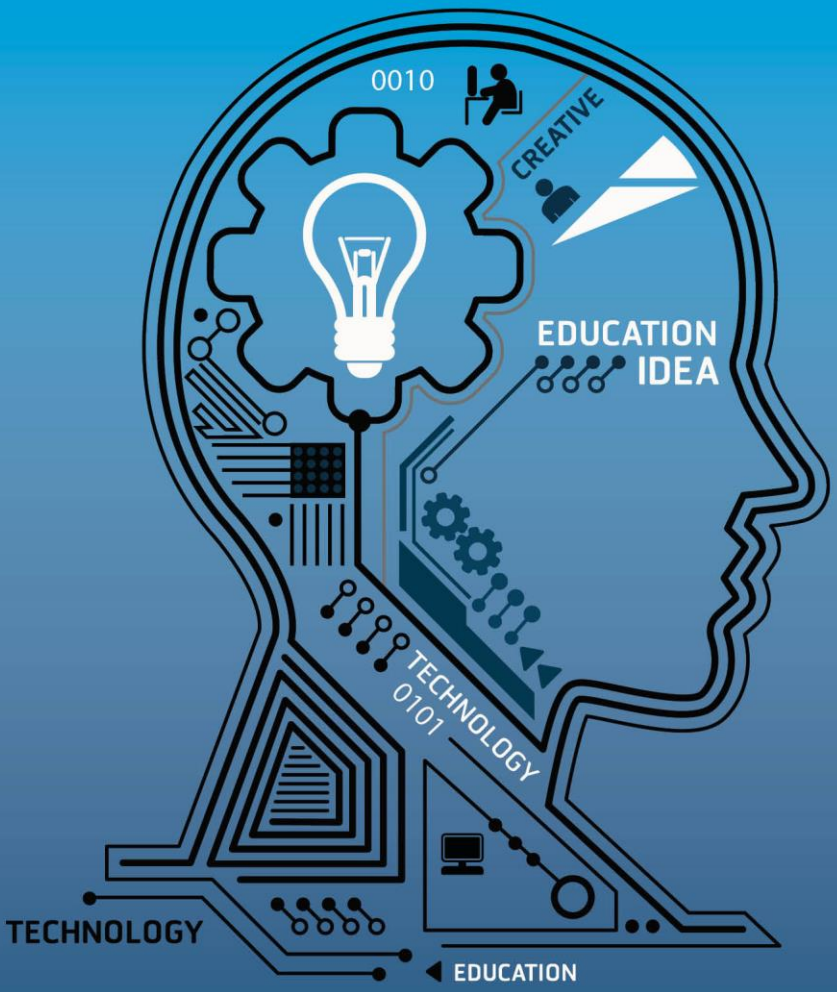
ITU Centres of Excellence for Europe

Training opportunities 2020



ITUAcademy
Empowering minds

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OVERVIEW OF CoE INITIATIVE

The Centres of Excellence (CoE) programme was launched by the International Telecommunication Union (ITU) in 2000, aiming to support capacity building in the field of information and communication technologies (ICTs). Designed to offer continuous education to ICT professionals and executives in the public and private spheres through face-to-face or distance learning programmes, the Centres serve as regional focal points for professional development, research, and knowledge sharing, as well as provide specialist training services to external clients. With the support from multilateral and regional organizations, CoE networks have been established in all ITU regions. The current network is composed of 31 Centres across the globe, six each in Africa, the Americas, Arab States and Asia-Pacific regions, five in the Europe region and three in the CIS region.

CENTRE OF EXCELLENCE FOR EUROPE

The second cycle of the new Centre of Excellence programme started in January 2019 and will end in December 2022. A total of 31 institutions were selected to operate as Centres of Excellence during this period. The following institutions were selected in Europe to provide trainings in particular six priority areas.

	Name of Institution	Country	Priority areas
	A. S. Popov Odessa National Academy of Telecommunications (ONAT)	Ukraine	Wireless & Fixed Broadband Digital Broadcasting
	Faculty of Electrical Engineering and Information Technologies, Ss. Cyril and Methodius University, Skopje (FEEIT)	North Macedonia	Wireless & Fixed Broadband
Technische Hochschule Brandenburg University of Applied Sciences Institute for Security and Safety	Institute for Security and Safety (ISS) at the Brandenburg University of Applied Sciences	Germany	Cybersecurity
INSTYTUT ŁĄCZNOŚCI PAŃSTWOWY INSTYTUT BADAWCZY	National Institute of Telecommunications (NIT)	Poland	Internet Governance Wireless & Fixed Broadband
NRD Cyber Security	NRD Cyber Security (NRD CS)	Lithuania	Cybersecurity
ICTP The Abdus Salam International Centre for Theoretical Physics	The Abdus Salam International Centre for Theoretical Physics (ICTP)	Italy	Internet of Things Big Data & Statistics

SCOPE

This catalogue has been produced by the ITU Office for Europe in collaboration with five ITU Centres of Excellence in Europe to highlight and promote the capacity building courses provided by the centres.

While participation is open to participants from all countries, stakeholders from the Member States of the Europe region (as defined at ITU) are primarily encouraged to participate in the courses. These countries are Albania, Andorra, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Georgia, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, North Macedonia, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, San Marino, Serbia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, Vatican City State and the United Kingdom.

The courses aim to increase participants' understanding, knowledge and awareness in the following areas:

- Wireless & fixed broadband
- Digital broadcasting
- Cybersecurity
- Internet governance
- Big data & statistics
- Internet of things

Courses are provided either face to face or online – via the ITU Academy e-learning platform.

All courses have a test component. A certificate of achievement is given to candidates who successfully complete the end-of-course assessment(s).

Information on the registration process and payment methods can be found on the ITU Academy website: academy.itu.int

Changes in course dates may occur and are reflected on the ITU Academy website: www.academy.itu.int

TRAININGS OFFERED BY ITU CoEs FOR EUROPE

In 2019 the ITU Centres of Excellence for Europe is offering 21 trainings. Two different kind of courses are provided. Face-to-face courses (in blue), online courses (in yellow), self-paced courses (in green). Trainings are presented in chronological order.

No	Training course topic	Coe	Dates	Venue	Training fee	Type of training
1	Cybersecurity technique	ISS	1 January – 31 December	Self-Paced	250 USD	Self-paced
2	Cyber incident response	ISS	1 January – 31 December	Self-Paced	250 USD	Self-paced
3	Strategic aspects for internet governance and innovations	NIT	3 -10 February	ITU Academy Platform	150 USD	Online
4	Wireless access techonologies to internet network	NIT	9-16 March	ITU Academy Platform	150 USD	Online
5	Security and qos in internet network	NIT	13-20 April	ITU Academy Platform	150 USD	Online
6	Building an effective cybersecurity team	NRD-CS	4-7 May	Vilnius, Lithuania	800 USD	Face-to-face
7	Building broadband telemedicine networks and providing e-health services at the local, regional and national levels	ONAT	14-15 May	Odessa, Ukraine	100 USD	Face-to-face (remote participation is possible)
8	Future broadband internet, cloud computing and internet of things	FEEIT	26 May - 22 June	ITU Academy Platform	150 USD	Online
9	Information security management system	ISS	1 June – 31 December	Self-Paced	250 USD	Self-paced
10	Features of 5g technology implementation at the local (some towns), regional (district, region) and national level	ONAT	11-12 June	Odessa, Ukraine	100 USD	Face-to-face (remote participation is possible)
11	Legal, regulatory and technical aspects of cloud computing in international data transfers	NIT	15-22 June	ITU Academy Platform	150 USD	Online
12	Features of 5g technology implementation at the local (some towns), regional (district, region) and national level	ONAT	2-3 July	Odessa, Ukraine	100 USD	Face-to-face (remote participation is possible)
13	Codata/rda research data science summer school	ICTP	3-14 August	Trieste, Italy	500 USD	Face-to-face
14	Codata/rda research data science workshops	ICTP	17-21 August	Trieste, Italy	250 USD	Face-to-face
15	Technical, business and regulatory aspects of 5g networks	NIT	24-31 August	ITU Academy Platform	150 USD	Online
16	Incident response practice hands-on scenario-based training	NRD-CS	7-10 September	Vilnius, Lithuania	800 USD	Face-to-face
17	Industrial cybersecurity and incident response	ISS	9-11 September	Xxxx	1250 USD	Face-to-face
18	Automation of broadband networks designing. Selecting the most appropriate solutions to build network	ONAT	24-25 September	Kostanay, Kazakhstan	FREE (IN RUSSIAN)	Face-to-face (remote participation is possible)

19	5g technologies for iot	ICTP	28-30 September	Trieste, Italy	300 USD	Face-to-face
20	Qos technologies and regulation for fixed and mobile	NIT	28 September - 5 October	ITU Academy Platform	150 USD	Online
21	Internet of things, big data and artificial intelligence technical, business and regulatory aspects	NIT	22-23 October	Warsaw, Poland	500 USD	Face-to-face
22	The use of adaptive technologies to transmit video over radio channels	ONAT	5-6 November	Odessa, Ukraine	FREE (IN RUSSIAN)	Face-to-face (remote participation is possible)
23	Applications of satellite based IoT networks	ICTP	16-17 November	Trieste, Italy	200 USD	Face-to-face
24	Legal aspects of artificial intelligence in business, household and public sector	NIT	8-9 December	Xxx	500 USD	Face-to-face
25	Mobile broadband internet, 5g and future services	FEEIT	17 November – 14 December	ITU Academy Platform	150 USD	Online

CYBERSECURITY TECHNIQUES

| 1 January – 31 December 2020 |

ORGANISED BY

Technische Hochschule Brandenburg
University of Applied Sciences
Institute for Security and Safety

LANGAGE

English

FEES

250 USD

MODE

Self-Paced

DURATION

Flexible

REGISTRATION DEADLINE

No deadline

COURSE CODE

TBC

Description:

This online course will provide theoretical and practical knowledge of it and cyber security and security methods for computer, network and electronic communication.
The course consists of various chapters and will cover fundamentals, such as it versus ics, threats and their sources, authentication, computer access control, cryptography, network security, network firewall concepts, intrusion detection.
The student will get a comprehensive view on security in the cyber space.

Audience:

Everybody working in the cyber as well as isolated computer environment

Trainer:

Mr. Dmytro Cherkashyn

CYBER INCIDENT RESPONSE

| 1 January – 31 December 2020 |

ORGANISED BY

Technische Hochschule Brandenburg
University of Applied Sciences
Institute for Security and Safety

LANGAGE

English

FEES

250 USD

MODE

Self-Paced

DURATION

Flexible

REGISTRATION DEADLINE

No deadline

COURSE CODE

TBC

Description:

The CIR course will provide students with all necessary knowledge of cyber incident response activities, what are main goals and challenges, and explaining main roles and responsibilities in such important process.
They will get most up to date trends in this area with an emphasis on most important details of each cyber incident response stage.
Upon the successful completion of this course, students will be able take a part in development and implementation of cyber incident plan.

Audience:

Security engineers, computer security specialists, computer incident response plan participants, line managers, security consultants

Trainer:

Mr. Dmytro Cherkashyn

STRATEGIC ASPECTS FOR INTERNET GOVERNANCE AND INNOVATIONS

| 3-10 February 2020 |

ORGANISED BY

National Institute of Telecommunications

LANGAGE

English

FEES

150 USD

MODE

Online

DURATION

8 days

REGISTRATION DEADLINE

3-10 February 2020

COURSE CODE

TBC

Description:

Internet and IP protocol is the winning technology in current telecommunications world. "Over IP" is the concept that can be considered in the context of almost all today's telecommunications services. Good understanding of this "IP world" requires not only knowledge of technical aspects, of the IP technology, but also strategic, political business issues.

The course aims at presenting the current process of innovations in Internet from all of these important perspective of view.

Audience:

The course is addressed to corporate executives and managers, policy makers, regulators, i.e. middle-level managers, administrators, officials and engineers dealing with planning, developing, implementing and managing current and future telecom networks.

Trainer:

Prof. Dr. Toni Janevski

WIRELESS ACCESS TECHNOLOGIES TO INTERNET NETWORK

| 9-16 March 2020 |

ORGANISED BY

National Institute of Telecommunications

LANGAGE

English

FEES

150 USD

MODE

Online

DURATION

8 days

REGISTRATION DEADLINE

9-16 March 2020

COURSE CODE

TBC

Description:

Internet and IP protocol is the winning technology in current telecommunications world. "Over IP" is the concept that can be considered in the context of almost all today's telecommunications services. Current users want to have access to any telecommunications services, from any plays, and at any moment. That's why mobility and wireless access to Internet plays so important role.

The course aims at presenting the key aspects of the current most important wireless access technologies to this Internet world

Audience:

The course is addressed to corporate executives and managers, policy makers, regulators, i.e. middle-level managers, administrators, officials and engineers dealing with planning, developing, implementing and managing current and future telecom networks.

Trainer:

Prof. Dr Toni Janevski

SECURITY AND QOS IN INTERNET NETWORK

| 13-20 April 2020 |

ORGANISED BY

National Institute of Telecommunications

LANGAGE

English

FEES

150 USD

MODE

Online

DURATION

8 days

REGISTRATION DEADLINE

13-20 April 2020

COURSE CODE

TBC

Description:

This course will focus on Security and Quality of Service (QoS) in Internet network from technology, regulation and business aspects. It will cover Internet fundamentals, including Internet protocols and architectures, Internet security standards and approaches as defined by IETF (Internet Engineering Task Force), as well as ITU's security architectures for end-to-end communications. Further, the course will incorporate cybersecurity approaches from the ITU viewpoint, and security aspects of emerging cloud computing and Internet of Things (IoT). Further, the course will incorporate Internet QoS, including the standardized solutions and practical approaches for provision of end-to-end QoS. In that manner it will cover QoS parameters as defined by the ITU and QoS for data (i.e., Over-The-Top services) and mobile services. Finally, the course will include network neutrality, Internet KPIs (Key Performance Indicators) and their measurements.

Audience:

This course is targeted at managers, engineers and employees from regulators, government organisations, telecommunication companies and academia, who are interested in understanding, implementation and regulation of Security and QoS in Internet Network, including technologies, standardization, regulation and content. Other institutions and individuals that are dedicated in building their capacity related to Security and QoS in Internet Network are also welcome to participate.

Trainer:

Prof. Dr Toni Janevski

BUILDING AN EFFECTIVE CYBERSECURITY TEAM

| 4-7 May 2020 |

Vilnius, LITHUANIA

ORGANISED BY

NRD Cyber Security

LANGAGE

English

FEES

800 USD

MODE

Face-to-face

DURATION

4 days

REGISTRATION DEADLINE

4-7 May 2020

COURSE CODE

TBC

Description:

Continuous growth and reliance on Information Communication and Technologies (ICT) results not only in benefits to organizations, but also in cyber incidents, which threatens ICT infrastructure and sensitive data inside it. The ability to timely detect, mitigate and recover from cyber incidents is a crucial capability to organizations, established and managed within Computer Security Incident Response Teams (CSIRTs/CERTs/CIRTs) and Security Operation Centers (SOCs), thereafter - cybersecurity team.

The course dives deep into CSIRT/SOC establishment practice, where combination of theory, unique experience with lessons learned, and hands-on practice give attendees a clear and actionable picture on how to build an effective cybersecurity team.

Fourth optional day is an iteration of the course and is dedicated to look into the CSIRT/SOC technologies on the spot. During the site visit attendees are led through service desks / incident tracking systems, vulnerabilities assessment and penetration testing tools, stack for cyber threat intelligence.

This training helps to successively prepare for cyber security team establishment and answers the main questions raised before starting:

- How to build an effective cybersecurity team? Overview, discussion, and practice about a mandate, governance, team and its structure, timeline, lessons learned from similar establishments, financial planning.
- What services in addition to incident management to introduce and how? Applied mandatory and complimentary services, best international practice for services models, incident management, incident management workflows and variations.
- What is technology behind it? Scrutiny of principal architecture for CSIRT stack, integrations and managerial (not technical) look into technologies, automation vs manual, and technology trends.
- How to mature security services and when? Elaboration of KPIs, SLAs and related metrics, security briefings, weekly/monthly/quarterly/yearly reports, analysis of examples and exercises on how to plan improvements for security services provided.

- What is the baseline for it? Presentation of best international models measuring the maturity of cybersecurity team and its various components, advice on how to use them and how they help in operational environment.

Audience:

The course is designed for non-technical professionals who are or will be responsible for cybersecurity teams/CSIRT/CERT/SOC establishment, management and growth in governmental and private sectors.

Trainer:

Sigitas ROKAS, Corporate Governance of Information Security Expert and the manager for CSIRT/SOC establishment projects

Mr. Vilius BENETIS, CSIRT/SOC architect, cybersecurity incident handling expert, researcher practitioner, CEO of NRD Cyber Security

BUILDING BROADBAND TELEMEDICINE NETWORKS AND PROVIDING E-HEALTH SERVICES AT THE LOCAL, REGIONAL AND NATIONAL LEVELS

| 14 - 15 May 2020|

Odessa, UKRAINE

ORGANISED BY

LANGAGE

English

FEES

100 USD

MODE

Face-to-face (Blended)

DURATION

2 days

REGISTRATION DEADLINE

May 14, 2020

COURSE CODE

TBC

Description:

The purpose of the Workshop is to give to the participants the information on

- provision of medical services using telemedicine networks, including the processing of digital medical data, personalized medical-service records, the electronic outpatient card, the electronic patient health record, and so on.
- determining the optimal variant of building telemedicine networks at the local, regional and national levels, taking into account the specificity of the countries in the region.
- construction of telemedicine networks, including the selection of hardware and software, as well as its installation and configuration.

Audience:

This workshop is targeted at technical staff, engineers, senior and mid-level management staff of telemedicine and telehealth service providers, medical institutions, clinics and hospitals, for doctors, for medical students. It is also of interest to employees of ministries and government healthcare authorities dealing with the issues of telemedicine network development and providing e-Health services.

Trainer:

Mr Vadim Kaptur

FUTURE BROADBAND INTERNET, CLOUD COMPUTING AND INTERNET OF THINGS

| 26 May - 22 June 2020 |

ORGANISED BY

LANGUAGE

English

FEES

150 USD

MODE

Online

DURATION

28 days (4 weeks)

REGISTRATION DEADLINE

25 May 2020

COURSE CODE

TBC

Description:

This course will focus on Future Broadband Internet, Cloud Computing and Internet of Things, including technologies, regulation and business aspects. It will cover Internet technologies, including IPv6, migration from IPv4 to IPv6, DNS, DHCP, Internet networking, HTTP 2.0, IP interconnection, IP QoS, cybersecurity, as well as Internet governance. Also, the course will include MPLS/IP transport, VPNs, Carrier Ethernet, as well as future gigabit copper, fiber optic, submarine cable, and satellite broadband access. Further, it will cover Software Defined Networking (SDN) and network virtualization (NFV) for fixed and mobile access and core, ITU's Cloud Computing architectures and models (SaaS, PaaS, IaaS), cloud security and privacy, OTT and telecom clouds, edge and fog computing services, as well as clouds governance. It will also include Internet of Things (IoT) and Web of Things (WoT), including critical IoT and massive IoT, data management, Big Data architectures, Big Data-driven networking, as well as IoT/data security, privacy and trust. The course will also include use of Artificial Intelligence (AI) for Internet and telecoms. Finally, it will cover future broadband OTT services (video, social, AR/VR, Web 3.0) and net neutrality, future IPTV, Industry 4.0, smart city, future clouds, future IoT/Big-Data/AI services, including their business and regulatory aspects.

Audience:

This course is targeted at managers, engineers and employees from regulators, government organisations, telecommunication companies and academia, who are interested in understanding, implementation and regulation of Future Broadband Internet, Cloud Computing and Internet of Things, including technologies, regulatory and business aspects. Other institutions and individuals that are dedicated in building their capacity related to Future Broadband Internet, Cloud Computing and Internet of Things are also welcome to participate.

Trainer:

Prof. Dr. Toni Janevski

INFORMATION SECURITY MANAGEMENT SYSTEM

| 1 June – 31 December 2020 |

ORGANISED BY

Technische Hochschule Brandenburg
University of Applied Sciences
Institute for Security and Safety

LANGAGE

English

FEES

250 USD

MODE

Self-Paced

DURATION

Flexible

REGISTRATION DEADLINE

No deadline

COURSE CODE

TBC

Description:

This online course will provide an introduction into ISO 27000 standard information security series as well as advanced theoretical knowledge and practical examples of development, integration as well as operation of isms according to ISO 27001 international standard.
Students will learn about information security-related processes like risk management, areas of standard application and necessary controls along with annex a to ISO 27001, which is compliance-related.

Audience:

Computer security specialists, security consultants, internal auditors, compliance specialists

Trainer:

Mr. Dmytro Cherkashyn

FEATURES OF 5G TECHNOLOGY IMPLEMENTATION AT THE LOCAL (SOME TOWNS), REGIONAL (DISTRICT, REGION) AND NATIONAL LEVEL

| 11 - 12 June 2020 |

Odessa, UKRAINE

ORGANISED BY

LANGAGE

English

FEES

100 USD

MODE

Face-to-face (Blended)

DURATION

2 days

REGISTRATION DEADLINE

June 11, 2020

COURSE CODE

TBC

Description:

The purpose of the Workshop is to give to the participants the information on modern and perspective technologies for mobile communications and broadband access. The Workshop will allow participants in future personally to assist introduction and development of 5G mobile communication and broadband access networks.

After the Workshop, participants will have an understanding of:

- main radio interfaces of 5G
- technologies used at the 5G physical layer, in particular the technical data, the frequency bands, spectral efficiency and the main technologies used at the physical layer
- principles of implementation of the 5G physical layer, in particular formation and processing of broadband signals; principles of 5G network implementation, in particular network architecture
- principles of the frequency planning for 5G networks , in particular of the radio channel models for of mobile networks, principles of calculation of radio channel and coverage, finding of trade-off between "power efficiency" and "frequency efficiency" in modern broadband access systems
- further evolution of 5G networks

Audience:

This workshop is targeted at technical staff, engineers, senior and mid-level management staff of telecommunications service providers, telecommunication and broadcasting companies. It is also of interest to employees of Telecommunication Authorities dealing with the issues of broadband network development, audio and multimedia broadcasting.

Trainer:

Mr Vadim Kaptur

LEGAL, REGULATORY AND TECHNICAL ASPECTS OF CLOUD COMPUTING IN INTERNATIONAL DATA TRANSFERS

| 15-22 June 2020 |

ORGANISED BY

National Institute of Telecommunications

LANGAGE

English

FEES

150 USD

MODE

Online

DURATION

8 days

REGISTRATION DEADLINE

15 June 2020

COURSE CODE

TBC

Description:

The subject matter if this web seminar refers to international data transfers whereby cloud computing solutions will be applied. In relation to the subject matter various types of data will be discussed, including personal, which will be analysed in the context of different regulations. The web seminar will include technical aspects of application of various types of the cloud computing and its impact on the application of the legal framework. The seminar will also address different roles of cloud actors and its obligations under relevant regulations. In addition, the seminar will discuss liability issues for providing cloud services in an international dimension. At the outset of the seminar a knowledge test will be conducted. The seminar will include regulatory aspects of the use of cloud computing, including regulatory control issues.

Audience:

The target group of this workshop include representatives of regulatory bodies, dealing with clould computing matters, telecommunications issues, consumer protection issues, cyber security issues, data protection issues.

Trainer:

Dr hab. Andrzej Krasuski

FEATURES OF 5G TECHNOLOGY IMPLEMENTATION AT THE LOCAL (SOME TOWNS), REGIONAL (DISTRICT, REGION) AND NATIONAL LEVEL

| 2 - 3 July 2020 |

Odessa, UKRAINE

ORGANISED BY

LANGAGE

English

FEES

100 USD

MODE

Face-to-face (Blended)

DURATION

2 days

REGISTRATION DEADLINE

July 2, 2020

COURSE CODE

TBC

Description:

The purpose of the Workshop is to give to the participants the information on modern and perspective technologies for mobile communications and broadband access. The Workshop will allow participants in future personally to assist introduction and development of 5G mobile communication and broadband access networks.

After the Workshop, participants will have an understanding of:

- main radio interfaces of 5G
- technologies used at the 5G physical layer, in particular the technical data, the frequency bands, spectral efficiency and the main technologies used at the physical layer
- principles of implementation of the 5G physical layer, in particular formation and processing of broadband signals; principles of 5G network implementation, in particular network architecture
- principles of the frequency planning for 5G networks , in particular of the radio channel models for of mobile networks, principles of calculation of radio channel and coverage, finding of trade-off between "power efficiency" and "frequency efficiency" in modern broadband access systems
- further evolution of 5G networks

Audience:

This workshop is targeted at technical staff, engineers, senior and mid-level management staff of telecommunications service providers, telecommunication and broadcasting companies. It is also of interest to employees of Telecommunication Authorities dealing with the issues of broadband network development, audio and multimedia broadcasting.

Trainer:

Mr. Vadim Kaptur

CODATA/RDA RESEARCH DATA SCIENCE SUMMER SCHOOL

| 3 – 14 August 2020 |

Trieste, ITALY

ORGANISED BY

The Abdus Salam International Centre for Theoretical Physics

LANGAGE

English

FEES

500 USD

MODE

Face-to-face

DURATION

10 days

REGISTRATION DEADLINE

12 June 2020

COURSE CODE

TBC

Description:

This course introduces selected topics from Research Data Science and hands-on exercises are provided to develop/build a range of data related skills and competence including data analysis techniques

Audience:

The training course is designed for:

- Professionals, Engineers, Researchers and Scientists
- This inter-disciplinary activity is suitable for disciplines and domains
- Regulators and others

Trainer:

- R. Barlow, University of Huddersfield, UK
- E. Okereafor, Big Data Academy, USA
- H. Shanahan, Royal Holloway University London, UK
- R. Quick, Indiana University, USA
- Giuseppe La Roca, European Grid Initiative
- Clement Onime, ICTP

CODATA/RDA ADVANCED RESEARCH DATA SCIENCE WORKSHOPS

| 17-21 August 2020 |

Trieste, ITALY

ORGANISED BY

The Abdus Salam International Centre for Theoretical Physics

LANGAGE

English

FEES

250 USD

MODE

Face-to-face

DURATION

5 days

REGISTRATION DEADLINE

12 June 2020

COURSE CODE

TBC

Description:

Parallel hands-on (with real or simulated data) workshops covering domain specific applications of Data Science for Research work in five different domains of:

Bioinformatics: Covers building Machine Learning workflows using NGS Data. Topics include: Experimental design; Introduction to NGS data analysis; Machine Learning in NGS; and CWL.

IoT and Big Data Analytics: Covers big-data analytics, real-time streaming or processing and sentiment analytics for both general and IoT applications. Some coding would be presented in the Java Programming Language and involves introduction to BDA pipelines using Apache Spark, Kafka and Cassandra.

Climate Data Sciences: Covers on-line and cloud computing based data access, processing and visualisation tools for Climate Science, including the Copernicus climate data services platforms and the CMIP Earth System Grid.

Computational Nuclear Engineering: Covers open-source tools and techniques (from basic to machine learning ones) for analyzing scientific big-data with focus on nuclear engineering applications.

Extreme sources of Data in High Energy Physics: Covers phenomenological, experimental and data-analysis aspects of the Standard Model; software development and tools for data analysis and reproducible science and sharing in particle physics.

Audience:

The training course is designed for:

- Professionals, Engineers, Researchers and Scientists
- From one of the listed domains or a related domain
- Regulators and others operators related to the domain

Trainer:

- E. Okereafor, Big Data Academy, USA
- Bioinformatics instructors
- A Tompkins, ICTP
- Computation Nuclear Engineering instructors
- Instructors on High Energy/Particle Physic

TECHNICAL, BUSINESS AND REGULATORY ASPECTS OF 5G NETWORKS

| 24-31 August 2020 |

ORGANISED BY

National Institute of Telecommunications

LANGAGE

English

FEES

150 USD

MODE

Online

DURATION

8 days

REGISTRATION DEADLINE

24-31 August 2020

COURSE CODE

TBC

Description:

This course will focus on technical, business and regulatory aspects of the 5G mobile networks. It include will 4G mobile technology transition toward the 5G, considering the access and core networks as well as end-user services. Mobile broadband Internet after 4G will continue with the next generation, 5G, so the course will cover also IPv6 and its impact on 5G mobile networks. Further, it will include M2M (Machine-to-Machine) and mobile Internet of Things (IoT) services are foreseen types in future 5G mobile environments, as well as mobile cloud computing implementations. Also, the course will include spectrum management for IMT (International Mobile Telecommunications) including the 5G considerations. The QoS in mobile networks going from 3G/4G mobile world toward the 5G will continue to be important, hence the course will also focus on QoS and QoE in next generation mobile environments. Finally, the course will focus on emerging services and applications in 5G mobile networks in different verticals, including technology, as well as their business and regulation aspects.

Audience:

This course is targeted at managers, engineers and employees from regulators, government organisations, telecommunication companies and academia, who are interested in understanding, implementation and regulation of technical, business and regulatory aspects of 5G network, including technologies, standardization, regulation and content. Other institutions and individuals that are dedicated in building their capacity related to technical, business and regulatory aspects of 5G network are also welcome to participate.

Trainer:

Prof. Dr Toni Janevski

INCIDENT RESPONSE PRACTICE HANDS-ON SCENARIO-BASED TRAINING

| 7-10 September 2020|

Vilnius, LITHUANIA

ORGANISED BY

NRD Cyber Security

LANGAGE

English

FEES

800 USD

MODE

Face-to-face

DURATION

4 days

REGISTRATION DEADLINE

7-10 September 2020

COURSE CODE

TBC

Description: For the efforts towards strengthening cyber security to be successful, technical teams must be specifically trained on practicalities of incident response. The course is designed to empower incident handlers to be effective at their work.

Data breaches are everywhere, and they're showing no signs of slowing down. Internal and external threats pose big risks to all types of organizations, only the damage and recovery time could be different. The training is dedicated to measure the readiness of CSIRT to deal with the most often real-world cases of cyber security incidents. The course is composed of series of exercises by providing participants with questionnaires and practical assignments on specific types of cyber security incidents.

Participants will be provided a set of specific pre-defined real-life incident scenarios. Several different incident handling cases are simulated to students and focused on incident detection and description, information gathering, analysis tools and techniques and incident handling phases by using RTIR (or related) tool. Cyber threat hunting tips are also provided to deeper knowledge in incident handling.

During hands-on exercises, participants will work with the following topics:

- Incident management key components;
- Information sources available, such as zone-h, shodan, pastebin, host and network logs;
- E-mail incidents investigation;
- Network logs-based incidents investigation;
- Host logs-based incidents investigation.

Prerequisite: participants are required to bring a laptop

Audience: The course is designed for CIRT members and all incident handlers who wish to be effective at their work.

Trainer: The training is led by prominent experts who are on daily basis involved in CSIRT related activities at national and organizational level in Lithuania and abroad.

Marius URKIS - NRD CIRT lead, cyber security incident handling and forensics expert

Rimtautas ČERNIAUSKAS - Technical cyber security consultant and investigator

INDUSTRIAL CYBER SECURITY AND INCIDENT RESPONSE

| 9-11 September 2020 |

PLACE

ORGANISED BY

Technische Hochschule Brandenburg
University of Applied Sciences
Institute for Security and Safety

LANGAGE

English

FEES

1250 USD

MODE

Face-to-face

DURATION

3 days

REGISTRATION DEADLINE

1 September 2020

COURSE CODE

TBC

Description:

This course will provide students with unique expertise in the area of critical infrastructure cyber security. The course will cover typical threats and vulnerabilities typical to it and industrial control systems.
Another part of the course will be dedicated to a case study on incident response in a hypothetical environment. This will be continued by the practical part, where students will play the role of hackers, who a targeting industrial control and security systems of the improvised company with the break-out session on consequences and potential mitigation strategies.

Audience:

Operational engineers, inhouse security specialists, ot security specialists

Trainer:

Dmytro Cherkashyn

AUTOMATION OF BROADBAND NETWORKS DESIGNING:

SELECTING THE MOST APPROPRIATE SOLUTIONS TO BUILD NETWORK

| 24 - 25 September 2020 |

Kostanay, KAZAKHSTAN

ORGANISED BY

LANGAGE

Russian

FEES

Free

MODE

Face-to-face (Blended)

DURATION

1 Day

REGISTRATION DEADLINE

24 September 2020

COURSE CODE

TBC

Description:

This training aims to introduce participants to modern methods of telecommunication network designing and the principles of its automation. It is focused on the aspects of broadband networks designing. Automated selection of the most appropriate solutions to build network using the Broadband Calculator online tool is considered. The training will allow participants to contribute personally to the implementation and development of telecommunication networks in future.

Upon completion of this training, participants will have understanding of:

- the position of telecommunications networks designing in the entire designing process;
- modern approaches to choosing the most promising solution for building telecommunications networks;
- method of choosing the most promising solution for building broadband access networks;
- automation of choosing the most promising solution for building broadband access networks

Audience:

This training is targeted at technical staff, engineering staff of telecommunication providing companies, telecommunications and broadcasting companies. The training can also be of interest to employees of Telecommunication Authorities of countries dealing with the issues of broadband network development.

Trainer:

Vadim Kaptur

5G TECHNOLOGIES FOR IOT

| 28 - 30 September 2020 |

Trieste, ITALY

ORGANISED BY

The Abdus Salam International Centre for Theoretical Physics

LANGAGE

English

FEES

300 USD

MODE

Face-to-face

DURATION

3 days

REGISTRATION DEADLINE

28 August 2020

COURSE CODE

TBC

Description:

5G technologies address a variety of applications in many fields, but those related with IoT are of particular interest given the great number of devices that are being connected.There is no doubt that 5G will play a pivotal role, both in massive and in critical applications.

This capacity building course aims to provide the audience with an understanding of the 5G aspects relevant to IoT. Participants will be exposed to the general aspects of wireless networking with the particular requirements of machine type communications and will then dive into specifics of LTE-M and NB-IoT.

Practical examples of 5G technologies for IoT will be demonstrated.

Audience:

The training course is designed for:

- Electrical engineers
- Telecommunications engineers
- Computer scientists
- Regulators
- Telecom Operators
- Networks Operators

Trainer:

Mr. Marco Zennaro

QoS Technologies and Regulation for Fixed and Mobile

| 28 September – 5 October 2020 |

ORGANISED BY

National Institute of Telecommunications

LANGAGE

English

FEES

150 USD

MODE

Online

DURATION

8 days

REGISTRATION DEADLINE

28 September 2020

COURSE CODE

TBC

Description:

This course will focus on technical, business and regulatory aspects of QoS for Fixed and Mobile Networks. It includes QoS (Quality of Service) and QoE (Quality of Experience) fundamentals by ITU, as well as traffic and QoS management in Internet and IP networks. Further, it includes QoS for fixed ultra-broadband access, including QoS solutions in metallic and optical networks, carrier grade Ethernet QoS, as well as end-to-end QoS.

The course also covers QoS for mobile ultra-broadband access, including 4G and 5G mobile technologies and their QoS capabilities and approaches. The telecom networks are built for provision of services. In that manner the course covers QoS-enabled services provisioning, including QoS and QoE for VoIP, video and IPTV services, as well as QoS for Internet data services (i.e., Over-The-Top services). Each telecommunication network is interconnected to other networks forming the global network of Internet and managed IP networks, so the course includes interconnection and its QoS aspects. Further, it covers generic and specific QoS parameters, KPIs (Key Performance Indicators) and their measurements.

The global Internet is based on network neutrality approach for OTT/data services, so the course also covers network neutrality and its regulation. The QoS constantly increases in its importance with the digitization and innovation of various critical services, so the course includes QoS regulatory framework based on technical, business/economic and regulatory principles of QoS for services over fixed and mobile networks.

Audience:

This course is targeted at managers, engineers and employees from regulators, government organisations, telecommunication companies and academia, who are interested in understanding, implementation and regulation of QoS for Fixed and Mobile networks, including technologies, standardization, and regulation. Other institutions and individuals that are dedicated in building their capacity related to QoS Technologies and Regulation for Fixed and Mobile Networks are also welcome to participate.

Trainer: Prof. dr Toni Janevski

INTERNET OF THINGS, BIG DATA AND ARTIFICIAL INTELLIGENCE TECHNICAL, BUSINESS AND REGULATORY ASPECTS

| 22-23 October 2020 |

Warsaw, Poland

ORGANISED BY

National Institute of Telecommunications

LANGUAGE

English

FEES

500 USD

MODE

Face-to-face

DURATION

2 days

REGISTRATION DEADLINE

21 October 2020

COURSE CODE

TBC

Description:

This course will focus on technical, business and regulatory aspects of Internet of Things (IoT), Big Data and Artificial Intelligence (AI). It will cover Internet technologies for IoT, then IoT standards, architectures and interoperability, as well as IoT policies and regulations, including IoT security and privacy issues. The course will include IoT services in 4G and 5G mobile systems, including massive IoT and critical IoT use cases. The IoT generates large amounts of data that cannot be processed by traditional techniques, and such data is referred to as Big Data. In that manner, the course will include Big Data overview, Big Data ecosystem and reference architecture, Big Data technologies and use cases, as well as business and regulatory challenges for Big Data. Artificial Intelligence (AI) is targeted for processing Big Data in Internet and telecom networks. In that regard the course will cover introduction to AI in ICT/telecom world, and AI applications in Internet and telecom worlds, including Machine Learning aspects for 5G mobile networks. The course will further include Big Data and AI challenges, business aspects, as well as policies and regulation. Finally, the course will cover Internet governance with regard to IoT, Big Data, and AI.

Audience:

This course is targeted at managers, engineers and employees from regulators, government organisations, telecommunication companies and academia, who are interested in understanding, implementation and regulation of Internet of Things (IoT), Big Data and Artificial Intelligence (AI), including technical, business and regulatory aspects. Other institutions and individuals that are dedicated in building their capacity related to IoT, Big Data and AI, including technical, business and regulatory aspects, are also welcome to participate.

Trainer: Prof. Dr. Toni Janevski

Venue: National Institute of Telecommunications (NIT), Szachowa 1, 04-894, Warsaw, Poland

THE USE OF ADAPTIVE TECHNOLOGIES TO TRANSMIT VIDEO OVER RADIO CHANNELS

| 5 - 6 November 2020 |

Odessa, UKRAINE

ORGANISED BY

LANGAGE

Russian

FEES

Free

MODE

Face-to-face (Blended)

DURATION

2 days

REGISTRATION DEADLINE

November 5, 2020

COURSE CODE

TBC

Description:

Upon completion of this training, participants will have understanding of:

- Methods of analyzing the impact of uneven distribution of users in the cells on the network bandwidth for reconfiguring devices in the network and increasing bandwidth in general;
- Functional model of adaptive video transmission system in radiocommunication channels;
- Technology of creation, preparation, reception / transmission of video information for civil purposes.

Audience:

This training is targeted at designers of digital broadcasting and wireless telecommunications systems in a variety of environments. The training will be also useful for specialists engaged in:

- provision of high-quality communication in urban terrain and high-quality color reproduction in various shooting and playback conditions
- designing antenna systems and improving them by applying adaptive technologies
- acoustic design of premises and provision of spatial sound in broadcasting systems
- introduction of new systems of visual information compression.

Also, the training may be of interest for the staff of organizations, enterprises and institutions dealing with the development of adaptive wireless communication systems, transmission of video content and information.

Trainer:

Vladimir Pilyavsky

APPLICATIONS OF SATELLITE BASED IOT NETWORKS

| 16-17 November 2020|

Trieste, ITALY

ORGANISED BY

The Abdus Salam International Centre for Theoretical Physics

LANGAGE

English

FEES

200 USD

MODE

Face-to-face

DURATION

2 days

REGISTRATION DEADLINE

TBD

COURSE CODE

TBC

Description:

Satellite technology has an important role in driving the growth momentum behind the Internet of Things (IoT) and unlocking the promise of connected devices worldwide. Satellites serves as a key enabler for IoT applications across industries and across geographical borders.

In this capacity building activity we will cover technologies of GEO (geostationary) satellites in C-, Ku- and Ka-band, new LEO (low earth orbit) or HEO (highly elliptical orbit) constellations, as well as the new developments in nanosatellites.

As controlling the cost per device is of essence for the success of IoT applications, we will cover the sustainability issue of satellite-based IoT applications.

Audience:

The training course is designed for:

- Electrical engineers
- Telecommunications engineers
- Computer scientists
- Regulators
- Telecom Operators
- Networks Operators

Trainer:

Ermanno Pietrosemoli, ICTP

Marco Zennaro, ICTP

MOBILE BROADBAND INTERNET, 5G AND FUTURE SERVICES

| 17 November - 14 December 2020 |

ORGANISED BY

LANGUAGE

English

FEES

150 USD

MODE

Online

DURATION

28 days (4 weeks)

REGISTRATION DEADLINE

16 November 2020

COURSE CODE

TBC

Description:

This course will cover mobile broadband Internet, 5G and future services, including technologies, regulation and business aspects. The course will cover Internet and IP mobility management approaches, Mobile IPv6, and mobile Internet governance. Also, it will include 4G/4.5G access, LTE-Advanced and LTE-Advanced Pro, Evolved Packet System (EPS) architecture, WiFi traffic offload, 4G QoS, small cells approaches, and spectrum management. Further, the course will cover 5G New Radio (NR) access, 5G Next Generation core, 5G network slicing/virtualization and SDN (Software Defined Networking), 5G QoS, 4G to 5G transition, and 5G spectrum management including 5G practical implementations. It will also include mobile/wireless Internet of Things (IoT) in 4G and 5G, including massive and critical IoT services, as well as Multi-access Edge Computing (MEC) and fog computing. It will also include enhanced Mobile Broadband (eMBB), Ultra-Reliable and Low-Latency Communication (URLLC) and massive Machine Type Communication (mMTC), as well as use of Artificial Intelligence (AI) and Machine Learning for 5G. Finally, the course will cover future mobile OTT **services and Internet net neutrality, VoLTE and VoNR, 5G** media streaming, AR/VR, 5G TV broadcast, 5G fixed-wireless access, vehicular to everything (V2X), industrial automation, 5G smart services, as well as business and regulatory aspects of future services.

Audience:

This course is targeted at managers, engineers and employees from regulators, government organisations, telecommunication companies and academia, who are interested in understanding, implementation and regulation of Mobile Broadband Internet, 5G and Future Services, including technologies, regulatory and business aspects. Other institutions and individuals that are dedicated in building their capacity related to Mobile Broadband Internet, 5G and Future Services are also welcome to participate.

Trainer:

Prof. Dr. Toni Janevski

LEGAL ASPECTS OF ARTIFICIAL INTELLIGENCE IN BUSINESS, HOUSEHOLD AND PUBLIC SECTOR

| 8-9 December 2020 |

Warsaw, POLAND

ORGANISED BY

National Institute of Telecommunications

LANGUAGE

English

FEES

500 USD

MODE

Face-to-face

DURATION

2 days

REGISTRATION DEADLINE

8 December 2020

COURSE CODE

TBC

Description:

The subject matter of this stationary workshop is the discussion of legal framework applicable to Artificial Intelligence with international focus. By discussing the application of Artificial Intelligence, various types of Artificial Agents in many spheres of life will be considered, including: business activity, household, and the public sector. During the workshop different definitions of Artificial Intelligence will be considered and discussed from a legal point of view. The workshop will also encompass liability issues connected with the use of Artificial Intelligence, including robots. Various concepts of liability will be assessed. During the workshop various examples of the application of Artificial Intelligence will be included. In addition, recommendations for future legislation will be presented and analysed. At the outset of the workshop a knowledge test will be conducted.

Audience:

The target group of this workshop include representatives of regulatory bodies, dealing specifically with Artificial Intelligence issues, but also with consumer protection issues, cyber security issues, data protection issues.

Trainer:

Dr hab. Andrzej Krasuski

Venue:

National Institute of Telecommunications (NIT), Szachowa 1, 04-894, Warsaw, Poland

Ms Ruta Jasinskiene

Head of Training

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Published in Switzerland
Geneva, 2019

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