Interconnection

Configuration of the inter relay communication between two SIPROTEC4 devices 6MD663 (Bay Control Units)

First of all, the devices used for the inter relay communication (at least two units) are defined via drag and drop from the device catalog. Naturally, the devices must have the appropriate ordering code (12. position of MLFB = 4 or 5), see fig 1. Inter relay communication is possible with the following SIPROTEC 4 devices:
6MD663, 6MD664   bay control units
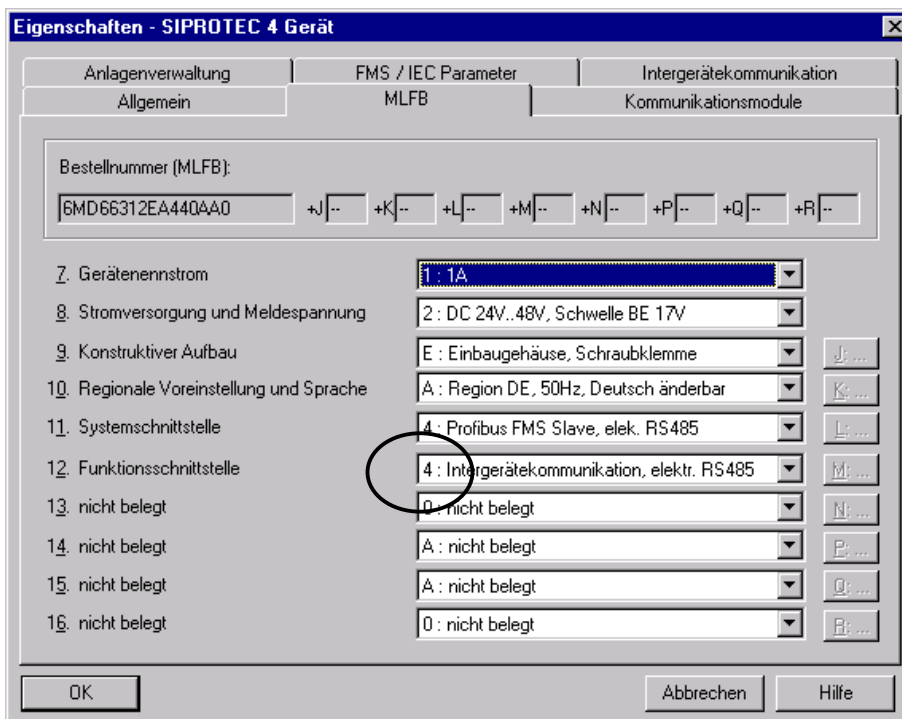6MD665   bay processing unit

Fig 1: Selection of units with inter relay communication

Once the two bay control units with inter relay communication have been applied in the DIGSI 4 manager, the IRC combination must be assigned in a similar manner. With the right mouse button, select "insert new object - IRC combination". The result is as shown in Fig 2:
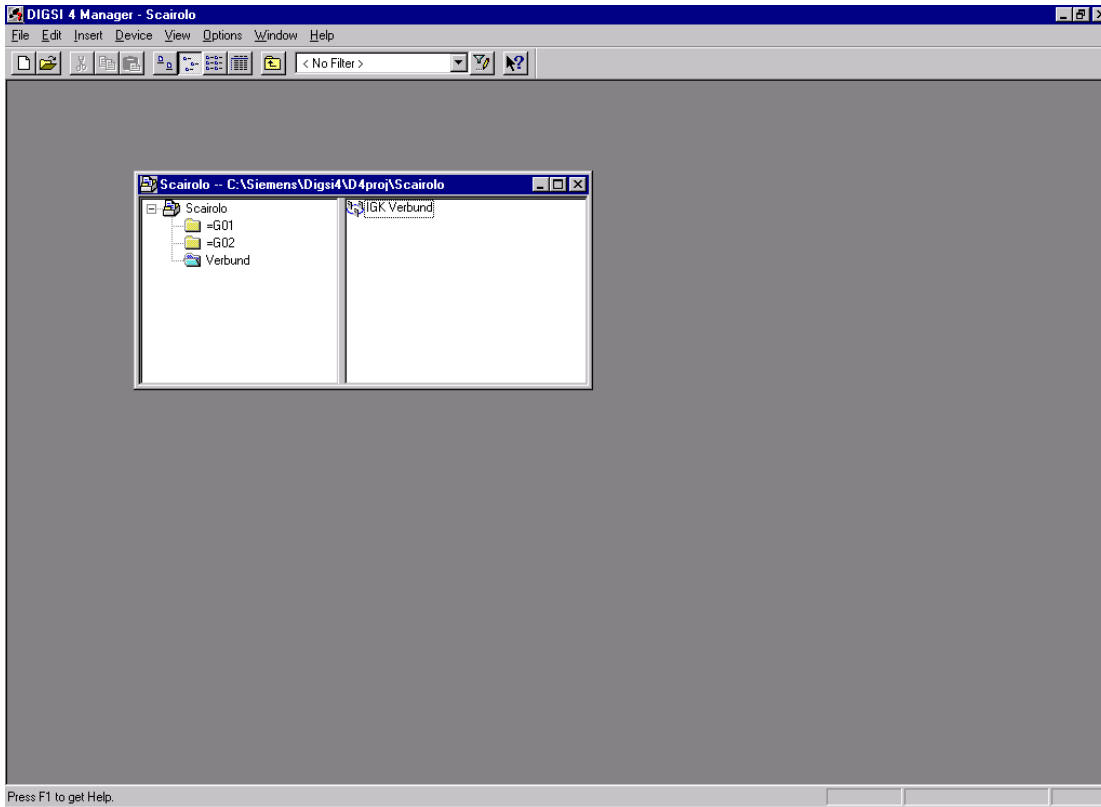
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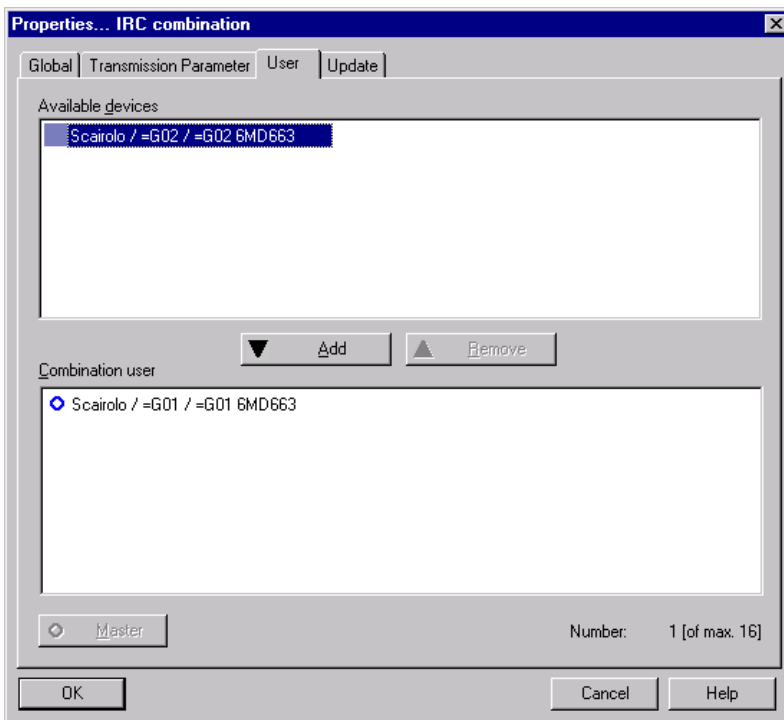Fig 2: inter relay combination in DIGSI4 manager

Fig 3: Selection of devices

When the IRC combination is visible, the terminal devices for the communication must be selected. With the right mouse button, click on the appropriate device combination and select "Object properties...". The selection is done by the third index card "User". With the "ADD" arrow they may be selected (moved to the lower window "combination user") see figure 3.

As the next step, the information content selected for exchange via the IRC must be routed in the I/ O matrix. For this purpose, open the relevant units in the "offline" mode and access the matrix. Two new columns "O" must be visible in the matrix, see figure 4. In these columns the information routed to the IRC (destination) and information derived from the IRC (source) must be marked with an "X".
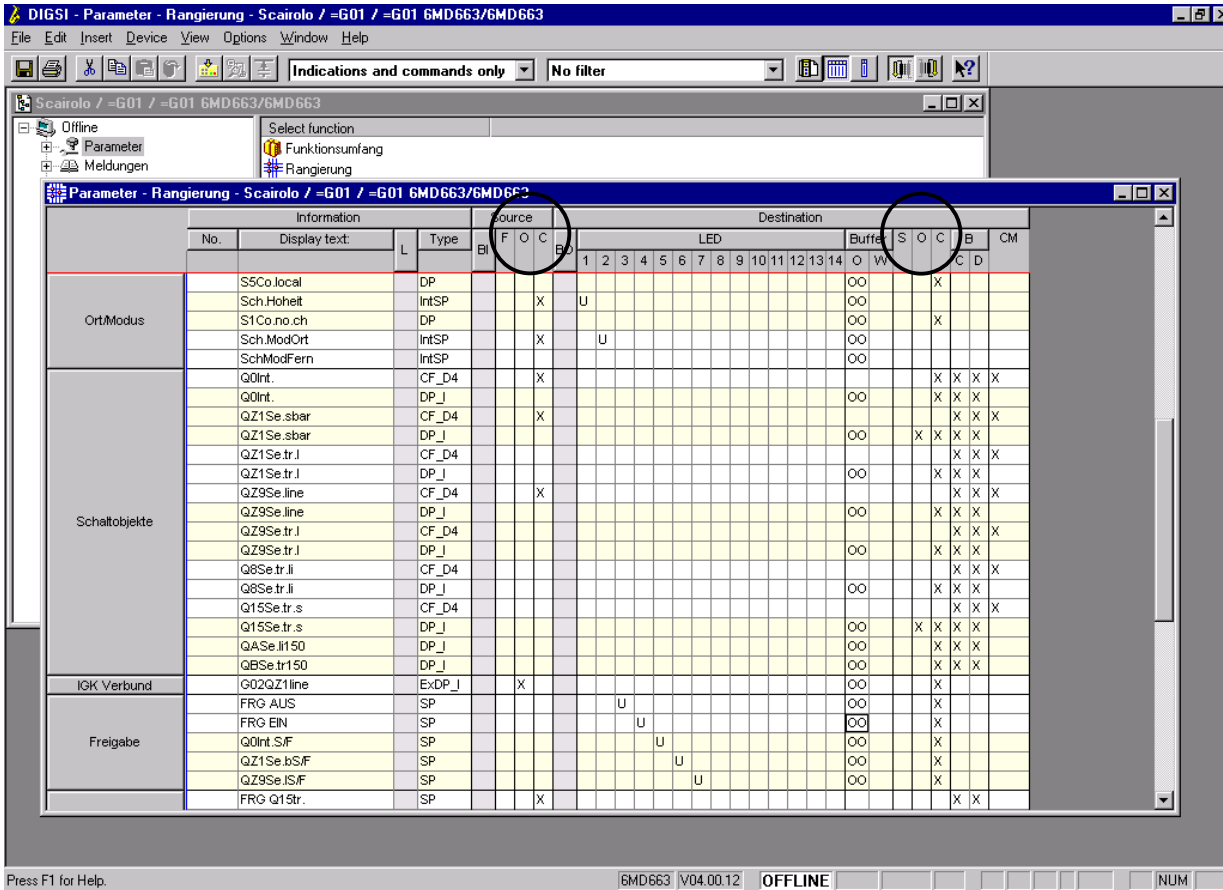

Fig 4: parameterisation of information which shall be available for inter relay communication

Information in the column "destination - O" is routed to the inter relay communication.

Once all the information is assigned as shown in figure 4, the connection can be configured. This is done in the IRC combination. Close the OFFLINE section in DIGSI and open the IRC combination (by double click with left mouse button). A window as shown in Figure 5 should appear.

Fig 5: IRC combination matrix

In this new matrix, the routing of information via the IRC connection is defined. In the column between information on the inter relay connection can be made. The column "source", shows all information that was routed with "destination" IRC in the DIGSI matrix. In the IRC combination matrix the destination can be selected. A pull down menu with those information points that were routed to "source" IRC in DIGSI will appear.

Finally a hint for the application of interlockinging. Since this is a very important safety function the inter bay connection should be supervised. In each participating unit, there is one annunciation "IRC disturbance" (see figure 6 for the german text).

Fig 6: IRC disturbance indication

This annunciation should be used in the CFC for interlocking: If there is a disturbance on the inter relay communication, no command with interlocks should be possible. This can be achieved by applying the IRC disturbance indication in the interlocking CFC chart.

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Comment

- With inter relay communication, up to 16 units can be connected.
- Each unit can send up to 32 information points to the bus
- The following information can be transported via interbay communication: Indications, measurements, counter values.

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