

# ITU-T STUDY GROUP 12

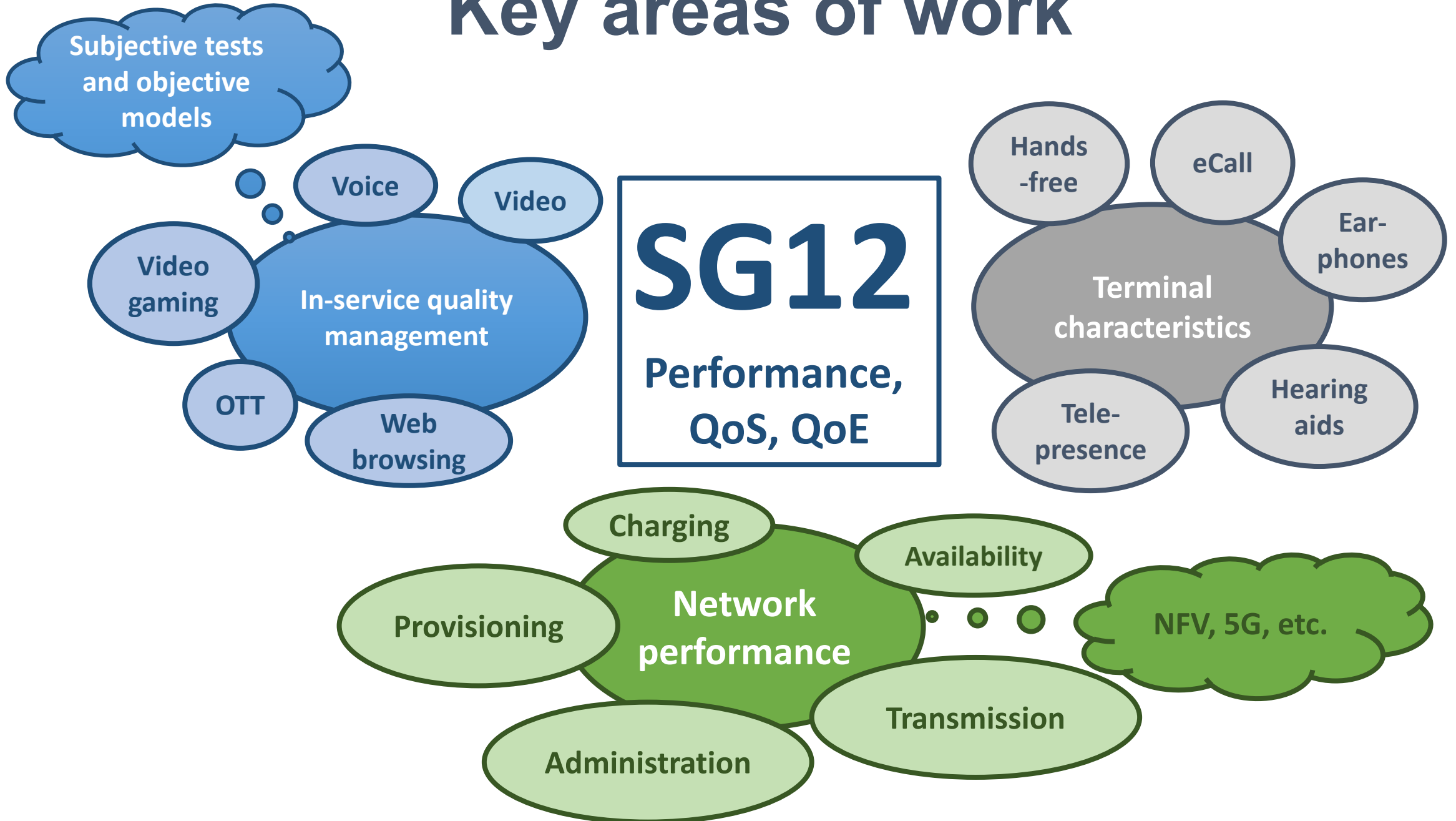
Performance, QoS and QoE

Key areas of work, achievements and outlook



**Kwame Baah-Acheamfuor**  
Chairman, SG12

# Key areas of work



# Achievements

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# Key SG12 achievements in 2013-2016 (1)

## VoLTE

**First VoLTE standard in ITU-T:**  
End-to-end QoS for voice over 4G



Rapid progress on QoE assessment and prediction for UDP and TCP/HTTP-based **video streaming services, including OTT video**



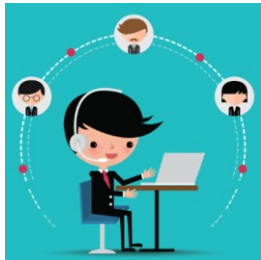
Widely used objective test methods for **hands-free in vehicles**



Completion of buffer models for media streams on TCP transport; hand-over performance among multiple access networks

# Key SG12 achievements in 2013-2016 (2)

Approval of **23** new and **25** revised ITU-T Recommendations



Adoption of subjective test methods for **speech intelligibility, telemeetings and web browsing**



Completion of opinion model for network planning of **video and audio streaming** applications

## MOS

Revised **MOS** terminology, interpretation and reporting

## Quality of Experience

New QoE definition: QoE is the degree of delight or annoyance of the user of an application or service

# Challenges

# Challenges faced by SG12 in 2013-2016

Conflicts with SG11 on QoS measurements and testing



Limited participation of Sector Members from developing countries

# Outlook

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# Outlook on SG12 in 2017-2020

Addition of lead role **on quality assessment of video communications and applications** – new work in the pipeline

Number of proposed Questions stable: one merger, one new: **Virtualized deployment** of recommended methods for network performance, QoS and QoE assessment

Strong interest in QoS/QoE from **administrations and regulators in developing countries.**  
Regional Group and Quality Service Development Group play catalytic role for new SG12 work



# Abbreviations and acronyms

5G	5 <sup>th</sup> generation network	OTT	Over the top
eCall	Emergency call system	QoE	Quality of experience
HTTP	Hypertext Transfer Protocol	QoS	Quality of service
LTE	Long-Term Evolution	TCP	Transmission Control Protocol
MOS	Mean opinion score	UDP	User Datagram Protocol
NFV	Network function virtualization	VoLTE	Voice over LTE