Synchronization in ITU-T in the New SG15 Study Period (2017-2020)

WSTS–2017, San Jose

Stefano Ruffini, Ericsson, ITU-T Q13/15 Rapporteur

Silvana Rodrigues, IDT, ITU-T Q13/15 Associate Rapporteur

Introduction

- ITU is the United Nations specialized agency for information and communication technologies – ICTs, founded in 1865

- The ITU Telecommunication Standardization Sector (ITU-T) is one of the three sectors (divisions or units) of the ITU; it coordinates standards for telecommunications. Created as CCITT in 1956.

- The Study Groups of ITU's Telecommunication Standardization Sector (ITU-T) assemble experts from around the world to develop international standards known as ITU-T Recommendations
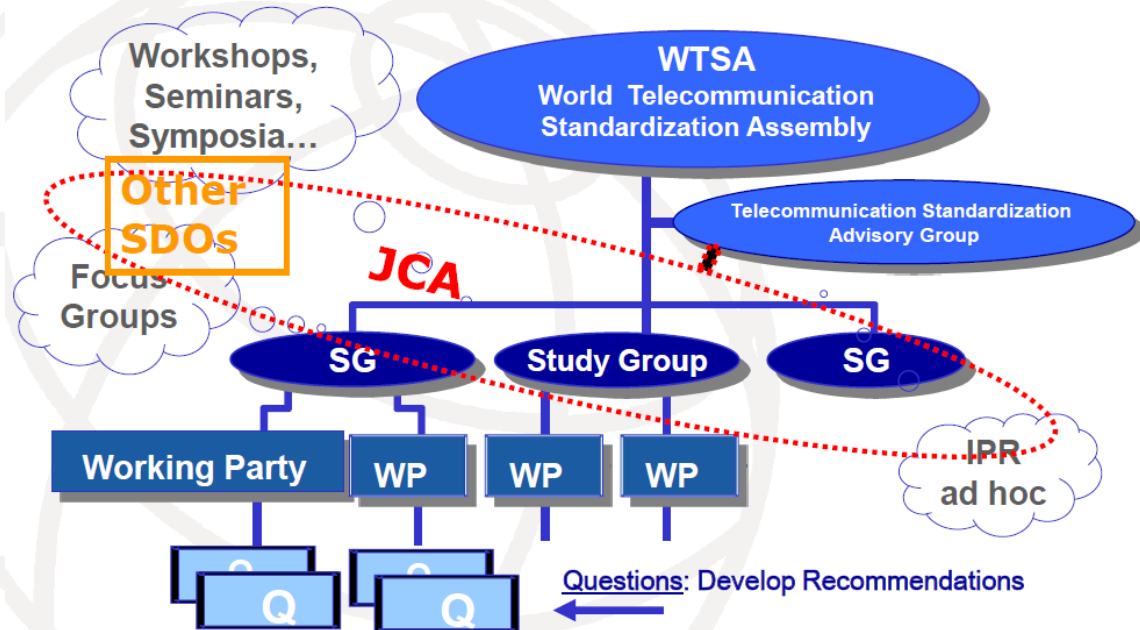
Working Structure
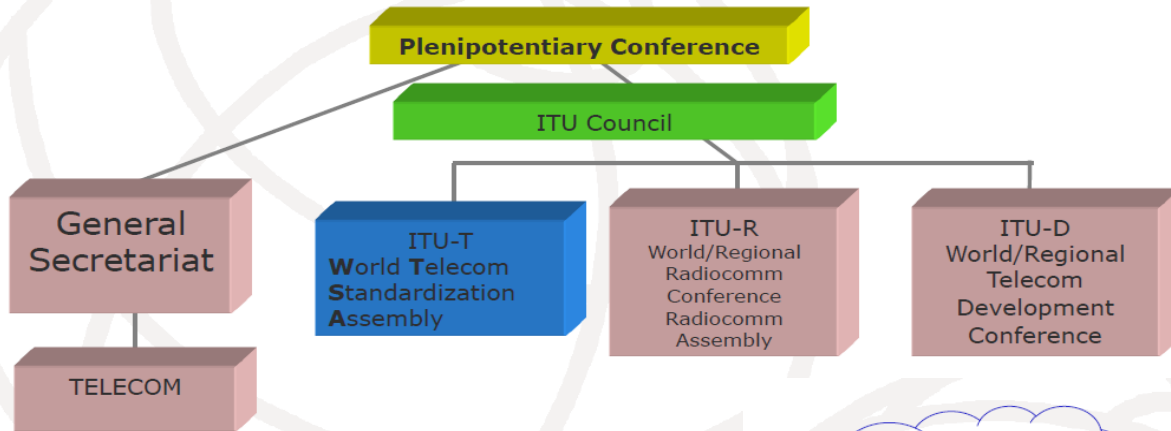
ITU Structure

ITU-T
Working Structure

New Study Period (2017-2020)

- World Telecommunication Standardization Assembly (WTSA-16): *Title, mandate, lead roles, points of guidance and Questions for ITU-T Study Group 15 in the study period 2017-2020 (SG15-C.1)*

- **ITU T Study Group 15** is the focal point in ITU T for the development of standards on *networks, technologies and infrastructures for transport, access and home*.

- Question 13/15 – Network synchronization and time distribution performance

Q13: Highlights for the new Study Period

- Continuing effort needs to be put into the study of synchronization issues in packet based networks.

- Requirements for the related OAM and Management functions need to be studied.

- Requirements from new network architectures and applications should be considered (e.g. as related to the IoT, IMT2020 (5G), etc.).

- Robust and reliable network synchronization solutions (e.g. as related to GNSS (Global Navigation Satellite System) backup) need to be addressed.

- SDN/NFV implications on the synchronization networks should also be studied.

- Test equipment specification needs continuous review to take account of technology changes and improvements of jitter, wander and precision time measurement

Q13: «Questions» Examples

- What are the requirements for jitter and wander for the future OTN interfaces e.g. beyond 100Gbit/s?

- What is the network functionality required to provide real-time distribution of absolute time-of-day reference services and/or phase synchronization? ..

- How can robust and reliable network synchronization solutions be provided (e.g. as related to GNSS backup)?

- ..what synchronization requirements are related to supporting the operation of the mobile network (e.g. backhaul and fronthaul) and of the related applications (e.g., LTE, LTE-A, IMT2020 (5G))?
  - What solutions are suitable to meet these requirements?
  - How can the accuracy be improved?

- Synchronization aspects related to new applications, e.g. as related to the Internet of things (IoT).

- What are the synchronization related requirements for OAM and Management functions