



Configuration of Alarm System BNCS Output Module

config_alm_bncs_output.dll

Written by: Charlotte Bell, Richard Kerry

Contents

Contents	2
1 Alarm System – BNCS Output Module	3
1.1 Overview	3
1.2 Description	3
2 Configuration Procedure	3
2.1 Configuring the Outputs	3
2.2 Create a new BNCS Output Module	4
3 Configuring the Outputs.....	5
3.1 Configure the Infodriver	5
3.2 Configure the Outputs	5
3.3 Importing and Exporting using the clipboard or a file	12
3.4 Slot Duplication	12
4 Documents referenced.....	13
5 Version history.....	13
5.1 Software Version	13
5.2 Document Version	13

1 Alarm System – BNCS Output Module

1.1 Overview

This module (`config_alm_bncs_output.dll`) is part of the suite of modules that form the BNCS Alarm System. This module is used to configure the module which provides a method of interfacing between the Alarms System and a BNCS system via an infodriver.

1.2 Description

The BNCS output module connects to the configured infodriver. If it succeeds, whenever there is a change to the state of a process, this change, if configured, will be passed on to the infodriver, and vice versa.

2 Configuration Procedure

To configure the BNCS Output module use the BNCS v4.5 configuration tool. What follows assumes that you are running the configuration editor and that this is connected to a suitable configuration server. It also assumes that you have already configured some inputs and processes in the Alarm System.

There can be one or more BNCS Output modules per Alarm system. Any BNCS Output can have up to a maximum of 4096 slots defined.

There is some information about the format of the file written in Appendix A, though it is preferable to edit the files using the config editor.

2.1 Configuring the Outputs

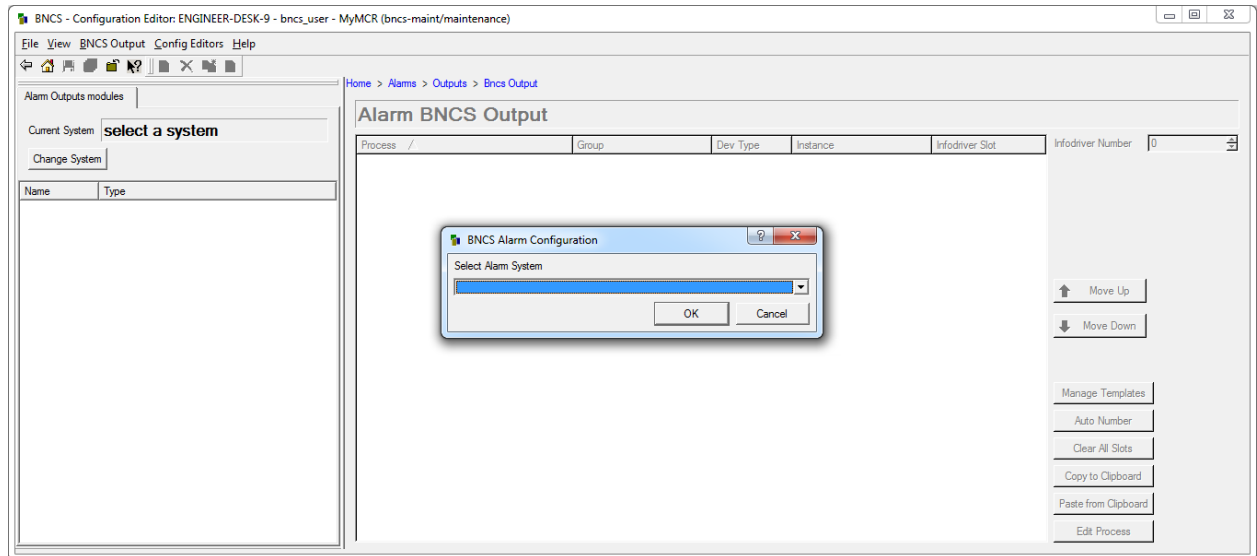
In the configuration editor, select Alarms, then Outputs, then BNCS Output.

Select the Alarm System to be edited.

It should already exist and processes should already exist as this editor needs to reference existing processes.

The Current System will show "select a system" if you have not yet selected one, in which case then select the Change System button, then select an alarm system from the drop down list. This step is needed because there may be several alarm systems within one installed BNCS system.

Actions relating to the whole module may be done either by right clicking in the bottom left hand pane (ie the context menu), via icons on the tool bar, or the BNCS Output menu item. Descriptions will not repeat this.



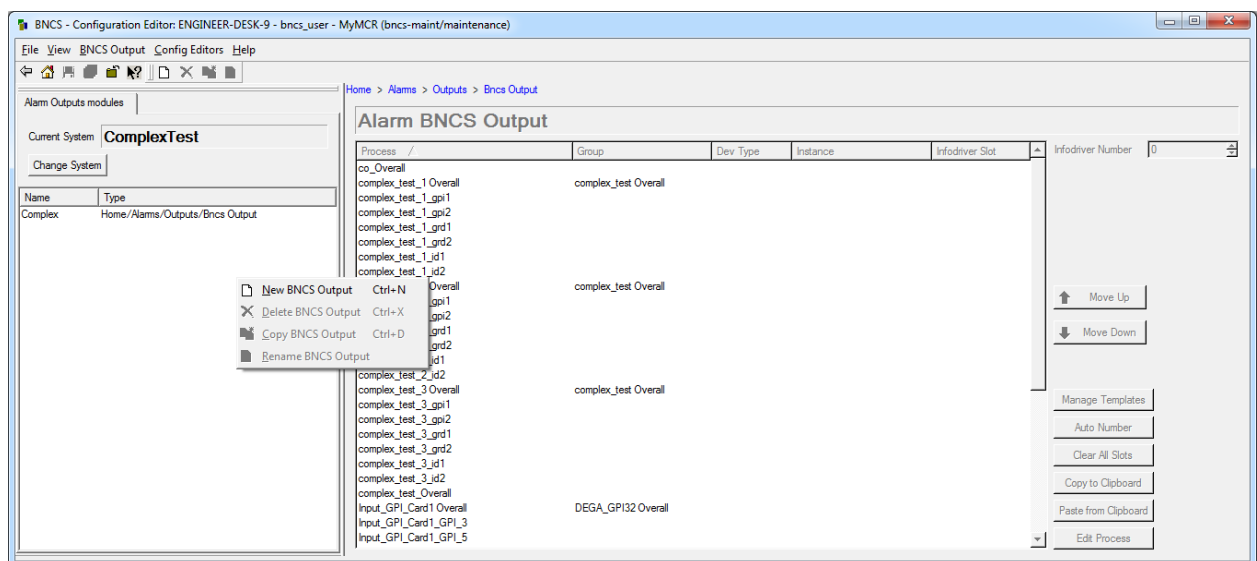
2.2 Create a new BNCS Output Module

If there are no BNCS Output modules configured yet create a new one.

Select New BNCS Output.

This may be given a more meaningful name using the menu or pressing F2.

Change the name to a meaningful one and press return.



3 Configuring the Outputs

You will see a list of the processes along with any group names in the right hand pane.

3.1 Configure the Infodriver

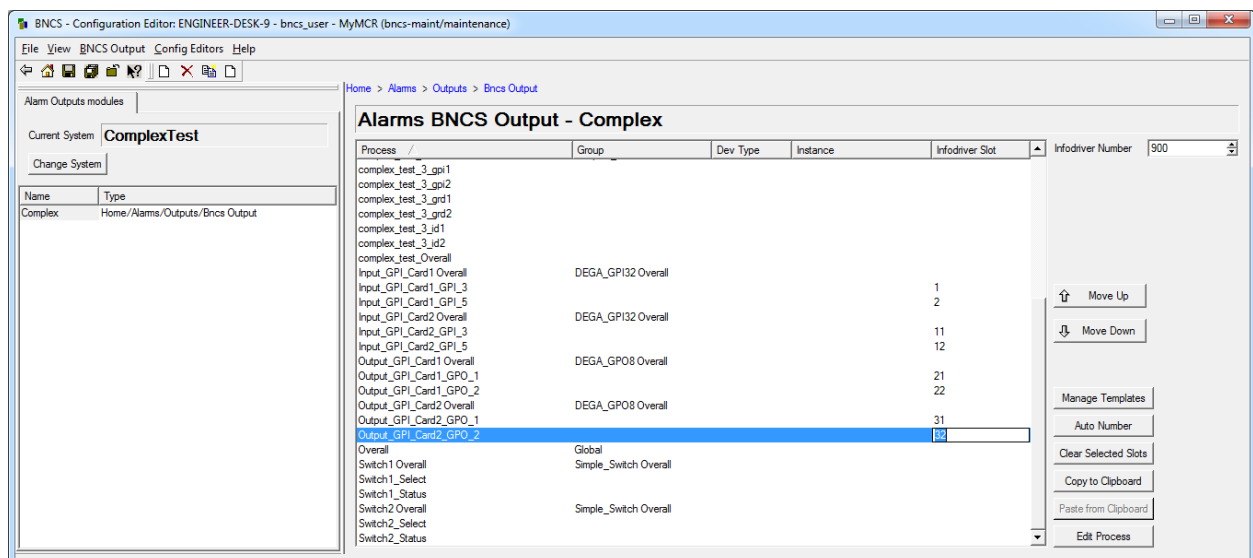
The next action should be to select the Infodriver number you want the module to appear as. Each output module must have a unique number. Use the control in the top right hand corner to set the infodriver number.

3.2 Configure the Outputs

There are three main ways to do this.

3.2.1 Manual Number

This is useful for a small number of slots. Double click on the process and manually type in the slot number.



3.2.2 Auto Number

This is useful for processes that do not fit into an instance-like pattern.

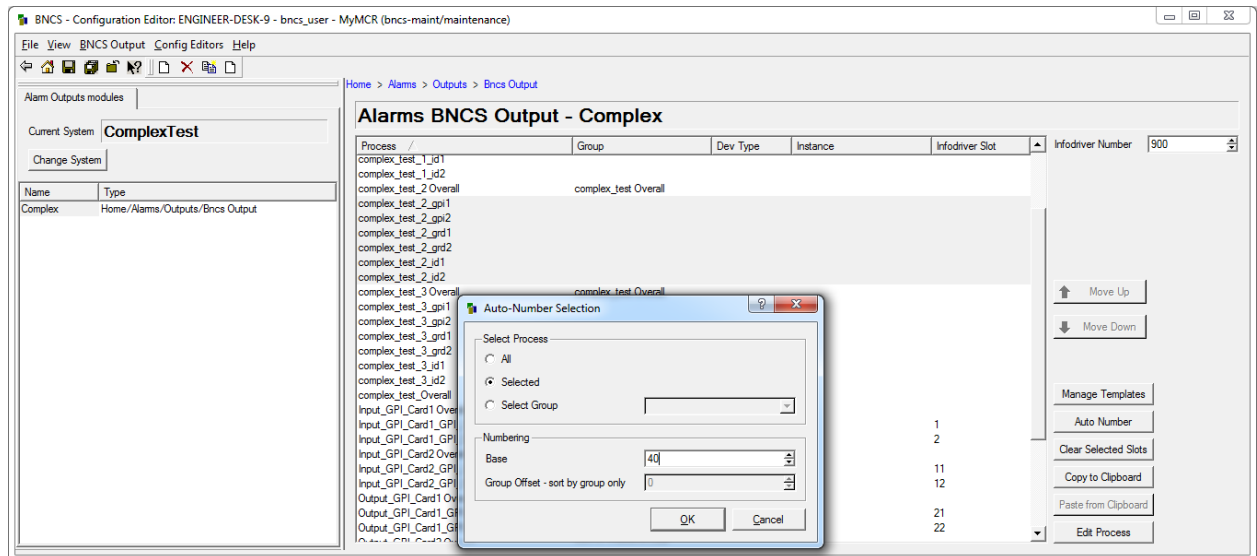
This function can act on all the processes, selected processes or all processes in a specified group.

To affect selected processes, select the processes that you wish to configure and press the "Auto Number" button. In the pop-up dialog select the Selected check-box.

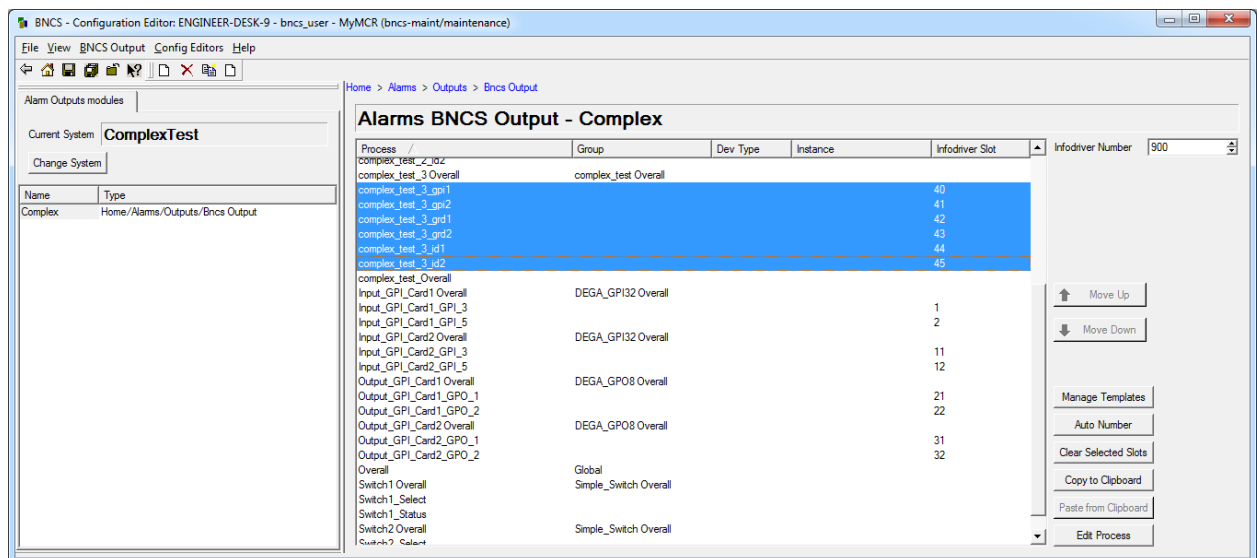
Select All to number all the processes (the process's selection state is ignored). All the processes will be numbered in the order in which they appear in the display.

Use Select Group and select the required group from the drop-down menu to number all the processes within a specific group processes (the process's selection state is ignored).

If the process list is sorted by Group a Group Offset may also be entered. In this case each new group found will have its base offset moved by the given amount. The Base value will also be applied, so if that is 20 and the group offset is 100 then the groups being processed will be given numbers starting with 20, 120, 220, 320 etc.



Select the base slot (and Group Offset if required and enabled) then press the OK button. The result is shown below.



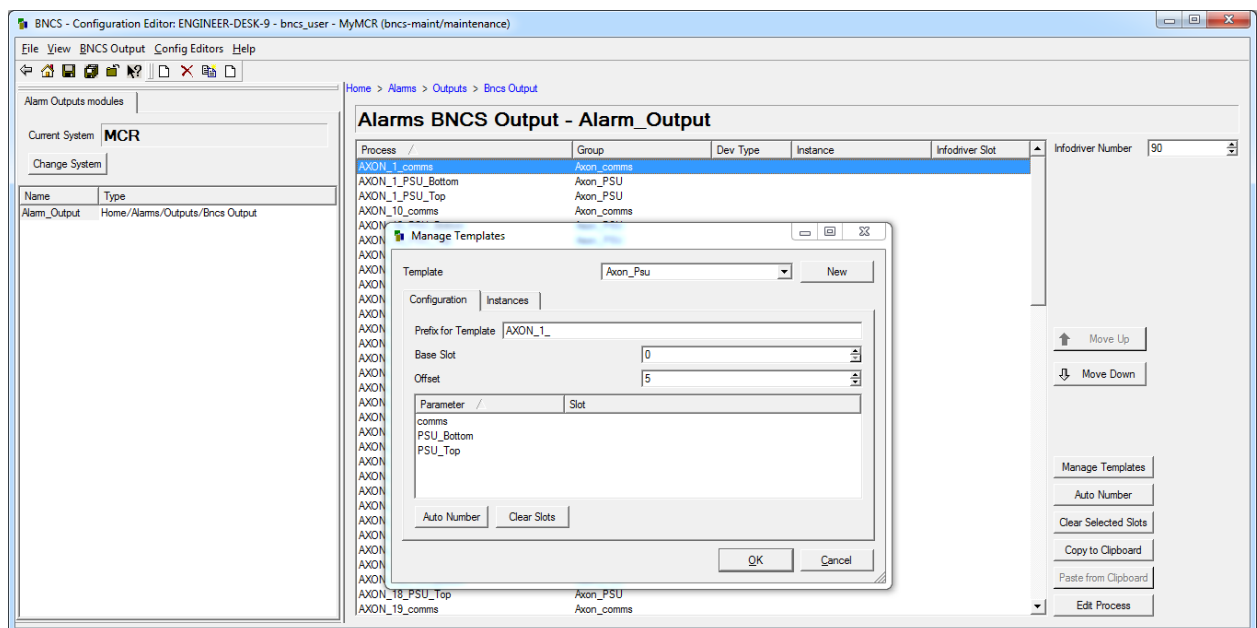
3.2.3 Creating Alarm Instance Outputs - Templates

This option is useful if you have alarms from a number of instances of similar devices. This option will produce instance-like outputs with all the parameters having the same slot number, with a different offset for each instance of the "device type".

The following example will use the alarm processes from all of the "Axon PSU" devices. Press the "Manage Templates" button. At the top of the popup select the "New" button to create a new template. Enter a template name "Axon_Psu".

We then pick one particular "instance" to use as the template. Only processes that are named using this convention can be used (i.e. prefix, underscore, suffix - global_more detailed) the aim is to isolate the common processes for each instance of the device. In this example we will choose "AXON_1_".

Note that as this is entered into "Prefix for Template" the characters are removed from the start of the names showing in the list and any resulting duplicates are removed. Type this in carefully and see the number of processes reduce. If at any point they all disappear then you have typed incorrectly.



You should see a small number of parameters listed in the parameter column. Only the popup will now be shown, for clarity.

The image shows a 'Manage Templates' dialog box. At the top, there's a 'Template' dropdown menu set to 'Axon_Psu' and a 'New' button. Below this are two tabs: 'Configuration' (selected) and 'Instances'. In the 'Configuration' tab, there's a 'Prefix for Template' text field containing 'AXON_1_'. Below that are 'Base Slot' and 'Offset' spinners, both set to 0 and 5 respectively. A table with two columns, 'Parameter' and 'Slot', is shown. The 'Parameter' column lists 'comms', 'PSU_Bottom', and 'PSU_Top'. The 'Slot' column is empty. At the bottom of the table are 'Auto Number' and 'Clear Slots' buttons. At the very bottom of the dialog are 'OK' and 'Cancel' buttons.

Parameter	Slot
comms	
PSU_Bottom	
PSU_Top	

In the "Slot" column, the required slot numbers may be entered manually for the parameters you want to use. To do this double-click in the number area then enter the slot number, as shown below.

Manage Templates

Template: Axon_Psu [New]

Configuration | Instances

Prefix for Template: AXON_1_

Base Slot: 0

Offset: 5

Parameter /	Slot
comms	1
PSU_Bottom	2
PSU_Top	3

[Auto Number] [Clear Slots]

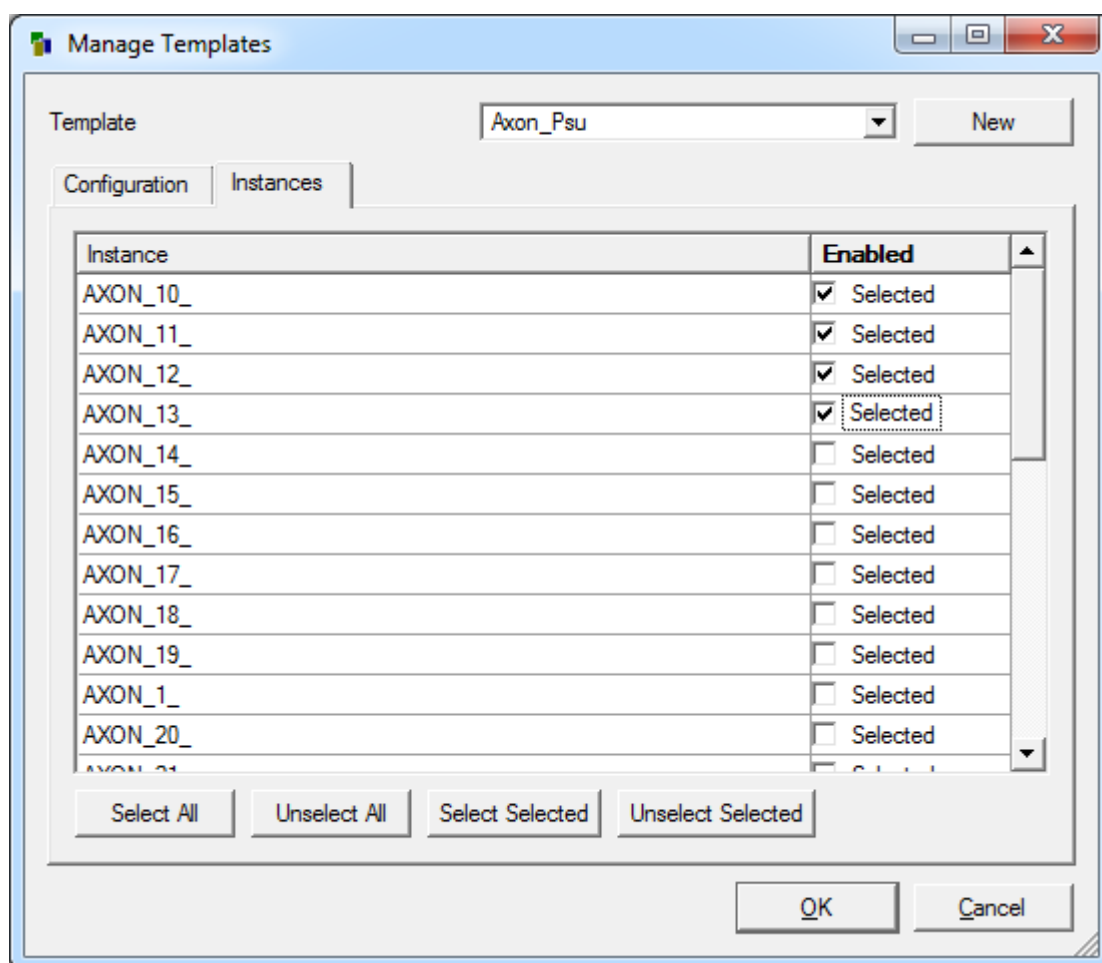
[OK] [Cancel]

Alternatively the numbers may be entered automatically. The Auto Number button will assign numbers to all selected rows, starting at 1.

Clear Slots will clear the number from all selected rows.

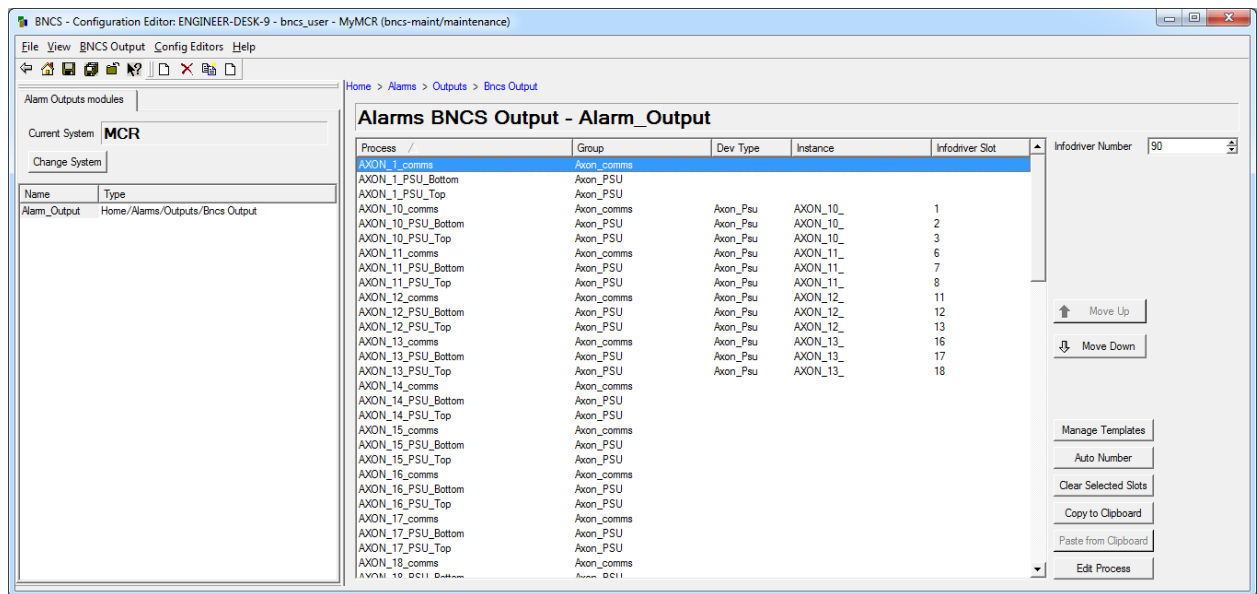
We now need to set the base slot (say 100) and the slot offset , which should be at least the number of parameters (5 in this case). If the offset is less than the number of parameters with numbers assigned, duplicates will be generated.

Next click on the "Instances" tab to select the instances you want to configure. Here we select the first four instances.



The four buttons below - Select/Unselect All/Selected - allow this to be done more easily, especially if there are a large number of "instances" available.

Click the "OK" button to create the outputs. The result is shown below.



When this alarm configuration is written, new instances are written to the instances file, and device type files are also created or modified.

The instance names and device types are created with the alarm system name and the output module name as prefixes to the instance name and the device type name.

The examples above create instance entries as shown below. The alarm system name is "MCR", the module name is "Alarm_Output" and the device type is "Axon_Psu".

```
<instance id="MCR_Alarm_Output" type="MCR_Alarm_Output" composite="no"
ref="device=90,offset=0"/>
```

```
<instance id="MCR_Alarm_Output_AXON_10_"
type="MCR_Alarm_Output_Axon_Psu" composite="no" ref="device=90,offset=0"/>
```

```
<instance id="MCR_Alarm_Output_AXON_11_"
type="MCR_Alarm_Output_Axon_Psu" composite="no" ref="device=90,offset=5"/>
```

```
<instance id="MCR_Alarm_Output_AXON_12_"
type="MCR_Alarm_Output_Axon_Psu" composite="no" ref="device=90,offset=10"/>
```

```
<instance id="MCR_Alarm_Output_AXON_13_"
type="MCR_Alarm_Output_Axon_Psu" composite="no" ref="device=90,offset=15"/>
```

```
<instance id="MCR_Alarm_Output_AXON_13_"
```

The MCR_Alarm_Output instance represents processes with a BNCS output that are not set using any template, ie manually or using auto number.

"MCR_Alarm_Output_AXON_10_" to "MCR_Alarm_Output_AXON_13_" correspond to the Axon_Psu template shown in the example above.

New device description files will be created for any new instances and will be listed in the "devicetypes.xml" file in the normal way.

Templates generated in this way will be stored in the alarm config file so may be recalled and reused, or edited, at a later time.

When a process has its slot number set using this template system it is “locked” and may not have the number changed manually. It is necessary to “unlock” it from the Manage Templates dialog before it may have a number set manually.

3.3 Importing and Exporting using the clipboard or a file

It is possible to copy the processes to the clipboard and then paste them into a text editor or tool, such as Excel. As processes with numbers managed using templates may not be selected they may not be copied to the clipboard.

It is also possible to paste from the clipboard into the configuration tool. In practice this is only useful for outputs which are not instance types as the instance name and device-type are not copied.

3.4 Slot Duplication

Whichever method is used to allocate processes to slots there is the possibility of creating slot clashes i.e. more than one process being allocated to the same slot. These need to be avoided for the system to work properly; only single process can be allocated to a slot. The configuration editor will mark any duplicated slots with visual warnings as shown below. Any processes with duplicate slots will be highlighted as yellow if not selected and dark red if selected.

The screenshot shows the 'Alarms BNCS Output - Alarm_Output' window. It contains a table with columns: Process, Group, Dev Type, Instance, and InfoDriver Slot. The table lists various processes and their assigned slot numbers. A warning message on the right states: 'Warning: There are duplicates.' The table shows that slot 13 is duplicated by AXION_12_PSU_Top and AXION_15_comms. Slot 14 is duplicated by AXION_14_PSU_Top and AXION_15_PSU_Top. Slot 15 is duplicated by AXION_15_PSU_Top and AXION_15_PSU_Top. Slot 16 is duplicated by AXION_13_PSU_Top and AXION_16_PSU_Top. Slot 17 is duplicated by AXION_16_PSU_Top and AXION_16_PSU_Top. Slot 18 is duplicated by AXION_13_PSU_Top and AXION_16_PSU_Top. The table also shows processes with unique slot numbers from 1 to 12 and 19 to 20.

Process	Group	Dev Type	Instance	InfoDriver Slot
AXION_1_comms	Axon_comms			
AXION_1_PSU_Bottom	Axon_PSU			
AXION_1_PSU_Top	Axon_PSU			
AXION_10_comms	Axon_comms	Axon_Psu	AXION_10_	1
AXION_10_PSU_Bottom	Axon_PSU	Axon_Psu	AXION_10_	2
AXION_10_PSU_Top	Axon_PSU	Axon_Psu	AXION_10_	3
AXION_11_comms	Axon_comms	Axon_Psu	AXION_11_	6
AXION_11_PSU_Bottom	Axon_PSU	Axon_Psu	AXION_11_	7
AXION_11_PSU_Top	Axon_PSU	Axon_Psu	AXION_11_	8
AXION_12_comms	Axon_comms	Axon_Psu	AXION_12_	11
AXION_12_PSU_Bottom	Axon_PSU	Axon_Psu	AXION_12_	12
AXION_12_PSU_Top	Axon_PSU	Axon_Psu	AXION_12_	13
AXION_13_comms	Axon_comms	Axon_Psu	AXION_13_	16
AXION_13_PSU_Bottom	Axon_PSU	Axon_Psu	AXION_13_	17
AXION_13_PSU_Top	Axon_PSU	Axon_Psu	AXION_13_	18
AXION_14_comms	Axon_comms			
AXION_14_PSU_Bottom	Axon_PSU			
AXION_14_PSU_Top	Axon_PSU			
AXION_15_comms	Axon_comms			13
AXION_15_PSU_Bottom	Axon_PSU			14
AXION_15_PSU_Top	Axon_PSU			15
AXION_16_comms	Axon_comms			16
AXION_16_PSU_Bottom	Axon_PSU			17
AXION_16_PSU_Top	Axon_PSU			18
AXION_17_comms	Axon_comms			
AXION_17_PSU_Bottom	Axon_PSU			
AXION_17_PSU_Top	Axon_PSU			
AXION_18_comms	Axon_comms			
AXION_18_PSU_Bottom	Axon_PSU			
AXION_18_PSU_Top	Axon_PSU			
AXION_19_comms	Axon_comms			
AXION_19_PSU_Bottom	Axon_PSU			
AXION_19_PSU_Top	Axon_PSU			

Here we can overcome the duplicate slots problem either by changing the slot numbers of the processes whose numbers have been assigned manually, or use the “manage templates” tool to change the base slot for those assigned by templates.

4 Documents referenced

This document should be read in conjunction with other documents in the tree.

In particular:

- Alarm – overview

- alarm – Colledia Control output

- alarm – config server/editor

The documentation relating to file formats may also be useful.

5 Version history

5.1 Software Version

Version numbers shown here may not be seen within the software itself. The implementation date is a more reliable way of determining whether a particular issue is present in any particular instance of the software.

Version	Date	Change	Author
1.00.00	13 November 2003□	Original Release	
1.00.00	13 January 2004	Demo system	
2.00.00	31 March 2004	System now one application with plugin dlls	

5.2 Document Version

Version	Date	Change	Author
1.00.00	15 November 2005□	Original Release	
2.00	5 December 2005	Full explanation of configuring outputs	
	19/01/2015	Corrections and amendments. Images reworked from current versions of software.	Richard Kerry

Atos IT Services Limited
4 Triton Square
Regent's Place
London NW1 3HG, UK
<http://uk.atos.net/>

BNCS
Room G300
Stadium House
Wood Lane
London W12 7TA
collediacontrol.it-solutions.gb@atos.net