

NON-CONFIDENTIAL VERSION

TRUPHONE RESPONSES TO SELECTED QUESTIONS IN THE PUBLIC CONSULTATION ON THE ALLOCATION OF NEW FREQUENCIES FOR 5G

Question No. 8. Could the MVNO model create a more competitive and innovative 5G services market? Should special provisions be written into future licences for enabling alternative players' access to 5G spectrum or infrastructure? If so, which provisions?

The answer to the first part of this question is unequivocally yes. MVNOs have offered innovative services since the advent of MVNOs.

Truphone is an MVNO that operates well beyond the mere rebranding and reselling of services to consumer and businesses. We are a full MVNO who uses only the radio-access network and spectrum of our host operators – for the rest, we have our own infrastructure. We have the capability to:

1. provide connectivity to IOT device manufacturers using our network – we are an MVNO operator in 8 countries – soon to be 9 and we have roaming agreements around the world with underlying roaming agreements which permit permanent use of foreign networks for IOT devices and applications.
2. remotely provision eSIM profiles to devices using secure GSMA certified processes.

Neither of these capabilities is unique but Truphone is one of only a few companies in the world who are able to offer both of these capabilities. Based on this, device manufacturers do not need to coordinate with separate network operators and eSIM providers. Our ability to make that easy for IOT device manufacturers makes us immediately appealing to those innovators – especially smaller niche innovators – and enables them to focus on innovating rather coordinating eSIMs and connectivity.

That attractiveness and our ability to facilitate that process of innovation will diminish significantly and in a short period if we are not able to provide all forms of 5G services contemporaneous with or shortly after those technologies are offered by MNOs. [REDACTED]

[REDACTED]

Question No. 13. What are the main pros and cons of the three rollout solutions (NSA with 4G core, NSA with 5G core and SA with 5G core)? What impact will the three solutions have on the expected increase in performance? Depending on the ecosystem's maturity, what timeline is possible for a 5G core deployment? What would be the RoI timeline for the different scenarios?

What are the main pros and cons of the three rollout solutions (NSA with 4G core, NSA with 5G core and SA with 5G core)?

NSA with 4G core:

Pros: Fast track to support 5G radio, no need to invest in 5G core. Increased capacity and flexibility due to the addition of NR.

Cons: Not a 5G core (performance would not be as good).

NSA with 5G core:

Pros: Best performance, using 5G Core and with both LTE and NR for capacity and flexibility.

Cons: Additional complexity and investment in the deployment of the 5G Core.

SA with 5G core:

Pros: Long term solution, especially combined with NR.

Cons: Need to migrate 4G traffic into new 5G Core, not a short term solution.

What impact will the three solutions have on the expected increase in performance?

Performance should be better with a NSA 5G core and best with an SA 5G core and NR.

Depending on the ecosystem's maturity, what timeline is possible for a 5G core deployment?

MNOs will be the early adopters and should be able to start during 2019, with non-contiguous coverage areas. Probably with NSA deployments.

[REDACTED]

What would be the ROI timeline for the different scenarios?

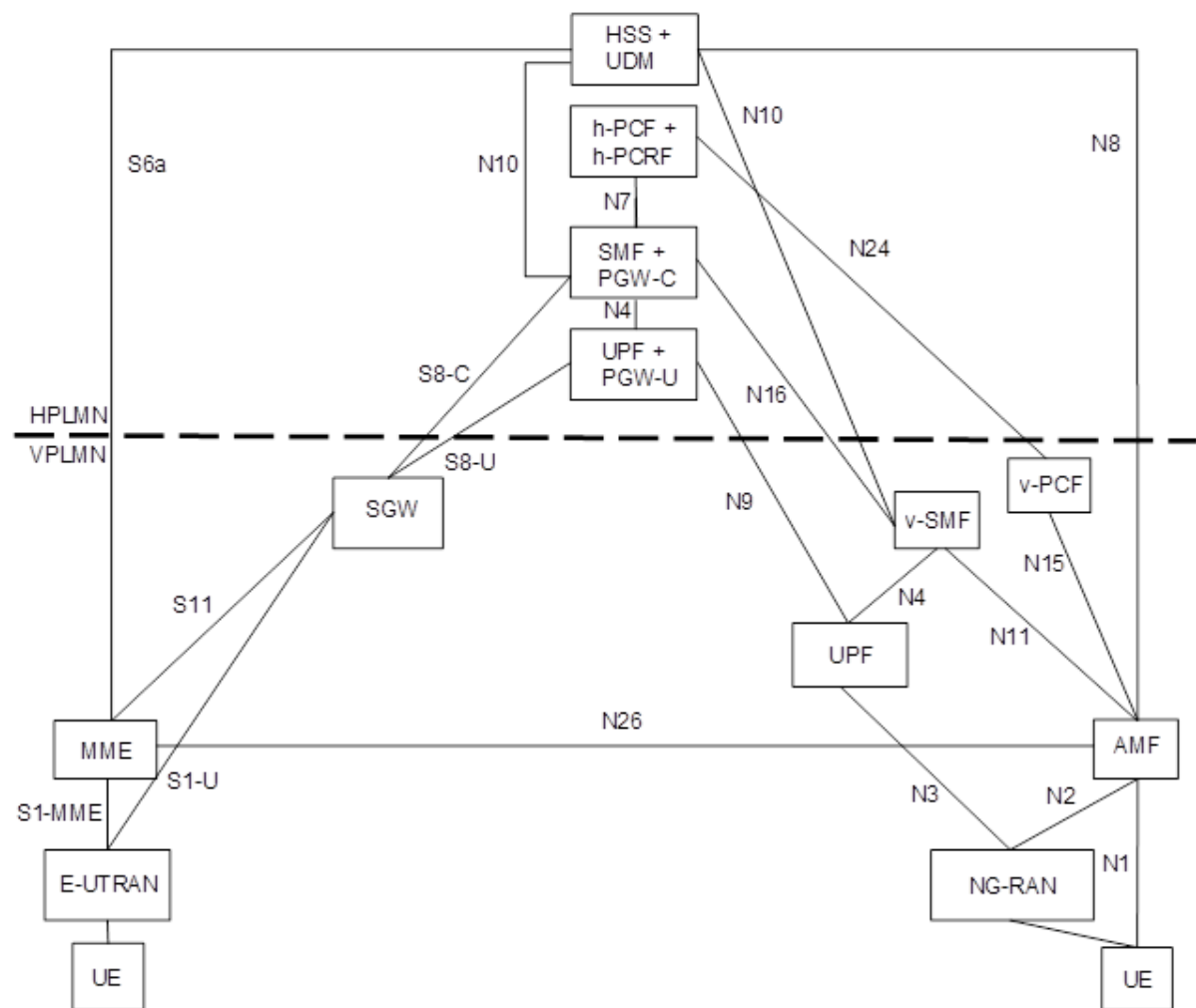
ROI should be best with the NSA with 4G Core deployment as we would be able to support 5G use cases without investing in a 5G core

Question No. 14. Regarding full MVNOs, what are the technical prerequisites for the host operator and the full MVNO, to ensure that the latter can be hosted on an ultrafast mobile network? Do these prerequisites differ depending on the host operator's architecture (SA or NSA) and the full MVNO's network core (4G or 5G)?

Regarding full MVNOs, what are the technical prerequisites for the host operator and the full MVNO, to ensure that the latter can be hosted on an ultrafast mobile network?

MNOs and full MVNOs have to agree and support the roaming architecture models defined in 3GPP.

We set out below the Roaming model that Truphone is likely to pursue (home-routed roaming architecture using the NSA with 4G core solution):



3GPP TS 23.501 V15.3.0 (2018-09)

Figure 4.3.2-2: Home-routed roaming architecture for interworking between 5GS and EPC/E-UTRAN

Do these prerequisites differ depending on the host operator's architecture (SA or NSA) and the full MVNO's network core (4G or 5G)?

Of course the interworking requirements will be different for each possible combination.

It is expected that mobile industry will respect the need of different operators to follow different migration strategies with some degree of divergence, therefore guaranteeing service continuity and network interoperability