

The European Utilities Telecom Council (EUTC) represents European electricity and gas generation, transmission and distribution companies and welcomes the opportunity to comment on the draft BEREC 'Further Guidance on 5G Network Slicing'.

Understandably, the Guidance itself is framed in legal terms, and therefore EUTC has found the examples invaluable in comprehending how the guidance might be interpreted in practice. In particular, we have focused on Example 3 (Video Transmission) and Example 5 (Connected Ambulance) as best illustrating similar situations to where utilities need access to communications networks for monitoring and control of critical utility infrastructure and communications with key personnel during times of congestion on public networks, and thus where network slicing may be of value.



Summary

Utilities have examined the potential benefits that network slicing might offer for emergency voice communications and monitoring and control of their critical operational data communications.

Utility networks are critically dependent on communications.

Our conclusions are that technology has yet to demonstrate real benefits to utilities; and even if there are substantial benefits, whether they can be realised in practice. This will be highly dependent on the regulatory framework, and the services public mobile network operators offer to deliver these features.

Utilities' main focus is on services designed to meet their specific needs in terms of resilience, security, availability, access during times of network congestion and guaranteed capacity to meet their requirements during times of stress.

EUTC has long advocated for the availability of dedicated and private communications infrastructures to support the operation of critical utility systems. This position reflects the specific mission of electricity and gas operators, whose communications networks support grid stability, operational safety, cyber resilience, emergency response and restoration of essential services. These requirements are becoming more demanding as a result of the energy transition, increased electrification, the expansion of distributed energy resources, higher reliability targets and growing cyber exposure. Against this background, network slicing

should be assessed not as a consumer-oriented enhancement of public mobile networks, but as a potential virtualised implementation of the same principles historically delivered through private utility networks and managed VPN services. For slicing to be a valid option for utilities, it must approach a “private network grade” condition, including assured resources, logical separation, predictable performance, enhanced security, resilience, prioritised restoration and continuity during crisis situations.

EUTC therefore considers that network slices serving Essential Entities should be recognised as specialised services where they are designed to support critical infrastructure functions and where the required level of assurance cannot be delivered through best-effort Internet Access Services. Such slices should not be viewed as preferential treatment of commercial traffic, but as dedicated operational communications environments necessary to fulfil public-interest obligations. Their assessment should focus on whether they provide equivalent operational assurances to private networks, including resource reservation, isolation, availability, security, resilience and continuity of service

The central question for utilities is not whether slicing can provide differentiated connectivity in a technical sense, but whether it can provide an operationally credible substitute for private networks. If slicing cannot offer assured capacity, isolation, resilience, security and continuity comparable to private communications infrastructures, then it will not meet the mission-critical requirements of utilities, regardless of its theoretical regulatory or technical classification.

In addition, slices serving Essential Entities should not be exposed to blanket restriction, shutdown or traffic management measures applied indiscriminately to public communications services during exceptional circumstances. Any legal, regulatory or security-driven intervention affecting such slices should be subject to a strict necessity and proportionality assessment, taking account of the role these communications play in maintaining the continuity, safety and restoration of essential services. Measures that do not distinguish between consumer communications and critical infrastructure communications risk undermining the resilience objectives established under NIS2 and the Critical Entities Resilience framework.

Within this context, EUTC welcomes BEREC's recognition that Specialised Services may be necessary to support services of public interest and machine-to-machine communications. The assessment of Specialised Services should therefore explicitly acknowledge resource assurance, security, resilience and operational continuity as legitimate requirements, in addition to traditional QoS parameters. Such services should not be considered detrimental to IAS where sufficient network capacity has been provisioned and compliance with IAS performance obligations can be demonstrated.

Detail

EUTC's comments do not relate to specific elements in the Further Guidance, but examine the effect of this guidance in four dimensions:

- In technical terms, what is possible?
- How will slicing be controlled in a regulatory framework?
- Will the operators' business models encourage them to offer slicing?
- Will device manufacturers find the market sufficiently attractive to offer slicing facilities in their products?

EUTC makes the following observations around these four principles:

- It is understood that Public Safety Services (Police, Fire, Ambulance) will be able to obtain priority access to public networks in most countries, but it is not clear how they will be guaranteed capacity when a network is congested.
- Utilities are concerned that even if they are able to negotiate a similar arrangement to public safety with regulators for priority access to public networks in times of crisis, they will always be secondary when competing with public safety for access or capacity. This would potentially leave utilities unable to control their critical assets during times of stress and impede restoration of critical services.
- In some countries some critical services have already migrated to a public network based critical communications network: it is reported that testing to ensure it operates satisfactorily has taken 6-7 years. This is because radio base stations must be parameterized correctly if access by critical users is to be guaranteed at 99.99% confidence level, the minimum always required for critical access in all locations.
- To date, experience has shown that even where priority enabled devices to have been recognised by the base station, during massive public order events, consumer devices cause sufficient competing traffic to prevent the base station being able to provide the desired service level to priority users.
- Mechanisms to handle planned massive events are being developed, but for unplanned events, there is need for more work. However, it has been observed that the network settings for dealing with a crisis cannot be implemented at all times as they negatively impact capacity for normal operations. This dilemma has yet to be resolved as far as utilities are concerned.



Most utility infrastructure is monitored and controlled using radio networks.

- Accordingly, priority requirements and network slicing for critical users have to be planned carefully and regularly tested, ideally in collaboration with all parties to whom priority access and guaranteed capacity has been promised.
- Although network slicing has been approved for several years, utilities observe that the usage of network slicing in commercial products, other than specific trials, has been minimal. Uptake has been limited because of technical implementation issues, technical capabilities and/or the business model. This makes utilities concerned that in spite of all the publicity which has been given to network slicing, there will not be a sufficiently substantial market to attract device, module and modem manufacturers.

European Utilities Telecom Council (EUTC)

The European Utilities Telecom Council (EUTC) is the leading European Utilities trade association dedicated to informing its members and influencing policies on how telecommunication solutions and associated challenges can support the future smart infrastructures and the related policy objectives using innovative technologies, processes, business insights and professional people.



Typical utility distribution control room

This is combined with sharing best practices and learning from across the EUTC and the UTC global organization of telecommunication professionals within the field of utilities and other critical infrastructure environments and associated stakeholders.

CONTACT DETAILS:

Adrian Grilli
Technology Adviser
European Utilities Telecom Council AISBL (EUTC)
Avenue Marnix 30
1000 Brussels, Belgium



E-mail: adrian.grilli@EUTC.org

+44 7831 683085

www.eutc.org