

SG13: Future networks, with focus on IMT-2020, cloud computing and trusted networks

*All about
networks*

FOR Dr. Leo Lehmann Chairman
SG13

Presented by: Bugaba Simon
Chairman ITU-T SG13 RG AFR



Study Group 13 Mandate

Future networks, with focus on IMT-2020, cloud computing and trusted network infrastructures

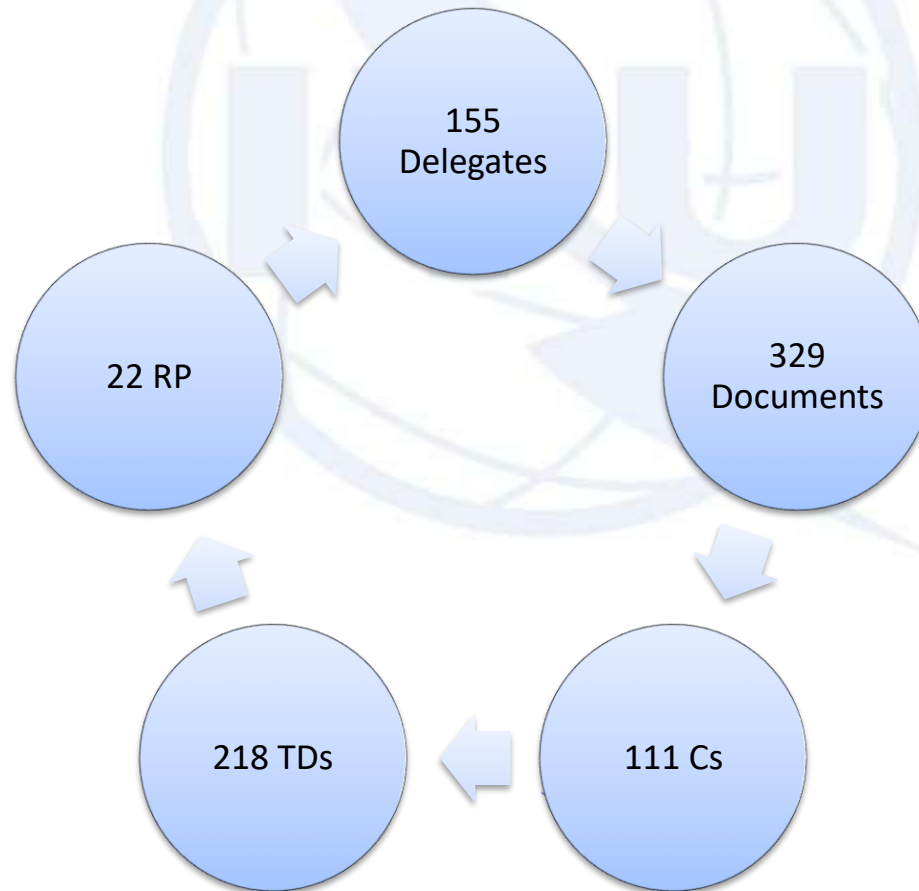
Mission:

- ❑ studies relating to the requirements, architectures, capabilities, for mainly future networks (FN)
- ❑ studies relating to **cloud-computing** technologies, **big data, virtualization, resource management**, reliability and security aspects of the considered network architectures.
- ❑ studies relating to **standardization of information centric trusted network infrastructures and trusted cloud solutions**

Responsibility: Developing recommendations (standards) for future networks,

SG13 Lead Study Group on

- ❑ Future networks such as IMT-2020 networks (non-radio related parts)
- ❑ Mobility management
- ❑ Cloud computing
- ❑ Trusted network infrastructures



Perspectives of SG13

- ❑ SG 13 investigates new technologies for incorporation into new networks in terms of Requirements, Architecture and Mechanisms
- ❑ Major study topics are IMT2020, Softwarized network aspects (non radio related), eNGN including NFV and SDN, Cloud Computing, trusted network infrastructures
- ❑ Hot topics under review include **Future networks 2030, Artificial Intelligence & Machine Learning, Quantum Computing,**
- ❑ Collaboration with other SDO's is **necessary and promoted**
- ❑ Study of potential utilization and guide of **open-source software** activities related to the scope of Study Group 13

SG13 Vice-Chairs

SG13 Vice-Chairs	Country	1 st or 2 nd Term
Mohammed AL TAMIMI	KSA	1 st
Rim BELHASSINE-CHERIF	Tunisia	2 nd
Ahmed EL-RAGHY	Egypt	2 nd
Yoshinori GOTO	Japan	2 nd
Hyung-Soo (Hans) KIM	Republic of Korea	1 st
Scott MANSFIELD	Canada	1 st
Juan Carlos MINUTO	Argentina	1 st
Brice MURARA	Rwanda	1 st
Fidelis ONAH	Nigeria	1 st
Heyuan XU	China	2 nd

☐ 1 Chairman elected during WTSA-16:

Dr Leo Lehmann (Switzerland)

☐ 10 Vice-chairs elected during WTSA-16

☐ 4 Vice-chairs from Africa



SG13 Working Parties

WP	Title	Questions
1	IMT-2020 Networks & Systems	Q.6: Quality of service (QoS) aspects including IMT-2020 networks
		Q.20: IMT-2020: Network requirements and functional architecture
		Q.21: Network softwarization including software-defined networking, network slicing and orchestration
		Q.22: Upcoming network technologies for IMT-2020 and future networks
		Q.23: Fixed-mobile convergence including IMT-2020
2	Cloud Computing & Big Data	Q.7: Big data driven networking (bDDN) and deep packet inspection (DPI)
		Q.17: Requirements, ecosystem, and general capabilities for cloud computing and big data
		Q.18: Functional architecture for cloud computing and big data
		Q.19: End-to-end cloud computing management, cloud security and big data governance
3	Network Evolution & Trust	Q.1: Innovative services scenarios, deployment models and migration issues based on future networks
		Q.2: Next-generation network (NGN) evolution with innovative technologies including software-defined networking (SDN) and network function virtualization (NFV)
		Q.5: Applying networks of future and innovation in developing countries
		Q.16: Knowledge-centric trustworthy networking and services

SG13 related JCA's

- ❑ **JCA:** A joint coordination activity (JCA) : **A tool for management of the work programme of ITU-T when there is a need to address a broad subject covering the area of competence of more than one study group**
- ❑ **JCA-IMT2020**
WTSA16 Resolution 92
- ❑ **JCA-SDN**
WTSA16 Resolution 77

Past

Recs Approved since 2017: 77

- Supplements: 9
- Other publications
 - Questionnaires 2
 - Technical papers/reports 4
 - Flipbooks 5
 - Online roadmap 1

2019 Outcome – Approved and Consented

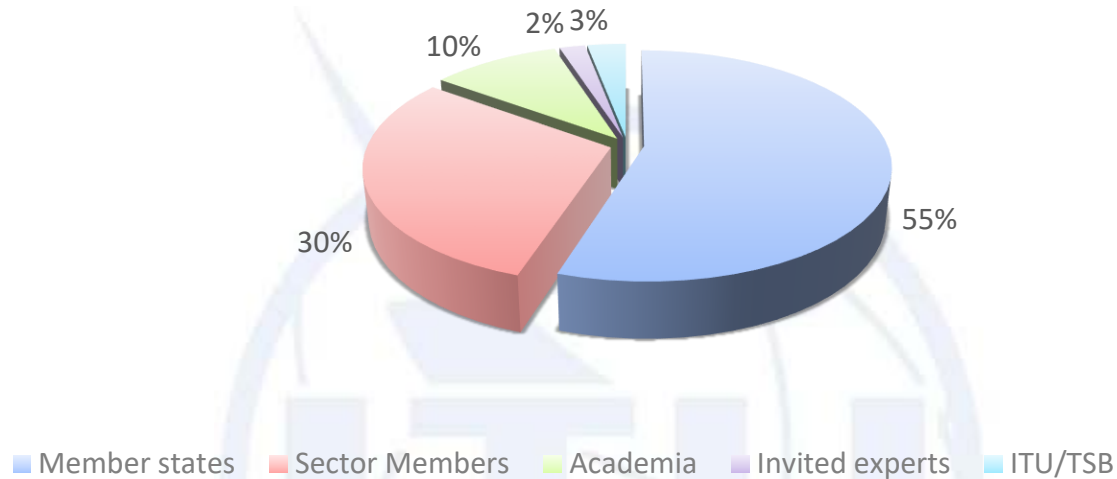
- TAP Approved: 1
- AAP Approved: 25
- Agreed: 2
- Consented: 3

Status for 30.01.2020

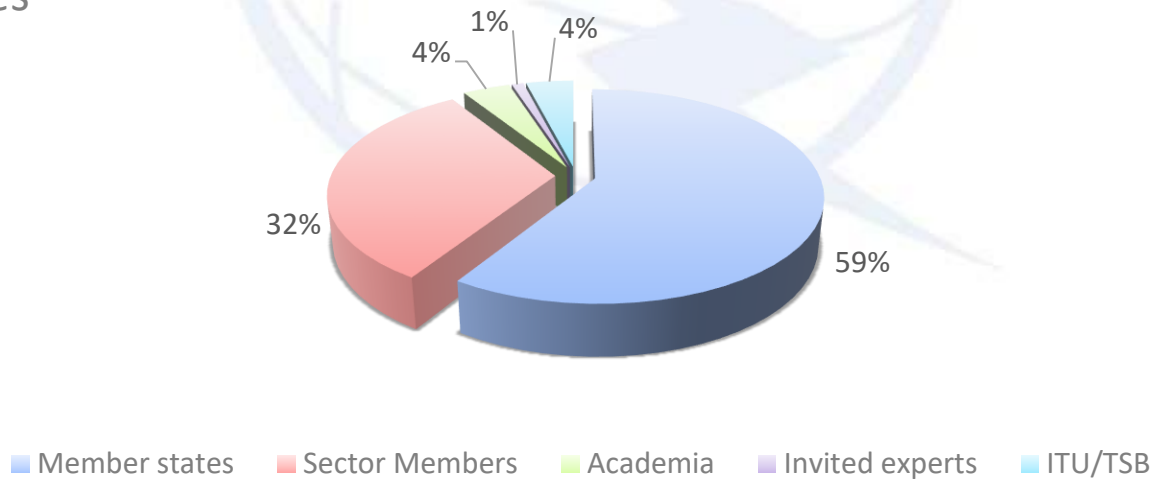


2019 Statistics – membership

Countries

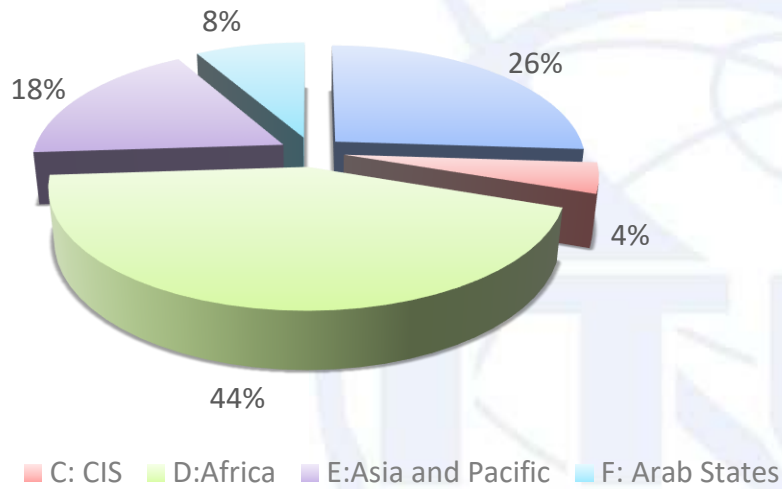


Delegates

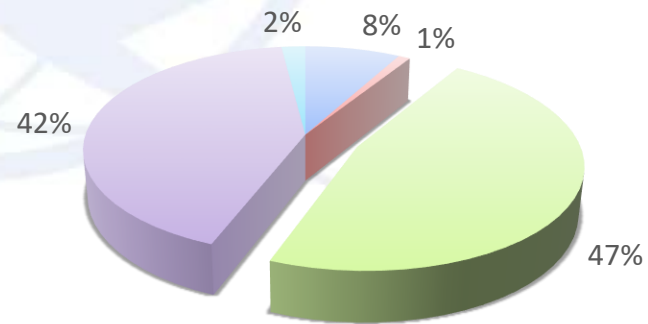


2019 Statistics - regions

Countries

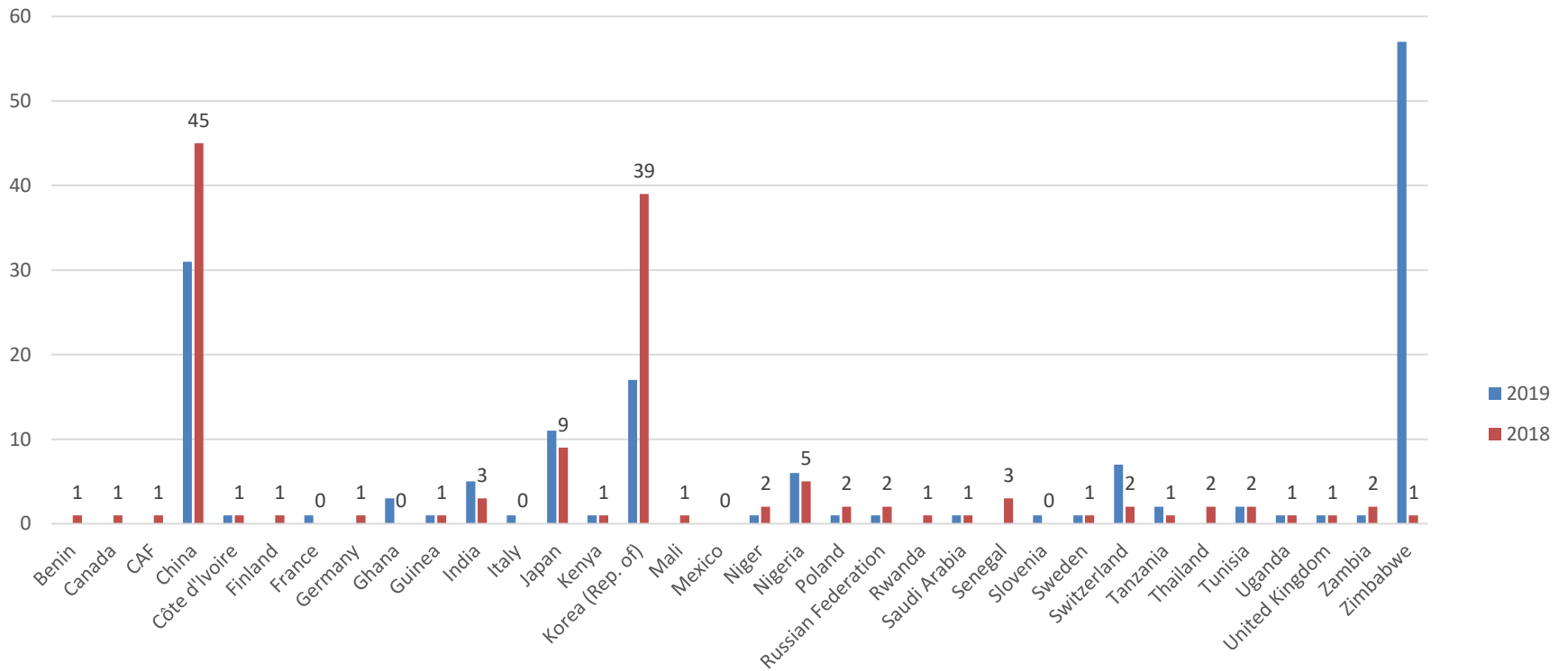


Delegates



2019 Statistics – DDP use and delegates per country

Countries Representation



SG13 Work on Bridging Standardization Gap (BSG)

Question 5/13:

Applying networks of future and innovation in developing countries

Main Tasks:

- ❑ Prepare documents summarizing the findings of a gap analysis on the current status and trends of IMT, future networks, NGN evolution implementation, CC, trust in ICT, big data, SDN and other new technologies, from a view point of developing country telecom networks.
- ❑ Develop scenarios in terms of services and deployments for applying IMT, future networks, NGN, CC, Trust, big data, SDN and other new technologies in Developing Country telecom networks.
- ❑ Examine possibility of evolution of existing equipment and other new technologies.
- ❑ Develop requirements in terms of services and deployments for applying IMT, future networks, NGN, CC, Trust, big data, SDN and other new technologies in Developing Country telecom networks.
- ❑ Provide guidance on how best developing countries can implement emerging technologies



SG13 Work on BSG : SG13RG-AFR

Objective: Encourage national authorities and operators from countries in Africa to work together and better contribute to ITU-T SG 13 activities in general and to Cloud Computing in particular in line with SG 13 mandate

Main Tasks:

Encourage active participation of African administrations, regulators and operators in the work of ITU-T SG 13

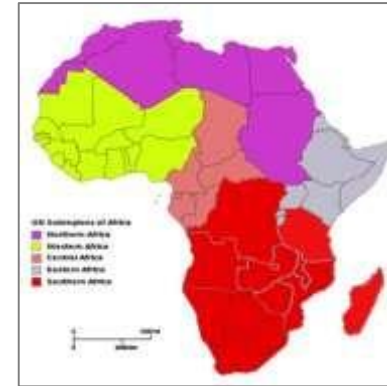
Encourage participation of African countries in workshops, Rapporteur meetings and other ITU-T SG13 events

Encourage African countries to contribute to the development of new/revised ITU-T Recommendations on cloud computing and future networks

Act as a liaison body between administrations, operators, regulators and ITU-T in matters relating to cloud computing and future networks

Reflect the relevant priorities of the continent as per ITU-T SG 13 mandate

Establish training needs on CC and future networks and coordinate the organization of technical tutorials in the region on such topics with ITU-T SG 13



SG13 Work on BSG: SG13 Regional Workshops for Africa

	Theme	Place	Date	Host
1 st	Standardization on IMT, M2M, IoT, Cloud Computing and SDN	Algiers, Algeria	8 September 2013	ARPT
2 nd	Future Networks: Cloud Computing, Energy Saving, Security & Virtualization	Tunis, Tunisia	28 April 2014	Tunisie Telecom
3 rd	ITU-T Standardization Challenges for Developing Countries Working for a Connected Africa	Livingstone, Zambia	23-24 February 2015	ZICTA
4 th	Future Networks for a better Africa: IMT-2020, Trust, Cloud Computing and Big Data	Accra, Republic of Ghana	14-15 March 2016	NCA
5 th	ITU-T Standardization Work on Future Networks: Towards a Better Future for Africa	Cairo, Egypt	2-3 April 2017	NTRA
6 th	<u>"Standardization of future networks: What opportunities for Africa?"</u>	<u>Abidjan, Cote D'Ivoire,</u>	<u>26-27 March 2018)</u>	ARTCI
7 th	<i>SG13 Regional Workshop on "Standardization of future networks towards Building a better connected Africa"</i>	<i>Abuja, Nigeria</i>	<i>3-4 February 2020</i>	<i>MCT/NCC</i>



ITU-T BSG Training for Developing Countries: Guidelines and Techniques for effective SG participation



CONTACT

BSG Secretariat
tsbbsg@itu.int

Website

itu.int/go/bridging



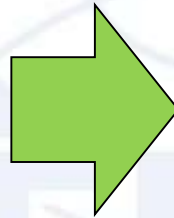
The Future Network issues

- **Future revolutionary services; efficient, effective, flexible, self-organizing, trustful user-friendly networks for services, provision and operation**
- **Network 5G solution for landed signal**
- **Emerging cloud, fog computing, quantum computing, XaaS, Big data**
- **Software-Defined Networking**
- **Smart grid, Wireless power Transfer**
- **Real-time flight monitoring**

From hardware to software

HW world

Dedicated appliances +
Dedicated wire/radio



SW world

Virtual functions +
virtual links
on generic server /
storage / network pool

Shift gives

Flexible network function implementation/ operation

Opex / capex reduction

Faster business cycle, rapid adaptation to demand, increased resource usage, ...

From IP-based networks to non-IP

IP

Non IP

NGN, Internet, WWW



ICN/CCN
Data aware networks

Why must Africa Join

- **Influence the technical communication channels of the future**
- **Contribute at an early stage to the standardization of the future networks**
- **Awareness of mechanism to overcome problems existing on modern networks**
- **Learn how more efficiently shape traffic**
- **Collaborations , learning and support from others**
- **Create new jobs**
- **Get knowledge to get your business on top or start a new one**
- **Learn about new services first**
- **Be smart to the environment**
- **Live well in a safe world society**

Conclusions

- ITU standardization for Future networks is progressing with high pace **(AFRICA MUST TAKE ITS PLACE)**
- ITU-T SG13 has started work on AI/ML and Future Network for 2030
- SG 13 is preparing for WTSA 2020 in India later this year by reviewing its work in totality **(WHAT IS AFRICA'S INTEREST)**
- As one of its missions ITU-T Study Group 13 works to include requirements and interests of the developing countries into the technical standardization **(AFRICA MUST HELP ITSELF)**
- **Africa participation in SG 13 is growing but still more work is needed**

The Must knows of SG13 welcome you to SG13



Leo Lehmann,
SG13 Chairman, since 2015
Leo.Lehmann@bakom.admin.ch



Tatiana Kurakova
TSB SG13 Counsellor
Tatiana.Kurakova@itu.int