## Annex A (informative)

## Example of "per service"/"per user" network slice in NGFI network

The implementation of network slicing in NGFI network requires the transport nodes to support some basic functions regardless of the transport technology(-ies) actually deployed. Figure 1 and Figure 2 show an example of transport network slices configured, respectively, "per service" and "per user" in both NGFI-I and NGFI-II segments.

In both scenarios, the use case considers to carry across NGFI network different types of services, 5G and 4G, exchanged between a cell site and core elements (EPC/5GC).



Figure 1 – Example of "per service" network slice in NGFI network

Mobile services are, then, assumed to be both latency critical, e.g., because a double functional split resulting in RU, DU and CU located in different sites; and not latency critical, e.g., because a complete gNB (5G) and eNB (4G) equipped at cell site. The transport applied to these last cases is, consequently, traditional backhaul to/from core elements.

In Figure 1, Fronthaul Transport Nodes (FTN), realizing NGFI-I and NGFI-II transport segments need, consequently, to perform the identification of services, i.e., classification based on assigned CoS, and the aggregation of services sharing same CoS over the associated transport slice.

In NGFI-I, transport slice 1 (TR\_SLICE 1) is devoted to carry latency critical services, between RU and DU, ensuring to meet the needed latency and bandwidth requirements. Transport slice 2 (TR\_SLICE 2) is assigned to the transport of 5G not latency critical services, thus, a more relaxed performances is supported (with respect to TR\_SLICE 1). Finally, a dedicated transport slice (TR\_SLICE n) is assumed to carry 4G services, again, not latency critical.

Similarly, in NGFI-II, a transport slice (TR\_SLICE a) is dedicated to latency critical services, between DU and CU (requiring, however, relaxed performances with respect to TR\_SLICE 1); and a second transport slice is dedicated to 4G/5G not latency critical services, to/from core elements.

In Figure 2, the scenario considers to share the NGFI transport infra-structure among different service providers. Thus, more services, potentially with different CoS belong to a specific provider, and the transport slice, assigned on provider basis (i.e., "per user"), is filled with all the services managed by that provider. This requires that in FTNs, a first classification function identifies the provider, (performing an inter-slice classification) and a further classification function may apply the QoS model to the specific transport slice (intra-slice classification). In NGFI-I and NGFI-II, "n" transport network slices (TR\_SLICE 1 to n) are, consequently, assigned to as many service providers.

Transport network slice in both scenarios here depicted may be realized both with physical/logical "hard" slices and logical "soft" slices. Specifically in the "per user" scenario, no-one prevents the NGFI operator to realize a multi-

technology slice assigned to each service provider and distributing in inner slices the different services, consistently with the forwarding characteristics, offered by the specific dataplane technology.



Figure 2 – Example of "per user" network slice in NGFI network

Finally, in both scenarios the connectivity potentially configurable to each transport slice may vary depending on the actual traffic matrix and network application. Examples of connectivity which can be associated to each transport slice are showed in Figure 3.



Figure 3 – Examples of transport network slice connectivity