

General Information on APT Training Course

1. **Title of Training Course:** Cellular Technology
2. **Organization (hosted by):** Advanced Level Telecommunication Training Centre (ALTTC) of Bharatt Sanchar Nigam Limited (BSNL)
3. **Duration:** 5 - 9 October 2015 (Excluding Arrival and Departure dates)
4. **Place:** Ghaziabad, India
5. **Course Description:**

4G and LTE Advance Mobile Network:

Participants will be given the information about Standardization bodies & process, 3GPP Releases, Overview of GSM/GPRS/EDGE . Operating concepts of UMTS , WCDMA concepts , UMTS architecture, Advanced Multiple Access Methods, Advanced Modulation Techniques ,OFDMA Concepts, LTE / 4G Architecture, Link Budget (Calculation, Margins, losses and Gains), , LTE Advance System Overview, Radio Access Network, Wi MAX Technology 3GPP2 Releases, Wi MAX Architecture.

6. Objectives:

The objective of the course is that at the end of the course, the trainees should be able to:

- Concepts of GSM/EGPRS Networks.
- Architecture of GSM/EGPRS Networks.
- Concepts of CDMA IS 95/1XRTT/EVDO Networks.
- Concepts of 3rd Generation Network UMTS/WCDMA.
- 3G UMTS Network Architecture.
- 3G UMTS Radio Network Planning.
- 3G UMTS Radio Network Optimization.
- Concepts of LTE/4G.
- Network Architecture of LTE/4G.
- 3G Applications and deployment issues.
- LTE/ 4G Applications and deployment issues.

7. Expected Outcome

- Get sufficient idea about migration path to 4G.
- Understand fundamental of UMTS.
- Get detailed insight into the technology used in UMTS , 3G LTE and 4G mobile radio networks
- Understand the 3G LTE /4G architecture
- Understand the different protocols involved in achieving high data rates in 3G , LTE/4G

- Learn how OFDM, MIMO and SDR work
- Learn all about the 3G LTE/4G air interface
- Learn the operation of handovers over heterogeneous networks

8. Target Audience

Executives working in telecom field and having basic knowledge of Mobile Communication.

9. Schedule:

All session will be held at ALTTC Campus except as noted. The details of schedule are shown in the following:

Day	Time	Topic
<i>Sun day</i> 04-10-2015	<i>Arrival</i>	
Mon day 05-10-2015	09:30 - 10:30	Registration and course briefing
	10:30 - 11:15	Inauguration of the Course
	11:30 - 13:00	Standardization Process and 3GPP Releases
	14:00 - 15:15	Overview of GSM
	15:30 - 17:00	Concepts of GPRS / EDGE
Tues day 06-10-2015	09:30 - 11:15	Concepts of CDMA IS 95/1XRTT/EVDO Networks
	11:30 - 13:00	Overview of 3rd Generation Network UMTS/WCDMA
	14:00 - 15:15	UMTS Radio Access Network
	15:30 - 17:00	Radio Network Planning and Optimization
Wednes day 07-10-2015	09:30 - 17:00	Field Visit to Agra
Thurs day 08-10-2015	09:30 - 11:15	Overview of HSDPA / HSUPA
	11:30 - 13:00	LTE Air Interface (OFDMA / SCFDMA)
	14:00 - 15:15	LTE Network Architecture
	15:30 - 17:00	Overview of WiMax
Fri day 09-10-2015	09:30 - 11:15	Overview of LTE-Advanced
	11:30 - 13:00	3G and LTE Deployment Issues
	14:00 - 15:00	Post Testing-Quiz
	15:15 - 17:00	Evaluation & Feed Back
<i>Satur day</i> 10-10-2015	<i>Departure</i>	

10. Transportation and Airport Reception:

The local host will provide the transportation between the Indira Gandhi International Airport (DEL) and the accommodation for the trainees based on the approved flight schedule information provided by APT. For airport pick up, ALTTC staff will escort the trainees to the hotel accommodation in Ghaziabad and return.

11. Hotel accommodation:

All trainees will be staying during the training course at Senior Executive Hostel at ALTTC Hostel located inside ALTTC in Ghaziabad, India.

12. Visas and Immigration Requirement:

All foreign visitors entering India must have a valid passport. Participants who require a visa should apply for a visa at an India consulate or diplomatic mission in their respective country well in advance of their departure. **The Embassy/Consulate may take up to two weeks for visa processing.** As visa requirements change from time to time, kindly check current visa requirement on entry visa to India by contacting the Indian Embassy in their country before travelling.

In case separate visa stamping is needed for every location in India, then visa may be obtained for Ghaziabad (for training) and Agra for (technical visit) as per schedule.

13. Weather:

The weather is quite hot in Ghaziabad during October. Climate, temperature ranges around 21 – 34 degree centigrade.

14. Electricity:

230 Volts AC 50Hz Electric sockets are Type D



Please bring the right adapter for your electrical appliances.

15. Bank & Currency

The unit of currency is Indian Rupees which comes in denominations of 1, 2, 5, 10, 20, 50, 100, 500 and 1,000. Please use authorized money changers and banks to change currency. They will issue a certificate of exchange which is required at the time of re-conversion of any unused currency. Under the Foreign Exchange Management Act 1999, it is an offence to exchange foreign currency other than through authorized money changers or banks. Foreign Exchange Rate is approximately INR 63.74 to USD 1.00 (as of May 2015).

Most bank ATMs honor Visa, Visa Electron, Master & Maestro cards & you may use these ATMs also to withdraw money. Most hotels, shops & other establishments accept

credit cards. Master & VISA cards are accepted at almost all such establishments whereas some of them accept Diners & American Express cards as well.

16. Regulation:

An applicant is required:

- Not to bring any member of his/her family;
- Not to change accommodation during training period;
- To participate in the course from the beginning to the end; and
- To return his/her home country at the end of their training course according to the international travel schedule designated by APT.

Participants are required to comply with instructions given by APT and the local host. (Further information on the requirement is found in the “Guidelines for APT fellowships under HRD Programme (2013)” and other related document)

17. Contact person for local host for training implementation:

Mr. Sanjeet Shrivastava

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