



Annexure – I

ITU Centres of Excellence Network for Asia-Pacific Region
Advanced Level Telecom Training Centre
FACE-TO-FACE Training Course on
EVOLUTION AND EMERGING TREND OF BROADBAND ACCESS TECHNOLOGIES
Ghaziabad (Near Delhi), India
20-24 May 2019

COURSE OUTLINE

COURSE DESCRIPTION

Title	ITU CoE Training Programme on “ EVOLUTION AND EMERGING TREND OF BROADBAND ACCESS TECHNOLOGIES ”
Objectives	<ul style="list-style-type: none">• To understand technical trends and market status of broadband wired line and wireless access networks.• To understand Next Generation Access –High speed (Broadband) IP based connectivity, ADSL, VDSL, Wi-Max, FTTH, BoPL etc.• Mobile broadband: Networks, technologies and QoS.• Optical fibre backhaul network: issues and trends.• Next generation network architecture and services.• Addressing Security Challenges of Broadband Network Access Technologies. <p>Discussion sessions along with field visit of deployed broadband network nodes will also be conducted to promote dialogue and exchange of experiences among participants.</p>
Dates	20-24 May 2019
Duration	5 days
Registration deadline	25 April 2019
Training fees	International participants: USD 275 (Tax Inclusive) per participant. Local participants: USD 275 (Tax Inclusive) or INR 19580/- (Tax inclusive) per participant.
Course code	19WS24257ASP-E

LEARNING OUTCOMES

Upon completion of this training, participants will be able to understand:

- The key business drivers of broadband, broadband network elements, network architectures for access, aggregation and core.
- Emerging trends in access control.
- Design & develop portal for precise monitoring and managing different network elements of access technologies.
- Vulnerability assessment and penetration testing on broadband network and security implementation.
- Use of social media for secure communication and monitoring of broadband network elements.
- The relationship between price regulation and costing.
- Broadband network project planning in an NGN converged environment.

TARGET POPULATION

This training is primarily targeted at participation of experts from regulators, government organizations and telecom operators, in-charge of costing and network planning issues are welcome.

TUTORS/INSTRUCTORS

S.No.	NAME OF TUTOR(S)/ INSTRUCTOR(S)	Position	CONTACT DETAILS
1.	Mr. M. K. Seth	Chief General Manager, ALTTC, BSNL, Ghaziabad, India	cgm_alttc@bsnl.co.in +91 94122 18777
2.	Mr. Subhash Chand	PGM, ALTTC, BSNL Ghaziabad, India	subhash.iitr83@gmail.com +91 9868202123
3.	Mr. Manoj Kumar Mishra	DGM (BB&ERP), ALTTC, BSNL Ghaziabad, India	dgm.bberp.alttc@gmail.com +91 9412739234
4.	Mr. H K Dixit	DGM(Tx & Mobile), ALTTC, BSNL Ghaziabad, India	dikshithk@rediffmail.com +91 9412739065
5.	Mrs. Suresh Devi	DGM(IT), ALTTC, BSNL Ghaziabad, India	Sureshdevi7009@gmail.com +91 9412739242
6.	Mr. Abhay Gupta	Assistant General Manager, ALTTC, Ghaziabad, India	abhaybpl@gmail.com +91 9412739319
7.	Mr. Anand Kumar	Assistant General Manager, ALTTC, Ghaziabad, India	anandkumarbsnl21@gmail.com +91 9412739248
8.	Mr. Vikas Nigam	Assistant General Manager, ALTTC, Ghaziabad, India	nigamvikas06@gmail.com +91 9412739314
9.	Mr. Naresh Singh	Assistant Director, ALTTC, Ghaziabad, India	nareshsingh@bsnl.co.in +91 9412000939
10	Mr. Rajeev Sharma	Assistant Director, ALTTC, Ghaziabad, India	at.rajeev@gmail.com +91 9412774506

EVALUATION

The assessment of the participants shall be based on the time spent on the training and the following parameters:

Evaluation Parameter	Weightage
Quizzes and Presentations	60%
Attendance	10%
Participation	30%

The minimum passing requirement for certificate is 60%

TRAINING SCHEDULE AND CONTENTS / AGENDA

(Updated information will be available at <http://www.itu.int/itu-d/asp> or <https://academy.itu.int>)

Agenda (for face-to-face trainings)

20 May	Topic
Session 1	Registration, welcome and keynote address
Session 2	Next generation broadband wireline access technologies
Session 3	Broadband network components & connectivity
Session 4	Role and scope of broadband network servers

21 May	Topic
Session 1	ISP core network architecture
Session 2	Strategic broadband planning: market retention & capturing
Session 3	Broadband deployment case study
Session 4	Visit to broadband & MPLS lab
Session 5	Quiz 1

22 May	Topic
Session 1	Evolution of Fibre based high speed broadband access: GPON/GEAPON Technologies, ITU G.984.x standards for GPON, DWDM
Session 2	OTN and CPAN as digital infrastructure for high speed Broadband
Session 3	Visit to OTN & CPAN lab
Session 4	Next Generation Core/Control Network

23 May	Topic
Session 1	Roll out of broadband services through NGN
Session 2	Visit to NGN & IMS lab
Session 3	ITU's IMT series and mobile internet architectures transitions
Session 4	3.9G and 4G mobile broadband: LTE/LTE Advanced

24 May	Topic
Session 1	Next Generation Broadband: Wi-Fi Access, Li-Fi
Session 2	Mobile Broadband: QoS Parameters
Session 3	Next Generation Mobile Broadband: 5G
Session 4	Quiz 2
Session 5	Validation, and Feedback

METHODOLOGY

The face-to-face program will include:

- Instructor-led presentations,
- Case studies,

- Group exercises
- Assignments
- Field visit to NGN labs etc.

COURSE COORDINATION

<p>Institute Head: Mr. MK Seth Chief General Manager ALTTC, Raj Nagar, Ghaziabad, UP, INDIA -201002 cgm_alttc@bsnl.co.in (Email) +91 120 2755121 (Works)</p> <p>Institute Coordinator: Mr. Subhash Chand Principal General Manager ALTTC, Raj Nagar, Ghaziabad, UP, INDIA -201002 subhash.iitr83@gmail.com (Email) +91 120 2755122 (Works) +91 9868202123 (Mobile)</p>	<p>Training coordinators: Manoj Kumar Mishra DGM(BB), Room No. 2103, Academic Building, ALTTC, Raj Nagar, Ghaziabad(U.P), INDIA-201002 dgm.bberp.alttc@gmail.com +91 120 2755620 (Works) +91 94127 39234 (Mobile)</p> <p>Anand Kumar AGM (BB), Room No. 2101, Academic Building , ALTTC , Raj Nagar, Ghaziabad(UP), INDIA -201002 anandkumarbsnl21@gmail.com +91 120 275 5040 (Works) +91 941 273 9248 (Mobile)</p>	<p>ITU coordinator: Mr. Ashish Narayan Program Co-ordinator, ITU Regional Office for Asia- Pacific 5th Floor, Thailand Post Training Centre, 111 Moo3 Chaengwattana Road,Laksi Bangkok 10210,Thailand ashish.narayan@itu.int (Email) +66 257 500 55 (Works) +66 257 535 07 (Fax)</p>
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REGISTRATION AND PAYMENT

ITU Academy portal account

Registration and payment should be made online at the ITU Academy portal.

To be able to register for the course you **MUST** first create an account in the ITU Academy portal at the following address:

<https://academy.itu.int/index.php/user/register>.

Training registration

When you have an existing account or created a new account, you can register for the course online at the following link: <https://academy.itu.int/index.php/training-courses/full-catalogue/evolution-and-emerging-trend-broadband-access-technologies>

You can also register by finding your desired course in our training catalogue

<https://academy.itu.int/index.php/training-courses/full-catalogue>.

Payment

1. On-line payment

A training fee of USD 275 per participant is applied for this training. Payments should be made via the online system using the link mentioned above for training registration at <https://academy.itu.int/index.php/training-courses/full-catalogue/evolution-and-emerging-trend-broadband-access-technologies>

2. Payment by bank transfer

Where it is not possible to make payment via the online system, select the option for offline payment to generate an invoice using the same link as above. Download the invoice to make a bank transfer to the ITU bank account shown below. Then send the proof of payment/copy of bank

transfer slip and the invoice copy to Hcbmail@itu.int and copy the course coordinator. **All bank transaction fees must be borne by the payer. Failure to submit the above documents may result in the applicant not being registered for the training.**

3. Group payment

Should you wish to pay for more than one participant using bank transfer and need one invoice for all of them, create an account as **Institutional Contact**. **Institutional Contacts** are users that represent an organization. Any student can request to be an institutional contact or to belong to any existing organization.

To do this, head to your profile page by clicking on the **“My account”** button in the user menu. At the bottom of this page you should see two buttons:

- a. If you want to **become an institutional contact**, click on the **“Apply to be an Institutional Contact”** button. This will redirect you to a small form that will ask for the organization name. After you fill the name of the organization you want to represent, click on **“continue”** and a request will be created. An ITU Academy manager will manually review this request and accept or deny it accordingly.
- b. If you want to **belong to an existing organization**, click on the **“Request to belong to an Institutional Contact”** button. This will redirect you to a small form that will ask you to select the organization you want to join from an organization list. After you select the correct organization, click on **“continue”**, a request will then be created. The Institutional Contact that represents that organization will manually accept or deny your request to join the organization.

ITU BANK ACCOUNT DETAILS:	
Name and Address of Bank:	UBS Switzerland AG Case postale 2600, CH 1211 Geneva 2 Switzerland
Beneficiary:	Union Internationale des Télécommunications
Account number:	240-C8108252.2 (USD)
Swift:	UBSWCHZH80A
IBAN	CH54 0024 0240 C810 8252 2
Amount:	USD 275
Payment Reference:	CoE-ASP- 24257-P.40593.1.04

4. Other methods of payment

For local participants, who would like to pay in local currency, training fee of INR 19,580 (Tax Inclusive) can be made directly to the ALTTC bank account. The details are as follows:

1.	Name of Account Holder: AO Cash, BSNL ALTTC
2.	Account Type: Current
3.	Account no: 10888625814
4.	Bank Name: State Bank of India, Main Branch, Ghaziabad, INDIA IFSC code: SBIN0000642