$ K + Doorway Help Contents

Versions 8.61.00 for 32 bit and 9.61.00 for 64 bit Windows

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For Microsoft Windows® 10, 8, 7, Vista, XP, and Server 2012 R2
Supervise products from:-
Trend Control Systems Ltd.
Seachange from Ener.G Controls Ltd.
Echelon LonWorks® with Doorway LNS Add-In.

For software updates visit **www.doorway.co.uk**

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Available from Doorway Systems or through your local controls specialist.
A free demonstration version is available on request.

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K Contents;Index;SeaChange;Echelon;LonWorks;LNS;Update;2000;Year 2000
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$ K +An Introduction to Doorway

Thank you for using this Doorway Systems product.

Doorway is an inexpensive Windows supervisor program for compatible controllers. Doorway provides an easy to use graphical way of monitoring and controlling plant connected to these controllers, for about the same price as a suite of Windows office applications.

DDE (Dynamic Data Exchange) lets 3rd party applications collect data from the BMS. DDE also lets Doorway collect data from other applications.

SNAPSHOT archiving in industry standard format lets 3rd party applications analyse data collected by the BMS, for example using TEAM by Energy Auditing Agency Ltd.

Microsoft's OLE technology enables linking between applications. With OLE Doorway works seamlessly with modern applications such as **Word, PowerPoint** and **Visio** by Microsoft. Doorway even comes with ready made Visio Templates for both plant and strategy diagrams.

Many PC's have a connection to local (lan) or wide area (wan) Information Technology (IT) networks for E-mail, central file storage etc. By locating BMS data and pictures on a network file server all Doorway users use the same data set, simplifying support. Doorway can also route BMS communications through the IT network, giving the remarkable feature of being able to access the BMS from almost any PC connected to the IT network. Multi user licence purchasers can run Doorway on several PC's simultaneously communicating through one BMS hardware connection.

Doorway is written to the industry standard TCP/IP software interface. Doorway support for legacy protocols such as IPX/SPX and NetBEUI has been discontinued.

Ethernet network interface cards are usually built into PC's or are available at very low cost. Networking software is included with Windows. A simple two station IT network can be set up in an office in less than an hour.

INTRODUCTION
$ Introduction to Doorway
K Introduction;Doorway;Windows;Visio;Information Technology;Microsoft;TCP/IP;IT Gateway;Gateway;Network;DOORNET application;NIC;Ethernet;Token Ring;TEAM;Echelon;LonWorks;LNS
+ Contents:002

$ K + **Doorway Systems**

7 Chanctonbury Way
Crawley
West Sussex
RH11 8TE
United Kingdom
Tel +44 (0)7973-223643 (office/mobile with answer-phone)

Doorway's price for a single user is comparable with other Office software suites for Windows. Multi user licences for up to eight users are available at attractive prices, see **www.doorway.co.uk** or call your local system specialist.

Doorway has been created by AD, JD and SE Chamier using powerful software tools from Microsoft so that compatibility with Microsoft Windows 7-32, Vista32, and XP is assured.

Doorway's on-line Help has over 200 topics and is over 64,000 words long. The Help system is updated at the same time as the Doorway application.

Doorway's program source code consists of over 1/2 million words. The software has proven robust in service, and requests for support from users are remarkably infrequent.

DOOR_SYS
$ Doorway Systems
K Doorway;Address
+ Contents:002

$ K + File - New

This is used when creating a new Doorway page. A Doorway page consists of a data file for the buttons and data points and usually a picture file. The New command clears all buttons, data points, and picture from the screen.

If you choose this command, it may take a few moments to clear the current data file from memory and stop communications, depending on your computer and the amount of data being requested.

See also File Formats

FILE_NEW
$ File New
K File;New
+ Contents:010

$ K + File - Open

Also activated with Function key F11.

Use this command to display an existing Doorway page.

A Doorway page consists of a DAT file, and an optional picture file (usually WMF or BMP format). The DAT file tells Doorway which picture file, if any, to use and what data to request from the BMS system. Once the page has been opened the system will then automatically retrieve the required data from the BMS.

Opened pages can be edited by the user using the menu commands. Most editing actions require the user to be logged on, and so the Log In & Out request may appear.

Doorway can also display the alternative PIC file format, used by other BMS supervisors.

See Using PIC files.
See File Formats

FILE_OPEN
$ File Open
K File;Open
+ Contents:020

$ K + File - Save

Also activated with Function key F12.

This allows the current page to be stored on disk under the current filename. If the filename has not been defined, then the File Save As option is invoked.

This option is only available (not dimmed) when the page has been modified by the user, and has not been stored on disk.

If you are not logged on, the Log In & Out request may appear.

If the currently displayed page is in the PIC file format, then any changes to the layout will not be saved unless the page is converted to Doorway format using the File Save As option.

FILE_SAVE
$ File Save
K File;Save
+ Contents:030

$ K + File - Save As

Also activated with Function key Shift F12.

This allows the current page to be stored on disk under your chosen filename. If you are not logged on, the Log In & Out request may appear.

Each Doorway page consists of a data file and an optional picture file.

The File Save As dialogue box allows the user to choose a filename for the data file and the optional picture file. It is recommended that picture filenames are the same as the data filenames, except where one picture is to be shared amongst several similar pages.

Once the picture has been named, you can then choose the File Save option to save the file after further editing without prompting for a filename.

The filename REG.DAT is prohibited by Doorway, since the Windows Registration Database is called REG.DAT and is normally in the Windows folder. The registration database is where Microsoft keeps application information concerning location and OLE capability. When searching for an application Windows first searches REG.DAT, then WIN.INI, then finally uses the DOS path.

File - Save in Version 1 format.
Doorway versions 1 and 2 used a fixed DAT file format which stored information for 30 Buttons and 60 Data Points.

Doorway version 3 allowed 60 Buttons and 100 Data Points. Doorway version 6.35 increased this to 120 Data Points. The version 3 and later DAT file format supports the extra Buttons and Data Points and allows for other enhancements in the future.

Doorway version 3 and later can read earlier files, however Doorway versions 1 and 2 cannot understand the version 3 format. The solution is to upgrade Doorway. For convenience you may save in the version 1 format. You will be alerted if excess items will be discarded.

See also Picture Formats. and File Formats

FILE_SAVE_AS
$ File Save As
K File;Save;REG.DAT;Format;Version 1 format
+ Contents:040

$ K + File - Optimise

See also Data Speed

Doorway requests data from the BMS in the order of the data points.

Transmitted messages can contain multiple data requests to a controller, hence the data shows more quickly if you request all the data from one controller before requesting data from the next controller.

The File - Optimise sort is ASCII and ordered by:

- LAN number
- Controller number
- Data Point request (not $ Text data points)

$ Text data points are moved to the lowest numbers. Their order is unchanged so that effects created by overlapping are retained. Unused data points are moved to the highest numbers.

PIC files are automatically sorted by Doorway since the order of data points in the In*a*Vision PIC drawing file is unpredictable.

Buttons are optimised by moving all unused Buttons to the highest numbers. The Button order is unchanged.

FILE_OPTIMISE
$ File Optimise
K File;Optimise; Speed
+ Contents:045

$ K + File - Return to Previous Page

Also activated with Function key F9, see also Button Syntax

This option allows you to return to the previous page that you were viewing. This is helpful if you wish to return to a Doorway page after viewing a page in the UPG format.

Normally this option will just return to the previous page.

See also the RETURN Command.

FILE_PREVIOUS
$ File Return to previous DAT
K File;Previous;Return
+ Contents:050

$ K + File - Startup Page & Paths

Also activated with Function key F9, see also Button Syntax

The Startup Page is also known as the HOME page.

To choose a page file (*.DAT) which you wish Doorway to show when the program is started, when the Home menu is selected on the Home icon is clicked on the Toolbar. The normal (default) page is file AUTO.DAT in the Doorway application folder.

A button may be set to jump to the Startup page with the command:-

*HOME

Doorway pages are usually built at first on a single PC, where fully formed file paths, such as C:\DOORWAY\AUTO.DAT are convenient. To use the project on another drive, for example a file server, requires the file paths to be altered, and editing a large project would take some time. Doorway's global page filepath modifier will check the front part of a file path and substitute if there is a match.

eg. replace C:\DOORWAY\
with E:\BMS\BLDG22\

FILE_START
$ File Home Page, Startup Page & Paths
K Home;Startup;Opening;Initial;Paths;Drive letters
+ Contents:055

$ K + File - History

This option shows a list of the last few files that have been displayed, with the most recent at the top. You may recall any of these files by clicking on the file name in the list.

See also DDE Links

FILE_HISTORY
$ File History
K History;Previous;List
+ Contents:056

$ K + File - Convert Path References Utility

A button may be set to open the Convert Path References utility with the command *CONVERTPATH
See also Button Syntax

The Convert Path References utility is provided to facilitate conversion of a Doorway project of graphic page files for use on file servers.

Doorway on a file server.
Placing a Doorway project's graphic files on a server eliminates the support burden of maintaining separate copies of project graphic files on each users workstation. Each Doorway workstation then accesses the single set of project graphic files. When a graphic is updated all users see the update.

Each workstation may have their own local copy of Doorway, but to eliminate the support burden of maintaining multiple local copies of Doorway we recommend that each user runs from a single server installed copy of Doorway.

You will need to run the library installer [DWLIB9xx.EXE] once on each client's workstation to install and register certain library files that cannot be server located. Updates to the Doorway program will be installed on the server installation. Updates to workstation library files will be very infrequent.

To start Doorway on any workstation simply map a drive letter to the Doorway folder on the server and create a shortcut link using the mapped drive letter to the Doorway Server Login file [DWUSER.EXE] which is installed with the Doorway program on the server. You will need to allocate client numbers, and login names and passwords. These login details are separate from the Doorway login names and passwords, it is however strongly recommended to make them the same.

Doorway project on a Server or Virtual Machine Server.
A drive letter mapping is required on each client user's workstation so that the program will run. Most Doorway graphic projects are built originally for a standalone workstation and often contain absolute references like C:\DOORWAY\..... Such a Doorway project placed on a server would not work as it will have be mapped with a drive letter other than C: hence in the range D: to Z: which would require checking and modification of every page's backdrop picture reference, button file references and data points used a buttons. On large projects this would be a long task.

The Convert Path References utility modifies the project graphic files to eliminate all drive letters. File requests are changed to use relative addressing. This means that it is permissable to use any drive letter on any workstation, and the the project may be placed anywhere within a server's structure.

The Convert Path References utility converts all absolute file paths in a page file [DAT] into paths relative to that DAT file's location. File references in background pictures, buttons and data points used as buttons are converted.

The following file type extensions are supported by the path reference conversion utility:-
DAT, ZON, DWC, TGD, MAP, NET, IP, TXT, XLS, XLSX, DOC, DOCX, EXE, BAT, PIF, PDF, UPG, PIC

The conversion supports buttons and data points which use Doorway's multiple command fields feature, where fields are separated by the **|** symbol.

It is suggested that the project is copied into the allocated server location and the conversion performed on the files on the server. You can use Doorway's "Startup Page & Paths" global page filepath modifier to facilitate opening files prior to conversion.
e.g
substitute
	c:\doorway\
with
	p:\bms\doorway\

FILE_PATH_CONV
$ Convert Path References
K File;Convert;Path;References;File Server;Server;Virtual Machine;VM
+ Contents:057

Conversion.
The user chooses one folder at a time for conversion. The conversion of each file is made in place and file(s) that need changes are saved and hence replace the original version.

You can convert just the ONE selected page file [DAT] in the folder. Tick "Convert ALL to convert of ALL page files [DAT] sequentially.

The *Commands *WAIT, *LOGIN and *START take a filename as a parameter and are converted by the utility. Other *Commands are left changed.

There are tick options to convert *Backdop Pictures*, *Buttons* and *DataPoints*, it is recommended that you tick all three options. The feature was implemented to assist in the development of the conversion utility.

Tick box *Check Backdrop Picture* tests each backdrop picture exists.

Tick box *Show each Page* shows each page after conversion. The feature can be used without enabling any of the three conversions as a handy way of checking quickly all pages in a folder.

Warning:
There is no UNDO feature so it is recommended that before starting the entire project is copied to another folder location, or a remote drive or USB memory stick as a backup in case the results are not as required.

How it works:
Assume the doorway program file DOORWAY.EXE and a project of graphics page files is installed in the following folder on a server:
p:\public\estates\bms\doorway

Assume file [buildings.dat] in a graphics suite created on a standalone workstation has these references:

Page file	c:\doorway\buildings.dat
Button1	c:\doorway\site1\building1.dat
Button2	c:\doorway\site2\building2.dat

The conversion would convert these file references to:

Button1	site1\building1.dat
Button2	site2\building2.dat

File [building1.dat] originally has these references:

File location	c:\doorway\site1\building1.dat
Button1	c:\doorway\buildings.dat
Button2	c:\doorway\site2\building2.dat

The conversion would convert these file references to:

Button1	**..**\buildings.dat
Button2	**..**\site2\building2.dat

Movements both up and down the folder structure are converted using standard computer notation.
Upwards movements use the double dot **..** recognised by Microsoft Windows, Apple OSX, UNIX, and LINUX.

$ K + File - Import PIC scale

See also Using PIC files. and Convert from PIC format

For your convenience Doorway has this In*a*Vision PIC file import scaling feature which you may use to seamlessly expand or shrink a picture and its BMS data to fit the screen properly.

Doorway correctly displays In*a*Vision PIC files which have been created on the same screen standard (i.e. same pixel resolution) as they are used on.

Some competitor supervisor schematics using In*a*Vision PIC files were created for Windows 3. These may have used the EGA or Paradise PEGA screens as fitted to some PC's around 1990. The vertical and horizontal dimensions of these pictures will need adjusting when moving to today's screen resolutions. This is particularly necessary if moving PIC files to the higher screen resolutions 1024*768, 1280*1024, or even 1600*1200 pixels.

Doorway allows PIC scaling values from 320 to 2000 pixels horizontally, and from 200 to 2000 pixels vertically.

The PIC legacy file format was designed before Windows standard font sizes were introduced, and are stored as a ratio of Micrografx internal 480 pixels/inch parameter. You can change the converted font size of BMS data points by changing the pixels/inch parameter in the range 120 to 1920 pixels/inch.

Select the button for the screen you think was used when the picture was created and File Open the PIC file. Now modify the vertical and horizontal pixel size to fine tune the scaling as desired, and redraw again. Do not close the PIC scale window, just reselect the picture using the History menu or use File Open.

PIC scale settings are also active when importing a PIC file as a picture using Edit - Load Picture File. Remember that in this case the picture is then always saved in WMF format, hence on redrawing this file will not rescale further. So fine tune the scaling as desired and then select Edit -Load Picture File and load the PIC file again, and it will be rescaled.

The PIC scale settings are used for all PIC files. When you have got a PIC file scaled to your liking, save it in Doorway's Microsoft WMF format. Remember to select the Screen button to get back to your own PC's screen resolution.

PIC scale settings are not saved when you close the program. Doorway always gets the scaling from your own PC's screen on startup.

FILE_PIC_SCALE
$ File Import PIC scale
K File;Import;PIC;Scale
+ Contents:058

$ K + File - Convert from PIC file

See also File Import PIC scale

For users with a competitor Supervisor using the PIC format this option provides a fast way of creating Doorway DAT and WMF files from the PIC format. This makes it very easy to ensure that both Supervisors show the same data.

After choosing this option select the folder where the PIC files are stored and click Start Conversion. The conversion process can be stopped by pressing the Cancel button, although any pages created are retained. Repeat the process for each folder as required.

To import each PIC file Doorway needs to locate the relevant GRP group file referenced in the PIC file and extract the lan numbers. Doorway looks for GRP files in the competitor Supervisor's usual installation folder i.e. C:\940\groups. If the file is not found Doorway then looks in the Doorway program folder. If the file is still not found Doorway assumes all addresses are on LAN 0, and alerts the user with a message box, but still continues to process the PIC file.

Project conversion:
To convert a project from a competitor Supervisor using the PIC format it is recommended to copy all PIC, UPG, TGD and GRP files from the competitor Supervisor PC onto the Doorway PC, recreating the original folder structure, usually c:\940\data and c:\940\groups. The folder structure must be maintained, or else every page will have to be checked for incorrect path references.

Now start Doorway and select menu File-Convert form PIC file. Choose the c:\940\data folder and convert the files. A DAT and WMF file is created alongside each PIC file.

In turn select and convert all other directories where PIC files have been placed.

If desired delete all the PIC files using File Manager/Explorer, as they are no longer required.

Now either create an AUTO.DAT in the Doorway folder with a Button to c:\940\data\overview.dat, or set the Doorway icon in Program Manager or Start Bar with the command line:-

```
c:\doorway\doorway.exe   overview.dat
```

Also set the working folder to:-

```
c:\940\data
```

Notes:
Doorway stores the address and lan for every item on a page in its file. Doorway only reads competitor GRP files when importing PIC files. The competitor GRP method of lan storage can suffer from ambiguity when a large number of sites are managed from a single supervisor installation. In certain circumstances alarms can be referenced to the wrong site name, since the GRP search order is set by absolute position in the MSDOS folder.

All communication with the BMS is suspended during the conversion process. On completion the original page is redrawn and communications restored. If a serious problem occurs during picture conversion the process will halt and advise the user.

FILE_PIC_CONV
$ File Convert Pic
K File;Convert;PIC;GRP
+ Contents:059

$ K + File - Change Lan Numbers and Addresses

See also Find & Replace

Change Lan Numbers
Sometimes pages created for use on a site are also to be used from a remote location with an MNC or TMN type modem. The local lan 0 then needs to be changed, for example to lan 1, to allow connection. Using the File-Change-Lan-Numbers feature for example the lan=0 references can be changed 'on the fly' to lan=1.

The lan references are only changed if the page is opened when the Change Lan Numbers screen is showing. When the screen is closed the feature is disabled.

The page is not marked as 'changed', and so the warning *File may have changed, Do you wish to Save changes* dialogue is not shown. To write the modified page to back to disk use the menu File Save As...

For convenience when developing pages the lan change option can be used to globally edit from any one valid lan number to any other valid lan number.

Change Addresses
The Change Addresses screen is provided to assist making global changes on a page, which can useful during page creation and editing. Any BMS type suffix is retained.

FILE_LAN_CHNGE
$ File Change Lan Numbers & Addresses
K File;Lan;Change;MNC;TMN;Autodial;Address
+ Contents:060

$ K + File - Copy Data To Clipboard

This choice is similar to the Print Data option. It copies the displayed data in the data points to the clipboard, together with the requests and other relevant information. This data may be pasted into other Windows compatible programs, such a Spreadsheet or Word Processor. The data is separated by tabs so that it may be easily formatted. In Spreadsheets applications the data fits neatly in cells.

FILE_COPY_DATA_TO_CLIPBOARD
$ File Copy Data to Clipboard
K Copy;Clipboard
+ Contents:061

$ K + File - Print Data

This choice is similar to the Copy Data option. It prints the displayed data in the data points together with the requests and other relevant information.

The data is printed in a tabular format across the page. It shows the data point number, the data request and the current data point display.

Example:

```
Ref   O/S   Lan   Request  Reply
---   ---   ---   -------  -----
1     20    0     S1($)    Space Temp 1
2     20    0     S2($)    Flow Temp 1
```

See also Printing problems

FILE_PRINT_DATA
$ File Print Data
K File;Print;Data
+ Contents:065

$ K + File - Print Picture

This option allows you to print the Doorway page on your printer. If your printer driver supports colour graphics, and you have a colour printer, you will get colour output. This option uses the Windows printer driver system.

The *Print Page Options* screen allows a number of options designed to assist paper documentation of pages.

Usually paper mode Landcape rather than Portrait is best to match the screen shape. If the print image will be larger than the paper selected Doorway will ask if you wish to resize it to fit.

If a non white background colour is set Doorway will ask if you wish to print the background colour. In addition to saving printer ink the paper print can often be clearer if the background is plain white. This option works well with WMF background pictures which have transparency, but BMP based pictures are usually opaque so are unable to benefit from the Doorway background option.

See also Printing problems

FILE_PRINT_PICTURE
$ File Print Picture
K File;Print;Picture
+ Contents:070

[#] [$] [K] [+] File - Exit

Also activated with Function key Alt F4.

A Log In level of 40 is required to exit the Doorway program. If you are not logged on, the Log In & Out request may appear.

When you choose File Exit a warning is displayed, since if you close the Doorway program you will no longer receive BMS alarms. If you wish to be notified of all BMS alarms, you will need to keep Doorway running at all times. Doorway can be reduced to an Icon (minimize) at the bottom of the screen, and alarm monitoring and reporting is maintained.

[#] FILE_EXIT_PROGRAM
[$] File Exit
[K] File;Exit
[+] Contents:080

$ K + Edit - Edit Mode

This activates Edit Mode. You can then click on any displayed Data Point or Button to edit its properties. The screen is resized to fill the screen width, and is vertically adjusted so that the full page is not obscured by the toolbars. You may Maximize the screen at any time if desired using the normal Windows methods.

You can also enter Edit Mode by holding down the shift key while clicking on a Data Point or Button. See also Keyboard Users.

To use Edit mode requires that you are logged in with an access level of at least 90.

When in Edit mode you may use the Right Mouse Button Properties Menu.

See also Edit Data Points, Edit Buttons and Moving Items Around

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EDIT_EDIT_MODE
$ Edit Edit Mode
K Edit;Mode;Shift key;Toolbar;Mouse
+ Contents:090

$ K + Edit - Edit size

This option shows the edit status box property menu.

When in Edit mode you may also use the right mouse button on the blue, yellow, or grey edit status boxes to show the edit status property menu.

The width of the status boxes may be increased if the screen is larger than the normal 640 pixel VGA width.
The font may also be made bold or made larger.

See also Edit Data Points, Edit Buttons and Moving Items Around

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EDIT_EDIT_SIZE
$ Edit Size
K Edit;Size;Status
+ Contents:095

$ K + Edit - Snap to Grid

See also Moving Items Around

Also activated with Function key F8.

This option toggles On and Off a black Grid on the screen. There are also five hidden grid lines between each displayed grid line.

When Snap to Grid is activated and a Data Point or Button is moved it will 'snap' to the top left corner of the nearest hidden grid square . This is useful for lining up rows and columns of Data Points or Buttons.

The grid is not redrawn automatically since the redraw time with complex background pictures can be excessive with modest speed computers. Press F8 twice to redraw the grid when required.

Hint: With modest speed computers patience is required as the screen keeps redrawing the picture. Try Edit Cut Picture, align the data points and Buttons, then select Edit Load Picture File to restore the picture.

EDIT_TOGGLE_GRID
$ Edit Toggle Grid
K Edit;Toggle;Grid
+ Contents:100

$ K + Edit - Add Data Point

Also activated with Function key F7.

This option adds a new Data Point to the screen. If you are not in edit mode, it also opens the Data Point editing toolbar (yellow) for you to add the BMS reference you require.

If you are not logged on, you may receive a log on request.

The data point is initialised with all style settings the same as for the data point showing in the yellow toolbar, except it is set as a text point.
eg. $Data Point 33

Use the right mouse button to copy and paste all of an existing data point's properties, even between pages. You may also duplicate an existing item , see Mouse Button Properties

See also Edit Data Points and Edit Buttons

EDIT_ADD_DATA_POINT
$ Edit Add Data Point
K Edit;Add;Data;Point;Toolbar;Mouse
+ Contents:110

$ K + Edit - Add Button

Also activated with Function key F6.

This option adds a new blank Button to the screen. If you are not in edit mode, it opens the Button editing toolbar (blue) for you to add the page filename or program you wish to jump to.

If you are not logged on, you may receive a log on request.

Use the right mouse button to copy and paste all an existing button's properties, even between pages. You may also duplicate an existing item , see Mouse Button Properties

See also Edit Buttons, Button Syntax and Edit Data Points

EDIT_ADD_JUMP_BUTTON
$ Edit Add Button
K Edit;Add;Jump;Button;Toolbar;Mouse
+ Contents:120

$ K + Edit - Align Selected

This option allows you to align and distribute groups of Data Points or Buttons on the screen. DataPoints may contain images.

Select Edit Mode.
While pressing the Shift Key use the mouse to draw a selection box around the items to be aligned. You can clear the selection box by clicking without the Shift key pressed. When the selected area appears correct release the Shift key and mouse button.
Use the menu Edit Align Selected, or Right mouse click anywhere on the Page background and choose to align or distribute Buttons or DataPoints as required.

The **Distribute** option distributes either Buttons or DataPoints so their top edges are uniformly spaced vertically.

The 'hot spot' which Doorway uses to determine if an item is selected is the top left hand corner, so is is not necessary for the box to encompass the entire item, which makes it possible to be more selective.

There is no 'undo' feature in this release of Doorway. It is suggested that you 'Save' the Page prior to using the Align feature!

EDIT_ALIGN
$ Edit Align Selected
K Edit;Align;Mouse;Distribute
+ Contents:125

$ K + Edit - Change Title

This option allows you to change the title displayed at the top of the screen. There can be a unique title for each page, usually a description of the location or main purpose of the page.

EDIT_CHANGE_TITLE
$ Edit Change Title
K Edit;Change;Title
+ Contents:130

$ K + Edit - Change Background Colour

This option allows you to change the background colour of the screen, behind the picture.

This **only** works if you can see the Background. Some pictures have a coloured bounding rectangle which fills the screen and so the Background is hidden. It is recommended that pictures containing a bounding rectangle for sizing reasons have this rectangle 'unfilled'. This allows the background colour to be changed easily in Doorway.

Older drawing packages such as Micrografx In*a*Vision only offer 15 colours. Doorway gives the full Windows choice. Depending on your PC this can be up to 16.7 million colours, sometimes called 'TrueColor'.

The number of colours visible on your PC depends on your Windows display software driver. Most PC's are shipped with "TrueColor (32bit)" display software drivers, which give over 16 million colours and is recommended. "HighColor (16bit)" gives 65,535 colours is acceptable. The additional colours are synthesised by mixing coloured dots on screen in a technique known as 'stippling'.

The legacy 256 and 16 colour drivers are no longer recommended as extensive 'stippling' is unattractive unless the pages were created using only the colours available. Also displaying "TrueColor (32bit)" pictures on a 256 or 16 colour display can be slow as Windows adjusts the colours.

EDIT_CHANGE_BACKGROUND_COLOUR
$ Edit Change Background Colour
K Edit;Change;Background;Colour
+ Contents:140

$ K + Edit - Change Scaling

This option allows you to globally change the scaling of all the Buttons and DataPoints on all Doorway pages on a PC.

Doorway pages are often created on standard 14" 1024*768 resolution screens fitted to most notebook PCs. If such pages are then displayed on larger 17" to 30" type monitors, the DataPoints and Buttons may appear too small. The size will depend on the resolution pixels of the display and the font sets being used by the PC's graphics card. The Page Scaling parameter is a global rescaling parameter, normally set at 100%, which can be varied from 30% to 300%. The setting is retained in the DOORWAY.INI file and is read whenever the program is started.

Note that the data files on disk are not altered.

Pages may also be created that automatically resize all Buttons and DataPoints on the page by setting a special datapoint with the **IMG=width*height* syntax which records the width and height resolution at which the page was designed.
See Button Syntax

EDIT_CHANGE_SCALING
$ Edit Change Scaling
K Edit;Change;Scaling;Rescaling;Page;Screens;Global
+ Contents:145

$ K + Edit - Change Animation Rate

See also Dynamic Images

This option allows you to globally change the rate at which DataPoints can flash their paper colour and update any animated images.

The rate is adjusted by setting the time in mS between updates. Valid values are between 5000 and 200mS, ie from 5 seconds down to 5 times a second. The standard value is 1000mS (1 second).

The standard value of 1000mS is suitable for flashing colour status. Animated images use significant processing power, and this can lead to the user interface becoming unresponsive with old low powered PC's. The user should experiment with varying the animation rate on the particular PC and pages.

On tests the fastest animation rate of 200mS (5 times a second) with 10 animated images was no problem for an Intel® Pentium® III 500MHz CPU (processor).

EDIT_ANIMATION_RATE
$ Edit Change Animation Rate
K Edit;Change;Animation;Rate;Dynamic;Images;Flash
+ Contents:147

$ K + Edit - Find & Replace

See also Change Lan Numbers and Addresses and Startup Page & Paths

Doorway's Find & Replace feature enables rapid editing of files.

If you select 'No Comms' from menu Tools-Communications then the data point syntax is displayed at each data point location. This allows quick inspection of an entire page, and the effects of Replace are shown immediately.

Shortcut key CTRL F

EDIT_FIND_REPLACE
$ Edit Find & Replace
K Edit;Change;Find;Replace
+ Contents:148

$ K + Edit - Load Picture File

Each page may have a picture as a 'backdrop'. Usually the picture shows the general arrangement of the building, floor or plant etc. onto which data from the BMS is overlaid.

From this dialogue box either type in the name of the required picture file, or chose the **Files** button to select from the disk directories. Any existing picture will be replaced by the selected picture.

See also Picture Formats

EDIT_LOAD_PICTURE
$ Edit Load Picture
K Edit;Load;Picture
+ Contents:150

$ K + Edit - Cut Picture

This option transfers the current picture to the Windows clipboard. It also removes the picture from Doorway.

EDIT_CUT_PICTURE
$ Edit Cut Picture
K Edit;Cut;Picture
+ Contents:160

$ K + Edit - Copy Picture

This option transfers a copy of the current picture to the Windows clipboard.

EDIT_COPY_PICTURE
$ Edit Copy Picture
K Edit;Copy;Picture
+ Contents:170

$ K + Edit - Paste Picture

If there is a picture in the Windows clipboard it will be copied into the Doorway page. Doorway can show both Windows Metafiles (WMF) and Bitmaps (BMP). The main difference is that Metafiles are scaleable whereas Bitmaps are normally fixed. OLE picture files may contain metafiles or bitmaps. With bitmap based files Doorway will offer a choice of using in a resizable mode (preferred) or fixed.

If both formats are on the clipboard Doorway will give you the choice. The recommended format is Metafile, but on slow PCs with very detailed pictures, eg photographs, the Bitmap format can draw faster. Experiment to determine your preference. Note that Bitmap disk files are usually very large.

See also Picture formats

EDIT_PASTE_PICTURE
$ Edit Paste Picture
K Edit;Paste;Picture
+ Contents:180

$ K + Edit - Edit OLE Picture

See also Insert OLE Picture and Insert Word, Powerpoint or Visio OLE Picture

This option is enabled if the current picture is in Microsoft OLE format and has file extension OLE. The picture is then passed to the application which created it to permit further editing.

Use menu UPDATE in the OLE application to update the picture in Doorway for review.
Use menu EXIT in the OLE application when editing of the picture is complete.
Use Doorway menu Edit-Edit OLE Picture to get back to the picture drawing application, or use convenience keys CTRL E.

Choose Doorway menu File-Save to save the picture to disk. Doorway saves OLE format pictures to disk in Microsoft OLE format and the file contains information required for re-editing at a future date. The picture file extension used is .OLE

If the application which created the picture is not installed on the PC, then editing is of course not possible. You may still transfer the picture to another drawing application for editing using Doorway's Edit-Copy Picture menu, and then Pasting the picture into the drawing application. In this case any extra features of the original OLE file will usually be lost.

Note: When a page with an updated OLE format picture is saved the OLE picture application is required, and will be restarted if it is not already running, so it is usually quicker to save the page before the final EXIT is used. This is of course only necessary if the editing has modified the picture, modifying buttons and data points etc on the page does not modify the picture.

Some OLE applications will not start unless their installation folder is included in the Environment Path.

EDIT_OLE
$ Edit OLE Picture
K Edit;Picture;OLE
+ Contents:185

$ K + Edit - Insert OLE Picture

See also Edit OLE Picture and Insert Word, Powerpoint or Visio OLE Picture

Doorway supports Microsoft's OLE technology for picture files. OLE picture files contain information about the application used to create the picture in the file to facilitate further editing.

Choose this menu option to show the Microsoft OLE insert object dialogue. The first time you open this screen you will need to press button Scan Registry to discover what OLE applications are installed. The current size in pixels of the Doorway page is shown to help when using bitmap programs such as *Microsoft Paint®.*

Example using *Microsoft Office*® : Start a new page using menu File-New. Now choose menu Edit-Insert OLE Picture. *S*elect *Microsoft PowerPoint Slide* and *PowerPoint*® will start. Now draw your picture. *PowerPoint*® allows the insertion of pictures from files or ClipArt on the PC.

Use menu UPDATE in the OLE application to update the picture in Doorway for review.
Use menu EXIT in the OLE application when editing of the picture is complete.
Use Doorway menu Edit-Edit OLE Picture to get back to the picture drawing application, or use convenience keys CTRL E.

You add data points and buttons to the page in Doorway in the normal way.

Choose Doorway menu File-Save to save the picture to disk. Doorway saves OLE format pictures to disk in Microsoft OLE format and the file contains information required for re-editing at a future date. The picture file extension used is .OLE

Microsoft *Visio*®, *PowerPoint*® and *Word*® are examples where OLE works well. In Visio the 'SmartShapes' are retained in the file, facilitating future editing, *without* slowing the loading of the picture into Doorway. See Insert Word, Powerpoint or Visio OLE Picture for fast menu options for Visio, Powerpoint and Word.

Some OLE applications, for example Visio, will not start unless their installation folder is included in the Environment Path.

In Windows 7-32, Vista-32, 2000 and XP you add the path from Control Panel System icon.
From Advanced tab select Environment Variables.
From upper pane User variables for 'username' select Variable PATH and click Edit...
If a path is already shown in the box then add a semicolon **;**
Visio 3, 4, 5, 2000
    c:\Program Files\Visio
Visio 2002
    c\Program Files\Microsoft Office\Visio10
Visio 2003
    c\Program Files\Microsoft Office\Visio11
Visio 2007
    c\Program Files\Microsoft Office\Visio12

In Windows 9x you add the path in AUTOEXEC.BAT.
Visio 3, 4, 5, 2000
    Path=%Path%;"c:\Program Files\Visio"
Visio 2002
    Path=%Path%;"c:\Program Files\Microsoft Office\Visio10"

To test the Visio path environment is correctly set:-

Open a *Command Prompt* or *MS-DOS Prompt* window

EDIT_INSERT_OLE
$ Insert new OLE picture
K Edit;Picture;Insert;OLE;Word;Powerpoint;Visio
+ Contents:186

Change to the root directory by typing **CD** and press the Return key
For Visio 2002 and later type **VISIO.EXE** and press the Return key and Visio should start
For Visio 3, 4, 5 and 2000 type **VISIO32.EXE** and press the Return key and Visio should start
If Visio does not start then Doorway will not connect through OLE to Visio.

$ K + Edit - Insert Word, Powerpoint or Visio OLE Picture

See also Edit OLE Picture and Insert OLE Picture

These menu options immediately run *Microsoft Word®, Powerpoint®* or the *Visio®* drawing application to create or modify OLE pictures. The selected application must of course be installed on the PC.

Doorway OLE works with *Microsoft Office®* versions 97, 2000 and XP and *Visio®* versions 3, 4, 5, 2000 and 2002.

The *Visio®* drawing product was created by the Visio Corporation until the company was bought by Microsoft. *Visio®* is an example where OLE technology works very well. The Visio 'SmartShapes' are retained in the file, without slowing the loading of the picture into Doorway. Visio is not required on a PC to show the picture in Doorway.

The Doorway CD places in the Doorway application folder a Visio template with stencil for HVAC Plant and a template with stencil for BMS Controller Strategy. If Visio is installed these four files need to be copied into the appropriate folder for use in Visio. It is assumed below that the manufacturers suggested installation folders have been used.

For Visio 2000, 2002 and 2007 the files are:

Doorway_plant.vst
Doorway_plant.vss
Doorway_strategy.vst
Doorway_strategy.vss

For Visio 3, 4 and 5 the files are:

D_MAIN.VST
D_PLANT.VSS
D_STRAT.VSS
D_STRATG.VST

Copy from the Doorway folder the appropriate files as above into:

Visio 3	c:\Visio\Template
Visio 4	c:\Program Files\Visio\Template
Visio 5	c:\Program Files\Visio\Solutions\Doorway
Visio 2000	c:\Program Files\Visio\Solutions\Doorway
Visio 2002	c:\Program Files\Microsoft Office\Visio10\1033\Solutions\Doorway
Visio 2003	....\My Documents\My Shapes\Doorway
Visio 2007	....\My Documents\My Shapes\Doorway

You will need to create the Doorway folders shown above. Folder 1033 is the language code for English and may be different in some non UK installations

Some OLE applications, for example Visio, will not start unless their installation folder is included in the Environment Path, for details of this see Insert OLE Picture.

EDIT_INSERT_VISIO
$ Insert new Visio OLE picture
K Edit;Picture;Insert;OLE;Visio
+ Contents:187

$ K + Edit - In*a*Vision Picture Editor

Doorway can always read and/or convert Micrografx's PIC format files so that users may retain their investment in legacy BMS graphics.

In*a*Vision was produced in 1986 for Windows 1 and runs in Windows up to 3.11.
In*a*Vision **will** run in **some** NT4 installations, but not all.
In*a*Vision will **not** run in Windows 95 or later.

You can start the In*a*Vision application with button command *INVISION. This activates the Micrografx In*a*Vision program, which creates pictures in the Micrografx .PIC format. In*a*Vision was provided with a competitor BMS software package. In*a*Vision is only activated if it is installed on your computer, and is either in the Doorway folder or is located by the DOS path.

The Micrografx In*a*Vision program was produced in 1986 for Windows 1.0. Most programs from that era do not work in later versions of Windows. In*a*Vision worked in Windows 3.1x but did not give Maximize or Minimize selections either in the System menu (top left) or the control boxes (top right). We programmed Doorway to modify In*a*Vision in Windows memory as it is started to show Maximize and Minimize buttons without infringing Micrografx's copyright. We hope you appreciate this touch.

See also Using PIC files. and Convert from PIC format

EDIT_INAVISION
$ Micrografx In*a*Vision Picture Editor
K Edit;Picture;Micrografx;In*a*Vision;PIC
+ Contents:188

$ K + Tools - Chat

Also activated with Function key F5, see also Button Syntax

This option allows you to 'talk' to another user using Doorway or another compatible software program on the BMS lan, eg UPDN.EXE, which was written by the authors of Doorway with this feature in mind!. If you wish to send a message to an incompatible supervisor you can send a message as an "ALARM".

To choose who you wish to speak to select the Destination button, and choose from the Controller Selector.

To send a normal message select "Send as Text".

To send as an alarm to a supervisor select "Send as Alarm"

When you have finished sending messages, you can choose the Close button to close the Chat window.

You can send alarms to any supervisor product or remote printer. Text messages will be ignored by most supervisors and printers.

To speak to another user using Doorway, select the Send as Text option.

TOOLS_CHAT
$ Tools Chat
K Tools;Chat
+ Contents:200

$ K + Tools - Log In & Out

Also activated with Function key F4.

See also Password Administration and Password Levels

This option allows users to log in and out of the Doorway program. Doorway can administer up to 20 Users, each with individual name, password (optional), level and log-on time.

You have to be logged in with a sufficient level to edit Doorway pages or change various settings in the BMS. If you attempt an action that requires you to be logged in, the Log In dialogue box automatically appears. This will also occur if the currently logged in level is insufficient.

The caption of the Log in box indicates why Doorway is requesting you to Log in. The required level for the feature is shown. The current user's level is shown alongside their name, on a small green or red square which shows whether the user has sufficient authority.

TOOLS_LOG_IN
$ Tools Log In
K Tools;Log In;Log Out;Password;Levels;Users
+ Contents:210

$ K + Tools - Toolbar

Doorway's Toolbar allows rapid access to the most used operating and edit commands. The Toolbar may be shown by selecting the Toolbar-Standard menu option. Selecting the Toolbar-Auto Hide option means that the Toolbar only shows when the mouse is at the top of the screen.

Left click the world icon to open the Communications Options screen, right click to open the Show Communications screen.

The Toolbar is moveable. Mouse click on the left hand 'touch point' of the Toolbar and drag it across the screen. If dropped near the top or bottom of the Doorway screen the Toolbar will 'dock' and become attached. Not that if the Auto Hide option is selected then the Toolbar will revert to the screen top.

The *TOOLBAR command may be used either on a Button or DataPoint in the usual way. Hence the Toolbar may be set to show only on particular pages, overriding the menu setting.

eg.	$*TOOLBAR 0	remove Toolbar
	$*TOOLBAR 1	show Toolbar
	$*TOOLBAR 2	show Toolbar with AutoHide
and	$*TOOLBAR	reset Toolbar to menu setting

See also Button Syntax

TOOLS_TOOLBAR
$ Tools Toolbar
K Tools;Toolbar;Edit
+ Contents:215

$ K + Tools - Log Book

This option opens the Doorway Log Book, which provides a powerful memo facility. You can for example, use it to store active plant status information. which you may need to update from day to day and which other members of the building facilities management team may need to know.

The time, date, and week number is shown of the last update. Updating of the disk file is automatic and takes place whenever you select another page, close the Log Book or exit Doorway. Although there is a manual File - Save option, no save occurs if there have been no changes.

When first installed the Doorway Log Book contains a few example pages, additional pages may be added at any time by using the File - Add Page option.

You can set a button to open the Log Book at particular page. Clicking on this button will activate the Log Book and display the appropriate page. You can also associate a text data point with a particular Log Book page. Clicking on this text data point will activate the Log Book and display the appropriate page.

See Button Syntax and Text Data Points

Hint for Advanced Users:
The Doorway Log Book is contained in a database file called DOORWAY.MDB which can be loaded into Microsoft Access 2 or later for further manipulation.

TOOLS_LOG_BOOK
$ Tools Log Book
K Tools;Log Book;Book;Notepad;Microsoft;Access;MDB
+ Contents:220

$ K + Tools - Notepad

Also activated from a Button with filename set to NOTEPAD.EXE.

This starts the Windows NOTEPAD text editor. Notepad is placed at the right hand side of the screen, and set as an 'On top' Window.

Using Doorway's extensive Cut and Paste features you may copy most data for further analysis and printing.

TOOLS_NOTEPAD
$ Notepad
K Tools;Notepad
+ Contents:225

$ K + Windows Resources

Doorway has been in commercial service since 1993. Doorway has steadily been enhanced to make use of increasing PC power and the advances in Windows inclding the latest Intel® and AMD® dual CPUs (processors). At all times Doorway has proved extremely stable in use.

If a new Doorway installation 'hangs' when opening a page then test with Windows in 'safe mode'. Safe mode uses Microsoft Windows screen driver for 16 colour VGA (640*480 pixels). If the installation then works correctly the problem may be in the third party screen driver, try a Microsoft Windows supplied screen driver. Doorway internally can use all 16.7 million windows colours (TrueColor), and Windows automatically shows the nearest colour from the physical palette. If a screen colour depth is chosen for a video card which has insufficient Video memory (video RAM) then the screen driver 'hangs' when an application like Doorway requests the maximum colour palette. Office applications seldom make use of 16.7 million TrueColor. The solution is either to fit the correct video RAM or reduce colour depth until the problem does not occur.

'Resources' are just index tables where Windows remembers all the items on the screen which the various applications have created. Resources are limited, and are not increased by adding memory (RAM). Windows 95/98/ME have modest 'system resources'. Windows 7-32, Vista32, XP, 2000 and NT4 resources are very large.

The authors of an application make speed versus resources trade-offs. Applications run quicker if displays are kept in memory. Discarding and recreating later when required releases resources, but the application then runs slower.

Windows shows the system resources free. In Windows 95/98/ME right click the *My Computer* icon. Choose menu Properties. From the System Properties screen select Performance. On starting Windows 95/98/ME will normally show about 95% system resources free. Doorway can show Windows resources, see Windows Resources.

In use system resources free will fluctuate up and down, which is quite normal. If an application 'crashes' Windows 95/98/ME is often unable to recover resources from the failed application. Consequently restarting Windows 95/98/ME after an application 'crash' is recommended. Windows 7-32, Vista32, XP, 2000 and NT are better at recovering after an application failure.

If System resources falls below about 10% Windows has difficulty managing items on the screen, leading to confused displays. Closing one or more applications is the only way to release resources.

Micrografx Designer 3.1 and Micrografx Draw 3.0
An errant application can 'consume' resources. Micrografx Designer 3.1 and Micrografx Draw 3.0 can export pictures as Windows Metafiles (WMF) or to the clipboard (WMF) which are flawed. The problem seems to be that the file contains requests for Windows to create 'pens and brushes' in the normal way, but does not tell Windows to free all of them afterwards. The resources problem has been confirmed by Micrografx technical support in the US, and an updated library file is available free of charge from them. Doorway Systems can also supply this file, please call.
The updated library file required is:-

MGXWMF.DRV size 37680 dated 24 Feb 1993

Note that the file date may have been changed using File Manager/Explorer or other DOS tools, which might mislead. Also Micrografx has not used the Windows properties version stamping feature available from File Manager/Explorer etc. The only certain check is to get the internal version information from within the Micrografx application:-
In Micrografx Designer 3.1 or Micrografx Draw 3.0 select menu Help-About... then click on the icon at the top left of the About screen to reveal the Micrografx library file internal revision numbers and dates, this item must be present:-

MGXWMF 2.0a 02/23/93

For work-arounds see below.

Windows Visat32, XP, 2000, NT4 and 9x

WINDOWS_RESOURCES
$ Windows Resources
K Resources;Screen corruption;Corruption;Crashing;Hanging;Lock up;Micrografx;Designer;Draw;Windows;Video RAM;Screen Driver;TrueColour
+ Contents:226

Micrografx has confirmed that with Windows 95 and later the WMF export feature in Designer 3.1 and Draw 3.0 does not work correctly. The work-arounds are:-

(i) Use Microsoft Word XP, 2000 or 97. In Word choose menu Insert-Picture-From File, then select the picture with the mouse, then menu Edit-Copy to put the picture on the Windows clipboard and in Doorway use menu Edit-Paste. All the Designer sample DRW pictures shipped with Designer 3.1 can be faithfully displayed in Doorway using Word as the converter, by contrast the Designer 3.1 WMF exporter fails to convert its own files completely.

(ii) Export the design in the legacy PIC format, which Doorway can read and convert to the Microsoft WMF format. Features which cannot be represented in the PIC format will be lost.

$ K + Tools - Run

This is similar to the Windows Start-Run feature. This is especially convenient for when the PC's access rights as set by the network administrator may have restricted use of the Windows Start-Run feature.

TOOLS_RUN
$ Run...
K Run
+ Contents:227

$ K + Tools - Communications

See also Button Syntax

This option allows you to change the communications settings, and is also available from the Engineering screen. The settings may be changed at any time, the change is immediate and there is no need to restart either Doorway or Windows.

Port and Baud Rate
The most usual connection to the BMS uses RS232 hardware and a PC COM port. The Baud Rate (speed) selected must match the associated BMS hardware, usually 9600 baud. Port and Baud are not applicable if the alternative of a TCP/IP network connection is made to a local or distant *Doorway IT Gateway* or to the proprietary EINC type hardware.

TCP/IP Network
This routes all communications using TCP/IP protocol over the IT network, using the *Doorway IT Gateway/Router* included with Doorway. The limit to the number of users per BMS hardware connection is set by the speed of data through the BMS hardware, about four simultaneous users will get acceptable performance through one gateway. Up to 117 gateways can be installed to support the 117 possible BMS lans which can be fitted to larger sites. In practice the load is spread across the hardware allowing many Doorway users. Each Gateway can be addressed by all 100 Doorway client addresses.

TCP/IP - Doorway Client or EINC Gateway

Each Doorway PC is a 'client' of the *Doorway IT Gateway* and requires a unique client number. If two Doorway clients are set with the same client number some BMS reply messages will be sent to the wrong client, hence these clients will experience erratic BMS data collection. There are 100 separate Doorway client addresses so address duplication should not be necessary.

When EINC is selected as a Port then the *Doorway Client* item changes to *EINC Gateway*. The EINC uses a simplified Telnet method to create a point to point link from Doorway to an EINC type device. Set the *EINC Gateway* number to connect to an EINC type device. The *EINC Gateway* IP address and port is set in the IP table, see below.

TCP/IP - Local Port
Messages using TCP/IP protocol enter a PC via a 'port' which is in the range 1 to 65535. Numbers in the range up to around 2000 are reserved for network industry standard system services. The Doorway standard (default) is Port 60010. It should only be necessary to change from the standard TCP/IP port number if it conflicts with another product on this PC. Doorway will not allow a port selection which is already in use on the PC. The optional *Doorway Server Licence* allows multiple copies of Doorway to be run from one software installation and automatically sets the Local Port to 60010 plus the Client number 0 to 99, hence the port may be from 60010 to 60109, and these port numbers are not user adjustable.

TCP/IP - LAN
Each BMS lan is associated with one or more *Doorway IT Gateways/Routers*. The association list is edited from this button. After installation all lans are associated with *Doorway IT Gateway* number 0. The list is retained in file DOORWAY.NET which may be copied to other PC's to speed multiple installations. You may dynamically load alternative NET files from a button or datapoint using syntax FILENAME.NET, but note that the communications options screen always saves to DOORWAY.NET.

TCP/IP - IP
Each *Doorway IT Gateway/Router* is installed on a PC with a fixed IP address and a port on which it listens for messages. The standard *Doorway IT Gateway* port is 60000, the standard *Doorway IT Router* port is 60001. The association list is edited from this button. On initial installation the IP addresses are set to the invalid address 0.0.0.0 so this must be edited as required. IP address 0.0.0.0 is internally substituted by the PC's own IP address so works with an IT Gateway on the PC without setting the IP address. The list is retained in file DOORWAY.IP which may be copied to other PC's to speed installation. It should only be necessary to change from the

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TOOLS_COMMS
$ Tools Communications
K Tools;Baud;Serial;Local;Port;COM port;RS232;Direct;CNC;Communications;Idle Time;Modem;Phone;Limit;V23;MNC;TMN;ANC;SANC;IT Gateway;Gateway;Network;DOORNET application;TCP/IP;NIC;Ethernet;Token Ring;EINC;IP;NET;DOORWAY.NET;DOORWAY.IP
+ Contents:229

standard TCP/IP port number if it conflicts with another product on this PC. *Doorway IT Gateway* will not allow a port selection which is already in use on the PC. When using an *EINC Gateway* set the IP address and port for the EINC type device which is to be used. To find out an EINC's settings use configuration mode over the BMS lan. You may dynamically load alternative IP files from a button or datapoint using syntax FILENAME.IP, but note that the communications options screen always saves to DOORWAY.IP.

TCP/IP - DNS name
PC and EINC DNS name to IP number resolution is supported, simply replace the IP number with the DNS name prefixed by $. DNS name resolution performance is determined by the network infrastructure which includes routers, as well as DNS and WINS servers. If the resolution service fails performance will suffer as Doorway waits while the network tries then fails to resolve the address. For the highest reliability numeric IP addressing is preferred.

See also Introduction to Doorway and Doorway IT Gateway and IT Router.

Doorway client PC's may use fixed IP addressing or DHCP variable IP address allocation.

Set **On-line Message** on (ticked) for the normal BMS mode. The BMS lan automatically sends an alarm message to all supervisor PCs and alarm printers whenever any supervisor program is started or stopped. With multiple supervisory PC's some users have found this irritating, so we have implemented this optional feature, however some network features may not then work as expected.

Set **Local Connection** off (not ticked) unless you are connecting locally to an IQ1xx series controller without using a LAN.

In **Local Connection** mode the controller addresses are ignored so this can be used for testing pages with only a single controller. There are data capacity limitations in the controller's local port which mean that data may be displayed more slowly.

Set **Modem Type** to the type fitted to the BMS. High Speed means industry standard faxmodems, now using the V90 56kbaud standard. The TMN modem operates as a fast MNC using legacy MNC data signalling. If no modem is fitted select TMN-MNC. The MNC works only at 1200 baud one way at a time, a method known as V23 half-duplex which is obsolete. The high speed modem option permits use with the wide range of high speed faxmodems now available at low prices. The BMS requires messaging with 'Odd Parity' which is provided by the PC's chipset hardware. Most PC IRDA infra red ports do not provide parity control, so when High Speed modem is selected Doorway provides parity control in software.
The Windows 9x legacy V23 SANC option is only available if the special interface driver is loaded, see V23 SANC.

Set **Modem Address and Lan** is used by MNC or TMN type modems. If the MNC/TMN is located on the Internetwork then set both the Address and the Lan to the switch setting on the modem.

Set **No Phone Limit** to disable Doorway's internal phone timer. This feature is intended for use with 'free' internal phone lines. It may be also be suitable for use with unattended third party applications which use Doorway DDE to obtain data from the BMS.
Note: If a page is shown which accesses a remote site by modem then the phone line will be held open indefinitely, resulting in a very large phone bill.

Set **MNC Direct connect** on (ticked) if you want to connect to an MNC or TMN without using a BMS lan. The MNC address must be set to match the hardware address switches (e.g. 96). Doorway's software CNC address must be different from the MNC address (e.g. 1). Doorway requires that the MNC Lan=0 and will set the controller Local Connection option to normal (Blank).

The **Idle Time** is the time between requests for data when Doorway is idling on a page, collecting data as a background task. Normally set this at the standard value which is 1.0 seconds.
When a new page is shown Doorway gets data as fast as each controller will return data until the page is filled, then Doorway relaxes into a slower background scan. An Idle Time of 1.0 seconds is normally suitable for up to four Doorway supervisors simultaneously accessing the same controller, using a 19K2 Lan and 50 controllers.

Using the *Doorway IT Gateway* several users can share one BMS lan hardware connection. To reduce congestion in the BMS lan hardware the idle time may need to be increased. Usually 1.4 seconds with 19k2 hardware, 1.6 seconds with 9k6 hardware is suitable.

With 9k6 Lans and large numbers of controllers the idle time may need to be increased. If congestion is suspected slowly increase the Idle Time in 0.1 second increments. Suitable values are from 1.0 (the default) to 5 seconds. Always use the smallest Idle Time value which is satisfactory, as the page background scan time is DataPoints x IdleTime seconds.
See also Tools Fast Refresh

The **System Idle Process** option shows when running Windows XP, 2000 and NT4. When ticked Doorway will give inactive time to Windows system idle process. The system idle process puts the processor in a low power mode, to increase battery endurance on notebook PC's and reduce heat in desktop PC's. In Windows ME, 98 and 95 this feature is controlled by Windows.

If the IT Gateway or IT Router is running on the same PC then do not tick the system idle process option else BMS messaging will be slowed. This limitation will be resolved in a forthcoming release.

You may also use command line parameters in Program Manager or the Start Bar in the normal way, these modify the settings in DOORWAY.INI.

$ K + Doorway IT Gateway and IT Router

See also Tools Communications and Server Login

Doorway uses industry standard IT networking to communicate with one or more remote BMS installations fitted with the *Doorway IT Gateways/Routers*. Industry standard TCP/IP protocol is used and messages can pass anywhere across the world wide Internet. Firewalls which are used to provide business security from hostile messages will often prevent BMS message transfer. In this case discussions with the management will be required about the provision of a secure VPN (Virtual Private Network). Up to four *Doorway IT Gateways* can connect to a PC's RS232 COM ports, up to six *Doorway IT Routers* connect to EINC type devices.

TCP/IP IP addresses
The *IT Gateway/Router* PC must have a fixed IP address, as it provides a service like a file server.
Doorway client PC's may use fixed IP addressing or DHCP dynamic IP address allocation.

Installing:
Start the *IT Gateway*. Set Menu-RS232 and Menu-Baud as required to connect to the BMS hardware. Always use the highest possible baud to maximise performance with multiple users. Set menu-Gateway and menu-Clients as required, see the example schemes below:-
or
Start the *IT Router*. Set Menu-EINC Remote IP and Remote Port as required to connect to the EINC device. Set menu-Gateway and menu-Clients as required, see the example schemes below:-

Identifier
The Identifier is the name of this *IT Gateway/Router*. The identity number is useful when tracing messages. The normal use of the identifier is to describe the location.

Identity No
The identity number is the number of this *IT Gateway/Router*. The identity number is useful when tracing messages. The identity number is not validated like an address so all Gateway's may have the same number, although this is not recommended as it makes diagnostics harder.

IP Ports
Each *IT Gateway/Router* is installed on a PC with a fixed IP address and a port on which it listens for messages. Doorway allows four simultaneous *IT Gateways* and six simultaneous *IT Routers* on one PC. The port numbering is odd as the first release was of *IT Gateway D* with port 60000 and *IT Router C* with port 60001. It should only be necessary to change from the standard TCP/IP port numbers shown below if they conflict with another product on this PC. A PC will not allow a port selection which is already in use on the PC

Application	Description	Port	
Doornet.exe	IT Gateway D	60000	original default
Doorneta.exe	IT Gateway A	60100	
Doornetb.exe	IT Gateway B	60200	
Doornetc.exe	IT Gateway C	60300	
Dooreinc.exe	IT Router C	60001	original default
Dooreina.exe	IT Router A	60101	
Dooreinb.exe	IT Router B	60201	
Dooreind.exe	IT Router D	60301	
Dooreine.exe	IT Router E	60401	
Dooreinf.exe	IT Router F	60501	

Adapter No

TOOLS_IT
$ Doorway IT Gateway
K Tools;Baud;Serial;Local;Port;COM port;RS232;Direct;CNC;Communications;IT Gateway;Gateway;Network;DOORNET application;TCP/IP;NIC;Ethernet;Token Ring;Fibre;FDDI;DNS;EINC;SoftEINC;Seurity Key;IT Router;Router;DOOREINC application
+ Contents:230

Most PC's will only have one Ethernet adapter, numbered 0. If two adapters are fitted this allows the preferred selection.

Lan Address - Single BMS lan attached to the *IT Gateway/Router*.
Set BMS lan number to -1 meaning ALL and messages are passed through unchanged. A useful choice is lan 0 for 'Intelligent mode' which enables the software INC network address translation table (NAT). *IT Gateway/Router* accepts messages for any lan number and correctly sends replies back to each Doorway client. Intelligent mode gives great flexibility. For example the site would be addressed as lan 0 by the on-site user. A distant user can now designate the site as say lan 47. The *IT Gateway/Router* client properties screen shows the Lan number and 'Guest' when set for lan 0 'Intelligent mode'.

Note that 'Guests' are usually casual visitors so are **not** sent alarms.

Choosing BMS lan number 1 to 119 tells the *IT Gateway/Router* to only accepts messages for that lan and so is less flexible.

Dialling out through TMN or MNC modems is OK, but note configuration mode of TMN or MNC is not possible in 'Intelligent mode' due to a limitation in both modem's firmware.

Lan Address - Multiple BMS lans attached to the *IT Gateway/Router* with Internetwork etc.
Set BMS lan number to -1 meaning ALL and messages are passed through unchanged. *IT Gateway/Router* is unable to determine the client for each message so each client gets all reply messages and discards those it did not request. Network traffic and PC workload is slightly higher.

Lan Error Filter
The filter is not normally used. The filter removes 'Lan Error' messages generated by the BMS lan when messages are sent to a BMS lan address which is not found, for example a device switched off.

Clients
Up to 100 clients can be accepted by each *IT Gateway/Router* which are selected from the menus. Simultaneous access by more than about 8 users to an *IT Gateway/Router* will overload the BMS network hardware and is seen by the user as slow data collection and lost messages. This is not usually harmful to the BMS, but is best avoided.

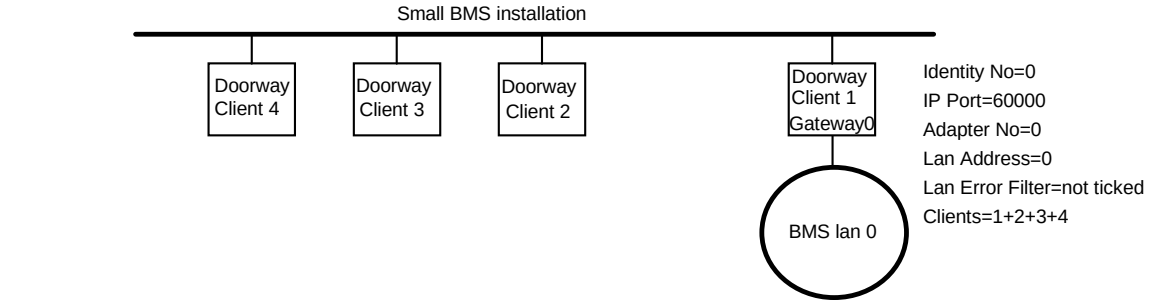
SoftEINC
Up to 4 clients can be accepted by an *IT Gateway/Router* from devices which can only connect using the simplified Telnet method used by EINC type hardware. For example the SoftEINC allows the third party 'SET' application to work simultaneously with Doorway clients. The EINC IP port option sets client 101, the others take the next three numbers. e.g. 10001, 10002, 10003, and 10004. Note that 'SET' will work through an *IT Gateway/Router* only if the Lan Address=0 for 'Intelligent mode' or Lan Address= -1 meaning ALL.

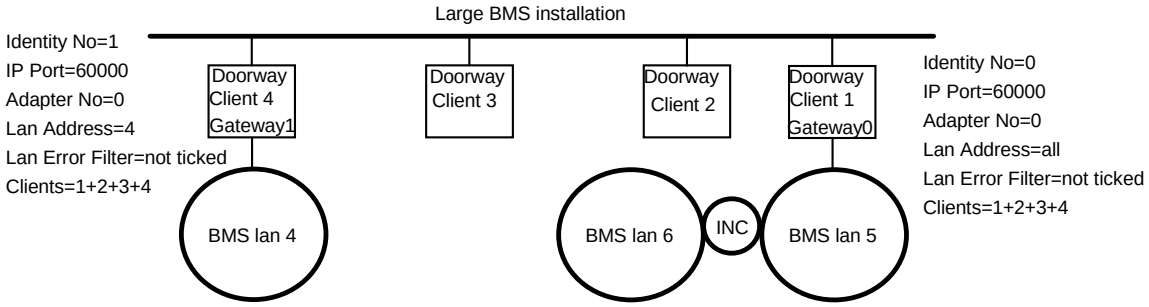
View
The View screen shows information about clients who have recently accessed this *IT Gateway/Router*. Clients no longer making data requests are removed automatically, see cache timeout below.

Cache Timout
When a client stops accessing the *IT Gateway/Router* it is removed from the list of users in the View screen. This is necessary otherwise messages may be sent to devices that are no longer active which can cause Ethernet alarms to be generated by routers and other network monitoring equipment. The cache timeout is the time to check one user. If 5 users are active the check of all users will take approximately 5 time the cache timout.

Security Key
The Security Key is a unique Doorway feature which may be used to ensure only known users access an *IT Gateway/Router*. The standard security key is ********** (i.e.16 stars). When a new security key is entered messages from Doorway clients that do not send the identical security key are ignored.

Message Routing
The routing of BMS messages to the appropriate *IT Gateway/Router* is set up in each Doorway client.


Small BMS installation
Doorway Client 4
Doorway Client 3
Doorway Client 2
Doorway Client 1 Gateway0
Identity No=0
IP Port=60000
Adapter No=0
Lan Address=0
Lan Error Filter=not ticked
Clients=1+2+3+4
BMS lan 0


Large BMS installation
Identity No=1
IP Port=60000
Adapter No=0
Lan Address=4
Lan Error Filter=not ticked
Clients=1+2+3+4
Doorway Client 4 Gateway1
Doorway Client 3
Doorway Client 2
Doorway Client 1 Gateway0
Identity No=0
IP Port=60000
Adapter No=0
Lan Address=all
Lan Error Filter=not ticked
Clients=1+2+3+4
BMS lan 4
BMS lan 6
INC
BMS lan 5

$ K + V23 SANC Modem Interface.

See also Tools Communications, and Autodialling with MNC or TMN type modems

Please note:
The modems referred to below are obsolete, and have not been available for some years.

Users who have a licence for the legacy DOS character based 921 Supervisor may have used its DOS mode SANC interface driver (Software Autodialling Node Controller). Communication with a distant MNC is then possible using the 921 with SANC software and a compatible V23 half-duplex modem such as the Quattro, Minimo, Master Systems and certain Dacom models, without additional hardware. Doorway's interface to the SANC.EXE modem driver and compatible V23 half-duplex modems is for use with Windows 95/98, and is not suitable for Windows XP, 2000, NT4 or ME.

In the Doorway folder Set-up will put these four files:-
GOSANC.BAT, SANC.EXE, DOORV23.COM and DOORV23X.COM

To use SANC move the above four files to the Windows folder using Windows Explorer. SANC.EXE supplied by Doorway is a dummy, with normal communications, and is supplied to let you test the procedure. You will have to replace this file with the SANC.EXE and ROM.TXT supplied with your 921 Supervisor to use a compatible V23 half-duplex modem.

Installation guidelines.

(i) SANC.EXE, DOORV23.COM and DOORV23X.COM **must** be in the Windows folder, i.e. where WIN.COM is located.

(ii) Doorway **must** be installed in the folder C:\DOORWAY as suggested by Set-up.

(iii) Using with Windows 3.1x:
GOSANC 3
Windows 3.1x, Doorway and the SANC interface will start.

(iv) Using with Windows 95 and 98:-
First configure Windows 95/98 hardware:
Right click on **My Computer**, choose Properties, then choose Hardware Profiles.
Create a new Hardware Profile called SANC.
Edit the profile to disable COM1 when using profile SANC.

Restart Windows 95.
When **Starting Windows 95...** appears press key F8
Choose Command Prompt only.
Windows will pause to let you choose the hardware profile.
Choose profile SANC.
The boot will stop at the DOS prompt.
Enter the following command:
GOSANC 95
Windows 95, Doorway and the SANC interface will start.

(v) GOSANC.BAT may be modified as required, and located where convenient. You may even place the working contents of GOSANC.BAT in AUTOEXEC.BAT and use the MSDOS 6.x menu system.
The syntax within GOSANC.BAT is as follows:

for Windows 3.1x
SANC port baud address DOORV23
where port=1 (fixed), baud=1200 (fixed), address=1, or 4-117 (adjustable)
e.g. cd \windows
sanc 1 1200 64 doorv23
for Windows 95:

V23_SANC
$ V23 SANC modem interface
K Modem;V23;ANC;SANC;Half-Duplex;GOSANC.BAT;DOORV23.EXE;Quattro modem;Minimo modem
+ Contents:231

e.g. cd \windows
sanc 1 1200 64 doorv23x

Hint for Advanced Users:

If required Doorway Set-up can install your original 921's SANC.EXE and ROM.TXT. Just copy the files to your master disk 2. Doorway Set-up looks for SANC.EXE and ROM.TXT on disk 2, and copies them to the Windows folder.

$ K + Tools - DDE Links - Server

See also DDE Links - Client, DDE Services, DDE Performance and DDE Programming

Doorway can be both a 'Client' and a 'Server' for exchanging data with other applications using Windows DDE (Dynamic Data Exchange). Select this option to enable DDE links with other applications. All DDE settings are retained in the DOORWAY.INI file. When DDE is enabled a "tick" is shown next to the menu choice.

Server
An application can make Automatic or Manual DDE links to collect data from Doorway's display data points. The application uses DDEPoke to send data to Doorway to request controller data in real time by remote control. Doorway can therefore be used as a communications server for third party applications. Typical applications include Microsoft Excel, Microsoft Access, and third party energy targeting packages.

Explorer
When a DAT file is double clicked from Windows Explorer, Doorway will receive Explorer's DDE message and show that DAT file if the file association settings are:

Action	open
App used to perform action:	c:\doorway\doorway.exe %1
Use DDE	(ticked)
DDE message	[open("%1")]
Application	doorway
DDE app not running	(leave blank then it works better)
Topic	System

Reading Doorway data points
Doorway provides a DDE Copy Link feature. Enable DDE from menu Tools-DDE Link. Use menu Edit-Edit Mode and select a data point. Now click the Right Mouse button on a data point to show the Properties menu. Select Copy Link to copy the reply and its DDE item syntax to the Windows clipboard. Now for example in Microsoft Excel use Paste Special Link and the Windows DDE syntax is written for you, as shown below. Alternatively you may manually create the link in Excel using the Microsoft DDE syntax of **Application-Topic-Item** as shown below.

To show Doorway DataPoint(1) in Microsoft Excel 4, 5 or '95' requires the following cell formula, which can be entered by hand, or by using Paste Special Link as above.
=DOORWAY|DISPLAY!'datapoint(1)'
The 'pipe' symbol, the 'exclamation' mark and the single quotes must be exactly as shown.

Files SAMPLE99.XLS and SAMPLE97.XLS for Excel 97 and SAMPLE00.XLS for Excel 5 are installed with Doorway and contain examples using the Microsoft Excel VBA language. See also DDE Programming

To show Doorway DataPoint(1) in MS Word for Windows the following macro reads DataPoint(1) and writes it at the current cursor position in the document.

```
Sub MAIN
app$ = "doorway"
topic$ = "display"
item$ = "DataPoint(1)"
chnl = DDEInitiate(app$, topic$)
reply$ = DDERequest$(chnl, item$)
DDETerminate chnl
Insert reply$
InsertPara
```

TOOLS_DDE_LINK
$ Tools DDE Links - Server
K File;DDE;Paste;Link;DOORDEMO;Mouse;Excel;Word;Server;LonWorks;LNS;VBA;Explorer;File Association
+ Contents:232

End Sub

Changing Doorway data points on a Page
Exact details of how to change a data point's send parameters depends on the third party application, but below is an example to illustrate the principle. The Microsoft DDE syntax is **Application-Topic-Item-Data** and the DDEPoke command is used to transfer the data.

The following MS Word for Windows macro sets DataPoint(1) sending to controller 33 on lan 8. It then sets software Knob 1 value to 22, and also requests the value. It is recommended to request at least one piece of data otherwise Doorway will pause several seconds expecting a reply for this data point. Note that the lan number followed by the **/o** separator is required to ensure that lan and controller are correctly determined by Doorway. If a controller 'PIN' is required to allow a change to be made to a value then add the **/pin** field.

```
Sub MAIN
app$ = "doorway"
topic$ = "send"
item$ = "DataPoint(1)"
data$ = "8/o33/K1(V=22,V)"                  either normal
data$ = "8/o33/pin1234/K1(V=22,V)"          or with PIN option
chnl = DDEInitiate(app$, topic$)
DDEPoke(chnl, item$, data$)
DDETerminate chnl
End Sub
```

The data points in use on a page are updated sequentially as a background task, so the item might not be updated for a while.

Hint for Advanced Users:
DDE Programming uses DataPoint(0) which is always available and is independent of the page being displayed. A third party application may route data via Doorway's communications services to or from the BMS system. Any data in the BMS standard format text communications may be routed.

Doorway sends the request to the BMS immediately there is a change in Send-DataPoint(0). Usually the third party application will also set an Automatic (hot) link with Display-DataPoint(0) and respond to the change event when the BMS replies.

The third party application must anticipate that the BMS may not reply, Doorway does not perform retries for the DDE application. The third party application must also anticipate that the user may perform procedures in Doorway or another PC application which suspends activity for a period, for example floppy disk formatting.

For development purposes it is convenient to be able to observe DDE activity. If a DDEPoke command is sent with a data field containing just the word **SHOW** then Datapoint(0) will appear on the screen at the top left corner. If a DDEPoke command with a data field containing just the word **HIDE** then Datapoint(0) will be concealed again. Datapoint(0) can be moved around the screen with the CTRL key and mouse in the usual way, but not edited.

$ K + **Tools** - **DDE Links - Client**

Not applicable to SeaChange Doorway

See also DDE Links - Server, DDE Services, DDE Performance and DDE Programming

Doorway can be both a 'Client' and a 'Server' for exchanging data with other applications using Windows DDE (Dynamic Data Exchange). Select this option to enable DDE links with other applications. All DDE settings are retained in the DOORWAY.INI file. When DDE is enabled a "tick" is shown next to the menu choice.

Client

A useful feature of Doorway is to be a Client to another DDE application (server). Doorway makes automatic (hot) DDE links to collect data from other applications in addition to other communications methods such as RS232. Doorway then uses DDEPoke to send data to the other applications to change parameters in real time on user demand, such as when adjusting knobs and switches etc.

A simple DDE application of Doorway as a client is with the LonWorks® DDE Server which enables Doorway to display information from the growing range of LonWorks® compatible products. For convenience the same syntax is used with the faster and highly featured *Doorway LNS Add-In*.

Syntax for Doorway data point

{ application | topic ! item }

Note the { } surrounding the entire DDE field

If the application and topic fields are empty and the | and ! separators omitted then Doorway uses the Default DDE Server which is set in the Doorway DDE Links screen, this can considerably simplify data entry. Note that the { and } symbols around the item field are still required. Item names can be complex and are usually case sensitive. Sometimes single quotes may sometimes be required around items which contain complex sub fields or which contain ambiguous characters.

An optional BMS syntax may be added to the DDE field to indicate to Doorway how to display the information, and what click action, if any, is permissible. Use trailing /* to disable click action as usual.

Note that in examples below some spaces have been added for clarity, these should not be in your codes.

Example using Microsoft Excel.

To read and write data from a local copy of Excel

{excel | book1 ! r1c1} to access the default sheet

{excel | [book1]sheet2 ! r1c1} to access Sheet2 in Book1

Examples using the Doorway LNS Add-In or LonWorks® DDE Server

Showing and adjusting analogue values

e.g. {FanCoil31.nvoReturnAirTemp}

{FanCoil31.nviAirSetPoint}K99(V)/30/10/ degC

Showing and adjusting digital status

e.g. {FanCoil31.nviFanEnable}

{FanCoil31.nviFanEnable}I99(S)

{FanCoil31.nviFanEnable}W99(S)/On Text/Off text/12/10/

Any non zero value is assumed to be a digital 1 i.e. ON.

Doorway's Switch screen sends numeric 1 for ON and 0 as OFF.

Showing and adjusting multiple states.

e.g. {FanCoil31.nviFanSpeed -t integer}#/Off/Low Speed/Medium Speed /High Speed

{FanCoil31.nviFanSpeed -t integer}#/Off;15/Low Speed;14/Medium Speed;12/High Speed;12

TOOLS_DDE_CLIENT

$ Tools DDE Links - Client

K Tools;DDE;Paste;Link;DOORDEMO;Mouse;Excel;Word;Client;LonWorks;LNS

+ Contents:233

where *-t integer* tells *LMSRVR.EXE* to return numeric codes, rather than text.
See also Settings Syntax.

Formatting numeric values
The { } field on its own will display numeric data in the raw format for the item. To indicate to Doorway that the data is to be evaluated as numeric add a BMS type declaration containing (V). Then either add a specific format or else Doorway will use the DDE default format set in the Tools-DDE Links screen. Use the **-t** parameter as shown above to instruct *LonWorks* to return different data formats.

Raw	{nvoFanCoil31.ReturnAirTemp}
Default	{nvoFanCoil31.ReturnAirTemp}A1(V)/// degC
Formatted	{nvoFanCoil31.ReturnAirTemp}A1(V){#0.0}/// degC

With the Doorway LNS Add-In the **-t** parameter may be simplified to just the **-** sign, and override formatting commands are:

-INT
-REAL
-DISCRETE
-BINARY
-RAW
-RAW_HEX

See also Formatting analog values

$ K + Tools - DDE Services

See also DDE Links - Server, DDE Links - Client, DDE Performance and DDE Programming

NetDDE - Legacy support
Microsoft NetDDE is a service in Microsoft Windows. Using NetDDE most DDE enabled applications, including Doorway, can be shared so that data can be exchanged with a suitable program on a remote PC using the IT network. Microsoft NetDDE uses works over all Windows supported Network protocols,

To use NetDDE the server application must be set to 'share' the required topic. Setting a share in Windows 95 and NT modifies the registration database. If an application does not have a built in option to set a NetDDE 'share' then use the Microsoft utility DDESHARE.EXE. DDESHARE.EXE is available over the Internet from Microsoft, and is included with Doorway version 4.05 onwards for convenience, and installed in the Doorway folder. The copyright of DDESHARE.EXE belongs to Microsoft Inc.

Examples using Microsoft Excel.
To read and write data from a local copy of Excel
{excel|book1!r1c1}

To read and write data from the same copy of Excel at a remote PC
{\\pcname\ndde$|excel$!r1c1}

where pcname is the network identifier of the PC, as revealed by NET VIEW etc.
excel$ is the share name set for Excel.
The topic in Excel to be shared is book1

Although the topic name sheet1 was used in Excel 4, Microsoft has conveniently arranged that topic names sheet1 and book1 are interchangeable.

Note:
The following Alarm, Graph and ASCII transport services are not implemented in LonWorks®. On request by users these proprietary services have been added to Doorway.

DDE Alarm *Not applicable to SeaChange Doorway*
This is for collecting alarms from the LonWorks® network, and Doorway displays and archives the alarm received in the normal way. LonWorks® does not allow for a descriptive alarm text, nor implement alarm security where alarms are repeated by the originator until confirmation is received from the PC of successful reception. A defined LonWorks® method is required.

RS232 through DDE (ASCII transport) *Not applicable to SeaChange Doorway*
ASCII serial communications may be transported through a DDE channel using Point To Point Tunnelling. This may be useful for certain applications, for example for connecting to a remote system with a serial RS232 port. The Doorway standard BMS data packet size of up to 101 characters may be broken into smaller packets for transport if required, with LonWorks® use 31 characters. Performance of this service is determined by the third party device.
To use this service use address suffix **d** on an individual data point , or set BMS Type globally with ***BMS=d**

Graph Data Logger *Not applicable to SeaChange Doorway*
This is for accessing graphs stored in the *Doorway LNS Add-In*. Note that Echelon has not defined a standard method for passing logged information for graphs.

TOOLS_DDE_SERVICES
$ Tools DDE Services
K Tools;DDE;DDE Tunnel;NETDDE;DDESHARE.EXE;Link;Remote Link;Services;Default DDE Server
+ Contents:234

$ K + Tools - DDE Performance

See also DDE Links - Server, DDE Links - Client, DDE Services and DDE Programming

Microsoft Windows DDE is a service of the Windows messaging system. Messaging is the heart of the Windows system, and through this applications receive key, mouse, disk and other system event information.

Microsoft's OLE technology is a superset of DDE, and is used to pass large quantities of information about an object. For example Doorway can show a Visio picture embedded as an OLE object. The object contains the picture, templates and other settings so that Visio can continue from exactly from where it was when the object was embedded.

The speed taken for Doorway to initiate an exchange of data with another DDE application depends on Doorway, the other application, Windows, and the PC hardware.

TOOLS_DDE_PERFORMANCE
$ Tools DDE Performance
K Tools;DDE;Paste;Link;Excel;Word;Server;Client;LonWorks;LNS
+ Contents:235

$ K + **Tools** - **DDE Programming**

See also DDE Links - Server, DDE Links - Client, DDE Services and DDE Performance

For communications from third party applications it is recommended to use item 'DataPoint(0)' which is independent of the page being displayed. A third party application may both send and request data using Doorway's communications services for the BMS system. Any data in the BMS standard format text communications may be routed.

Doorway sends the request to the BMS immediately there is a change in Send-DataPoint(0). Usually the third party application will also set an Automatic (hot) link with Display-DataPoint(0) and respond to the change event when the BMS replies.

The third party application must anticipate that the BMS may not reply, Doorway does not perform retries for the DDE application. The third party application must also anticipate that the user may perform procedures in Doorway or another PC application which suspends activity for a period, for example floppy disk formatting in Windows may suspend other tasks.

For development purposes it is convenient to be able to observe DDE activity. If a DDEPoke command is sent with a data field containing just the word **SHOW** then Datapoint(0) will appear on the screen at the top left corner. If a DDEPoke command with a data field containing just the word **HIDE** then Datapoint(0) will be concealed again. Datapoint(0) can be moved around the screen with the CTRL key and mouse in the usual way, but not edited.

Three sample code procedures are shown below written in Microsoft's VBA language which is provided with Microsoft Excel 97 and other Microsoft products, and is shipped in file SAMPLE97.XLS installed by Doorway. See also the later file SAMPLE99.XLS which also shows how to request 1000 point logs from suitable controllers.

For more demanding applications it can be useful to validate each reply. An additional DDE reply channel has been provided at {Doorway|Send!DPreply}. The reply contains the BMS address, lan, and request as well the datareply. e.g. 0/o20/S1(V)/21.34

```
---------------------------------------------------------------------------------------------------------------
Option Explicit

---------------------------------------------------------------------------------------------------------
Sub ReadDP()
'
' This code fragment is provided to show the general principles of using DDE
' to collect data from the BMS through Doorway using Microsoft VBA
' and Microsoft Excel 97              A.D.Chamier-Doorway Systems
'
Dim chnlrx As Integer
Dim i As Integer
Dim n As Integer
Dim row As Integer
Dim col As Integer
Dim sep As Integer
Dim item As String
Dim retval As Variant

row = 6: col = 1: sep = 2
Application.Worksheets("Sheet1").Range(Cells(row, col), Cells(row + 4, col + sep)).ClearContents
chnlrx = Application.DDEInitiate("doorway", "display")

For n = 1 To 4
   item = "dataPoint(" & CStr(n) & ")"
   Worksheets("Sheet1").Cells(row + n, col).Formula = item
```

TOOLS_DDE_PROGRAMMING
$ Tools DDE Programming
K Tools;DDE;Paste;Link;Excel;Word;Server;Client;LonWorks;LNS;VBA;Programming;SAMPLExx.XLS;XLS
+ Contents:236

```
    retval = Application.DDERequest(chnlrx, item)
    i = LBound(retval)
    Worksheets("Sheet1").Cells(row + n, col + sep).Formula = retval(i)
    DoEvents
Next n
Application.DDETerminate chnlrx

End Sub
---------------------------------------------------------------------------------------------------

Sub RequestData()
' This code fragment is provided to show the general principles of using DDE
' to collect data from the BMS through Doorway using Microsoft VBA
' and Microsoft Excel 97                A.D.Chamier-Doorway Systems
'
Dim chnltx As Integer
Dim chnlrx As Integer
Dim i As Integer
Dim item As String
Dim data As Object
Dim retval As Variant

item = "DataPoint(0)"
Set data = Worksheets("Sheet1").Range("E7")
Worksheets("Sheet1").Range("E7:E8").ClearContents
chnltx = Application.DDEInitiate("doorway", "send")
chnlrx = Application.DDEInitiate("doorway", "display")

' first clear the channel
Application.DDEPoke chnltx, item, data

' now request data
Worksheets("Sheet1").Range("E7").Formula = "0/o20/pin1234/K1(V=15,$,V,%)"
Application.DDEPoke chnltx, item, data

' now get the reply
Do
retval = Application.DDERequest(chnlrx, item)
i = LBound(retval)
Loop Until Len(Trim$(retval(i))) > 0
Worksheets("Sheet1").Range("E8").Formula = retval(i)

Application.DDETerminate chnltx
Application.DDETerminate chnlrx

End Sub

---------------------------------------------------------------------------------------------------
Sub RequestGraph()
'
' This code fragment is provided to show the general principles of using DDE
' to collect data from the BMS through Doorway using Microsoft VBA
' and Microsoft Excel 97                A.D.Chamier-Doorway Systems
'
Dim chnltx As Integer
Dim chnlrx As Integer
Dim item As String
Dim s As Integer
Dim n As Integer
```

```
Dim l As Integer
Dim u As Integer
Dim data As Object
Dim retval As Variant

item = "DataPoint(0)"
Set data = Worksheets("Sheet1").Range("A18")
Worksheets("Sheet1").Range("A18").ClearContents
Worksheets("Sheet1").Range(Cells(19, 1), Cells(22, 103)).ClearContents
chnltx = Application.DDEInitiate("doorway", "send")
chnlrx = Application.DDEInitiate("doorway", "display")

' first clear the channel
Application.DDEPoke chnltx, item, data

' now do work
' To select plot type  /0=1hour /1=15min /2=24hr /3=1min (else blank=any)
For s = 1 To 4
   Worksheets("Sheet1").Range("A18").Value = "*plot 0/o20/S" & CStr(s)
   ' e.g. to select the 15min plot use
   'Worksheets("Sheet1").Range("A18").Value = "*plot 0/o20/S" & CStr(s) & "/1"
   Application.DDEPoke chnltx, item, data

   ' now wait for a reply
   Do
      retval = Application.DDERequest(chnlrx, item)
      l = LBound(retval)
   Loop Until Len(Trim$(retval(l))) > 0
   ' got a reply so show the data
   u = UBound(retval)
   For n = l To u
      Worksheets("Sheet1").Cells(18 + s, n).Formula = retval(n)
   Next n
Next s

Application.DDETerminate chnltx
Application.DDETerminate chnlrx

End Sub
```

$ K + Tools - LonWorks

Echelon LonWorks® capability using a LonWorks® DDE Server is included with Doorway.

For high performance the *Doorway LNS Add-In* module is available at an additional charge which provides fast data collection, alarms and graphs.

Note that Echelon LonWorks® LNS software services, must be installed on the PC before the *Doorway LNS Add-In* can be used.

TOOLS_LONWORKS
$ Tools LonWorks
K LonWorks;LNS
+ Contents:237

$ K + Tools - Lan & CNC Diagnostics

General
Lan diagnostics are not applicable to LonWorks®, or the LonWorks® network as used by SeaChange.

The BMS Lan (Local Area Network) tries quite hard to deliver each message. The originating node, e.g. communications node controller (CNC) or HVAC controller will send the message again if the receiving node indicates the message was corrupted. If there is no reply at all the sending node will also send the message again. Retries takes place after a suitable time delay a further two times before the message is discarded and the originator informed. When the lan informs Doorway it cannot deliver a data point request ***Lan error*** appears in the data point.

On a busy Lan messages can be lost due to congestion, and in this situation excessive retries could increase the congestion leading to Lan collapse. CNC, LNC, INC, ANC and MNC shipped prior to 1990 had a firmware programming error in the dynamic allocation of buffers for send and receive messages. The result was that the node can 'lock-up' in busy traffic situations, requiring a power off to recover.

Lan diagnostics will work over the IT Network, the diagnostics refer to the BMS Lan.

Lan Diagnostics
Node controllers continuously monitor the Lan and adjust their message retry delay time to suit. The Lan diagnostic screen shows the local Lan, i.e. the Lan to which the lan node is connected, and optionally a remote lan. The slider bar selects the remote lan to be observed. The upper part of the screen shows some parameters as reported by the CNC to which Doorway is connected, the lower part shows information from the remote Lan's INC or MNC.
To diagnose the Internetwork set remote Lan 126. To diagnose a remote Internetwork set the remote Lan to the remote MNC address and include the remote MNC address in your dial request.

Local Lan Status corresponds to the Network OK lamp on the CNC hardware. Remote Lan parameters are all determined from the remote INC or MNC.

Lap Time is the CNC's measured average time for a test message to pass around the Lan. When the Lan is initially powered up the Lap time is pre-set to 500mSec (½ second) and then adjusts quite slowly to the average actual measured time. The time varies both with baud and number of devices on a Lan.

Lan baud		**Approximate Lap Time**
19200	=	40mS plus 1mS delay per node
9600	=	80mS plus 2mS delay per node

The data capacity of a Lan is approximately inversely proportional to Lap Time:

50mS	=	about 20 messages per second
100mS	=	about 10 messages per second
200mS	=	about 5 messages per second

Higher than normal figures will be seen on Lan's which are suffering from congestion, faulty hardware, or perhaps electrical interference. Lap times over 200mS are an indication of lan overload, and will also be evident as slow response to data requests by Doorway.

Doorway is designed not to overload the BMS Lan, so multiple Doorway Supervisors may be used safely. The Lan stressing 'burst mode' fast request method is only used when a new page is called, then Doorway updates data points at the Idle Time set in the Tools-Communications screen. The Lan stress is less, but the effective page refresh time is the same. Supervisor products only using the 'burst mode' can be less suitable for multiple supervisor installations.

TOOLS_LAN_DIAGNOSE
$ Tools Lan & CNC Diagnostics
K Tools;Lan;Lan error;Serial;Local;CNC;Communications;Diagnostics;Lap Time;Network;Summer Time;Winter Time;Daylight Saving;BST;GMT
+ Contents:238

Practical measures to be taken to relieve Lan congestion include checking that only required alarms are enabled and all Inter-Controller communications have realistic Interval times. Check that analog Significant Change values and digital byte/bits are not causing excessive transmission events. Check that only ***one*** controller on a site has the Time Change set for Summer-Winter (BST-GMT). The controller configuration module is **T** and parameter **G=1**. When G is non zero the controller broadcasts a time update message whenever its clock is changed, as well as every midnight. If more than one controller has this set then clock update messages can occur continuously, echoing back and forth between controllers.

$ K + Tools - Fast Refresh

Also activated with key CTRL R, see also Button Syntax

Doorway automatically ensures that a page of data is collected as fast as the BMS can deliver the data. It then slows down to a regular background idle which permits other users to access the controllers on the system without causing congestion. This is set as the Idle Time, see Tools Communications.

The refresh option restarts the fast data request process without having to redraw the page.

TOOLS_REFRESH
$ Tools Refresh
K Tools;Refresh;Serial;Local;Port;COM port;RS232;Direct;CNC;Communications;Idle Time
+ Contents:239

$ K + Tools - Engineering

Also activated from Doorway page with key CTRL O or with button command *ENG

Engineering has been designed to operate as easily with the keyboard as with the mouse. The Engineering screen allows the user to:-
Administer and define user passwords.
Set up Alarm retransmission.
Configure controllers.
Upload IQ1 and IQ2 data files from a controller to disk.
Download IQ1 and IQ2 disk data files to a controller from disk.
Search the entire system using Text communications.
Show lists of configuration information.

Structured Text mode is like a configuration mode for IQ3 controllers, and assists by completing a user's entry:

eg	R	is sent as R1(*)
	T	is sent as T1(*)
	S1	is sent as S1(*) for safety S is sent as S1(*)
	G1	is sent as G1(*)
	F1	is sent as F1(*)
also	S($)	is sent as S($) and returns the label of all sensors
	S(*)	is sent as S(*) and returns all details of all sensors

IQ3 modules may be created or deleted using command *CREATE and *DELETE.
Add a module eg G99
*CREATE G99
If OK Doorway will show "Module action OK: G99"
Or Doorway might show "Module denied: PIN"

Delete a module eg G99
*DELETE G99
If OK Doorway will show "Module action OK: G99"
Or Doorway might show "Module denied: PIN"
This will also appear if the module does not exist

Add Time Zone eg Z5 with 7 days of 3 on and 3 off positions
*CREATE Z5(W(P1,P2,P3,P4,P5,P6))
Then setup the on and off times from the time zones screen.

Keyboard Shortcuts:
Previous entries sent to the controller in Configuration mode can be recalled using the up and down cursor keys. The left and right cursor, backspace and delete keys permit editing in the normal way. To step through configuration modules the Page Up and Page Down keys have been defined to produce the < and > symbols for your convenience.

The Esc key moves the focus from any list back to the Engineering Configuration screen. The Esc key then toggles the focus between the edit line and the Configuration data.

Use the standard Windows keys:-
Ctrl C to copy highlighted text to the Clipboard.
Ctrl V to Paste Clipboard text.
Ctrl X to cut text and place it on the Clipboard.

TOOLS_ENGINEERING
$ Tools Engineering
K Tools;Engineering;Configuration;Controller
+ Contents:240

$ K + Engineering - Electrical Connection List

To create a new list use menu Options-Select Lan from Map and choose any controller on the target lan. Now use menu Get-New Connection List to start the routine. The routine can take several minutes to run, the test messages 'visit' every device on the lan. The count parameter decrements on each device. When each device has been counted it is restored. When the count has finished the list is finished with 'Message direction is upwards (End)'. The list can be printed or saved, and previous lists loaded for printing or reviewing.

If PIN security protection has been set in any controller on the lan selected then you must log in as a user with configuration mode authority, i.e. a PIN with level 99, otherwise the list will be incomplete.

The list shows the Lan parameter which should show the expected lan number. The routine may sometimes fail to complete, usually caused by lan congestion. In this case the lan number in some controllers may be left at the test lan numbers of 100 or 101, these are valid lan numbers and are therefore safe. The correct lan number can at any time be restored and reviewed with menu 'Restore-Lan Numbers'

Background.
The standard BMS lan has devices connected in a ring. The lan ring is made up of many separate cable segments. Each segment consists of a pair of copper wires connecting the transmitter on one device to the receiver on the next device. Each device (or node) on the lan transmits messages from the terminals labelled Tx which are received at the next device at the terminals labelled Rx.

Red lamps (LED type) show provide diagnostic information of continuity, as the lamps are not lit if the cable is broken. If the two conductors of a segment become joined (short circuit) then the Tx lamp connected to the segment is lit but the Rx lamp of the other device on the segment s not lit.

Each device continuously monitors the lan by sending test messages around the lan. Hence the device can generate 'Lan broken reported by xx' and 'Lan OK' alarms which are shown by Doorway. The 'Lan broken reported by xx' where xx is the address of the device which is not receiving messages. Hence there is a problem either with the lan segment connected to that device's Rx terminals, or the Rx electronics, or the Tx electronics of the previous device.

To locate the fault it is helpful to have a diagram of the electrical wiring of the lan and it's physical location. Lan broken alarms are only sent once. You can force a CNC device to repeat it's lan broken message by switching off for a time of 5 to 15 seconds the CNC's electrical supply. Do not switch off the Doorway PC else the alarm will be missed, as the alarm will occur between 75 and 90 seconds after the CNC power is applied.

To check the validity of electrical wiring diagrams, or if there are none, certain devices on the lan do the work in generating an electrical device connection list. At this time only IQ controllers have the required feature called 'Visitor message attribute addressing' which is normally used for advanced multi controller cooperative HVAC strategies.

A competitor product for determining the electrical device connection list with 'Visitor message attribute addressing' used an attribute often used in control strategies, attribute R(K). R(K) is alphanumeric anywhere from 0 to 10 characters long, and is usually unique to each controller. This product stored every controllers R(K) attribute, carried out the test by writing by setting R(K) to 'RAT', and then restored the attribute. Sometimes due to lan congestion or product failure it would fail to restore the attribute. If the attribute was being used for a site wide HVAC strategy then this could damage the operation of the BMS.

Doorway's electrical connection list routine uses a controller attribute which has never, to our knowledge, been used in a control strategy, attribute R(N). R(N) is a number and holds the lan number of the controller. As the lan number is known no storage is required. Doorway sets R(N) to 100, or 101 if the lan number is 100. If the routine does fail menu Restore Lan Numbers sends a global message to write the correct lan number back into every controller and then lists every controller and the attribute, which give the user visual feedback and so confidence in the routine.

TOOLS_E_LIST
$ Electrical Connection List
K Tools;Engineering;Electrical;Connection;Lan;List
+ Contents:241

$ K + Engineering - Text Scan PIN Numbers

See also Configuration Scan PIN Numbers and Intelligent Scan PIN Numbers.

If a controller has User PIN number(s) set then changes to the controller are regulated. A date based override PIN for configuration mode is available from the manufacturer's website for each controller variant, however these PIN tools are restricted to approved resellers. This Doorway facility is provided for users who the manufacturer will not assist.

The purpose of the controller PIN is to increase the security of the controller's configuration and settings. Doorway Systems appreciates that not all users will wish to have this feature enabled. Hence an Access Code is required which is unique to the Doorway licence number, and is available on request from Doorway Systems.

Text scan PIN numbers tests each PIN number in sequence from 0 to 9999, the start number may be selected. Doorway first synchronises the controller's time and date with the PC using controller peer level synchronisation. Doorway then uses text comms to attempt to change the hour to 0 with each test PIN number in sequence. Note this routine cannot be used if the PC time is between midnight and 1am, the workaround for insomniacs is to change the PC clock!

The routine will stop on the first PIN that can change the Time, i.e. has a level 95. PIN level 95 allows all changes except PIN settings in User modules.

A controller with a data error responds 'Help' to each request, in this case you must use one of the other methods.

On a small lan this routine can take more than three hours to scan all numbers, longer on a large lan. For a quicker method with IQ1xx and IQ2xx series controllers use Intelligent Scan PIN Numbers.

TOOLS_PIN_TSCAN
$ Text Scan PIN Numbers
K Tools;Engineering;Text;Scan;PIN;Date;Number;Access Code
+ Contents:242

$ K + Engineering - Configuration Scan PIN Numbers

See also Text Scan PIN Numbers and Intelligent Scan PIN Numbers.

If a controller has User PIN number(s) set then changes to the controller are regulated. A date based override PIN for configuration mode is available from the manufacturer's website for each controller variant, however these PIN tools are restricted to approved resellers. This Doorway facility is provided for users who the manufacturer will not assist.

The purpose of the controller PIN is to increase the security of the controller's configuration and settings. Doorway Systems appreciates that not all users will wish to have this feature enabled. Hence an Access Code is required which is unique to the Doorway licence number, and is available on request from Doorway Systems.

In configuration mode the PIN level required is 90 except:

50	Time module
85	Upload existing strategy
95	Download a new strategy
99	User modules

Configuration scan PIN numbers tests each PIN number in sequence from 0 to 9999, the start number may be selected. Doorway first enters configuration mode. Doorway then enters and exits the first User module with each PIN in turn and checks if the controller responds 'edit inhibited', as follows:

Now trying:	U1X0000	
Now trying:	U1X0001	and so on.

The routine will stop on the first PIN which does not result in 'edit inhibited' i.e. has a level 99. You can now review the User PIN settings with U1 etc. in the normal way, note that the date based override PIN may have been found by the scan.

On a small lan the routine can take more than three hours to scan every number, longer on a large lan. For a quicker method with IQ1xx and IQ2xx series controllers see Intelligent Scan PIN Numbers.

TOOLS_PIN_CSCAN
$ Config Scan PIN Numbers
K Tools;Engineering;Configuration;Scan;PIN;Date;Number;Access Code
+ Contents:243

$ K + Engineering - Intelligent Scan PIN Numbers

See also Text Scan PIN Numbers and Configuration Scan PIN Numbers.

If a controller has User PIN number(s) set then changes to the controller are regulated. A date based override PIN for configuration mode is available from the manufacturer's website for each controller variant, however these PIN tools are restricted to approved resellers. This Doorway facility is provided for users who the manufacturer will not assist.

The purpose of the controller PIN is to increase the security of the controller's configuration and settings. Doorway Systems appreciates that not all users will wish to have this feature enabled. Hence an Access Code is required which is unique to the Doorway licence number, and is available on request from Doorway Systems.

Most controllers manufactured up to around 1996 were of the IQ1xx, IQ9x and IQ7x type which had a common date based override PIN based on three firmware variants. IQ2xx controllers override PIN depend on the address, lan and date.

Intelligent scan safely manipulates the controller properties to discover the PIN's, and display them to the user. The routine normally takes around 1 minute, if it fails on the first attempt you should retry. If the routine is unsuccessful try one of other methods.

Intelligent scan leaves the controller in configuration mode. If the scan was successful you will be logged in. If the controller was corrupted the PIN numbers may be more than 9999 or negative value. Levels may also be corrupted with numbers more than 99 or negative. Ensure PIN numbers and levels are as required before exiting from configuration mode. If the controller was corrupted you can now download the original IQF or IQ2 file to restore normal working.

TOOLS_PIN_ISCAN
$ Intelligent Scan PIN Numbers
K Tools;Engineering;Intelligent;Scan;PIN;Date;Number;Access Code
+ Contents:244

$ K + Engineering - Reset Controller Time and Date

See also Text Scan PIN Numbers, Configuration Scan PIN Numbers and Intelligent Scan PIN Numbers.

A corrupted controller data file is often accompanied by an invalid Time and Date. This routine resets the controller's Time and Date to the PC clock using an intercontroller time and date synchronisation message which does not require a controller PIN.

TOOLS_PIN_DATE
$ Reset Controller Time and Date
K Tools;Engineering;Reset;PIN;Time;Date;Number;Access Code
+ Contents:245

$ K + System - Map

Also activated with key CTRL M, see also Button Syntax

The Doorway Map of Addresses shows the devices attached to the BMS lan The map is not actually required for communications, it is to help you manage your system, and can also be used to check that the BMS lan is operational.

The MAP button clears the list, interrogates the lan and attempts to build a new list automatically. Controllers show their type, firmware issue, data file identifier and Alarm reporting address. Other devices show relevant data as available. On a large lans this may take a while as the lan is interrogated.

If a remote site is dialled using an MNC the MNC can emulate the INC hardware so messages are routed by lan only. The virtual INC method also allows mapping of the remote site. To map a remote Internetwork include the remote MNC address in your dial request. Dial the site in the normal way, and when connected press the MAP button.

The manual controls ADD, DELETE and UPDATE permit individual changes to be made to the list.

The Map may be printed.

When complete the Map may be saved to disk. The filename DOORWAY.MAP is automatic. For multi-site use the file can also be saved in an additional file for convenience. Other map files may be loaded at any time when required. The file DOORWAY.MAP is loaded every time the program is started. Map's can also be exported in CSV format (comma separated values) for use in a Microsoft Excel spreadsheet etc.

If a new Map is not created:
The automatic mapping routine may sometimes fail to complete. To diagnose mapping problems see what information has been collected. Doorway first requests the addresses on the local lan. If an INC (address 126) is found Doorway requests the addresses from the Internetwork. Then Doorway requests the addresses for each lan (address) found on the Internetwork. If a dial-up connection has been made Doorway will then request a the addresses for each of the virtual lans set up in the dial string. Finally Doorway steps slowly through each address in the map list and requests version, identifier and alarm address information. Note that some devices do not have all parameters.

No addresses will collected by Doorway if:-
Connected to an early 1200 baud only CNC.
Connected to a CNC+ with firmware earlier than 2.0
Connected to a CNC+ with address 10.
Directly connected to an IQ1xx series controller.
Directly connected to an IQ2xx series controller with **sUpervisor port addr** not set.
Menu Tools-Communications
- Baud Rate does not match the attached hardware.
- Local Connect is set (crossed).
- MNC Direct Connect set (crossed) and MNC address wrong
- On-Line message clear (blank) can prevent mapping, repower CNC.

No addresses will collected by Doorway from Autodial remote sites if:-
Single lan remote site
- Lan in dial string must match **oWn lan** in the remote MNC-TMN

Multi lan remote site
- Lan(s) in dial string must match actual lans at the remote site

To map remote Internetwork dial string must include the remote MNC-TMN address.

Hint for Advanced users:

LISTS_MAP_OUTSTATIONS
$ System Map Controllers
K System;Map;Controller;Outstation;Network;LAN;Add;Zone
+ Contents:250

To get a new data point from the Map open the yellow Edit toolbar. Then hold the CTRL key and drag the desired item from the Map list onto the page. The below reference and address is also written into the editing box, edit further as required.
i.e. R(N,L,D)

$ K + System - Alarm Panel and Archives

Alarm Panel also activated with Function key F3, see also Button Syntax, Alarm Retransmission, Alarm Filter, Password Administration, Password Levels and Sounds and Wav Files.

All alarms are archived to a monthly file, and you can view the month's archive by pressing the "View Archive" button. The Alarm Viewer shows the current month's archive file. You can view previous months alarm archives from the MONTH menu. Viewer co-operates with Doorway and new alarms are added to the file as they are received. To see the last alarm use the BOTTOM menu.

Alarm archives are stored in text files kept in the Doorway folder. They are automatically discarded after 11 months. They have the file names JAN.TXT through to DEC.TXT. Doorway also stores the PC's time and date at which each alarm was received. All internal dates in Doorway are stored in Microsoft 'long date' format and so have Year 2000 conformity.

Alarm Panel activity:
The alarm panel will try to show 'on top' of all other PC applications when an alarm arrives, and so takes the keyboard focus. To work with another PC application without BMS alarms taking the keyboard focus 'Minimise' the alarm panel. The alarm count is shown and the alarm sounder is still active. The alarm panel will stay minimised, even if a new alarm arrives, for 10 minutes or until the user manually 'Restores' the alarm panel. See also Sound Repeat Time below.

Print Alarms option:
When enabled a special printer buffer keeps the alarms on disk. When convenient press the "Print Now" button. After printing the printer buffer is emptied. The print buffer is a disk file called PBUFF.TXT. which may be viewed from the Alarm archive view screen. Note viewing alarm files with other applications such as Word, WordPad or Write which open the file for exclusive access, so the Operating System prevents the file being updated by Doorway. Notepad does not have this effect.

Sound option:
The Alarm Panel will sound with each incoming alarm or may be disabled altogether. A page can also initiate sound, see Sounds and Wav Files.

Sound Repeat Time:
The default setting of 0 allows only one sound per alarm receipt. If required the Alarm Panel may repeat the alarm sound regularly, adjustable between 1 and 9 minutes.

Show alarms option:
The alarm panel will be given the Windows foreground 'focus' on each alarm arrival or sound repeat, and is 'Restored' if it had been 'Minimised'. Note as this gets around the Microsoft strategy of preventing one application stealing the focus from another application, it is a user choice.

Sound file name:
This shows the name of the Windows sound file (*.WAV). The sound file can contain speech or music which will play if you have a sound card. Delete the file name to use the normal PC beep. The internal PC beep sound may be enhanced, see Sounds and Wav Files.

Ignore Alarms option:
The alarm panel normally shows whenever an alarm is received. When this option is set the alarm panel does not show when an alarm is received. All other actions still occur, and alarms are always archived to disk. This feature is intended for users who wish to view the BMS but have no responsibility for alarms.

Print to paper on receipt of alarm:
Windows ME, 98 and 95 users with dot matrix printers may use this option which ignores Windows, and prints immediately through DOS. Doorway will search for Printer port hardware, and a printer test button is provided. Otherwise you will need to provide the hardware port addresses. Normally LPT1=378, LPT2=278, and LPT3=3BC. Please note when using this option that Windows cannot prevent alarm messages possibly being printed in the middle of another application's printouts.

TOOLS_ALARMS
$ System Alarm Panel and Archives
K System;Alarm;Archive;History;Panel;2000;Year 2000; Print;Show alarms;Alarm sounds repeat;PNC
+ Contents:260

Windows XP, 2000 and NT4

DOS printing is not allowed in Windows XP, 2000 or NT4. Windows forces applications to share printers, so Doorway has to print through Windows print services. Each application printout is finished before another starts. However it is possible for Doorway to print an alarm as soon as it is received as follows.

Set the option in the Alarm panel to Print Alarms so the alarms are queued in Doorway's print buffer. From Doorway menu System Event Calendar set an Event with syntax *ALARMPRINT QUIET and set the times for every 1 minute on every day, or as otherwise required. Every minute Doorway will inspect the print buffer, and if not empty will send it to Windows for printing. It is recommended that you use a printer such as a fanfold paper dot matrix printer.

Electronic "PNC"

Doorway can be used as an electronic "PNC" (Printer Node Controller) replacement by continuously showing the alarm archive screen. This is achieved by setting an alarm retransmission channel to trigger on any lan and any outstation, select all alarm types, select option 'Action only' and set the Action command as

&& *WAIT 1 *ALARMS

When any alarm is received the alarm archive screen is updated with the new alarm, and will be set to maximum size. Note although the retransmit address is not used a valid number must be set, eg Lan 119 and Address 119

$ K + Engineering - Tools - Alarm Actions and Retransmission

See also Alarm Archive, Alarm Retransmission Queue and Alarm Email and GSM SMS Settings.

Available from the Engineering page.

Doorway's alarm retransmission feature permits BMS alarms to be sent to additional Supervisors, PNC alarm printers, MNC or TMN modems to remote supervisors or pagers, and send GSM SMS text messages to a appropriate GSM mobile or fixed line phones via TMN or local GSM phone. 99 retransmission channels are provided, giving considerable flexibility. BMS lan generated alarms are not retransmitted, since the lan automatically informs Supervisors and PNC alarm printers of lan status.

Each alarm is offered to all 99 channels in turn and matching is by:-

Alarm source lan and address range, use ***** for any address, often known as a "wild card".
You can also select certain alarms using Lan * with:-
Address 128 for CNC network alarms
Address 129 for Doorway alarms e.g. Snapshot problem or datapoint alarms detected with *ALARMSCAN
Address 130 for DDE channel alarms
Address 131 for Doorway LNS Add-In alarms

Alarm text match with one or two text fields, place **&&** between text fields if two fields required.
The alarm is searched for matching text. Spaces are significant, letter case is ignored. Any characters including * can be used for alarm filtering. Hence * will only pass alarms containing * in the alarm message, and is not a "wild card".

Alarm message types are Normal, Critical and Text.

Each channel retransmits to one destination, using BMS lan or IT network.
Option to retransmit between Doorway IT Clients over IT network. Each Doorway client is allocated a unique BMS lan number and hence an IP address. The *Own LAN* setting ensures the reply is returned to the sending IP address and Doorway client.

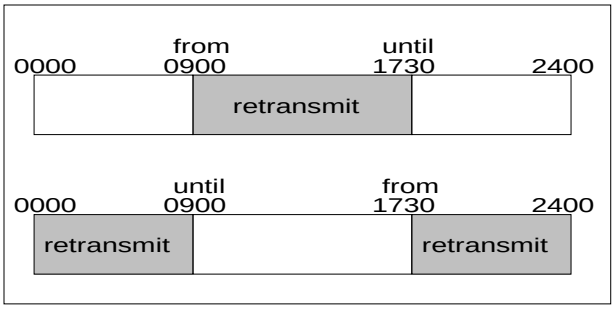
A message may be associated with a channel and appended to the alarm.
To add the alarm source address and channel prefix message with **[*]**
Button syntax to jump page may be set e.g. **&& c:\doorway\filename.dat**
Show alarm on a User panel e.g. **&& *PANEL 3 /left/top/label**
Button ***** commands may be set e.g. **&& *SEND W1(S=I)/L99/o99**
Use the **|** symbol to concatenate commands
e.g. **[*] && c:\doorway\boiler.dat | *SEND W1(S=I)/L99/o99 | *PANEL 4/25/100/Boiler faults**
Option to send message without alarm, e.g. for non technical staff or GSM SMS text message to mobile/cellular phone.
Option to Action only, with no alarm retransmission.

Each channel may have its own 7 day operating times, or may use the global time settings.

Retransmission for each day of the week is selected with check boxes. The start (from) and stop (until) time each day when retransmission is active can be set anywhere between 00:00 and 24:00.
Convenience buttons set retransmission to Day only, Night only, 24 hour or Global.

Time examples:
Retransmission during the working day
From 09:00 Until 17:30.
Retransmission outside the working day (overnight)
From 17:30 Until 09:00.

TOOLS_RETRANSMISSION
$ Alarm Retransmission
K Engineering;Alarm;Retransmission;SMS;Email
+ Contents:265



Notes:
If several channels match an alarm then retransmission to each channel destination occurs.
If several channels match an alarm then only the last Action found is carried out.
BMS controllers can create both NORMAL and CRITICAL alarms.
921 and 94x Supervisors convert NORMAL and CRITICAL alarms to TEXT style on retransmission.
Doorway does not convert alarm styles on retransmission. Messages may then be filtered again at another Doorway Supervisor as desired for sophisticated routing.
To ensure that the source of a controller alarm can be easily identified be sure to set the controller's address (R) page correctly with its own address, lan and an informative identifier. Also set TEXT ON in the controller's addresses (R) page so that alarms are sent with informative text rather than machine codes. You may also use **[*]** to append address and retransmission channel to the alarm [Lxx oyy czz].

Sending alarms as GSM SMS text messages:
You can use command *SMS to send text messages using a local GSM phone.

Alternatively the TMN modem may be used with service providers who support the standard 'TAP' protocol interface. As the TMN truncates messages to 77 characters even standard controller alarms are truncated, so it is recommended to use the retransmit Message Only option to replace an alarm with shorter and more useful text.
Example:
Set Record 1 in the TMN with addRess=119, laN=0, Tele=RRxxx where xxx is the service number and RR selects the GSM SMS service parameters. Set Ext.addr to the destination handset number, a password may be required by the service provider. Retransmit alarms to 119 on Lan 0,.

With TMN modem it is possible to send alarms to 10 different mobile/cellular phones, each with different time and day profiles.

Example of peer to peer alarm messaging between two Doorway clients:
Allocate Client 0 as BMS lan 100, Client 1 as BMS lan 101.
All alarms are received from the BMS via an IT gateway and sent to all connected clients.
Client 0 receives all BMS alarms and returns the machine level acknowledgment back to the BMS.
Client 1 has it's *Alarm Accept Filter* to only accept alarms from Lan 100, so ignores alarms directly from the BMS.
Client 0 retransmits alarms as required to Client 1 by setting the option *To IT Client* and items *Retransmit LAN* 101, and *Own LAN* 100.

At each Doorway Client PC use menu Tools-Communications-button IP and set the IP addresses of each Doorway client PC against the Lan number allocated to that Client. In this case the PC's require fixed IP addresses.

$ K + Engineering - Tools - Alarm Retransmission Queue

See also Alarm Retransmission.

The alarm retransmission queue monitor screen is opened using a button on the Alarm Retransmission screen, or from the normal page with button command ***ALARMQUEUE**.

Alarm retransmission across IT network uses the communications Lan-Gateway-IP tables, each Doorway client takes a Lan number. Check the *IT Net* option to set the senders Own Lan so the alarm acknowledgment knows how to get back.

Retransmitted alarms may optionally be stored until a machine generated acknowledgement is received from the destination device. The maximum number of retries is on installation set to 120, but is adjustable from 0 to 3000.

When the number of retries is set to 1 or more Doorway will periodically send the alarm until either an acknowledgement is received, signifying success, or the set number of retries is exceeded, signifying failure. At this point the alarm is removed from the queue. Failure is alerted as a normal BMS alarm so the user is aware of the problem.

A retry is attempted at a minimum interval of 30 seconds. With the normal 120 retry setting Doorway will therefore attempt for about 1 hour (120*30 secs). If Doorway is running Snapshots, Events etc. then the retry will be delayed. A page with more than 30 data points increases the retry interval. With 120 data points and 1 second communications idle time the retry interval will increase to 120 seconds. With the normal 120 retry setting Doorway will then retry for about 4 hours (120*120 secs). Hence at the maximum setting of 3000 Doorway will retry for between 1 and 4 days. The minimum interval is user adjustable up to 1 hour (3600 secs), and 180 secs is suggested for GSM SMS text messaging to reduce duplicated messages entering the SMS message centre queue.

If Doorway is closed with items still in the retransmission queue the user is informed with an OK or cancel dialog, and the queue is shown. When Doorway is closed any items in the queue are cancelled.

If the *Record Audit Trail* option is selected in the Passwords screen then audit files of user actions are written in JAN.DWA, FEB.DWA etc. Similarly alarm retransmission audit files which record alarm retransmission activity are written in JAN.DWR, FEB.DWR etc. Each retransmission alarm is written when first sent (SENT), and also when the alarm is removed from the queue records as success (OK) or failure (FAIL). Items in the queue manually cancelled by the user are also recorded in the DWR file (CANCEL). When Doorway is closed any items in the queue are also cancelled as above. After 11 months the monthly DWR file is deleted before the new month starts. If required copy files to suitable archive storage.

TOOLS_RETRANS_Q
$ Alarm Retransmission Queue
K Engineering;Alarm;Retransmission;Queue
+ Contents:266

$ K + Engineering - Tools - Alarm Accept Filter

See also Alarm Archive

When using an IT Network all alarms received by the IT Gateway from the BMS hardware connection are sent to all active users of that Gateway. The alarm accept filter allows a user to decide from which addresses alarms will be accepted. With planning alarms can be distributed amongst many users as required. A system will generally use a combination of alarm acceptance filters and alarm retransmission.

Example:
A site has a BMS with controllers spread over two lans, numbered 4 and 5. The site has three users with PC's connected to the IT network. One user has a PC connected to the BMS using CNC hardware with address 1 located on lan 4. In the normal BMS way this lan is also seen by the PC as lan 0 (local lan). Any of the users may have their Doorway software, or the site graphic pages, located on a file server.
The BMS connected PC is set:-
Doorway 0. Port=ITNet, DoorwayClient=0, Local Port=60010.
IT Gateway 0: Identity No=0, IP Port=60000, Clients 0, 1 and 2 ticked.

The two remote users run:
Doorway 1: Port=ITNet, DoorwayClient=1, Local Port=60010
Doorway 2: Port=ITNet, DoorwayClient=2, Local Port=60010

All users have Communications Options Lan and IP settings as follows:

Lan	*Gateway*
0	0
4	0
5	0
100	100
101	101
102	102

G'way	*Port*	*IP*
0	60000	w.w.w.w
100	60010	w.w.w.w
101	60010	x.x.x.x
102	60010	y.y.y.y

Replace w, x and y with the actual IP addresses of each PC

Suppose that the BMS PC (client 0) is to show all alarms, Doorway client 1 is to receive only 'Critical' alarms, and Doorway client 2 is not to receive any alarms:-

Doorway client 0
Engineering Screen - Alarm Retransmission
Lan= *
Addresses= * - *
Text match=
Critical alarms= X
LAN=102
Own LAN=100
On IT Net=X
Times & Days as required

TOOLS_FILTER
$ Alarm Filter
K Engineering;Alarm;Filter
+ Contents:267

Doorway client 1
Engineering Screen - Alarm Accept Filter
Filter alarms = X
Add address to the list:-
Address=127 and Lan=101
List shows 101 127 <All addresses in Lan>

Doorway client 2
Engineering Screen - Alarm Accept Filter
Filter alarms = X
Ensure no addresses in the list
No alarms will be accepted

Background:
When a Doorway or other BMS supervisory PC accepts an alarm from a BMS controller it immediately archives the alarm to disk and the controller is sent a 'receipt'. The controller will repeat the alarm every 30 seconds until it gets a 'receipt'. If many alarms are not accepted BMS lan congestion can occur due to the continuous alarm repeats. A little care is required when using the Alarm Filter so that alarms from all possible addresses have acceptors.

When the user reads and 'acknowledges' an alarm on the screen at a convenient later time, no communication with the controller occurs, since it already has its 'receipt'.

$ K + Engineering - Tools - Alarm Email and GSM SMS Settings

See also Alarm Retransmission.

Email
Alarms can be sent as Emails using Doorway's retransmission feature or even from a button on a graphic page.
Syntax *EMAIL addresses/subject/message

eg *EMAIL tom@company.co.uk/Attention/This is my message

Separate multiple addresses with a **;** (semicolon)
*EMAIL tom@company.co.uk;harry@company.co.uk/Attention/This is my message

When using alarm retransmission you can use () to append the actual BMS alarm message
*EMAIL tom@company.co.uk;harry@company.co.uk/BMS Alarm/Building 5 alarm ()

The email group allows many recipients to a single email
*EMAIL *GROUP*/BMS Alarm/Building 5 alarm ()

Group can be used with one or more named recipients, in any order and a semicolon is required between each.
eg *EMAIL tom@company.co.uk;*GROUP*/BMS Alarm/Building 5 alarm ()
or
*EMAIL *GROUP*;tom@company.co.uk/BMS Alarm/Building 5 alarm ()
or
*EMAIL tom@company.co.uk;*GROUP*;harry@company.co.uk/Attention/This is my message

Set the parameters required to send Emails through an SMTP gateway server. If SMTP authentication is not required then leave the Username or Password fields blank. Secure SMTP authentication is not supported in this release.

A commercial service available from **www.smtp2go.com** is low cost and works well.

The FROM address is important as it is the mailbox where any SMTP gateway response messages will be sent, for example if a message is not deliverable because the destination address is not known. Hence the FROM address should be an active email account which is checked by the user from time to time.

The email queue monitor screen is opened using a button on the Email and GSM settings screen, or from the normal page with button command ***EMAILQUEUE**.

GSM Short Messages
Alarms can be sent as short messages from the PC through a local GSM phone directly over the GSM network using Doorway's retransmission feature or even from a button on a graphic page by linking the Doorway PC with a suitable GSM phone.

Syntax *SMS tel/message

When using alarm retransmission you can use () to append the actual alarm message
eg *SMS 01234567890/BMS Alarm ()
Some phone handsets will not accept a telephone number with spaces in the number.

A serial link is required to the phone, either by cable or more conveniently by short range BlueTooth radio link. The serial port parameter must be set to the hardware COM port or virtual COM port for BlueTooth.

TOOLS_EMAIL
$ Alarm Email and GSM SMS settings
K Engineering;Alarm;Email;GSM;SMS;Queue
+ Contents:268

Conveniently Windows XP SP2 and later includes native support for many BlueTooth adapters (eg CSR) without additional driver software. Most GSM phones with BlueTooth capability are compatible with this feature in Doorway, for example Nokia.

The SMS transmission queue monitor screen is opened using a button on the Email and GSM settings screen, or from the normal page with button command ***SMSQUEUE**.

$ K + System - Event Calendar

From this screen up to 99 'events' may be made to occur either on a particular date and time, or periodically by using the wild card * to signify 'every' in the Day and/or Month fields.

Event actions include running another program, for example an Excel macro routine, for setting Doorway to show a particular page, or for downloading one or more Time Zones to a controller. Several *commands may concatenated on a button, separate each command by the **|** symbol (usually called the 'pipe' symbol).

This screen may be called from a button with syntax *EVENTS.

Examples of event syntax:-

Running another program
(The program or component is set to do some action)
EXCEL.EXE
ANALYSE.XLS
ROUTINE.MDB

Changing Page
AUTO.DAT

Simulating a Button action
*DIAL HANGUP
*FILECOPY c:\doorway\snapshot\snap01.mdb , F:\bakup\snap01.mdb

Starting a chart
filename.DWC

Run the Time Zone Calendar download
*SEND CALENDAR /DAYn /PINxxxx
see also Time Zone Calendar

The Event Calendar as shipped allows 15 seconds for most Event actions to complete. For use with modems and other slow procedures this time may sometimes need to be changed. At present this parameter is not adjusted from within Doorway. The parameter is stored in the file DOORWAY.INI. Locate the section labelled [Calendar] and the item EventWait=15. Valid times are 3 to 300. The wait time is measured in seconds.

LISTS_EVENTS
$ System Event Calendar
K System;Events;Calendar;Time;Clock;Automatic
+ Contents:270

$ K + Time Zone Calendars

In the Areas screen the user creates Areas which contain controller time zones which are to receive the same occupation times. In the Calendars screen the user chooses for each Area the occupation times for any date up to 31st December 2099. In the Downloads screen the user may manually download one or all days within the 7 days. Downloads may be automated using the Event Calendar.

Site
There is only one site, called *Doorway*, this is to allow for future expansion.

Calendars screen
The Calendars screen allows different occupation times to be set in advance for each Area for any day to 31st December 2099.

On any day an Area may be set to:

No Action	Use day already in controller
Standard Week	Use day from Standard Week
	Each Area has a Standard Week of 7 days repeated indefinitely
	BMS controllers with 'Standard Week' feature have both weeks set
Special Day	Use day from Special Day 1 to 9
	Special Days are shared by all Areas and repeat daily indefinitely
	Rename by double mouse clicking on the text (e.g. Holiday)
Exception	Each Area has unique Exception times for each day to 31 Dec 2099
	Exception days are not repeated
	99 year Exception storage (6 times x 100 Areas x 366 days x 99 years)

The current day is indicated by a tick in the Day of Week row. Buttons are provided to select Previous Quarter, Previous Month, Next Month and Next Quarter.

Select each Area in turn from the Area drop down box. Initially every day is set to No Action. Mouse click in the grid to select a day cell. The Start-Stop times for the current cell are shown in the lower part of the screen where they may be edited. Click the Apply button after editing any times and before selecting another cell else your time changes will be discarded. The Copy button collects the group of six times, for convenience the Paste button also performs Apply.

The keyboard cursor keys may be used. The grid has the keyboard focus one Tab key press after Next Quarter button is highlighted. Press the End key to reveal the selector in the bottom right hand cell. Cursor keys move the selector. Select a cell with the Insert key. Clear a cell to No Action with the Delete key. Cursor keys with Shift key held down selects a range of cells in a row.

BMS controllers with the 'Standard Week' feature automatically replace each day from it's internal 'Standard Week' at the end of each day. With 'Standard Week' feature controllers there is often no need to download settings to 'undo' changes such as holidays.

Areas screen
The Time Zone Areas screen allows the assembly of a Collection of zones which control plant. The 100 controller time zones capacity is likely to be sufficient even for large sites. To collect zones click the *Get Zones* button.

In the Time Zones Names screen menus are used to *Select from Map* and then *Get from BMS* the time zone labels. If the BMS is not available then *Off Line Substitute* may be used to list zones, verify against system documentation. SeaChange zone list is always off line. Select from Domains 0 to 8 and *Off Line Substitute* will list Zones 1 to 200, any 100 of these may be managed by Calendars. SeaChange systems using multiple lans (networks) must ensure the correct lan is selected from the Map for each zone. For example there may be Zone 1 on each lan in a large system.

To add a Zone to the Zones Collection first highlight an empty line in the Zones Collection list. Now in the Time Zones Names screen highlight a zone and click the Transfer menu or double mouse click the zone name.

TIME_ZONE_CALENDAR
$ Time Zone Calendar
K System;Events;Calendar;Time;Clock;Zone;Download;Automatic
+ Contents:271

To replace a Zone in the Zones Collection first highlight the Zone in the Zones Collection list. Now in the Time Zones Names screen highlight a zone and click the Transfer menu in the Time Zones Names. The new zone will replace the old zone in all Areas in which it was used.

To add an Area highlight a line in the Areas list and type a suitable name in the box at the top of the column. Add zones to the Area by highlighting in the Collection list and clicking the Connect button or double mouce click the zone. Repeat for each zone required in that Area. There can be up to 100 user named Areas.

Areas and Zones can be edited at any time.

Downloads screen
The Time Zones Downloads screen appears when the command *SEND CALENDAR is invoked from the Event calendar, from a button, or manually using the Test Now button on the Calendars screen. When manually invoked the Run now button can be clicked to start the routine for any day from today to 6 days ahead, or for all 7 days. Downloading to a large number of time zones take a considerable time.

Downloads can be for any days from today to 7 days ahead and are written in the controllers 'Current week' section. It is recommended to run the Calendar download every night at for example 1:00am using the Event Calendar using syntax: *SEND CALENDAR as shown below. If enhanced reliability is required the download may be repeated at say 2:00am. Each zone time message is attempted up to three times, and download failures are summarised in a BMS alarm, which may be retransmitted if required to other devices. Download failures do not require any user intervention or resetting. If in use the DWA audit trail file will show download start and stop times and any failures.

Button commands
*SEND CALENDAR /DAYn /PINxxxx
where n is the number of days including today, range 1 to 7
and xxxx is the controller PIN number, omit /PINxxxx if not required

examples:
*SEND CALENDAR runs the download for today
*SEND CALENDAR /PIN1234 runs the download for today with PIN 1234
*SEND CALENDAR /DAY3 runs the download for 3 days including today
*SEND CALENDAR /DAY7 /PIN1234 runs the download for 7 days including today with PIN 1234

*SEND CALENDAR /DAY-2 runs the download for the day 2 days from now (ie tomorrow)
*SEND CALENDAR /DAY-7 runs the download for the day 7 days from now

*CALENDAR A shows the Areas screen
*CALENDAR T shows the Calendars screen
*CALENDAR D shows the Downloads screen

$ K + Time Zone Download

See Time Zone Calendar

Note: The method described below has been superseded from version 7.90 by the Time Zone Calendar and information in this section has been retained for reference only.

One or more time zones may be updated using a normal Doorway time zone (ZON) file. There are a very large number of controller, zone and day combinations possible. Doorway lets you visualise the task by placing the references to the time zones on a page using the controller identifier label. In addition a controller's time zones can be edited by clicking on the item to open the Time Zone screen. The page can contain other data points, images and picture in the normal way. For example you could add time zone references to office floor plan pages.
There can be 120 data points per page, so up to 600 time zones can be controlled from one page if desired. Note that downloading to a large number of time zones can take considerable time.

1 Download routine

The download routine is started using one of the three methods shown below; from a menu, from a button, or by the event calendar. Doorway analyses the page and downloads the appropriate days and times from the ZON file to time zone(s) in controllers referenced in the data points. The flexible request syntax allows either the data point or the request to determine zone, day, or week, as shown below.

1.1 Menu (no longer on menu)

Choose menu *System-Download to time zones...* Select a day or week(s) as required. For a single day set the times as required, for a week choose a time zone ZON file.
This screen may also be called from a button with the command *DOWNZONE. (see Button Syntax)

1.2 Button

Prebuilt selections may be set on a button, using the button *SEND syntax:. (see Button Syntax)
Zone numbers from data points, days from request.
Individual day

*SEND *filename*.ZON /Z?,1(*)	next monday - day 1
*SEND *filename*.ZON /Z?,8(*)	every monday - day 8
etc.	

Whole week

*SEND *filename*.ZON /Z?,1($)	current week - days 1-7
*SEND *filename*.ZON /Z?,8($)	standard week - days 8-14
*SEND *filename*.ZON /Z?,14($)	current & standard week - days 1-14

Zone numbers from request, days from request.

*SEND *filename*.ZON /Z1,1(*)	zone 1 next monday

Zone numbers and day(s) from data points.

*SEND *filename*.ZON

1.3 Event Calendar

The automatic downloading process is initiated by the Event Calendar. The event requests a DAT page and a time zone ZON file. Doorway displays the page and uses the ZON file for the time zone screen. Then Doorway performs a *SEND button command, as shown above. If a controller fails to acknowledge receipt of a time then a BMS alarm is raised, the remaining times are still actioned.

2 Syntax for data points

There are two data point styles for use with time zone downloading; controller identifier label or time zone label. With the controller identifier you can have up to 5 time zones per controller set by one data point. Sometimes however the time zone label can be more helpful than the controller label. A mixture of methods is allowed.

TIME_ZONE_DOWNLOAD
$ Time Zone Downloading
K System;Events;Calendar;Time;Clock;Zone;Download;Automatic
+ Contents:272

2.1 Controller Identifier Label

When in Edit mode use the CTRL key and mouse to 'drag and drop' from the Map onto the page. Add zones 1 to 5, edit as required. You may also add descriptive text in the optional *text* field.

Example 'drag & dropped' from Map
R(N,L,D)
Now add zone numbers as required
e.g. R(N,L,D)/ *text*=Z54321,14($)

Zone numbers are actioned from right to left, and may be in any order. The optional field *text* shown above allows customisation, for example use _ to give a newline. If the day/week will be set in the request, the data point may be left as shown. If you want the data point to control the day/week then set as below:-

Page data point syntax for single day
R(N,L,D)/ *text* =Z2,1(*) for zone 2 Monday of Current week
to
R(N,L,D)/ *text* =Z2,7(*) for zone 2 Sunday of Current week

R(N,L,D)/ *text* =Z2,8(*) for zone 2 Monday of Standard week
to
R(N,L,D)/ *text* =Z2,14(*) for zone 2 Sunday of Standard week

Page data point syntax for whole week
R(N,L,D)/ *text* =Z2,1($) for zone 2 all 7 days of Current week
R(N,L,D)/ *text* =Z2,8($) for zone 2 all 7 days of Standard week
R(N,L,D)/ *text* =Z2,14($) for zone 2 all 14 days of both weeks

2.2 Time Zone Label

Page data point syntax for entire week
Z2,1($) for zone 2 all 7 days of Current week
Z2,8($) for zone 2 all 7 days of Standard week
Z2,14($) for zone 2 all 14 days of both weeks

Page data point syntax for single day
Z2,1(*) for zone 2 Monday of Current week
to
Z2,7(*) for zone 2 Sunday of Current week

Z2,8(*) for zone 2 Monday of Standard week
to
Z2,14(*) for zone 4 Sunday of Standard week
if controller does not support (*) use ($,E,F,G,H,I,J)

$ K + System - Snapshots

See also Snapshot Export, Button Syntax, Password Administration and Password Levels

Doorway can *Snapshot* a Page or Graph to a set of Snapshot database files for collecting and archiving data. Snapshots can be taken manually and/or automatically at pre-set times. The Snapshot databases can be viewed at any time. Using Microsoft Access it is straightforward to view and manipulate the Snapshot databases for further analysis. All internal dates in Doorway are stored in Microsoft 'long date' format and so have Year 2000 conformity.

Setting up a Snapshot database.
Go to the Doorway page or create the graph which you wish to Snapshot. If required change the title of the page or graph, using menu Edit-Change Title. Open the Snapshot screen with menu System-Snapshots from Doorway's main screen. From the Snapshot screen use menu Capture-Doorway Page or Capture-Doorway Graph. The image and other relevant internal data is copied to the snapshot screen. Now use menu Snapshots-New Snapshot File to create the database structure for the captured image. Doorway automatically allocates the next free Snapshot filename, and adds the Snapshot to it. Doorway uses the Page or Graph Title as a file Description which is shown when selecting Snapshot files. Use menu Edit-Description to modify the file description at any time. PIC and UPG format pages cannot be captured directly, so use File-Save to convert to the normal DAT format, then File-Open to show the DAT file, and then Capture-Doorway Page.

Manual Snapshots.
At any time you may manually run a Snapshot, and add another record to its database. This will not alter any automatic timed settings. Open the required Snapshot database with menu Snapshot-Open Snapshot File. Then use menu Action-Run Snapshot Now. Doorway instructs either the graph screen or the main Doorway screen as appropriate to collect the data, captures the image and adds it to the database. Doorway then either closes the graph screen or returns the main Doorway screen to its previous image. The time and date of each Snapshot is saved in the database.
The *SNAPSHOT command may be used on a button.

Automatic Snapshots.
Doorway will make Snapshots automatically at predetermined times. The time and date of each Snapshot is saved in the database. Use menu Action-Times to get to the Snapshot Times screen. For convenience all the timed events are stopped when the Snapshot Times screen is showing. For each Snapshot database choose either Once A Day or Interval. For Day and Month either enter a particular day/month or use a * which is the "wild card" meaning every. The weekdays are entered individually, giving yet another filter, so a cross in each day means 'any day'. Now choose either Once A Day or Interval.

For Once A Day the hours and minutes means the actual time. It is suggested that Once A Day snapshots are all set to say 23:50 to capture the days graph with the time axis showing complete days. If more than one Snapshot is set for the same time, they are collected quickly and safely one at a time in numerical order. Valid Once A Day times are 00:01 through to 23:59. The Midnight times 00:00 and 24:00 are ambiguous as to which day they refer to and if set then Doorway will not snapshot that channel.

If Interval is selected then the hours and minutes means 'every'. The Interval time is always relative to midnight, so for example Interval 6hrs 0mins will snapshot at 04:00, 08:00, 12:00, 16:00, 20:00, but note Doorway ignores 00:00 and 24:00 which are ambiguous as to which day they refer to.

While the minimum interval allowed is 0 minutes and Snapshots then occur as fast as possible, other factors come into play. To ensure reliable communications, particularly with multiple Doorway users, Snapshots can be delayed by Doorway's Page data requests. For example a full page with all data points in use may delay the Snapshot by about a minute. To speed up your testing set Doorway's page to a simple page or even a blank one. The Snapshot screen does not have to be showing for automatic events to occur. Snapshots work even when you are in Engineering mode. However remember that if you are 'configuring' the same controller that the Snapshot needs then the data will not be sent, and the Snapshot will fail.
The *SNAPSHOT command may be used in an alarm retransmission filter.

SYSTEM_SNAPSHOTS
$ System Snapshots
K System;Snapshots;Archive;Reports;Functions;Automatic;Action;Time;Clock;Record;Playback;Description;Microsoft;Access;2000;Year 2000;MDB;TEAM;Snapshot Folder;Snapshot Repair
+ Contents:280

Autodialling Snapshots
A snapshot will operate on the current modem if the snapshot description contains a valid **dial* command. The method may also be used if required to 'hang up' a call quickly.
eg. London office *dial 0123 456789 /1,4,5
and *dial hangup
A snapshot may change the current communications port if the snapshot description contains a valid **COM* or **EINC* command.
eg. London office *COM 1
and London office *EINC 99
or London office *COM -2,99

and London office *EINC 99 *DIAL 01234567/1,4,5

Exporting Snapshots
A snapshot may exported in various CSV formats after each run if the snapshot description contains a valid **export* command.
eg London office *EXPORT 99
eg London office *EXPORT 99 /LIST
eg London office *EXPORT 99 /MONTAGE
eg London office *EXPORT 99 /CLIMATE

A snapshot backdrop picture or graph plot may be exported in WMF format
eg London office *EXPORT 99 /WMF

Any of the above commands may be combined, the order of commands must be as below
London office *EXPORT 99 /LIST /WMF *EINC 99 *DIAL 01234567/1,4,5
For more details see Snapshot Export

Snapshot failure.
If a manual or Automatic Snapshot fails to complete within a reasonable time then an alarm is generated and added to the normal monthly alarm file. Since the alarm panel can optionally be disabled by the user a small message box also appears to alert the user. Automatic snapshots are not disabled by a failure, and will automatically run again at the next action time. If a snapshot fails no record is added to the database.

Reviewing Snapshot databases.
You can review the snapshots by using menu File-Open Snapshot File and selecting the desired file. You can scroll through the records either using the 'Video recorder' type data control, or use the Edit-Find Record menu to show a chronological list of the records. To move the data control to a convenient position on the screen hold down the control key. When the mouse pointer becomes a crosshair drag the data control across the Snapshot screen.

Deleting Snapshots.
An entire Snapshot databases may be deleted with menu Snapshot-Delete Snapshot File. Individual Page records (not Graph records) may be 'deleted' using menu Edit-Delete Record, but note that no actual disk space is saved unless the database file is 'compacted'. Microsoft reports compatibility difficulties with Microsoft Access 7 for Windows 95 and later if earlier database files are 'compacted', and so a 'compact' feature is not provided by Doorway.

Repair Snapshot File.
A Snapshot database file can be left invalid by an incomplete write operation. This can occur if Doorway quits unexpectedly because of a power failure or computer hardware problem. The database will not be left invalid if you exit Doorway normally. Menu Repair Snapshot File also attempts to validate all system tables and all indexes. Any data that cannot be salvaged is discarded.

Snapshot Database Design.
Up to 99 Snapshot databases may be created called SNAP01.MDB to SNAP99.MDB. Each database file holds all the necessary parameters to recreate the image. Hence if the original page is subsequently modified this does not affect the Snapshot database which can continue to collect the same data as it was when created.

Doorway uses Microsoft's MDB format so that users may make further analysis if required using Microsoft Access, which also has comprehensive programming capabilities. The databases are divided internally into two Tables which are named *Snapshots* and *Data Files*. The structure of the database Tables are different depending on whether Page or Graph data is to be stored. A Page snapshot file has just one record in the *Data Files* table which contains all necessary information, including the picture eg WMF and DAT file. Using the *Data Files* table Doorway can recreate the page and then request the data from the controllers. The graph *Data Files* table holds the

references to the controller and sensors, and each graph image, so holds as many records as have been collected. The *Snapshots* table always contains as many records as have been collected. With multi-trace graphs there is an additional record for each additional trace.

Users without Microsoft Access can use the *Snapshots Export* feature to make a file directly readable by most spreadsheets, including Microsoft Excel, see Snapshot Export.

A typical snapshot database file containing a years information, ie 365 days of one per day, may be up to 50 MB in size. The number of records possible is very large, and the limit is unlikely to be reached in practice. Each Snapshot database can hold up to 1 Gbyte (ie 1000Mbyte). Doorway can have 99 Snapshot databases of this size. See also Snapshots Format.

Snapshots are normally located in a subfolder of the Doorway application folder, for example C:\DOORWAY\SNAPSHOT. It is possible to change the snapshot folder to another location, which may even be on another machine or file server, see INI File Options

$ K + Snapshots Format

See also Snapshots and Snapshot Export.

Doorway installs a full licensed version of the Microsoft Access Database 'Jet' engine version 2. This software is a well proven and robust database engine which has become the widest selling database on the PC.

Many users may already have a version of Microsoft Access either alone or as part of the Microsoft Office Professional suite.

SNAPSHOTS_FORMAT
$ Snapshots Format
KSystem;Snapshots;Format;Archive;Record;Playback;Description;Microsoft;Access;MDB
+ Contents:281

$ K + Snapshots Export

See also Snapshots and Snapshots Format.

Users without Microsoft Access can use the *Snapshots Export* feature to make a file directly readable by most spreadsheets, including Microsoft Excel. Two text formats are offered to allow the widest use in spreadsheets, word processors and other applications.

Export Standard format
.CSV (Comma Separated Values).
This is a file with a comma delimiter between each field, and a carriage return between each record.

.TXT (Text).
This is a file with a tab delimiter between each field, and a carriage return between each record.

Export List format
Doorway can export both page and graph snapshots in a list format more convenient for external applications. The export from SNAP01 is appended to file LIST01.CSV. The external application may delete the CSV file after it has read the data.

Menu Export List-Showing exports the currently showing record.
Menu Export List-Last exports the most recent record.

Export Montage format
Doorway can export both page and graph snapshots in a list format for the Montage® data analysis package from Enviros Software Solutions Ltd. The export from SNAP01 is appended to file MONT01.CSV. Montage may delete the CSV file after it has read the data.

Menu Export Montage-Showing exports the currently showing record.
Menu Export Montage-Last exports the most recent record.

Export Climate Notebook format
Doorway can export graph snapshots in a list format for the Climate Notebook® data analysis package from the Image Permanence Institute. The export from SNAP01 is appended to file CLIM01.CSV. The user should delete the CSV file after importing the data into Climate Notebook®.

Menu Export Climate Notebook-Showing exports the currently showing record.
Menu Export Climate Notebook-Last exports the most recent record.

Export Picture
Doorway can export the currently showing page or graph snapshot picture in Windows WMF format for use in Doorway or other applications. Note that the page picture contains the backdrop but not the datapoints.

Button on a Page
You can use button command *EXPORT, see Button Syntax to have a button on a page which manually initiates the export of the last record.

Automation
To automatically export at chosen times and dates append the following syntax to the snapshot description:
*EXPORT nn
*EXPORT nn /list
*EXPORT nn /montage
*EXPORT nn /climate
*EXPORT nn /wmf

SNAPSHOTS_EXPORT
$ Snapshots Export
K System;Snapshots;Archive;Record;Playback;Reports;Functions;Microsoft;Access;MDB;Export;CSV;TXT;Montage;Climate Notebook
+ Contents:282

where nn is the snapshot number.
You may also export the last record at chosen times and dates using the Event calendar with the same syntax.

Warning:
If the Doorway is collecting data for any snapshot, or the snapshot database file is open in another application, it will often not be possible for the export routine to access the database file. This can occur if the export is set in the Event calendar and runs at around the same time as any snapshots. If the Event cannot be scheduled at a different time a solution is to set the snapshot to export every time it is run, see topic Snapshots.

$ K + System - Clock List

See also Button Syntax, Adjusting Time and Controller Time.

This option allows you to check all the clocks in controllers on the BMS lan. It also shows the time in the PC.

To synchronise an individual controller to the PC, select (highlight) the controller, then choose Synchronise Single.

To synchronise all the controllers to the PC, choose Synchronise All.

You can copy to the clipboard or print the contents of the list.

LISTS_CLOCKS
$ System Clocks List
K System;Clock;List;Time;Date;Weekday;Hours;Mins;Setting;2000;Year 2000
+ Contents:290

$ K + System - LonWorks Point List

See also DDE Links - Client

Menu System-LonWorks Point Lists, will show the LonWorks All-Points, Log-Points and Alarm-Group files. Then use menu LonWorks-Edit to open the files in Windows Notepad or Microsoft Excel.

File DOOR-LNS.CSV is used by the *Doorway LNS Add-In* to build an object cache of data points from the LNS database. The LNS point cache markedly improves speed of data collection. Doorway can use a mixture of cached and uncached points. DOOR-LNS.CSV may contain up to 30,000 points.

File DOOR-LOG.CSV is used by the *Doorway LNS Add-In* to poll LonWorks data points and permit BMS style sensor logging , hi/lo etc. alarms of sensors, and device Not Responding alarms. Use menu Create Log Points file to quickly create a file to monitor all the temperatures, eg filter using *Temp* or perhaps *nvoSpaceTemp*. Each item is placed in alarm group 1, which you may then edit. DOOR-LOG.CSV may be identical to, or a subset of, DOOR-LNS.CSV.

File DOOR-ALM.CSV is used by the *Doorway LNS Add-In* to name alarm groups, and set Max, High, Low and Min value alarm limits for data points. DOOR-ALM.CSV may contain some or all of the points in DOOR-LOG.CSV allowing an individual alarm for every logged item. It is important that cache numbers refer to the same NV item.

In Edit mode data points may be dragged from the cache list onto the page in the normal way. A cached data point has a cache number eg #12345 shown below, before the NV reference.

eg. {#12345,XL10.nviSetPoint} cached
{XL10.nviSetPoint} non cached

The information returned by LonWorks® LNS depends on the NV data type. Sometimes an ASCII string is returned such as OFF or ON, which may be convenient. If you wish to use Doorway's display capabilities, or write back a change value to LonWorks, then you must get LonWorks to return a number, for example by adding -INT to the NV, for more details see DDE Links - Client,

Once LonWorks LNS is returning a numeric code then the normal BMS control fields may be added in the normal way. Note that LonWorks OUTPUT Network Variables cannot have their value changed.

eg. {#4,XL10.nviSetPoint}K(V)/50/10/ degC
{#4,XL10.nviManOccCmd}W(S)/Auto/Manual/12/10

Owing to the limited number of NV's possible in the LonWorks Neuron processor, some NV's contain arrays of data, separated by field delimiters, such as the comma (,). Doorway can read and write array parameters, see Array Syntax.

A sample of each file will be installed by SETUP, any existing file will not be overwritten, so your hard work entering cache data is safe! Note that the first two lines in each file must be exactly as shown:-

DOOR-LNS.CSV
[DOORWAY] , [LNS]
number , item
1,XL10.nviRequest -INT
2,XL10.nvoStatus -INT
3,XL10.nciMaxSendTime
4,XL10.nviSpaceTemp
etc.

DOOR-LOG.CSV
[DOORWAY] , [LNS] ,
number , item , alarm

LISTS_LNS
$ System LonWorks Point List
K System;LonWorks;LNS;DDE;Cache
+ Contents:292

4,XL10.nviSpaceTemp
14,XL11.nviSpaceTemp
24,XL12.nviSpaceTemp
34,XL13.nviSpaceTemp
etc.

DOOR-ALM.CSV

[DOORWAY] , [LNS] , , , ,
alarm, max , hi , lo , min , label
1 , 29 , 27 , 15 , 11 , FCU
2 , 99 , 70 , 50 , 0 , HWS
3 , 150 , 100 , 10 , 0 , LPHW
4 , 35 , 10 , 4 , -5 , CHW
etc.

$ K + System - Generic Text Pages

See also Button Syntax

Generic Text pages are a selection of DAT pages laid out in a similar way to the legacy DOS character based 921 Supervisor program. This enables the immediate use of Doorway without creating any custom pages.

First select the desired Controller by mouse or keyboard from the Map of Addresses.

Then select the data required from the controller.

Call for graphs of sensors, and adjust Knobs and Switches using mouse or keyboard.
Left mouse button requests a 96 point graph
Right mouse button requests a 1000 point graph if available

Generic Text pages can be called from normal Doorway pages using the *GENERIC button syntax.

SeaChange generic pages are provided by SmartKontrols Ltd.

See also Editing Buttons

GENERIC_PAGES
$ Text Pages
K 921;Text Pages; Generic Pages;Mouse
+ Contents:295

$ K + Controller - Time

Also activated with key CTRL T, see also Button Syntax

This option allows you to adjust the clock in a controller. The PC's calendar clock is showed on the left side. Updating the controller's time and date directly from the PC's calendar clock can be done with a couple of mouse clicks, press the >>>> button to transfer the information, and then the Update button to send the time and date information to the controller, and the controller value are requested again for your verification. If the time and date information have not updated then the controller probably has a security PIN applied which you must set up with your password.

See also System Clocks List and Adjusting Time

OUTSTATION_TIME
$ Controller Time
K Controller;Time;Clock;Date;Weekday;Hours;Mins;Setting
+ Contents:300

$ K + Controller - Time Zones

Also activated with CTRL Z, see also Button Syntax

See also SeaChange Time Zones

A Time Zone is a BMS description of a time clock. Doorway lets you view and change the actual settings of each time clock. Although most controllers have 5 time clocks, a few models have 1 and some have none. Refer to the BMS system documentation for further information.

IQ1 and IQ2 series controllers hold Current week *(Today and next 6 days)* and Standard week *(Every Week after the next 6 days)*. Each Current day is restored from the Standard weekday at midnight.

IQ3 series controllers only support the Current week, and there is no Standard week restore. On or off time positions which have not been created in the controller show as a **?**. Zones and Positions may be created or deleted from Doorway's Engineering screen. Doorway will only show Zones 1 to 5 and three on and three off time positions per day.

Set the Zone radio button as required. Each Get button initiates the uploading of controller 7-day data for the displayed Zone to the screen. The 7-day data may be transferred between zones using the Copy and Paste feature. This action does not use the Windows Clipboard.

The 7-day Standard week of the displayed Zone may be stored to disk. 7-day data loaded back from disk is temporarily shown blue to indicate that it is different from that in the controller. This blue indicator is removed when viewing another Zone.

The ZON file on disk only holds the 7-day data for one Zone. Load and Save only involves the 7-day data of the Standard week of the Zone displayed. If you wish, use Copy and Paste to move data to the Current week .

When any 7-day data is downloaded to the controller it is first checked for time validity, and valid entries are shown yellow. If there is an illogical time entry the download is not made. As the download proceeds each day turns white if successful.

When another Zone is selected all uploaded 7-day data is retained, and may be reshown at any time. All 7-day data is retained until another controller is selected.

Override Today downloads immediately to the Controller Zone selected. ON sends 00:00 to 24:00 and OFF sends 24:00 to 24:00. If the controller weekday number is incorrect then today is still over-ridden, but the day actually changed in the Current week may not be as expected. The controllers modified Current week is then uploaded for viewing.

The computed on and off times in the related Optimimum Start Stop (OSS) module are shown, together with the Warm Up and Cool Down limits in minutes. When the Warm Up and Cool Down limits are showing they can be adjusted by clicking with the mouse, which shows the Control Knob screen. Values from 0 to 1440 minutes (24 hours) may be entered. The computed times are adjusted as the OSS module 'learns' the zone thermal characteristics. Note that if a zone never reaches the setpoint, the OSS module will be always at the set limit.

Hint for keyboard users:
The four cursor keys can be used to move rapidly through the data.
Home or End keys to put the cursor at Monday or Friday of the Standard Week.
Page Up or Page Down keys to put the cursor at Monday or Friday of the Current Week.
Alt-W and Alt-U keys to adjust the OSS module limits.

LISTS_TIME_ZONES
$ Controller Time Zones
K Controller;Time;Clock;Zone;Occupation;Load;Save;Every;Next
+ Contents:310

$ K + SeaChange Controller - Time Zones

Also activated with CTRL Z, see also Button Syntax

See also Time Zones

A Time Zone is a BMS description of a time clock. Doorway lets you view and change the actual settings of each time clock. Many SeaChange Controllers contain a Time Zone. The times specified are called Occupation Times because they define when that part of the building is to be occupied. The Zone Controllers will normally start the plant using Optimum Start, and stop the plant using Optimum stop to ensure that the required environmental conditions are achieved for just the specified Occupied period. If the start and stop times are set the same that period is ignored.

Domains
Controllers may be grouped into Domains. Domains provide additional addressing, so more controllers may be used in a system.

Normal Week
This defines the Occupation times for the Zone and is used provided the Special days are not setup.

The 7-day data may be transferred between zones using the Copy and Paste feature. This action does not use the Windows Clipboard.

The 7-day Normal week of the displayed Zone may be stored to disk.
7-day data loaded back from disk is temporarily shown blue to indicate
that it is different from that in the controller. This blue indicator is removed when viewing another Zone.

The ZON file on disk only holds the 7-day data for one Zone. Load and Save only involves the 7-day data of the Normal week of the Zone
displayed.

When any 7-day data is downloaded to the controller it is first checked for time validity, and valid entries are shown yellow. If there is an illogical time entry the download is not made. As the download proceeds each day turns white if successful. Only those days times which have been changed since the last upload from the Zone will be downloaded.

Special Days
Today: the times for today may be changed and they will be used instead of the times indicated in the Normal Week. Override Today downloads immediately to the Controller Zone selected.
ON sends 00:00 to 24:00 and OFF sends 24:00 to 24:00.
A 'reset' button is provided which sets the times back to their default settings so that the Normal times will be used. If a special case of no occupation is required set 00:00 00:00 24:00 24:00.

Tomorrow: special Occupation times may be setup for tomorrow, the 'reset' button sets the time back to the default setting which disables the feature.

Holiday: the number of days holiday may be changed with the slider bar or directly typed into the text box. The holiday pattern commences tomorrow and uses the Occupation times shown. The default is no Occupation but this may be changed as required. The change will not be made in the controller until the 'download times' button is clicked.

If using the full version of *Doorway,* rather than the simpler *SeaChange Doorway,* the SeaChange Time Zone screen can be selected using menu Controller-Time Zones. A SeaChange SLT reference must be in the Map, and the type SeaChange. If the PC is connected directly to an SLT then the Map button will create the entry. If an SLT is connected to CNC hardware on a BMS lan Map in the usual way. Otherwise add an entry manually, and press the update button.

Hint for keyboard users:

LISTS_SEACHANGE_TIME_ZONES
$ SeaChange Controller Time Zones
K SeaChange;Controller;Time;Clock;Zone;Occupation;Load;Save;Domains
+ Contents:311

The four cursor keys can be used to move rapidly through the data.
Home or End keys puts the cursor at Monday or Friday of the Week.
Page Up puts the cursor at Special Day - Today.
Page Down puts the cursor at Special Day - Holiday.

$ K + Lonworks Controller Time Schedules - Time Zones

See also Button Syntax

The 50 Controller Schedules may be used to provide a Time Clock function for controllers which do not have built in Time Clocks, for example LonWorks. The scheduler may also be used with other Doorway compatible controllers if desired. Periodically Doorway runs the scheduler and sends the next items appropriate command to the controllers. The minimum time between updates is adjustable in seconds, the recommended value is 30 seconds. Set the update time to 0 to disable all Schedules. Each schedule has a descriptive **Name** and an **Action**. The action property can contain four sections, separated by a comma. The first section sets the **Occupied** value, the second section sets the **Unoccupied** value. The optional third part describes the controller point for an **Optimiser** offset time which holds the minutes of advance of the start time. The syntax is similar to the *SEND function. The optional fourth part is used to select the **Change** mode where the value is only sent once when a time boundary is crossed, and is selected by the **#** symbol.

Examples:-

1{FCU.nviOcc} ,0{FCU.nviOcc}, {FCU.nviOSS}, #

B32(S0=I)/o20 , B32(S0=O)/o20 , A200(V)/o20
B32(S0=I)/L4/o20 , B32(S0=O)/L4/o20 , A200(V)/L4/o20

[z1]W1(S0=I) , [z1]W1(S0=O)

For convenience you may temporarily disable a schedule by prefixing the action line with a $ and then the item will be ignored.
e.g. $ 1{FCU.nviOcc} , {FCU.nviOcc}, {FCU.nviOSS}

Notes:-
The Optimiser 'start time advance' feature is not operational in this release.

Hint for keyboard users:
The four cursor keys can be used to move rapidly through the data.
Home or End keys puts the cursor at Monday or Friday of the Week.

LISTS_SCHEDULE_TIME_ZONES
$ Controller Time Schedules
K Schedule;Controller;Time;Clock;Zone;Occupation;Load;Save
+ Contents:312

$ K + Controller - Alarms

Also activated with key CTRL A, see also Button Syntax

This allows you to see the alarms that are stored in the controller. Up to the last 20 alarms are stored in the controller after they have been acknowledged. If the controller is not selected you will be prompted to choose one.

You can copy to the clipboard or print the contents of the list.

LISTS_ALARMS
$ Controller Alarm Array List
K Controller;Alarm;Array;List;History;Archive
+ Contents:320

$ K + Controller - Plots

Also activated with key CTRL P, see also Button Syntax

This allows you to obtain a list of the controller's plotting (logging) channels. If the channel is used the sensor, controller period code, plot interval, and plot span is shown. The span is estimated for standard 96 point and also the extended 1000 point plots. Note that extended plots are not available from older controller models.

Choose Adjust to show the Plot Channels toolbox from where you may change the sensor and plot interval settings. The Send button sends changes to the controller and also updates the Plot list.

You can copy to the clipboard or print the contents of the list.

LISTS_PLOTS
$ Controller Plot channels
K Controller;Plot;Graph;Channel;Log
+ Contents:325

$ K + Controller - Get All Named

This allows you to obtain the Sensor, Input, Driver, Knob and Switch lists for a single controller. Only items with a name (label) set up in the controller will be shown.

When you choose this command you will first be asked to select a controller. Any previous lists are then cleared, and the lists are then called automatically.

This feature assists in diagnosing BMS faults and also with building and checking pages.

Hint for Advanced users:
To add a new data point, open the yellow toolbar. Then hold the CTRL key and drag the desired item from the list onto the page. The appropriate reference and address is also written into the editing box.

To change an existing data point, open the yellow toolbar. Then double click the desired item in the list and the appropriate reference and address is written into the editing box.

LISTS_GET_ALL
$ Get All Controller Lists
K Controller;Get All;Dragging;Dropping
+ Contents:330

$ K + Controller - Sensors

Also activated with key CTRL S, see also Button Syntax

This option allows you to list all the names and values of sensors in a controller. You can select All sensors or only those with Names. If the controller is not selected, you will be prompted to choose one. You can show the graph of a sensor (if it has a plot connected) directly from the list. Highlight the desired sensor and click the Graph menu, or just double click with the mouse on the item in the list.

Menu 'All Status' lists the sensors with the High and Low alarm levels, alarm Status and Enable bits, and the sensor Offset trim values.

Set each input's alarm action using the Alarm menu. The Adjust Offset, High and Low levels, and also Alarm High, Low, Offscale and Read enables are available when the list shows the appropriate item.

You can copy to the clipboard or print the contents of the list.

Hint for Advanced users:
To add a new data point, open the yellow toolbar. Then hold the CTRL key and drag the desired item from the list onto the page. The appropriate reference and address is also written into the editing box.

To change an existing data point, open the yellow toolbar. Then double click the desired item in the list and the appropriate reference and address is written into the editing box.

LISTS_SENSORS
$ Controller Sensor List
K Controller;Sensor;List;Dragging;Dropping;
+ Contents:340

$ K + Controller - Inputs

Also activated with key CTRL I, see also Button Syntax

This option allows you to list all the names and values of the inputs in a controller. You can select All inputs or only those with Names. If the controller is not selected, you will be prompted to choose one.

Set each input's alarm action with the Alarm Required level and Enable menus.

You can copy to the clipboard or print the contents of the list.

Hint for Advanced users:
To add a new data point, open the yellow toolbar. Then hold the CTRL key and drag the desired item from the list onto the page. The appropriate reference and address is also written into the editing box.

To change an existing data point, open the yellow toolbar. Then double click the desired item in the list and the appropriate reference and address is written into the editing box.

LISTS_INPUTS
$ Controller Input List
K Controller;Input;List;Dragging;Dropping;
+ Contents:350

$ K + Controller - Drivers

Also activated with key CTRL D, see also Button Syntax

This option allows you to list all the names and values of the drivers in a controller. You can select All drivers or only those with Names. If the controller is not selected, you will be prompted to choose one.

Set each driver's alarm action with the Alarm Maintenance Interval and Readback menus.

You can copy to the clipboard or print the contents of the list.

Hint for Advanced users:
To add a new data point, open the yellow toolbar. Then hold the CTRL key and drag the desired item from the list onto the page. The appropriate reference and address is also written into the editing box.

To change an existing data point, open the yellow toolbar. Then double click the desired item in the list and the appropriate reference and address is written into the editing box.

LISTS_DRIVERS
$ Controller Driver List
K Controller;Driver;List;Dragging;Dropping;
+ Contents:360

$ K + Controller - Knobs

Also activated with key CTRL K, see also Button Syntax

This option allows you to list all the names and values of the knobs in a controller. You can select All knobs or only those with Names. If the controller is not selected, you will be prompted to choose one.

You may adjust any knob directly from the list. Highlight the desired knob and click the Adjust menu. The adjust knob box will appear. The list item will show the new value if the controller accepts the change.

You can copy to the clipboard or print the contents of the list.

Hint for Advanced users:
To add a new data point, open the yellow toolbar. Then hold the CTRL key and drag the desired item from the list onto the page. The appropriate reference and address is also written into the editing box.

To change an existing data point, open the yellow toolbar. Then double click the desired item in the list and the appropriate reference and address is written into the editing box.

LISTS_KNOBS
$ Controller Knob List
K Controller;Knob;List;Dragging;Dropping;
+ Contents:370

$ K + Controller - Switches

Also activated with key CTRL W, see also Button Syntax

This option allows you to list all the names and values of the switches in a controller. You can select All switches or only those with Names. If the controller is not selected, you will be prompted to choose one.

You may adjust any switch directly from the list. Highlight the desired switch and click the Adjust menu. The adjust switch box will appear. The list item will show the new value if the controller accepts the change.

You can copy to the clipboard or print the contents of the list.

Hint for Advanced users:
To add a new data point, open the yellow toolbar. Then hold the CTRL key and drag the desired item from the list onto the page. The appropriate reference and address is also written into the editing box.

To change an existing data point, open the yellow toolbar. Then double click the desired item in the list and the appropriate reference and address is written into the editing box.

LISTS_SWITCHES
$ Controller Switch List
K Controller;Switch;List;Dragging;Dropping;
+ Contents:380

$ K + Controller - Zone Names

LISTS_ZONES
$ Controller Zone List
K Controller;Zone;List;Dragging;Dropping;
+ Contents:385

[#] [$] [K] [+] Controller - Tidy Lists

Also activated with Function key F2.

This option brings all the lists to the top of the screen, and arranges them as they were when first invoked.

[#] LISTS_SHOW_IN_FRONT
[$] Controller Tidy List
[K] Controller;List;Tidy
[+] Contents:390

$ K + Phone - Dial

See also Phone Menu, Button Syntax, Data point and MNC or TMN number table,

Doorway's phone directory is used for manually dialling BMS sites, and can hold up to 120 entries. You can store a site name with each phone number, and up to five BMS lan numbers which are required if using MNC, TMN, ANC and V23 SANC modems.

Press the Dial button in the directory screen to dial the selected number. The modem type is set using menu Tools-Communications. SeaChange Doorway only supports High Speed modems.

If the number is already connected the request is ignored. If the modem is connected to another number the HangUp command is issued and the Dial re-attempted automatically.

If the Lan change box is checked then before dialling it will select menu File-Change Lan Numbers. The next page(s) to be shown will have the selected lan numbers modified as it is loaded.

Autodialling with MNC or TMN type modems
Autodialling with High Speed Modem

PHONE_DIAL
$ Phone Dial
K Phone;Dial;Dir;Modem;ANC;SANC;MNC;TMN
+ Contents:392

$ K + Phone - Hang Up

see also Phone Menu and Button Syntax

Syntax:
Button *DIAL HANGUP
Datapoint $*DIAL HANGUP

When using a high speed modem this option interrupts the BMS data traffic and commands the modem to end the phone call, and 'hang up' the line.

When using MNC, TMN, ANC and V23 SANC modems the BMS address and lan must be set, using menu Tools-Communications.

When using UniNetworking with the MNC etc. number table, remember to move off the page which requested data from the autodialled remote site, before using this command. The command sets the MNC's internal traffic timer temporarily from its normal 2 minutes to 0 seconds. If there are no messages going across the link then the MNC will promptly end the phone call, and report DISCONNECTED. If a page is showing which requests data over the phone then the line will stay open, despite this command being sent.

If using virtual INC routing with an MNC etc. you may hang up at any time. However data points will eventually show Lan Error since the BMS lan cannot find a route for the messages.

PHONE_HANG_UP
$ Phone Hang Up
K Phone;Hangup;Modem;ANC;SANC;MNC;TMN
+ Contents:393

$ K + Phone - Reset Modem

see also Phone Menu and Button Syntax

Syntax:
Button *DIAL RESET
Datapoint $*DIAL RESET
(Only applicable to high speed modems.)

It is necessary that the modem is configured correctly if phone calls are to be reliable. Many modems are able to remember settings by performing certain commands. Others always power up with the manufacturers default set. Refer to your modem instructions for details.

Before dialling with your high speed modem we recommend first using this command to put the modem into a known state.

Note: You can only reset a modem which is not making a call. If the modem is currently making a call then the reset commands will merely be sent to the other end of the line, with unpredictable effects.

Doorway keeps the modem reset command in the DOORWAY.INI file. If the ModemReset entry in the INI file is not found or is less than 3 characters long, Doorway recreates the standard reset setting and places it in the INI file.

You may manually edit with Notepad the INI file ModemReset entry to suit your particular modem. The INI file entry must start with the Hayes command characters AT.

Standard setting
ModemReset=ATZ

Note: use **/** to signify the Enter key to build a more complex reset command as required, and also after certain commands like ATZ which the modem takes some time to action.
eg ATZ / AT&B1

PHONE_RESET_MODEM
$ Phone Reset Modem
K Phone;Reset;Modem
+ Contents:394

$ K + Phone - AT Commands

see also Phone Menu and Button Syntax

Syntax:
Button *DIAL ATCOMMAND
Datapoint $*DIAL ATCOMMAND
(Only applicable to high speed modems.)

To give you the widest choice of high speed modem we have provided a screen for sending configuration commands to the modem. Having determined which configuration settings are appropriate use the modem's non volatile memory (if provided) to remember the settings between sessions. See the modem instructions for details. Alternatively modify the ModemReset entry in the DOORWAY.INI file to suit. See Reset Modem

Doorway allows both upper and lower case text to be used, which may sometimes be convenient. Modems expect AT commands to be in upper case although many modems will understand lower case as well. You may also send one or more CTRL characters to the modem by using the **^** character preceding the letter A to Z. To send CTRL Z enter **^Z** and Doorway will convert this to the single ASCII character.

The so called 'Hayes compatible' AT command set is unfortunately subject to wide variations in syntax between manufacturers, so the manufacturers literature will have to be studied to use many advanced features. Fortunately for normal use the common commands seem to be the same for most manufacturers.

examples:

AT&F	Reset to manufacturers defaults
ATZ	Reset to previously stored power on defaults
ATH1	On hook, useful for checking for dial tone
ATH0	Off hook
ATD1234	Dial number 1234
ATDT	Tone dialling
ATDP	Pulse dialling
ATE1	Echo commands
ATV1	Modem responses in Text, not code numbers

Note: You can only send commands to a modem which is not making a call. If the modem is currently making a call then the commands will merely be sent to the other end of the line, with unpredictable effects.

PHONE_AT_COMMANDS
$ Phone AT Commands
K Phone;AT Commands;Modem
+ Contents:395

$ K + Phone - Status

See also Phone Menu and Button Syntax

Syntax:
Button *DIAL STATUS
Datapoint $*DIAL STATUS

The phone status screen show the activity of the modem and its telephone line.

The screen appears automatically, and closes when a 'connected' message appears, or after a short while.

When using a High Speed modem the phone status screen monitors the 'AT' modem command sequence. BMS data requests would disrupt the command sequence, so the phone status screen suspends BMS requests. Note that if the screen is closed manually BMS data requests immediately recommence, which may disrupt the connection.

A text data point can show the current modem and telephone number using:
$*TEL

PHONE_STATUS
$ Phone Status
K Phone;Modem;Status;On Line;Off Line
+ Contents:396

$ K + Autodialling with MNC, TMN, ANC and V23 SANC Modem

See also Communications Settings, Phone Menu, Autodialling with High Speed Modem, and V23 SANC

Example syntax:
Button *DIAL 01234 567890 / 1,4,5,6,7
Datapoint $*DIAL 01234 567890 /1,4,5,6,7

Doorway supports the proprietary autodialling modems MNC, TMN, ANC, and V23 SANC. When the MNC etc. modem phones another site call progress messages from the modem are shown on the screen. Modem alarms are archived as BMS alarms.

Two methods are available for autodialling with MNC or TMN type modems.
'UniNetworking' is simple and works well. The MNC 'number table' is configured either manually or dynamically by page data points, giving considerable flexibility, and it is easy to diagnose faults. The **'Virtual INC'** facility is better for larger sites, the MNC emulates the INC hardware so messages are routed by lan only. UniNetworking is used by controllers and 921 products, Virtual INC by 94x products.

UniNetworking *(non preferred)*
You may set up data points on page(s) to dynamically control the MNC number table. See Data point and MNC number table. Alternatively manually enter the details for each remote controller in the MNC's phone number table in the same way as for controller alarm routing. This can be done by selecting Tools - Engineering to get to Doorway Engineering. Then Controller - Map to choose the MNC. Then select Controller - Configure to talk to the MNC, and hence set up its phone list.

If the MNC is located on a BMS internetwork then only one entry for each remote lan is needed, and the individual controller addresses are not needed, which is very convenient. Up to 10 remote lans can then be accessed simultaneously. When the MNC sees a request for an address which is in its number table it dials the remote site. For historic reasons the communications protocol for dynamically controlling UniNetworking telephone numbers is limited to 14 digits. Manually configured numbers can be up to 20 digits.
See Data point and MNC number table

Virtual INC *(preferred)*
The MNC may be located either on the BMS local lan or on the BMS Internetwork. If located on the local lan (lan 0) the MNC behaves as if it contains a BMS INC and internetwork, and only the remote lan number is required. Doorway first tries to find a route through the MNC with the address set in the Communications option screen. If the MNC at this address is busy or not present then a 'visitor' search locates the next available MNC anywhere on the BMS.

The MNC must be internally configured to permit 'Visitor dial-out' and the 'Position' must be set correctly. All five virtual lan routes implemented in the MNC software may be used. In common with 94x products data from only five lans can be received during a connection. To communicate with any other lans at the same telephone number you have to disconnect and redial, this is a feature of the BMS design.

Direct connection to MNC or TMN
Direct connection to the MNC or TMN is easy with Doorway, and saves hardware. Remote sites can be mapped, and lan laptimes measured for health. Select MNC direct connect, local MNC address, and MNC lan=0 in menu Tools-Communications. If the settings are correct Doorway will Map and find the local MNC. Now use engineering configuration to remove all entries from the MNC number table. From the deFaults page set oWn lan=1 (although this sounds wrong!). Set MNC alarm reporting addRess=1, which is Doorway's internal address. A remote single lan is numbered by the remote MNC's oWn lan setting, so this must be known for successful operation, note that this defaults to lan 1. A remote MNC positioned on an internetwork has lans as set by INC hardware, and the Internetwork lan number is viewed by using the remote MNC address. Incidentally lan numbers allocated by early 921 supervisors, were often used just to select different phone numbers, rather than actual addresses, which has caused a lot of confusion.

A button or a data point may dial a virtual lan(s) connection
Example syntax:
Button *DIAL 01234 567890 / 1,4,5,6,7

PHONE_MNC
$ Autodialling with MNC, TMN, ANC and V23 SANC Modem
K Modem;ANC;SANC;MNC;TMN;Virtual INC;INC;Uninetworking;Phone;Limit;Autodial;Direct connection;V21;V23;SW
+ Contents:397

Datapoint $*DIAL 01234 567890 /1,4,5,6,7
If the correct number is already connected the request is ignored. If the modem is connected to another number the HangUp command is issued and then the Dial is re-attempted.

Phone Limit
About 15 minutes after a call is connected all data requests are halted and the user is informed. This reduces the chance of large phone bills caused by leaving unattended a page requesting data from a remote site.

The user is asked whether the modem is still actually making a call. If YES the call timer will run for another 15 minutes. If NO the timer is cancelled. If the modem is actually still on line then remember that this timer is off. The NO selection is provided in case Doorway does not receive a DISCONNECTED message when the call ends. The call timer is always restarted when the modem reports DIALLING.

Using MNC and TMN modems on the same lan or at remote sites.
With only one MNC or TMN modem fitted Doorway sends dial requests to the modem address set in menu Tools-Communications. With more than on modem fitted you can send the dial request to the desired modem by prefixing the address to the phone number.
Example syntax:

Button	*DIAL 01234 567890 / 1	address set in Communications
	*DIAL o96,01234 567890 / 1	96 on local network
	*DIAL L112,01234 567890 / 17	112 on internetwork

Calls between MNC and TMN use the legacy V21 300 baud full duplex signalling protocol as used in the 1970's. To request V21 300 baud add prefix **SW** to the phone number.
Example syntax:

Button	*DIAL SW01234 567890 / 1	address set in Communications
	*DIAL o96,SW01234 567890 / 1	96 on local network
	*DIAL L112,SW01234 567890 / 1	112 on internetwork

MNC, ANC and SANC special codes:

J	Wait for dial tone
K	2 second pause
L	Pulse dial
M	Tone dial (default)
SW	V21 300 baud for connection between MNC and TMN
RP	Pagers etc. using V21 300 baud full duplex, MNC and ANC only
RR	GSM SMS and pagers etc. at V33 autosensing baud, full duplex, TMN and AND only

$ K + Autodialling with High Speed Modem

See also Communications Settings, Phone Menu, Autodialling with MNC, TMN, ANC and V23 SANC Modem and Autodialling with High Speed Modem

Example syntax:
Button *DIAL 01234 567890
Datapoint $*DIAL 01234 567890

Doorway's high speed modem facility uses the basic Hayes command to manipulate the dialling sequence. All modems recognise these basic commands, and no user settings are required.

If the number is already connected the request is ignored. If the modem is connected to another number the HangUp command is issued and then the Dial is re-attempted.

The phone status screen monitors the 'AT' modem command sequence. BMS data requests would disrupt the command sequence, so the phone status screen suspends BMS requests. Note that if the screen is closed manually BMS data requests immediately recommence, which may disrupt the connection.

Phone Limit
This works the same way as in Autodialling with MNC, TMN, ANC and V23 SANC Modem.

TMN-H/G modem
The TMN-H uses an industry standard high speed modem (V34 & V90) in PC card as used with notebook PC's to interface with the fixed line telephone network. Additional electronics implements the legacy MNC signalling protocol. TMN-G is similar to TMN-H except uses a GSM PC card to interface to a GSM mobile telephone network.

ADL modem
This uses a low cost simple standard modem with 2400 baud maximum speed (V22bis) to interface to a fixed line telephone network.

Doorway can communicate using a TMN-H/G to a remote TMN-H/G or ADL modem using the legacy protocol, which is selected with a Lan number of 1 or greater with the dial instruction.

Doorway can communicate using an industry standard modem to a remote TMN-H/G or ADL modem using industry standard 'Hayes' protocol, which is selected by omitting the Lan number from the dial instruction.

In Doorway for TMN-H/G set RS232 baud=9600, for ADL set RS232 baud=2400.

PHONE_HIGHSPEED
$ Autodialling with High Speed Modem
K Modem;High Speed;Phone;Limit;Autodial;TMNH;TMNG;ADL
+ Contents:398

[#] [$] [K] [+] Autodialling with High Speed Modem to Remote Site

See also Communications Settings, Phone Menu, and Autodialling with High Speed Modem

To use a High Speed modem at a remote site requires the modem to be 'configured' in the appropriate mode including 'autoanswer' of calls. While the SeaChange SLT automatically configures a modem, BMS controllers and CNC devices do not. For the latter the user has to configure the modem, and then store the settings in the modem's power-up 'profile'.

Modems generally adhere to the 'Hayes' method where commands are prefixed AT and entered with a carriage return (character 13). While the principal commands for dialling and hanging up are standard, there are wide variations between brands for other commands. Fortunately there are a few groups of brands with similar instruction sets. The settings below have been found appropriate, although variations may still be required.
Compatible BMS systems generally require 9k6 or 19k2 baud with 7bit Odd parity. Modems 'autobaud' to the PC 'AT' command sequence, but do not 'autobaud' to controllers and CNC's etc. Fortunately modems usually 'store' the current baud, bit and parity settings. Hence if you use Doorway to configure the modem, the baud, bit and parity settings will be stored correctly. Most controllers 'local' port are fixed at 9k6 baud.

Rockwell generic - models usually up to 14,400bps (eg Zoom V32)

AT&F	load factory defaults
AT&C1	CD follows carrier
AT&D0	DTR ignored
AT&S0	DSR on
AT&K0	disable all flow control
ATS0=1	autoanswer after 1 ring
ATS30=3	mins inactivity time before hangup
ATQ1	connection reporting off
ATE0	do not echo commands
AT&Y0	power on with profile 0
AT&W0	save in NVRAM profile 0

useful information:-

AT&V	View settings
AT\S	view Status (some modems only)

Rockwell generic - models 28,800bps and later (eg Zoom V34 & V90)

AT&F	load factory defaults
AT&C1	CD follows carrier
AT&D0	DTR ignored
AT&S0	DSR on
AT&K0	disable all flow control
ATS0=1	autoanswer after 1 ring
ATS30=3	mins inactivity time before hangup
ATQ1	connection reporting off
ATE0	do not echo commands
AT&Y0	power on with profile 0
AT&W0	save in NVRAM profile 0

useful information:-

AT&V	View settings

3Com/US Robotics (eg 56K Faxmodem & Sportster V34 & V90)

AT&F	load factory defaults
AT&C1	CD follows carrier

[#] PHONE_HIGHSPEED_REMOTE
[$] Autodialling with High Speed Modem to Remote Site
[K] Modem;High Speed;Phone;Autodial;Auto Answer;Remote;Site;Hayes;AT Commands;Cable;Rockwell;Zoom;3Com;US Robotics;CNC;Controller
[+] Contents:399

AT&D0	DTR ignored
AT&S0	DSR on
AT&H0	all tx flow control disabled
AT&I0	rx software flow control disabled
AT&R1	rx hardware flow control off, RTS ignored
AT&B1	fixed serial rate (ie follows device)
ATS0=1	autoanswer after 1 ring
ATS19=3	mins inactivity time before hangup
ATQ1	connection reporting off
ATE0	do not echo commands
ATY0	power on with profile 0
AT&W0	save in NVRAM profile 0

useful information:-

ATI4	View current settings
AT$	Basic commands
ATD$	Dial commands
AT&$	& commands

Cable

Most modems are fitted with a 25 way RS232 socket. Connect a standard 9 to 25 way BMS cable to a PC and use Doorway to set up the above configuration. Make sure you use same baud as will be used by the controller or CNC (eg 9600 or 19200 baud). You require the special modem adapter shown below to connect the modem to the controller or CNC. You will probably have to assemble your own adapter, see below. The modem is configured using item 1, an industry standard cable. Then the modem is connected to an IQ2xx controller using items 2, 3 and 4, or to a CNC using item 2 only.

1. Std cable PC to configure modem, also IQ151 controllers etc.

<PC	9way skt	25way plug	modem>
	3	2	> tx
	2	3	< rx
	7	4	> rts
	8	5	< cts
	6	6	
	5	7	gnd
	1	8	< cd
	4	20	> dtr
	9	22	

2. Special modem adapter.

<modem	25way plug	25way plug	item 3 or device with 25 way skt>
	3	2	> tx
	2	3	< rx
	4	5	< cts
	7	7	gnd
	8	4	> rts
	8	20	> dtr

notes: *The adapter is not symmetrical, so label clearly*
This is not the same as a 'null modem'
Pin 8 is connected to both pins 4 and 20
CD regulates data flow from BMS
Parts example see below

3. Std PC 25way to 9way converter.

<item 2	25way skt	9way plug	item 4>
	2	3	> tx
	3	2	< rx
	5	8	< cts

6	6	
7	5	gnd
4	7	> rts
8	1	
20	4	> dtr
22	9	

4. Std BMS cable PC 9way to IQ2xx controller.

<item 3	9way skt	RJ11 header	controller>
	3	1	> tx
	2	6	< rx
	8 link to 4 on 9way		
	5	5	gnd
	4 link to 8 on 9way		
	7	3	> rts

RJ11 plug

Pins 1-6 left to right with plug away from you and connectors at top

Typical colours:

1 - White
2 - Black
3 - Red
4 - Green
5 - Yellow
6 - Blue

5. Std BMS cable PC 9way to IQ1xx controller - 5pin.

<item 3	9way skt	5pin header	controller>	pin
	3		> tx	1 or 5
	2		< rx	2 or 4
	8	link to 4		
	5		gnd	3
	4	link to 8		

Useful components for making cables.

Available from RS Components Ltd in UK.

RS 210-1082 Line link kit
RS 466-208 9 way D solder socket
RS 484-789 9 Way D hoods (pack of 5)
RS 362-825 Multi core non screened cable 3 cores of 7/0.2mm^2 (reel of 25m)
RS 237-1685 Crimp socket shell, unshrouded header 6 way single row (trim to 5 ways)
RS 233-1889 Crimp unshrouded 32-28awg (pack of 100)
RS 446-664 6 way RJ11 patch cord

Notes:-

Using AT&C1 and the CD (carrier detect) hardware connection shown above uses the BMS hardware flow control to stop the controller sending BMS messages which would confuse the modem when waiting for a call. Once the modem is 'connected' all BMS messages will be passed through the modem.

IQ90, 100 and Plus range BMS controllers were not fitted with any hardware flow control.

The cables shown above use industry standard cables and 9-25way adapters for convenience.

$ K + Help - Contents

Also activated with Function key F1.

This option shows the contents screen of this help file.

Throughout Doorway Function key F1 will always invoke the relevant help page.

HELP_CONTENTS
$ Help Contents
K Help;Contents;
+ Contents:400

$ K + Help - Tutorial

This option starts the Doorway tutorial. The tutorial has been built using standard Doorway pages. Many pages in the tutorial have only text, the other pages have pictures which were drawn using the quite simple application Microsoft Draw. Microsoft Draw is included 'free' with several Microsoft applications. The tutorial is only intended to give a short introduction to Doorway's main features.

HELP_TUTORIAL
$ Help Tutorial
K Help;Tutorial
+ Contents:410

$ K + Help - About

This displays a dialogue box which identifies the Doorway version and serial number. Also sometimes shown is the name of the licensed end user or the supplier that Doorway was sold through. The information button provides further information on the authors of the product, and shows Doorway Systems address for further information and support. This is also available in this help file under Introduction to Doorway from the Contents page.

HELP_ABOUT
$ Help About
K Help;About;
+ Contents:420

$ + File Menu Options

Please select a topic you wish to view help on:

New
Open
Save
Save As
Save in Version 1 Format
Optimise Data Points
Return to Previous Page
Set Startup Page & Paths
History
Convert Path References
Import PIC scale
Convert from PIC format
Change Lan Numbers
Change Addresses
Copy Data to Clipboard
Print Data
Print Picture
Exit

FILE
$ File Menu
+ Contents:003

$ + Edit Menu Options

Please select a topic you wish to view help on:

Edit Data Points
Edit Buttons

Edit Mode
Edit Size
Snap to Grid
Add Data Point
Add Button
Change Title
Change Background Colour
Change Scaling
Change Animation Rate
Find & Replace
Load Picture File
Cut Picture
Copy Picture
Paste Picture
Edit OLE Picture
Insert OLE Picture
Insert Word, Powerpoint or Visio OLE Picture

EDIT
$ Edit Menu
+ Contents:004

$ + Tools Menu Options

Please select a topic you wish to view help on:

Chat
Log In & Out
Log Book
Notepad
Windows Resources
Communications
DDE Links
Lan Diagnostics
Fast Refresh
Engineering

TOOLS
$ Tools Menu
+ Contents:005

$ + System and Controller Menus

Please select a topic you wish to view help on:

System Menu

Map
Alarm Archives
Event Calendar
Schedules
Snapshots
Download Time Zones Calendar
Clock list
Lonworks Point list
SeaChange Label List
TMN-MNC Number Table
Graphs
Chart
SeaChange Pages
Generic Text Pages

Controller Menu

Time
Time Zones
Alarms
Plots

Get All
Sensors
Inputs
Drivers
Knobs
Switches
Tidy Lists

LISTS
$ System and Controller Menu
+ Contents:006

[#] [$] [K] [+] Phone Menu Options

Please select a topic you wish to view more help on:

See also Button Syntax

Doorway has the capability to work with either modern high speed modems and the earlier V23 half-duplex 1200 baud BMS modems. Select the modem type in the Tools-Communications screen.

High speed modems:
The high speed modem option permits use with the wide range of faxmodems available today. Full duplex communication at high speed means that BMS data is displayed at the same rate as when directly connected to the BMS. V90 faxmodem (up to 56,000 baud) were available for less than £60 in January 2001.
The high speed modem is connected either to a BMS Lan hardware connection or directly to a suitable controller. To get the highest system performance use the highest baud rate available for the hardware connection, usually 19,200 baud.

Autodialling with High Speed Modem
Autodialling with High Speed Modem to Remote Site
Dial
Hang Up
Reset Modem
AT Commands
Status

V23 half-duplex 1200 baud modems:
BMS data display rate is constricted both by the slow baud and also by the half duplex (one way at a time) limitation.

Autodialling with MNC type modems
Data point and MNC number table
Dial
Hang Up
V23 SANC
Status

[#] PHONE
[$] Phone Menu
[K] Modem;FaxModem;V90;V34;V32;V23;ANC;SANC;MNC;TMN;Autodial;Phone
[+] Contents:007

$ + Help Menu Options

Please select a topic you wish to view help on:

Contents
Tutorial
About

HELP
$ File Menu
+ Contents:008

$ K + Uninstalling Doorway

IMPORTANT:
Doorway is licensed with a security software licence token (software 'dongle'). This token is valuable to you. To correctly de-install the licence token from the hard disk, run the Doorway Setup program from the Doorway master disk. When the options screen appears select De-install Licence to recover the licence token back to the master floppy disk. The Licence token consists of the folder DOORWAY.203 and its contents which have attributes Hidden and System. The licence files are keyed to the hard disk sector and other parameters hence copying does not create a new licence.

See also Licence Agreement

Doorway installation makes **NO** changes to CONFIG.SYS, AUTOEXEC.BAT, WIN.INI, SYSTEM.INI or the Windows registry database, so that Doorway can be easily uninstalled. Now follow these instructions to remove Doorway from your PC:

1) Delete all the files in the installation folder and below
C:\DOORWAY etc. (see security software licence token above)

2) Delete the following files from C:\WINDOWS\SYSTEM
DOORWAYC.VBX
DOORWAYN.VBX
DOORWAYT.VBX

3) Doorway installed the following files in C:\WINDOWS\SYSTEM
Warning: Removing files in section 3 may stop other programs from functioning correctly. These Microsoft Windows library files are **not** unique to Doorway and may be supplied with other applications, so before you delete any of these files, please check to see if any of your other applications require them. If you are not sure, then don't delete them.
CMDIALOG.VBX
CSWSKCTL.VBX
CSIMGCTL.VBX
CSIMGL16.DLL
DRAGDROP.VBX
GAUGE.VBX
GRAPHX.VBX
GSW16.EXE
GSWAG16.DLL
GSWDLL16.DLL
KEYSTAT.VBX
MSCOMM.VBX
MSAFINX.DLL
MSAJT112.DLL
MSAJT200.DLL
OLECLIEN.VBX
PICCLIP.VBX
VBRUN300.DLL
VBDB300.DLL

DISK_FILES
$ Uninstalling Doorway
K Uninstalling;De-install Licence;Disk;File;Deleting;Removing;Security;Token;Licence;Dongle;Installation removal
+ Contents:430

$ K + Picture Formats

See also File Formats

Windows picture formats are of only two basic types, Windows MetaFiles with extension WMF based on vector information, and Windows Bitmaps with extension BMP based on pixel information. Doorway supports several compression formats for bitmap files, such as RLE, JPG, GIF and PCX. Embedded files with extension OLE contain metafiles or bitmaps together with other information to make editing within the source application very easy.

Doorway assumes files with the extension WMF, OLE and PIC are resizable. Menus Edit-Load Picture File and Edit-Paste Picture have an option to use a bitmap type files in a fixed or resizable mode. Menu Edit-Load Picture has an option to create and use a BMP file from JPG, GIF and PCX compressed files. BMP files usually display faster as no decompression is required. If you temporarily reduce Windows colour depth to just that required for the image the BMP file created will be smaller.

Doorway can also use compressed bitmap picture files in Microsoft's Run Length Encoded format (.RLE), Zsoft's Paintbrush format (.PCX), Compuserve's 256 colour format (.GIF) and the 'Joint Picture Experts Group' lossy compression format (.JPG). The time taken to rebuild the data from a compressed format depends on the compression used and the CPU (processor) speed. For the fastest picture display convert compressed formats to BMP format. To convert a backdrop picture in Doorway use menu Edit-Load Picture File and tick the create BMP from JPG,GIF or PCX. Alternatively use menu Edit-Cut Picture, then Edit Paste Picture. the new format will be BMP.

Windows metafiles contain the 'vector' or shape information about the items in a picture. Metafiles are often small as they only contain instructions on how to draw the vector shapes, 5-100k is normal. Metafiles can be easily resized and retain quality.

Bitmaps contain the individual pixel representation of a picture, and are used by painting type programs, document scanners and digital cameras. BMP bitmap files are often quite large, 200k-1M is normal. Photographs use bitmaps and when resized can lose image quality. Microsoft's RLE format is a simple format used to reduce file size. Note that RLE decoding is actually performed in the Windows display driver, and is not supported by all display drivers.

Microsoft OLE is a technology for passing information from one application to another. The OLE file is a container which holds the picture in WMF or BMP format and other information required by the source application. Doorway uses OLE to show pictures created in another Windows application without having to understand the file type. The advantage of using OLE is that the picture may be re-edited from Doorway at any time without the complication of file import/export routines. It is recommended to use the OLE method where possible to simplify picture editing and to eliminate file format problems.

In*a*Vision files with the extension PIC contain instructions for creating a metafile. In*a*Vision PIC files have been used to hold both picture and BMS codes in one file. For further information please see Using PIC files.

If your chosen drawing package does not support OLE or cannot save the file in one of Doorway's supported formats, Copy the picture to the clipboard, and then Paste into Doorway. Doorway will save the picture in either WMF or BMP format as appropriate. In this case be sure also to save the picture in the drawing packages own format to allow future editing.

Some popular vector drawing packages
Note: The product names shown below are the copyright of their respective authors.

Microsoft Visio (Highly recommended)
If the OLE link to Visio fails see Insert OLE Picture
Microsoft Powerpoint
Microsoft Word
Corel Draw
Adobe Illustrator
Autodesk AutoCad

PICTURE_FORMATS
$ Picture Formats
K Picture;PCX;BMP;WMF;PIC;DRW;RLE;JPG;PCX;GIF;Draw;Designer;Microsoft;Micrografx;Visio;In*a*Vision ;Corel;Format;Images
+ Contents:440

Obsolete Windows drawing packages, use with caution, see help topic 'Designer'.
Micrografx Designer 3.x
Micrografx Draw 3.x
Micrografx In*a*Vision

Some popular Bitmap painting packages
Microsoft Windows Paint
PaintShop Pro

A feature in Windows Paint, PaintShop Pro and some other applications is the capability of placing a bitmap inside a metafile file or vice versa. Doorway will display such compound files. Note that many drawing packages cannot edit compound files.
With compound WMF files Windows XP, 2000 and NT4 are unable to predetermine the display strategy so first build the picture in a temporary memory area before writing to the screen. This also occurs every time any section of the picture is covered or uncovered by another screen item. The memory movements results in slower than usual screen redraws. If insufficient memory (RAM) is available application instability may occur. Doorway will warn when a WMF file larger than 2MB is displayed.

$ K + Sounds and WAV files

See also System Alarm Panel and Archives

BMS Alarms
Doorway will sound as each alarm is received by the alarm panel, if the alarm sound option is selected. The panel will resound if the **MIN**utes time is non zero and alarms remain unacknowledged. The alarm sound is selected in the alarm panel. Individual alarms may be customised by placing a sound instruction in the label in the BMS controller.

eg S1 $=Room Temp !!
S1 $=Room Temp !! ding

BMS data points
A digital status data point can sound. Place a **!!** (double exclamation) at the end of the data point on-text or off-text as required. Each time the data point is refreshed and if that status has text with a **!!** then the sound is played. Note that the **!!** is not displayed. The alarm sound is set in the alarm panel or each one may be customised. See also Edit Data Points

example: I2(S) / Alarm !! / Normal / 12 / 10 /
I2(S) / Alarm !! ding / Normal / 12 / 10 /

Text data points
A text data point can sound once when the page is opened.

example: $This point sounds once !!
$This point sounds once !! ding

Longer sounds
Many PC's standard 'beepers' are not very loud. For use with Windows 9x only Doorway has a multi-tone alarm sounder whose duration is adjustable. Type #1 for a short tone, through to #50 for a longer tone series. Use the test button to see how your PC sounds. The multitone sounder can be used in any of the situations above.

User Customised Sound WAV Files
Doorway can only play WAV sound files if a PC sound card is installed.
To save space on data points and in BMS alarm labels the WAV extension is not required, and Doorway assumes the file is type .WAV. Sound files must be placed in Doorway's IMAGES folder, or you may use a fully formed DOS path.

Note: Extra spaces are used above for clarity, and are not required.

ALARM_CHOOSE_WAV
$ Sound and WAV files
K Alarm;Sound;WAV;Beep;Dynamic;!!;Images Folder
+ Contents:450

$ K + Load a MAP file

This command allows you to load a different list of controllers into the Controller Selector. This allows lists of multiple sites to be stored on disk.

The file DOORWAY.MAP is loaded every time the program is started.

LOAD_MAP
$ Open a MAP file
K Map;Open;Load
+ Contents:460

$ K + Save a MAP file

This command allows you to store the current list of controllers from the Controller Selector to a file. You may choose any filename you like, but it must have a MAP extension.

The file DOORWAY.MAP is loaded every time the program is started.

SAVE_MAP
$ Save a MAP file
K Map;Save
+ Contents:465

$ K + Choose a Font

This dialogue allows you to choose the font that you wish to use for the selected Data Point.

See also Grey Edit Style

Extra features available when using certain fonts:-
If *ARIAL* font is used the label appears on the first line, and the value and units on a second line.
If *COURIER*, *COURIER NEW* or *FIXEDSYS* font is used then the text is fixed spacing, and is useful where items need to align. This feature is used in the generic text pages.

STYLE_FONT
$ Choose a Data Point font
K Style;Font;Data;Point
+ Contents:470

$ K + Choose a Data Point Paper Colour

This dialogue box allows you to choose the paper (background) colour for the selected Data Point. This colour is displayed when no dynamic colours have been specified for particular values.

Digital (binary) data points may be set to change background colour (and text) as the status changes. A negative colour number will flash between the dynamic colour and the selected paper (background) colour. See also Edit Data Points

Note: If the Transparent property has been selected then the paper colour is not visible.

STYLE_PAPER
$ Choose a Data Point Paper Colour
K Style;Paper;Data;Point;Flash;Background
+ Contents:475

$ K + Choose a File

This dialogue box allows you to choose which DAT file this button will jump to.

Instead of a DAT file you can specify a program, (*.EXE, *.BAT, *.COM or *.PIF) which will be executed when the button is clicked.

Windows remembers associations for many file types, so the program name is often not required.
Examples:
C:\WINDOWS\CONTACTS.CRD for Cardfile
C:\FILES\MEMO.WRI for Write
C:\FILES\LETTER.DOC for Word
C:\EXCEL\BUDGET.XLS for Excel

If your application does not run then put the path and program name first.

e.g. C:\CAD\DRAW.EXE C:\FILES\PICTURE.DRW

Hint for Advanced users
Windows looks for application associations by checking its Registration database (REGEDIT.EXE), then WIN.INI, then finally the DOS path. Many applications register themselves during installation.

JUMP_FILES
$ Choose Button file
K Button;File;Cardfile;Write;Excel;Word
+ Contents:480

$ K + Editing Data Points - Yellow Toolbar

See also Edit Buttons Data Speed and Moving Items Around

The yellow toolbar shows all the parameters for a data point being requested from the BMS. To look at a particular data point either click with the mouse on an existing data point on the page or move through the edit list with the scroll bar. Up to 120 data points may be placed on each page.

For information on data point syntax see:
Formatting Analog Values and Maths Expressions
Sensor
Inputs and Counters
Drivers
Knobs
Analog Nodes
Switches
SeaChange Configuration
Control Settings
Array Items
Manual Override
Binary Nodes
Time and Date
Time and Date from PC
Time Zone
Adjusting and Displaying other items
Text Data Points
Data Point as Button
Data point and MNC number table

Right Mouse Button Properties
BMS Types
Dynamic Images

Controller and LAN may be entered directly or selected using the MAP button.

PALETTE shows a table of optional data sensitive background colours with optional flash, see Data Point Paper Colour
STYLE allows the selection of type styles from the Grey Edit Style toolbar.
DELETE removes the current entry from the list and the page.
ENTER inserts or updates the current entry on the page.
CLOSE finishes the editing session.

Hint for keyboard users:
With the yellow toolbar in focus the Page Up and Page Down keys will move through the list, and also place the mouse pointer over each data point in turn.

With the main picture in focus the Home, End, Page Up and Page Down keys will place the mouse pointer over each data point in turn. Then press the Insert key to move the details to the yellow toolbar.

DATA_EDIT_MODE
$ Data Point Editing Window
K Edit;Data;Point;Yellow;Syntax;Palette;Style;Colour;Flash;Toolbar;Mouse
+ Contents:490

$ K + Formatting Analog Values and Maths Expressions

<<<

see also Analog Nodes, Edit Data Points and Adjusting and Displaying other items.

Many analog values from controllers are sent with two digits after the decimal point. Doorway can reduce the displayed precision, using correct mathematical rounding to show either one digit after the decimal point, or only whole numbers. Some formatting codes possible are shown below.

Formatting can be combined with all the other parameters in the data point.

Examples

1 decimal place.

```
A200(V){#0.0}/50/10/degC/
S1($,V,%){#0.0}///text/*
K1($,V,%){#0.0}/40/-10/
D1($,V){#0.0}
```

Alternatively replace (#0.0} above with:

{#0}	Whole numbers only
{#0.00}	2 decimal places
{#000000}	6 whole numbers
{#000000.00}	6 whole numbers and 2 decimal places
{#0.####}	Up to 4 decimal places
{#.0}	Suppress leading 0 when value less than 1
{#0.00%}	Returns the number multiplied by 100 with percent sign % appended

etc.

Format codes may also contain text which must be enclosed within single quotation marks.
{#0.0 'degC setpoint')

LonWorks® devices can return complex data fields to the Doorway LNS Add In. Discussion of these fields is beyond the scope of this section. Doorway supports many of the Microsoft VBA language formatting codes, which are a superset of the codes shown above. Select menu Tools-DDE Links to set the default format for DDE data points without a format field. A blank field disables the formatting. A typical default setting might be 0.0# and note that the { } symbols are not required here.

$*SUM

A data point can evaluate a floating point mathematical expression like a spreadsheet cell. The data point may be non communicating ($ text) or communicating. Expressions may contain combinations of it's own or other data point's values, constants, mathematical operators.Expression evaluation proceeds from left to right, and parentheses are not supported. The negative value of a constant or data point designator is indicated with the -ve symbol preceding the operand without a space. Other single character operator symbols require a space on each side. Operator symbols are not case sensitive, and there may be up to 20 operators in an expression. Optional formatting of the numeric value allows the addition of leading and or trailing text.

For diagnostics the expression evaluation can be monitored in the communications screen.

Symbols:

d	Datapoint
+	Used to sum two numbers.
-	Used to find the difference between two numbers or to indicate the negative value of an operand.
*	Used to multiply two numbers.
\	Used to divide two numbers and return a floating-point result.
^	Used to raise a number to the power of an exponent.

FORMAT_SYNTAX
$ Formatting Analog Values and Maths Expressions
K Format;Analog;Values;Sum;Maths;Expression;Evaluate;Spreadsheet;Int;Fix;Truncate;Square Root;Sin;Cos;Tan;Mod;Sign;Absolute;Log;Ln;Exp;%;Percentage;Operators
+ Contents:491

MOD Divides two numbers and returns only the remainder.
SQR Returns the square root of a number.
SGN Returns an integer indicating the sign of a number.
ABS Returns the absolute value of a number.
INT Return the rounded down integer portion of a number (eg -8.9 = -9)
FIX Return the truncated integer portion of a number (eg -8.9 = -8)
SIN Returns the sine of an angle measured in radians.
COS Returns the cosine of an angle measured in radians.
TAN Returns the tangent of an angle measured in radians.
LOG Returns the logarithm of a number to base 10.
LN Returns the natural logarithm of a number to base e.
EXP Returns e (the base of natural logarithms) raised to a power.
{ } Format description

Examples - Communicating data points:

Offset, example add 4.6

```
A101(V)///*sum + 4.6 /*
```

Formula of form **y=mx+c**, example m = -3, c = 100

```
A101(V)///*sum * -3 + 100 /*
A101(V)///*sum * -3 + 100 {#0)/*    (whole numbers)
```

Square root

```
A101(V)///*sum SQR /*
A101(V)///*sum SQR{#0.00} /*      (2 decimal places)
```

Square

```
A101(V)///*sum ^ 2 /*       (non mouse clickable)
K1(V)///*sum ^ 2            (mouse click controls K1 value)
K1(V)///*sum ^ 2{#0}        (whole numbers)
```

Formatting

```
S1(V)///*sum + 4.6 { 'Room temp ' #0.0 ' ℃' }
```

Example - Text data point*:*

Sum of values on data points 7, 29 and 103

```
$*SUM d7 + d29 + d103
```

Complex expression

```
$*SUM 55 + d7 + d29 * 1.23 sqr log {#0.00 'kPa'}
```

The expression may be read as:-
Start with the constant value 55
Add the value of data point 7
Add the value of data point 29
Multiply by the constant 1.23
Return the square root
Return the logarithm
Format to 2 decimal places
Append units text kPa

$ K + **Syntax for Sensors**

<<<

Value	S1(V)
With units	S1(V,%)
With label	S1($,V,%)

With alarm S1($,V,%,M)
If any alarm status bit is set (I) then the item shows in white text on red paper.
See below for user limits

Mouse Clicking on the above will display the graph if logged.
Left mouse button requests a 96 point graph
Right mouse button requests a 1000 point graph if available
To prevent graph request add /*
Example S1($,V,%)/*

If more than one plot channel has been allocated to a sensor the lowest numbered plot channel will be shown. To request a particular sensor graph time period set the option field as shown below, or leave blank to get the first channel (default) for types 0 to 3. With IQ2 for plot types 4 and above and with IQ3 all plot periods have to be specifically requested.
If an exclamation mark **!** is used instead of the time period the first plot channel connected to that sensor is requested.
If a question mark **?** is used instead of the time period a list of plot channels connected to that sensor is shown for the user to select. However if only one plot channel is attached then that plot is requested immediately.
If the **x** option is used then the left-right mouse button choice is overridden.

Example S1($,V,%)/options/
eg S1(V) / **1 p x ? !** /
options **1** is period code
p for Precision data *(note message protocol limits numbers to 5 digits)*
x for eXtended 1000 point log
! to use first plot
? to show list of available plots, if only one plot it will be collected immediately

period	0	1 hour
	1	15 min
	2	24 hr (midnight)
	3	1 min
IQ2-3 only	4	5 min
	5	10 min
	6	20 min
	7	30 min
	8	6 hr
	9	1 sec

To add extra text after a Sensor
Example S1($,V,%)/ 1px/ / text

Use Arial font when requesting labels to get a two line display
or use the _ underscore character in the text for multiple lines of text
Example S1($,V,%)///line 2_line 3_line 4

The time period and text fields may be used together if required
Example S1($,V,%)/period// text

SENSOR_SYNTAX
$ Syntax for Sensors
K Sensor;Syntax;SCADA;User limits;Top;Bottom;Mouse;Plot
+ Contents:492

With user limits S1($,V,%)////T=Ttext/B=Btext/Tcolour/Bcolour/
where T is the top value and B the bottom value
Example S1($,V,%)/1//OK/35=Hot/5=Cold/-12/9/

Binary action and suppress value
Example S1(V)/1///Hot/Cold/-12/9/

Embed *commands with ** prefix

See also Formatting analog values, Edit Data Points and Adjusting and Displaying other items.

To create the ℃ symbol:
Press **ALT** key while typing **0176** on the numbers pad on PC standard 101 key keyboard, then type **C**.

For certain SCADA type applications you may store a data point label and page location in controller modules. In the S module the x,y coordinates are stored in H and L respectively (values 0-1000), and the label in $ (20 characters max).
eg. S1(H,L,$) display label at page coordinates x=H, y=L
S1(H,L,$)////$ Click to modify label
Drag with mouse to change the location on page, and store in controller.
Password and controller PIN rules apply.
Source=the sensor number.
Input type=1 internal analogue.
Exponent=4.
The sensor should be **not** be in the se**Q**uence table.

$ K + Syntax for Inputs and Input Counters

<<<

Status I1(S)
With label I1($,S)

Default On or Off
Options
I1(S)/on text/off text/
I1($,S)/on text/off text/
I1(S)/on-text/off-text/on-colour/off-colour/
I1($,S)/on-text/off-text/on-colour/off-colour/

Colours are numeric 0-15 as shown on palette
or 16.7million colour choice using Red*Green*Blue (range 0-255 each)
Negative colours will flash
Place trailing **!!** in text field to sound alarm when item updated
For custom sounds see Sounds and Wav Files
Use Arial font when requesting labels to get a two line display
or use the _ underscore character in the text for multiple lines of text

Embed *commands with ** prefix

See also Edit Data Points and Adjusting and Displaying other items.

Input Counters
The input pulse count (N) value in many IQ series controllers has a difficulty in that the maximum value which will correctly increment by one count per input pulse is not defined. It has been observed that values up to 3,276,800 count as expected, while values above 3,330,000 do not count correctly, and the count value eventually stops incrementing.

To resolve the count ambiguity Doorway has an optional automatic rollover for input count values, the rollover value is subtracted from the value before display, and is sent back to the controller. The counter data point will flash red to show the displayed count is different from the controller. When the controller value has updated the counter data point stops flashing.

It is suggested that 1,000,000 is used for the highest rollover value, although other values are permissible.

Count I1(N)/rollover/pin/
Count displays as integer only
Rollover is maximum desired count
PIN is for controller, omit if not required
note: I1($,N) will only display conventionally

Examples I1(N)/1000000/1234/
I1(N)/1000000//
I1(N)/1000/5678/

Note: Flashing indicates that the data point is trying to implement the rollover. Flashing should not continue for more than a few seconds. If the rollover field is not set as above in the data point then the rollover feature is disabled.

INPUTS_SYNTAX
$ Syntax for Inputs and Counters
K Input;Syntax;Colour;Counters
+ Contents:493

$ K + Syntax for Drivers

<<<

ANALOG D1(V)
With label D1($,V)
With units D1($,V)/ % (see below)

Options (for relay modules)
D1(V)/100% text/70% text/40% text/0% text/
or D1($,V)/100% text/70% text/50% text/0% text/

Default colours are:
greater than 75% = RED
74% to 50% = style paper
49% to 25% = BLUE
less than 25% = style paper
Or append colour number to any text field with a semicolon
Example D1(V)/Pump 1 On;14/Off/Pump 2 On;14/Off/

DIGITAL D1(Sv)
With label D1($,Sv)
Options
D1(Sv)/on text/off text/
D1($,Sv)/on text/off text/
D1(Sv)/on-text/off-text/on-colour/off-colour/
D1($,Sv)/on-text/off-text/on-colour/off-colour/
Ls channeL status, B for Bit status and Ss may be used instead of Sv as required
Colours are numeric 0-15 as shown on palette
or 16.7million colour choice using Red*Green*Blue (range 0-255 each)
Negative colours will flash
Place trailing **!!** in text field to sound alarm when item updated
For custom sounds see Sounds and Wav Files
Use Arial font when requesting labels to get a two line display
or use the _ underscore character in the text for multiple lines of text

To just add extra text after an analog output Driver you may simplify to:
Examples D1(V)/ %
D1($,V)/ %full

Use Arial font when requesting labels to get a two line display
or use the _ underscore character in the text for multiple lines of text

Example D1($,V)/line 1_line 2_line 3

Embed *commands with ** prefix

See also Formatting analog values, Edit Data Points and Adjusting and Displaying other items.

DRIVERS_SYNTAX
$ Syntax for Drivers
K Driver;Syntax;Colour
+ Contents:494

$ K + Syntax for Knobs

<<<

Value K1(V)
With units K1(V,%)
With label K1($,V,%)
Clicking on the above will allow adjustment.
To prevent Knob adjust put /* on the end

Options K1(V)/max-value/min-value/
Example K1($,V,%)/40/-10/

If the max-value and min-values are blank or numerically equal then they are ignored. In this case the controller is requested to send its Top and Bottom limits.

To add extra text after a Knob
Examples K1($,V,%)/40/-10/ text
K1($,V,%)/// text

Use Arial font when requesting labels to get a two line display
or use the _ underscore character in the text for multiple lines of text
Example K1($,V,%)///line 1_line 2_line 3

With user limits K1($,V,%)////T=Ttext/B=Btext/Tcolour/Bcolour/
where T is the top value and B the bottom value
Example K1($,V,%)/40/-10/OK/35=Hot/5=Cold/-12/9/

Binary action and suppress value
Example K1(V)/40/-10//Hot/Cold/-12/9/

Embed *commands with ** prefix

See also Formatting analog values, Edit Data Points and Adjusting and Displaying other items.

For certain SCADA type applications you may store a data point label and page location in controller modules. In the K module the x,y coordinates are stored in T and B respectively (values 0-1000), and the label in $ (20 characters max).
eg. K1(T,B,$) display label at page coordinates x=T, y=B
K1(T,B,$)////$ Click to modify label
Drag with mouse to change the location on page, and store in controller.
Password and controller PIN rules apply.

Global Knob
A datapoint may be used to open the control knob screen to adjust a knob across an entire Lan, or even all Lans.
Options K1(V)/max-value/min-value/default value
Example K1($,V,%)/40/-10/23
Set the address to 0 and Lan as required. Lan 128 signifies the change is to be sent to every lan on the site and should be used with caution.

KNOBS_SYNTAX
$ Syntax for Knobs
K Knob;Syntax;Max;Min;Top;Bottom;SCADA;User limits
+ Contents:495

$ K + Syntax for Analog Nodes

<<<

Value A200(V)
Clicking on the above will allow adjustment.
To prevent analog node adjust put /* on the end

Options A200(V)/max-value/min-value/text
Example A200(V)/50/10/degC

If the max-value and min-values are blank or numerically equal then they are ignored.

Use the _ underscore character in the text for multiple lines of text
Example A200(V)///line 1_line 2_line 3

With user limits A200(V)////T=Ttext/B=Btext/Tcolour/Bcolour/
where T is the top value and B the bottom value
Example A200(V)/40/-10/ degC/35=degC Hot/5=degC Cold/-12/9/

Binary action and suppress value
Example A200(V)/40/-10//Hot/Cold/-12/9/

Embed *commands with ** prefix

See also Formatting analog values, Edit Data Points and Adjusting and Displaying other items.

Global Analog Knob
A datapoint may be used to open the control knob screen to adjust an analog across an entire Lan, or even all Lans.
Options A221(V)/max-value/min-value/default value
Example A221($,V,%)/40/-10/23
Set the address to 0 and Lan as required. Lan 128 signifies the change is to be sent to every lan on the site and should be used with caution.

ANALOG_SYNTAX
$ Syntax for Analog Nodes
K Analog;Node;Syntax;User limits;Top;Bottom
+ Contents:495

$ K + **Syntax for Switches**

<<<

Status W1(S)
With label W1($,S)
Clicking on the above will allow adjustment.
To prevent Switch adjust put /* on the end

Default reply On or Off

Options

W1(S)/on text/off text/
W1($,S)/on text/off text/
W1(S)/on-text/off-text/on-colour/off-colour/
W1($,S)/on-text/off-text/on-colour/off-colour/

Colours are numeric 0-15 as shown on palette
or 16.7million colour choice using Red*Green*Blue (range 0-255 each)
Negative colours will flash
Place trailing **!!** in text field to sound alarm when item updated

Embed *commands with ** prefix

For custom sounds see Sounds and Wav Files
Use the _ underscore character in the text for multiple lines of text
Example W1($,S)/Pump_on/Pump_off/12/10/

Embed *commands with ** prefix

See also Edit Data Points and Adjusting and Displaying other items

---

SWITCH_SYNTAX
$ Syntax for Switches
K Switch;Syntax;Colour
+ Contents:496

$ K + Syntax for SeaChange Configuration items

<<<

ANALOG C1(V)
With label C1($,V)

Clicking on the above will allow adjustment.
To prevent analog node adjust put /* on the end

Options C1(V)/max-value/min-value/text
Example C1($,V)/25/15/degC
C1($,V)///degC/*

If the max-value and min-values are blank or numerically equal then they are ignored.
Use the _ underscore character in the text for multiple lines of text
Example C1(V)///line 1_line 2_line 3

With user limits C1(V)/max-value/min-value/text/T=Ttext/B=Btext/Tcolour/Bcolour/
where T is the top value and B the bottom value
Example C1(V)/40/-10/OK/35=Hot/5=Cold/-12/9/

Binary action and suppress value
Example C1(V)/40/-10//Hot/Cold/-12/9/

DIGITAL C1(S)
With label C1($,S)
Options
C1(S)/on text/off text/
C1(S)/on text/off text/
C1(S)/on-text/off-text/on-colour/off-colour/
C1(S)/on-text/off-text/on-colour/off-colour/
Colours are numeric 0-15 as shown on palette
or 16.7million colour choice using Red*Green*Blue (range 0-255 each)
Negative colours will flash
Place trailing **!!** in text field to sound alarm when item updated
For custom sounds see Sounds and Wav Files
Use the _ underscore character in the text for multiple lines of text

Embed *commands with ** prefix

See also Formatting analog values, Edit Data Points and Adjusting and Displaying other items.

SEACONFIG_SYNTAX
$ Syntax for SeaChange Configuration items
K Configuration;SeaChange;Syntax;Colour;User limits;Top;Bottom
+ Contents:497

$ K + **Syntax for Control Settings**

<<<

The Control Settings box is intended for use with predetermined settings. The two syntax structures give support for both simple numeric, using **#**, and any alphanumeric, using **!**. Either syntax supports up to 20 fields.

! - For any alphanumeric responses.
Syntax
K1(V)/ reply=TEXT / reply=TEXT / reply=TEXT /!
{...}! / reply=TEXT / reply=TEXT/ reply=TEXT/
{...}! / reply / reply /reply /

- For numeric responses in range 0 to 20.
Syntax
K1(V)/ text0 / text1 / text2 / text3 /#
{....}#/ text0 / text1 / text2 / text3 /

Clicking on the above will allow adjustment.
To prevent Setting adjust put /* on the end

Options
Each text field above may contain any or none of these components:
text alarm image,rescale;colour

The text is shown in the data point, and also in the settings screen. With the # syntax if a value is not used, leave the field blank without spaces and the field will not appear in the settings box.

Colours are numeric 0-15 as shown on palette
or 16.7million colour choice using Red*Green*Blue (range 0-255 each)
Negative colours will flash
Alarm is trailing **!!** in text field to sound alarm when item updated
For custom sounds see Sounds and Wav Files
Use the _ underscore character in the text for multiple lines of text
Text examples

text;10	paper colour green
text!!	alarm sound
text!! ding	sound WAV file
text,,,image.wmf	static image
text,,5image.wmf	static image no 5 of multiframe
text,,aimage.wmf	animated image 8 state
text,,aimage.wmf,75	animated image rescaled *75%
text,,aimage.wmf,75!!;10	animated image*75%+alarm+paper green
text,,aimage.wmf,75!!ding.wav;10	animated image*75%+sound WAV+paper green
text,,aimage.wmf,75!!ding;10	animated image*75%+sound WAV+paper green
text,,aimage.wmf,75!!ding;0*96*0	animated image*75%+sound WAV+paper dark green

Examples
K1(V)/Off////On/#
{FCU3.nviFanEnable}#/Off////On
where 0=Off and 4=On

K1(V)//Low/Medium/High/#

SETTINGS_SYNTAX
$ Syntax for Control Settings
K Control;Setting;Array;Syntax;#;Colour;LonWorks
+ Contents:498

{FCU3.nviFanSpeed}#//Low/Medium/High/
where 1=Low, 2=Medium, 3=High

K1(V)/0.00=Boiler 1/50.00=Boiler 2/100.00=Boiler 3/!
{FCU3.nviFanEnable}! / -1=OFF / 128=ON /
{FCU3.nviFanEnable}! / emerg_nul=OFF / emerg_normal=ON /
{FCU3.nviFanEnable}!/ emerg_nul / emerg_normal /

Embed *commands with ** prefix

See also Edit Data Points and Adjusting and Displaying other items.

$ K + Syntax for Array Items

<<<

Occasionally a data item will only be available within an array of other items. Doorway can extract and show, and adjust if appropriate, any single item in a complex array. Array items are often used in LonWorks because of the limited number of network variables.

Examples:

Analog **V**alue
eg {nciSetPnts}?(V,0)/50/10/ degC **,** is the separator
or (nciSetPnts}?(V|0)/50/10/ degC **|** is the separator

Digital **S**tatus
eg {nciSetPnts}?(S,0)/on text/off text/on colour/off colour
A non zero number is treated as binary 1

The separator may be any ASCII character in the range 0 to 127 decimal. Characters such as Tab (9), Carriage Return (13), Line Feed (10) cannot be typed into the yellow edit box. For these add 128 decimal to the character number and Doorway will internally compensate for this. These characters are entered pressing the ALT key and using the numerals keypad. eg for Tab (9) press ALT 0137. Doorway will then show a black rectangle for the Tab character. See the application Windows *Character Map* and view font MS Sans Serif to see how a character will appear.

Colours are numeric 0-15 as shown on palette
or 16.7million colour choice using Red*Green*Blue (range 0-255 each)
Negative colours will flash

See also Edit Data Points and Adjusting and Displaying other items.

Hint for Advanced Users:
With LonWorks Network Variables which are not standard data types, LonWorks LNS Data Server provides the separator for data structures. The default is Tab (character 9) on the presumption that this character will never appear in any data item.

You may change the default setting, although this may impact adversely on other applications. Open the Windows Registry Editor from Start-Run and launch REGEDIT.

Now locate the key:-
HKEY_LOCAL_MACHINE\SOFTWARE\LonWorks\LCA\Data Server\Defaults\Raw Format Separator
The value will probably show as 0x00000009 (9)
This means the current separator is 9 Hex, ie 9 Decimal which is the TAB character.

Use menu Edit-Modify, select Base Decimal, and set value Data to 44 (the , comma character)
The value will now show as 0x0000002c (44)

Close REGEDIT and relaunch the *Doorway to LNS Add-In* and a comma will be used to separate non standard Network Variable array items.

ARRAY_SYNTAX
$ Syntax for Array Values
K Array;Setting;Syntax;?;Colour;LonWorks
+ Contents:499

$ K + Syntax for Manual Override

<<<

It is necessary for appropriate control strategy to be in the controller for this feature to be utilised.

Clicking on the item will allow adjustment.

Digital

The first item is the Auto/Manual switch and is displayed in the usual way. The on (I) condition must correspond to auto mode and off (O) to manual mode. The data item at the end is the manual On/Off switch. Any combination of Switches or Bits may be used.

1/on-text/off-text/on-colour/off-colour/2

1 represents the data reference for the Auto/Manual switch
2 represents the data reference for the On/Off switch
Colours are numeric 0-15 as shown on palette
or 16.7million colour choice using Red*Green*Blue (range 0-255 each)
Negative colours will flash
Place trailing **!!** in text field to sound alarm when item updated
For custom sounds see Sounds and Wav Files
To prevent Override adjust put /* on the end

Examples W1(S)/ Auto /Manual/12/10/W2(S)
B18(S0)/ Auto /Manual/12/10/B20(S3)
W16(S)/ Auto /Manual/12/10/B19(S7)
B19(S4)/ Auto /Manual/12/10/W5(S)

Analog

The first item is the Auto/Manual switch and is displayed in the usual way. Either on(I) or off (O) may correspond to Auto. The data item at the end is the analog knob. Either Switches or Bits may be used for the Auto/Manual selection. Any Knob or suitable Analog node may be used for the analog adjustment.

1/on-text/off-text/on-colour/off-colour/**2**

1 represents the data reference for the Auto/Manual switch
2 represents the data reference for the analog adjustment
Colours are numeric 0-15 as shown on palette
or 16.7million colour choice using Red*Green*Blue (range 0-255 each)
Negative colours will flash
Place trailing **!!** in text field to sound alarm when item updated
For custom sounds see Sounds and Wav Files
To prevent Override adjust put /* on the end

If the data reference for the analog adjustment is a Knob then the controller is requested to send its Top and Bottom limits.

Examples W1(S)/ Auto /Manual/12/10/K1(V)
B18(S0)/ Auto /Manual/12/10/A221(V)

To preset fixed limits on any analog adjustment use the optional max and min fields set with numbers:

Examples W1(S)/ Auto /Manual/12/10/K1(V)/max/min/
B18(S0)/ Auto /Manual/12/10/A221(V)/max/min/

OVERRIDE_SYNTAX
$ Auto Manual override switch
K Auto;Manual;Hand;On;Off;Switch;Override;Max;Min;Top;Bottom;Syntax;Colour
+ Contents:500

Embed *commands with ** prefix

See also Edit Data Points and Adjusting and Displaying other items.

$ K + Syntax for Binary Nodes

<<<

Status B1(S1)
Clicking on the above will allow adjustment.

Default reply On or Off

Options
B1(S1)/on text/off text/
B1(S1)/on text/off text/
B1(S1)/on-text/off-text/on-colour/off-colour/
B1(S1)/on-text/off-text/on-colour/off-colour/
Colours are numeric 0-15 as shown on palette
or 16.7million colour choice using Red*Green*Blue (range 0-255 each)
Negative colours will flash
Place trailing **!!** in text field to sound alarm when item updated
For custom sounds see Sounds and Wav Files
To prevent digital switch adjust put /* on the end

Example B1(S1)/Auto/Manual/15/12/

Hint for speed:
We recommended using the I (input), W (switch) or D (driver) notation rather than the B (binary) notation where possible to make checking easier.

In Doorway the equivalent Binary node values can sometimes be collected faster. Use Optimise Data Points to ensure that the B values are consecutive. Doorway then requests the byte, rather than the 8 individual bits, saving communications time. If all eight bits are required the speed increase is considerable.

Examples:
Use B1(S0) rather than I1(S) if showing more than one Input in the range 1 to 8.
Use B7(S0) rather than D1(Sv) if showing more than one digital Driver in the range 1 to 8.

Embed *commands with ** prefix

See also Edit Data Points and Adjusting and Displaying other items.

BINARY_SYNTAX
$ Syntax for Binary Nodes
K Binary;Node;Syntax;Colour
+ Contents:501

$ K + Syntax for Time and Date

<<<

See also Adjusting and Displaying other items, Time / Date from PC, and for Summer-Winter see Adjusting Time.

Time and date from controller

Time	T(H,N)	
Date	T(D,M,Y)	
Weekday	T(W)	1=Mon ,2=Tues etc
BST/GMT	T(G)	change hours
SummerT(S,O)	day+month	
Winter	T(E,T)	day+month

To prevent adjustment put /* on the end.

Examples	T(H,N)	current time (Hrs+mins)
	T(S,O)	Summer Time starts

TIMEDATE_SYNTAX
$ Syntax for Time and Date from Controller
K Time;Date;Syntax;Summer Time;Winter Time;Daylight Saving;BST;GMT
+ Contents:502

$ K + Syntax for Time and Date from PC

<<<

See also Adjusting and Displaying other items, and Time / Date

The **$*NOW** text data point syntax is used to display the PC's own date and/or time. To format the appearance you use standard characters that have special meaning, with additional text if required, as shown below.

When the data point is clicked the Time and Date adjustment screen appears. If a valid BMS address and lan is used the controller time and date will be collected, ready for adjustment. Set address 0 to prevent controller access. To prevent all adjustment put /* on the end.

Examples:

$*NOW dd/mm/yyyy	01/03/2000
$*NOW d-mmm-yy	1-Mar-00
$*NOW d mmmm yyyy	7 March 2000
$*NOW h:mm	8:41
$*NOW hh:mm	08:41
$*NOW h:mm:ss	8:41:35
$*NOW h:mm AM/PM	8:41 PM
$*NOW h:mm d/m/yy	8:41 1/3/00
$*NOW hh:mm ddd_d mmm yy	08:41 Wed 1 Mar 00
$*NOW 'My text'_h:mm dddd_d mmmm yyyy	My text 8:41 Wednesday 1 March 2000

Character	Meaning
c	Display the date as ddddd and display the time as ttttt, in that order.
d	Display the day as a number without a leading zero (1-31).
dd	Display the day as a number with a leading zero (01-31).
ddd	Display the day as an abbreviation (Sun-Sat).
dddd	Display the day as a full name (Sunday-Saturday).
ddddd	Display the date as a complete date (including day, month, and year) formatted according to the Short Date setting in the International section of the Windows Control Panel. The default Short Date format is m/d/yy.
dddddd	Display the date as a complete date (including day, month, and year) formatted according to the Long Date setting in the International section of the Windows Control Panel. The default Long Date format is mmmm dd, yyyy.
w	Display the day of the week as a number (1 for Sunday through 7 for Saturday.)
ww	Display the week of the year as a number (1-53).
m	Display the month as a number without a leading zero (1-12). If m immediately follows h or hh, the minute rather than the month is displayed.
mm	Display the month as a number with a leading zero (01-12). If m immediately follows h or hh, the minute rather than the month is displayed.
mmm	Display the month as an abbreviation (Jan-Dec).
mmmm	Display the month as a full month name (January-December).
q	Display the quarter of the year as a number (1-4).
y	Display the day of the year as a number (1-366).
yy	Display the year as a two-digit number (00-99).
yyyy	Display the year as a four-digit number (100-9999).
h	Display the hour as a number without leading zeros (0-23).
hh	Display the hour as a number with leading zeros (00-23).
n	Display the minute as a number without leading zeros (0-59).
nn	Display the minute as a number with leading zeros (00-59).
s	Display the second as a number without leading zeros (0-59).
ss	Display the second as a number with leading zeros (00-59).

PCTIMEDATE_SYNTAX
$ Syntax for Time and Date from PC
K Time;Date;Syntax;Now;PC
+ Contents:503

ttttt Display the time as a complete time (including hour, minute, and second) formatted using the time separator defined by the Time Format in the International section of the Windows Control Panel. A leading zero is displayed if the Leading Zero option is selected and the time is before 10:00 A.M. or P.M. The default time format is h:mm:ss.

am/pm Use the 12-hour clock and display a lowercase AM with any hour before noon; display a lowercase PM with any hour between noon and 11:59 PM.

AM/PM Use the 12-hour clock and display an uppercase AM with any hour before noon; display an uppercase PM with any hour between noon and 11:59 PM.

a/p Use the 12-hour clock and display a lowercase A with any hour before noon; display a lowercase P with any hour between noon and 11:59 PM.

A/P Use the 12-hour clock and display an uppercase A with any hour before noon; display an uppercase P with any hour between noon and 11:59 PM.

AMPM Use the 12-hour clock and display the contents of the 1159 string (s1159=) entry in the WIN.INI file with any hour before noon; display the contents of the 2359 string (s2359=) with any hour between noon and 11:59 PM. AMPM can be either uppercase or lowercase, but the case of the string displayed matches the string as it exists in the WIN.INI file. This format is provided for International Windows versions using other time notations.

Additional Text

: The time separator separates hours, minutes, and seconds when time values are formatted. The actual character used as the time separator depends on the Time Format specified in the International section of the Windows Control Panel.

/ The date separator separates the day, month, and year when date values are formatted. The actual character used as the date separator in the formatted output depends on Date Format specified in the International section of the Windows Control Panel.

- + $ ( ) *space*
These literal characters may be included directly in the format. To display a character other than one of those listed, enclose it in single quotation marks (**' '**). Examples of characters that can't be displayed as literal characters are the date- and time-formatting characters (a, c, d, h, m, n, p, q, s, t, w, y, \ and /:), the numeric-formatting characters (#, 0, %, E, e, comma, and period), and the string-formatting characters (@, &, <, >, and !).

'ABC' To include text containing other characters you must use single quotes to enclose the text.

_ The underscore character causes the following items to be placed on a new line.

$ K + Syntax for Time Zone

<<<
See also Adjusting and Displaying other items.

Show details of a Time Zone Zn,d(items)
where n is Zone number, d is Day number and items are as required.

Clicking on the item will open the Zone screen.
To prevent adjustment put /* on the end

Examples Z1,1($)
Z3,2($,E,F)
Z5,3(E,F,G,H,I,J)

Note: The comma is required between zone and day numbers.

ZONE_SYNTAX
$ Syntax for Time Zones
K Time;Zone;Syntax
+ Contents:504

$ K + Adjusting and Displaying other items

<<<

Many items have a standard action when clicked with the mouse or selected from the keyboard. Note however that all actions are disabled if an item is terminated with /*

Module	*Item*	*Param*	*Action*
Analog	A	V	Control Knob
Bit	B	Sn	Control Switch
Config	C	V	Control Knob for SeaChange
Config	C	S	Control Switch for SeaChange
Knob	K	V	Control Knob
Sensor	S	V	Graph
Switch	W	S	Control Switch
Time	T		Time/Day adjust
Zone	Z		Time Zone adjust
Address	R		Time Zone adjust
Text	$		LogBook
any	#		Control Settings adjust
any	!		Control Settings adjust
LonWorks	?		Item from Array adjust

Sometimes it is required to adjust another parameter in a module. To indicate the desired action, eg Control Knob, Control Switch, Control Label or Control Settings, append **/K** or **/W** or **/$** or **/!** or **/#** to the item. To adjust *hh:mm* time values set the max and min values with a colon and append **/:/K**. With **/K** and **/W** the item can use the K and W optional syntax fields, such as dynamic and flashing colours and dynamic images.
Examples:-

```
S1($,L)/80/-20/ Low alarm level/K
S1($,L)/5/-5/ °C offset/K
S1($,N1)/ Enabled/ Disabled/12/7/W
I1($,E)/ Enabled/ Disabled/12/7/W
L1(G)/10/0/ L1 Gain/K
Z0,1(E)/24:00/00:00/Day 1 Start/:/K
S1($)////$
R(D)//$
K1(V)/Off/Low/Slow/Medium/Fast/High/#
K1(V)/0.00=Boiler 1/50.00=Boiler 2/100.00=Boiler 3/!
```

Doorway knows how items are usually displayed. You can override the display behaviour by appending **/K** or **/W** to indicate the item is to be displayed as an analog or a binary value respectively. To prevent a mouse click opening the adjustment screen append **/***

This example shows both digital and analog display of a Timer logic module:

```
G1(Ss)/ Input On /Input Off /10/12/W/*
G1(N)/ 120 / 0 /On delay secs/K
G1(N)/ 120 / 0 /Off delay secs/K
G1(Dv)/ Input On /Input Off /10/12/W/*
```

Embed *commands with ** prefix

Display Map on a datapoint
A dynamic map of addresses can be shown on a datapoint. The syntax is the two letters **NS** without any brackets, which denotes Network Set. The address is always 126 (INC), only the lan number changes as required, so for the local lan use Lan 0, for the Internetwork use Lan 126.

DATA_EDIT_ITEM
$ Adjusting and Displaying other items
K Syntax;Adjust;Display;Item;Knob;Switch;Label;/K;/W;/$;LonWorks;Map
+ Contents:505

The Windows font *Fixedsys* gives good display results.

Static Map on a text datapoint
A static datapoint of addresses may be used underneath a dynamic map datapoint in a contrasting colour such as light blue so a missing address shows through.

Example syntax:
$*NS=FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF

Each bit of the 32 hexadecimal characters corresponds to one address in a complex pattern. To extract the normal 32 character pattern for a given lan make a new page with only a datapoint for the desired lan. Menu Tools-Show Communications will show the message replies. Select the desired reply and copy to the Windows Clipboard with standard keys CTRL-C. Now paste into the yellow edit toolbar and discard the 9 characters before NS= and also the comma and other characters after the 32 network set characters. Finally add **$*** before the NS= and the datapoint should show.

It can help to use menu Tools-Communications Options-Idle Time to 5 seconds to slow the messages to make it easier to copy to the clipboard. Don't forget to put the idle time back to the normal 1 second when you have finished.

Now place the dynamic datapoint exactly on top with the same font and set the style property Transparent. Use menu File-Optimise datapoints to ensure text datapoints are before active datapoints and hence underneath.

$ K + Text Data Point

<<<

A text data point is one which starts with a $ and it can be set to:-

Show static text.
Behave like a button, see Data Point as Button Syntax.
Globally change a page's communications protocol, see BMS Types.
Write an entry in the MNC, ANC or SANC number table, see Data point and MNC number table.
Dial a remote site, see Autodialling with MNC, ANC and V23 SANC Modem and Autodialling with High Speed Modem to Remote Site
Replicate a data point without communicating.
Change the current COM port.

Static text.
Doorway can show colourful and effective pages without a picture file. This is done by setting some of the normally dynamic data points to contain just text. Edit - Add data point, automatically sets the data point request as a text data point.

Text data points are prefixed by a dollar ($) symbol. The text which follows is usually shown without communicating with any controller, and the controller address and lan numbers are ignored. The full range of Windows text style and colour combinations are provided by Doorway including boxed, transparent and underlining effects. To create multi-line text use the underscore character (_) for each new line. The underscore symbol is usually found on the PC keyboard on the shifted minus key.

To create rectangles and boxes with or without text:
1) Add data point.
2) Select a suitable font and size. (e.g. Arial 36 point)
3) Type $ followed by a series of spaces to set the width.
4) Type a series of underscores to set the rectangle height.
5) Select Enter to action your selection.
6) Adjust font size and colours, spaces and underscores as necessary.

Log Book.
A text data point can be used to invoke the Log Book at a particular page by adding slash (/) and a page number to the end. The slash and page number are not displayed. See also Log Book

Internal dynamic labels
Text data points can show one of 10 internal dynamic labels, numbered 0 to 9.
eg $$0
Internal labels are usually set from a button when dynamically loading a multiple use page, such as a fan coil controller.
eg eg button FCU.DAT /L4 /o20 /$1 Fan Coil 21 '
eg button FCU.DAT [z21] /$1 Fan Coil 21 '/$8 Building 2 '
eg button FCU.DAT {device.nvoRoomSensor} /$1 Fan Coil 55 '/$8 Building 3'
The single ' is mandatory and allows the label to be padded with spaces for display formatting.
Underscore _ marks can be used to set multiple text lines.
Labels are not retained when the Doorway application is closed.
Labels may be reviewed with button command ***LABEL n**, see Button Syntax

Replicate a data point.
eg $*DP nn
The data point replicates data point **nn** without external communication.

Change the current COM port.
eg $*COM 2

TEXT_POINT_SYNTAX
$ Text data point
K Edit;Data;Point;Syntax;Text;Draw;Rectangle;Box;$;#;Log Book;/;~;Tilde;Label;Internal Label;Dynamic
+ Contents:515

The current port is changed to COM 2 when the page is opened. Doorway's configuration settings file (INI) is not updated, so on the next start Doorway will be as previously set. The user must implement a page structure which ensures the correct port is selected at all times. If the named port is already selected then no effect occurs. See Button Syntax

Hint for Advanced users:
If you need to display a slash symbol (/) in the text, the tilde character (~) has been coded to display as a slash.

$ K + Data Point as a Button

<<<

A powerful feature of Doorway is the ability to use Data Points as additional Buttons when desired.

Using a Data Point you can create regions of a page (with or without text) which when clicked will action the command. Set transparent to make a region invisible. The commands available are the same as with buttons. See also Button Syntax

A text data point is used as a button by adding **/#** (slash hash) and the button command to the end.

Examples: $Press this button/#auto.dat
$Word Processor/#write.exe
$Time Clock/#sample.zon/o99/z3
$Sensors/#List S /o99

also $*dial 0123 45678 /1
$*dial hangup

A normal data point is used as a button by appending **/*/#** (slash star slash hash) and a button command to the end. The usual click action is suppressed.

Examples: S1($,V,%)/*/#auto.dat
I1(S)/on-text/off-text/12/10/*/#write.exe
B15(S0)/on-text/off-text/12/10/*/#sample.zon/o99/z3

See also Edit Buttons and Text Data Points Syntax and Edit Data Points

---

JUMP_POINT_SYNTAX
$ Data Point as Button
K Edit;Data;Point;Syntax;Text;Draw;Rectangle;Box;Button;/*;/*/#;$*
+ Contents:516

$ K + Data point and MNC number table

See also Phone Menu, Button Syntax and Text Data Points Syntax and Edit Data Points

The method shown below was intended for controllers which cannot perform the modem dialling process. The method is limited to 10 devices, unless a dynamic scheme is implemented. Supervisors usually use the Virtual INC method, see Autodialling with MNC type modems

Doorway can use Data Points to set up an MNC, TMN, ANC or SANC phone number table. The phone number(s) are automatically sent to the MNC whenever that page is displayed.
When directly connected to a controller the phone numbers confuse the controller and sometimes even change time zone settings. From Doorway version 6.1 writing to the number table is barred and the user notified unless Doorway has been polled by the CNC in the preceding 3 minutes. Connect via a CNC and wait up to 3 minutes or set in menu Tools-Communications Local-Connect or MNC-direct-connect as appropriate.

The data point is set up as a phone number by preceding the phone number with $@ and the controller and (optional) MNC register number at the end. The address and lan for the data point is that of the local MNC.

Examples:
Local and remote MNC on local lan. No address may be duplicated.

$@0171123456/20	controller 20 in register R2 (default)
$@0171123456/44/2	controller 44 in register R2
$@0171123456/33/10	controller 33 in register R10

Local MNC on local lan, remote MNC on Internetwork. No address may be duplicated. This is because the local MNC accepts messages based on address only. It then internally adds the lan number and sends it to the remote MNC to route.

$@0171123456==4/20/1	controller 20 on lan 4 in register R1
$@0171123456==5/21/2	controller 21 on lan 5 in register R2
$@0171123456==6/22/2	controller 22 on lan 6 in register R3

Local MNC on Internetwork, remote MNC on Internetwork. Hence only the lan numbers are required.

$@0171123456==4/0/1	any controller on lan 4 in register R1
$@0171123456==5/0/2	any controller on lan 5 in register R2
$@0171123456==6/0/3	any controller on lan 6 in register R3

To clear an MNC register entry.

$@==0/0/1	clear register 1

MNC, ANC and SANC special codes:

J	Wait for dial tone
K	2 second pause
L	Pulse dial
M	Tone dial (default)
SW	V21 300 baud for MNC-TMN link

eg $@9K0123456789 /33/1 uses controller 33 in register R1

MNC_POINT_SYNTAX
$ Data Point and MNC, TMN or ANC Number Table
K Edit;Data;Point;ANC;SANC;MNC;TMN;MNC special codes;ANC special codes;TMN special codes;SANC special codes;Modem;Phone;Number;Syntax;Text;Button;$;SW
+ Contents:517

$ K + Editing Buttons - Blue Toolbar

See also Button Syntax, Edit Data Points, Choose A File and Moving Items Around.

This toolbar is where you edit or delete existing buttons from your page. In the first box type the text you wish to display on a button.

In the second box type the action to be performed when the button is pressed. Generally the command is the file name of the page to be displayed. Doorway displays DAT, PIC and UPG pages. Jumping to a ZON file brings up the Time Zone box. Jumping to a Map file updates and shows the address map.

A wide range of other actions are also available from buttons as Doorway reserves several keywords for button actions. Keywords are prefixed with *, for example ***DIAL**. These keywords are invalid filenames, so therefore cannot be page filenames, see Button Syntax.

Doorway automatically sizes each button to fit the text, which can include spaces before and after the text.
You may manually set the Button size and font size by using the syntax :-

text /* width / height / fontsize
eg Press me/*300/200/32

The smallest button:

Press me/*5/5

Internally the width and height are not allowed smaller than 5 as smaller buttons are not visible!

Keyboard users:
To create a keyboard shortcut to a button place an underlined letter in your button text. This is done by preceding the letter with the ampersand (&) symbol.
For example:
&Chillers displays as Chillers
The keyboard shortcut is then ALT-C.

If the shortcut key is the same as one in Doorways menu bar, Windows will action the menu, not your button.

BUTTON_EDIT_MODE
$ Button Editing Window
K Edit;Button;Button size;Size;Blue;Toolbar
+ Contents:520

$ K + Button Syntax & *Commands

Return to Edit Buttons
See also Text Data Points Syntax

From a button Doorway actions files with extensions DAT (page), ZON (time zone), MAP, DWC (chart) , WAV (sound) and also the legacy files PIC, UPG and TGD. All other files are passed to Windows Explorer for action. Below are Doorway's command words which have special actions. Command words are always prefixed with the * character, to distinguish them from file names.

Several *commands may concatenated on a button, separate each command by the **|** symbol (usually called the 'pipe' symbol).

Embedded *commands
You may embed *commands in a datapoint label to provide active control.
eg I1(S) / ON **FIRE.DAT/ OFF /
When the digital input value becomes ON the page FIRE.DAT will be opened

eg I1(S) / ON ***SEND W1(S=O),L4,o99/ OFF /
When the digital input value becomes ON then W1 in controller 99 on Lan 4 will be sent an Off request

***ADDRESS**
Globally change every non text data point with non zero address to a new address and lan.
eg *ADDRESS /o99
*ADDRESS /L99/o99
*ADDRESS /[b1z1]
*ADDRESS /L99/o99/[b1z1]

Dynamic File Addressing
You may dynamically change particular data point addresses by jumping to a file with button syntax shown below. Only non text data points with either the invalid address 0 in the stored file or ( ) or [ ] or { } references containing **?** or ***** or **!** can be changed. Other items are unchanged, which allows useful page effects. Internal labels may be used with a multiple use page, such as for fan coil controllers, see Text Data Points.
eg. FCU.DAT /o99
FCU.DAT /L99/o99
FCU.DAT /L99/o99/(A77)
FCU.DAT /L99/o99/(A77)/$1 Fan Coil 55 '/$8 Building 3'
FCU.DAT [b1z1]
FCU.DAT /L99/o99/[b1z1]
FCU.DAT {XL10}

Standard data points containing **?** are changed if the item matches and address 0
eg. dp=A?01(V) is changed by FCU.DAT /(A77) to dp=A7701(V)

SeaChange data points containing ? are changed if the items match
eg. dp=[z?]... is changed by FCU.DAT /[z3] to dp=[z3]..
dp=[b1z?]... is changed by FCU.DAT /[z3] to dp=[b1z3]...

BUTTON_SYNTAX
$ Button Syntax & *Commands
K Button;Syntax;Address;Dynamic;Dynamic file addressing;Alarm;AlarmPrint;AlarmQueue;AlarmScan;ANC;Change;Chart;Clean;Change;Chart;Click;Clock;COM port;Convert;Create;Communications;DDE;Delete;Dial;Dir;DownZone;DP;DWC;EINC;Email;ENG;Events;Event Log;Exit;Export;FileCopy;FileMove;FileKill;Generic Pages;Graph;Hangup;Help;Home;Idle;IMG;In*a*Vision;IP;Label;Link;List;LogIn;LogEvent;Log;Mouse;NET;Queue; LogBook;Map;Minimize;MNC;Modem;Password;Panel;Phone;Plot;Read;Refresh;Reset;Return;RS232;SANC;Schedule;Seachange;Send;Showcomms;SMS;Snapshots;Start;SUM;TEL;TGD;TMN;Time;Toolbar;Wait;Write;Zone;Reserved words;Key words;921;* Commands;Star Commands;Command;/o;/L;/[
+ Contents:525

dp=[d?b?z?]... is changed by FCU.DAT /[d2b3z4] to dp=[d2b3z4]...

SeaChange Generic pages have data points containing **!** which are changed dynamically for SeaChange Domain, Module, Sub Module, Lan and Address stored in reserved internal labels $-1 to $-5 respectively. Users may use this feature in their own dynamically addressed pages.
e.g. [d!z!a!]S1(V)

LNS and DDE data points starting ? are modified
eg. dp={?.nviSetPoint}... is changed by FCU.DAT /{XL10} to dp={XL10.nviSetPoint}...
eg. dp={?!R1C1}... is changed by FCU.DAT /{excel | book1} to dp={excel | book1!R1C1}...

[*] and {*} data points are completely changed
eg dp=[*]... is changed by FCU.DAT /[d2b3z4] to dp=[d2b3z4]...
eg dp={*}... is changed by FCU.DAT /{device.nviSetPoint} to dp={device.nviSetPoint}...

To call a generic page from a dynamic page and use the same address see *Generic below.

SeaChange generic parameters:
Show a Lan value on a datapoint with syntax $$-4
Change a Lan value click on a datapoint with syntax $$-4 /*/#*CHANGE
Change a Lan value from a button with syntax *ADJUST $-4

***ADJUST**
Show the Control Knob adjustment without a corresponding datapoint on the page
syntax *ADJUST Knnn(V)/max/min/default/Lan/os
or *ADJUST Knnn(V)/Lan/os
eg *ADJUST K1(V)/100/-10/80/L99/o99
*ADJUST K1(V)/L99/o99 where T, B and V are read from controller
or *ADJUST K1(V)////L99/o99 where T, B and V are read from controller
also *ADJUST A221(V)/100/-10/80/L99/o99
also *ADJUST $-4 to set SeaChange Lan generic parameter

***ALARM**
Show the Alarm panel
also available using function key F3

***ALARMS**
Open the Alarm archive for the current month
?.TXT opens the current month alarm archive in Windows Notepad

***ALARMSCAN**
Page datapoints may be used to generate alarms when their paper colour changes to RED.
Add a text datapoint with the syntax $*ALARMSCAN
On each page refresh cycle datapoints whose paper colour has
changed to RED (colour 12) will produce an alarm with content
Doorway Page Alarm: {alarm}
where {alarm} is the actual text showing on the datapoint followed by Doorway identification.
To force a resend of the current page alarms set button with syntax *ALARMSCAN 1
For alarm retransmission filtering use text matching or source address 129 for Doorway internal alarms.

***ALARMPRINT**
Print the alarm print buffer.
eg *ALARMPRINT
*ALARMPRINT QUIET
Use with Event calendar to ignore error if nothing to print

***ALARMQUEUE**
Show the alarm retransmission queue
As from Alarm Retransmission screen

?.DWR opens the current month retransmission archive in Windows Notepad

***BUTTON** only for use by DDE requests into Doorway.
An external application can request Doorway to perform a button command.
eg *BUTTON auto.dat
*BUTTON *SEND K1(V=15) /o99
also *SEND K1(V=15) /o99

***CHANGE**
*CHANGE [dpnumber] [ALL]
eg *CHANGE will show the Change control for this data point.
*CHANGE 9 will show the Change control for data point 9.
*CHANGE 9 ALL will show the Change control for all similar items to data point 9.
see also Change Data Point Reference

***CHART** as from the System menu

CHART File
eg FILENAME.DWC reads the file and shows the chart.

***CLEAN**
Close Graph and Chart screens from a button, useful with Touchscreen PCs

***CLICK**
*CLICK 9 will cause the same action as mouse clicking on data point 9.

CLOCK as from the System menu
*LIST C

***COM** as from the Tools-Communications menu
*COM opens the options screen
also to change the current COM port
eg *COM 2 RS232
*COM -1,0 IT net, Client 0
*COM -1,5 IT net, Client 5
*COM -2,7 EINC, Gateway 7
For use on a data point prefix with $
eg $*COM 2
note *EINC xx is equivalent to *COM -2, xx
This command may be appended to a Snapshot description for port control by the Snapshot.

***CONVERTPATH**
Show the Convert Path References screen.
see Convert Path References

***CREATE**
eg *CREATE Z5(W(P1,P2,P3,P4,P5,P6))
see Tools - Engineering

***DDE** as from the Tools-DDE Links menu

***DELETE**
eg *DELETE Z5
see Tools - Engineering

***DIAL** as from the Phone menu
eg *DIAL 0123 456789 /4 *(lan field only required for MNC,TMN, ANC or SANC V23 modem)*

*DIAL Dir
*DIAL Hangup
*DIAL Reset
*DIAL ATcommand
*DIAL Status
$*DIAL 0123 456789 /4 on a data point
Append to Snapshot description for modem access by a Snapshot.

***DOWNZONE** as from the System-Download to Time Zones menu

***DP**
The data point replicates another data point without external communication.
eg $*DP 12

***EINC** as from the Tools-Communications menu
to change the current EINC connection
eg *EINC 0 EINC, Gateway 0
*EINC 7 EINC, Gateway 7
For use on a data point prefix with $
eg $*EINC 2
Append to Snapshot description for COM port control by a Snapshot.
note *EINC xx is equivalent to *COM -2, xx

***EMAIL** sends an email
*EMAIL addresses/subject/message
eg *EMAIL tom@company.co.uk/Attention/This is my message
*EMAIL tom@company.co.uk;harry@company.co.uk/BMS Alarm/Building 5 alarm ()
in alarm retranmission actions use () to append the actual alarm message
*EMAIL *GROUP*/BMS Alarm/Building 5 alarm ()
*EMAIL tom@company.co.uk;*GROUP*/BMS Alarm/Building 5 alarm ()
*EMAIL *GROUP*;tom@company.co.uk/BMS Alarm/Building 5 alarm ()

***EMAILQUEUE**
Show the email retransmission queue
As from Email and GSM settings screen
?.DWR opens the current month retransmission archive in Windows Notepad

***ENG** shows the engineering screen
eg *ENG /L4/o20 Engineering - Configuration mode Lan 4 controller 20
*ENG F6 Engineering - Function key F6 - alarm retransmission screen
*ENG /L4/o20/T1 Engineering - Text mode Lan 4 controller 20-Normal text
*ENG /L4/o20/T2 Engineering - Text mode Lan 4 controller 20-Terse text
*ENG /L4/o20/T3 Engineering - Text mode Lan 4 controller 20-Structured text

***EVENTS** as from the System-Event Calendar menu

***EXIT** Warning: Use this command with extreme caution
As from the File-Exit menu to close Doorway program from a button, datapoint or event.
eg *EXIT requests normal confirmation from user
*EXIT 1 closes immediately even if unsaved page file etc

***EXPORT** as from the System Snapshots menu
Export entire snapshot as CSV or TXT file
eg *EXPORT 23
and the output file will be SNAP23.CSV

Export latest snapshot as CSV file suitable for external data analysis package.
eg *EXPORT 23 /list

and the output file will be LIST23.CSV

Export latest snapshot as CSV file suitable for Enviros Montage® data analysis package.
eg *EXPORT 23 /montage
and the output file will be MONT23.CSV

Export latest snapshot as CSV file suitable for Climate Notebook® data analysis package.
eg *EXPORT 23 /climate
and the output file will be CLIM23.CSV

Export latest snapshot backdrop picture or graph plot as WMF file suitable for display in Doorway or other package.
eg *EXPORT 23 /wmf
and the output file will be SNAP23.WMF

***FILECOPY**
Copy a file from one location to another, use with Button or Events.
eg *FILECOPY c:\doorway\snapshot\snap01.mdb , F:\bakup\snap01.mdb
* and ? wildcards are not supported

***FILEKILL** Warning: Use this command with extreme caution
Delete one or more files, use with Button or Events.
eg *FILEKILL c:\doorway\snapshot\snap01.mdb
*FILEKILL c:\doorway\snapshot\??????.mdb
For safety the following are not permitted
* wildcard
? wildcard in the extension
DAT, WMF, BMP, OLE, PCX, GIF, JPG, DLL, EXE, COM, INI, HLP

***FILEMOVE** Warning: Use this command with extreme caution
Move a file from one location to another, use with Button or Events.
eg *FILEMOVE c:\doorway\jan.txt , F:\bakup\jan.txt

***FILENAME** Warning: Use this command with extreme caution
Rename a file or folder, use with Button or Events.
eg *FILENAME c:\doorway\jan.txt , c:\doorway\jan-bak.txt

***GENERIC** text pages as from the System menu.
*GENERIC will show the map before entering first generic page.
eg
*GENERIC /L99/o99/s1 or s17 or s33 or s49 or s65 or s81
*GENERIC /L99/o99/i1 or i17 or i33 or i49 or i65 or i81
*GENERIC /L99/o99/d1 or d17 or d33 or d49 or d65
*GENERIC /L99/o99/k1 or k17 or k31 or k46
*GENERIC /L99/o99/w1 or w21 or w41
*GENERIC /L99/o99/L1 or L17
*GENERIC /L99/o99/X will show the IQ3xcite setup page
*GENERIC /L99/o99/E10 will show the IQL10 page
to *GENERIC /L99/o99/E19 will show the IQL19 page
*GENERIC /L99/o99/F will show the FCxx pages
*GENERIC /L99/o99/Z1 will show the Time Zone 1 page
*GENERIC /L99/o99/Z31 will show the IQ3 Time Zone 1 page
*GENERIC /L99/o126/N will show the Lan map page for lan 99
To call a generic page from a dynamically addressed page and use the same address
*GENERIC /L?/o?/E10
The return page will be that which called the dynamically addressed page

also *GENERIC SEACHANGE will open SeaChange generic pages, if installed
*GENERIC SEACHANGE /L99/o99/ to select routing over BMS and Ethernet networks

***GRAPH** as from the Controller menu
also available using *LIST G

***HELP**
eg *HELP 1 shows Help file Contents
*HELP 700 shows Help file Licence Agreement
*HELP 701 shows Help file Software Releases

***HOME** go to the Home page

***IDLE**
This option allows control of Doorway's Communications Options Idle Time value.
e.g. *IDLE=1.2 value in seconds

This option also allows control of Doorway's real time activity. Doorway is designed in accordance with Microsoft guidelines for real time systems, and co-operatively shares CPU (processor) time with other applications. Sometimes it is convenient to suspend Doorway without closing the program. This may be set manually on a button, or by DDE from an external application.
eg *IDLE STOP Suspend Doorway's real time activity-no alarm reporting will occur.
*IDLE Resume Doorway's activity

***IMG**
Fonts and images are always adjusted in size as the Doorway screen is resized. The *IMG feature provides an automatic way to resize button and data point text and image size with changes in screen resolution. The *IMG command in a data point provides information for resizing when the screen resolution is different. Open the required page, set menu-Change Font Scaling to 100% and set each data point's font size as required. Similarly adjust each image size with the rescale factor. Now add a data point with *IMG so the file knows the design screen width and height.
eg $*IMG=*width*height*
$*IMG=1024*768
When the screen resolution is different from the *IMG value Doorway automatically resizes button and data point text and images. Image size accuracy is maintained accurately over the screen resolution range from 640x480 to 3840x2400. If possible create the page and set *IMG using the lowest resolution required as font quality generally improves when expanded, but not when shrunk.
The datapoint shows as a single * (star) so that the datapoint may easily be concealed. If communications option *No Comms* is selected then the full syntax is shown on the screen so it is easier to locate.

***INVISION**
See In*a*Vision Picture Editor

IP
eg FILENAME.IP uses the file instead of DOORWAY.IP

***LABEL** for reviewing and changing internal dynamic labels
eg *LABEL 4
see Text Data Points

***LINK** only for use by DDE requests into Doorway.
An external application can request Doorway to make an 'automatic link' from DataPoint(0) to an item in the external application. This can be used for example to stop the Mouse hourglass appearing momentarily on each DDE request by eliminating the need for a DDE Poke command.
eg *LINK application|topic!item
and *LINK without parameters terminates the link.

LIST as from the Controller menu
SENSOR, INPUT, DRIVER, KNOB, SWITCH, TIME, ZONE, ALARMS, PLOTS, MAP, GRAPH
eg *LIST S /o99
*LIST S /L99/o99
This format is also used for S I D K W T Z A and P.
See the CTRL key items in the menus.

(note *ZONE replaces *LIST Z)

***LOGEVENT**
Write an alert into Windows Application Eventlog from the Alarm action screen
eg *LOGEVENT [alarm]
or *LOGEVENT /EventID/ [alarm]
or *LOGEVENT /EventID, Category/ [alarm]
EventID and Category are numeric values in the range 0 to 65535 and written to these Windows Event log parameters which assist 3rd part tools.

where [alarm] is replaced by Doorway with the BMS alarm
or *LOGEVENT This is my test BMS alarm message
or *LOGEVENT /101/ This is my test BMS alarm message
You may also use a button, or more usefully, add to an existing buttons script
eg *LOGEVENT /123/ The user clicked this button

***LOGIN** as from the Tools menu
eg *LOGIN will show the LogIn screen
*LOGIN 40 / FILENAME.DAT
will jump to the page FILENAME.DAT if the user has password level 40 or above.
?.LOG opens the current month login archive in Windows Notepad
?.DWA opens the current month audit archive in Windows Notepad

***LOGOUT** will logout the current user

***LOGBOOK** as from the Tools menu
eg *LOGBOOK
*LOGBOOK 23
also **LOGBOOK / 23*

To discard LogBook's page 23 text to monthly .LBK archives
*LOGBOOK 23 !!

MAP files
eg *MAP FILENAME.MAP reads the file only but does not show the screen.
FILENAME.MAP reads the file and shows the map.
*LIST M as from the System menu

***MINIMIZE** as from the Windows minimize button.

NET
eg FILENAME.NET uses the file instead of DOORWAY.NET

***PANEL**
For use with the Alarm Actions and Retransmission screen to place an alarm in one of 15 alarm panels in addition to the normal alarm panel. A panel is not created until an alarm is placed in it. *PANEL can be used in a button to show the panel if it exists.
Alarms are placed in file MMM-Pnn.TXT
*PANEL *nn / left / top / panel label*
Left in range 0-1000
Top in range 0-1000
Page is virtual 1000 by 1000
0 or omit to set centre of screen
eg. *PANEL 1 / / / Chillers
with file JUN-P01.TXT

***PLOT**
Up to 8 traces can be placed on a 96 or a 1000 point graph.

From data points on the current page:
*PLOT dp dp dp dp / max / min / ticks
eg *PLOT 15 will show a graph if data point 15 is a sensor item.
*PLOT 9 12 23 44 will put the four traces on a graph.
*PLOT 9 12 23 44 / 80 / 20 / 6 will show four traces
and the Y-axis is scaled 80 to 20 with 6 ticks.
From any sensor:
*PLOT sn/Ln/on sm/Lm/om sp/Lp/op /max/min/ticks/period/style
eg *PLOT s1/o20
*PLOT s1/L4/o20
*PLOT s1/o20/[z1]
*PLOT s1/o20 s2/o24 s3/L6/o44
*PLOT s1/o20 s2/o24/[z1] s3/L6/o44
Default *PLOT s1/o20 s2/o24 s3/L6/o44 / / / / !
Choose *PLOT s1/o20 s2/o24 s3/L6/o44 / / / / ?
1min *PLOT s1/o20 s2/o24 s3/L6/o44 / / / / 3
precise *PLOT s1/o20 s2/o24 s3/L6/o44 / / / / 3x
manual *PLOT s1/o20 s2/o24 s3/L6/o44 /80/40/6/3x
and the Y-axis is scaled 80 to 20 with 6 ticks.
For period codes see Sensor Syntax

Plot styles can be selected in range 1 to 22, if omitted 'Lines' style is selected
eg *PLOT s1/o20 s2/o24 s3/L6/o44 /80/40/6/3x/13 will select the 'Tape' style

***PRINT**
Print from the current page as from menu File-Print-Data or File-Print-Page
eg *PRINT PAGE
*PRINT DATA

***READ**
Sends the request message when button pressed and writes the reply with time and date in a CSV file (Comma Separated Variables) for import into Microsoft Excel etc. The files are named READnnn.CSV where nnn is the channel chosen from 001 to 120. The command may be automated using the Event calendar.
**READ channel / request / lan / address*
eg *READ 1 / S1($,V,%) /L99 /o20

***REFRESH** as from the Tools-Communications menu
Restart the fast data request sequence.

***RETURN** as from the File-Return to Previous Page menu

***RS232**
For applications requiring special messages, eg security camera control.
*RS232 *port / baud, parity, data bits, stop bits / data*
precede CTRL characters by ^
set port 0 to signify the current BMS port is to be used.

eg *RS232 2/9600,O,7,1/ATZ^m

***SCHEDULE** as from the System-Schedules menu

***SEACHANGE**
Control SeaChange label conversion of current page and mainly used in generic pages.
eg *SEACHANGE disable conversion
*SEACHANGE 0 disable conversion
*SEACHANGE 1 normal conversion

***SEND**
Sends the message when button pressed
eg *SEND W1(S=O) /o99
*SEND K1(V=15) /o99
*SEND K1($='Room Setpoint') /o99 use single quotes
*SEND B18(S1=I) /L99/o99
*SEND B18(S1=I) /L99/o99/pin1234
where O and I above are letters not numbers
For SeaChange devices
eg *SEND [z1]K1(V=15) /o20
*SEND [z1]K1(V=15) L99/o20 with multiple sites

Use controller text attribute matching
where /o0 means all controllers and /L128 means all lans
SEND FCU/Room Setpoint*(V=21) /o0
SEND FCU/Room Setpoint*(V=21) /L128/o0/pin1234
SEND FCU1&FCU3*/Room Setpoint*(V=21) /L128/o0/pin1234
where & means AND
SEND FCU1||FCU3*/Room Setpoint*(V=21) /L128/o0/pin1234
where || means OR as | is a separator between commands
*SEND 21{app|topic!item}
*SEND 21{excel|book1!r1c1}
*SEND 21{item} using the default DDE server setting

The LogIn level is adjustable from the default value in range 0 to 99
*SEND*0 W1(S=O) /o99 No LogIn required
*SEND*99 W1(S=O) /o99 LogIn level 99
*SEND*40 FCU*/Room Setpoint*(V=21) /L128/o0/pin1234

*SEND N{A>0}(D)/L128/o0 Global text search for IC communications in use

Download time zone(s) from Calendar
*SEND CALENDAR /DAY n /PINxxxx
see Time Zone Calendar

Send PC time & date to controller(s) and bypass any PIN
*SEND *NOW /L99/o99
Controllers with Winter/Summer time chanGe>0 ignore above message so use
*SEND *NOW /L99/o99/pinxxxx
if o=0 then global on selected lan, if Lan=128 then all lans
For SeaChange devices
eg *SEND *NOW /L0/o20/[B1]

***SEND CONFIG** for devices with configuration mode
CONFIG sends CTRL O
/ sends enter key (CR)
The comma character is used to prevent ambiguities
eg controller
*SEND CONFIG R / DPlant Room / XX /L0 /o20
eg TMN
*SEND CONFIG R10/R1,N119,T01234567,E07973123/X1234X/L112/o112
note how pin number 1234 was used above

***SHOWCOMMS** as from the Tools-Show Communications menu

***SMS** to send a SMS text message through a local GSM phone
*SMS tel / message
eg *SMS 01234567890/ This is my message
In the Alarm Retransmission screen to send the alarm text itself use ()

*SMS tel / ()
or *SMS tel / message
or *SMS tel / message ()
eg *SMS 01234567890/ This is my message ()
The SMSport COM port is user adjustable from the Engineering screen menu Email and SMS Settings
Tested with BlueTooth serial link to Nokia 6230 phone using Microsoft XP+SP3 built-in BlueTooth capability.
Some phone handsets will not accept a telephone number with spaces in the number.

***SMSQUEUE**

Show the SMS transmission queue
As from Email and GSM settings screen
?.DWR opens the current month retransmission archive in Windows Notepad

***SNAPSHOT** as from the System Snapshots menu
eg *SNAPSHOT
*SNAPSHOT 23
You can also start or stop a snapshot from a button, or use the alarm filter to action on receipt of a particular alarm. The snapshot is actioned immediately, sets the Snapshot Action times and then runs at the normal time boundaries.

*SNAPSHOT channel / mins / option
eg *SNAPSHOT 99 / 15 set action time to run now then with interval of 15 minutes
*SNAPSHOT 99 /120 / D set action time to run now then daily at 120 minutes ie 02:00
*SNAPSHOT 99 / 0 / D set action time to run now only as time 00:00 ignored
*SNAPSHOT 99 / 0 clear action time

***START**

Open a file with the application associated with Windows. The complete file path must be provided.
eg *START c:\doorway\dw_manl.pdf

***SUM**

The data point evaluates the mathematical expression
eg $*SUM -5 * d21 + 100
see Formatting analog values

***TEL**

Show the current modem and telephone number

TGD file

Doorway can read TGD files, think of them as a disk based PLOT command.
eg BLRFLOW.TGD reads the file and actions it.

***TIME** as from the Controller menu

***TOOLBAR**

eg. $*TOOLBAR 1 show ToolBar
$*TOOLBAR 0 remove ToolBar
$*TOOLBAR ToolBar as menu setting

***WAIT**

Intended for automatic use on a page in a text ($) data point. A manual selection of another page or entering page edit mode will cancel any pending wait command.

*WAIT *secs command*
eg. *WAIT 15 auto.dat
Commands may be concatenated
*WAIT 30 *logout | auto.dat
*WAIT 30 *logout | ding.wav | auto.dat
*WAIT 30 *logout | *wait 5 info.dat | auto.dat

***WRITE**

Write message to a text file
*WRITE *filename, text*
eg. *WRITE myfile.txt, This is my message_this is line 2_ and this is line 3.

***ZONE** as from the Controller menu
eg *ZONE
and *ZONE /[z1] for SeaChange
*ZONE /[d8z1] for SeaChange on domain 8
(note *ZONE replaces *LIST Z)

To preset the controller
eg *ZONE /o20/z1
*ZONE /L99/o20/z1
*ZONE /L99/o20/z1/GET uploads current & standard week times from controller
*ZONE /o55/[z1] for SeaChange routed over BMS lan
*ZONE /L99/o55/[z1] for SeaChange routed over BMS lan
*ZONE /L99/o55/[d8z1] for SeaChange on domain 8

To set the times for today in a zone
*ZONE /Lxx/oyy/Zxx/SET 0830,1200,1300,1730,2400,2400

To preset the controller and load a ZON file
eg c:\doorway\sample.zon /o20/z1
c:\doorway\sample.zon /L99/o20/z1
c:\doorway\sample.zon /[z1] for SeaChange
c:\doorway\sample.zon /L99/o55/[z1] for SeaChange routed over BMS lan

To load a ZON file into both Current and Standard weeks of all zones, and open at zone 1
eg c:\doorway\sample.zon /L99/o20/z1/all

$ K + Changing Style - Grey Toolbar

See also Edit Data Points

This allows you to choose the colours and fonts used in Data Points. Your choices are reflected in the example in the toolbar.

The Style Copy/Paste feature is provided to quickly copy styles across a page. Only the style data is changed. The Style Copy button only remembers the data point number, and then Paste copies across just the Style parameters from the original data point. It is not possible therefore to copy styles between pages with this feature.

The Right Mouse Button Properties menu offers a complete Copy/Paste of all the parameters of Data Points and Buttons. As this feature remembers all the parameters it works even after changing page.

Extra features available when using certain fonts:-
If *ARIAL* font is used the label appears on the first line, and the value and units on a second line.
If *COURIER*, *COURIER NEW* or *FIXEDSYS* font is used then the text is fixed spacing, and is useful where items need to align. This feature is used in the generic text pages.

FONT_EDIT_MODE
$ Font Style Editing Window
K Edit;Style;Font;Data;Point;Grey;Mouse
+ Contents:530

$ K + BMS Types

See also Text Data Points Syntax

Doorway uses software drivers to communicate using several communications protocols. Where possible the differences between the various communications protocols do not affect the user interface, as a consistent style of data point properties is both easier to learn and use.

Doorway's communication drivers are being continually increased and additional drivers will be introduced as required, contact Doorway Systems with your requirements.

Protocols may be mixed on a page and used in any order, although faster data throughput will generally occur if the order is structured.

The default BMS type is 0, and is restored on every page change.

Type	Application	Method
0	IQ1, IQ2 and SeaChange	Short text
a	IQ3, IQL, XNC, FNC, ID etc.	'Terse' text
b	IQ1xx pre v4, How fire i/f etc.	'Random' value
c	IQ3 module changes	Structured text
d	DDE Point To Point Tunnelling	Short text
e	Permit write from Datapoint	'Terse' text
f	*reserved for future use*	

BMS type **a** is the only protocol used by later devices eg IQ3, IQL, XNC, FNC and ID. BMS type **a** was named 'Terse' text even though the messages are longer than normal text.

BMS type **b** is primarily for use with BMS controllers without text communications, ie IQ1xx prior to version 4 firmware. Much less data is available from these controllers, in particular labels and units are not displayable. Item values available include sensor value, analog value, digital status, plots, time zones and controller configuration mode are available. Datapoint examples:-

S1(V)	Requests plot when clicked
A5(V)	Adjust Analog when clicked
B18(S0)	Adjust Digital when clicked

BMS type **c** is only for use with IQ3 series BMS controllers The structured text protocol allows complex data structures to be handled in a consistent manner using nested parenthesis (brackets).

BMS type **e** for use with all IQ series BMS controllers allows a datapoint to perform a Write action when the datapoint is refreshed. e.g. W1(S=I)

Example

To change a single data point, add the code **a** to its address as below

20a

Or you may globally change all data points on a page by setting a data point

$*BMS=a

When running this will display as **BMS type a**

BMS_TYPES
$ BMS Types
K BMS Types;Types;Data;Point;Syntax;Protocol;IQ types;Communications;Text;Terse;Random;Enhanced;DDE Tunnel;IQ Version;IQ3;$
+ Contents:535

$ K + Dynamic Images

See also Edit Data Points, Edit Animation Rate and Image Creation.

Doorway can show both static and animated images. Animated images are created by playing continuously the sequence of frames in a multiple image. Frames may also be shown separately to provide a multilevel image, for example a tank contents gauge.

Images are contained in files containing either a single image, or an 8 or 11 frame multiple image. Picture formats supported are the same as the Doorway page background, namely WMF, BMP, JPG, GIF and PCX, and also Microsoft's ICO icon file format. Images can be created using most drawing applications, or from document scanners and digital cameras. Images automatically resize with the Doorway page. Images may be either static shown by a text data point, or dynamic in response to varying conditions in the BMS.

Doorway automatically creates an IMAGES folder which is used to hold static and dynamic images which you wish to have available for all pages. The image file search order is the current page folder then the IMAGES folder. This means that you need only use the filename, which is more convenient than using the full pathname, and is drive location independent.

Animated images require considerable PC power, and a fast Intel® Pentium® or AMD® Athlon® CPU (processor) is required. The effect of a slow CPU (processor) is that the PC response to menu selection etc becomes poor. To manage the processing burden the animation time interval may be adjusted from menu Edit-Change Animation Time. Animation is suspended when Doorway is minimized to an icon, releasing CPU (processor) power for other applications. Animation is also suspended when no communications option is selected.

Each Doorway page can show up to 40 images, either static or animated. Any data point numbers may be used for images.

Image Syntax:

Single	,,,filename,rescale	
Multiple-still frame	,,1filename,rescale	8 state
Multiple-animated	,,afilename,rescale	8 state
binary	,,bfilename,rescale	8 state
status byte	,,sfilename,rescale	8 state
value	,,vfilename,rescale	8 state
decimal value	,,dfilename,rescale	11 state
decimal labelled	,,lfilename,rescale	11 state

The separator characters are commas.
The action codes (a, b, d, l, s and v) are lower case. Upper case action codes (A, B, D, L, S and V) signify that the frames in a multiple image are stacked vertically rather than horizontally. The choice of horizontal or vertical is for convenience, since images will be distorted if larger than about 300mm (12 inches) in width or height. The rescale parameter is optional, and may vary from 1% to 900%. If omitted the scale is 100%.

Digital
BMS-item / on-text image / off-text image / on-colour / off-colour
Text is used as switch labels in the usual way.

image	*descriptor*
none	*omit*
static	,,,file.wmf
frame 3 of 8	,,3file.wmf
animate all 8	,,afile.wmf

Analog
BMS-item / max / min / image

IMAGES
$ Dynamic Images
K Dynamic;Images;Graphics;Flash;$;Rotate;Speed;Animation;Frames;Multi Level;BMP;WMF;PIC;DRW;RLE;JPG;PCX;GIF;ICO;Images Folder
+ Contents:537

where *image* is: ,,vfile.wmf
or ,,dfile.wmf
The separator ,,v indicates that the data point shows a decimal **v**alue in 8 states.
The separator ,,d indicates that the data point shows a **d**ecimal value in 11 states.

frame	% of span (max-min) 8 state		% of span (max-min) 11 state	
1	0	12.5	0	5
2	12.5	25.0	5	15
3	25.0	37.5	15	25
4	37.5	50.0	25	35
5	50.0	67.5	35	45
6	67.5	75.0	45	55
7	75.5	82.5	55	65
8	82.5	100.0	65	75
9	na	na	75	85
10	na	na	85	95
11	na	na	95	100

Text DataPoint
To show images without a controller use the following syntax:-

Single	$,,,filename,rescale	
Multiple-still frame	$,,1filename,rescale	8 state
Multiple-animated	$,,afilename,rescale	8 state
value	$,,$xvfilename,rescale	8 state
decimal value	$,,$ydfilename,rescale	11 state

where x is 1 to 8
y is 1 to 9, 0 and - for values 1 to 11
change v to V and d to D for vertically stacked frames.

Datapoint examples:
The examples below are to illustrate the principles, many items in the BMS may be used to derive information in a suitable form.

Static: $,,,tank.wmf

Two state:

default text	W1(S)/,,,go.wmf/,,,stop.wmf/
user text	W1(S)/Run,,,go.wmf/Stop,,,stop.wmf

Relay module using 100, 70, 40, 0 values:

	D1(V)/,,,heat.wmf/,,,off.wmf/,,,cool.wmf/,,,off.wmf
	D1(V)/,,,pump1.wmf/,,,off.wmf/,,,pump2.wmf/,,,off.wmf
animated	D1(V)/,,afan1.wmf/,,,off.wmf/,,afan2.wmf/,,,off.wmf

Animated:

default text	W1(S)/,,afan.wmf/,,1fan.wmf/
user text	W1(S)/Run,,afan.wmf/Stop,,1fan.wmf/

Multilevel analog value:

8 level	A1(V)/100/0/,,vtank.wmf
11 level	A1(V)/100/0/,,dpressure.wmf
11 level offset	A1(V)/2500/1000/,,dpressure.wmf

Multilevel binary value:
The rightmost three characters of the reply are evaluated, ignoring space characters. Capital letter `I` means binary 1.
G1(Ev,Fv,Gv)///,,btank.wmf
S1(M)///,,balarm.wmf (nb: reads OLH only)
S1($,V,%,M,M)///,,balarm.wmf

D1(M,V)/,,balarm.wmf (eg show on-off-fault etc images)
D1(M)/,,balarm.wmf (eg show faults only)

bin	dec	frame
000	0	1
001	1	2
"	"	"
110	6	7
111	7	8

Multilevel status byte:
Up to eight leftmost characters of the reply are evaluated, or until a space character. A number 1 or capital letter I means ON. The first bit which is ON determines the frame number to be shown. If no bits are ON then a blank is shown, unless optional *off-text* is used as shown below. If less than 8 bits in the status place a space before any *off-text* to prevent incorrect analysis.

A1(S)///,,salarm.wmf
S1(M)///,,salarm.wmf
A1(S)///*off-text*,,salarm.wmf
S1(M)/// *off-text*,,salarm.wmf *(note space as 4 bits only)*

Hint for Advanced users:
To add a new data point image to the page, open the yellow toolbar, and click the Images button. Select the required image from the Image Viewer list. Then hold the CTRL key and drag the image from the box onto the page. The reference for a static image is written into the editing box. Now edit the parameters in the yellow toolbar to get dynamic effects as required.

$ K + Image Creation

See also Dynamic Images

Images may be created using the same application that you used for making Doorway page pictures. Where possible use vector drawings (.wmf) as they are easier to create and edit than pixel orientated bitmaps. Photographs and scanned pictures which consist of large numbers of individual pixels are always displayed as a bitmap (.bmp).

Static images
Draw the image as required. In use the image is shown the same size as it was when created. To vary the size of the displayed image append a comma followed by a percentage number to the filename. If no rescale number is present, then normal size i.e.100% is assumed. Images may be resized between 1% and 900% of their original size.

Multiple Images
Multiple images can be rescaled in the same way as static images, see above. Making multiple frame images for animation requires some care. Doorway divides the multiple frame into 8 or 11 equal frames. Doorway calculates the image size in twips, see below. The image size is then converted to the pixel units of the actual display in use. Doorway will resize the image if necessary to make it exactly divisible by the number of frames required. If the division was not exact there would be a difference between frames. and when played as an animated image, the image may appear to move sideways, or upwards if using vertical frames. The image will also wobble if the contents of each frame are not matched.

It is recommended to practice first with set of simple rectangles, and the number in each frame. When the image animates smoothly, try a more complex image. Use a vector drawing application which allows a 'snap to grid' feature, and set a suitable grid. Create the first image the same size which you require in Doorway. Surround the image with a bounding rectangle set to the minimum thickness. Copy the image to get the required 8 or 11 images either horizontally or vertically. Make sure that the overall dimension is not greater than about 300mm (12 inches) else the image will be distorted. This is unlikely to be a limitation in practice as both horizontal or vertical stacked frames may be used. Now change the internal contents in each frame as required. 11 frame images are used where it is wished to represent a decimal value to 10% resolution, rather than 12.5%. All other multiple frame images contain 8 frames.

For example with an 8 frame image, rotate the image by 360/8 i.e. 45 degree per frame. However with a two bladed fan 22.5 degrees would be required. With a four bladed fan 11.25 degree would be required, and so on. If a four bladed fan is rotated 22.5 degrees per frame then eight frames shows two revolutions, and the perceived rotation speed is higher.

Now set the bounding rectangle colour to 'none', and its fill colour to 'none'. Save the drawing in the application's native file format for re-editing if required later. Select the multiple frame image and 'Export' as a Windows Metafile (.wmf). If suggested choose 'Placeable' or 'APM header' type WMF file.

Using Doorway to create a wmf file.
If the application does not offer a .wmf export feature select 'Edit-Copy' to copy the image to the Windows clipboard.
Run Doorway.
Select menu File-New.
Select Menu Edit-Paste Picture.
If OLE format is offered choose NO.
If Metafile or BitMap is offered choose Yes to accept the metafile.
Select menu File-Save As
Save Doorway Page as... choose filename TEST.DAT for example
Save Picture file as... choose filename TEST.WMF for example
Doorway will create TEST.WMF from your image, with the size information from your drawing application. Do not worry that Doorway's page ignores the image dimensions and stretches it to fill the page, the original dimensions will still be saved in the wmf file.
Now you may use the image to animate a data point, see Dynamic Images

---

IMAGE_CREATE
$ Dynamic Image Creation
K Creation;Dynamic;Images;Graphics;Flash;$;Rotate;Speed;Animation;Frames;Multi Level;Visio
+ Contents:538

Corel Draw and Visio 5 have been used to produce images suitable for animation. When exporting metafiles from Corel □raw ensure the APM header (Aldus Placeable Metafile) option is ticked. Corel Draw seems to work very accurately and animations are smooth. In Visio 1 to 4 the developers added a small white border around metafiles to "enhance their appearance in Word", so animations were inaccurate. Visio Developer Network Knowledge Base says that many people told Visio that they did not want this feature, so Visio developers removed this feature from Visio 5 onwards.

Using Visio Technical 5.0c Plus, Visio 2000 and Visio 2002.

To create an 8-state animated image in Visio 5 or later without Visio adding extra space around the metafile perform the following actions. The final image will be 1 inch square, but can be scaled in Doorway to suit, this ensures the best accuracy. Set your PC to the highest screen resolution to improve image creation accuracy. Once created you can use images at any screen resolution. In addition set your screen to less than the number of colours of the target display. The images are kept small, and the screen driver does not have to work rendering for example a 16 million colour animation into a 256 colour display!

Draw a bounding rectangle 8 inch by 1 inch
To set properties of bounding rectangle
Right click on bounding rectangle
Format-Fill
    Pattern=0=none
    Foreground=1=white
    Background=0=black
    Shadow pattern=0=none
    Shadow foreground=0=black
    Shadow Background=1=white
    Apply, then OK
Right click on bounding rectangle
Format-Line
    Pattern=0=none
    Weight=0.0001pt (custom)
    Colour=0=black
    Cap=Square
    Round Corners=(sharpest)
    Rounding=0in
    Begin=0=none
    End=0=none
    Size=Very Small
    Apply, then OK
The bounding rectangle will NOT be visible,
but may be found at any time by clicking on its location.

Now draw the required 8 animation images at 1 inch pitch inside the bounding rectangle.
Do not 'Group' the bounding rectangle to the internal images.
When complete save in both formats using the "Save as type" drop down box.
File-Save As TEST.VSD
File-Save As TEST.WMF

In Doorway to evaluate TEST.WMF without BMS communications use a text data point with syntax
    $,,aTEST.WMF,500
Where 500% rescale is used to enable checking of the animation for accuracy.

Twips.
Doorway, like most drawing applications, works internally in 'twips'. The twip is Windows unit of screen measurement equal to 1/20 of a printers point. There are approximately 1440 twips to a logical inch or 567 twips to a logical centimetre - the length of a screen item measuring one inch or one centimetre when printed. The twip is a screen-independent unit used to ensure that placement and proportion of screen elements in your screen application are the same on all display systems. By contrast the pixel is a screen dependent unit of measurement.

$ K + Command Line Options

The complete command line for Doorway looks like:

DOORWAY.EXE [zzzzz.DAT] [local] [P=x] [B=yyyy] [manager]

Any item in square brackets is optional. Do NOT include the square brackets. You may use any single option, or any selection in any order, but if the filename is included it MUST be first. Saved in INI file means that the parameter is retained from session to session in DOORWAY.INI. Command line parameters take precedence over INI file settings. See also INI File Options

zzzzz.DAT
This is the file you wish to load on start-up, the Home page. Replace the zzzzz with the filename.
If the file is in a different folder from Doorway then set the required folder in Program Manager or Start Bar in the normal way. Note that this setting allows you to overrule the file as set from Doorway menu File-Set Home Page.

local (saved in INI file)
Required if you want to connect locally to a controller without using a LAN. The controller addresses are ignored so this can also be used for testing pages with a single controller.

P=x (saved in INI file)
This is the number of the serial port you wish to use. Replace the x with a number from 1 to 4.

B=yyyy (saved in INI file)
This is the baud rate that you wish to talk to the device at. Replace the yyyy with one of the following:
1200 for 1200 baud
9600 for 9600 baud
19K2 for 19200 baud.

Manager mode
In Manager mode all menus except Help are removed. This is intended for users who wish to limit access to the BMS. The only possible actions are changing Knobs and Switches if placed on an accessible page. Password login is still required for Knob and Switch adjustment, and to close the program. Editing of pages or other engineering functions are not available from Manager mode.

Manager mode from a desktop icon
A desktop shortcut link icon can be set to start Doorway, use the following syntax on the shortcut link icon's Properties command line:
C:\DOORWAY\DOORWAY.EXE MANAGER

Manager mode permanent operation
To make Doorway run in Manager mode at all times make the following entry in the DOORWAY.INI file using Notepad or other text editor. Locate the [Doorway to BEMS] section, and add the entry as shown below:-

```
[Doorway to BEMS]
VERSION=MANAGER
```

Manager mode options:
VERSION=MANAGER retains the Help menu item so the page aspect ratio is unchanged.
VERSION=MANAGEROLD removes all menu items.
VERSION=MANAGERFULL removes all menu items and the caption bar. If the Windows task bar option 'Keep the taskbar on top of other windows' is deselected then the Doorway page will fill the screen completely.

To get back to normal operation delete the above INI file entry, or you may disable by prefixing with a semicolon (;) which tells Windows the line is inactive. Alternatively place the word ENGINEER on the command line of a shortcut link icon and Doorway will run in the full mode with all menus showing, disregarding the INI file setting.

COMMAND_LINE
$ Command Line Options
K Command;Line;Program Manager;Options;Startup; Manager Mode;Version;INI
+ Contents:540

$ K + INI File Options

Like most Windows programs Doorway uses an INI file (DOORWAY.INI) to hold information about users choices in the program. There are a great many settings in the INI file, and the majority of these are automatically updated when selections are made in Doorway, so it is not usually necessary to edit the file manually. If a setting is missing or invalid Doorway uses a sensible setting instead.

A few special parameters are provided to modify Doorway's behaviour which are not currently changed from within the program, and these are shown below. Setting of these features from within Doorway may be added in the future.

The DOORWAY.INI file may also hold information about other Doorway Systems software installed on a PC. For example [Doorway to BEMS], [SeaChange] and [DoorwayIT] and many other sections may all exist in the DOORWAY.INI file, the sections are created as required by the relevant Doorway product.

Doorway full product:-

In section
[Doorway to BEMS]
To set the startup Window size
StartupWindow=left,top,width,height (in pixels)
example - ½ size VGA
StartupWindow=160,120,320,240
example - Maximized
StartupWindow=0,0,-1,-1
example - Minimized
StartupWindow=0,0,0,0

To select manager mode permananently
Version=manager
or
Version=managerold
or
Version=managerfull
A desktop shortcut icon can override Manager mode by being set with "c:\Doorway\Doorway.exe Engineer"

To simplify Doorway to SeaChange Doorway
Version=seachange
All settings are read from and written to the section [SeaChange]

To force hardware handshake - eg for legacy 1200 baud CNC
RS232Handshake=-1
Note this gives RTS/CTS flow control on the COM port.

In section
[SnapShots]
default Snapshot folder (inside the Doorway application folder)
SnapDir=snapshot
Example of an alternative Snapshot folder
SnapDir=f:\public\bms\user1\snapshot

SeaChange Doorway product:-

INI_FILE
$ INI File Options
K Options;Setting;Startup;Manager Mode;Version;INI;Snapshots;Snapshot Folder;RS232 Handshake;Handshake;Flow Control;RTS;CTS
+ Contents:545

All entries are as above except the section title is **[SeaChange]**. Entries which refer to features not provided in SeaChange Doorway are ignored.

$ K + Adjusting Time

This screen is for adjusting the time and date in a controller. For convenience you may also check and copy from the calendar clock in your PC.

To copy the PC time and date as displayed to the controller edit boxes press the button with the >>>> symbol.

To update the time and date in the controller with your edited values click on the Update button. The time is **NOT** sent to the controller until the update button is pressed.

If your system has many controllers with individual clocks you may also review and then adjust the time in all controllers simultaneously using System Clocks List.

See also Controller Time

Dates in Doorway are stored in Microsoft 'long date' format with 4 digit year. The BMS controller uses the year abbreviated to one or two digits. Doorway makes the two digit year for the BMS controller from the last two digits of the four digit year.

Summer-Winter (Daylight Saving) Time changes:
European Union
The 9th EC Directive prescribes the start and end dates of Summer time as the last Sundays in March and October respectively. These dates are in line with those already operating in the United Kingdom. The 9th Directive provides that these start and end dates should apply indefinitely. The Order came into force on 11 March 2002, for further information see http://www.berr.gov.uk

Daylight Saving:
begins at 1 a.m. GMT on the last Sunday of March and
ends at 1 a.m. GMT on the last Sunday of October

Examples. Summer time begins and ends respectively on the following dates:
In 2017: the Sundays of 26 March and 29 October
In 2018: the Sundays of 25 March and 28 October
In 2019: the Sundays of 31 March and 27 October
In 2020: the Sundays of 29 March and 25 October
In 2021: the Sundays of 28 March and 31 October
In 2022: the Sundays of 27 March and 30 October
In 2023: the Sundays of 26 March and 29 October
In 2024: the Sundays of 31 March and 27 October
In 2025: the Sundays of 30 March and 26 October
In 2026: the Sundays of 29 March and 25 October
In 2027: the Sundays of 28 March and 31 October
In 2028: the Sundays of 26 March and 29 October
In 2029: the Sundays of 25 March and 28 October

USA Except Hawai and Arizona
From 2007 under legislation enacted in 2005, *Energy Policy Act* in the USA.
Daylight Saving:
begins at 2 a.m. on the second Sunday of March and
ends at 2 a.m. on the first Sunday of November

ADJUST_TIME_BOX
$ Adjusting Time
K Time;Clock;PC;Controller;Adjust;Summer Time;Winter Time;Daylight Saving;BST;GMT
+ Contents:550

$ K + Password Administration and System Settings

See also Tools - Log In and Password Levels

To administer Passwords use the Tools-Engineering menu to get into Engineering Mode. Then from Engineering Mode use the Tools-Password menu.

Doorway can restrict users from using certain features. To control which features a user may access put their name and other settings in Passwords. Each user has a name, password (optional), password level, controller PIN and a logout time adjustable from 1 to 255 minutes.

The BMS controller can also prevent users from changing settings. If a controller has a PIN number and level set up, this has to be encrypted and included in all Supervisor communications messages which want to change controller parameters, eg Knobs, Switches, Time Clocks etc. If the PIN is incorrect then the message is ignored.

Password
A Doorway password may consist of anything between 0 and 20 letters or number, including spaces. No characters at all means that no password is required for that user.

Controller PIN
A PIN is any number between 1 to 9999. Each user can have a PIN set up to match levels set in the controller. The PIN in the controller is set in module *Users*, by using its configuration mode. See your BMS documentation.

Level
Each level includes the levels below it, for example if you let a user Adjust Knobs and Switches then that user can also acknowledge alarms. See Password Levels

LogOut Time (minutes)
The time is measured from when a user last crossed a password threshold, hence regular user activity may keep the user logged In. Timeout is suspended while in Engineering mode. You may manually Log Out with the menu Tools-Log In & Out available in both Engineering Mode and the Doorway page, and the PIN then is not sent with messages.

Record LogIn and Out
If this option is selected Doorway will record each successful LogIn by a user in files JAN.LOG, FEB.LOG etc. Each LOG file is retained for 11 months, and is then automatically deleted.

Record Audit Trail
If this option is selected Doorway will record many changes sent to BMS controllers such as adjustments to knobs, switches, time clocks etc. sent from this supervisor. The audit information is stored in files JAN.DWA, FEB.DWA etc. Each DWA file is retained for 11 months, and is then automatically deleted.

Show Number Pad
If this option is selected Doorway will show a numbers pad with Login, Time & Date, and Time Zone screens to allow entry from a touch screen.

Archive Alarms
If this option is selected Doorway will archive alarms in addition to JAN.TXT in file 2006JAN.TXT etc and these monthly files are not deleted by Doorway.

Page Tool Tips
The toolbar shows information when the mouse is over a button, communicating datapoint or image. When the toolbar cannot be enabled else it would obscure the display this option shows the same information at the top right hand corner of the page.

PASSWORD_ADMIN
$ Password Administration and Security Settings
K Password;Administration;Security;Levels;Log In;Log Out;Users;Record Log In;Timeout;PIN numbers;LOG;Audit Trail;DWA;PC Name;Identifier;Number Pad;Touch Screen;System settings
+ Contents:560

Edit Mouse Tool Tips
This option is for Edit mode, when the mouse pointer is over a button, datapoint or image enhanced information is shown alongside.

Logbook Level
The level required to use the Logbook may be set here, the standard (default) value is 0, for all users.

Exit Doorway
To Exit the Doorway application the required user level is normally set at 40. With this option you may change this level. Please note that a user can always close a Microsoft Windows application by closing Windows, or from the Windows Task List available from any Control Box-Switch To, or using the Ctrl+Esc keys, or even by simply turning the PC's power off.

PC Name
The PC Name is the name returned to other BMS devices when requested. It is the equivalent of the BMS controller Identifier. When first installed Doorway will set the PC Name as "Doorway - XXXX" where XXXX is the licence serial number. Suggested alternatives are your location name and / or your own name

Notes:
To set a level below which no password is required
Set a blank password for the *first* user. Then set the level for the *first* user to the level below which no password is required. To access a feature requiring a higher level Doorway will still request Log In as normal.

To disable all passwords:
Set a blank password for the first user with a level of 99. Log In is never requested, and the first user's PIN is always used.

Default action with first user
If the currently selected user has insufficient level, or has timed out and the *first* user in the password list has no password, selecting a feature which is at or below the default level causes Doorway to automatically LogIn as the first user, not the currently selected user. Note that this means the controller PIN then becomes that set for the first user.

$ K + Password Levels

See also Tools - Log In and Password Administration

Each level includes the levels below it, for example if you let a user Adjust Knobs and Switches then that user can also acknowledge alarms. To be able to do everything you require a password level of 99.

Page screen	
Exit Doorway	40 (adjustable-see below)
File Open	40
Initiate CHAT	45
Acknowledge alarm	50
View alarm archives	60
Acknowledge all alarms	65
Print alarms now	66
Adjust Knobs & Switches	70
Button *SEND text comms	70
Manual override	75
Change zone times current	74
Change zone times standard	75
Change schedule times	75
Change controller clock	80
Adjust Plot Channels	85
Adjust Alarm Enables	87
Adjust TMN-MNC number table	90
Modify and save pages	90
Build, load and save maps	90
Print alarms flag	90
Alarm sound	90
Alarm sound enable flag	90
Repeat alarm sound time	90
Communications	90
DDE settings	90
Animation rate	90
Schedule actions	90
Snapshot screen	
New Snapshot file	89
Delete Snapshot file	89
Snapshot Actions	89
Delete a single record	99
Event calendar screen	
Review or change events	90
Engineering screen	
Configure controllers	95
Download/Zero	95
Upload	96
Alarm Retransmission	97
Text communications	98
DOS alarm printer flag	99

PASSWORD_LEVELS
$ Password Levels
K Password;Levels;Log In;Log Out;Users;Record Log In;Timeout;PIN numbers
+ Contents:565

Alarm Filters 99
Ignore alarms flag 99
Change passwords 99

$ K + Keyboard Users

Many of Doorway's features are accessible without a mouse:

Selecting a Data Point

Press the Page Up and Page Down keys to move between data points.

Press Insert to "click" on a data point.

Press Shift Insert to edit a data point.

Selecting a Button

Press the tab key to move between buttons.

Press Space to "click" the button.

Press Shift Space to edit a button.

Hint: If you cannot get back to the main window, press the ESCAPE key.

KEYBOARD_USERS
$ Keyboard Users Shortcuts
K Keyboard;Shortcuts;Users;
+ Contents:570

$ K + Adjusting Knobs

This allows you to adjust controller knobs if the user is logged in with a level of 70 or higher.

The maximum and minimum values shown are those entered in the Data Point request, **not** those set in the controller. If the actual controller limits are less than those set in the Data Point request then the controller will ignore invalid values.

If the controller requires a PIN for the knob being adjusted it will be necessary for the user to be logged in with the necessary PIN.

As well as the software knobs K1 through to K30, analog nodes A1 etc may if appropriate be adjusted as a knob. To prevent an analog node from being adjusted append /* to the end of the data request.

see also Knobs Syntax

ADJUST_KNOB
$ Adjusting knobs
K Adjust;Knob
+ Contents:580

$ K + Adjusting Switches

This allows you to adjust controller switches if the user is logged in with a level of 70 or higher.

The on and off text shown is that entered in the Data Point request.

If the controller requires a PIN for the switch being adjusted it will be necessary for the user to be logged in with the necessary PIN.

As well as the software switches W1 through to W20, binary nodes B1(S0) etc may if appropriate be adjusted as a switch. To prevent a binary node from being adjusted append /* to the end of the data request.

see also Switches Syntax

ADJUST_SWITCH
$ Adjusting switches
K Adjust;Switch;
+ Contents:590

$ K + Adjusting Labels

This allows you to modify controller labels if the user is logged in with a level of 70 or higher.

The controller requires a PIN level of 99 for the label to be changed so it will be necessary for the user to be logged in with the necessary PIN.

To adjust a label append /$ to the end of the data request.

ADJUST_LABEL
$ Adjusting labels
K Adjust;Label
+ Contents:591

$ K + Adjusting Settings

This allows you the user to adjust multilevel settings between predetermined values, where intermediate value would make no sense. This is useful with most BMS, LonWorks® LNS and some DDE applications. The user must be logged in with a level of 70 or higher.

The text for each valid level is that entered in the Data Point request.

To prevent an item from being adjusted append /* to the end of the data request.

see also Settings Syntax

ADJUST_SETTINGS
$ Adjusting settings
K Adjust;Setting;DDE;Multi level
+ Contents:592

$ K + Adjusting Drivers (On-Off-Auto)

This feature allows you to control an auto / manual facility when set in the controller to manipulate the signal to a Driver. The user must be logged in with a level of 80 or higher.

The on and off text shown on screen is that entered in the Data Point request. The words AUTO and MANUAL are suggested for consistency.

If the controller requires a PIN for the switch being adjusted it will be necessary for the user to be logged in with the necessary PIN.

see also Manual Override Syntax

ADJUST_DRIVER
$ Adjusting drivers (On-Off-Auto)
K Adjust;Driver;Hand;On;Off;Auto;Manual;Override
+ Contents:595

$ K + Change Data Point Reference

The Change Data Point control is reached using the *CHANGE command. This is used on some generic pages to achieve dynamic reallocation of a Data Point parameter without using the yellow toolbar.

For example if data point 23 is S1($,V,%) it could be changed using the Change Data Point control to a different sensor using the Button (file box) command:-

Syntax *CHANGE [dpnumber] [ALL]

*CHANGE will show the Change control for this data point.
*CHANGE 9 will show the Change control for data point 9.
*CHANGE 9 ALL will show the Change control for all similar items to data point 9.

See also Button Syntax

CHANGE_DP_REF
$ Change Data Point Reference
K Change;Data;Point;Generic Pages
+ Contents:597

$ K + Enhanced Graphs

Also activated with CTRL G.

Graphs are shown by clicking on a sensor data point which is being logged. Up to eight traces may be shown on the graph before the first trace is overwritten. Data is added to an existing graph by clicking on the next sensor data point.

The most recent plot can be recalled by choosing Edit - Refresh last plot. The graph is cleared either by closing the window, or selecting Edit - Clear.

A variety of graph styles are available in the options menu. Pie charts are only applicable when there is only one trace. Scatter graphs are only applicable with 2 or 4 traces.

The number of traces, colours etc. may be altered by using the Edit-Preferences menu.

Preference option *Fine Autoscale* provides an autoscaling more suitable for HVAC use. Option *Calculate Time* operates on plots with 80 or less points with 15 minute interval, and the time axis is recalculated by Doorway. The calculate time feature is provided to mask the manufacturer acknowledged graph time firmware error in some IQL series controllers. IQL series controllers only plot 80 points. The calculate time option is also used to precede the plot with fixed minimum values so the plot has the standard 96 points. Hence IQL plots may be compared with other standard plots.

The Statistics menu options are only applicable to Line graphs.

The Group menu allows you to average adjacent data points. A full set of data contains 96 points. Group 8 means that every 8 points are averaged and a substitute point is plotted. The benefit of this feature is most apparent with the 2D and 3D Bar styles which are very attractive when printed to a colour ink jet printer.

Edit - Demo data produces 2 simple traces which are grouped by 4 and shown as a 3D bar, vertical, z-clustered chart as an indication of what can be achieved.

File - Save Graph Picture saves the current graph to disk as a WMF picture.

File - Copy Graph to Clipboard puts the current graph onto the clipboard as a picture where it may be pasted into another application, for example a Word Processor.

File - Copy Data to Clipboard puts the figures used to create the current graph(s) as text onto the clipboard where it can be pasted into another application, for example a Spreadsheet or Word Processor for further analysis.

Printing:

The size of the printed graph relates to the size of the window on the screen. Maximized produces the largest graph possible. Setting the printer to Landscape produces larger graphs than Portrait.

File - Print Graph Mono prints the current graph and the coloured traces are converted to black dotted and hashed lines. Some printers may have difficulty discriminating between the line styles in which case experiment with group 2 and group 4 which may improve the printout without filtering out too much of the data.

File - Print Graph Colour prints the current graph using the displayed colours, if a colour printer is attached. A monochrome printer may convert coloured traces to either black (visible) or white (invisible) depending on the printer driver.

GRAPHS_GSW
$ Enhanced Graphs
K Graph;Enhanced;Plot;Log
+ Contents:600

File - Print Graph as Page prints the current graph as shown on the screen. Hence adjusting the shape and size of the graph screen adjusts the image on the paper. Note that depending on screen and printer resolution selected the printed image may be made larger than one sheet of paper. If this occurs reduce the printer resolution and/or the graph screen size.

Archived graphs from the legacy DOS character based 921 Supervisor may be imported, printed, and copied to the clipboard.

See also Quick Plot and Chart

See also Printing problems

$ K + Quick Plot

The quick graph is particularly useful with modestly powered computers. Only one trace is shown at a time and the data axis labelling is simplified.

File - Open is still under development.

File - Save As saves the basic numerical data as received from the controller to disk.

File - Copy Data to Clipboard puts the figures used to create the current graph as text onto the clipboard where it can be pasted into another application, for example a Spreadsheet or Word Processor for further analysis.

File - Print prints the current graph to the printer. The size of the printed graph relates to the size of the window on the screen. Maximized produces the largest graph possible. Setting the printer to Landscape produces larger graphs than Portrait.

See also Enhanced Graphs and Chart

See also Printing problems

GRAPHS_QUICK
$ Quick Plot
K Graph;Quick;Plot;Log
+ Contents:610

$ K + Chart

Also activated with CTRL H.

See also Enhanced Graphs and Button Syntax.

From the System menu select Chart. The chart can display up to 8 traces. The sampling time is adjustable in steps between 15 seconds and 1 hour. The most recent 96 points per trace are shown, and any older data discarded. This allows a view of between 24 minutes and 4 days.

From the Chart window you can select menu Edit Data Items to show the Chart Data Items edit screen. Here you may manually enter up to 8 items for charting.

A data item can be an analog point which will supply a number, such as S1(V), or D1(V), or even K1(V). Internal configuration values can be charted, for example F1(Dv), or L1(Dv).

Most digital points can also be charted. The digital On and Off status are plotted by default as 100% and 0 respectively, such as I1(S), or D1(Sv), or even W1(S). Internal configuration status can also be charted, for example G1(Dv), or even B13(S0).

DDE points can be charted, with the same syntax as data point. The default dde server is used if the item is used on its own.
eg: {application|topic!item}
{item}

To ease viewing of several digital traces any digital status can be changed from the default 100 and 0 values using the following syntax after the item request /on value/off value/
eg: I1(S)/10/5/

Rapid Charting
From the Enhanced graphs screen select menu Chart. This copies the graph parameters across to the chart and initiates chart data requests. Then choose a suitable sampling time. The chart may then be manually modified or added to at any time as required.

Saving and Loading Chart settings
Chart settings may be saved to disk and reloaded when required. Files use the Doorway Chart file extension (.DWC).

See also Printing problems

CHART_GSW
$ Chart
K Graph;Chart;Plot;Log;DWC
+ Contents:615

$ K + Return Command

You can return to the previously displayed page with a Button with the Filename set to the word RETURN.

Since the word RETURN has this special meaning note that Doorway therefore cannot jump to a file called RETURN.DAT.

This is different to the File - Return to previous DAT option.

See also File Return to previous DAT.

RETURN_COMMAND
$ Return Command
K Return;Previous;File
+ Contents:630

$ K + File Formats

Many Doorway files are stored in ASCII format and may be viewed with the Notepad text editor supplied with Windows. Advanced users may sometimes wish to edit these files directly. Be careful not to alter the structure of any files, since Doorway may not then be able to understand them correctly!

File Extensions:

DAT	for page descriptions.
TXT	for alarms, etc.
ZON	for one 7-day timeclock pattern.
MAP	for the site controller list.

For your convenience Doorway can also show the "User Page" UPG format used by some other BMS software. Either use File - Open, or set up a button on an existing page. In the file open box the "List files of type" drop down list has a UPG option. Doorway will not save in the UPG format. You may however save in Doorway's DAT format in the normal way, either retaining the FIXEDSYS font and only 8 colours on a white background, or enhanced with Doorway's wide choice of type sizes, fonts, and colours, together with a backdrop colour or picture if you so wish.

Click boxes for jumps to other UPG files are implemented. Note that only a single mouse click is needed to action the jump. Keyboard support is available using the tab key to select and the spacebar to action in the usual way.

Pages that are too large are automatically converted to multiple pages with Next and Previous buttons. Doorway may optimise the data so that some $, V and % references are combined.

For more information on DAT page files see File Save As and on picture file formats see Picture Formats.

FILE_FORMATS
$ File Formats
K File;Format;Picture;Data;User Pages;DAT;Microsoft;WMF;BMP;TXT;ZON;MAP;UPG
+ Contents:640

$ K + Using In*a*Vision PIC files

See also Import PIC scale

The PIC file format was used by other BMS supervisor products and can be read by Doorway. The file format is obsolete and should not be used for new installations.

PIC files were created by the 1986 Micrografx In*a*Vision drawing package. The BMS engineer inserted special text codes on the picture to indicate click boxes (buttons) and BMS data points. Micrografx Draw 3.0 and Designer 3.1 can also edit pictures in the PIC format.

Use File Open and select In*a*Vision PIC from the File Type list box. You may also set a Button on a Doorway page to jump to a PIC file. You may also have a PIC file as the starting screen using Program Manager or the Start Bar in the normal way, eg OVERVIEW.PIC.

PIC files are converted into Doorway pages as they are loaded. This conversion process can sometimes take several seconds, depending on the complexity of the picture. The special text codes are converted and appear as appropriate Doorway buttons and data points. For your convenience some BMS references are adjusted to optimise their use with Doorway.

It is recommended that the converted file is then Saved in Doorway format (DAT and WMF). The Doorway format loads much faster than a PIC file as no conversion is required. Doorway's advanced features are then available to a converted PIC file.

Please note that Doorway does not Save in PIC format.

Micrografx In*a*Vision PIC files are NOT the same as Lotus 1-2-3 for DOS PIC files.

The file conversion process:
Doorway extracts the BMS codes for the DAT file and builds the WMF picture in memory. This is how Windows displays pictures, redrawing them automatically after they have been covered by another object.

The competitor BMS product reads in and analyses the PIC file. Then two temporary WMF files are written to the Windows TEMP folder. The first file holds just the picture in WMF format, and the second, holds just the BMS codes. Then the BMS codes file is read in again. Finally the picture file is read in again to build the WMF picture in memory (RAM). Finally the two temporary files are deleted. This conversion is required every time the PIC file is loaded. This disk intensive process can be slow and also 'fragments' the hard disk, requiring frequent running of a disk defragmenter (e.g. Microsoft DEFRAG) to maintain speed of operation.

LOADING_PIC_FILES
$ Using In*a*Vision PIC Files
K PIC;File;Format;Micrografx;In*a*Vision;Conversion;Import
+ Contents:645

$ K + Data Speed

See also Optimise Data Points and Edit Data Points

Doorway requests data from the BMS in the order of the data points. It is worthwhile optimising the order of the data points in the Page to maximize the speed of data gathering.

Transmitted messages can contain multiple data requests to a controller, hence the data shows more quickly if you request all the data from one controller before requesting data from the next controller.

Doorway has internal rules over certain data requests. Data points for Time, Date and Zone functions are always requested *after* other items, regardless of their data point position.

If you create a Page which consistently seems to be slow to get data it is worth checking the syntax of each data point. The BMS controller gets confused if presented with an unknown syntax, or redundant spaces, that shown below was seen with firmware version 7.0

These replies are accepted by Doorway:-

```
S1($,V,%)      S1 BOILER RETURN TEMP     136.35  degC
S1($,V ,% )    S1 BOILER RETURN TEMP    136.35 degC
```

These replies are rejected as invalid by Doorway:-

```
S1($ ,V,%)     BOILER RETURN TEMP  S1  136.35  degC
S1($ , V,% )   BOILER RETURN TEMP  S1  136.35 degC
S1($ , V , %)  BOILER RETURN TEMP   136.35S1 degC
S1($ ,V ,% )   no reply at all
```

Note: Setting a data point to transparent causes it to draw much slower as Windows has to blend the text with the background. This blending occurs even if the underlying area is plain colour or even white! You may be able to achieve the desired effect by setting the data points Paper property to the same colour as the underlying area, which has no speed penalty

Hint for advanced users:
Doorway's File - Optimise Data Points feature will normally reorder the data points satisfactorily.
You may manually fine tune the data points in a completed DAT file using Notepad and its Cut and Paste feature. Do not alter the overall file structure, else unexpected results may occur.

DATA_SPEED
$ Data Speed
K Data;Point;Speed;Optimise;Edit;DAT
+ Contents:650

$ K + Moving Items Around

See also Snap to Grid

Moving Buttons and Data Points around the Doorway page is easy. Hold the CTRL (Control) key down while dragging the item with the mouse. On low powered PC's a bit of care is required when positioning the item, the best method is to allow the PC to 'catch up' with you before dropping the item in the desired position.

The edit toolbar may be moved from the normal position at the bottom of the screen. Move the mouse to the left hand end of the toolbar on the item number. The mouse cursor changes to a four headed arrow when you are above the 'hot spot'. Click and drag the toolbar as desired. Menu Edit-Edit mode will restore the toolbar to the bottom of the screen. To re-enter Edit mode without moving the toolbar use the keyboard shortcut Shift and mouse click on a Data Point or Button.

For SCADA type applications a data point may be dragged with the mouse without the CTRL key pressed if the data point syntax is appended with /+
eg. S1($)////+ *(+ indicates drag)*

At present Doorway provides no method of moving an item without a mouse.

Hints for advanced users:
Use Notepad to edit the DAT file to align an item's X or Y co-ordinates where precise vertical or horizontal alignment is important.

Co-ordinates are the top left corner of an item's bounding box.

Doorway uses a scale of 1000 points in each direction across the page, where the top left corner is 0,0 and the bottom right corner is 1000,1000.

When a page is loaded any item with an X or Y co-ordinate of more than 1000 is automatically moved back onto the visible screen.

Do not alter the overall file structure, else unexpected results may occur.

MOVE_ITEM
$ Moving Items Around
K Edit;Moving;Dragging;Dropping;Adjust;Control Key;Scale;Align;Ctrl;Mouse;Toolbar;SCADA
+ Contents:655

$ K + Right Mouse Button and the Properties Menu

*Please substitute the word **LEFT** if you have the right mouse button as your normal button.*

Right mouse button requests a 1000 point graph if available.
Left mouse button requests a 96 point graph

Edit Mode.
When a toolbar for Edit Mode is showing click the right mouse button on a Data Point or Button to show the Properties Menu. The menu items that appear vary with the context.

On a Button or Data Point.
Properties shows the toolbar for that item.
Copy places all the parameters of the item on Doorway's Edit Clipboard.
Copy Link places the DDE syntax to monitor this data point on the Windows Clipboard, if DDE has been selected in the Tools DDE Links menu.
Paste changes all the parameters of the item from Doorway's Edit Clipboard, using the last information placed there.
Paste Style changes only the style parameters of the item from Doorway's Edit Clipboard, using the last information placed there.
Duplicate creates a new item with identical properties.
Label... shows the SeaChange Label Conversion edit screen.
Move attaches the item to the Mouse Pointer which is dropped in the new position with the next mouse click.
Send to Back moves the item to position 1 which is behind all other items of the same kind.
Send to Front moves the item to the highest position which is in front of all other items of the same kind.

On the Page background.
Add Data Point creates a new Data Point at the location.
Add Button creates a new Button at the location.

Note:
Doorway's special Edit Clipboard has space for the parameters for one Data Point and one Button at the same time. The Edit Clipboard contents are retained when jumping pages, and are kept quite separate from the normal Windows Clipboard.

RIGHT_MOUSE
$ Right Mouse Button and Properties
K Edit;Moving;Mouse;Properties;Copy;Paste;Duplicate;Right;Left;Label;Conversion
+ Contents:657

$ K + Printing Problems

Local Printer
The printer is connected to the PC via LPT, COM or USB ports.

Check the website of the printer manufacturer to see if an updated driver is available.

Try a printer driver for an earlier model. For example many Hewlett Packard inkjet printers work with the HP550C driver.

On Windows 95, 98 and ME if Doorway does not print try reducing the print resolution to 300dpi. If the resolution is not adjustable try a driver for an earlier model. For example many Hewlett Packard LaserJet printers work with the driver for the HP LaserJet 6P model.

Network Printer
The printer is connected to a Server PC and the server is connected to the printer via it's LPT1 or USB ports, or to an Ethernet attached printer. The information below applies to Microsoft Windows servers.

Windows XP, 2000 or NT4 clients connect as:
\\ *ServerName* \ *PrinterName*
example:
GATWICKPRINTER1\HP Color Laserjet 5500 PCL6

Windows 95, 98 and ME clients connect as:
\\ *ServerName* \ *PrinterShareName*
example:
GATWICKPRINTER1\HP5500

Notes:
The ServerName is the Windows Computer Name of the server PC. Microsoft recommends this name is not longer than 15 characters, otherwise external network services are required. From the name Windows 2000 and XP produces a valid 15 character NetBIOS name for compatibility with Windows network browsing service.

The PrinterName used by Windows XP and 2000 allows long file names including spaces. Windows printer wizard supplies a printer description, the installer may change or add more information.

The PrinterShareName used by Windows 95, 98 and ME cannot exceed 12 characters.
The PrinterShareName used by Windows XP and 2000 can exceed 12 characters.

Doorway can work with ServerName, PrinterName or PrinterShareName containing any Windows permitted characters including spaces.

Microsoft recommends that for widest compatibility with applications the entire qualified name of server and printer, including the three slashes, should not exceed 31 characters.

Doorway with Windows XP:
Print Lists, Pages and *Graph as Page* works with qualified names up to 48 characters.
Print *Graph-Chart-Mono/Colour* works with qualified names up to 31 characters.
Print *Graph-Chart-Mono/Colour* with qualified names longer than 44 characters usually results in Windows detecting a fault and closing Doorway

Corrective Action
It is not practical to change server or printer names in a large organisation. If the Windows XP, 2000 or NT4 qualified name is long it is usually possible to print simply by using the printer sharename which is usually shorter.

PRINTING_PROBLEMS
$ Print problems
K Print;Problems
+ Contents:660

From Control panel open the Printers folder
Locate the printer, for example
HP Color LaserJet 5500 PCL6 on GATWICKPRINTER1
In this example the
ServerName = *GATWICKPRINTER1*
PrinterName = *HP Color LaserJet 5500 PCL6*

Right mouse click on the printer name and select properties
Select Sharing tab
Read the Share Name, for example
PrinterShareName = *HP5500*

Start the Add Printer Wizard
Select Local Printer
Do not select Plug and Play option
Select Create a new port of type Local Port
Enter port name *\\GATWICKPRINTER1\HP5500*
(If Network path is not found the names are incorrect)
Select the printer from the manufacturer and model lists
Keep existing driver (if offered)
Printer name-suggest *Doorway HP5500 PCL6*
Yes to default printer
Do not share printer
Yes to print a test page

There will now be two printers in the printers list
Original driver managed by server staff:
HP Color LaserJet 5500 PCL6 on GATWICKPRINTER1
New local driver
Doorway HP5500 PCL6

Right mouse click on printer *Doorway HP5500 PCL6* and select properties
Type in Location box *\\GATWICKPRINTER1\HP5500*
Type in Comment box *Port for Doorway*
If the system prevents you setting Location and Comment fields then it is likely that you have selected the server printer driver which is administered by server staff.

Now test Doorway menu Print Data, Print Page, Graph menu print Mono, Colour and Page,
When selecting the printer the Location and Comment fields will confirm the correct printer is selected.

$ K + Label Conversion

SeaChange four character labels may be expanded into longer text with up to 40 characters. The items which can be expanded are leading **($** label and trailing **%)** units.

eg. [B1 Z1] S1($,V,%)
Doorway will convert both $ and % items. $ and % items used in other than leading and trailing positions respectively are not converted.

The label conversion edit screen is accessed from menu **System-SeaChange Label List**. The edit screen may also be accessed from a data point's properties menu. Select menu **Edit-EditMode**, then click the right mouse button on a SeaChange format data point, ie prefixed with **[** . From the data point properties menu which appears select **Label...**

The label conversion edit screen shows a list in alphabetic order of the four character labels and the expanded text which will be shown instead. Labels which are not shown in the list are shown unchanged.

Note for Advanced users
The label conversion text is retained in the file DOORWAY.LBL. If required this file may be viewed using Notepad or other text editor. If modifying this manually file be sure to retain the same data structure, else unexpected results may occur. File DOORWAY.LBL is always read when Doorway is started, and is also read again when the label conversion editor is opened.

There is space for 1000 labels and a file size of 25KB. Larger files or with more items will not be rejected. Doorway will alert the user when the file is rejected.

Doorway converts each label in real time as they are required. If a large number of label conversion items are in the list then the time the PC takes to locate a label may become noticeable. The solution is either to use a PC with a faster CPU (processor), or reduce the number of labels, or place the text directly on the Doorway page, either as a text data point, or in the backdrop picture.

LABEL_CONVERSION
$ Label Conversion
K Label;Conversion;SeaChange;Mouse
+ Contents:666

[#] [$] [K] [+] SCADA Mode

Supervisory Control And Data Acquisition (SCADA) software is quite similar to BMS supervisory software such as Doorway. Doorway has some special SCADA like features which can be useful in some applications.

A Control Label screen allows the label of an item to be changed.
The location of a point on the screen can be associated with certain controller parameters.
Specified data points can be dragged just using the mouse, without the CTRL key.
A data point can replicate another point without communications

---

[#] SCADA_Mode
[$] SCADA Mode
[K] SCADA
[+] Contents:668

$ K + Doorway Server Login

See also Doorway IT Gateway and IT Router.

The Doorway server licence allows up to 100 users (1 local and 99 remote clients) to run from one installation of Doorway software, and each user has all Doorway functions. The Doorway Server Login application (DWUSER.EXE) is the entry point for remote clients to the server mode.

IT Gateway and IT Router.
Multiple users can share one or more access points into the BMS. The IT Gateway allows many users to share a PC COM port RS232 connection to a CNC type device. The IT Router allows many users to share an ethernet virtual CNC type device as found in EINC, IQ3 and similar devices.

Local operation.
If the server is a Windows platform then Doorway can still be run in the normal way for one user. If ethernet communications are used then select Client 0 and settings to choose the IT Gateways and/or IT Routers in use.

If on the same PC you run Doorway with IT Gateway(s) and/or IT Router(s) then you must tick the *Local Gateway-Router* option to allow free multi tasking else messages will be lost.

Remote client operation.
Doorway can be run from any Windows PC that has access to the server share where Doorway is installed as follows:
On the selected PC locate the server share and map for example as Drive Z: and make the drive mapping persistent.
Create a shortcut to file Z:\DWUSER.EXE on the server and label the icon as DOORWAY.
To operate the user double clicks the shortcut and in the Server Login screen selects their user account, enters their password if required and clicks OK. Their personal copy of Doorway will run on this PC. Each user has their own personal alarm archives and Snapshot records. BMS Passwords, and Ethernet NET and IP lists are common to all users.

Configuration file.
The names and passwords reside in file DWUSER.INI which is created when DWUSER.EXE is first run. Double click this file in Windows Explorer to edit it with Windows Notepad. The file structure is as follows:

```
[DOORWAY]
User, Password,  Folder
User 1,          ,DW1
User 2,          ,DW2
User 3,          ,DW3*   see below
User 4,          ,DW4
```

Users.
By default users are named User 1 etc. It is strongly recommended that the default names are replaced with the users real names.

Passwords.
The space after the User field is for a password, and spaces signify no password. Passwords are written in clear text as high security is not needed. All letters are internally converted to lower case to eliminate problems caused by CAPS LOCK key status.

Folder.
It is strongly recommended that the default folder names of DW1 through DW99 are retained. Folder names DW1 through DW99 are created automatically when required.

Communications parameters.
When a Doorway Client is started the communications parameters are set for *IT Net* and the Client number is selected. If a * character (asterix) is appended to the DWn item then the communications parameters are set for *EINC,IQ3* to permit sites to use these devices instead.

SERVER_LOGIN
$ Server Login
K Server;Login
+ Contents:680

$ K + Licence Agreement

See also Uninstalling Doorway

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LICENCE_AGREEMENT
$ Licence Agreement
K Licence;Agreement
+ Contents:700

$ K + **Doorway Software Release Notes**

0.900	1/5/93	First release to site
0.937	7/7/93	TUTORIAL, ENGINEERING configuration, HELP, MAP
0.947	29/7/93	EDIT PICTURE
0.950	17/8/93	Enhanced GRAPHS. MAP shows Alarm OS and LAN
0.954		RS232 PORT and BAUD selection. HELP in-context
0.955		UP and DOWNLOAD IQF files. LISTS align feature
0.959		In*a*Vision launcher with Min & Max buttons
0.960		Fixed bug if no RS232 Port selected Doorway could hang
0.993	6/2/94	Fixed bug where if showing page from disk drive other than Doorway's drive then alarms are written into the other drive.
0.996	5/3/94	Doorway Demo version introduced
0.997	14/3/94	Extensive HELP enhancements
0.997a	15/3/94	Modify Sensor list menus
0.997b	16/3/94	Corrected bug slowing data requests if PIN used when logged in.
0.999f	29/8/94	Display In*a*Vision PIC files
1.2	1/10/94	Convert In*a*Vision PIC files, Read GRP file for Lan numbers Read PRM940.STR file for Digital status text
1.4a	29/12/94	List Plots introduced
2.0	1/1/95	DDE feature introduced
2.2	9/4/95	Alarm retransmission
2.3	1/6/95	Microsoft OLE for picture links with most drawing packages. Doorway Network Gateway for IT Networking (DOORNET.EXE ver 1.0a) Exit Doorway password level moved to 40 from 0. Adjust clock password level moved to 80 from 60. Map changes all now require password level 90. Add Time & Date to every alarm log file entry. Separator line in alarm file shortened 74 chars from 76. Corrected the count of PRN-BUF.TXT lines.
2.5	1/8/95	Multiple PIC file conversion - complete folder Right Mouse Copy/Paste DataPoint and Button properties More flexible alarm retransmission times and days. Direct through DOS alarm printing feature for Dot Matrix printers
2.6	1/9/95	Doorway compatibility with Windows 95 verified. PLOT and CLICK buttons implemented. TGD file support. DIAL button for high speed modem implemented
2.6f	14/9/95	ShowTextDp routine corrected, now sends comms to MNC on local lan This bug was introduced in 2.5f 14/8/95 - Sorry!
2.6g	16/9/95	DIAL HANGUP button feature DIAL button works for high speed modem
2.6i	3/10/95	Tidy up Alarm Viewer printout. Double clicking a Button error corrected.
2.6j	9/10/95	Corrected time axis bug on 4-day log, which was showing the time for a 90min log.
2.6k	2/11/95	Control Knob now shows correct value when the units field contained a % symbol eg K1(V,%) returning 45.65 %RH
2.6l	15/11/95	DIAL button commands, Dial Dir, Dial Hangup, Dial Hangup, Dial Reset, Dial ATcommand Engineering mode - warning if communications port is not open. Copy Graph to clipboard scaling corrected.

SOFTWARE_RELEASES
$ Doorway Software Releases
K Software Releases;Version;Update;Releases
+ Contents:701

		Snapshots - manual capture of Pages and Graphs for comment.
2.7a	19/11/95	Edit-Change Scaling for user control with differing monitor sizes Snapshots - Timed capture of Graphs evaluation release.
2.7b	22/11/95	Graph colour preferences in INI file The word Controller replaces Outstation throughout the application.
2.7d	27/11/95	Passwords for Engineering layered from 95-99 Adjustable duration multi-tone sound for Alarms (#1 to #50)
2.7f	4/12/95	Snapshots - Time capture of Pages evaluation release.
2.8a	19/12/95	SNAPSHOTS fully operational Engineering F, G, L, Q lists have Get-Unused option. Sensor alarm status S1($,V,%,M) when in alarm shows white text on red field. 921 Mode pages modified to show sensor alarm status Driver syntax recognises (,Ss) as the same as (,Sv) and shows digital status. INI file override 'Version=Manager' added to stop Program Manager 'fiddlers'. Decimal point control formatting supported:- eg S1(V,%){#0.0} will permit up to 1 number after the decimal point eg K1(V,%){#0} will permit only whole numbers
2.8b	21/12/95	Add Exit Program level option on Password screen.
2.8c	24/12/95	Doorway compatibility with Windows NT 3.51 verified. Manager mode enable function keys: F3=Alarm panel, F4=Log In, F9=Previous page Add DataPoint uses style from DataPoint showing in edit panel DUPLICATE option added to right Mouse button menu Screen redraw speeded up, especially with 256 colours and hi-res SVGA All lists may be now dragged outside Doorway page border Main page Sensor and other lists accessible in Engineering mode
2.8d	1/1/96	SeaChange compatibility announced Knob without Max and Min settings get Top and Bottom values from Controller Manual-Override-Analog gets Top and Bottom values from Controller Engineering list of Intercontroller Communication channels Engineering list of Critical Alarms Engineering Q-Get-Unused option now works correctly on version 4 firmware (NB version 4 firmware does not return the Q item letter S, I, D etc due to a bug in 1988-9)
2.8e	4/1/96	SeaChange Controls Ltd address changed
2.8f	17/1/96	Small mods to improve keyboard control
2.8g	24/1/96	Communications IdleTime now user adjustable
2.8h	28/1/96	Lists ignore os address when Direct Connect selected If Knob Bottom value selected adds 0.01 to value (not SeaChange)
2.8i	8/2/96	SeaChange info screen address, tel & fax number updated
2.8m	15/2/96	Snapshots available from Button Redundant spaces in data points alerted, can slow data collection.
2.8n	18/2/96	Snapshots increased to 50, and new Snapshot Description feature. Corrected Display confusion if Snapshot occurred when Minimized
2.9a	28/2/96	Snapshot has Find Record and Copy Data or Picture to clipboard features PCname feature introduced into Map, change from Password form
2.9b	4/3/96	Snapshot option to Print on Run in colour or monochrome.
2.9c	10/3/96	Return or F9 File-Previous does not return to Tutorial
3.0a	14/3/96	Data Points increased from 60 to 100, Buttons from 30 to 60
3.0b	17/3/96	File-Save-As Version 1 file format option added
3.0c	24/3/96	SeaChange and LIST's syntax conflict since ver 3.0a corrected
3.0d	30/3/96	Snapshot Capture now ignores PIC, UPG, 921 and Tutorial pages
3.0e	6/4/96	Log Book available from Button Corrected Snapshot-Open-File sometimes showing wrong description
3.0f	13/4/96	Corrected Global-Global text comms failure introduced in 2.5f by Lan number test introduced to deal with bad PIC files.

3.0g	28/4/96	SeaChange Adjust Knob and Switch action improved
3.0h	18/5/96	Button syntax *GENERIC actions 921 or SeaChange generic page
3.0i	2/6/96	Adjust sensor offsets menu in Sensor list
3.1a	17/6/96	DataPoint Flash, Sound and Jump features *ALARMS *CHANGE and *SEND commands
3.1b	23/6/96	921 mode Tuning page introduced
3.1c	25/6/96	Acknowledge ALL alarms now at password level 65 was 50 Demo version initial loss of focus corrected.
3.1d	3/7/96	Real time CHART feature introduced and *CHART command
3.1e	14/7/96	CHART takes labels from Plot, adjustable max/min on digital status
3.2a	17/7/96	DOORNET.EXE ver 1.1a with user defined COM, BAUD and NET IT channels differ from earlier single channel - please upgrade. MNC number table now written before page comms starts
3.2b	20/7/96	Keyboard in Chart-Edit-Data-Items: Home, End, PgUp, PgDn, cursor
3.2c	22/7/96	Clear any dp flash value if No Reply
3.2d	30/7/96	Revised SAMPLE00 showing IT network arrangement.
3.2e	17/8/96	Menu Tools Fast Refresh for communications *REFRESH and *COM commands INI entry for StartupWindow in pixels=left,top,width,height eg Maximized StartupWindow=0,0,-1,-1 Minimized StartupWindow=0,0,0,0 ½ size VGA StartupWindow=160,120,320,240
3.2f	22/8/96	*SEND protected by login level 70 (as Knobs & Switches) DataPoint and Button Double-Click warning automatic 30min hold-off
3.3a	3/9/96	V23 modem SANC interface support (Windows 3.1x)
3.3b	5/9/96	V23 modem SANC interface support (Windows 95) SANC modem types identified in Map
3.4a	9/9/96	PIC file conversion-data points with /X or /Y the font is now only changed to black if font is red. Global BMS Type command in a data point: $*BMS=0 Normal text communications (this is the default) $*BMS=1 Machine style communications required for some BMS devices.
3.4b	16/9/96	Lan Diagnostic feature introduced.
3.4c	1/10/96	Individual BMS Type on os address eg 20a, 20b (types 1 and 2 respectively) $*BMS=2 Random style communications required for some BMS devices.
3.5a	14/10/96	Digital input Counter Rollover feature introduced to resolve controller overflow problem. Ixx(N)/rollover/pin eg I45(N)/1000000/1234/
3.5b	16/10/96	SeaChange label conversion feature introduced.
3.5c	22/10/96	AT commands allows lower case and CTRL characters (eg ^Z)
3.5d	24/10/96	Lan Diagnostics & Fast Refresh warn if communications not available
3.5e	28/10/96	Snapshot toolbar & Snapshot alarm now shows 4 digit year
4.00	1/12/96	Manager mode F keys disabled in ver 3.0c corrected *SNAPSHOT command takes parameter eg *SNAPSHOT 23 *DDE command LonWorks® DDE Server support {application|topic!item}A1(V) etc DOORNET.EXE ver 1.20
4.01	2/12/96	DragDrop extended from DAT WMF and PIC to include BMP, OLE and RLE formats
4.02	8/12/96	Non responding formatted DDE data points now show 'No Reply'
4.03	9/12/96	Phone Limit more sensitive to modem 'disconnected' message MNC transmission optimises throughput automatically (as V23 SANC)
4.04	15/12/96	PIC import now corrects bad syntax Bn(0) to Bn(S0) etc. DDE alarm channel introduced
4.05	18/12/96	Z1,1($,E,F) etc now works correctly Click on Z data point now collects Zone label

		MNC data appears quicker (as V23 SANC) Datapoint syntax $*dial 12345678 and $*hangup so Snapshots can autodial with a High Speed Modem.
4.06	5/1/97	Edit toolbars now moveable with mouse
4.07	13/1/97	High speed modem may be used over IT Net (DOORNET.EXE ver 1.30) Doorway Personal 1.10. Personal saves its settings in DOORWAY.INI and initially looks for this in the users Windows folder, if none found uses the Doorway Personal application folder
4.08	15/1/97	LonWorks® DDE Server displays faster
4.09	20/1/97	High Speed modem dial timeout lengthened Modem screen larger
4.10	29/1/97	Edit-Load Picture File now allows blank entry and allows individual picture file type selection DDE data displays faster using block mode
4.11	3/2/97	Edit toolbars move when Windows 95 & NT4 StartBar set 'On Top' Right Mouse button now works when using data point edit style BMS Type 2 (b) now supports S1(V) etc and requests graph when clicked
4.12	12/2/97	Snapshots increased to 99 Phone Directory increased to 50 entries
4.20	2/3/97	'Hot' screen resolution change now immediately resizes all items LonWorks® DDE Server performance 100 Lon points in about 12 seconds MNC etc 'virtual INC' lan routing using Phone directory, Button or data point *DIAL Selectable MNC address, for 'visitor' search set address 0 MNC register method using data point $@ etc. still supported Smaller modem status screen Chart now suspends during Modem dialling and on PhoneLimit Datapoint command $*NOW shows customisable PC time & date
4.21	13/3/97	Corrected graph not showing with virtual INC autodial connection
4.22	18/3/97	Time Zones now show with virtual INC autodial connection
4.23	25/3/97	BMS Types now always alpha a-z (although numeric codes still valid) Create data points by 'dragging' from lists of S, I, D, K and W onto page Datapoint can now show last alarm using V20 (warning V11 returns V11 to V20) Engineering list of logic's now requests G(Y,D,R,M,O,N) Setup program has more flexible options, more tolerant token transfer
4.24	29/3/97	Setup program Network drive installation option Doorway OK on Windows NT 4.0 even with 'bugged' Service Pack 1 Windows NT 4.0 users recommended to fit Service Pack 2 Selectable Graph time periods, syntax S1($,V,%)/period//text
4.25	14/4/97	Engineering Download & Zero controller datafile password level lowered to 95 Clock list shows time 'Change' item Map and Clock list include remote site when MNC on line Manual modem HangUp flushes MNC virtual routes INI entry RS232Handshake=-1 gives RTS/CTS flow control *DIAL command available through DDE DataPoint(0)
4.26	21/4/96	Button syntax FILENAME.MAP reads the file and shows the map MNC direct connection maps remote lans Lan diagnostics includes all remote lans 'GENERIC' UPG can use lans other than 0 & in data point now shows correctly (previously showed _)
4.27	24/4/97	Insert OLE Picture screen enlarged to show more items
4.28	5/5/97	Alarm filter for IT Network alarm distribution
4.29	14/5/97	Sizeable Buttons with syntax = text /* width / height / fontsize eg Press me/*300/200/32 Edit Graph title, use before capturing graph for snapshot Print Snapshot shows title on printout Plot collects labels from BMS type 'a' devices
4.30	16/6/97	MNC virtual autodialling mapping accommodates own address variation

5.00	27/6/97	Scaleable dynamic images using either BMP and WMF format with up to 30 static or 15 animated images (or pro-rata) per page
5.01	6/7/97	Vertical dynamic images supported, and new 11 state decimal value option. Animation syntax changed from '#' to 'a' and 'A'
5.02	15/7/97	System-Clocks and Adjust-Controller-Time screens show 4 digit PC year. The year is abbreviated to two digits for use by the BMS controller. Note: All versions have internal dates stored in Microsoft 'long date' format so Doorway has always had Year 2000 conformity.
5.03	17/7/97	Anti-aliasing compensation for off-grid effects in multi-frame image. Text data points may be used for testing images without controller
5.04	29/7/97	Plots increased from 4 to 8 Chart has File Open and Save options (FILENAME.DWC) Button syntax FILENAME.DWC reads the file and starts the Chart Printer cancel fault corrected Edit-Load-Picture-File of type PIC discarding lan entries fault corrected Snapshot Page data validation enhanced Snapshot Autoprint Page shows date, time & caption & adjusts to printer page
5.05	6/8/97	Plot data available through DDE, see SAMPLE00.XLS file
5.06	14/8/97	Time zone On-Today/Off-Today password made same level as Download Menu Edit-Size or right mouse to change status box width and font properties Driver relay drive levels 100, 70, 40, 0 can take colour option DDE Control-Setting screen to select from list of up to 20 values
5.07	18/8/97	Edit Size includes 12 point, Help context corrected *SEND through DDE now available eg *SEND 21{app!topic!item}
5.08	31/8/97	Snapshot export in CSV and TXT formats
5.09	7/9/97	Snapshot INI file setting option, default is SnapDir=snapshot
5.10	21/9/97	Corrected images showing 'File Error' after using snapshots Snapshot Capture now gets default text under images
5.20	5/10/97	Dynamic images increased to 40 static or 20 animated images per page List digital inputs & sensors 'Get-Named-in-Alarm' data more consistent Image Viewer CTRL drag picture to screen or CTRL C to copy filename DOORNET.EXE ver 5.20 updated driver interface to network adapter *TIME, *GRAPH, *ALARM, *ALARMS commands
5.21	29/10/97	Charting now available for DDE items Charting when using IT NET has improved validation MNC direct connect over IT NET available Snapshots set for interval will now run unlimited days
5.22	22/11/97	Map shows IQ2xx version Plot periods expanded for IQ2xx series Plot has Y grid option Copy plot data to clipboard shows time, can now copy all 8 traces 256 colour palette changes lessened DOORNET.EXE ver 5.22 for routed messages Engineering File-Clear Screen menu feature If controller knob Trange=Brange then limits ignored.
5.30	1/12/97	IT routing and improved graph features preview.
6.00	8/1/98	Improved graph features with zoom. Microsoft Access 2.0 database engine for better performance. In*A*Vision can run in Windows NT4 from Doorway menu. Import PIC scale 1280*1024 option, size increased from 2000 to 6000 pixels. DOORNET.EXE ver 6.00 allows IT routers and 999 gateways. Optional Doorway LonWorks® LNS Add-In available.
6.01	17/2/98	Dynamic image now takes the 'Boxed' style from the data point. MOVE on item Properties menu allows mouse drag without CTRL key. 16.7million status colours using Red*Green*Blue (range 0-255 each) eg. W1(S)/OK/Trip/15/-255*128*128/ SeaChange Time Zones increased from 16 to 200.
6.02	20/2/98	Alarm retransmission has separate time profile for 7 days.

6.03	21/2/98	Event Calendar introduced with up to 99 programmed actions.
6.04	5/3/98	Help topics for SeaChange Zone and High speed modem connections.
		Critical alarm retransmission selector corrected.
6.05	15/3/98	Windows 3.1 LogBook & Snapshots, alert if SHARE.EXE not loaded.
		Snapshots can now hold more complex pictures.
6.10	21/4/98	Drag & drop from Map for easy Time Zone page creation.
		Snapshot export converts CR, LF, Tab to _ and , to ¸ (=Alt 0184)
		Enhanced multilevel status & binary image capabilities
		S, I and D lists enhanced with alarm adjustments
		Append text after Driver eg D1(V)/ %
		Most items can now be adjusted by Control Knob or Switch
		eg. S1(L)/40/-10/ Low level alarm/K *(K indicates knob)*
		I3(E)/Enabled/Disabled/15/15/W *(W indicates switch)*
		Dynamic file re-addressing, with three methods, eg.
		*ADDRESS /L99/o99 change all address' on current page
		FCU.DAT /L99/o99 jump to file, then change selected address'
		Menu File-Change-Lan-Numbers screen to simplify MNC dial-in
		DDE data collection quicker & can include PIN with DDE requests
		eg. 8/o33/pin1234/K1(V=22,V)
		SeaChange charting restored, broken in v5.21 by IT-NET verification-Sorry!
		Communications screen requires MNC direct connect lan=0
		MNC number table download from page disabled when LocalConnect
		Menu Help-Doorway-on-the-Web links to your Internet Browser
		*DIAL command placed in Snapshot description will be actioned
6.11	28/4/98	Corrected Map request response to show version 6.1
		SeaChange Doorway remove menu File-Change-Lan-Numbers
		Updated Help for HS Modem connection and settings.
6.20	22/5/98	Alarm repeat sound & re-show interval adjustable 1-9 mins
		*ALARMPRINT will print-empty alarm buffer, Event
		Set 0 for no repeat sound, re-show 10 mins as previously.
		Alarm and PRN-BUFF printouts tidied and added Time & Date
		Adjust time item if colon in max & min fields and /:/K
		eg Z0,1(E)/24:00/00:00/text/:/K
		*SEND may send global /o0 and global-global /I128/o0 messages
		'Doorway LNS Add-In' DOORWAY3.EXE ver 1.20
		with mixed NV static and cached points
		and NV array items may be shown and adjusted
		eg {nv-item}?(K,0) where , is the separator
6.21	10/6/98	Button EXCEL.EXE FRED.TXT now works if file in page folder
		Excel on LonWorks-Point-List menu
		Excel & Access on Snapshot menu
		DDE can read modem status using DOORWAY|MODEM!MSG
		Map identification of IQ2xx devices improved
6.22	22/7/98	'Doorway LNS Add-In' DOORWAY3.EXE ver 1.22
		NV array status items may be shown and adjusted
		eg {nv-item}?(S,0)/on text/off text/on colour/off colour/
		*GENERIC works as *921
		Snapshot graphs work correctly with numeric sensor labels
		FNC identified as BMS type a
		PIN can be set in *SEND B18(S1=I) /L99/o99/pin1234
		BMS type a devices now allow Bn(S0) to Bn(S99)
6.23	17/9/98	For enhanced monitoring, replies to IC comms 'from' B20(S4) and B20(S5)
		Changed Internet address to "doorway.co.uk"
		Snapshot open Excel now works even if CSV type not registered in Windows
		SeaChange Zones up to 999 may be adjusted & called from button
6.30	1/11/98	*ADDRESS and Dynamic File Addressing now available for SeaChange
		IT Net unregistering from NetBIOS improved
		Menu File-Set Home (Startup) Page to choose initial screen.
		Adjust-Time and Clock-List-Sync-All now ignore PC country settings

		Engineering configures IQ2xx f/w 2.0
6.31	24/11/98	Graphs and lists shared from IT Gateway improved
		All IT Net messages go to Gateway 0, unless set in DOORWAY.NET
		Lan Change check box in Phone Dial to open Lan Change screen.
		With HS modem failed message retry delay reduced
		BMS type b devices now allow adjustment of An(V) and Bn(Sm)
		Control knob adjustment for values greater than ±15000
		Programable data point labels $$0 to $$9 for multiple fcu's etc
		eg button FCU.DAT /o20 /[z21] /$1 Fan Coil 21 '
6.32	30/11/98	Tools-Windows Resources monitor screen
		DDE to dp(0) will now take BMS type=a or b
		Change Lan Numbers has NOW button and Change from lan box
6.33	13/12/98	Edit data points now shows data request if 'no comms' selected
		Zone now shows OSS times, with adjustable limits
6.34	16/12/98	Phone Dial menu increased to 100 entries
		Adjust Knob will take A10099(V) for FNC etc.
6.35	1/2/99	Data Points increased from 100 to 120
		Dynamic file addressing for SeaChange data points allows [*]
		Icon files (*.ICO) may be used for dynamic images
		DDE example for Excel 97 in SAMPLE97
		DDE accepts *BUTTON command as from the page
		DAT file may be set as DDE association from Windows, same as Excel
		Visio shortcut menu Edit-Insert Visio OLE Picture...
		In*A*Vision removed from menu, use *INVISION command
		Driver text levels now work across range >75, 75-50, 50-25, <25
		Dynamic File Addressing now available for LNS and DDE.
		SeaChange Domains 0-15 supported.
		To format alarm retransmission from 94x supervisor set
		Doorway's address type in 94x Housekeeper as '945 issue 2'
		Snapshots MDB files can be open at the same time with MS Access.
		Snapshot folder user adjustable.
		Alarm screen has 'View Remote Alarm Files' option.
		LNS lists capacity increased to 30,000 items
		*FILECOPY and *FILEMOVE commands, useful for Events
		IQF Upload & FileOpen show date correctly with PC set for US date
		LonWorks® LNS Add-In can now log items for graph
		Settings control improved, now can take any character
		eg {...}#/ NULL / ON /
		{...}! / -1=NULL / 128=ON /
		{...}! / emerg_nul=NULL / emerg_normal=ON /
		Retransmit LonWorks® alarms to Trend
		*LABEL command
		'____' in SeaChange reply treated as 'No Reply'
		Select individual MNC & TMN with prefix to phone number.
		eg o96,01234 56789 96 on local network
		L112,01234 56789 112 on internetwork
6.36	20/5/99	Alternative 'Fine' graph autoscaling, see menu Graph-Options-Preferences.
		DOORNET.EXE ver 6.10 with reduced CPU load
6.37	14/6/99	Corrected bug in 6.36 multi lan dialling with multiple MNC & TMN
		Snapshot folder selection improved
		Modem status screen closes automatically after about 1min
		RUN... option on Tools menu to start other Windows applications
6.38	16/8/99	Doorway LNS Add-In updated to v1.50
		Modem selection "o" or "L" prefix is now case insensitive
		Modem selection "o" or "L" prefix in *DIAL command on Page and Snapshots
		*RS232 command, eg for security camera control
		*DIAL STATUS command to show modem status screen.
		File path selector for LogBook
		Legacy V21 300 baud TMN-MNC link improved, use SW dial prefix

6.39	26/8/99	Control Label screen for adjusting controller labels
		eg. S1($)////$ *($ indicates label)*
		SCADA mode: Label and page location stored & read from controller
		location set by drag-drop, label by mouse click.
		eg. S1(H,L,$)////$
		K3(T,B,$)////$
		Doorway LNS Add-In updated to v1.51 with 24hr logs working
		3 month log time axis has user selected date format
		Colour -0 now flashes Black
		Colour R*G*B allows component R=0 and R= -0 now flashes
		Drag selected data point without CTRL key
		eg. S1($)////+ *(+ indicates drag)*
		Concatenate button commands with **|** *(the pipe symbol)*
		eg. SITE-A.MAP **|** *GENERIC **|** *DIAL 01234 567890
		*LOGBOOK /4 syntax simplified to *LOGBOOK 4
		*LOGBOOK 9 **!!** will discard LogBook page 9 text to monthly .LBK archives
		Password added to Alarm sound file, level=55
		$*DP nn on data point copies point without requiring comms

6.39.06	30/9/99	Problem with locating file MSAFINX.DLL on servers fixed
6.39.07	14/10/99	Images file search order is current page folder then IMAGES folder
6.39.08	21/10/99	Archived graphs from the legacy 921 DOS application may be imported Snapshot graph ***dial** action improved Snapshot can take UNC path eg. \\server\...
6.39.09	10/11/99	Demo Mode no longer outputs SeaChange data requests, ie with **[** or **]**
6.40	1/3/00	Toolbar option and *TOOLBAR command Mouse arrow changes over 'clickable' data points *MAP enhanced to load file without showing screen. *COM enhanced to allow dynamic switching *PLOT enhanced for direct sensor addressing *IDLE to control Doorway's internal activity Audit trail feature logs knob and switch changes to .LOG files Precision and extended (1000 point) graph data formats supported eg S1(V) / **1 p x** / / text options **1** is period code **p** for Precision data **x** for eXtended 1000 point log Additional DDE support see SAMPLE99.XLS Chart length now 500 points. Continuous time option Choose Doorway address for when MNC DirectConnect Comms Idle minimum reduced from 1.2 to 0 sec Choose IT gateway for High Speed modem over IT net Alarm action customisable, add command to alarm sound file eg program ding.wav | dwalarm.exe or DDE ding.wav | {dwfax!send!alarm) IQL controller identified by Map *LIST Z /Ln/On/Zn/GET uploads times from controller Edit mode draw box to Align Up, Down, Left, Right data points or Buttons *LOGBOOK command enhanced IQF files now up to 64K bytes long SeaChange labels now available from System menu Support for new SeaChange generic pages
6.41	28/3/00	*SEACHANGE on data point stops label conversion on the page SeaChange generic pages-Domain 0 masked from requests Toolbar AutoHide option Modem MNC or HighSpeed selected by any lans in telephone number I1(N) now does not attempt rollover at 0-conversion from PIC improved.
6.42	4/4/00	Engineering menu option for 'terse' text communications mode Toolbar enhanced

		SeaChange Zones on/off today action corrected
6.43	12/4/00	Toolbar AutoHide available during Edit
		Toolbar shows modem connection phone number & time
		Datapoint command $*TEL shows modem connection phone number
		*SEND command now has adjustable LogIn level (0 to 99)
		eg *SEND*0 W1(S=O)/o20
		Show engineers Journal items using BMS type a
		eg J(1,2,3,4)
		SeaChange Configuration item can determine W or K type
		eg C1($,S) or C1($,V)
		Manual Override switch can now take preset limits
		eg W1(S)/on text/off text/on colour/off colour/K1(V)/max/min/
		Command *HELP topic-no.
		Animated images increased from 20 to 40, same as static images
		IT Network clients increased to 999 addresses
6.43.01	13/4/00	*Toolbar 2 option sets AutoHide
6.44	17/4/00	More refinements for use with Windows 2000
		Toolbar modem monitor enhanced
6.45	27/4/00	TCP/IP networking no longer mandatory-it was in version 6.40 to 6.44
		Map and view ID access controller data
		eg DV1($) (use BMS type a)
6.46	24/5/00	Chart now allows BMS type a
		Dynamic addressing now allows BMS type letter
		Event calendar entry space increased from 50 to 80 characters
		Configure LINC on local lan using o126 L0
		Map now shows INC and LINC description field
		Change addresses utility screen
		Command *HOME
		Engineering option Auto Caps Lock
		*SEND can now send quotes, use single quote
		eg *SEND K1($='Room Setpoint')/o20
6.50	19/6/00	Copy button on Time Zone screen sends formatted data to clipboard
		Lower case items for some controllers eg Knobs K1 and k1
		Enhanced sound capabilities using !!FILENAME.WAV
		BMS data point **!!** feature plays on every update
		Text data point containing **!!** plays when page opened
		BMS Alarm containing **!!** plays when received
		Logbook 6!! to flush page 6, now does not show logbook
		Audit trail feature now logs changes to .DWA files:
		Manual Override analogue
		Manual Override On-Off-Auto
		Label changes
		Time & Date changes
		Sync All Clocks
		Plot channels
		LogIn & Out-add user number to .LOG file
		Sensor List-Get all settings shows alarm delays
		User adjustable password level on Logbook
		DDE data point(0) formatted reply at {Doorway|Send!DPreply}
		eg 0/o20/S1(V)/21.34
6.51	22/6/00	Copy Time Zone screen to clipboard-Zone corrected, time & date added
		LogBook & Snapshots-corrected AM-PM time error on some Win98 PC's
		StartUp size now does not maximise if INI width >-Screen width etc.
6.52	13/7/00	Corrected SeaChange dynamic file addressing broken in ver 6.46
		Corrected animated image wobble when % not multiple of 25
		Number pad option for LogIn, Time & Zones for Touchscreen displays
6.60	29/11/00	Snapshot 1000 point log fault of missing date/time in tables corrected
		Settings syntax can now be used with non LonWorks® controllers
		and up to 20 preset values can be displayed and adjusted

		eg. K1(V)/Off/Low/Slow/Medium/Fast/High/#
		K1(V)/0.00=Boiler 1/50.00=Boiler 2/100.00=Boiler 3/!
		Corrected Modem on-line time showing negative
		*IMG command to resize static and dynamic images with screen resolution
		Generic text pages supports controllers with higher numbered items
6.61	14/2/01	Copy to Clipboard(enhanced) & Paste in SeaChange Time Zone operational
		Restored adjust OSS Warm up adjustment (was broken in ver 6.50)
		Corrected dynamic page using {...} syntax losing characters
		Corrected Snapshots with 24 hour interval failure
6.62	27/4/01	Controller Time Schedules preliminary release
		Increased guard time for alarm retransmission to reduce message collisions
6.63	21/5/01	*LOGOUT and *WAIT commands
		Snapshot, Events and Schedules actions now suspended in Edit mode
		Controller Time Schedules enhanced
		Doorway Personal 6.60 update
6.64	12/6/01	IQ2 file format supported
		Clipboard keys Ctrl X, C & V work in time zone and schedule screens
		Generic text page I65-90 showing I49-64 corrected
		IQL10 generic text screen
6.65	26/7/01	LNS Add-In ver 2.00 Chart & Snapshots, corrected
		LNS normal and inverted Digital Status alarms feature
6.66	30/7/01	Graph change data labels feature
		Snapshots now prompt for title when graph captured.
6.70	31/7/01	Occasional colour change after using Align Datapoints & Buttons corrected
6.80	1/9/01	PIC conversion user adjustable Pixels/inch for data point fontsize re-scaling
		Resizable bitmap file option in Edit-Load Picture and Edit-Paste Picture
		JPG, GIF and PCX compressed bitmap picture formats supported
		Import PIC scale shows current size, useful for BMP editor eg. Paint
		Lan Diagnostics-click for immediate update-shows if Dumb mode selected
		FileSaveAs from UPG changes all references with .UPG to .DAT
		Tools-Run... Enter ? to open current DAT file in Notepad
		ANCpanel no longer gets the focus (just visible)
		If No Comms selected data points show syntax
		Edit-Find & Replace feature (shortcut key CTRL F)
		File-Startup Page & Paths with global page filepath change feature
		Home page available from Shift F9 key
		Generic text page support includes FNC hosted Batibus fan coil controllers
6.81	25/9/01	Corrected 'File Error' with ICO & static WMF images in v6.80
6.90	25/9/01	IT Network IP port changeable, Protocols other than TCP/IP discontinued
6.92	23/11/01	Snapshot creates .ORG file to simplify archive and renewal
6.96	18/12/01	Tx & Rx comms lights on toolbar
7.00	21/12/01	IT Network legacy protocol support discontinued
		IT Network TCP/IP port changeable, also in Doorway IT Gateway
		DWUSER.EXE introduced for common access point for IT network clients
		Schedules refresh time changed to item update time to reduce effect on user
7.01	3/1/02	Global page filepath change feature works correctly on buttons
7.02	8/1/02	IT Gateway now will handle 100 Doorway clients
7.03	22/1/02	IP address 0.0.0.0 will be redirected to local IP for local IT Gateway
		The / substituting ~ in data point now shows in adjustment screens
		IT Gateway View Client Properties print option
		Start after delay DWDELAY v2.10 now starts LNS correctly
7.04	1/2/02	Graph-Import legacy archive recognises new 921 notation for 2001-2026
		Button now can handle same application calls as Windows-Start-Run...
7.10	7/2/02	Compact format graphs rejection of out of sequence and duplicate packets
		upgraded to same as precision format graphs, diagnostics in comms window
		Duplicated messages are a sign of serious BMS lan congestion
		IT Gateway now supports HS modem on any lan number
7.20	17/2/02	Manager mode accepts right mouse button for 1000 point logs
		PIC file font substitution user selection

		TCP/IP Telnet support for serial port servers and EINC
		Toolbar World icon opens communications settings screen
7.30	6/4/02	DDE initialises correctly at start up (v7.00-7.20 error)
		*ALARMPRINT QUIET ignores error if nothing to Print, useful with Event
		Alarm retransmission channels increased from 4 to 5
		Alarm retransmission text match options
		Alarm retransmission queue management with audit file JAN.DWR etc
		*ALARMQUEUE command
		*EINC xx command
7.31	11/4/02	Change font scaling now has Button Bold or Normal option
7.32	15/4/02	Snapshots now automatically saves an unsaved edited Page before running
		Map of Hiross units "Link" now identified as BMS Type a
		*PLOT now allows mix of normal and Seachange items
		*PLOT now allows BMS types
		Plot of less than 96 point works again
		Plot preference to calculate time axis for plots up to 80 x 15min to correct IQL controllers with graph time stamp problems
7.33	22/4/02	Dynamic file addressing now supports /L99/o99/(A99) e.g. for FNC
		Edit toolbar now always full screen width, Edit Size now includes 14 point
7.40	1/5/02	SeaChange Edit toolbar with VGA screen only shows lan box with IT Net
7.41	2/5/02	LonWorks® LNS Add-In alarms can now be retransmitted
7.42	23/5/02	Driver data point Dx(Ls) can use digital data point syntax
7.50	26/5/02	Doorway replies to external request R(D), returns 'PC name'
		Peer to peer messaging, including alarms, across IT Network
		IT Network Alarm Filter option for 'All addresses in Lan'
7.51	7/6/02	Button syntax ?.DWA, ?.DWR, ?.LOG, ?.TXT shows file for this month
		Time Zone download audit trail to .DWA files
		Right mouse button for extended sensor graph even when interval type preset
7.52	8/7/02	Button syntax ?.DWA, etc. now works from Page in any folder
		for external application e.g. WINWORD.EXE ???.DWA
		IT Network Alarm Accept filter has Omit Alarm Receipt option
		Alarm retransmission enhanced: 50 channels, messages, actions & times
7.54	25/7/02	Login level for alarm sound file and reshow time changed from 55 to 90
		Drop JPG,PCX or GIF file onto page writes BMP file if Shift held down.
7.60	28/8/02	Map identifies modem MNC or TMN, previously showed ANC
		Return key F9 held continuously no longer gives stack overflow warning
		Visio 2002 now works through OLE, menu options for Word and Powerpoint
		OLE interface enhanced, OLE application list now saved
		Graph Print as Page prints with shape and size as shown on screen
7.61	5/9/02	Knob list shows PIN level, show and adjust Top and Bottom of range
7.62	18/10/02	Electrical Connection List shows order of controllers on bms lan
		Determine controller PIN number, requires Access Code for each licence
7.70	11/11/02	Data point Top and Bottom user limits allow dynamic text and images with value on
		Analogue, Knob and Sensor and on SeaChange analog C items
		Generic Text pages for Sensors now show High, Low, O or R status
7.70.03	25/11/02	Printer error messages enhanced
7.70.04	3/12/02	Serial ports increased up to COM 99
		Audit trail logs modem messages
		*Wait page jump when Display minimised now restores correctly
		Edit Load Picture dialog shows Doorway width and height
		WMF file size warning at 2MB as this makes Windows use excessive RAM
7.80	16/12/02	IT network LAN and IP lists increased to 127 to include remote internetwork
		TMN-MNC dial-in alarms show telephone number, address and lan
7.81	24/2/03	Enable Alarm Sound password level changed from 55 to 90
		External DDE application can read and write to LNS points
		IT Network can be addressed with DNS name
		Corrected Scheduler labels not being saved in NT4,2000,XP
		Menu to view and edit TMN-MNC phone numbers. Command *TMN-MNC
		Command *SEND CONFIG allows reconfiguration, e.g. TMN phone to GSM SMS

		Alarm retry interval adjustable from 30 to 3600 secs eg 180 secs for GSM SMS
		Alarm retransmission channels increased from 50 to 99
		Alarm retransmission of Snapshot and Event problems (filter with addr=129)
		$*SUM maths expression evaluator on data points
7.82	27/2/03	HS modem compatibilty with GSM phones via IRDA and cable improved
		Corrected Show Phone Status always enabled at startup
7.83	9/6/03	IT client number duplicates in IT Gateway alerted
		Upload-Download IQF-IQ2 files up to 64 Kbytes working again !
		Upload default filename now LxxxNxxx.IQF
		Messages to wrong lan ignored by IT Gateway, see ViewClientProperties
		IT Gateway set for lan 0 accepts messages for any Lan (dynamic INC)
		IT Gateway accepts DNS names up to 80 characters
		DOORWAY.LBL traps more file errors and user entry of " in conversion text
		and max labels increased from 500 to 1000, file size limit at 25kb
		Saving MAP to a user file no longer automatically updates DOORWAY.MAP
		Improved time axis labelling of 1000 points plots
		Schedules increased to two start and stop times per day
7.84	18/7/03	*SNAPSHOT channel/mins to control snapshot from button or an alarm
		Show option on alarm panel to bring alarm panel to foreground in all Windows versions
7.85	26/7/03	Data point Top and Bottom user limits allows decimals, also new binary action
7.86	1/9/03	*IMG enhanced to resize data point and button fonts with static and dynamic images
		Snapshot description supports *EINC nn *DIAL phone/lan
		User named .NET and .IP files supported from button or datapoint
		EINC can be addressed with DNS name
		Dial-in to TMN using industry standard modem, requires TMN fw 4.30
		Config scan changed to U1X to get PIN value 99 (from RX PIN value 95)
		MANAGER mode now retains Help menu so page aspect ratio unchanged
		Doorway responds to R(D) and R(C) requests
		List S, I & D have new Get All Alarmed feature
		Engineering has new Enabled Alarms list
		IQ3xcite shows in Map
		IQ3xcite generic setup page
		Snapshot *EXPORT command
7.86.06	22/2/04	New Find feature in Map and all lists, from menu or key CTRL-F
		Load competitor PGE schematic page files, partial conversion only
7.86.07	26/2/04	Summer-Winter change screen
		IT Gateway SoftEINC ports compatible with 'SET' and '96x' products
7.86.08	25/2/04	Mapping through EINC and IQ3 ethernet virtual lans supported
7.86.09	28/2/04	History list moved from right mouse button to menu bar
7.86.10	12/3/04	Engineering lists of F,G & L have show connections option
		Fixed bug in menu 'Return to Previous Page' and key F9
7.86.11	16/3/04	*ALARMS shows alarm viewer and updates from alarm file
		Visitor messages on a datapoint to show Sum,Max,Min,Count and Address
		eg K1(V+0);CT=0 displays Sum n.nn ;CT=20
7.87.00	17/3/04	IT Gateway single lan 0=intelligent mode allows any lan request as a guest
		IT Gateway single lan retransmission acknowledgment fault corrected
7.87.01	30/3/04	Alarm archive option for alarm file YYYYJAN.TXT etc
		Terse Text mode now shows address and lan of replies
		Generic text pages enhanced for IQL controllers
		Generic text pages can be called from inside dynamically addressed pages
		Montage Export of page snapshots
7.88.00	25/4/04	Intelligent Scan PIN numbers in approx 1 minute
		Engineering Restore Time & Date to controller
7.88.01	10/5/04	Option to save Map in CSV format for use in Excel etc.
		Corrected error where Modem and Graph snapshot could suspend comms
		until a another page was selected
7.88.02	15/5/04	*WRITE filename, text command introduced
		15 alarm panels selected in alarm retransmission with action *PANEL n
		Command *PANEL n on button or datapoint will show panel if it exists

7.88.03	9/6/04	Print Passwords shows form and now also a formatted list
		Corrected Chart points count
7.89.00	16/6/04	Print Graph/Chart mono/colour now support landscape
		Print Graph/Chart support improved for screens larger than 1024*768
7.89.01	23/6/04	Print Display improved for screens larger than 1024*768
7.89.02	23/6/04	Intelligent PIN scan shows User 6
7.89.03	6/8/04	Intelligent PIN scan leaves controller logged on in configuration mode
		Chart from Graph screen without sensor label now works
		*READ command writes to file READnnn.CSV capacity 120 channels
		*FILEKILL command, useful for Events
		IQ2 files version 2 are now supported
		FilePath modifier feature enhanced
		Back key now works as F9, like Browsers
7.89.04	17/8/04	Alarm filter can select CNC, Doorway, DDE and LNS alarms
		99 year time zone Calendar introduced
		Embed *commands in datapoint label for active control
7.89.05	30/8/04	Alarm RTx filter *PANEL nn/xx/yy/text for 15 user alarm panels
		and write to file JAN-P01.TXT etc
		Button/Event *GENERIC /Ln/on/z1 for zone file 921-Z-01.DAT etc
7.89.06	14/9/04	Button/Event *SEND CALENDAR to automate
7.89.07	20/10/04	Button/Event *SEND CALENDAR /PINxxxx
7.89.08	24/10/04	IQF now handles SET generated IQ2 files with CRLF at end
		DataPoint $*ALARMCOUNT nn /text
		Button/Event *ALARM nn/xx/yy/text
		Ignore Alarms now stops alarm text going into alarm panel and sound
		INI Version=Manager can be overriden by shortcut link
		set with command line ENGINEER
7.90.00	13/1/05	Button/Event *SEND CALENDAR /DAYn /PINxxxx
		File New password level of 90, was 0
		Number of Users increased from 20 to 40
7.90.01	17/2/05	Chart Copy Data to Clipboard added
		Comms Idle time=0 gives maximum data rate, for diagnostics only
		Left margin printing option in many screens
		Print IQF file details screen
		Mouse over DP, IMG and JB shows syntax on ToolBar
		Shift F8 toggles ToolBar
7.90.02	30/3/05	*SEND *NOW /Lxxx/oyyy sends PC time & date to controller(s)
		*ZONE command replaces *LIST Z
		New command to update timezone today only
		*ZONE /Lxx/oyy/Zxx/SET 0830,1200,1300,1730,2400,2400
	1/4/05	Lan connection list uses N=100, or 101 if Lan=100
	4/4/05	Control Knob, Switch, Setting, Label, Manual Override Analogue/Digital
		now recognise global BMS Type
		Datapoint can show actual Lan Network Set with syntax NS o126 Lnnn
7.90.03	18/4/05	Datapoint can show static Lan Network Set with syntax $*NS={32 hex chars}
		Generic text pages for Time Zones and Lan Network Set
		Syntax added *GENERIC /Lxxx/oyyy/z1 and *GENERIC /Lxxx/o126/n
		OLE picture file save asks if user would also like to save in WMF format
7.91.00	8/6/05	New command *ADJUST for control adjust from a button, global supported
		Datapoint can initiate Global knob adjustment
		*Export command can be automated by setting in Snapshot description
7.91.01	12/6/05	Password edit screen brought into line with Microsoft practice
		i.e. (cannot display) changed to 20 stars and (none) changed to blank
		Download TimeZones current week lowered from 75 to 74
7.91.03	27/7/05	Repair Snapshot database file if left invalid after incomplete write operation
		Connection to TMNG at 9600 and ADL at 2400 now works
7.91.04	30/7/05	Maths on datapoints with \ division operator corrected
7.91.05	8/8/05	Prefix and postfix labels on Maths datapoints made consistent
7.92.00	16/8/05	DOORNET.EXE now uses Doorway passwords

		added COM5-COM10 and Baud 2400
		Doorway Server version introduced for 25 users
7.92.02	2/9/05	Doorway IT Router introduced to allow sharing of EINC like IT Gateway
7.92.03	17/10/05	IT Router own cnc address override to correct EINC own Lan problem
7.93.00	24/10/05	Seachange Doorway using IT Net shows all address options for use with multiple SmartEinterfaces
		IT Gateway using software INC alarm acknowledge OK for IQ2xx fw 3.xx
7.93.01	28/11/05	*WEB ccc/S1(V)/Lxxx/oYYY command to collect and write html datapoint
7.93.02	29/11/05	Controller Time Schedules option to send only on change
		Phone Dial menu increased to 120 entries
7.94.02	13/12/05	Calendar drag mouse to select columns, as indicated by East-West arrow
7.94.03	20/12/05	Seachange generic pages updated so Lan can select Ethernet IP address
7.95.00	8/1/06	System Idle Process comms option in Windows XP, 2000 and NT4
		Doornet and DoorEinc allow 2nd instance and option to disable Audit Log
8.00.00	31/1/06	Edit mode right mouse click options: Add datapoint or button Distribute vertically selected buttons or datapoints/images 'Send to Back' and 'Send to Front' button or datapoint/image Paste Style datapoint Copy now also copies the displayed text to Windows Clipboard
		Button and datapoint 'ToolTips' option on page top right and with mouse in Edit mode
		Doornet and DoorEinc now allow 4 instances each for large mixed systems
		*IMG, *TOOLBAR and *SEACHANGE tags now display as * except when Comms off
		SeaChange generic pages updated and included in Doorway update
		SeaChange Label enable status option in Label edit screen
		Safety alert if Optimise, SendToBack-Front will upset absolute addressed actions
		Graph now allows 8 traces of 1000 points (was 6)
		Save, load and create buttons for graph definition files (*.TGD)
		Graph 3D effects updated
		*PLOT can select graph style
8.01.00	27/2/06	Modem Reset can now be set with initialisation string from screen
		Time Zones now supports IQ3 with up to 5 zones and 3 on+off times per day
		New generic pages for IQ3 Time Zones
		New engineering option Structured Text is like a configuration mode for IQ3 controllers
		New BMS Type c to show IQ3 controller structured items on a page
		Edit Change Font Scaling enhanced to allow global page rescaling without using *IMG
8.02.00	24/3/06	WMF file size warning now adjustable in INI file from 2,000,000 to 9,000,000
8.03.00	21/4/06	RS232 CommPort limited to 16, previous up to 99 not always available in Windows
		Alarm action write to Windows EventLog with *LOGEVENT [alarm]
8.03.01	12/5/06	Snapshot menu Export Picture and *EXPORT nn / WMF saves as SNAPnn.WMF
		Image resize maximum increased from 500 to 900%
		Print Snapshot improved for screens larger than 1024*768
8.04.00	01/6/06	*SNAPSHOT command enhanced to select interval or once per day
		Calendar Standard Week updates Standard and Current Weeks
		Time Zone Names list supports SeaChange and IQ3
		Calendar supports SeaChange and IQ3
		Calendar print option for Area and Zone list
		Load Picture File and Toolbar Save tooltip shows OLE picture application
8.05.00	24/7/06	Shift right mouse click on toolbar world icon to Show Communications
		*ADJUST K and A now gets value, units and label if available from controller
		*FILENAME command, useful for Events
		Override password of day available from Doorway Systems
		Datapoint label if available appears after about 1sec if Page ToolTips enabled
		Text Scan PIN numbers improved and sets Change G=0
		For OR in *SEND command use || and Doorway will convert before sending
8.06.00	5/8/06	If run in background Snapshot closes MDB file after run
8.06.02	02/11/06	Event Calendar text field increased from 50 to 80 characters
8.06.03	26/11/06	List User Levels introduced in Engineering
		*SEND *NOW /Lxxx/oyyy/pinxxxx for PC time & date to controller(s) even when G>0

8.07.00	08/01/07	DDE requests to Display(0) now always use BMS type 'a'
8.08.00	25/01/07	DataPoint Distribute failure to distribute dp60 to 120 corrected
8.09.00	6/02/07	Comms option 'Wait time' range 2 -9 sec to reduce wait for failed controllers
		*Send *Now now works as documented !
		*.PDF offered in Button Edit Open
		Map has resize buttons and +/- shortcut keys
8.09.01	8/3/07	Increase number of Doorway Server Clients from 25 to 99
8.10.00	25/4/07	IT Gateway and IT Router options to minimise to screen icon or TaskBar
		*START command to improve opening of file association applications
8.11.00	21/6/07	INI option *EditFont* allows selection of international font for edit toolbars
		Alarm from controller with *Text Off* causes B495(S0=I)+userPIN to set *TextOn*
8.12.00	24/7/07	Display screen size assumes standard taskbar if Windows taskbar set to Auto-hide
		COM port locator introduced, max COM port now 9 as higher fail on some PC's
8.13.00	22/8/07	Audit trail feature now logs user login and logout to .DWA files
8.14.00	31/8/07	Global page filepath modifier applies now to dp image files
8.14.02	10/10/07	Checks that Doorway.ini file is not set ReadOnly
8.20.00	22/01/08	Climate Notebook Export of graph snapshots
		USB licence token option supported
		Gateway and Router uses ExitDoorwayLevel
8.21.00	7/4/08	Print Page Select DataPoint style option
		*SMS command for text message through GSM phone
8.21.01	20/5/08	Generic Text page Time Zones corrected
		Start after Delay application (DWdelay) now allows 3rd party application startup
8.22.00	1/7/08	Local Gateway-Router idle option, previously was preset with Client 0
		Driver syntax Dn(B) now handled as digital like Ls etc
		SeaChange SmartServer supported, select EINC and set Port=80
		SeaChange generic page for serial adapter parameter setting
8.22.01	11/7/08	StartupWindow=0,0,0,0 now sets minimised as documented
		Synchronise SeaChange clocks *SEND *NOW /Lnn/onn/[B1]
8.23.00	1/11/08	Snapshots now collects IQ3 sensor labels
		Yellow DataEdit entry box increased from 128 to 150 characters
		Global Rescale enhanced, accepts user values and screen size up to 2560*1600 pixels
8.24.00	5/1/09	Text mode 'Enhanced' renamed 'Structured' to align with manufacturer
		DataPoint ToolTip now located above datapoint to facilitate legibility and mouse click
8.25.00	24/3/09	*EMAIL command to send messages and alarms by email
		Dynamic image decimal can show its value using new L syntax instead of D
8.26.00	27/11/09	Fixed bug in v8.25 where images would occasionally show file name on top of image
8.26.01	11/12/09	Network Set NS now always padded to 31 characters width, was 32 characters if 8th value present
8.30.00	12/1/10	Controller Lists feature now fully supports IQ3 series
		Generic text page for Sensors now fully supports IQ3 series graphs
		Syntax options to show plot channels connected to a sensor
8.30.01	16/1/10	Yellow DP entry box increased to 200 characters
		Blue JB entry boxes increased to 160 characters
		Alarm Retransmission entry box increased to 160 characters
		Loss of changed images after screen Minimised fixed
8.31.00	21/2/10	Modify, create and delete IQ3 series plot channels
		More syntax options to select plot channels connected to a sensor
		Chart extended to 1000 points
8.32.00	3/6/10	Hand-Off-Auto controls work correctly with IQ3 series
8.33.00	5/6/10	Button command *EXIT to close program from button
8.34.00	4/7/10	Server version now correctly locates SeaChange pages
8.35.00	6/8/10	Print Page new option for item only
		*CLEAN command to close Graph and Chart screens for Touchscreen PC
		IC comms incorrectly sent to Doorway from IQ1+2 controllers are
		acknowledged so the controller does not become congested with retries
		New Generic text page for IC Comms with failure status indicators
8.36.00	23/8/10	*LOGEVENT command enhanced with fields for EventID and Category
		IQ3 with PIN=0 also sent encoded for *CREATE, *DELETE and List Plot Change
8.37.00	16/9/10	On licence validation failure the licence folder is indicated

8.38.00	8/10/10	New feature to produce alarms from page datapoints *ALARMSCAN (filter with addr=129)
8.39.00	20/11/10	Control Setting screen is now wider and allows horizontal scroll bar
		ManagerFull mode gives screen without menu or caption for Touchscreen PC
		Doorway Server Login screen has numbers pad for Touchscreen PC
8.40.00	26/1/11	Snapshot page data collection incomplete warning is to alarm panel only
8.40.01	15/2/11	Graph labels reordered to display longer labels better
		Knob and Switch adjustment now works with Synapsis SIP vIQ
		Map Identifier field increased from 15 to 20 chars and inv alarm addresses masked out
		BMSType = e allows writing from a datapoint eg W1(S=I)
8.41.00	17/5/11	Export List v2 with combined Date+Time field
8.42.00	13/7/11	Corrected Map omission of IQ type details
8.42.01	27/7/11	ManagerFull mode page caption now shows in Engineer override
8.42.02	26/9/11	Doorway Server Login (DWUSER.EXE) allows selection of EINC for users with * character
8.43.00	4/11/11	Time Zone support increased from 5 to 8 for use with IQ3 controllers
8.44.00	10/1/12	Enlarge knob adjustment buttons for use with Touchscreens
		Engineering screen now shows current PIN
		Add to IP selections 127.0.0.1 Loopback
8.45.00	13/1/12	SMS alarm queue management
		*SMSQUEUE command
8.46.00	6/2/12	Snapshots Find Record screen capacity increased
8.47.00	15/5/12	Dual monitor support improved
		Plot Create/Delete now sends PIN 0
		*EXIT 1 closes Doorway immediately from button, datapoint or event
		Seachange data containing ???? is discarded unless SeaChange label translation disabled
		Remove DOS printing option from Alarm panel
		Increase Alarm retransmission "Message && Action" field from 80 to 120 chars
		Email *GROUP* feature allows easier setting when there are many recipients
8.47.01	18/5/12	Email Group now removes all invalid characters
8.47.02	27/5/12	Time Zone screen for IQ3 now creates 3 on and 3 off times if not present.
8.47.03	9/8/12	IT Routers increased to 26 (A to Z)
8.48.00	22/8/12	After adjusting a Knob, Switch or Override page the page data point should update faster
8.50.00	25/4/13	Licence key no longer required and the software is now free and supported
8.51.00	3/2/14	Control knob adjustment screen enhanced for touchscreen finger operation
		Control knob adjustment screen has optional numbers pad like the Login screen
8.52.00	13/2/14	Graph Zoom updated
8.53.00	25/2/14	Manual Override adjustment screen has optional numbers pad like the Login screen
		Touchscreen numbers pad layout has Touchscreen keyboard toggle
		User option ArchiveAlarms not retained now fixed
		Missing menu option Show Communications fixed
8.54.02	15/7/14	Edit Toolbars dual screen initial placement improved
8.54.04	26/11/14	Time Zone screen sets all 24:00 times slots as Off
		Dual screen handling improvements
8.54.05	30/1/15	IQ4 Time Zone handling improved and consistent with v9.54.05
8.54.07	6/5/15	Changes as v9.54.07
8.54.08	9/11/15	Changes as v9.54.08
8.54.09	14/11/15	Changes as v9.54.09
8.55.00	27/11/15	Changes as v9.55.00
8.60.00	12/1/16	Changes as v9.60.00
8.61.00	19/7/17	Changes as v9.61.00

Ver 8 above works only with 32 bit versions of Windows XP, Vista, Windows 7, 8 and 10
Ver 9 onwards is required for all 64 bit versions of Windows 7, 8, 10 and Server 2012 R2

9.00.00	12/11/12	Preview of Doorway compatible with Windows 7-64bit & 8-64bit
9.00.01	22/4/13	Licence key no longer required and the software is now free and supported
9.51.00	3/2/14	Control knob adjustment screen enhanced for touchscreen finger operation
		Control knob adjustment screen has optional numbers pad like the Login screen
9.52.00	13/2/14	Graph Zoom updated and cursor now shows
9.53.00	25/2/14	Manual Override adjustment screen has optional numbers pad like the Login screen

		Touchscreen numbers pad layout has Touchscreen keyboard toggle
		User option ArchiveAlarms not retained now fixed
		Missing menu option Show Communications fixed
9.54.01	7/5/14	New feature Menu-Convert Path References to convert projects for server use
9.54.02	15/7/14	Improvements to Convert Path References feature
		New button command *ConvertPath
		Edit Toolbars dual screen initial placement improved
		Edit Toolbars can now be moved with the mouse
9.54.03	27/7/14	Doorway Server Login (DWUSER.EXE) allows selection of EINC for users with DWnn* character (as 8.42)
9.54.04	26/11/14	Time Zone screen sets all 24:00 times slots as Off
		Dual screen handling improvements
9.54.05	30/1/15	IQ4 Time Zone handling improved and consistent with v8.54.05
9.54.06	19/2/15	Alarm Viewer opens at correct month
		Alarm panel handles most Unicode chars for non English character sets
9.54.07	6/5/15	Corrected "paper" colour of text datapoints sometimes using previous page value
revised	28/8/15	Places the patch for Windows Help in Doorway folder HELP-FIX.
		Right mouse click on file DW-HELP.CMD and choose 'Run as Administrator' to install
9.54.08	9/11/15	Max screen resolution horizontally is increased, tested at 2560 x 1440
9.54.09	14/11/15	Max screen resolution vertically is increased, tested at 3840 x 2400
9.55.00	27/11/15	Corrected bug in Grid and Align features on screens with resolution 2560x1440 and higher
9.60.00	12/1/16	Align Route, Gatway and Doorway versions
9.61.00	19/7/17	Syntax NS for lan graphic the left misalignment after _ newline character is fixed
		Generic Text pages for sensors extended to S416