First step: The input/output matrix

Before you start with the programming of the CFC-chart, the required input/output routing in the matrix must first be completed. The CFC-chart extensively interfaces with the input/output matrix. Every annunciation, measured value or control command used in the CFC-chart must first be routed accordingly in the input/output matrix.

The input/output matrix is the hub of information flow. Here, the source and destination of all the information flow of the device is configured e.g. if you require a measured value to be displayed on the graphic default display, the appropriate measurement must be routed in the matrix with a cross in the appropriate column (default display).

Before programming the CFC-chart make a list of all the annunciations, commands etc. that will be used as inputs and outputs of the CFC-chart. These must then be defined and routed in the input/output matrix so that they will be available when programming the CFC-chart. Information must be separated into the types CFC source and destination. Source CFC is information coming from the CFC logic and destination CFC is information going to the CFC logic.

The following steps must be carried out:

1. In the default settings check whether the required information destination CFC element is already routed. If not, then apply the appropriate cross in column "Destination CFC".

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	01814	50-1 TimeOut		OUT																											х			
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	01833	50N-2 TRIP		OUT																										0	х	4		

Picture 1: in the default setting not all information is routed with destination CFC



- 🖬 🎒 🕺 🖻 😭 😭 🚵 🎘 葦 Indications and commands only 💌 No filter - 🗈 🖬 🛯 💵 🕅 😢 Information estination BCD CM No. Display text: Type BO LED Buffer L 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 2 3 4 5 6 7 8 9 10 11 12 13 14 O S T Device, General P.System Data 1 Osc. Fault Rec P.System Data 2 * * 50(N)/51(N) PU 50(N)/51(N)TRIP OUT OUT X X X 01761 00 01791 0 >BLK 50/51 >BLOCK 50-2 01704 SP X X 01721 SP U х 01722 >BLOCK 50-1 SP 01723 >BLOCK 51 SF 01751 50/51 PH OFF oc 01752 50/51 PH BLK 00 X 00 01753 50/51 PH ACT 01762 50/51 Ph A PU OUT OUT 00 х 00 01763 50/51 Ph B PU 01764 50/51 Ph C PU OUT OUT L 00 X 00 01800 50-2 picked up 00 X 01805 50-2 TRIP 0 01810 50-1 picked up 01815 50-1 TRIP 01820 51 picked up 01825 51 picked up OUT OUT 00 X 0 OUT 00 X 0 X OUT 0 01804 50-2 TimeOut 01814 50-1 TimeOut 01824 51 Time Out 01852 50-2 BLOCKED 01851 50-1 BLOCKED OUT OUT OUT 00 X 00 X oc ουτ 00 50/51 Overcur 01855 51 BLOCKED OUT 00 00 х 01714 SP >BLK 50N/51N x 01724 >BLOCK 50N-2 SP υ 01725 >BLOCK 50N-1 SP X X 00 X X >BLOCK 51N 50N/51N OFF 01726 SP 01756 OUT oc 01757 50N/51N BLK 00 01758 50N/51N ACT 00 01765 50N/51NPickedup 00 X 00 X 50N-2 picked up 01831 01833 50N-2 TRIP OUT 0 x
- 2. If the required information element is not available, then a user defined information element of the appropriate type must be inserted.

Picture 2: The icon for the information catalogue

Click on the icon (see picture 2) or select the menu entry Insert \rightarrow Information Catalogue. Thereafter a new window opens (see picture 3)

Information catalog	×
Indications, Commands, Measured Values, Metered Values (select and drag to left column):	
Annunciations Control without FeedBack Control with FeedBack Measurement PowerMeter	

Picture 3: The information catalogue for user-defined information



3. Select the required information type from the catalogue and insert it at the appropriate location in the input/output matrix via drag&drop.



Picture 4: information catalogue content (expanded)

If for example a simple new annunciation is required, select the type "single point" annunciation (SP). The classification ON/OFF or OPEN/CLOSE merely indicates how the pick-up and reset of the annunciation is indicated in the event logs.

The annunciation is positioned in the input/output matrix via drag & drop.

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50/51 Overcur.	01855	51 BLOCKED		OUT																														0	00		00	Х				
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	01726	>BLOCK 51N		SP						Т		Т	Τ	Т	Τ													Т	Т	Т								Х			Т	
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	01758	50N/51N ACT		OUT						Т		Т		Τ														Т	Т					0	20			Х				
	01765	50N/51NPickedup		OUT						Τ															L				Τ								00	х				
	01831	50N-2 picked up		OUT																																	00	х				
	01833	50N-2 TRIP		OUT																																	0	х				
	01834	50N-1 picked up		OUT																																	00	х				
	01836	50N-1 TRIP		OUT						Т		Т		Τ														Т	Т								0	Х				
	01837	51N picked up		OUT						Τ																											00	х				
	01839	51N TRIP		OUT																																	0	х				
	01832	50N-2 TimeOut		OUT						Τ		Т		Τ														Т	Т									Х				
	01835	50N-1 TimeOut		OUT																																		х				
	01838	51N TimeOut		OUT																																		х				
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Picture 5: the new annunciation in the input/output matrix



4. To rename the annunciation click on the text field and enter the new name. To route the appropriate source and destination of the annunciation, click on the appropriate column with the right mouse button and select the column entry. Input information to the CFC logic must be routed with a "X" in the column "Destination CFC". Information derived from the CFC logic must be routed with a "X" in the column "Source CFC". Other routing of the annunciation such as e.g. to LED or binary output or from binary input or service interface must additionally be done.

													De	stina	tion									
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	01825	51 TRIP	51 TRIP	OUT															0)				
	01804	50-2 TimeOut	50-2 Time Out	OUT																				
	01814	50-1 TimeOut	50-1 Time Out	OUT																				
	01824	51 Time Out	51 Time Out	OUT						Τ						Т								
	01852	50-2 BLOCKED	50-2 BLOCKED	OUT												Τ		00	0	00				
50/51 Overcur.	01851	50-1 BLOCKED	50-1 BLOCKED	OUT														00	0	00				
	01855	51 BLOCKED	51 BLOCKED	OUT														00	C	00				
	01714	>BLK 50N/51N	>BLOCK 50N/51N	SP																				
	01724	>BLOCK 50N-2	>BLOCK 50N-2	SP			U																	
	01725	>BLOCK 50N-1	>BLOCK 50N-1	SP																	<			
	01726	>BLOCK 51N	>BLOCK 51N	SP																				
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	01757	50N/51N BLK	50N/51N is BLOCKED	OUT														00		20)				
	01758	50N/51N ACT	50N/51N is ACTIVE	OUT														00						
	01765	50N/51NPickedup	50N/51N picked up	OUT															0	20)				
	01831	50N-2 picked up	50N-2 picked up	OUT															0	20)				
	01833	50N-2 TRIP	50N-2 TRIP	OUT																				
	01834	50N-1 picked up	50N-1 picked up	OUT																2013				
	01836	50N-1 TRIP	50N-1 TRIP	OUT																> p				
	01837	51N picked up	51N picked up	OUT															0	20)				
	01839	51N TRIP	51N TRIP	OUT															0))				
	01832	50N-2 TimeOut	50N-2 Time Out	OUT																				
	01835	50N-1 TimeOut	50N-1 Time Out	OUT																				
	01838	51N TimeOut	51N Time Out	OUT																				
	01854	50N-2 BLOCKED	50N-2 BLOCKED	OUT														00		20)				
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Measurement																		*						

Picture 6: the new annunciation in the input/output matrix routed to the destination CFC

5. **IMPORTANT**: Save the settings! Afterwards the annunciation will be available in CFC.

Similar procedure applies to commands, measured values, counters etc.

Please note that commands with feed-back will create two lines in the input/output matrix. These lines cannot be separated. The first line contains allocation for the command output (typically routed to binary outputs), while the second line contains the feedback information associated with this command (typically derived from binary inputs).



		Information		urc	e																	De	stin	atior	1													_
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Device, Neneral					*																					*						*		-	* *	•		
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P.System Data 2					*	*													,	*												*	1	* :	* *	•		
50/51 Overcur.					*		* *														*	*	*				*	•				*	1	* :	* *	•		
67 Direct. O/C																				,	*	*	*									*	,	* :	*			
Measurem.Superv																		1	*					*								*		:	*			
79M Auto Recl.					*		Т					Γ	*	*													Т					*	1	*	* *	•		
Fault Locator																																*	,	* :	*	T		
50BF BkrFailure					*						*	*																				*	1	* :	* *	•		
Cntrl Authority					*																									*	*	*			* *	•		
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Control Device		GndSw Cl.	IntSP		х																																	
		Block Data	IntSP		х																																	
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		Q9 Op/Cl	CF_D2																																x			
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		Fan ON/OFF	DP																													00		:	X			
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		F4-Permit	SP		Х																							l	J			00				X		
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Picture 7: a new command with feedback signal in the input/output matrix

