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# 5G Security in ITU-T SG17

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# Mandate and Vision for ITU-T SG17



## **Mandate:**

ITU-T Study Group 17 is responsible for building confidence and security in the use of information and communication technologies (ICT).

- Providing security by ICTs (vertical)
- Ensuring security for ICTs (horizontal)

## **Vision**

- A center of security competence with more participation from ITU membership
- Study new emerging areas and produce high quality technical Recommendations
- Increase collaboration/cooperation with other international organizations

# 5G Security in SG17



- ❑ X.1121 - X.1127 on Mobile security
- ❑ X.1147: Security requirements and framework for big data analytics in mobile internet services
- ❑ X.1811: Security guidelines for applying quantum-safe algorithms in IMT-2020 systems
- ❑ X.1812: Security framework based on trust relationship in IMT-2020 ecosystem
- ❑ X.1813: Security requirements for operation of vertical services supporting ultra reliable and low latency communication (URLLC) in IMT-2020 private networks
- ❑ X.1814: Security guideline for IMT-2020 communication system
- ❑ **X.5Gsec-srocv: Security Requirements for the Operation of IMT-2020 Core Network to Support Vertical Services**
- ❑ **X.5Gsec-ecs: Security framework for IMT-2020 edge computing services**
- ❑ **X.5Gsec-message: Security Requirements for IMT-2020 message service**
- ❑ **X.5Gsec-netec: Security capabilities of network layer for IMT-2020 edge computing**
- ❑ **X.5Gsec-ssl: Guidelines for classifying security capabilities in IMT-2020 network slice**

Note: approved ITU-T Recommendations are shown in black font. Ongoing/not completed work items are in blue font.



- ❑ X.1038: Security requirements and reference architecture for SDN
- ❑ X.1041: Security framework for voice-over-long-term-evolution (VoLTE) network operation
- ❑ X.1042: Security services using the Software-defined networking
- ❑ X.1043: Security guideline of Service Function Chain based on SDN
- ❑ X.1044: Security Requirements of Network Virtualization
- ❑ X.1045: Security Service Chain Architecture
- ❑ X.1046: Guideline on software-defined security in SDN/NFV network
- ❑ X.1047: Security requirements and architecture for network slice orchestration and management

# 5G related work in SG17 – Cloud computing security



- ❑ X.1603: Data security requirements for the monitoring service of cloud computing
- ❑ X.1604: Security requirements of network as a service (NaaS) in cloud computing
- ❑ X.1605: Security requirements of public infrastructure as a service (IaaS) in cloud computing
- ❑ X.1606: Security requirements for communication as a service (CaaS) application environments
- ❑ X.1631 | ISO/IEC 27017: Information technology – Security techniques – Code of practice for information security controls based on ISO/IEC 27002 for cloud services
- ❑ X.1641: Guidelines for cloud service customer data security
- ❑ X.1642: Guidelines for the operational security of cloud computing
- ❑ X.1643: Security guidelines for container in cloud computing environment
- ❑ **X.BaaS-sec: Guideline on DLT as a service (BaaS) security**
- ❑ **X.gecds: Guideline on edge computing data security**
- ❑ **X.nssa-cc: Requirements of network security situational awareness platform for cloud computing**
- ❑ **X.sgcnp: Security guidelines for cloud native PaaS**
- ❑ **X.sgdc: Security guidelines for distributed cloud**
- ❑ **X.sgmc: Security guidelines for multi-cloud**
- ❑ **X.sr-cphr: Security requirements of cloud-based platform under low latency and high reliability application scenarios**
- ❑ **X.soar-cc: Framework of Security Orchestration, Automation and Response for cloud computing**

# Other 5G Security related work in SG17 – Big data, etc



## □ Big data security

- ▣ X.1750: Guidelines on security of big data as a service (BDaaS) for Big Data Service Providers
- ▣ X.1751: Security guidelines on big data lifecycle management for telecommunication operators
- ▣ X.1752: Security guidelines for big data infrastructure and platform
- ▣ X.gdsml: Guidelines for data security using machine learning in big data infrastructure

## □ cryptographic profiles for 5G security

- ▣ X.509, etc
- ▣ X.676: OID-based resolution framework for IoT group services

## □ **ITU Workshop on Security for 5G and beyond, 22 August 2022**

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谢谢

Thank you

Merci

Спасибо

Gracias

# Backup slides





# ITU IMT-2020 Standardization Roadmap



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#### IEEE 1609.2-2016

**Subject:** IEEE Standard for Wireless Access in Vehicular Environments--Security Services for Applications and Management Messages

**Responsible group:** IEEE

**Topic(s):** Wireless; IMT-2020

#### IEEE 1609.2a-2017 (Amendment to IEEE Std 1609.2-2016)

**Subject:** IEEE Standard for Wireless Access in Vehicular Environments--Security Services for Applications and Management Messages - Amendment 1

**Responsible group:** IEEE

**Topic(s):** IMT-2020

#### IEEE 1609.3-2016

**Subject:** IEEE Standard for Wireless Access in Vehicular Environments (WAVE) – Networking Services

**Responsible group:** IEEE

**Topic(s):** IMT-2020

#### IEEE 1609.4-2016

**Subject:** IEEE Standard for Wireless Access in Vehicular Environments (WAVE) – Multi-Channel Operation

**Responsible group:** IEEE



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#### ITU-T Y.4114 (07/2017)

**Subject:** Specific requirements and capabilities of the Internet of things for big data

**Responsible group:** 20

**Topic(s):** IMT-2020

... Numbering, addressing and naming Y.500–Y.599 Operation, administration and maintenance Y.600–Y.699 **Security** Y.700–Y.799 Performances Y.800–Y.899 INTERNET PROTOCOL ASPECTS General Y.1...

#### TS 24.502

**Subject:** Access to the 3GPP 5G System (5GS) via non-3GPP access networks; Stage 3

**Responsible group:** 3GPP TSG CT1

**Topic(s):** IMT-2020

#### ITU-T Y.3110 (09/2017)

**Subject:** IMT-2020 Network Management and Orchestration Requirements

**Responsible group:** ITU-T SG13

**Topic(s):** IMT-2020

...he status and events of the instantiated slice resources for the purpose of fault, performance, and **security** management. □ The IMT-2020 Slice Lifecycle Management is required to manage the lifecycle of the ma...

#### ITU-T Y.IMT2020-reqts (under study)