

Globecom 2015, Workshop on 5G Security, 6 Dec.

I will bring the star for you “securely”

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Chairman 3GPP SA3

3GPP TSG SA WG3 (Security) Terms of Reference

The WG has the overall responsibility for security and privacy in 3GPP systems

- performs analysis of potential threats to these systems
- determines the security and privacy requirements for 3GPP systems
- specifies the security architectures and protocols
- ensures the availability of cryptographic algorithms which need to be part of the specifications

<http://www.3gpp.org/Specifications-groups/sa-plenary/54-sa3-security>

3GPP SA3 specification location:

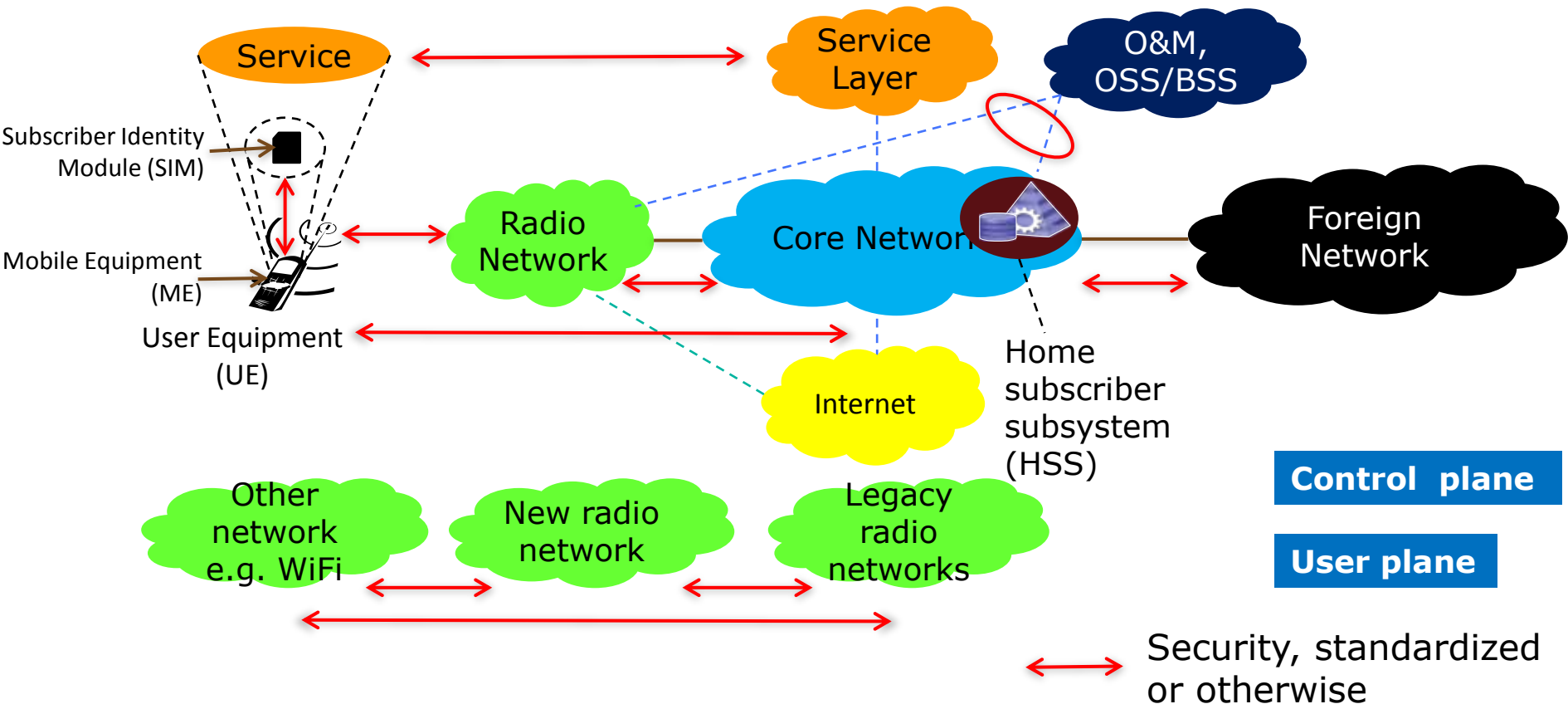
<http://www.3gpp.org/ftp/Specs/html-info/33-series.htm>

Finding specific specification:

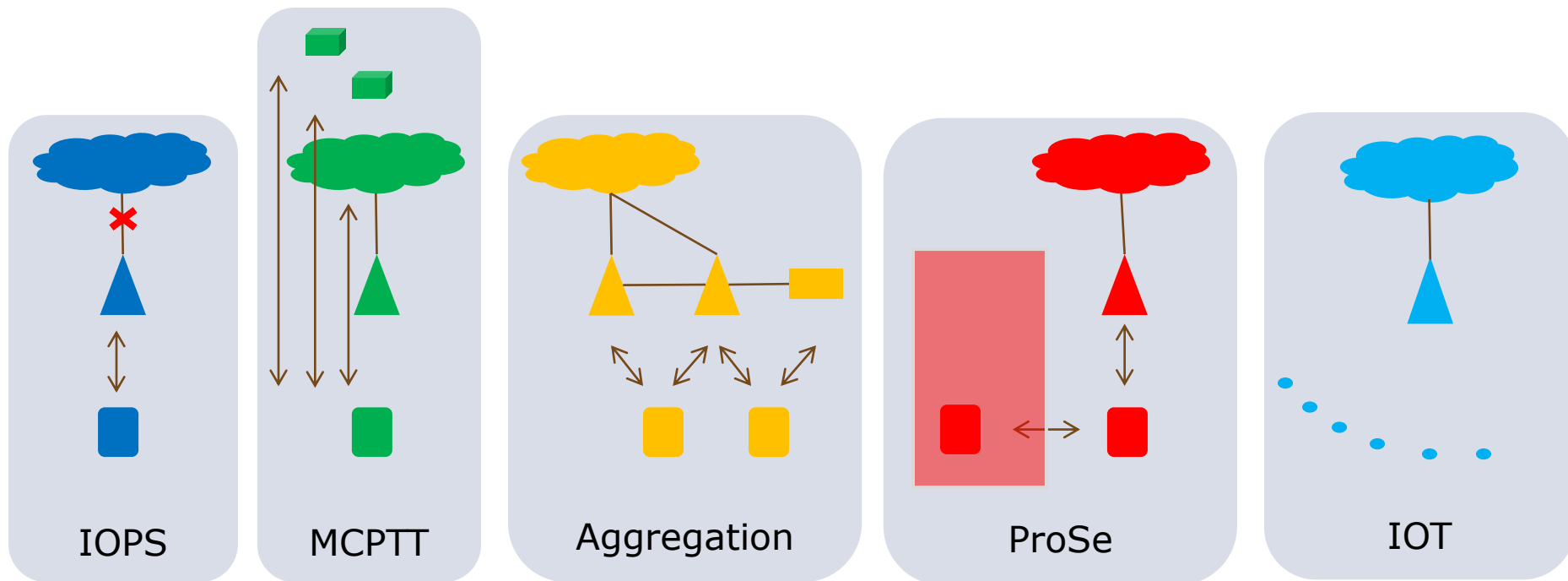
<http://www.3gpp.org/ftp/Specs/html-info/xyyyy.htm>

Replace xyyyy by specification number, e.g., 33401 for TS 33.401

Security Standardization



3GPP SA3 Activities: Selected Topics



IOPS: Isolated E-UTRAN for Public Safety MCPTT: Mission Critical Push to Talk for LTE ProSe: Proximity based Services IOT: Internet Of Things

3GPP Activities Overview: Towards 5G?

New Services and Markets Technology Enablers (SMARTER)

- **Critical Communication (SMARTER-CriC)**
- **Massive Internet of Things (SMARTER-mIoT)**
- **Enhanced Mobile Broadband (SMARTER-eMBB)**
- **Network Operations (SMARTER-NEO)**

Study on Next generation scenarios, requirements radio technology in Dec. RAN plenary

Study on a Next Generation System Architecture ("FS_NextGen") in Dec. SA plenary

Dual Connectivity and Aggregation (Dual_C etc.)

Internet Of Things (NB_IOT, EASE, BEST)

Machine Type Communication (MTC)

LTE support for V2X services (V2XLTE)

Network Management of Virtualized Networks (OAM_VIRNET)

Dedicated Core Networks (DÉCOR)

Flexible Mobile Service Steering (FMSS)

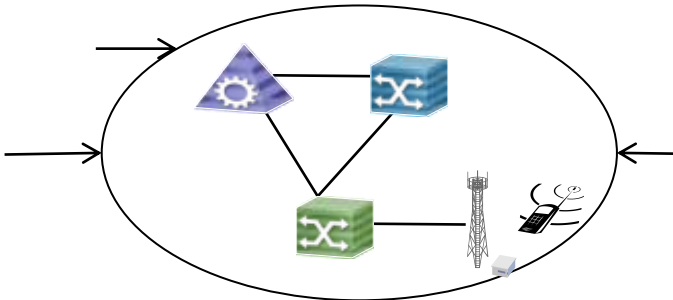
Isolated E-UTRAN for Public Safety (IOPS)

Mission Critical Push To Talk over LTE (MCPTT)

Proximity based Services (ProSe)

Security Assurance Specification for 3GPP network products (SCAS & SECAM)

Towards 5G – What does it mean?

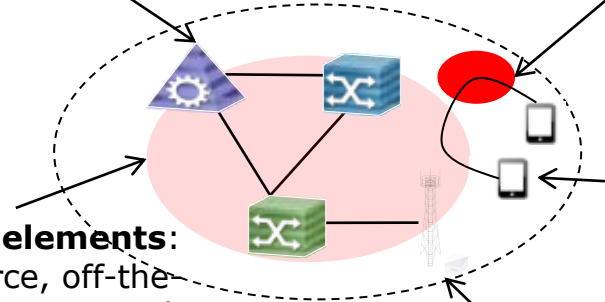


- 2015



Business: Open API

Services: OTT for free



Network elements:
Open source, off-the-shelf HW, SW, virtual, cloud

End-device:
Open source, eSIM, IoT

Spectrum/Radio:
Cognitive radio, unlicensed band,

2020 -

**Openness, Increased connectivity,
Reach in terms of technology & society**

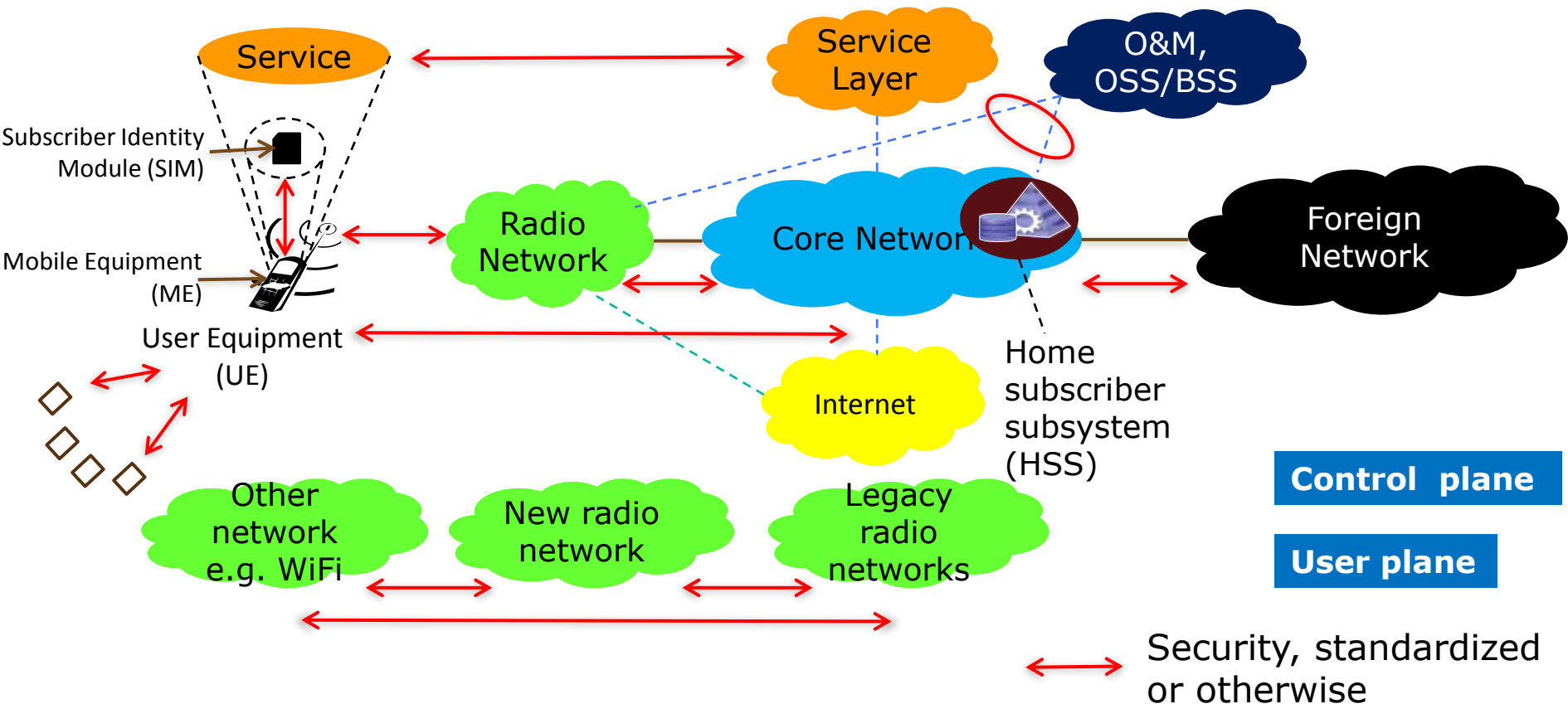
What is 5G?

- New radio interface(s)
- Lot's of communication
- At all kinds of data-rates
- More mobility
- "Increased" connectivity
- More software
- "Open" stuff everywhere
- Virtualization and cloud

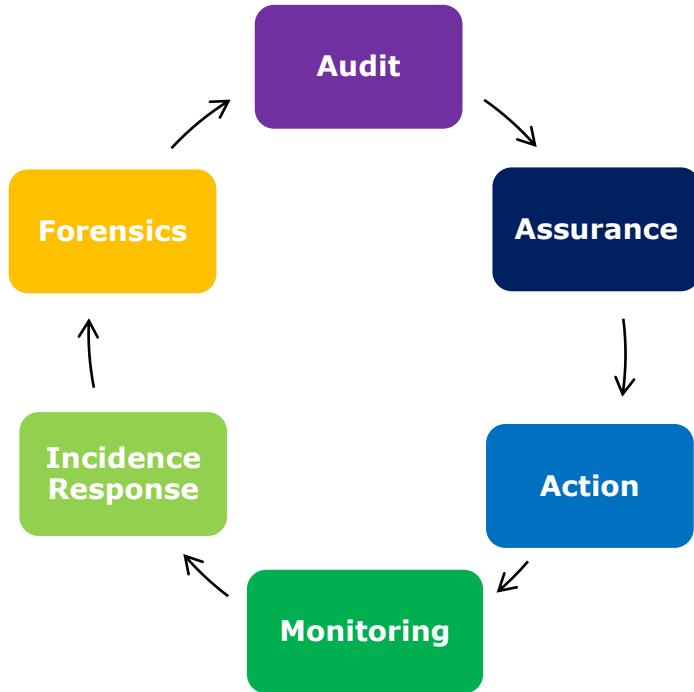
Security?

- Maintain current level of security
- Security for mobility
- Lawful interception
- Public safety and critical infrastructure security
- Need to consider all aspects including lifecycle security -- deployment, management and network security

Security Standardization

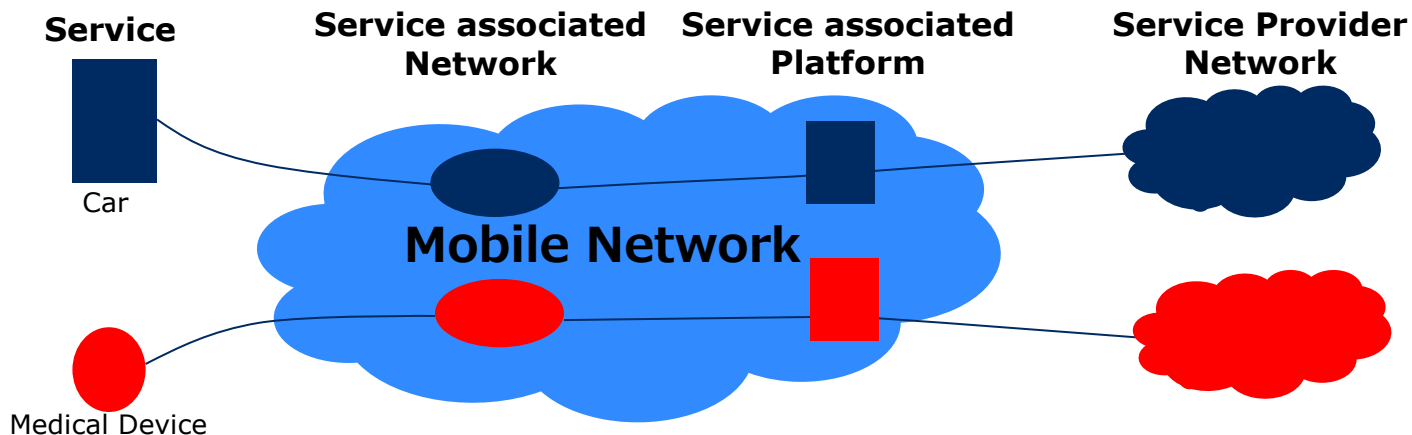


Assuring Security



- **Auditing:** Evaluation against policy and conformance requirements
- **Assurance:** Testing network and devices
- **Action:** Based on assurance result
- **Monitoring:** Continuous, real time monitoring and evidence collection
- **Incidence Response :** Response to critical security incidents
- **Forensic Analysis:** Source of proof for security and compliance issues

Network Fulfilling Security needs: Security as a Service



The network adapts to security needs of service. Thus personalizing network security instead of one-size-fit-all network security.

Take Away

- Already several changes are taking place in mobile communications systems
- The next generation (5G) will bring several changes not seen in traditional sense of mobile communication systems
- Traditional security requirements for mobile communications systems will exist
- Security considerations for “lifecycle” will become ever important
- Security assurance will become necessary
- Requirements will come on networks to fulfill security needs based on services provisioned



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