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|  | **Annex 1****TRAINING OUTLINE****ITU CENTRES OF EXCELLENCE NETWORK FOR ASIA PACIFIC REGION****Conformity and Interoperability for Internet of Things****30 October -3 November 2017, Shanghai, China**  | 院标-2上标下字 |

**COURSE DESCRIPTION**

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| Title  | **Conformity and Interoperability relating to Internet of Things (IoT)** |
| Method of delivery | Face-to-face  |
| Objectives | * To equip participants with an understanding of  ITU Conformity and Interoperability, Programme, its Implementation, as well as Conformity Assessment Principles;
* To equip participants with an understanding of policy, supervision, requirement and conformity assessment and interoperability etc. for new technology;
* To build knowledge to participants with IoT general development trends and its standardization progress and standard system, hot technology, security related issues on interoperability of IoT;
* To build participants’ knowledge and skills with practical solutions and technical planning of several kinds of IoT application areas, such as industrial internet, smart city, smart home etc.
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| Dates | 30 October–3 November 2017 |
| Duration | Five days |
| Registration deadline | 30 September 2017 |
| Training fees | Free with support from the China Academy of Information and Communication Technology (China) |
| Course code | **17WS20472ASP-E** |

**LEARNING OUTCOMES**

Upon completion of this training, participants will be able to

* Understand the development and implementation of conformity assessment programmes;
* Understand the basic C&I frame for new technology , focusing on what to do, how to do;
* Understand the general development trends, standardization process and system, hot technology, equipment safety on interoperability of IoT;
* Understand the development status, practical solutions and technical planning of several kinds of IoT application areas.

**TARGET POPULATION**

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

**FACILITATOR/EXPERTS**

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| **NAME OF TUTOR(S)/INSTRUCTOR(S)** | **CONTACT DETAILS** |
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**EVALUATION**

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

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| Evaluation Parameter | Weightage ( in %) |
| Quizzes and presentations | 60 % |
| Attendance  | 10 % |
| Participation | 30 % |

The minimum passing requirement for certificate is 60%.

**DRAFT TRAINING SCHEDULE AND CONTENTS / AGENDA**

**(Updated information will be available at** [**http://www.itu.int/itu-d/asp**](http://www.itu.int/itu-d/asp)**)**

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| **Monday 30 October 2017 ( Day-1)** |
| **08:30 -09:00** | **Registration** |
| **09:00-10:20** | Opening Session |
| **10:20 - 10:40** | **Morning Break** |
| **10:40-11:20** | Session 1-1: Global and ITU C&I standard system* Introduction of the Global and ITU C&I standard system
 |
| **11:20-12:00** | Session 1-2 : Management Principles (regulatory framework – Network Access License)* Introduction of Chinese Supervision and Conformity Assessment Principles for New Technology using in Communication Network
 |
| **12:00-14:00** | **Lunch Break** |
| **14:00-14:40** | Session 1-3: Management Principles (regulatory framework – Certification)* Introduction of China's certification System for equipment
 |
| **14:40-15:30** | Session 1-4: New Tech. of Communication Networks – Technology Standards (standardization system)* Introduction of the Chinese Development of Technology Standards for Network Equipment with New Technology
 |
| **15:30 – 15:50** | **Afternoon Break** |
| **15:50-17:00** | Session 1-5: C&I in member countries (experience of each country)* About new technology policy & supervision, etc. in each country
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| **Tuesday 31 October 2017 (Day-2)** |
| **09:30-10:30** | Session 2-1 :The general development trends of IoT (general overview–development trend)* Background: The IoT era is coming
* The significant IoT technological advances
* The development and competition of global IoT industry
* The application development in three fields：industry,  consumption and urban management
* Aanalysis of the challenge
 |
| **10:30 - 11:00** | **Morning Break** |
| **11:00-12:00** | Session 2-2: IoT standardization activities and progress (general overview–Standardization)* IoT ecosystem
* Key technologies enabling IoT infrastructure
* IoT standardization activities
* IoT standard system
* IoT standardization progress (incl. ITU- SG20 and CCSA)
* IoT Standardization challenges
 |
| **12:00-14:00** | **Lunch Break**  |
| **14:00-15:00**  | Session 3-1: Attributes and testing challenges of IoT terminals – NB-IoT as an example (hot technology -- NBIoT)* Overview of the conformance testing  standardization, testing  methods and certification system of traditional communication terminals;
* Standardization progress of NB-IoT terminals and key testing technologies;
* Analysis of the testing difference between NB-IoT terminals and LTE terminals;
* Recommendations for the testing of NB-IoT terminals and progress of industrial certification.
 |
| **15:00 -16:00** | Session 3-2: Introduction of Wi-Fi standardization and Interoperability Certification Test (hot technology -- WiFi)* Wi-Fi Alliance and Industry Overview
* Roadmap of Wi-Fi standardization
* Wi-Fi Interoperability Test Programs Focus
 |
| **16:00 – 16:30** | **Afternoon Break** |
| **16:30-17:30** | Session 3-3: Bluetooth Technology Scheme (hot technology-Bluetooth)* Introduction of the basic concepts, evolution, application;
* Comparison with other similar technologies (applicable scenarios, especially in IoT environment);
* Testing and testing systems concerning Bluetooth technology in an on-demand manner.
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| **Wednesday 1 November 2017 ( Day-3)** |
| **09:30-12:00** | Visiting the Shanghai Internet of Things Company |
| **12:00 - 14:00** | **Lunch Break** |
| **14:00-15:00****15:00-17:30** | Lab-tour (visiting East China Branch with first-hand operations)Hand-in operation in the lab |
| City and Local tour  |

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|  **Thursday 2 November 2017 (Day-4)** |
| **09:30-10:30** | Session 4-1:The Introduction about Security Risks of Internet of Vehicles (test of devices - security)* The Overview of Internet of Vehicle
* The Development of Internet of Vehicle
* Internet of Vehicle Standardization Activities
* Security Risk Analysis of Internet of Vehicle
 |
| **10:30 - 11:00** | **Morning Break** |
| **11:00-12:00** | Session 4-2: Evaluation Protocols for the Safety of the IoT devices: (test of devices – environment-friendliness)* The difference of IoT devices in terms of their appearances, functions and applicable scenarios.
* The ambiguity on adopting the appropriate standards for the IoT devices.
* The evaluation protocol based on the operational modality and installing environment of individual device.
* The analysis of risk based on the classification of the individual usage scenario.
 |
| **12:00 - 14:00** | **Lunch Break**  |
| **14:00-14:40** | Session 5-1: IoT-related technologies and applicable areas (application- general overview)* IoT architecture;
* Typical technologies and applications at different layers;
* Development trends of technologies at different layers;
* Industrial applications of IoT.
 |
| **14:40-15:40** | Session 5-2: Introduction about Industrial Internet(IIoT) and relevant standardization activities (application-Industrial Internet)* Concept of IIoT
* Development of IIoT
* IIoT standardization activities
* Standard items introduction, i.e. IIoT network interconnection, IIoT platform, industrial PON…
 |
| **15:40-16:20** | Session 5-3:Implementation of IOTs in Agriculture Industry in China (application-Smart Agriculture)* The ambition of the IOT implementation in China agriculture industry
* IOT Farming Market Overview
* The structure and principle of the IoT agriculture
* IOT application in China farming
* IOT: various farming scenarios benefits
* Farming analysis & major functionality
 |
| **16:20 -16:50** | **Afternoon Break** |
| **16:50-17:30** | Session 5-4: Research on the Key Technology and Industry in Connected and Automated Vehicles (application-Internet of Vehicles)* The Concept of Connected and Automated Vehicles
* The Key Technologies of Connected and Automated Vehicles
* The Industry Development of Connected and Automated Vehicles
* The Future View of Connected and Automated Vehicles
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|  **Friday 3 November 2017 (Day-5)** |
| **09:30-10:30** | Session 5-5: Development and Practice of Smart City in China(application – Smart City)* Overall progress of smart city in China
* Smart city focus areas
* Character of smart city in China
* Future development direction of Smart city
 |
| **10:30-11:00** | **Morning Break** |
| **11:00-12:00** | Session 5-6:Research and analysis on intelligent renovation home (application - Smart Home)* Defined the Smart home and introduced the history of the development of smart home.
* Analyzes the status and share some data of the Smart home Renovation.
* Future development direction of Smart home
 |
| **12:00 - 14:00** | **Lunch Break** |
| **14:00-15:00** | Session 5-7: Status and Trends of eHealth in China (application–Smart Health)* Background
* Concept and scope
* Current status of eHealth in China
* Future development direction of eHealth in China
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| **15:00-15:30** | **Afternoon break** |
| **15:30 -16:30** | Summary （including Test） |
| **16:30-17:00** | Evaluation for this training course  |
| **17:00-17:30** | Closing Session |

**METHODOLOGY**

The face-to-face programs will include

* + Instructor-led presentations,
	+ Case studies,
	+ Group exercises

**TRAINING COORDINATION**

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| **ITU coordinator:**Mr. Sameer Sharma, Senior Adviser,ITU Regional Office for Asia & the Pacific, 5th Floor, Thailand Post Training Centre,111Moo3 Chaengwattana Road, Laksi Bangkok 10210,ThailandTel: +66 257 500 55, FAX: +66 257 535 07 Email: Sameer.sharma@itu.int **CAICT (China) coordinator:**Ms. Ying Wang, CAICT Tel: +86 10 62304471, Fax: +86 62304735Email: wangying@caict.ac.cn  |

**REGISTRATION**

**Registration for the training program**

Please complete the form in Annex 3 and return back to Ms. Shi Xiaoning(shixiaoning@caict.ac.cn) with copy for information to Mr. Sameer Sharma (sameer.sharma@itu.int).

**Registration on ITU Academy Portal**

As the course evaluation will be carried out online, participants are also requested to register online at the ITU Academy platform. Registration should be made at "https://academy.itu.int” by following the steps:

**Skip STEP 1,** *if you already have a username and password*

**Step 1:** Create a new account in the ITU Academy portal at <https://academy.itu.int/index.php?option=com_hikashop&view=user&layout=form&Itemid=559&lang=en>. After completing the registration form, a message will be sent to your e-mail address inviting you to log in to the platform.

**Step 2:** Once you are logged in, you can search for the course in the training catalogue or directly proceed to the course link:

[**https://academy.itu.int/index.php?option=com\_joomdle&view=coursecategoryextended&cat\_id=:&course\_id=1171:conformity-and-interoperability-for-internet-of-things&Itemid=476&lang=en**](https://academy.itu.int/index.php?option=com_joomdle&view=coursecategoryextended&cat_id=:&course_id=1171:conformity-and-interoperability-for-internet-of-things&Itemid=476&lang=en)

**Step 3: Click on “Enroll me into this course” and type in the following enrolment key: 17WS20472ASP-E. You will then be able to access the course page.**

*Please note that online registration should be done* ***before 30 September 2017****.*