

<SK Telecom's Views on SA Rel-19 >

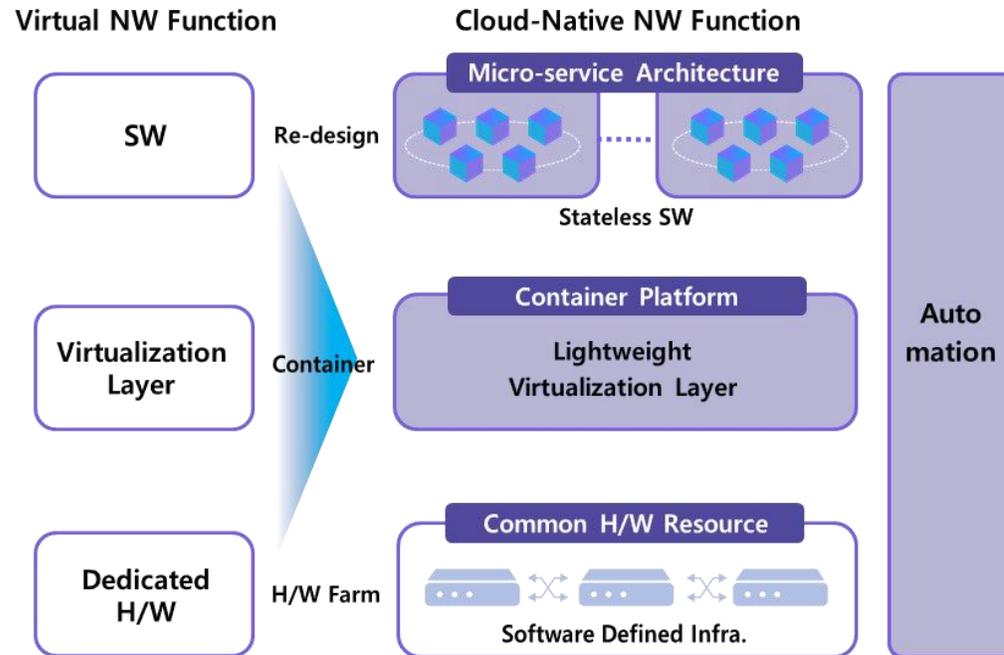
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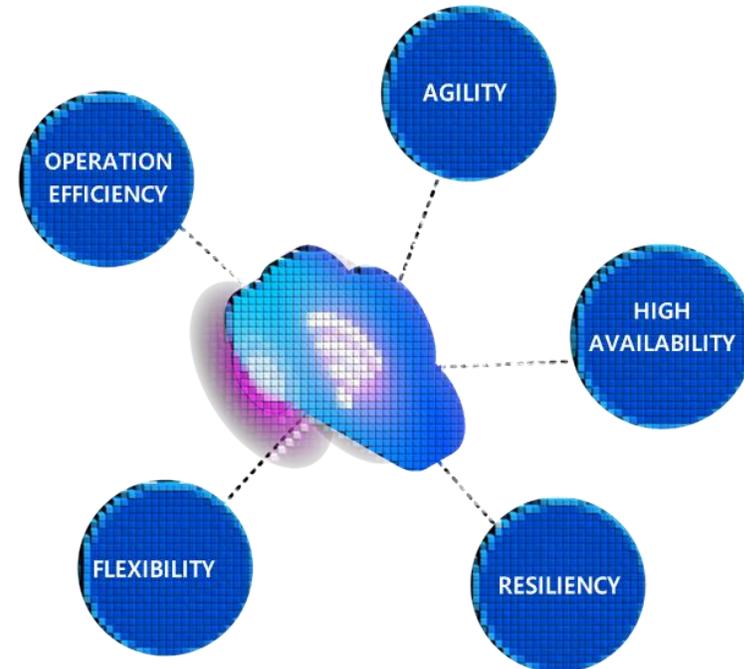
Outline 1/2

SKT's Cloud-native Architecture ('22~)

SKT's Virtualization Journey



Cloud-Native Advantage



Outline 2/2

S.N O.	Title	Brief Description and Key Objectives	Related Stage-1 Study/Work Item	Lead Stage-2 WG	RAN dependencies	Other WG dependencies
1	EnergyServ 5G environment adaptation (See slide 4 for more details)	<ul style="list-style-type: none"> 5G to adapt energy-aware procedures to make efficient energy utilization to reduce carbon emissions Objective#1 <ul style="list-style-type: none"> Provide a mechanism for individual NFs based on energy consumption, to process, registration, discovery, select/route, load (re)balancing, and overload-control. 	Yes, TR 22.882-110 [FS_EnergyServ]	SA2	No	
2.	FS_RRC (Study on Robust and Resilient Core) (See slide 5 for more details)	<ul style="list-style-type: none"> Study is aiming at identifying/analyzing existing and new methods for 5GC to support protecting against signal storm and related misbehaving network functions. Objective#1: Protecting from signal storm and abnormal network functions <ul style="list-style-type: none"> WT#1.1: architecture to support protection from signal storm and abnormal network functions, by means of mechanisms that facilitate troubleshooting, security analysis and monitoring of signal paths, changes and recoveries of network functions. WT#1.2: predict and detect signal storm with metrics to measure signal storm and abnormal network functions. WT#1.3: a mitigation solution for the signal storm to guarantee the stability of network functions themselves and their surrounding network functions. 	Yes, TS 22.xxx [AIML_MT_Ph2]	SA2	No	
3	UPF enhancements (See slide 6 for more details)	<ul style="list-style-type: none"> Study is enhancing UPF to support SBA with enhancements for Charging/QoS/Exposures Objective#1 <ul style="list-style-type: none"> Support of packet retransmissions/fragmentation detection Support of packet header/insertion, support of payload detections Support of UPF extension for packet trace exposures 	UPCAS/UPEAS	SA2	No	SA5
4	eSBA enhancements (See slide 7 for more details)	<ul style="list-style-type: none"> Study for enhancing SCP to support NSA/LTE nodes Objective#1: When using SCP, Support for <ul style="list-style-type: none"> All NFs to support legacy protocols using a single and common interface like SBI, and/or provide legacy protocols with conversion in mind. 	eSBA	SA2	No	

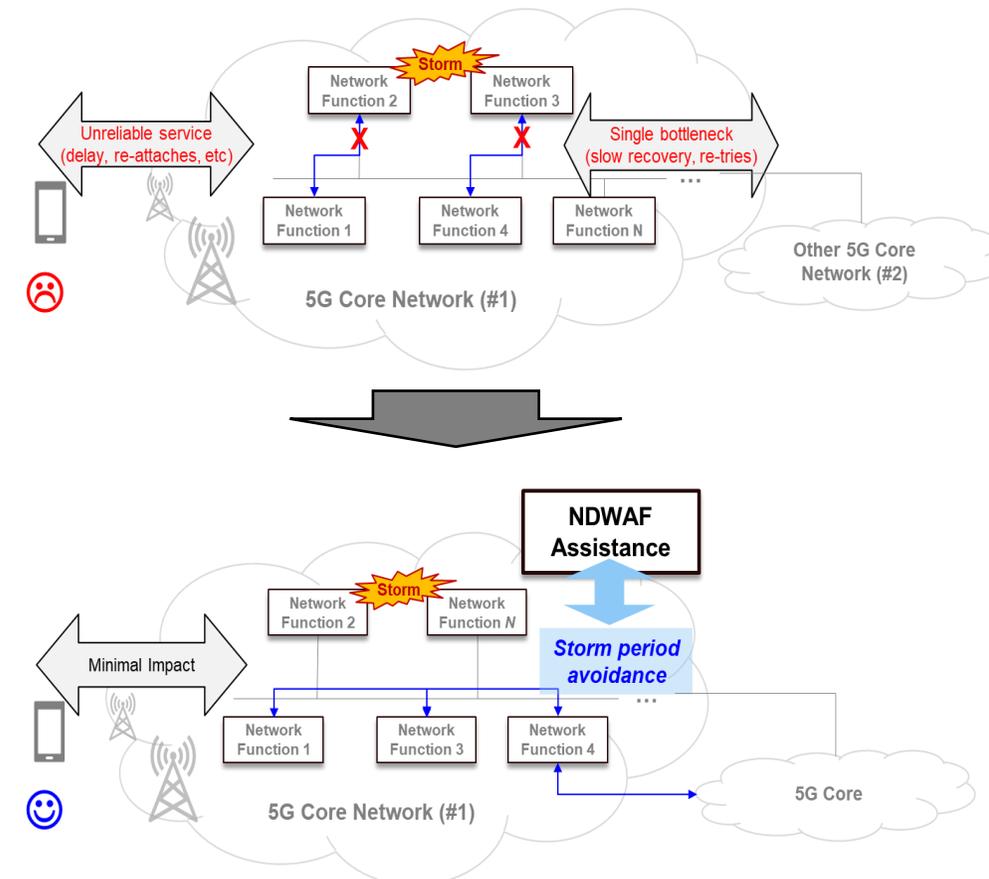
Robust and Resilient Core

🌿 The study is aiming at identifying and analyzing existing and new methods for 5GC to support protecting against signal storm and related misbehaving network functions.

WT#1.1: Study whether and how to enhance the existing architecture to support protection from signal storm and abnormal network functions, by means of mechanisms that facilitate troubleshooting, security analysis and monitoring of signal paths, changes and recoveries of network functions.

WT#1.2: Study whether and how to predict and detect signal storm with metrics to measure signal storm and abnormal network functions.

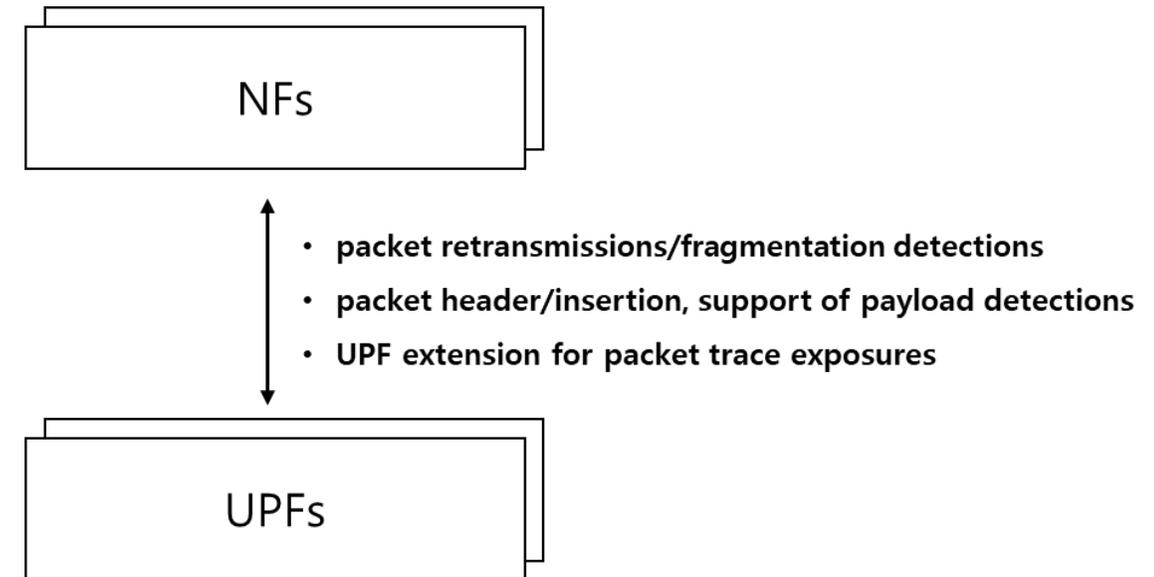
WT#1.3: Study a mitigation solution for the signal storm to guarantee the stability of network functions themselves and their surrounding network functions.



SA2#157 <https://portal.3gpp.org/ngppapp/CreateTDoc.aspx?mode=view&contributionId=1442135>

UPF enhancements

- **Study for enhancing UPF to support SBA with enhancements.**
- Some charging/billing plans need to remove out retransmitted packets and fragmentation & reassembly related bytes.
- Some traffic needs to be rate-controlled based on packet header and/or payload differently.
- Some traffic needs to be exposed/analyzed by providing a raw/sample packet traces.
- Some redundancy mechanisms, e.g., UPF Set support is needed for better reliabilities.



eSBA enhancements

Study for enhancing SCP to support NSA nodes

Background : SCP only supports SBI-enabled NFs, making it more difficult to develop, verify, integrate and operate when 'NSA/SA Converged Core' is used. Currently, 5GC supports some 4G functions such as SMF/PGW-C for interworking with NSA/LTE. It would be better to have a unified Service mesh network

When using SCP, support for

- All NFs to support legacy protocols using a single and common interface like SBI, and/or
- provide legacy protocols with conversion, and/or passthrough mesh network mechanism

