

# **E3-E4 (CM) TECHNICAL**

## **BTS Mini Link and Maintenance Issues**

# WELCOME

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- This is a presentation for the E3-E4 Technical Module for the Topic: **BTS Mini Link and Maintenance Issues.**
- Eligibility: Those who have got the Upgradation from E3 to E4.
- This presentation is last updated on 18-3-2011.
- You can also visit the Digital library of BSNL to see this topic.

# AGENDA

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- **Mini Link**
- **System Overview**
- **Mini Link Maintenance Procedures**

# BTS Mini Link

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Mini link is a Microwave link between BSC & BTS.

- An efficient and rapid way of developing wide-converge networks. Suited for cellular applications.
- Offers fast deployment. Ideal for quick providing medium capacity-links.
- It can be used anywhere within the network, where one to seventeen 2 Mbps transmission lines are required.
- It can quickly be mounted on existing building or structures.

# System Overview

- A MINI-LINK can be divided into two parts:

**Indoor Unit** and **Outdoor Unit.**

## Indoor Unit

- Modem unit (MMU)
- Traffic unit (TRU)
- Access Module Magazine (AMM)

## Outdoor Unit

- Radio Unit
- Compact antenna



Fig. Mini link ODU with Antenna

# Mini link Maintenance

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## The purpose of mini link maintenance

- To prevent the occurrence of critical faults causing BTS outage.
- To reduce the fault time of the microwave equipments for reducing the down time of the BTS.
- To ensure better network reliability and quality of service.

# Mini link Maintenance Procedures

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## Procedure for detecting faults:

- The occurrence of fault is intimated through SMS alert by OMC-R to BSS in charge in case of critical faults.
- The Major / Minor faults are detected by periodic site inspection of BSS team,
  - by using LCT (Local craft terminal),
  - by monitoring physical alarms and
  - by measuring the RX level / voltage levels.
- ❖ The fault is detected whether of IDU, ODU, Cable/connectors or alignment problem.

# Mini link Maintenance Procedures

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## Procedure for handling equipment faults

- If the fault is of IDU / ODU, replace the faulty unit with spare, subject to spare availability.
- The faulty unit is handed over to the AMC holder for repair.
- If spare is not available, the fault is registered at OMC-R (web site).
- OMC-R, in turn, intimates the concerned vendor / AMC holder for rectification.



# Mini link Maintenance Procedures

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- Monitors the corrective action taken by the vendor / AMC holder and acts accordingly.
- If the vendor / AMC holder does not take prompt action, the case is escalated to the higher ups for ensuring speedy restoration.

# Mini link Maintenance Procedures

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- Procedure for maintenance, if cable/connector fault or alignment problem.
- If the fault is of cable/ connectors, the connectors at top and bottom are physically checked, re-adjusted.
- If IDU, ODU, Cable and connectors are OK. Then by checking the RX level and the voltage level.
- If alignment is not OK, realignment is done for rectification of fault.

# Mini link Maintenance Procedures

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– Procedure for closing the fault docket.

- After rectifying the fault, the BSS in charge intimates the same to OMC-R.
- OMC-R checks the status of the system and closes the fault docket.

# Earth

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Chassis earth, Antenna earth are to be checked and loose contacts/ breaks etc if any may be rectified.

- Value to be less than **1 ohm** for each earth.
- To be checked once in 6 months.
- Test results may be recorded in the logbook.
- If the values exceed the limit, initiate the corrective action.

