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RBS 6201 GSM Commissioning - Create and Install IDB

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1

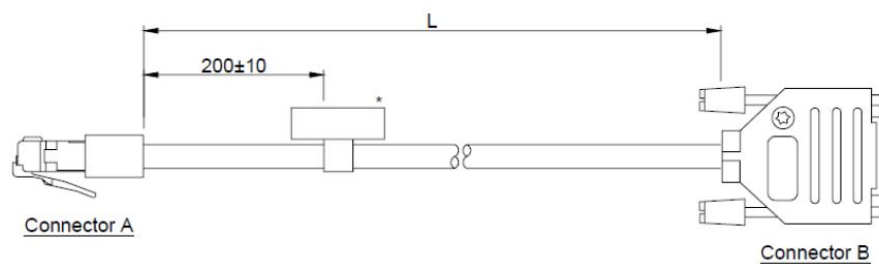
Tools and SW

- OMT R50L
- RBS Software G13B (**R73F**)

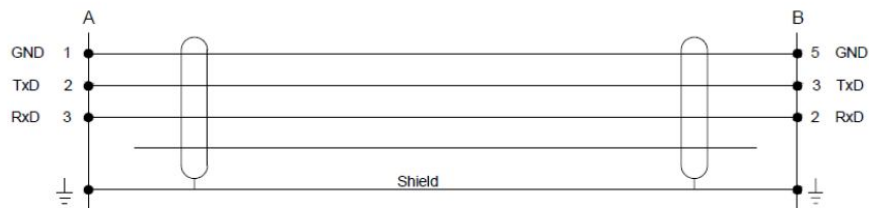
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- RJ45- Dsub 9 (female) cable
- USB – Dsub 9(male) adaptor (Optional)
- Card reader (Compact Flash)

RJ45- Dsub 9 (female) cable (RPM 919 489/00700)



*) Label for product identity marking (Cable shorter than 0.4 meter, the label shall be placed in the middle)

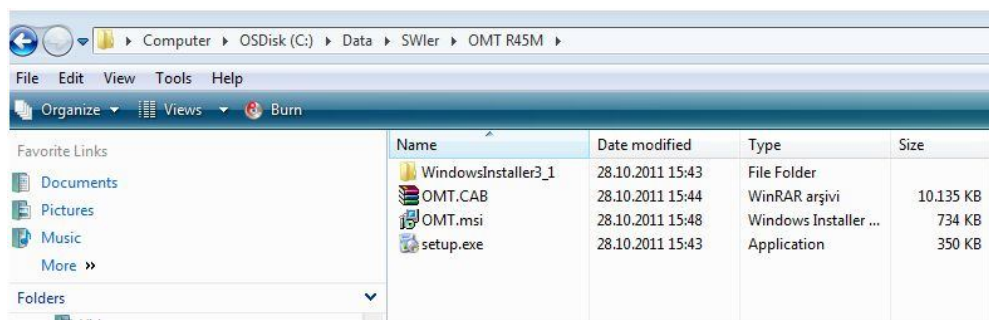


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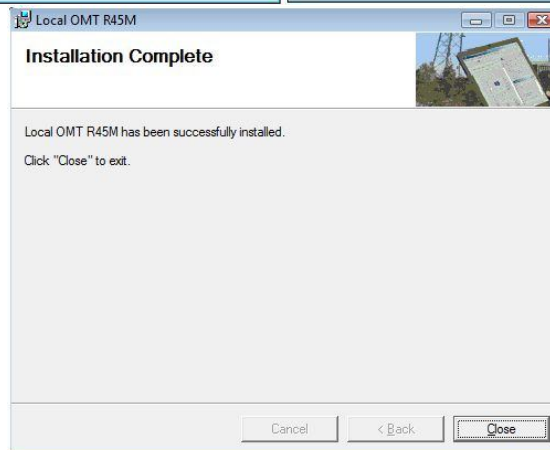
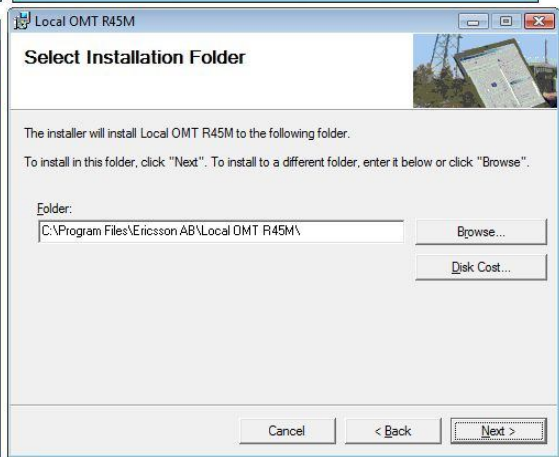
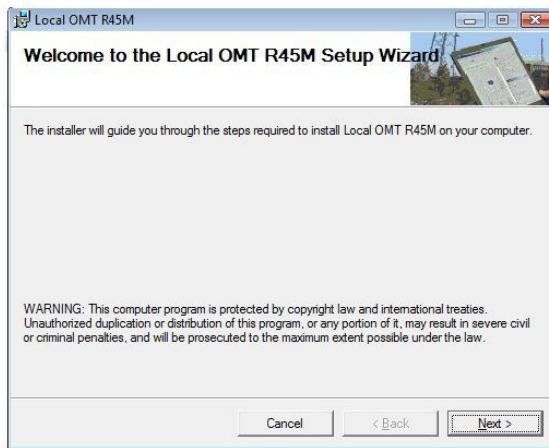
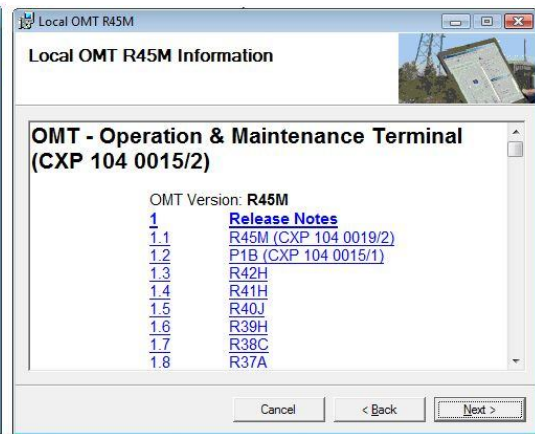
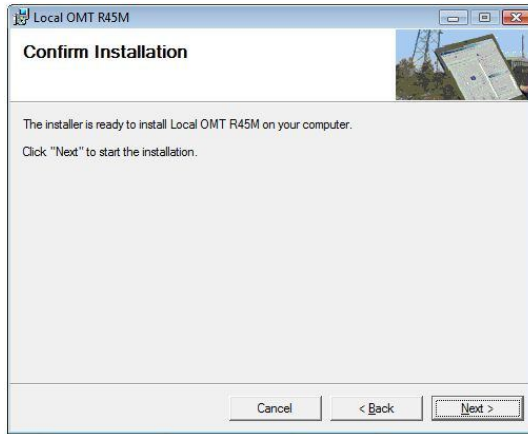
2

OMT setup

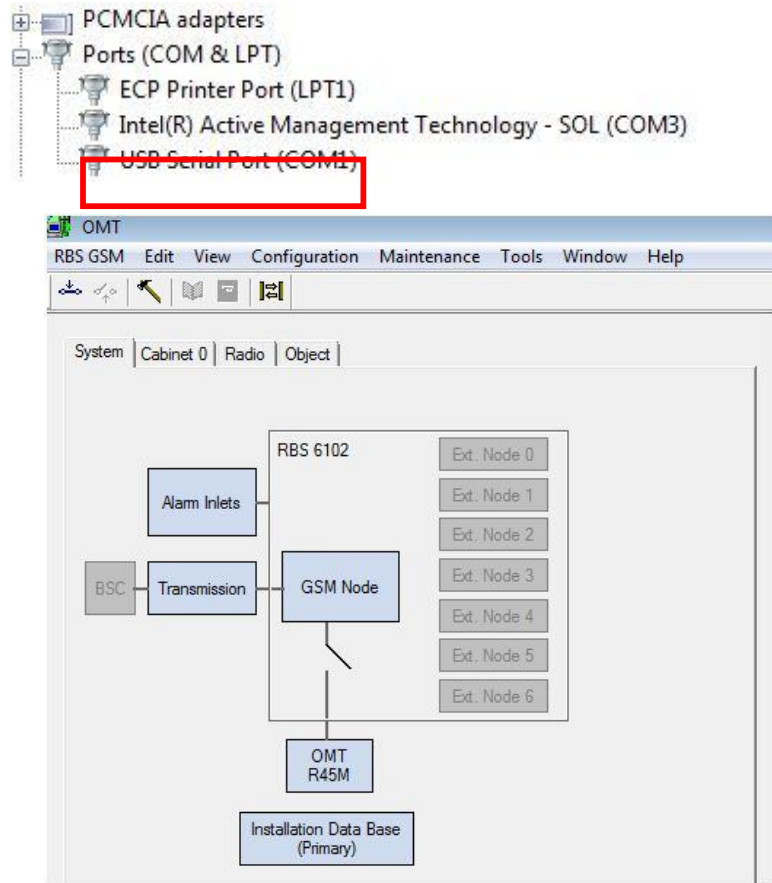
- Run Setup.exe



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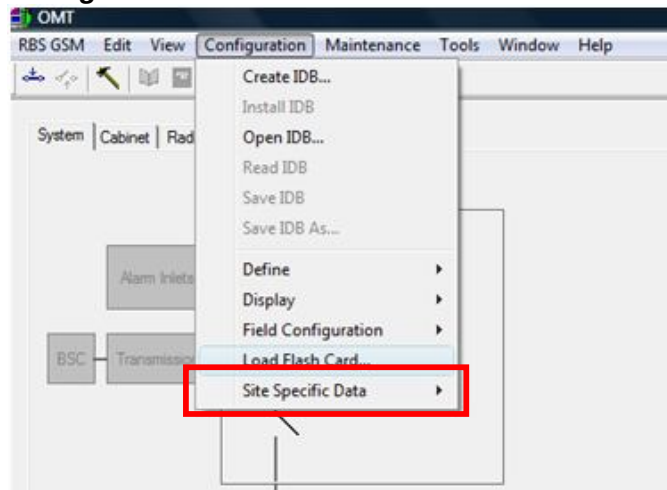
3 Commissioning RBS 6000 GSM (RUS)

3.1 BTS SW load to flash card

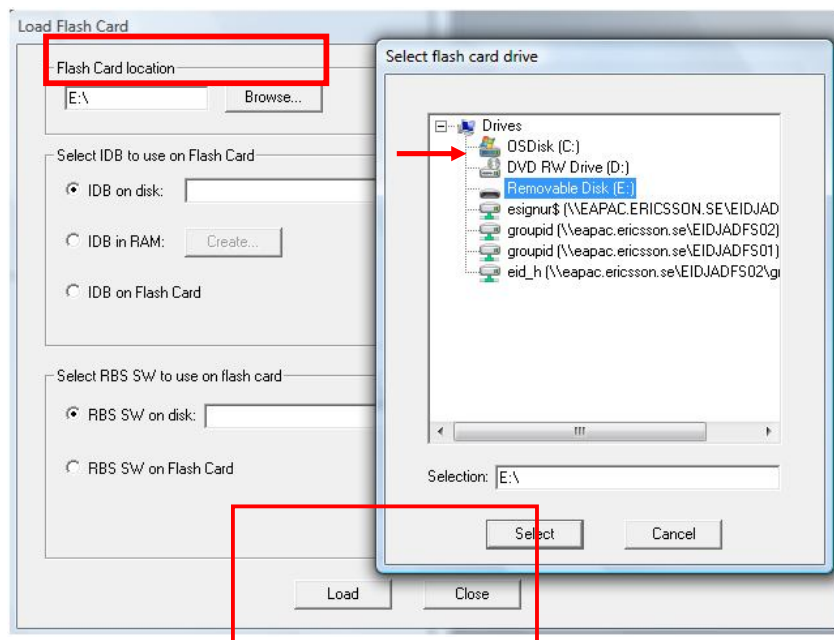
1. Turn off the circuit breaker of DUG20.
2. Remove POWER, EC, Y-LINK-CPRI cables
3. Use T20 Torx screwdriver, T20 for removing DUG from radio shelf. Remove the flash card.
4. Install the flash card in to card reader.
5. Run OMT.

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6. Configuration → Load Flash Card

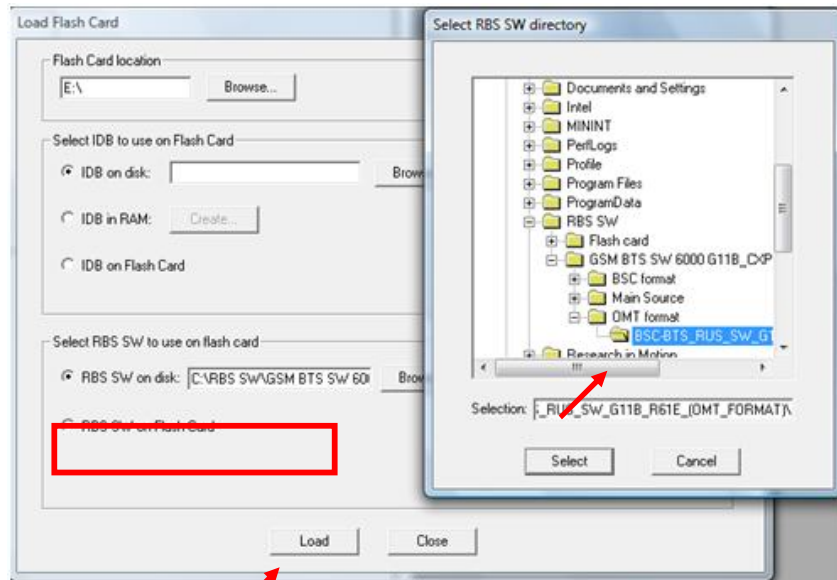


7. Select the drive of Flash Card Reader



8. Select the BTS SW with “RBS SW on disk” on your computer.

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9. Click **Load** button to begin sw loading.

10. Remove flash card from card reader and re-install it in to DUG.

11. Install DUG in to Radio Shelf. Install EC, POWER, Y-LINK cables.

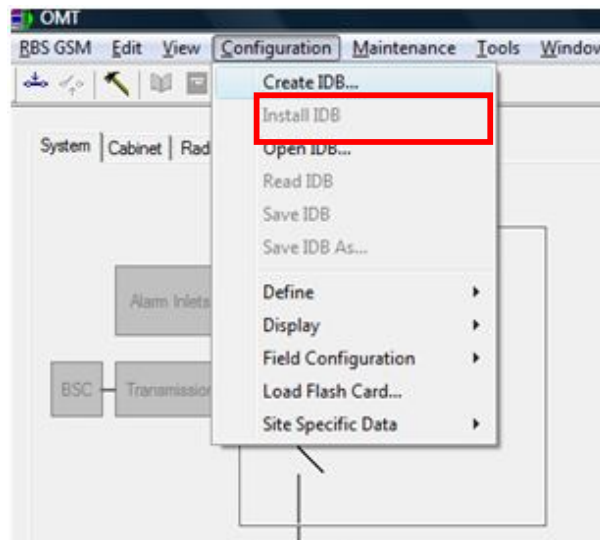
12. Check the cables on DUG.

3.2

Create IDB

- Run OMT
- To create IDB ; Click **Configuration** → **Create IDB**

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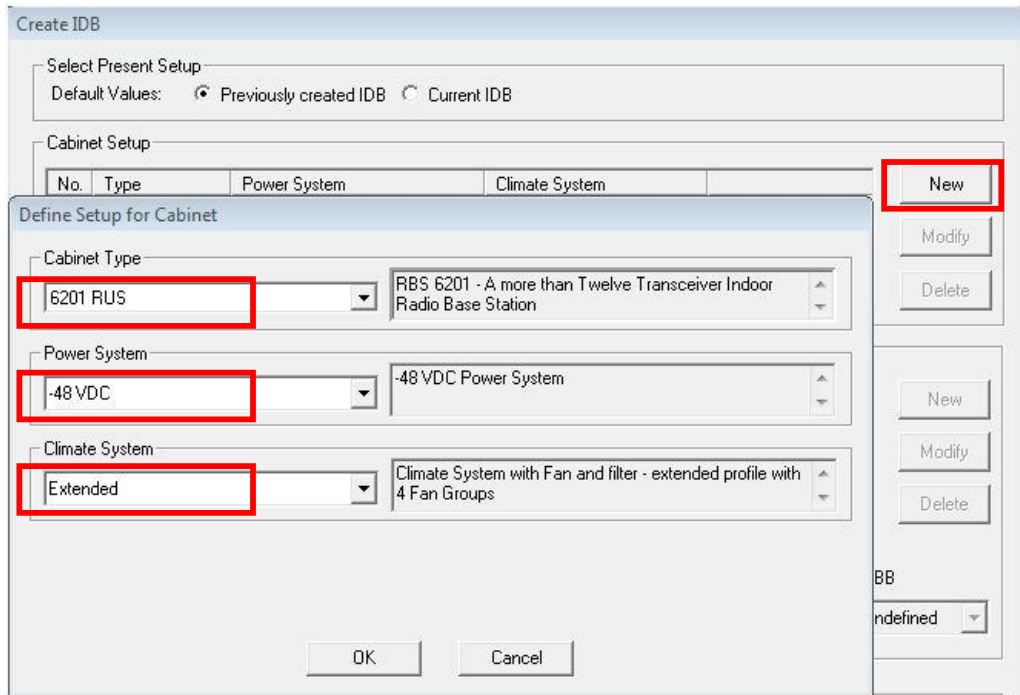


3.2.1 Cabinet Setup

Cabinet Setup ;Click **New** button.

- Select Cabinet Type; RBS (6601, **6201 RUS**, 6102 RUS)
- Select Power System (**-48 VDC** , 100-250 VAC -48/60 VDC)
- Select Climate System for **Extended** (4 fans)

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Create IDB

Select Present Setup
Default Values: ☒ Previously created IDB ☐ Current IDB

Cabinet Setup

No.	Type	Power System	Climate System
	6201 RUS	-48 VDC	Extended

Define Setup for Cabinet

Cabinet Type: 6201 RUS (RBS 6201 - A more than Twelve Transceiver Indoor Radio Base Station)

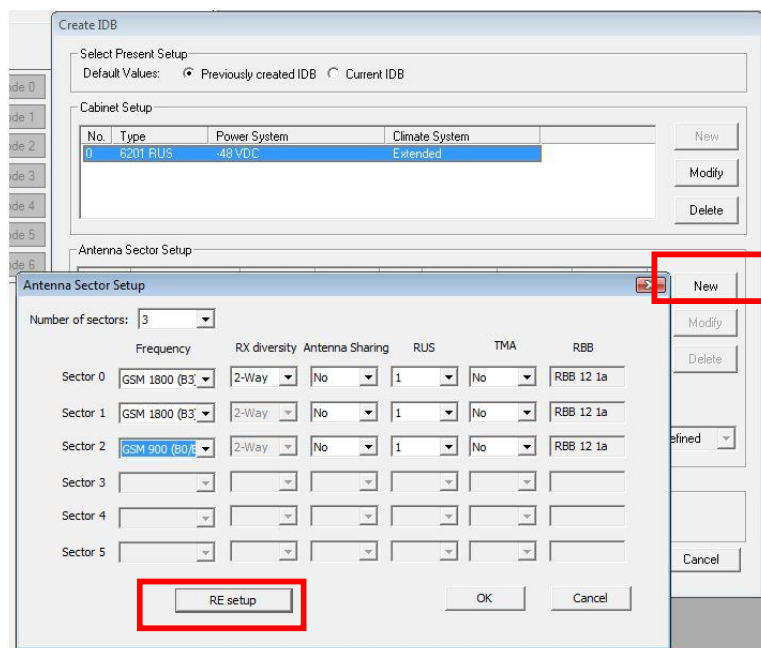
Power System: -48 VDC (-48 VDC Power System)

Climate System: Extended (Climate System with Fan and filter - extended profile with 4 Fan Groups)

Buttons: New, Modify, Delete, OK, Cancel

3.2.2 Antenna Sector Setup

Click New button for Antenna Sector Setup



Create IDB

Select Present Setup
Default Values: ☒ Previously created IDB ☐ Current IDB

Cabinet Setup

No.	Type	Power System	Climate System
0	6201 RUS	-48 VDC	Extended

Antenna Sector Setup

Number of sectors: 3

	Frequency	RX diversity	Antenna Sharing	RUS	TMA	RBB
Sector 0	GSM 1800 (B3)	2-Way	No	1	No	RBB 12 1a
Sector 1	GSM 1800 (B3)	2-Way	No	1	No	RBB 12 1a
Sector 2	GSM 900 (B0)	2-Way	No	1	No	RBB 12 1a
Sector 3						
Sector 4						
Sector 5						

Buttons: New, Modify, Delete, RE setup, OK, Cancel

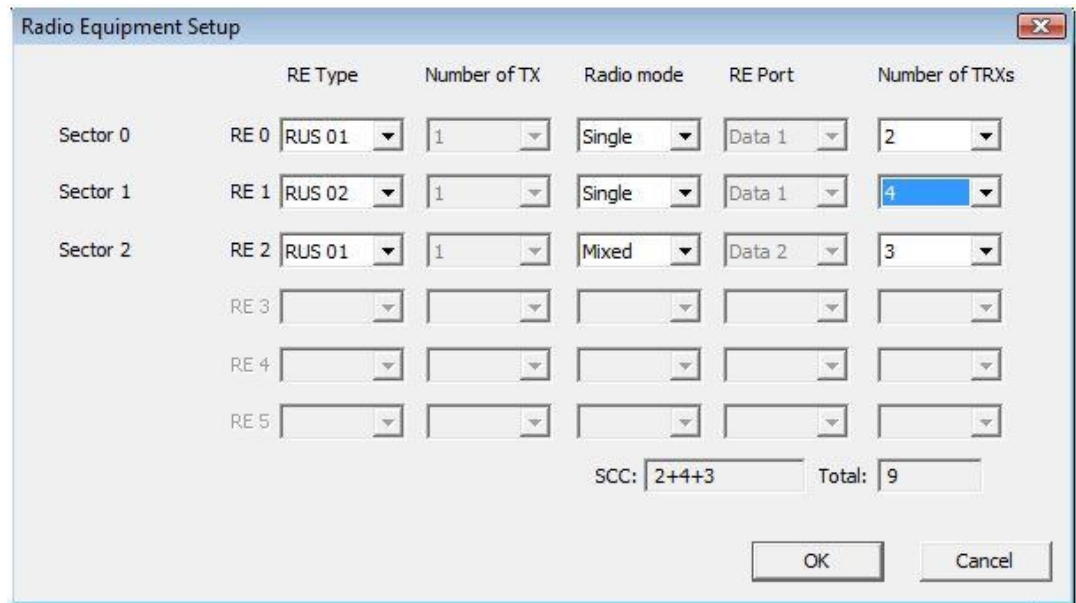
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Açıklama:

- Number of sector : DUG 20. (**3 sectors**)
- Frequency: (GSM 900 MHz **B0/B8** GSM 1800 MHz **B3**).
- Number of RUS according to installation.

3.2.3 Radio Equipment Setup

Radio Equipment Setup: To setup the TRX number of each radio unit. Select the RE type according to your installed radio units.



The dialog box 'Radio Equipment Setup' contains a table for configuring radio equipment across three sectors. The columns are RE Type, Number of TX, Radio mode, RE Port, and Number of TRXs. For Sector 0, RE 0 is set to RUS 01, 1 TX, Single mode, Data 1 port, and 2 TRXs. For Sector 1, RE 1 is set to RUS 02, 1 TX, Single mode, Data 1 port, and 4 TRXs. For Sector 2, RE 2 is set to RUS 01, 1 TX, Mixed mode, Data 2 port, and 3 TRXs. RE 3, RE 4, and RE 5 are currently empty. At the bottom, the SCC is calculated as 2+4+3 and the Total is 9. OK and Cancel buttons are at the bottom right.

	RE Type	Number of TX	Radio mode	RE Port	Number of TRXs
Sector 0	RE 0 RUS 01	1	Single	Data 1	2
Sector 1	RE 1 RUS 02	1	Single	Data 1	4
Sector 2	RE 2 RUS 01	1	Mixed	Data 2	3
	RE 3				
	RE 4				
	RE 5				

SCC: 2+4+3 Total: 9

3.2.4 Transmission Setup

Transmission Setup ; Select No STN for E1 and select SIU for Tcu/SIU transmission.r



The 'Transmission Setup' dialog box shows 'STN Equipment' set to 'No STN' (highlighted with a red box) and 'RBS transmission interface' set to 'E1' (selected with a radio button). Other options for STN Equipment are 'SIU' and 'Other'. The 'RBS transmission interface' options are 'T1' and 'Internal'.

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Define Transmission

Transmission Configuration Parameters

STN Equipment: SIU Transmission Interface: E1

Network Topology: Stand alone

Sync Source: ☒ PCM A ☐ PCM B ☐ PCM C ☐ PCM D

E1

CRC-4: Activated

Spare Bits (sa4-sa8): 11111

Receiver Sensitivity A: Short haul

Receiver Sensitivity B: Short haul

Receiver Sensitivity C: Short haul

Receiver Sensitivity D: Short haul

T1

LBO A:

LBO B:

LBO C:

LBO D:

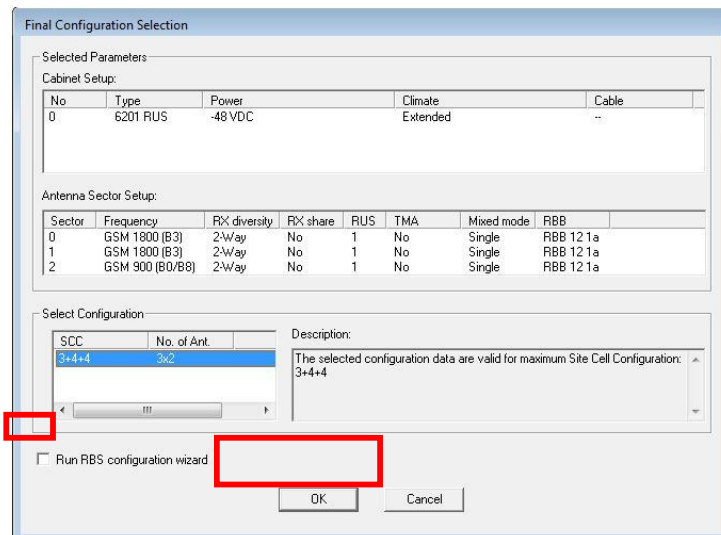
FDL Use:

OK Reset Cancel

Ex: for TCU configuration.

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3.2.5 Final Configuration Selection

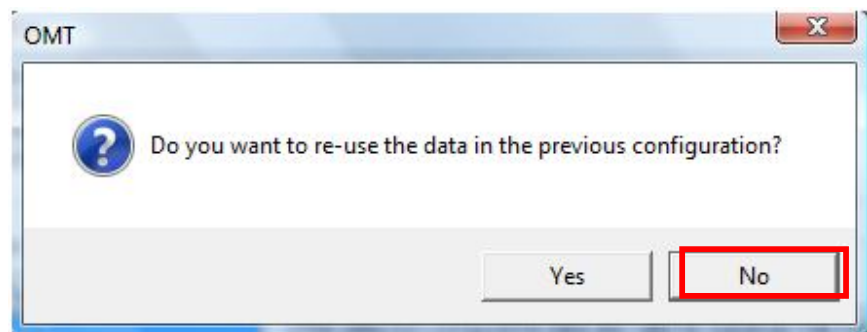


The dialog box 'Final Configuration Selection' contains three main sections:

- Selected Parameters:**
 - Cabinet Setup:** A table with columns No, Type, Power, Climate, and Cable. Row 0 shows 6201 RUS, -48 VDC, and Extended.
 - Antenna Sector Setup:** A table with columns Sector, Frequency, RX diversity, RX share, RUS, TMA, Mixed mode, and RBB. Rows 0, 1, and 2 show GSM frequencies and configurations.
- Select Configuration:**
 - A table with columns SCC and No. of Ant. Row 0 shows 3+4+4 and 3x2.
 - A description box states: 'The selected configuration data are valid for maximum Site Cell Configuration: 3+4+4'.

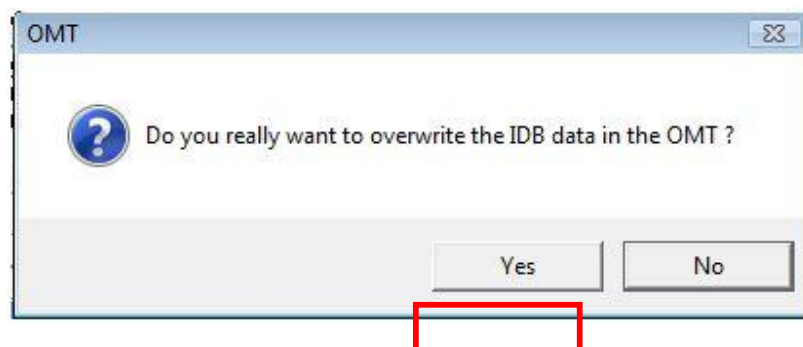
At the bottom, there is a checkbox 'Run RBS configuration wizard' and 'OK' and 'Cancel' buttons. Red boxes highlight the 'Run RBS configuration wizard' checkbox and the 'OK' button.

Select No.



The OMT dialog box asks: 'Do you want to re-use the data in the previous configuration?'. It has 'Yes' and 'No' buttons. The 'No' button is highlighted with a red box.

Select YES.



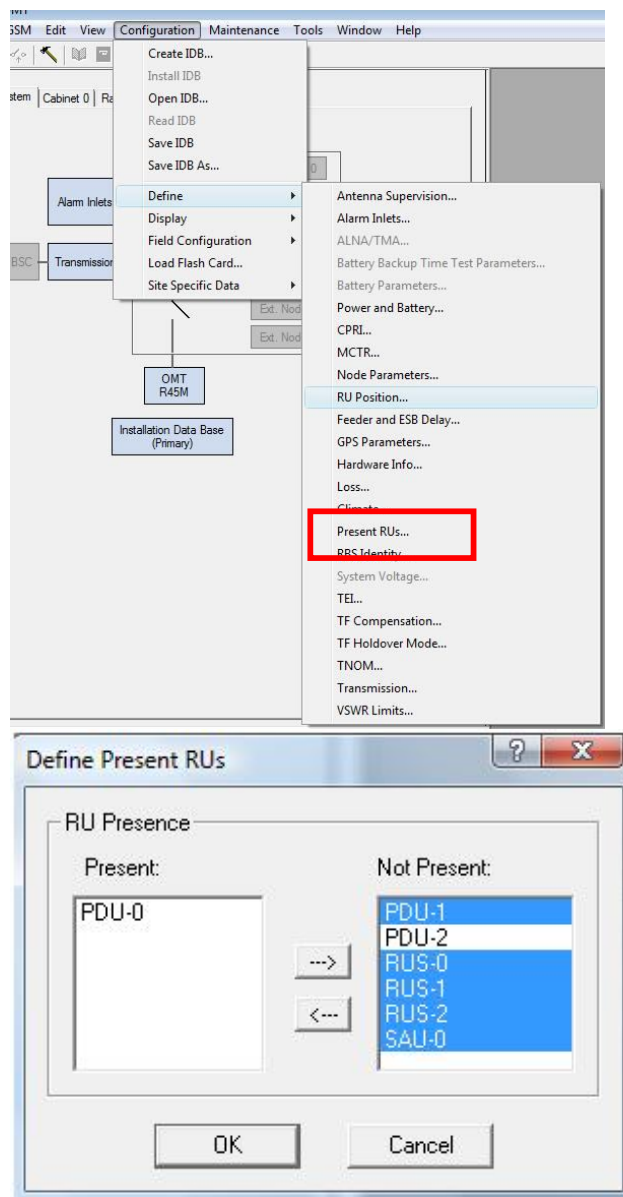
The OMT dialog box asks: 'Do you really want to overwrite the IDB data in the OMT ?'. It has 'Yes' and 'No' buttons. The 'Yes' button is highlighted with a red box.

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Finish the sector configuration.

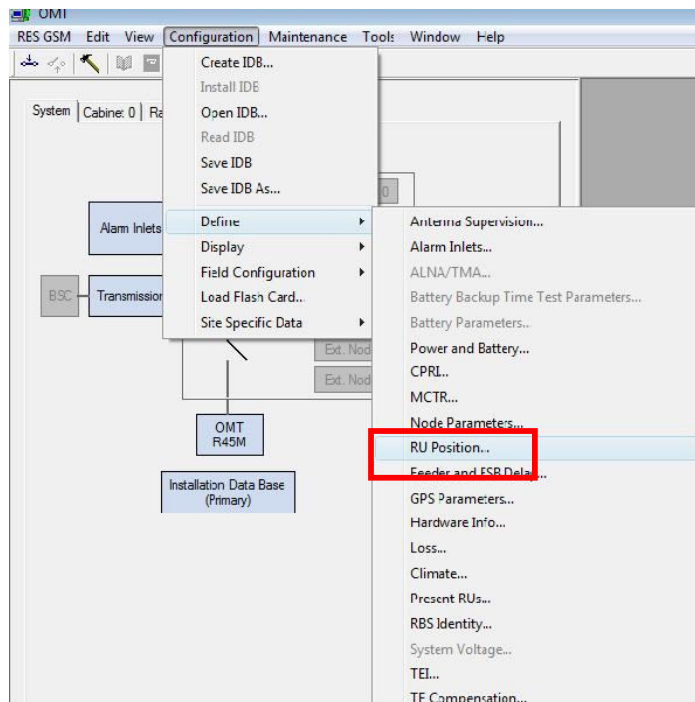
3.2.6 Define Present RU

Select the RUs that are installed in the RBS.

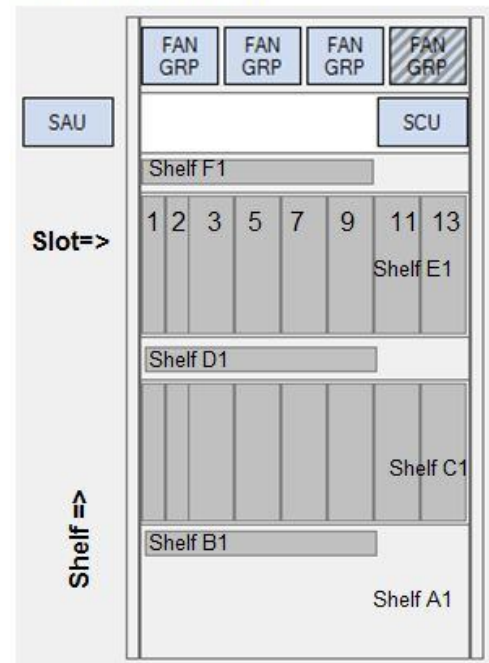


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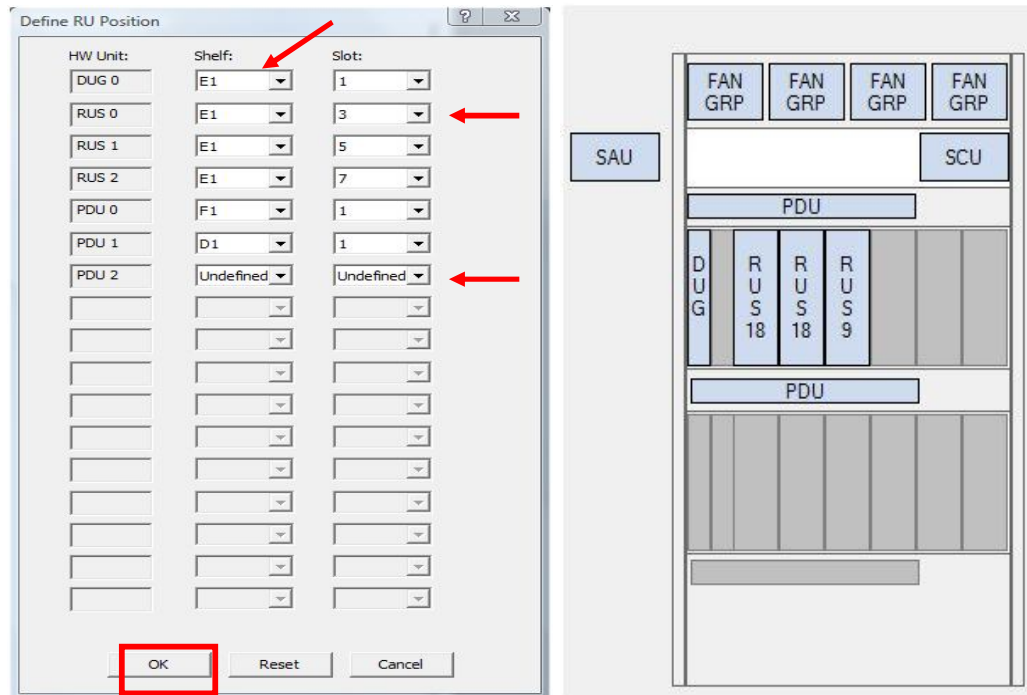
3.2.7 Define RU Position



RBS 6201 (-48 VDC)

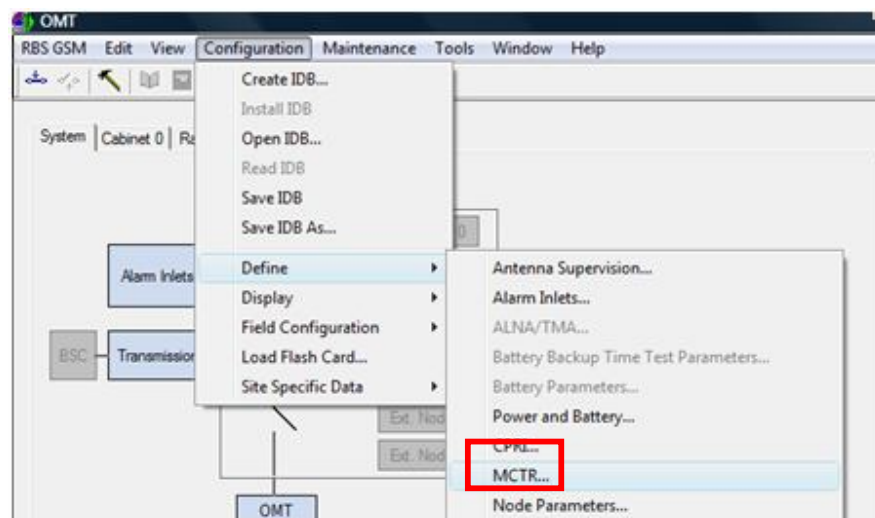


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3.2.8 Define MCTR Configuration

Define the power/trx according to the installed radio modules such as RUS01 or RUS02.



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Define MCTR Configuration

MCTR	Power level	Power distribution
0	480 (0.1dBm) (60 W)	3x43 dBm (3x20 W)
1	480 (0.1dBm) (60 W)	4x42 dBm (4x15 W)
2	480 (0.1dBm) (60 W)	4x42 dBm (4x15 W)

Power Distribution: 3x43 dBm (3x20 W)

OK

Define MCTR Configuration

MCTR	Power level	Power distribution
0	490 (0.1dBm) (75 W)	3x44 dBm (3x25 W)
1	490 (0.1dBm) (80 W)	4x43 dBm (4x20 W)
2	480 (0.1dBm) (60 W)	4x42 dBm (4x15 W)

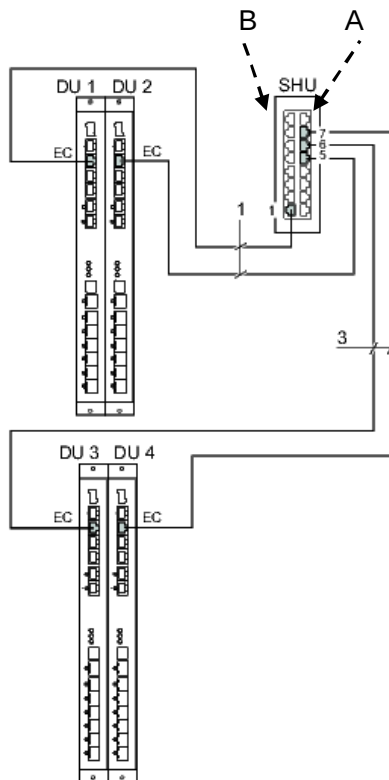
Power Distribution: 4x42 dBm (4x15 W)

OK

Example configuration for MCTR settings.

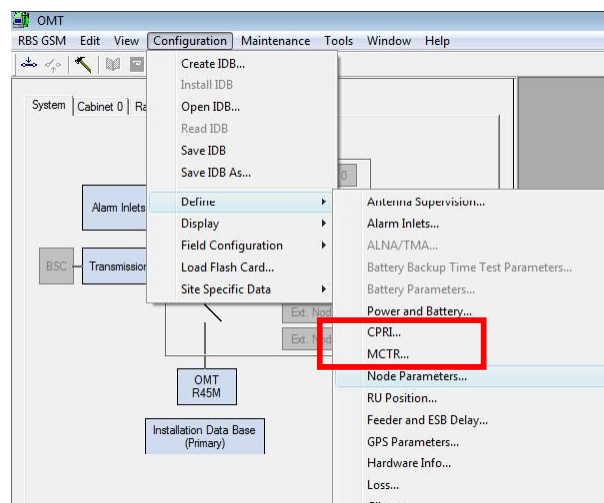
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3.2.9 Define Node Parameter



- DU 1 (Primary Node)
DU → Port **EC**
SHU → Port **B1**
- DU 2 (Secondary Node)
DU → Port **EC**
SHU → Port **A5**
- DU 3 (Secondary Node)
DU → Port **EC**
SHU → Port **A6**
- DU 4 (Secondary Node)
DU → Port **EC**
SHU → Port **A7**

Digital Unit 1 controls the support system of the RBS such as energy, battery, climate units and external alarms. **On 1.Slot GSM DUG 20** is the **DU1- Primary Node**



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- DU 1 (Primary Node) settings

Define Node Parameters

GSM Node | External Nodes | Support System Hub Position

Support system control: ☒ True ☐ False

Hub position: B1

Logical Name:

Full Distinguished Name:

NOT AVAILABLE

☐ All hub positions

OK Reset Cancel

If there are any other DU's present on RBS select "External Nodes"

New node

Hub address: A5 A6 A7

☐ All hub positions

Logical Name: NOT AVAILABLE

Full Distinguished Name: NOT AVAILABLE

OK Cancel

DU 2 = A5
DU 3 = A6
DU 4 = A7

Hub address is the hub position of the equipment that is connected on SHU.

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On **Support System Hub Position** page, check the other unit's hub positions according to CPI.

Define Node Parameters

GSM Node | External Nodes | **Support System Hub Position**

PDU-0: A2
PDU-1: B2
PDU-2: B7
SCU-0: A1

Hub position: A1

☐ All hub positions

OK Reset Cancel

Click Ok and finish.

- **DUG 2-4 (Secondary Node) settings**

Define Node Parameter

Define Node Parameters

GSM Node | External Nodes | **Support System Hub Position**

Support system control: ☐ True ☒ **False**

Hub position: B1

Logical Name: **A5**
A6
A7
B1

Full Distinguished Name:
NOT AVAILABLE

☐ All hub positions

OK Reset Cancel

DU 2 = A5
DU 3 = A6
DU 4 = A7

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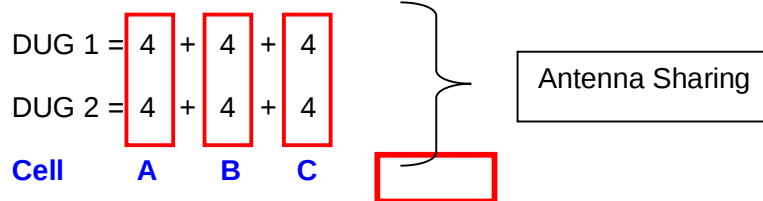
Select Support system control **False** and click OK.

3.2.10 Define ESB Delay

If there is more than one DU in the RBS,the DU's should be synchronized. Therefore, the ESB delay values should be defined.

Example:

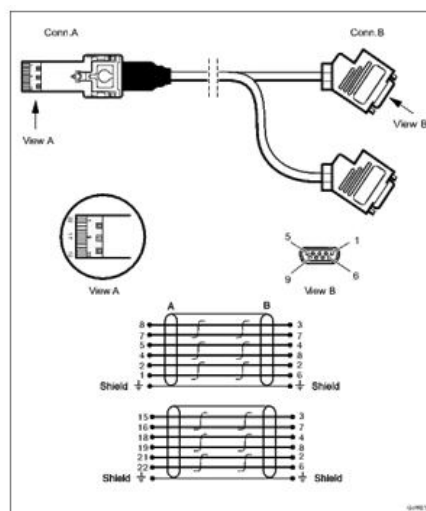
Configuration = 8+8+8 (2 DUG)



Note: The ESB Delay value is defined just on the Slave(2.DUG).

ESb Cables for DUG - DUG

- ESB cable (RPM 777 296/00500) → 2 (HSIO- D-Sub connector) 50cm delay value = 7ns



- External ESB cable (RPM 513 1104) → 1 D-sub – D-sub between DUG's. (Delay value depends on the cable length.)

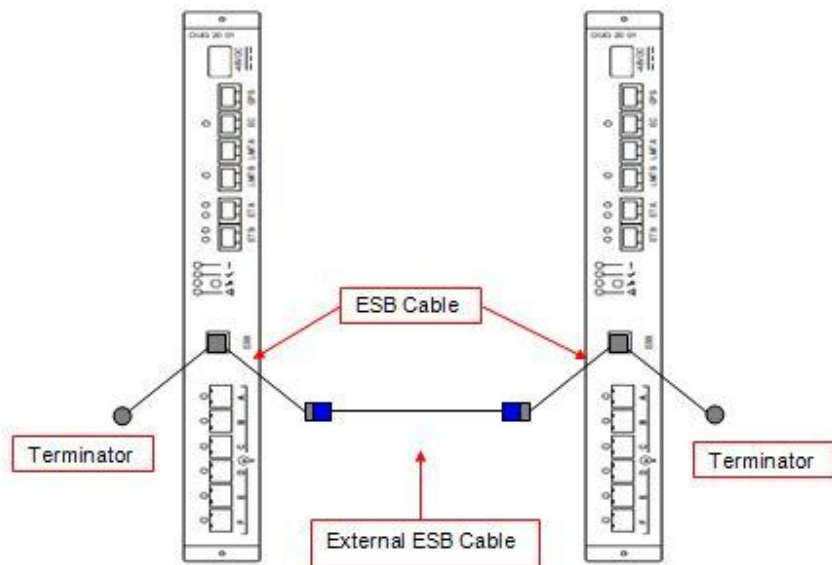
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Product Number	Length (m)	Delay (ns)
RPM 513 1104/03240	3.24	19
RPM 513 1104/07020	7.02	41
RPM 513 1104/12420	12.42	73
RPM 513 1104/25380	25.38	150
RPM 513 1104/75060	75.06	443

- ESB Terminator (RPT 403 805/01) → 2 D-sub terminator



- DUG to DUG



Total **ESB Delay** = 4554 + (delay ESB Cable + delay external ESB cable)

Calculation:

ESB cable (RPM 777 296/00500) = 3.1 ns (for 2)

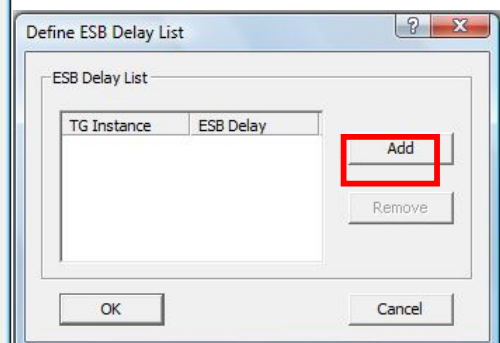
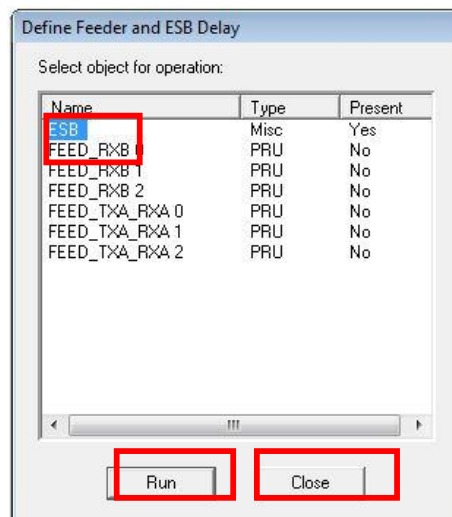
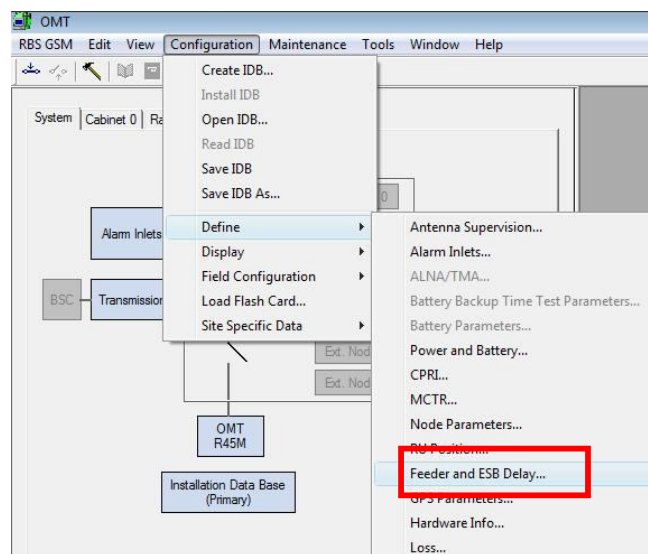
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External ESB cable (RPM 513 1104/00120) = 41 ns (for 1)

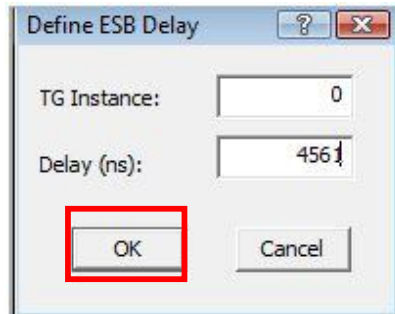
Total ESB Delay = 4554 + 3.1 + 0.7 + 3.1

Total **ESB Delay = 4561 ns**

After installing the ESB cables between DUG's, on OMT at the second (Slave) DUG ;



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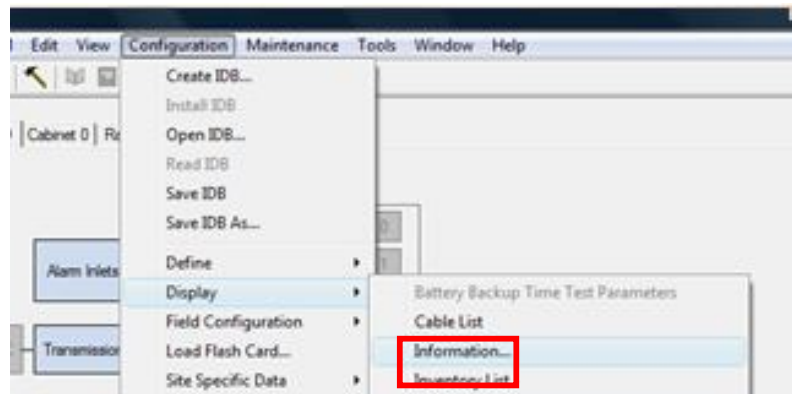
After defining total delay ESB value, select OK. And Close.

3.2.11 Define TF Compensation

TF Compensation

- ESB Delay (ns)** : Section 3.2.10 Define ESB Delay (if RPM 513 1104/00120 is used) **4561ns**
- On 1. DUG (TG Master) **Transmitter Chain Delay (ns)** value:
Transmitter Chain Delay (ns) = 17784 tur

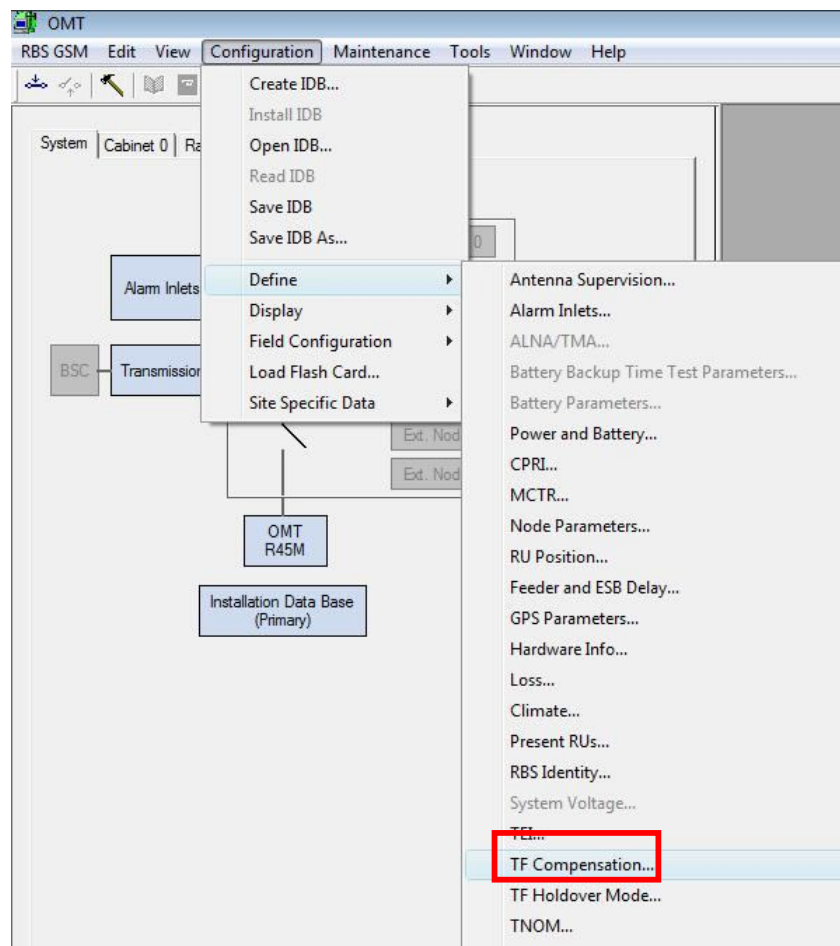
Connect to 1.DUG via OMT.



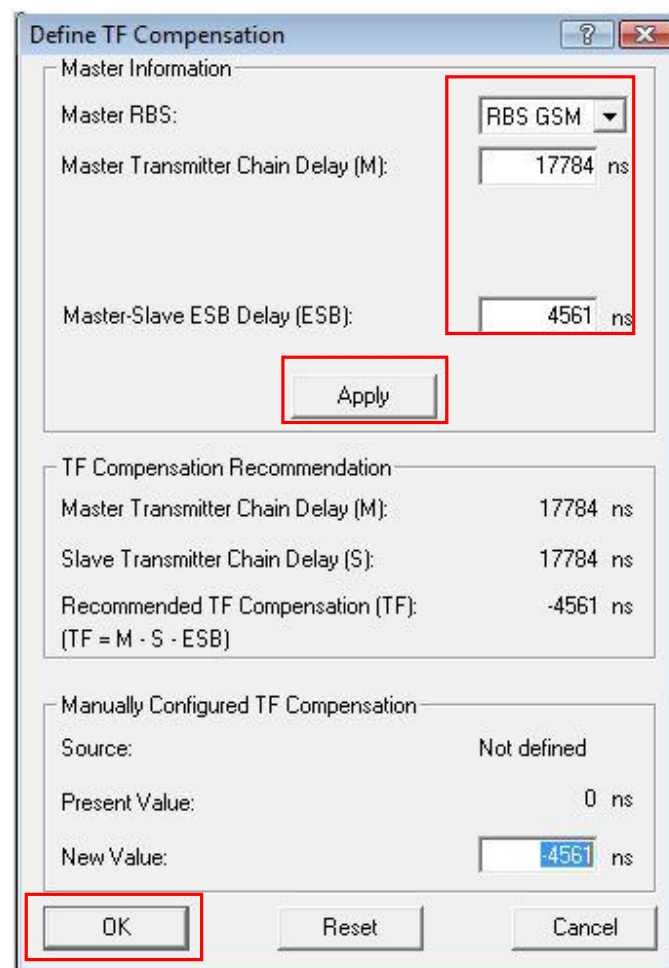
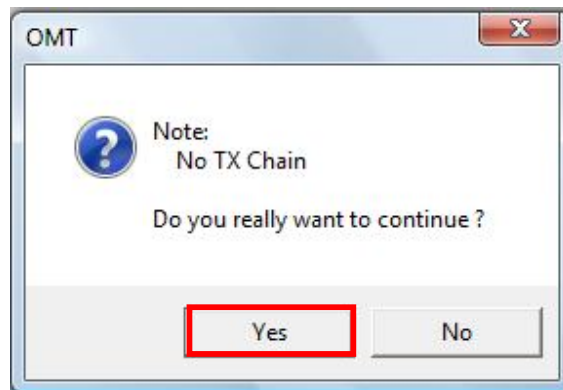
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Manually Configured TF Compensation:
Source: Not defined
Value: 0 ns
Transmitter chain delay: 17784 ns
Note:
Delay for FEED_TXA_RXA 0: 0 ns
Delay for FEED_TXB_RXB 0: 0 ns
Delay for FEED_TXA_RXA 1: 0 ns
Delay for FEED_TXB_RXB 1: 0 ns
Delay for FEED_TXA_RXA 2: 0 ns
Delay for FEED_TXB_RXB 2: 0 ns

Connect to 2.DUG(TG Slave)



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Click OK.

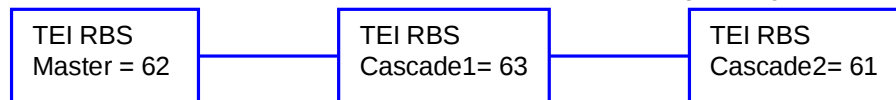
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3.2.12 Define TEI

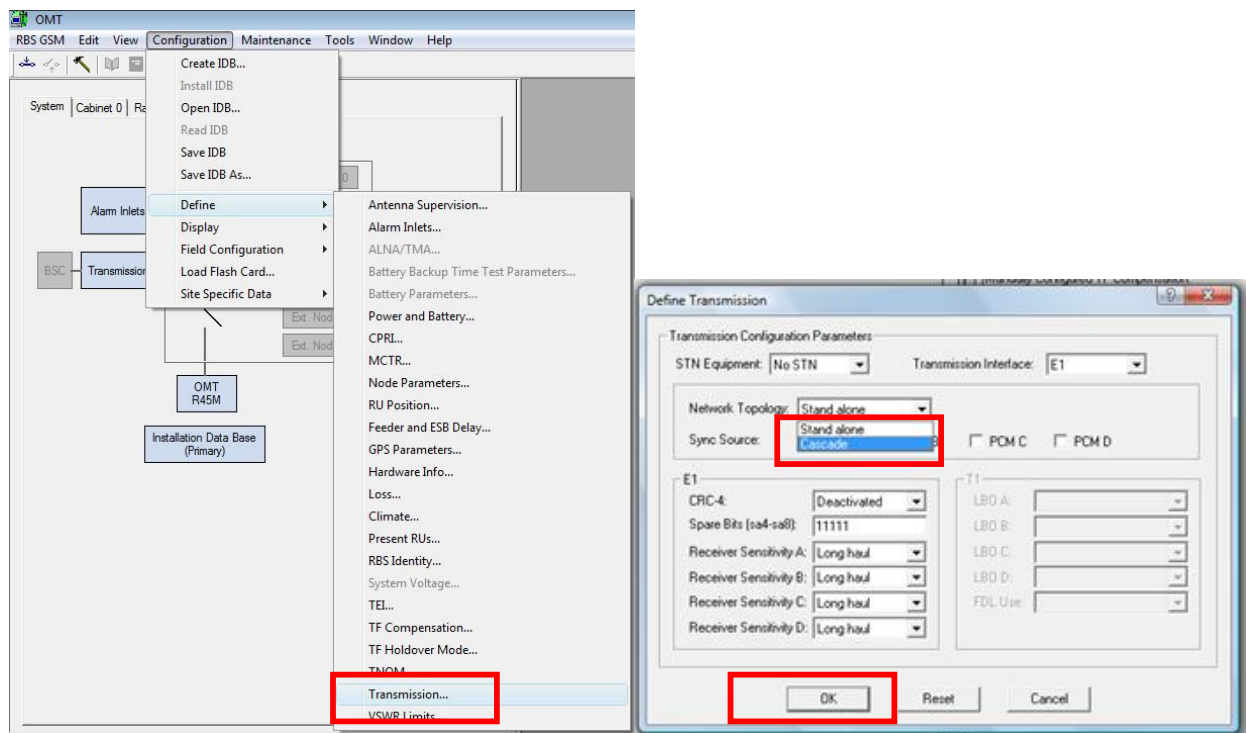
If more than one DUG shares the same E1 transmission line,RBS cascading should defined by TEI.

TEI value 12- 63 arasında.

For single E1 on a single DUG ;“**Stand alone**” RBS için değeri **TEI=62**’dir.

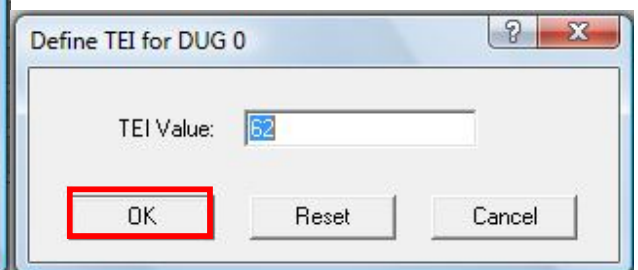
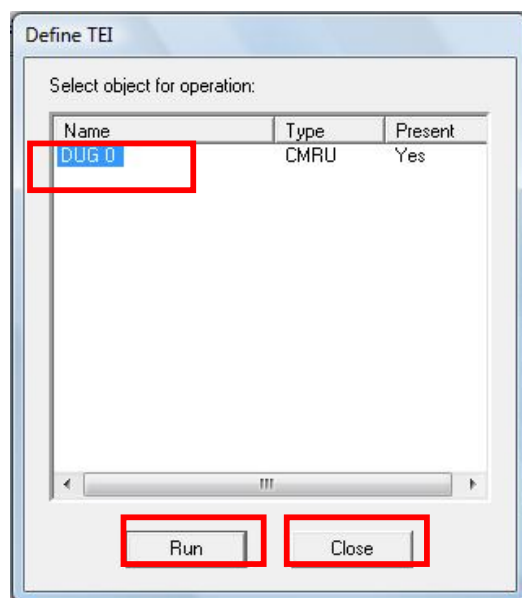
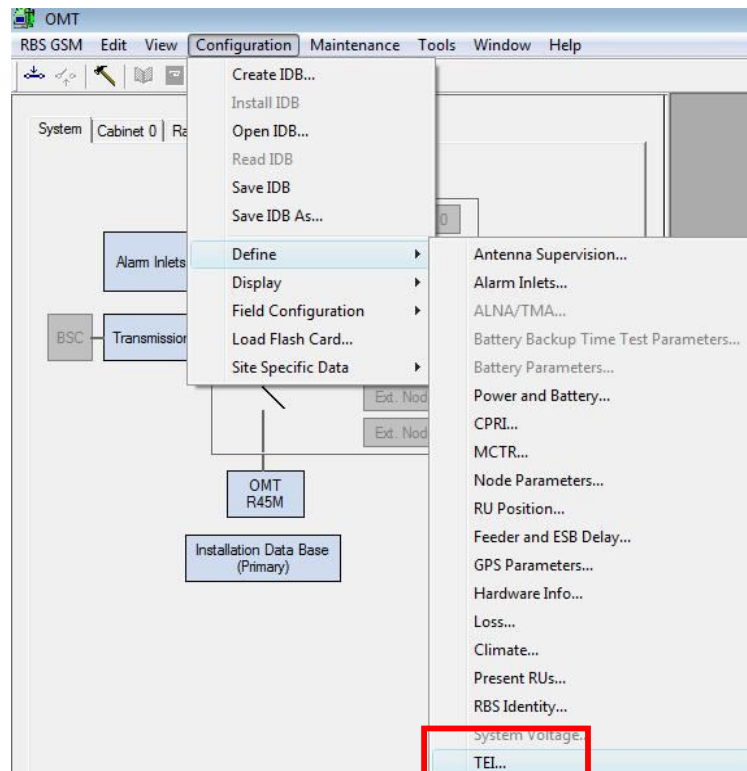


Select "Network Topology" as Cascade.



Click Configuration tab , Define TEI.

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Click OK.

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Approved (Document resp)	Checked	Date 2013-12-27	Rev PA1	Reference

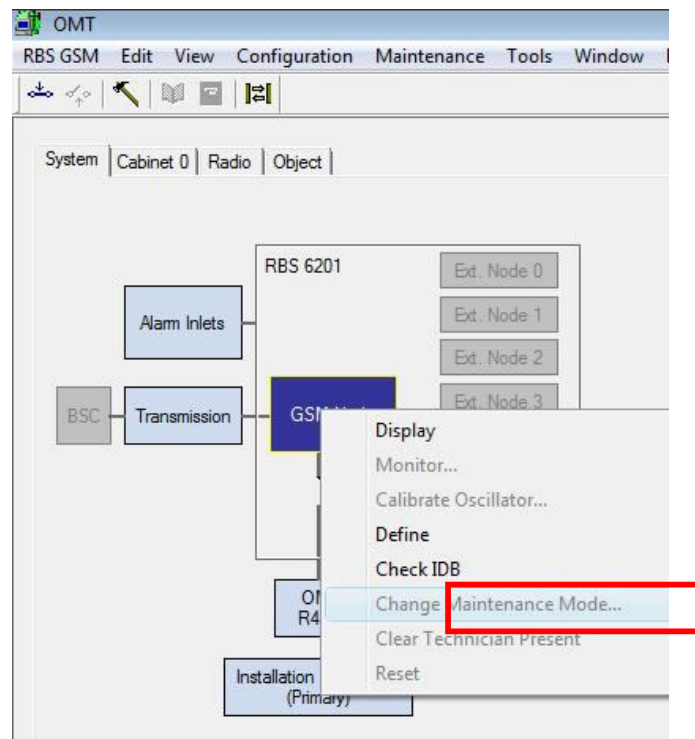
3.3 Install IDB

Before installing IDB ;

- Check all the cards and equipment that is defined on IDB.
- Connect the DUG via LMTA port with RJ45- Dsub OMT cable.
- Click **Connect** on RBS GSM tab.

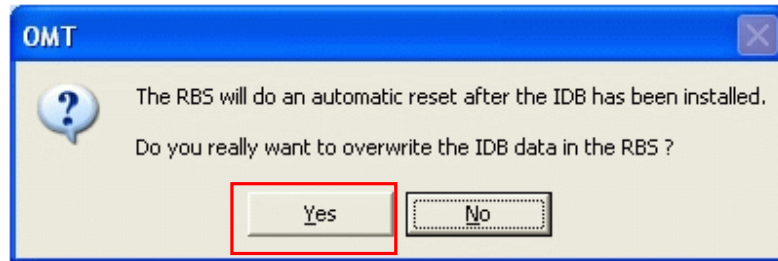


- Change DUG from kartını **Local Mode – Maintenance Mode** by **Change Maintenance Mode**



- Configuration → Install IDB → Yes

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Approved (Document resp)	Checked	Date 2013-12-27	Rev PA1	Reference



- Re-connect to DUG with OMT.
- **Configuration → Read IDB**
- Check IDB
- **Click Change Maintenance Mode .**