Day 3 – Panel 5
Situation on the standardization of 5G cybersecurity

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5G security: is this topic addressed within ISO/IEC JTC 1 SC 27?

What are the current and future considerations? Is there a need to cooperate with other SDOs in that respect?

From a telecom company perspective, what would be the benefit of having a certification schemes on 5G security?
5G, 5G operation, 5G use cases imply complex systems

Figure 3: Generic 5G Architecture

Figure 12: MNO Lifecycle processes

Figure 4: Core network architecture zoom-in

Source: ENISA updated 5G Threat Landscape, Dec. 2020
How to deal with 5G security complexity? Any relevant options for 5G cybersecurity certification?
Takeways 1/2

A sound basis to address 5G security keeps valid from ISO/IEC JTC 1 SC 27 frameworks
1. Risk management framework keeps with ISO/IEC 27005
2. Continuous improvement should rely on ISO/IEC 27001
4. Mapping to ISO/IEC 27033-7 of VNF security capabilities should be explored

5G sub-domains Cybersecurity Certification should consider 2 schemes:
1. Pan-European 5G cybersecurity risk homologation “Substantial” to match Industries needs, at “High” to match Member States needs (on specific sub-domains),
2. Pan-European 5G Vendors cybersecurity certification with “Basic” to enable a first-level of system hardening and integration
Takeways 2/2

► What role for ISO, IEC, CEN and CENELEC with regards to 5G standardization?

1. ENISA’s 5G Threat Landscape could be transferred in a European Standard
2. 5G risk likelihood evaluation should rely on EBIOS Risk Manager and Kill Chain™ knowledge bases relying on technical works from 3GPP and ETSI
3. Foster an homologation approach of 5G cybersecurity risks
4. Coordinate with Member States to define a pan-European « High » for relevant 5G sub-domains
5. Coordinate with industries to make NIS2-compliant « Substantial »
6. Standardize methodologies for real-time risk likelihood evaluation leveraging on Big data and AI
7. Standardize knowledge bases of threats and threat detection techniques leveraging on CERTs observations
Proposal 1: 5G cybersecurity certification for Operators and Verticals based on 5G risk homologation allows to deal with systems complexity.

Proposal 2: 5G cybersecurity certification for Vendors: « Basic » based on 3GPP Approach NESAS/SCAS.
Annex - ISO/IEC JTC 1 SC 27 areas

SCOPE OF WORK

Development of standards for information security, cybersecurity, and privacy protection. This includes generic methods, techniques, and guidelines to address both security and privacy aspects, such as:

- Security requirements capture methodology;
- Management of information and ICT security, in particular information security management system (ISMS) standards, security processes, security controls, and services;
- Cryptographic and other security mechanisms, including but not limited to mechanisms for protecting the accountability, availability, integrity, and confidentiality of information;
- Security management support documentation including terminology, guidelines as well as procedures for the registration of security components;
- Security aspects of identity management, biometrics, and privacy;
- Conformance assessment, accreditation, and auditing requirements in the area of information security management systems;
- Security evaluation criteria and methodology.

SC 27 engages in active liaison and collaboration with appropriate bodies to ensure proper development and application of SC 27 standards and technical reports in relevant areas.

Source: SC27, Standing Document 11, 2020