Saia-Burgess Controls Ltd.
Bahnhofstrasse 18 I CH-3280 Murten I Switzerland
T +41 (0)26 672 71 11 I F +41 (0)26 670 44 43

saia-burgess
Smart solutions for comfort and safety

Intern

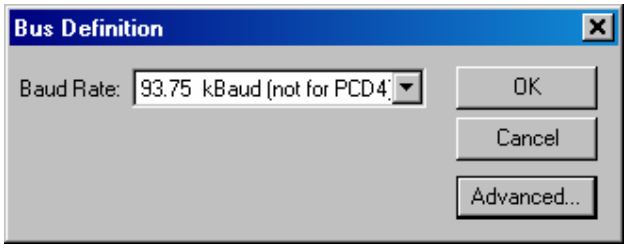
Alfonsi Claudio I T +41 (0)26 672 74 67 I pcd@saia-burgess.com

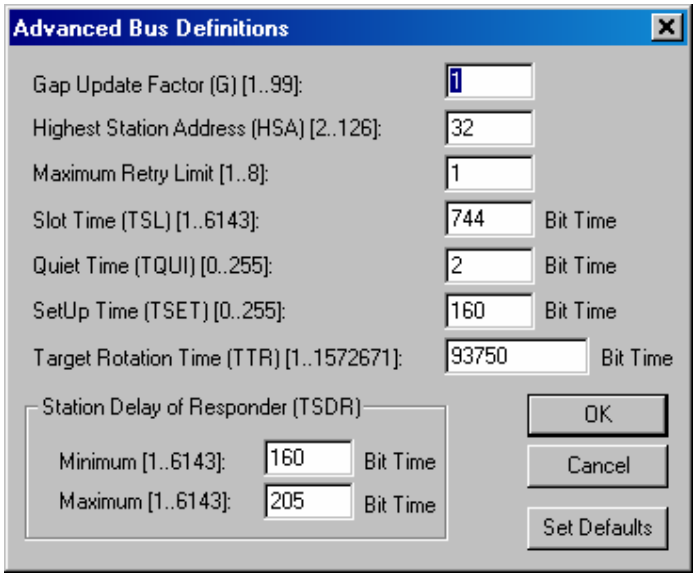
Concern: **Profibus FMS communication with a Unigyr device**

For action | For information | For circulation

Date: 25.11.2004

It's possible to connect our Saia devices to the Unigyr device of Landis & Staefa using the Profibus FMS protocol.
To connect correctly the Unigyr device to the PCD we have to adapt our FMS parameters according to the column "Fremdparameter of the table which we have received from Siemens (See next page).
For the Profibus bus definition on the PG5 Profibus configurator the following values have to be used on the Profibus-FMS configurator:





Event Notification

SIEMENS

PROFIBUS-Fremdankopplung mit PRU1, PRU2, PRx10
17. Juli 2000

Parameter			PRU2 und PRx10 <=V6.10 default Einstellung	PRU2 und PRx10 <=V6.10 Einstellung für PRU1	PRU1 und PRx10 >=V6.14 default Einstellung	PRU1 und PRx10 >=V6.14 Einstellung für PRU1	PRU1 und PRx10 >=V6.14 Einstellung für Fremdg	PRU1 und PRx10 >=V6.14 Einstellung via Diag.	z.B.	Fremdgerät geforderte Einstellung
Bus-Parameter										
HSA	Highest Station Address		32	32	32	32	32			32
BD	Baudrate	(in baud)	93750	93750	93750	93750	93750			93750 bd
TSL	Slot Times	(in bits)	744	744	744	744	744			744 bits
TQUI	Quiet Time	(in bits)	2	2	2	2	2			2 bits
TSDRmin	Station-Delaytime-Respond min	(in bits)	95	95	95 / 105	95 / 105	95 / 105			160 bits
TSDRmax	Station-Delaytime Respond max	(in bits)	140	140	140 / 160	140 / 160	140 / 160			205 bits
TTR	Target-Rotation-Time	(in bits)	93750	93750	93750	93750	93750			93750 bits
G	Gap-Update-Factor		1	1	1	1	1			1..10
TSET	Setup Time	(in bits)	160	160	160	160	160			160 bits
RDZ	Redundance		none	none	none	none	none			none
KBL-Parameter									z.B.	
LocLSAP	Local Link Service Access Point	(FDL)	Rem@+1	Rem@+1	Rem@+1	Rem@+1	Rem@+1	*B	5 2	Rem@+1
RemLSAP	Rem. Link Service Access Point	(FDL)	Own@+1	Own@+1	Own@+1	Own@+1	Own@+1	*B	2 5	Own@+1
RemADR	Remote Stationaddress	(FDL)	Rem@	Rem@	Rem@	Rem@	Rem@		4 1	Rem@
CTYPE	Connection Type	(LLI)	MMAZ	MMAZ	MMAZ	MMAZ	MMAZ			MMAZ
MaxSCC	MaxNbr of confirmed SrvReq	(LLI)	2	2	2	2	1	*B		1..2
MaxRCC	MaxNbr of confirmed SrvInd	(LLI)	2	2	2	2	→ 2	*B		1
MaxSAC	MaxNbr of unconfirmed SrvReq	(LLI)	1	2	1	2	0	*B		0..2
MaxRAC	MaxNbr of unconfirmed SrvInd	(LLI)	2	2	2	2	→ 2	*B		0..2
ACI	Acyclic-Control-Interval (in 10ms)	(LLI)	60000	60000	60000	60000	60000	*B		60000
ATT	Connection-Attribute (D=defined)	(LLI)	D	D	D	D	D			D
! OV	OV-Number	(FMS)	OVnr	OVnr	OVnr	OVnr	OVnr			0
! ProfName	Profilename	(FMS)	0	0	0	0	0			0
! AccProt	Access protected	(FMS)	0	0	0	0	0			0
! PwAccGrp	Password and AccessGroups	(FMS)	00	00	00	00	00			00
TxHi	MaxLen of hi-prio TxTelegrams	(FMS)	0	220	0	220	0	*B		0..220
TxLo	MaxLen of lo-prio TxTelegrams	(FMS)	220	220	220	220	220	*B		0..220
RxHi	MaxLen of hi-prio RxTelegrams	(FMS)	220	220	220	220	220	*B		0..241
RxLo	MaxLen of lo-prio RxTelegrams	(FMS)	220	220	220	220	220	*B		220..241
ReqSrv	Requested Profibus-Services	(FMS)	58 30 D9	FF FF FF	58 30 D9	FF FF FF	00 00 00	*B		00 30 00
OffSrv	Offered Profibus-Services	(FMS)	58 30 D9	FF FF FF	58 30 D9	FF FF FF	58 30 D9	*B		00 00 00

! Diese Parameter werden beim Verbindungsaufbau vom PRU2 resp. PRx10 nicht geprüft

Siemens Building Technologies AG

Landis & Staefa Division
Postfach
CH-6301 Zug

Gubelstrasse 22
CH-6301 Zug
Telefon +41 41-724 24 24
Fax +41 41-724 35 22
www.sibt.com

Landis & Staefa
Gebäudekomfort
und Energieeffizienz

F:\DOCUME~1\bechlusa\LOCALS~1\Temp\1317rev2.doc

Saia-Burgess Controls Ltd.
Bahnhofstrasse 18 I CH-3280 Murten I Switzerland
T +41 (0)26 672 71 11 I F +41 (0)26 670 44 43

Definition of the Profibus FMS Station number of the PCD and the SAP's.

- On the Profibus-FMS network all Unigyr Devices have to have a Profibus address which is < then the PCD Profibus address
- The Unigyr Device has a fixed relation between the station address and SAP numbers.
  Remote SAP = Own Address + 1
  Local SAP = Remote Address + 1
  Example:
  Unigyr has Profibus address: 1
  PCD has Profibus address: 3
  SSAP for Unigyr on the PG5 FMS configurator: 4
  SSAP for PCD on the PG5 FMS configurator: 2

Modification of the Sasi Texts
To be able to communicate correctly with the Unigyr device the Sais text have to have the following values:

"CREL:0,1,128,4,2,0,220,220,220,64,48,00,**88,48,217**,2,2,1,2,60000,0,0;"

Hex Value: **58,30,D9** (as described on the Simens table)

The text which was generated with the PG5 Profibus FMS Configurator has the following format:
"CREL:0,1,128,4,2,0,220,220,220,64,48,00,64,48,00,2,2,1,2,60000,0,0;"

The user have to adapt the text which was generated with the PG5 Profibus FMS Configurator (file name "fms-configuration-file-name".src) manually with a text editor with the values **88,48,217** on the correct place as describe above.
After the change of the file the user have to perform a "Build" on the PG5 project manager **(not "rebuild all")**.

Attention:
The PG5 will re-generate a new "fms-configuration-file-name".src file each time the "rebuild all" from PG5 project manager or the "compile" from the PG5 FMS configurator is performed.
This re-generation will erase the modification which was performed manually.
On the demo project we have stored the modified configuration on the file:
"FMS_NETWORK_ref.SRC"

Saia-Burgess Controls Ltd.
Bahnhofstrasse 18 I CH-3280 Murten I Switzerland
T +41 (0)26 672 71 11 I F +41 (0)26 670 44 43

Accessing to Unigyr

Communication tests show us, that the Unigyr don't like to have too much FMS communication.
If we do access all the time the Unigyr device then there is a delay of about 30 seconds before the channel will be open and sometime the channel close suddenly.
On our project we do communicate one time each second with the Unigyr device.
Either we do open the channel or we do send/receive data's from Unigyr.
Using this one second communication trigger will result in a faster opening of the channel and no suddenly closure of the channel.

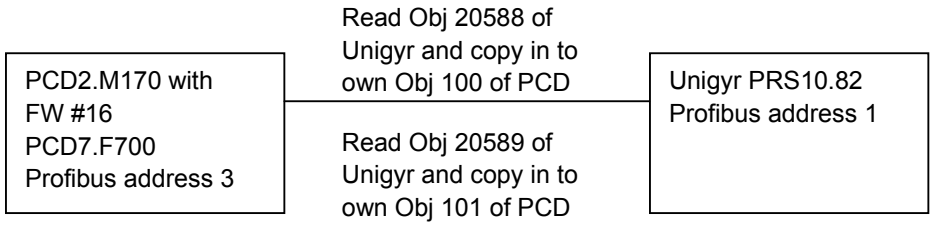
Reading/Writing of Unigyr objects.

Due of the fact that the Unigyr device has Objects with a address >16383 and we are not able to access directly this address >16383 with the PCD program code we have to access this address with indirect programming over a FB like the example below where the PCD does read the object 20589 of Unigyr and copy the value in his own object 100:

```
LD    R 2000
        20589
LD    R 2001
        100

CFB     FB_PB_Read
        PB_Channel    ;Profibus Channel
        0             ;Element n°
        R 2000        ;Src index
        R 2001        ;Dst Index

; FB to read the values of Unigyr

        FB    FB_PB_Read

        SRXM  =1            ; Channel
              =2            ; Number of elements
              =3            ; Source
              =4            ; Destination
        EFB
```

Saia-Burgess Controls Ltd.
Bahnhofstrasse 18 I CH-3280 Murten I Switzerland
T +41 (0)26 672 71 11 I F +41 (0)26 670 44 43

Description of the Demo PG5 Project:



Files on the PG5 Project:

- FMS_NETWORK.PRF contains the FMS configuration.
  The Unigyr device is also configured. It's not necessary to define the FMS objects on the Unigyr device.
  The modifications which are mentioned on the section "**Modification of the Sasi Texts"** are integrated manually on the file FMS_NETWORK.SRC
- FMS_communication.sfc contains two graftec structures:
  On one graftec structure the opening of the FMS channel is performed
  The other graftec structure performs the cyclic communication with the Unigyr device.
  The PCD does read the object 20588 of Unigyr and copy this object in to the object 100 of the PCD. Also the object 20589 is read and copied in to the object 101 of the PCD.
- PB_src.src contains the COB 0 which calls in a cyclic way each second the two graftec structures.
  Also the send/receive FB's for FMS communication are stored in this file.