

Work Progress and Plan of ITU-T SG11 on IMT-2020

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WTSA-16 Resolutions related to ITU-T SG11 for IMT-2020

- **Res.92 - Enhancing** the standardization activities in the ITU TSS related to non-radio aspects of international mobile telecommunications
 - instructs Study Group 11 to promote the studies on standardization activities related to the **non-radio aspects of IMT signalling, protocol and testing**
- **Res.93 - Interconnection** of 4G, IMT-2020 networks and beyond
 - instructs Study Group 11 to develop ITU T Recommendations which specify the **framework and signalling architectures** to be used for establishing interconnection among 4G, 5G/IMT-2020 networks and beyond to achieve interoperability worldwide
- **Res.90 - Open source** in the ITU TSS
 - support the **use of open-source projects** in their work, as appropriate, taking into account the outcome of the TSAG study

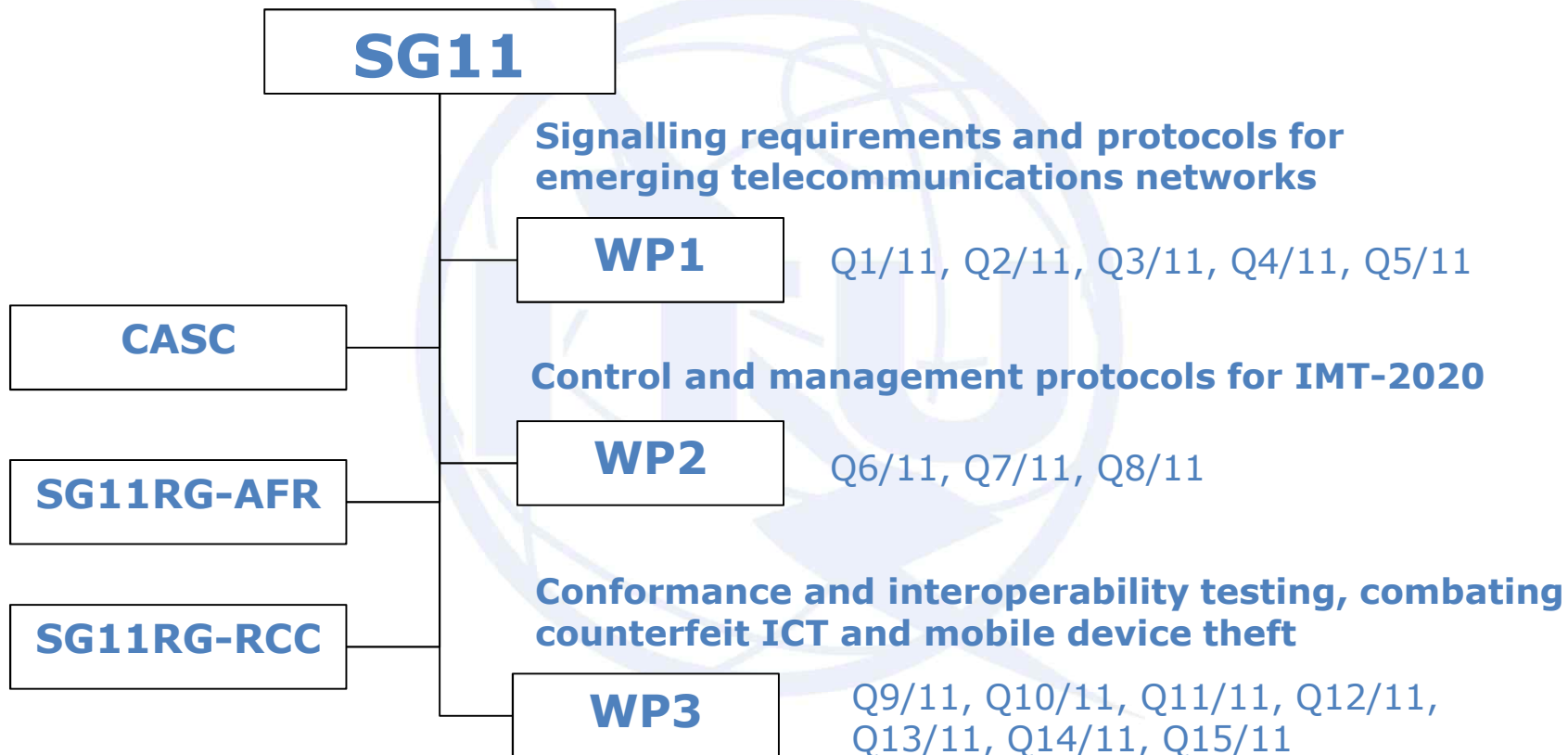


Overview of ITU-T SG11

- Resolution 2 - Responsibility and mandate
 - Responsible for studies related to **signalling-system architecture, signalling requirements and protocols**, for all types of networks and technologies, including **IMT-2020**
- Resolution 2 - Lead study group
 - Lead SG on **signalling and protocols**, including for IMT-2020 technologies
 - Lead SG on establishing **test specifications, conformance and interoperability testing** for all types of networks, technologies, including IMT-2020
 - Lead SG on combating counterfeiting of ICT devices
 - Lead SG on combating the use of stolen ICT devices



Overview of ITU-T SG11



- CASC: Conformity Assessment Steering Committee
- RG-AFR : Study group 11 regional group for Africa
- RG-RCC : Study group 11 regional group for RCC



Questions related to IMT-2020 work

- **Q6/11: Protocols supporting control and management technologies for IMT-2020**
- **Q7/11: Signalling requirements and protocols for network attachment including mobility and resource management for future networks and IMT-2020**
- **Q8/11: Protocols supporting distributed content networking and information centric network (ICN) for future networks and IMT-2020, including end-to-end multi-party communications**
- **Q4/11: Protocols for control, management and orchestration of network resources**
- **Q10/11: Testing of emerging IMT-2020 technologies**



Q6/11: Protocols supporting control and management technologies for IMT-2020

- New Question, **dedicated on core control protocols** and related work for IMT-2020
 - Development of Recommendations on protocols to control IMT-2020 transport network to support IMT-2020 requirements
- Key issues and technologies for IMT-2020 protocols
 - Core technologies including network slicing, orchestration and resource management, network capability exposure, enhanced network management;
 - Enhanced identification, authentication and authorization for IMT-2020;
 - Control and Management of multiple network slices;
 - Interworking of IMT-2020 and existing networks, etc.



Q7/11: Signaling requirements and protocols for network attachment including mobility and resource management for FNs and IMT-2020

- Development of Recommendations on signalling requirements, architecture, and protocols related to **network attachment** for FN and **IMT-2020**
- Key issues and technologies for network attachment protocols
 - Network attachment procedures;
 - Multi-interface streaming capability;
 - Mobility management, Resource management;
 - Fixed and mobile convergence, etc.



Q8/11: Protocols supporting distributed content networking and ICN for FN and IMT-2020, including end-to-end multi-party communications

- Development of Recommendations on protocols to support content networking for FN and IMT-2020 and also includes protocols for end-to-end multi-party (group) communications
- Key issues and technologies for FN and IMT-2020
 - Managed Peer-to-peer networking;
 - Protocols for Multicast and Broadcast;
 - ICN (Information centric networking) based protocols for IMT-2020, etc.



Q4/11: Protocols for control, management and orchestration of network resources

- develop signalling requirements and protocols for control, management and orchestration of network resources based on FN architectures, including SDN, NFV, network virtualization, 5G/IMT-2020, etc.
- Key issues and technologies
 - admission control coordination;
 - resource control and traffic management;
 - QoS signalling and traffic management;
 - interaction among bearer and resource control domains;
 - seamless session mobility, etc.



Q10/11: Testing of emerging IMT-2020 technologies

- New Question for testing technologies for IMT-2020
- Key issues and technologies
 - methodology for testing IMT-2020 technologies to be used in super-dense heterogeneous networks;
 - methodology for testing services which require ultra-low latency;
 - architecture of the model network to be used for testing IMT-2020 technologies and tactile Internet services;
 - test suites for testing IMT-2020 technologies, tactile Internet services, and D2D connection/scenario, etc.
- No new work items yet



Work Program

- Related current Work Items from the last Study Period
 - Q.SMO: Signalling requirements of Software-defined Metro Orchestration (Timing: 2018)
 - Q.SAN-MIM: Signalling requirements of SDN-based access networks with media independent management capabilities (Timing: 2017)
 - Q.NEA-REQ: Signalling Requirements of NFV Entity Management for Network Attachment (Timing: 2018)
 - X.mp2p-series: Architecture and Protocols for Managed P2P communications (Timing: 2017~2018)
 - Q.rrp: Request routing protocol for content delivery (Timing: 2018)



Work Program

- New Work Items are proposed and under discussion at SG11 RGM meeting in July 2017
 - Q.NS-LCMP: Protocol for network slice lifecycle management [by Q6/11]
 - Includes creating a new network slice instance, modifying an existing network slice instance, and terminating an existing network slice instance
 - Q.IEP-REQ: Signalling requirement of Intelligent Edge Computing Platform [by Q7/11]
 - Describes signalling requirements of Intelligent Edge Computing Platform for providing intelligence to edge network
 - Intelligent data processing function for converged wireless and wired network



Strategy for protocol development on IMT-2020

- Appropriate actions to implement WTSA-16 Resolutions
- For Res.92 (Protocols for non-radio aspects of IMT-2020)
 - Concurrent development of protocols for IMT-2020, in align with the works on requirement and architecture of ITU-T SG13
 - Considering related specifications of other SDOs (3GPP, ETSI, etc.)
- For Res.93 (Interconnection of 4G, IMT-2020 networks and beyond)
 - High priority should be given to the Interconnection works to achieve interoperability worldwide
- For Res.90 (Use of Open source)
 - Fast development and evaluation of Protocol Specifications based on POC(Proof of Concept) approach using open source HW and SW



Strategy for protocol development on IMT-2020

- Avoid unnecessary duplicated works with relevant groups
 - Close collaboration with ITU-T SG 13 and other SDOs, Forum, etc.
 - Mutual complement with relevant works of other groups
 - Enhance collaboration with Open Source Community for efficient evaluation of protocols
- Further enhancement of on-going work, considering requirements of emerging IMT-2020 services



Future Meetings

- Current Plans
 - ITU-T SG11 meetings
 - 8 ~ 17 November 2017, Geneva
 - E-meetings for Q7/11
 - 4–8 Sept. 2017
 - E-meetings for Q8/11
 - 28 Aug.-1 Sept. 2017
- Future meeting plans can be changed based on the RGM and WPs meeting in July 2017



Thank you for your attention!

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