

3GPP Critical Communications Standardisation – Progress, Present and Future

TCCA Critical Update Webinar

09 March 2021

View the webinar recording [here](#).

This document sets out the questions and answers from the webinar.

Q. Can you please repeat Qualcomm involvement in 3GPP (MCPTT)?

Qualcomm is a contributing member to standards in many working groups – currently servicing for instance as SA6 vice-chair. It is worth noting that Qualcomm was very active in the standardisation of the LTE Direct in Rel-12, D2D (Device-to-Device) technology allowing LTE devices to detect each other and to communicate directly.

Q. Since 3GPP SA6 beginning, the LTE Direct Mode (ProSe) was a requirement with really no viable solution. Now that we have C-V2X focus in R16-17, will we have a 5G viable Public Safety version of ProSe/Sidelink communications?

Work is ongoing in standardisation to respond to off-network user requirements. Final verification of the capability will take place as part of product implementation. MC companies are actively involved in the work on ProSe/SideLink in e.g. SA2 – the related work might be done by SA2 in the end.

Q. In the 5G Phase 1(R15) and 5G Phase2(R16), there were the major topics of URLLC, mMTC and eMBB. In 5G R17-18, will there be any new major topics added to the previous three topics?

These three items are the cornerstones of the IMT-2020 triangle. The issue is obviously very much open to interpretation, but what 3GPP currently does is mostly filling the area of this triangle.

Q. Cross reference between stage-1 requirements and stage-3 protocol specifications:

- a. We see customers put stage-1 requirements in their RFP without knowing if those stage-1 requirements have stage-3 protocol specs that have been defined.**
- b. Please advise on how we can find out which stage-1 requirements have stage-3 protocol specs that have been defined and in which releases.**

At the present time there is no way to forward reference from requirements to stage 2 or stage 3 work. Nevertheless, all stage 2 and 3 work should include backwards-references to the related earlier work. In general, it was agreed that SA1 should not forward point to other groups which will work on the stage 2 / 3 implementation of stage 1 requirements. There is currently a discussion ongoing on the 3GPP SA mailing list on how to improve requirements tracking in 3GPP – any input on this discussion is highly appreciated.

Q. Backward compatibility between MCX UE clients and MCX servers:

- a. Can we expect an MCX UE should work with an MCX server running a newer release?**
- b. If no backward compatibility is maintained, can 3GPP provide the information about which changes between releases will break the MCX UE <-> MCX server interface?**

In general, the 3GPP MC standards are intended to be backward compatible for the functions carried forwards from an earlier release, from Rel-14 onwards.

Q. Is the 5G sidelink designed in a way that it will meet the public safety requirements? The current sidelink standard is not believed to meet user expectations.

The V2X sidelink main use case is to address the needs of autonomous vehicles. Work is ongoing in standardisation to respond to off-network mission critical device-to-device user requirements utilising part of the same component. On TCCA's side we expect the final verification of the capability to take place as part of product implementation.

Q. With 5G, comes uRLLC (low latency) and mMTC (massive connection). What's your view on the possible new services for Mission Critical that will be adopted to take advantage of these new features? Any feedback from industry so far?

Traditional Mission Critical services such MCPTT and MCVideo do not require uRLLC as they are time sensitive in the range around 100 ms or more. However, as latency decreases and machine-to-machine systems gain in role, new opportunities in critical communications are also introduced, the same applies for massive connections. At first this will be experienced in abilities to have more accurate situational picture by aggregating far more data sources and soon after in capabilities of remote presence for instance in tele medicine via haptics.

It is worth noting that from a society security point of view 5G capabilities such as autonomous vehicles contribute to safety and security as the majority of accidents currently are caused by human errors. At the same time those developments call for new roles and positions for society-critical services.

Q. Network slicing in 5G. Is it useful and when will be the first deployments using network slicing in production?

3GPP doesn't make any statements on implementations or deployments. It is therefore not possible to justify here how useful first deployments of network slicing will be.

On TCCA's side we recognise that network slicing enables a specific users and services Quality of Service according to their service requirements in shared networks. This adds to the tool box in ensuring critical communication meet the service requirements and enable efficient, safe and reliable working environments. Network slicing may also turn out to be very significant capability as critical communications users roam from one network to another. TCCA has been providing feedback to GSMA study on Network Slicing Profiles to establish commonly supported service profiles for the sector. Currently there is no information if 5G Network Slicing is in operation for the critical communication sector.

Q. Any commercial deployment PPDR on 5G right now?

3GPP doesn't make any statements on implementations or deployments.

On TCCA's side we are not aware of any nationwide PPDR networks utilising commercial MNO RAN in 5G operation at this point of time. The Finnish Virve 2.0 service has 4G/5G core and is connected to local MNO 4G/5G RAN. However, this service is not yet in operational use. FirstNet in USA is in the process of upgrading the core network to support 5G and eventually also 5G NR. There may well be tactical or other private networks offering services over 5G to PPDR users today.

Q. What are your thoughts on the pace of 3GPP Releases versus the stability that public safety requires?

Standardisation is a continuous work process on one side adding and amending capabilities as well as correcting specifications based on gained experience. There is usually a period of change requests making essential corrections which tail off in the six months to a year following a Release. This needs to be taken into account in planning service evolution and change management. Considering the current stage of 3GPP standards coverage is a very good starting point for public safety. Generally, 3GPP standards provide very good backward compatibility.

Therefore, the 3GPP release approach can be regarded as a tool to make vertical applications more stable and continuously adjust them to the new technologies introduced.

Q. What are the plans for Utilities/Smart Grid and Manufacturing 4.0 to have a seat at the table of 3GPP specification development?

Answered during the webinar

Q. Qualcomm interest was mentioned, has there been any timelines provided by Qualcomm for an expected ProSe/D2D modem?

Answered during the webinar

Q. While it's more simplistic to determine what 3GPP release a cellular network supports, how can an agency determine which 3GPP Release each mobile device supports?

Answered during the webinar

Q. How do you see Band 68 options for PPDR, on the short and long term? Is carrier aggregation w B28 a real expectation?

Answered during the webinar

Q. MCIoPS is listed as a Rel-17 study area. How is IOPS expected to evolve from 4G to 5G? Should IOPS take advantage of 5G Edge architecture?

Answered during the webinar

Q. Is 3GPP supporting the preparation communications between verticals?

Answered during the webinar