

# **Operators' views on interoperability of 5G NR**

**SK telecom, KT, LG Uplus, Verizon**

# 1. Background

**3GPP is delivering Release 15 to the industry in 3 distinct steps (a.k.a. multiple drops):**

- 'Early' drop – 5G NSA(Non-standalone) : ASN.1 frozen in March 2018;
- 'Main' drop – 5G SA(Standalone) : ASN.1 frozen in September 2018;
- 'Late' drop - Additional migration architectures : ASN.1 to be frozen in June 2019.

**Republic of Korea completed 5G spectrum auction in June 2018 and commercial 5G network services started in December 2018**

- Republic of Korea held its first 5G spectrum auction in the 3.5GHz and 28GHz bands in June 2018.
- Three Korean operators turned on 5G networks at midnight on December 1, 2018.  
So far, 5G commercial services have been available for B2B using mobile routers.
- The 5G services for smartphone users will roll out in March 2019 when 5G customized smartphones will be launched

**U.S. operator is also pushing for early 5G commercialization**

- Verizon currently offers 5G broadband internet in some areas and will launch 5G service in April 2019.

## 2. Observation

**The interoperable and compatible issues between different versions of Release 15 were raised.[1][2][3]**

- It is well understood that the September 2018 version of the Release 15 is the basis for initial 5G deployments.
- Some CRs approved at December 2018 might lead to non-interoperability with September 2018 version.
- There are still ongoing interoperability discussions within companies regarding some of the approved CRs, even though we respect and believe that the approved CRs are outcome of careful consideration and discussions.

**From the perspective of operator, non-interoperability would create a major confusion in the market**

- In order to overcome non-interoperability issue, UE firmware should be upgraded, but in reality only a few users do upgrade their firmware.[1]
- Users who have not updated their UE firmware might experience communication failure.

## 3. Conclusion and Proposal

1. The compatibility of devices and networks used for the first deployments should not be impacted by later version of Release 15 specifications.
2. Operators and vendors preparing early 5G commercialization should check the interoperability issues carefully in each CRs. It requires very tight interworking between standardization experts and development experts.
3. To ensure interoperability between previous version of Release 15 specifications, the CRs with the “backward compatibility issues” shall not be agreed.

# References

[1]RP-182733, "Operator View on 5G NR"

[2]R1-1903355, "Interoperability of Release 15 specifications"

[3]R2-1902229, "Interoperability of Release 15 specifications"