

ITU-T STUDY GROUP 17

Security



Heung-Youl Youm
Vice Chairman, SG17
on behalf of

Arkadiy Kremer
Chairman, SG17

Summary of Results
Study Period 2013-2016



Contents



**Study Group 17
Security**

**Future
perspective
of SG17**

Conclusions

Acknowledgements

Additional Slides

- Terms of reference
- Management team
- Structure
- Leadership for other groups (JCAs and FGs)
- Highlights of achievements / Projects
- Highlights of WP1, WP2, WP3, WP4, WP5/17, projects
- Statistics
- Workshops (with SG17 leadership / participation)

Study Group 17- Security

Building confidence and security in the use of ICTs

Cybersecurity

Countering spam

Cloud computing security

IoT security

ITS security

SDN security

Mobile (phone) security

Smart-grid security

Identity management

Information Security Management

Application security

Big Data analytics security

PKI, PMI, Directory

Telebiometrics

Languages
(ASN.1, SDL, MSC, TTCN-3 ...)

Future Perspective of SG17

ICT security (I)



Security



Global Experts

Centre of excellence



Collaboration

Separation of security responsibilities within ITU-T

SG17 | SG13
SG20

Attractiveness of participation

Participate!



ICT security (II)

SG17



Cybersecurity



ITU-D

SG17 as centre of security competence

Implementation of ITU-T Recs

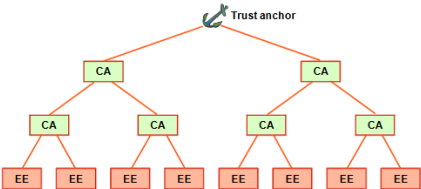
Development of security approaches

Strengthening the trust framework

Information Society



ICT security, PII, PKI



Public key infrastructure (PKI)

Protection of Personally Identifiable Information (PII)

Smart grids



Protection of Children Online

SG17 as lead study group for security

Internet of things (IoT)



SG17

Questions – LSG – JCAs – Projects

SG17 proposed **12** Questions for the next study period and they shall all continue.

SG17 should be the lead study group responsible for:

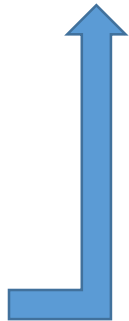


Languages
and
description
techniques

**IDENTITY
MANAGEMENT**

**JCA-IdM and JCA-COP
as well as ASN.1 & OID **Projects**
need to continue given their
important contributions.**

Conclusion



**Increased
Participation
above 150
participants**

SG17 has successfully **evolved** to:

cover new security issues

address new security challenges

with security experts in core Questions.

SG17 achieved significantly **build-up** of participation and energy in:

Identity Management

Cybersecurity

Cloud Computing Security

SG17 has **built strong relations** with other key bodies working on security and conducted numerous **collaborative** efforts

SG17 has **promoted** and **disseminated** ITU-T security work

Acknowledgements

Great thanks are due to the many people who have contributed to the enormous success of SG17 during this study period:

- Delegates with their many contributions
- Editors in drafting texts for Recommendations
- Rapporteurs in leading work efforts
- Liaison officers in coordinating efforts with other bodies
- Project leaders and JCA leaders
- Management team including Working Party chairmen
- TSB support – Counsellors, Assistants and other staff

Best wishes to all for the next study period.

Additional Slides

Supplemental Slides

- Terms of reference
- Management team
- Structure
- Leadership for other groups (JCAs and FGs)
- Highlights of achievements / Projects
- Highlights of WP1, WP2, WP3, WP4, WP5/17, projects
- Statistics
- Workshops (with SG17 leadership / participation).

Terms of Reference

- Current: *Responsible for building confidence and security in the use of information and communication technologies (ICT). This includes studies relating to **cybersecurity, security management, countering spam** and **identity management**. It also includes security architecture and framework, protection of personally identifiable information, and security of applications and services for the Internet of things, smart grid, smartphone, Internet Protocol television (IPTV), web services, social network, cloud computing, mobile financial system and telebiometrics. Study Group 17 is also responsible for the application of open system communications, including directory and object identifiers, and for technical languages, the method for their usage and other issues related to the software aspects of telecommunication systems, and for conformance testing to improve the quality of Recommendations.*
- Future perspective: include security aspects of software-defined networking (SDN), NFV security, and big data analytics.

Management Team (I)

Chairman	Arkadiy Kremer	Russian Federation
Vice-Chairmen	Khalid BELHOUL	United Arab Emirates
	Mohamed M.K. ELHAJ	Sudan
	Mario German	Mexico
	FROMOW RANGEL	
	Antonio GUIMARAES	Brazil
	Zhaoji LIN	China (P.R.)
	Patrick MWESIGWA	Uganda
	Koji NAKAO	Japan
	Sacid SARIKAYA	Turkey
Heung Youl YOUM	Korea (Republic of)	

Management Team (II)

WP Chairmen

WP 1/17	Koji NAKAO	Japan
WP 2/17	Sacid SARIKAYA	Turkey
WP 3/17	Heung Youl YOUM	Korea (Rep. of)
WP 4/17	Antonio GUIMARAES	Brazil
WP 5/17	Zhaoji LIN	China (P.R.)

TSB

Martin EUCHNER	Advisor
Sarah SCOTT	Assistant

Study Group Structure (1/2)

- **WP 1/17, Fundamental security**
Telecommunication/ICT security coordination, security architectures/frameworks, SDN security, network security, telecommunications information security management.
- **WP 2/17, Network and information security**
Cybersecurity, countering spam.
- **WP 3/17, Identity management and cloud computing security**
Cloud computing security, SOA security, identity management and architectures.

Study Group Structure (2/2)

WP 4/17, **Application security**

IPTV security, ubiquitous sensor network security, home network security, peer-to-peer security, IoT security, ITS security, smart-grid security, SDN security, application security services, telebiometrics security, e-health security.

- **WP 5/17, Formal languages**

Directory, PKI/PMI, ASN.1, OID, SDL-2010, ODP, URN, MSC, TTCN-3, maintenance of OSI Recommendations.

- **Joint coordination activities**

JCA-IdM, JCA-COP

- **SG17 Regional Group in Africa.**

Leadership for SG 17-related other groups (I)

■ JCA-IdM

- Co-Chairmen: Mr Abbie BARBIR, Aetna, Mr Hiroshi TAKECHI, NEC
- Represented: SGs 2, 3, 5, 9, 12, 13, 15, 16, 17, American Bar Association, ENISA, ETSI, ISO/IEC JTC 1/SC 27/WG5, ISO/IEC JTC 1/SC17, ENISA, ETSI/ISG, GLEIF, GSMA, OASIS/IdCloud TC, OASIS Trust Elevation TC, OASIS IBOPS, OpenID Foundation, FIDO Alliance, OASIS TC IBOPS, Kantara Initiative, American Bar Association, GLEIF, STORK 2.0 project, and UPU,...
- 10 meetings, 44 documents processed.

Leadership for SG 17-related other groups (II)

■ JCA-COP

- Chairman: Mr Philip RUSHTON, United Kingdom
- Established April 2012
- Represented: ISO/IEC JTC 1/SC 27/WG5, IETF/ISOC, ITU-D Q3/2, DeafKidzInternational, ECPAT, EFC, FCACP, FOSI, GSMA, ICMEC, I-KiZ, and Iran (Islamic Republic of); outreach to COP stakeholders
- 8 meetings, 3 outgoing liaisons.

Highlights of achievements (I)

- SG17 successfully transitioned into a core competency center on security averaging 155 participants.
- SG17 examined 592 contributions and 3017 TDs and developed 49 new, revised 69 Recommendations, and developed 13 Supplements.
- 10 Recommendations currently under AAP or TAP.
- Up to 81 draft new/revised Recommendations currently under development for approval in the next study period.
- 3 Lead Study Group responsibilities, 2 JCAs, and 2 Projects were very active.
- Increased collaboration with SDOs (e.g., joint texts).

Highlights of achievements (II)

- Lead study group for Security
 - Close coordination and collaboration with other SGs and SDOs on security; particular focus has been placed upon partnerships and avoiding potential conflicts in the work.
 - Joint work with several SCs in ISO/IEC JTC 1.
 - Produced 6th edition of the “Security Manual” that promotes ITU-T’s security work.
 - Produced Technical Report on successful use of security standards
 - Security Standards Roadmap and Security Compendium kept up-to-date.

Highlights of achievements (III)

- Lead study group for Telecommunication Security
 - Security collaboration arrangements between SG17 and SG13 on cloud computing security, and between SG17 and SG20 on IoT security.
 - Four workshops held on security.
 - Maintained an on-line listing of SG17 relationships with TCs of ISO and IEC and SCs of ISO/IEC JTC 1 (identifies nature of relation of joint work, common/twin text, cooperation mode, etc) (In response to WTSA-12 Resolution 7).

Highlights of achievements (IV)

- Lead study group for Identity Management
 - Continued collaboration with OASIS on IdM.
 - A WIKI with IdM Roadmap is available from the SG17 web page - provides a compilation of existing and ongoing IdM standards globally & reflects coordination with other bodies.
 - Continuation of Joint Coordination Activity of Identity Management (JCA-IdM).
- Lead study group for Languages and Description Techniques
 - Collaboration with ETSI on TTCN-3, JTC 1/SC 7 on ODP, and JTC 1/SC 6 on ASN.1, OIDs and registration.
 - Supported SDL-Forum and SAM Workshop on languages.

Fundamental Security (WP 1/17) Highlights (I)

- **Telecommunication/ICT security coordination**
 - Management support of other SG17 security Questions
 - Security coordination
 - Security project (see separate slide)
- **Security architecture and framework**
 - Network security architecture, IPv6 security, ...
 - 4 new Recs, 1 new Supplement; 3 under development.
- **Telecommunications information security management**
 - In support of WTSA-12 Resolution 58
 - ISM framework, risk/asset/incident management, PII code of practice, ...
 - 1 revised Rec, 1 new Supplement; 1 in TAP
 - 4 under development.

Network and Information Security (WP 2/17)

Highlights (II)

■ **Cybersecurity**

- In support of WTSA-12 Resolution 50.
- Finalized cybersecurity information exchange (CYBEX), X.1500 series.
- Intense work program; many collaborations with principal forums of the cybersecurity community.
- 9 new Recs, 8 Amendments, 2 new Supplements (1 revised); 2 in TAP
- 3 under development.

■ **Countering spam by technical means**

- In support WTSA-12 Resolution 52
- Countering spam in voice spam, mobile messaging spam, ...
- 2 new Recs, 2 Supplements;
- 4 under development.

Identity Management and cloud computing security (WP 3/17) Highlights

- **Identity management architecture and mechanisms**
 - Discovery of IdM, IAM taxonomy, telebiometric authentication, entity authentication assurance, trust elevation, sharing network authentication with service authentication, ...
 - 4 new Recs, 3 under development.
- **Cloud computing security**
 - Cloud computing security framework, software as a service security, CaaS/IaaS/NaaS security, Big Data as a Service, operational security for cloud computing, Code of practice for information security controls based on ISO/IEC 27002 for cloud services, ...
 - 5 new Recs, 1 revised Rec, 5 under development.

Application Security (WP 4/17) Highlights

- **Security aspects of ubiquitous telecommunication services**
 - IoT security, ITS security, SDN security, smart-grid security, mobile security, mobile phone security, IPTV security and content protection, ubiquitous network security framework, ...
 - 2 new Recs; 3 new Supplements, 3 in TAP
 - 6 under development
- **Secure applications services**
 - Application security mechanisms, XACML, multi-factor authentication, anonymous authentication, authentication in IDSP environments, non-repudiation, peer-to-peer security, fraud detection, ...
 - 8 new Recs, 2 new Supplements
 - 6 under development
- **Telebiometrics**
 - Telebiometrics, e-Health & telemedicines security protocols
 - 3 new Recs, 1 in TAP, 8 under development.

Formal languages (WP 5/17) Highlights (I)

- **Generic technologies to support secure applications**
 - X.500-series on Directory including X.509 on PKI, computerized directory assistance, Abstract Syntax Notation One (ASN.1), Object Identifiers (OIDs) and associated registration authorities, ODP, certified e-mail.
 - ASN.1 and OID project (see separate slide)
 - 4 new Recs, 23 revised Recs, 14 technical corrigenda to X.500 series; 1 TR; 8 under development.

- **Formal languages for telecommunication software and testing**
 - SDL-2010, UML, MSC, URN, Testing and Test Control Notation (TTCN-3), ...
 - 6 new Recs, 30 revised Recs; 4 revised Implementer Guides, 1 revised Supplement, 3 in AAP, 19 under development.

Telecommunication/ICT security coordination Project

(Major focus is on coordination and outreach)

- **Security coordination**
 - Within SG17, with ITU-T SGs, with ITU-D and externally.
 - Kept TSAG, ISO/IEC/ITU-T SAG-S informed on security efforts.
 - Made presentations to workshops/seminars and to GSC.
 - Maintained reference information on the LSG on security webpage.
- **Compendium of Security Recommendations**
 - Includes catalogs of approved security-related Recommendations and security definitions extracted from approved Recommendations.
- **Security Standards Roadmap**
 - Includes searchable database of approved ICT security standards from ITU-T and others (e.g., ATIS, ENISA, ETSI, IEEE, ISO/IEC JTC 1, IETF, OASIS, 3GPP, 3GPP2).
- **ITU-T Security manual**
 - 6th edition produced.

ASN.1 and OID Project

- The SG17 ASN.1 & OID project continues to assist:
 - Existing users of ASN.1 and object identifiers (OID), within and outside of ITU-T (e.g., ITU-T SG 16, ISO/IEC JTC 1/SC 27, ISO TC 215, 3GPP, etc.).
 - Countries (e.g., Algeria, Andorra, Argentina, Bolivia, Bosnia and Herzegovina, Brazil, Honduras, Lithuania, Malaysia, Mongolia, Nicaragua, Oman, Philippines, Rwanda, and Sri Lanka), and in particular developing countries, in setting a national registration authority for OIDs.
- This project provided speakers and tutorial material, and coordinates the provision of tool support to users and the contents of related websites.
- In cooperation with the TSB, a database is being maintained that contains a machine-processable copy of the current version of all ASN.1 modules that are included in ITU-T Recommendations.
Database: <http://www.itu.int/ITU-T/asn1/database> (>840 modules)
- OID Repository: <http://www.oid-info.com> (>966 000 OIDs).

Statistics (I)

- 44 Rapporteur group meetings held
(stand-alone, e-meetings, or collaborative with ISO/IEC JTC 1/SC 6, 27)
- 592 contributions received
(excluding Rapporteur meetings)
- 8 SG meetings held
- 8 WP 1, 2, 3, 4, 5/17 meetings held in conjunction with SG17 meetings
- Min/Max/Average SG participants:
131/170/152.

Statistics (II)

- 117 New/Revised Recommendations approved, *plus* 10 Recommendations determined or consented.
- 81 draft new/revised Recommendations currently under development for approval in the next study period.
- 12 Questions assigned by WTSA-12.
- 2 Questions revised during study period.
- 12 Questions proposed for next period.

Workshops (I)

SG17 organized four workshops:

- **ITU-UPU mini workshop**
Geneva, Switzerland, 21 January 2014.
- **ICT Security Standardization Challenges for Developing Countries**
Geneva, Switzerland, 15 – 16 September 2014.
- ***Global Cybersecurity Challenges: Collaborating for effective enhancement of cybersecurity in developing countries***
Geneva, Switzerland, 8 September 2015 afternoon.
- **ITU-ATU Workshop on Cybersecurity Strategy in African Countries**
Khartoum, Sudan from 24 to 26 July 2016.

Workshops (II)

SG17 (through its lead study group function on Languages) supported the following workshops:

- **16th International System Design Languages Forum Model-driven dependability engineering**
Montreal, Canada, June 26-28, 2013.
- **8th System Analysis and Modeling (SAM-2014) workshop**
Valencia, Spain, 29 – 30 September 2014, in collaboration with ACM and IEEE.
- **17th SDL Forum**
Berlin, Germany, 12 – 14 October 2015.
- **9th System Analysis and Modeling (SAM-2016) workshop**
Saint Malo, France, 3-4 October 2016, in collaboration with ACM and IEEE.