ASIA-PACIFIC TELECOMMUNITY

TRAINING COURSES IN 2021

2021

LIST AND SCHEDULE OF
APT TRAINING COURSES IN 2021

No.	Training Course	Schedule	Training Center
China			
1	Intelligent Optical Network Technology & Solutions	18-29 Oct	WRIPT, Wuhan
2	The development and application of artificial intelligence and Blockchain Technology	2-9 Nov	BUPT, Beijing
3	Artificial Intelligence and 5G Technology	15-26 Nov	E-CAICT, Shanghai
4	Security Measures for the Era of Artificial Intelligence	10-16 Nov	NJUPT, Nanjing
5	Smart Interconnection for Internet of Things	13-21 Oct	XUPT, Xian
India			
6	Spectrum Management and Monitoring	4-17 Aug, 27 Sep- 08 Oct	RGMTTC, Chennai
7	IOT Technologies & Ecosystem	25-29 Oct	NTIPRIT, Ghaziabad
8	Evolution of Future Networks & Ultra Broadband Internet	6-17 Sep	ALTTC, Ghaziabad
9	Licensing in a Convergent Environment	6-12 Oct, 10-16 Nov	BRBRAITT, Jabalpur
Thailand			
10	Future Broadband Internet and IoT	6 Sep-4 Oct	NT Academy
11	State of Computing in 5G Network and IoT Analytics (Phase I)	16 Aug – 13 Sep	NT Academy
12	State of Computing in 5G Network and IoT Analytics (Phase II)	22-26 Nov	NT Academy

Country	Aug	Sep	Oct	Nov
China			① ②	③
			⑤	④
India	⑥	⑥		⑨
		⑧	⑨	
Thailand		⑩		⑫
	⑪			
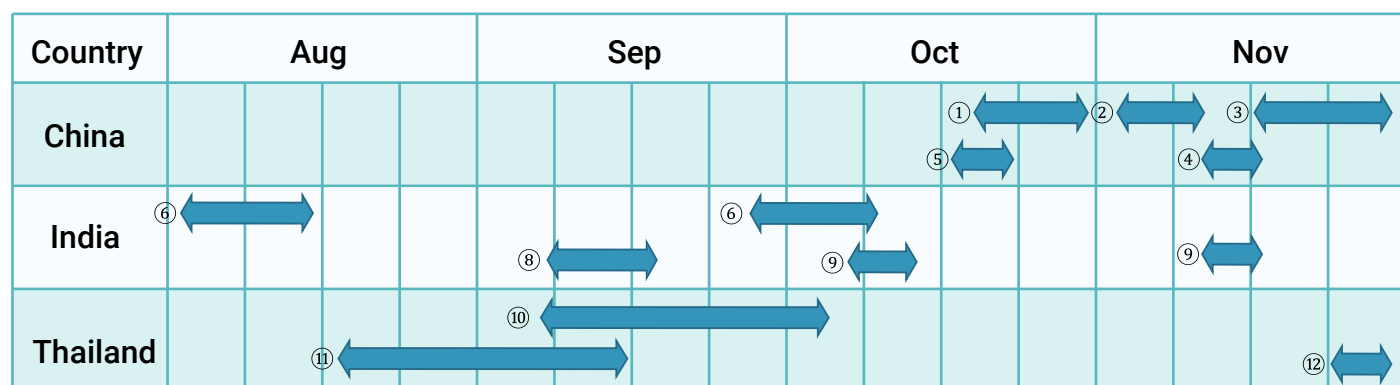
Intelligent Optical Network Technology & Solutions

No.1

- Duration: 6 -17 September 2021
- Organization: Wuhan Research Institute of Posts and Telecommunications

Objectives

The objectives of this course are to learn the following knowledge:

1. Intelligent optical network solution
2. Optical access technology, include: EPON,GPON and NG-GPON
3. Broadband optical transmission network technology, including OTN/100G OTN/400G OTN/POTN
4. Optic fiber and cable technology
5. FTTH technology and Solutions
6. The key technology of ODN
7. SPN technology
8. 5G Technology and solution

Overview

- Lectures,online technical investigation and online experiment will be arranged in this training course.
- Online technical investigation will be arranged in CICT group company to learn about products and solutions in the field of optical commnunication and mobile communication.
- Online experiment will be arranged to test and operate optical network equipment.
- Country report allowed participants from different countries to share developments in ICT industry in each country

Syllabus

Date	Topic
Day 1	Opening Ceremony • Optical access technology : EPON, GPON and NG-PON
Day 2	• Optic fiber and cable technology
Day 3	• Broadband optical transmission network technology, including OTN/100G OTN/400G OTN/POTN
Day 4	• ODN technology and Solutio
Day 5	• FTTH technology and Solutions
Day 6	• 5G Technology and solution
Day 7	• SPN technology and solutions
Day 8	• Testing and operating optical communication equipment
Day 9	• Online visit in China Information Communication Technology company
Day 10	Country report Graduation ceremony

Target Trainees

- Regulators, and Policymakers
- Representatives from academia and international
- organizations working on regulatory or policy issues
- Management and technical staff in ICT companies
- Capable of listening, speaking, reading and writing in English

- Wuhan Research Institute of Posts and Telecommunications (WRI) is one of the two research institutes directly under Ministry of Posts and Telecommunications (predecessor of Ministry of Information Industry)

- In 2018, WRI (FiberHome Technologies Group)and Datang Telecom Group restructured and merged into China Information Communication Technologies Group Corporation (CICT).

- Now the company is the birthplace of China's optical communications, one of the main proposers of international standards for mobile communications, and is an internationally renowned provider of information and communication products and integrated solutions.

- Its business focuses on the following aspects:Optical Fiber Communication/Mobile Communication/Optoelectronics and Large Scale Integrated Circuits/Data Communication/Network Information Security/Intelligent Application.

Trainers

1. Mr.Taozhiyong,Professor,ITU expert, vice president of Fiberhome College, WRIPT
2. Dr Sangziqin, ITU expert, WRIPT
3. Dr Chengwen,senior engineer,WRIPT

The Development and Application of Artificial Intelligence and Blockchain Technology

No.2
- Duration: 2 – 9 November 2021
- Organization: Beijing University of Posts and Telecommunications (BUPT)

Objectives

The objective of this course is to learn the following:

1. The development trend of artificial intelligence and blockchain technology

2. Theoretical basis of artificial intelligence and blockchain technology

3. Cases and applications of artificial intelligence and blockchain technology
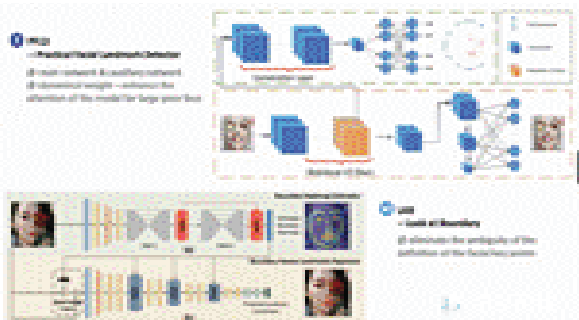
Syllabus

Date	Topic
Day 1	- Opening ceremony & Ice-breaking trip - The development trend of artificial intelligence -- the construction of a complete artificial intelligence system
Day 2	- Integration of artificial intelligence and new media development - Experimental explanation and display
Day 3	- Deep learning framework and practical application - Intelligent scene analysis
Day 4	- Object analysis and understand of video - Application of artificial intelligence technology in medical field
Day 5	Day off
Day 6	Day off
Day 7	- Artificial intelligence and blockchain technology - Experimental explanation and display
Day 8	- The application of machine learning - National report & Closing ceremony

Overview

- Students will learn about artificial intelligence and blockchain technology through lectures and laboratory presentations.

- At the country reporting session, they will introduce what they have learned about AI and blockchain technology and discuss the development cases of AI and blockchain technology in their countries.

Target Trainees

- University degree or equivalent degree, working in the artificial intelligence field or telecommunications industry for more than 3 years;
- Professional and technical personnel with certain research in the field of artificial intelligence
- Head of department engaged in artificial intelligence applications

- Sufficient English speaking and writing skills;
- Under the age of 45;
- No military service;
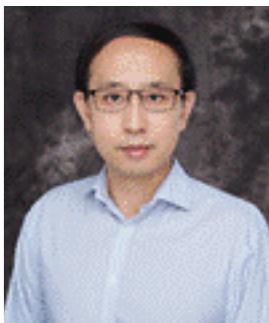- Healthy physical and mental & Positive attitude

Training Organization

Beijing University of Posts and Telecommunications (BUPT)

- "Project 211"
- "985 Advantage Discipline Innovation Platform"

- An important training base for IT talents in China
- Superior disciplinary resources

Trainers

| Dr. Zhang Chuang | Dr. Ma Zhanyu | Dr. Wu Ming | Dr. Xu Weiran | Dr. Deng Weihong |

| Dr. Ren Leyi | Dr.Zhang Xu | Dr.Yan Haotian | Dr.Xu | Dr.Qiu |

Artificial Intelligence and 5G Technology

No.3
- Duration: 15 – 26 November 2021
- Organization: China Academy of Information and Communications Technology (East China Branch)

Objectives

The objectives of this course are:

- to learn some new knowledge and ideas of Artificial Intelligenc and 5G Technology, take useful ideas and technologies back to their home country;

- to enhance the international cooperation and communication between countries in Asia Pacific area.

Overview

- Trainees can understand the technique of artificial intelligence and 5G better;

- Through the theory learning, case study, and online discussion, trainees can learn more cutting-edge knowledge and ideas;

- Take useful ideas and technologies back to their home countries, and enhance the international cooperation and communication between countries.

Syllabus

Date	Topic
Day 1	Opening Ceremony
Day 2	• Reveal the Mysterious of AI
Day 3	• AI：A Brief Introduction
Day 4	• Commercialization of Artificial Intelligence
Day 5	• 5G empowers AI
Day 6	• Online Q&A
Day 7	• 5G Basic Knowledge
Day 8	• 5G Industry Application
Day 9	• Online Q&A
Day 10	Graduation ceremony

Target Trainees

- Regulators, and Policymakers, etc.,

- Representatives from government organizations and High-Tech Companies in the ICT field

Training Organization

- China Academy of Information and Communications Technology (East China Branch) was founded in September of 2010. A local government think tank and a R&D and innovation platform.

- Make forward-looking deployments in the fields of smart city, AI and bigdata, intelligent network, information security and communication.

- Provide the government and enterprises with services and solutions of decision-making and support, standard and specification, experiment and verification, test and evaluation, consultation and planning.

- East China Branch is located in the west band of Shanghai, which is thecore area of the only strategic emerging cluster of Artificial intelligence in Shanghai.
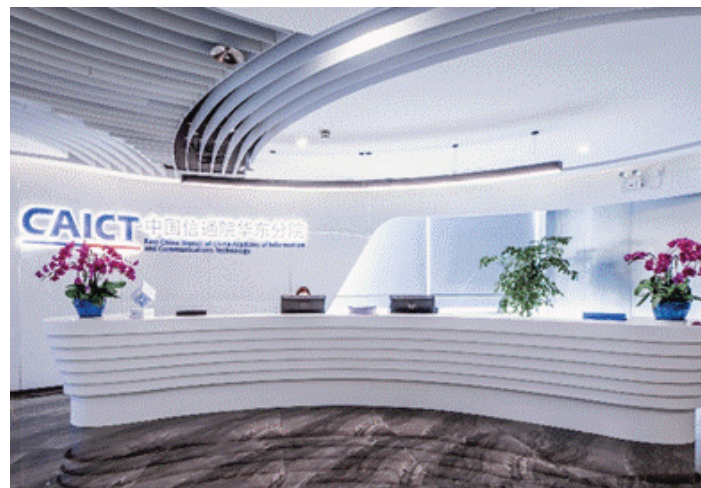
Trainers

Dr. Yue Gao
Associate Professor, Doctoral Advisor,
Shanghai JiaoTong University AI Institute

Intelligent Optical Network Technology & Solutions

No.4
- Duration:10 – 16 November 2021
- Organization: Nanjing University of Posts and Telecommunications

Objectives

- To understand fundamental&advanced digital technology in communication & computer networks based IOT

- To understand the latest standards and privacy protection mechanisms of IoT security industry

- To understand network information security issues and get knowledge about practical network security techniques

- To learn the technology and skills to protect computers, networks, programs and data from unintended or unauthorized access, change or destruction

- To understand the latest development of The Internet of Things required in current innovative technology

- To learn the next generation of intelligence for big data analytics and smart systems

- To understand the Opportunities and Challenges that Big Data brought for competitive intelligence

Syllabus

Date		Topic
Day 1	Morning	Opening Ceremony •Protocol layers and service models (Fundamentals of Internet, Concepts of delay, security, and Quality of Service (QoS)/Application layer protocols and client-server model/The OSI reference model)
	Afternoon	• Data link layer(Link layer. Error detection. Multiple access protocols. IEEE 802.3 Ethernet./CRC calculation/ Polynomials in a Modulo 2 system)
Day 2	Morning	• Network layer(The IP Protocol Header/Class-based IP address format/Open shortest path first protocol)
	Afternoon	• Conventional Encryption Principles •Location of Encryption Devices •Key Distribution
Day 3	Morning	• Public-Key Cryptography Principles •Digital Signatures •Key Management
	Afternoon	• Threats against network applications •Firewalls •Intrusion detection systems
Day 4, Day 5		Weekend reviewing
Day 6	Morning	• Fundamentals of the Internet of Things and its applications • Introductions to RFID technology and its applications
	Afternoon	• Operational Challenges of Wireless Sensor Networks • New standards & privacy protection mechanisms of IoT security industry
Day 7	Morning	• Strategies of Enterprise Competitive Intelligence based on Big Data • Analyzing , keeping, retrieving, storing, and sending the information with Big Data
	Afternoon	Country report , Test and Evaluation, Graduation ceremony

Overview

• With the theme of "Security Measures for the Era of Artificial Intelligence", the online training course in NJUPT will give the participants the fundamental and advanced knowledge&technology in the area of Computer Communication Network, Information Security,Big Data and Internet of Things by lively forms like lecturing\case analysis\demonstration\seminar and so on.Furthermore, the training course also will provide the participants with full understanding and exchanges for the latest development and trends in telecommunication technology and manufacturing industry.

- The 7 days online training course "Security Measures for the Era of Artificial Intelligence" will be held from Nov.10 to Nov.16 , which will all be given by the elite professors from Nanjing University of Posts and Telecommunications.

Target Trainees

- be a university graduate or equivalent with working experience of more than 3 years in the field of telecommunications or information business.
- be currently engaged in planning and/or operation/maintenance of computer network and information security.
- be engineers in telecommunications carriers, telecommunications regulatory, network monitoring or information security officials working at the government.

Training Organization

- NJUPT was established in 1942 that enjoys 78 years history. It is approved by the Chinese Ministry of Education (MoE) as the first batch of First-class Discipline Construct on University, also it's approved by the Jiangsu Provincial People's Government (JPPG) as High Level Construction University. Now, it owns 2,600 faculties which include 984 supervisors to Doctoral and Master's degree candidates and offers education to approximately 30,000 students. Four disciplines of NJUPT are among the world's top 1% on the ESI ranking and the discipline of Communication engineering ranks 25th in the ARWU. NJUPT is engineering- oriented with a focus on information technology,integrating such disciplines as science, engineering, economics, management, literature, education, art and law, and offers multi-layered educational programs leading to bachelor's, master's, and doctor's degrees, as well as post-doctor's positions. For the past 78 years, it has delivered more than 240,000 outstanding talents for the country, many of them have become leaders, technical elites, and management leaders in information industry at home and abroad, which enjoys the reputation of "the cradle of China IT talents".
- NJUPT actively promote international exchanges and cooperation.At present, it recruits overseas students at three levels: undergraduate, graduate and postgraduate. More than 700 students come from more than 50 countries are studying in our school.
- For consecutive 30 years, NJUPT has been serving as one of the training bases of ITU Asia-Pacific Telecommunications Organization (APT) in China that has offered the training courses in telecommunications management and technology for more than 400 friends from the Asia-Pacific region.Through this way, we are not only sharing fruits of scientific and technological development but also building bridges of friendship with people of the Asia-Pacific region.

Trainers

Dr. Zhang Yingzhou
Professor of School of Computer Science, NJUPT

Dr. Ye Ning
Professor of School of Computer Science, NJUPT

Dr. Luo Bingqing
Professor of School of Computer Science, NJUPT

Intelligent Optical Network Technology & Solutions

No.5
- **Duration: 13 – 21 October 2021**
- **Organization: Xi'an University of Posts and Telecommunications**

Objectives

- This project is for the purpose of promoting our country and the Asia-Pacific region to exchange and cooperate in "Smart Interconnection for Internet of Things".

- Let participants understand the basic performance of smart interconnection and cutting-edge technology trends, have a whole picture of the best practice and application of Smart Cityand IoT.

Overview

- Participants will understand and grasp the related technologies and applications of smart interconnection networks through lectures, seminars and demo which cover technologies of smart interconnection of Internet of Things (IoT), network framework etc. All of these will finally make trainees be able to have further knowledge on development reviews and application prospects of smart interconnection for communication networks, and can have a preliminary understanding of key technology and development trend of smart interconnection of Internet of Things

Syllabus

Date	Topic
Day 1	Opening ceremony Antenna Techniques for 5G Networks
Day 2	"TianyiCloud" Architecture of China Telecom
Day 3	RFID and Applications for IoT
Day 4	5G Application for Intelligent Home
Day 5	5G Heterogeneous Network and Intelligent City
Day 6	Rural e-commerce in China under the background of ICT
Day 7	Country Report

Target Trainees

- Have had engineering experience in telecommunications industry, or telecommunications regulatory organization in the government

- Be a university graduate with working experience in software development.

Training Organization

- XUPT is a comprehensive university covering seven fields of engineering, management, science, economics, literature, law and arts with IT and communications as its main feature. It is the only university in northwest of China majoring in telecommunications.

- XUPT has established cooperative relationships with approximately 40 universities and academic institutions from more than 10 countries , including Germany, the United States, the UK etc. XUPT has built strategic cooperative partnerships in scientific research and talent training with domestically renowned enterprises Huawei Company, ZTE Cooperation, China Telecom etc.

Trainers and Research Field

- Xi 'an University of Posts and Telecommunications
  - Prof. Shang Feng (Microwave Antenna)
  - Prof. Li Pengfei (E-commerce)
  - Prof. Zhang Xin (Mobile Interconnection)
  - Dr Yan Xiaohong (IoT)

- China Telecom Shaanxi Branch
  - General Manager of Market Zhang Yonghui (Smart City)
  - Senior Engineer OU Yang Chenji (Smart City)

Spectrum Management and Monitoring

No.6	• Duration: 4 – 17 August 2021 (Course A), 27 September - 8 October (Course B) • Organization: Rajiv Gandhi memorial Telecom Training Centre (RGMTTC), BSNL, Chennai, India.

Objectives

The objectives of this course are to learn:

- Spectrum Principles and Characteristics
- Spectrum Planning, Allocation, Licensing and Pricing
- Spectrum Monitoring and Auditing
- Spectrum Strategies and Enforcement
- Advanced Technologies in Spectrum Management

- Spectrum Econometrics and Pricing
- Operator's requirement on Spectrum Management
- Technical Study, Visit to field
- Group Discussion, Presentation, Issues and Case
- Studies on Spectrum Management.

Syllabus

Day	Session	Topic
1	I	Registration, Trainees Introduction and Inauguration Speech
	II	Spectrum Management – An Introduction
2	I	Spectrum Management - A Broader Perspective
	II	Spectrum Management - A Broader Perspective
3	I	Evolution of Wireless Technologies
	II	Spectrum Management - An operator View
4	I	Emerging Wireless Technologies
	II	Emerging Wireless Technologies
5	I	Recent trends including Cognitive Radio, White Space and Disaster management of spectrum
	II	Recent trends including Cognitive Radio, White Space and Disaster management of spectrum
6	I	Spectrum Monitoring and Enforcement
	II	Spectrum Monitoring and Enforcement
7	I	Spectrum Management - A Regulator View & QOS
	II	Spectrum Management - A Regulator View & QOS
8	I	Advance topics in Spectrum Management like Short range and Low interference devices, Small & Nano Satellites
	II	Advance topics in Spectrum Management like Short range and Low interference devices, Small & Nano Satellites
9	I	Pricing and Econometrics of Spectrum Management
	II	Presentation by Participants
10	I	Online Evaluation by trainees and Validation of the course
	II	Online Evaluation by trainees and Validation of the course

Overview

Spectrum is one the rare resources available for communication and by managing the spectrum efficiently. The network capacity as well as the reach can be increased.This course mainly focuses on the issues related to Spectrum Management.

Target Trainees

The Participant is supposed to have a basic knowledge of Electromagnetic Spectrum and cellular networks.

Training Organization

- RGMTTC, the training centre unit of BSNL, is in the forefront of Telecom industry with core focus on Telecom technologies & Networking.

- Being the Service Provider of Landline, GSM, CDMA, 3G, 4G, LTE, Internet Services, MPLS- VPN, Broadband,Telecom Switching, Optical Fibre, Rural Communication, Web-Hosting, Wi-Fi, Wi-MAX, Satellite Phone, IoT service, Cloud and so many others, we assure to make a difference with the training pattern with all high end equipments.

- Some of our corporate Clientele includes Tamil Nadu Skill Development Corporation(TNSDC), NSDC, Verizon, Power Grid Corporation Of India Limited, Southern Railway, Chennai Metro Rail Ltd, TCTS, Infosys, India Post, University of Madras etc

Trainers

NAME OF TRAINER	Designation and Organization
Sri. Pani Prasad, ITS	Director (SAS), NCCS, DOT Bangalore
Sri. R .David Koilpillai	Qualcomm Institute Chair Professor, Indian Institute of Technology (IIT)-Madras, Chennai
Sri. S. T. Abbas, ITS	Advisor (Network, Spectrum & Licensing) Telecom Regulatory Authority of India (TRAI)
Sri. R. Guruprasad	Deputy General Manager (CA (Retd), BSNL, Chennai
Sri. R. Saji Kumar, ITS	Principal General Manager, Nagarkoil SSA, Tamilnadu Circle, BSNL, Chennai
Sri. Jayakumar Jayavelu	General Manager, Pondicherry SSA, Tamilnadu Circle, BSNL
Sri. H. Dominic Savio	Sub – Divisional Engineer (Retd), RGMTTC BSNL, Chennai.
Sri. S. Raja Kumar	PRNCIPAL / Deputy General Manager, RGMTTC, BSNL, Chennai
K M BALAJI	Sub – Divisional Engineer, RGMTTC, BSNL, Chennai
P. VENKATA PATANJALI SARMA	Junior Telecom Officer, RGMTTC, BSNL, Chennai

IOT Technologies & Ecosystem

No.7
- Duration: 25 – 29 October 2021
- Organization: National Telecommunications Institute for Policy Research, Innovation and Training, India

Objectives

The objectives of this course are to
- Understand the IOT technologies and the IOT ecosystem
- Potential Use cases and the way these technologies can be used to address the issues being faced in development work
- Enable policy planners to devise a mechanism of checks and balances for addressing the issues of security and data privacy.

Syllabus

Date	Topic
Day 1	IOT Overview, IOT Network Architecture & Design
Day 2	"Things" in IOT & M2M Gateway, Communication Technologies for IOT, LP WAN & 3GPP based technologies and Use Cases
Day 3	5G for mMTC , eSIM and Use Cases, One M2M Framework for interoperability
Day 4	Application Protocols for IOT , Drone Technology: Cellular Connected Drones , IOT Security & Data Privacy
Day 5	AI in Edge Computing , Smart City Solutions

Overview

The course covers the following
- Various IOT Technologies and IOT Ecosystem including the opportunitiesand challenges.
- Communication Technologies like LP WAN, 3GPP based technologies,WiFi HaLow, ZigBee and 5G for massive machine type communication (mMTC)
- Application Protocols viz. CoAP and MQTT, Cellular Connected Drone
- IOT Security and Data Privacy
- Artificial Intelligence in Edge Computing and Smart City Solutions

Target Trainees

An applicant should preferably be:
- Officials from Ministries/ Licensor/ Operator from APT Member countries.
- have working knowledge of English language i.e. having skills of reading/ writing/ understanding/ speaking English language.

Training Organization

National Telecommunications Institute for Policy Research Innovation and Training (NTIPRIT) is the premier training institute of Department of Telecommunications, Government of India, involved in conduction of induction Training for probationary officers of Indian Telecommunication Service Group – A (ITS Group A) recruited through All India based Engineering Services Examination. Apart from Induction Training, NTIPRIT also conducts various In-Service Trainings, Management Development Programmes, Regional and International Trainings, Capacity Building workshops for Officers of Government of India in various aspects of Information and Communication Technology Administration in India.

Trainers

Mr.Deepak Sharma

Mr.Ashok Kumar

Mr.Aurindam Bhattacharya

Mr.Sharad Arora

Mr.Anil Chandaliya

Mr.Bipin P Kumar

Evolution of Future Networks & Ultra Broadband Internet

No.8

- Duration: 6 – 17 September 2021
- Organization: ALTTC, BSNL Ghaziabad, UP-201002, INDIA

Objectives

The objectives of this course are to learn:

- Migration from Convectional network to All-IP, evolution for Future Network.

- O&M activities for High Speed Internet services.

- Concept of UFBB and 4G-LTE, 4G-EPC,5G/5G-NR technologies, network Architectures and standards ,WiFi6.0, Satellite Broadband.

- Planning to harness potential offered by technologies to cater future network and service requirement.

- Equip with technologies for fast data processing and communication like Next gen. servers, MPLS, MPLS- TP/TE, MNG-PAN,OTN, FTTx, MGfast, xDSL etc.

- Regulatory framework and standards to achieve required QoS in future wireline and mobile network.

Syllabus

Date	Topic
Day 1	Registration/Inauguration/Overview of the course Future Wire line BB Access Technologies
Day 2	Broadband Network Architecture Components and Connectivity Broadband Servers: Role and Connectivity
Day 3	Core Data Network Technology: MPLS MPLS -TP Technology
Day 4	Next Generation Broadband Network: MNG-PAN Future Optical Transport Network : OTN
Day 5	WiFi 6.0 FTTx Technology
Day 6	Evolution of Future Mobile Network LTE/LTE-Advanced Network Architecture
Day 7	5G Network Architecture LTE Air interfaces
Day 8	5G New Radio Feature 5G MIMO/Massive MIMO and Beam Forming Technique
Day 9	5G Use Cases Advance Satellite BroadBand
Day 10	IPv6 and Migration Techniques Trainees Feedback, Evaluation &Discussion

Overview

In the future, to facilitate services to 100s of millions of connected devices, operators need to device policies incoherence to service requirements, e.g. low latency, low power sensor networks, hi mobility,wide area cellular connectivity, and data aggregation. conventional way of accessing Internet isn't enough to ever growing data needs of businesses and users.in the view of Covid-19 event, internet is playing a crucial role to maintain essential services, Togather the globe into a family, Connecting every nuke and corner of habitat, getting entertained, run business and empowering human being in fighting this common enemy. Ultra Fast Broadband(UFBB) Internet is the need of hour as per broadband forum and we are getting new standards frequently with assured QoS along with underlying technologies like MNG-PAN, PTN, FFTx, MPLS/MPLS- TP etc. Along with the Technological Framework for UFBB, a regulatory framework is also needed to the technocrats for making an informed decision about ultra-reliable ultrafast broadband with a shield to prevalent cyber-attacks. 5G also a contender in this race. 5G represents not only a new generation of technologies that impact the core and access network, but also a restructuring of the business models opening new avenues of revenue generations such as IoT/M2M, industry 4.0, AI on a much larger scale.

Target Trainees

- Engineers working in lower and middle management for Operation and maintenance, Operation expansion planning for of telecom companies
- Executives working in Government as advisor and decision makers,Regulators, and Policymakers for govern telecom services.
- Representatives from academia and international organizations working on research, regulatory or policy issues associated with various technologies.

Training Organization

- ITU-COE in Broadband and Cyber Security for South Asia
- A premier institute of BSNL,INDIA to impart advance Telecom Trainings to Govt. and Private Customers
- Use to be referred as Lung of the CITY to signify it's lush green campus full of serene beauty.

Licensing in a Convergent Environment

No.9
- Duration: 6 – 12 October (Group A), 10 – 16 November 2021 (Group B)
- Organization: BRBRAITT, BSNL, JABALPUR, INDIA

Objectives

The objectives of this course are to

- Understand the drivers of convergence in telecommunications, broadcasting, technology and media.
- Comprehend the impact of such rampant convergence on erstwhile wireline, wireless and broadcasting services.
- Identify which regulatory systems have to evolve.

- Review the concept of licensing as a key element of telecommunications regulation.
- Devise strategies to migrate from traditional and emerging licensing regimes with a focus on industry best practices.
- Follow best practice licensing for interconnection in a converged multi-operator and multi-platform telecommunications markets.

Syllabus

Date	Topic
Day 1	Registration and Welcome Regulator's duties in Licensing, Convergence, Legacy Licensing regimes - road to convergence
Day 2	Fundamental of licensing, Spectrum Management and Licensing, Licensing best practices , Key elements of Pricing and Regulations
Day 3	Financial issues in Broadband Development, USO Funding for rural broadband access, Regulating special / OTT services,
Day 4	Unified licensing framework , Implementation plan for a unified licensing regime, Case study on NOFN from regulatory angle, Net Neutrality
Day 5	Broadcasting regulation, Syndicate Presentation by participants, Online Test and Group Discussion Validation and Farewell

Overview

- This five-day training program will showcase the participants' different drivers and perspectives of convergence, how regulators have dealt with convergence including international case studies, price regulation, and real licensing in a converged environment.

- The course aims to cover the following:

- Understand Convergence & the drivers of convergence in telecommunications, broadcasting, technology and media

- Comprehend the impact of such rampant convergence on erstwhile wireline, wireless and broadcasting services

- Licensing and Regulator's duties

- Licensing implementation

Target Trainees

- Telecommunication Regulators and Policymakers, engineers, economists, managers and other professionals with an interest in licensing
- Representatives from academia and international organizations working on regulatory or policy issues
- Executives from Telecom Operators

Training Organization

- BRBRAITT, Jabalpur, India is a premier Training Institute in the field of telecommunication & IT. It is an apex training center of BSNL.
- It started working at Jabalpur since 22nd April, 1942.
- It has a campus of 35 acres with administrative building of 17280 square meters.
- Training centre is ISO 9001:2015 certified.
- The strength of BRBRAITT is its state-of-the-art telecom equipment.

Trainers

Dr. Manish Shukla, ITS
General Manager, BRBRAITT, Jabalpur

Shri R K Gangwar,
AGM, BRBRAITT, Jabalpur

Shri J K Bachani,
AGM, BRBRAITT, Jabalpur

Shri Gaurav Kapoor,
SDE, BRBRAITT, Jabalpur

Shri Pankaj Rai,
SDE, BRBRAITT, Jabalpur

Future Broadband Internet and IoT

No.10
· Duration : 6 September – 4 October 2021
· Organization: NT Academy, National Telecom Public Company Limited., Thailand

Objectives

The objectives of this course are:

- to introduce trainees to Broadband technologies, both wired line and wireless
- to introduce trainees to implement AI or Smart Computing to create digital services
- to provide knowledge for understanding Future Telecom Services
- to discuss and share experience of how to work with future challenges in Telecom networks and services.

Syllabus

Date	Topic
Week 1	Module 1: Current and future broadband technologies. The concept of Broadband and Digital infrastructure. Broadband technologies, both wired line and wireless. 5G mobile network and IoT as the platform for Industry revolution 4.0 and digital society. Low-speed satellite internet as the new coming technology.
Week 2	Module 2: State computing in telecom networks Introduction to Big Data and AI. Basic cloud computing and its implementation in telecom network. Edge/Fox computing. Security concerns in telecom networks
week 3	Module 3: Future telecom networks and services Future of Software-based telecom networks (SDN and NFV) and SD-WAN. Future telecom services and OTT services. Business and regulatory aspect for future telecom services. Challenge of broadband networks to cope with disaster and any kind of state emergency

Overview

This course focuses on Future Broadband Internet, and its services, especially digital services.To realize future digital services, we need to integrate new innovation on Big Data, AI, and etc.into telecom network. In the course, we focus on 3 tropics, namely current and future

broadband technologies, state of computing in telecom networks, and future telecom network and services.

This online course is arranged into 3 modules to study within 3 weeks,one module per week. At the end of each week, there would be evaluation test before moving to the next module. After three-week study, trainees are required to write the short country report on the topic of IoT implementation in their countries, as part of completing the online study.

Target Trainees

• Engineers or IT persons who are working in the network/service providers to provide 5G services, or

• Persons who are working in the national regulatory agency or government agency,and are in charge of 5G service policy and regulation.

Training Organization

NT Academy,
National Telecommunication Public Company Limited
5 Ngamwongwarn 17 Alley, Bang Khen,
Mueang Nonthaburi District, Nonthaburi 11000

Trainers

Tong Srikhacha, Ph.D
Senior Director ICT Training and Knowledge
Development Sector,
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State of Computing in 5G Network and IoT Analytics
(Phase 1: Online Training Course)

No.11
- Duration : 16 August – 13 September 2021
- Organization : NT Academy, National Telecom Public Company Limited., Thailand

Objectives

The objectives of this course are:

- to introduce trainees to the 5G network and its perspective design applications

- to describe the paradigm of computing that will change social life and environments

- to be familiar with and able to implement AI or Smart Computing to create digital services

- to discuss and share experience of how to withstand or challenge with future directions in smart computing of Telecom Services.

Syllabus

Date	Topic
Week 1	Module 1: Basic concept of Telecom connectivity This module provides the knowledge of how mobile networks are evolved, especially 4G/5G mobile networks, and also how the concept of Internet of thing (IoT) is introduced.
Week 2	Module 2: Basic concept to IoT network infrastructure and its standard This module provides basic concept of IoT network infrastructure, IoT value chain, and IoT standard, namely, overview of IoT Platform and network architecture, IoT standards, and IoT value chain and eco-system.
week 3	Module 3: Security Concerns for IoT implementations This module provides basic concept of IoT security, namely, understanding major security risks and issues in IoT, and also designing security into IoT

Overview

The Internet of Things (IoT) becomes part of life and environment, being established as the new computing paradigm, which is bound to change the ways of everyday working and living. Phase 1 online training is the one-month online learning program providing basic concept necessary to build up the IoT knowledge for a better understanding, such as

- Basic concept of Telecom connectivity
- Basic concept to IoT network infrastructure and its standard
- Security Concerns for IoT implementations

Target Trainees

• Engineers or IT persons who are working in the network/service
  providers to provide 5G services, or

• Persons who are working in the national regulatory agency or
  government agency, and are in charge of 5G service policy
  and regulation.

Training Organization

National Telecommunication Public Company Limited
5 Ngamwongwarn 17 Alley, Bang Khen,
Mueang Nonthaburi District, Nonthaburi 11000

Trainers

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National Telecommunication Public
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Head of Government and Industry
Relationship,
Ericsson (Thailand) Ltd.

State of Computing in 5G Network and IoT Analytics
(Phase 2: Virtual Classroom Training)

No.12
- Duration : 22 – 26 November 2021
- Organization : NT Academy, National Telecom Public Company Limited., Thailand

Objectives

The objectives of this course are:

- to introduce trainees to Broadband technologies, both wired line and wireless

- to introduce trainees to implement AI or Smart Computing to create digital services

- to provide knowledge for understanding Future Telecom Services

- to discuss and share experience of how to work with future challenges in Telecom networks and services.

Syllabus

Date	
Day 1	• Opening ceremony • Fundamentals of 5G Mobile Networks and Eco System • IoT Architecture and Framework
Day 2	• Cloud Computing Reviews • The Paradigms of Cloud and Mobile Computing
Day 3	• Taxonomy of Edge and Fog Computing • Machine Learning and AI perspective
Day 4	• AI as a Micro-service at the Edge Network • Building Blocks Design and Implementation of a Fog Computing for IoT Analytics
Day 5	• Challenges and Future Directions in Smart Computing • Closing ceremony

Overview

The Internet of Things (IoT) becomes part of life and environment, being established as the new computing paradigm, which is bound to change the ways of everyday working and living.

Phase 2 is a one-week virtual classroom discussing in more in-depth on followings: 5G Mobile Networks and Eco System, IoT architecture and framework, cloud and mobile computing, Edge and Fog Computing, machine learning and AI perspective, AI as a micro-service, and challenges and future directions in smart computing.

Target Trainees

- Engineers or IT persons who are working in the network/service providers to provide 5G services, or

- Persons who are working in the national regulatory agency or government agency, and are in charge of 5G service policy and regulation.

Training Organization

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