

SLOG SOLUTIONS PRIVATE LIMITED
TECHNOLOGY: TELECOM
DURATION: MODULE 1 (4 WEEKS)
MODULE 1 + 2 (6 WEEKS)

MODULE 1:

- Introduction to Telecom Sector
- History of Telecom Sector in India
- Growth of Telecom Sector in India
- Telecom Circles in India
- Telecom Companies in India

Different Types of Telecom Sites for 2G/3G/4G network

- Introduction to Cell Site,
- Node Site,
- BSC Site,
- RNC Site, MSC Site,
- POI Site,
- Transmission link,
- Repeater Site with classification
- equipment used at these sites.

Equipment used at 2G/3G/4G sites

- Equipment (infra):- Introduction,
- type and usages of Telecom Towers,
- Shelter, Pole Mounts,
- Outdoor Cable Trays (HCT and VCT),
- Roxtec and Cable Tray (Indoor - HCT).

Equipment (Electrical):-

- Introduction,
- types and usages of Diesel Generator,
- AMF panel,

- Earthing Pits,
- Lightning Arrestors,
- Aviation Lamps,
- Servo - Stabilizer,
- Power Interface Unit,
- Power Plant,
- Air-conditioner,
- Battery Bank,
- Alarm Panel.

Telecom Equipment:-

- Introduction,
- type of usages of panel Antenna (GSM, UMTS & LTE),
- Antenna Accessories
- RF cables & Accessories (RF cables, Jumper Cables, RF Connectors, RF Clamp, RF Earthing Kits, Weather proofing Kits & Surge arrestors etc.).

Tools & Test Equipment used at 2G/3G/4G sites

- Tools:- Spanners, Screw Drivers,
- Hammers, Cutters, Crimping Tools,
- Knife, Drill Machine, Punching Tools,
- E1 Connector Tools, Wrapping Tool,
- Strippers,
- Hot Air Gun,
- Torque Wrench,
- Ratchet Set,
- Soldering iron,
- Tilt Meter,
- Mirror Compass,
- RF cable Cutter,
- Spirit Level,
- Allen Key,
- Rope,
- Pulley etc.

Test Equipment's:-

- Laptop,
- Multimeter,
- Analog Power Meter,
- Digital Power Meter,
- Ethernet Tester,
- VSWR Meter,
- Site Analyzer, etc.

Health & Safety Tools :-

- Helmet,
- Safety Belt,
- Gloves,
- Boots,
- First Aid Box,
- EHS Guideline Sheets etc.

Software Tools: -

- Filezilla,
- Site Analyzer PC Tool,
- USB to COM Driver,
- Different Microwave software,
- Different BTS/Node-B/eNode-B software etc.

Module 2

Introduction to Telecom Technologies as GSM/UMTS/LTE

- Overview,
- General Standard & Specification,
- Architecture,
- Function of Network elements used in Access & Core networks,

- Protocols,
- Channels,
- Traffic Management
- Transport Technology used in GSM/UMTS/LTE.

Hardware Description and commissioning of Transmission Equipment's System used in 2G/3G/4G Networks-

- Microwave Technology overview:-
- What is Microwave?,
- MW Frequencies Band,
- Propagation Used,
- LOS Principle,
- Fundamental of LOS survey,
- Types of Microwave (PDH & SDH),
- Why we used MW communication system in GSM,
- UMTS & LTE Networks.

E1/T1 Fundamental:-

- What is E1 or T1?,
- Basic of E1/T1,
- different types of E1/T1 cables,
- E1 bypassing & routing,
- Capacity of MW communication system in Terms of E1/T1/STM1.

E1 Patching:-

- Concept of E1 routing,
- Physical E1 Connection between two Microwave IDUs,
- Logical Cross Connection of E1,
- E1 Testing,
- Optical media Termination & E1 Mapping.

Transmission Equipment's:-

- types and usages of Microwave Dish Antenna,
- Feed Horn,
- Microwave Radio,
- Wave Guide Cable,
- Wave Guide Splitter/Coupler,
- IF Cable & Accessories,
- Transmission Rack, DDF,
- Microwave IDU,
- Mux,
- SDH
- other transmission equipment's.

Microwave Product Description:-

- NSN Flexi Hopper,
- NSN Flexi Packet Radio,
- NSN Flexi Hybrid Radio,
- Ericsson Mini-Link,
- Ericsson Mini-Link TN etc.

Implementation of MW Equipment's:-

- 1+0 & 1+1 Microwave configuration,
- Diversity in Microwave,
- Installation Process for Microwave Antenna,
- Fixing of Radio with Antenna,
- IF Cable routing & Termination,
- Microwave Rack Installation,
- IDU & DDF installation,
- Commissioning Process,
- Alignment Process.

Fundamental of BTS/Node-B and e Node- B

- Concept of Diversity Technique, Carrier configuration,
- RF Radio Units, Power Unit and Controller Unit.
- Introduction to BTS/Node-B/eNode-B

- Fundamental Block diagram of BTS/Node-B/eNode-B
- Different Cards/Module of BTS/Node-B/eNode-B
- Sectorization in BTS of BTS/Node-B/eNode-B
- Alarms in BTS of BTS/Node-B/eNode-B
- Carrier configuration used in BTS/Node-B/eNode-B

Product Overview and Installation of RF Equipment's

- Explanation of Product overview,
- Cabinet Information, Cards description,
- Cards functionality,
- Internal Cabling according to different configuration,
- External interface of cabinet,
- External and Internal Alarms

Nokia Solution Networks (NSN):-

- Nokia Ultra site EDGE BTS,
- Nokia Flexi EDGE BTS,
- Nokia Flexi WCDMA BTS,
- Nokia Multi-Radio.
- Ericsson:- RBS2000 Series (RBS2954/RBS2964) and RBS6000



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