S2-153083

Next Generation Network Architecture: Study item proposal

Nokia Networks, Verizon, Alcatel-Lucent, Sprint

New study item for '5G' architecture

Factors that justify an Architecture study for 5G in SA2:

New services requiring

-extreme high data rates

-ultra low latency, mobility and high reliability

- efficient support of massive machine type communication

Flexibility and Efficiency

- Extreme flexibility in offering (new) network services for TCO optimization

- Operational efficiency and simplicity

Convergence

- Convergence with other access

- Common core, radio access agnostic core

User experience management

- Dynamic QoS principles

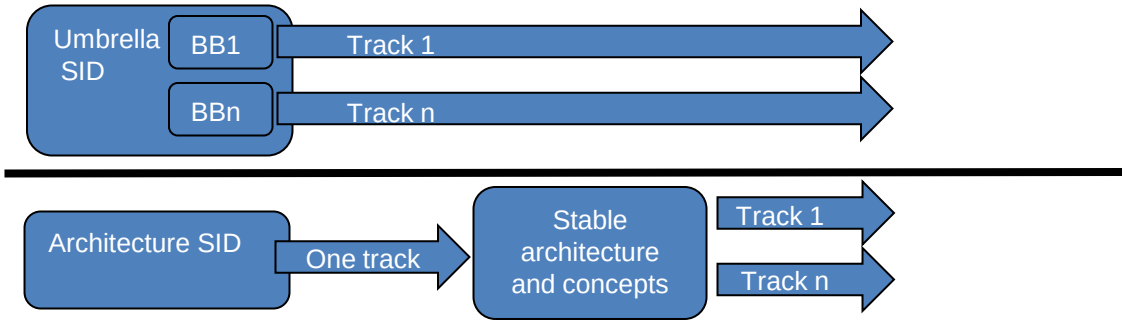
- QoE management

'5G' Radio

- Support for new RAT

How to structure the work in SA2?

- **Option 1:** One umbrella SID with multiple BBs from the start
- **Option 2:** One single SID until the architecture work reaches maturity, splits into multiple BBs afterwards



	Advantages	Disadvantages
Option 1	•Multiple tracks from the beginning could allow parallel processing	•More resources from companies needed •Parallel work without a stable reference architecture can lead to diverging solutions and requires extensive coordination at the initial phase
Option 2	•Allows SA2 to work in a focused manner and agree on a single reference architecture, BBs can start at any time when group decides architecture is mature •Benefits from both single track until the WG reaches stability in the discussion and multiple tracks when parallel processing is possible/required.	none

Summary and Conclusions

- 3GPP needs to specify an architecture fulfilling the needs of the next decade – and beyond
- **Outcome of the study should result in an agreed reference architecture and system level concepts.**
- The initial phase of the work should focus on studying a suitable architecture.
  - Initial phase of the work should be done in one stream to allow for one single reference architecture and avoid inconsistencies
  - Subsequent phases can done in parallel to ensure faster progress

Reference

- Snippet from SA#69 meeting notes:
  - It was agreed that TSG SA should provide guidance to SA WG2 to begin work with a single study item with timescales for the work.
  - *AP 69/2:SA WG2 were asked to provide a proposed Study WID to TSG SA#70 on Next Generation Mobile Network Architecture*

BACKUP

NGMN Vision

Serves as a baseline for 5G architecture discussion and definition

**"5G is an end-to-end ecosystem to enable a fully mobile and connected society.
It empowers value creation towards customers and partners, through existing and emerging use cases, delivered with consistent experience, and enabled by sustainable business models."**

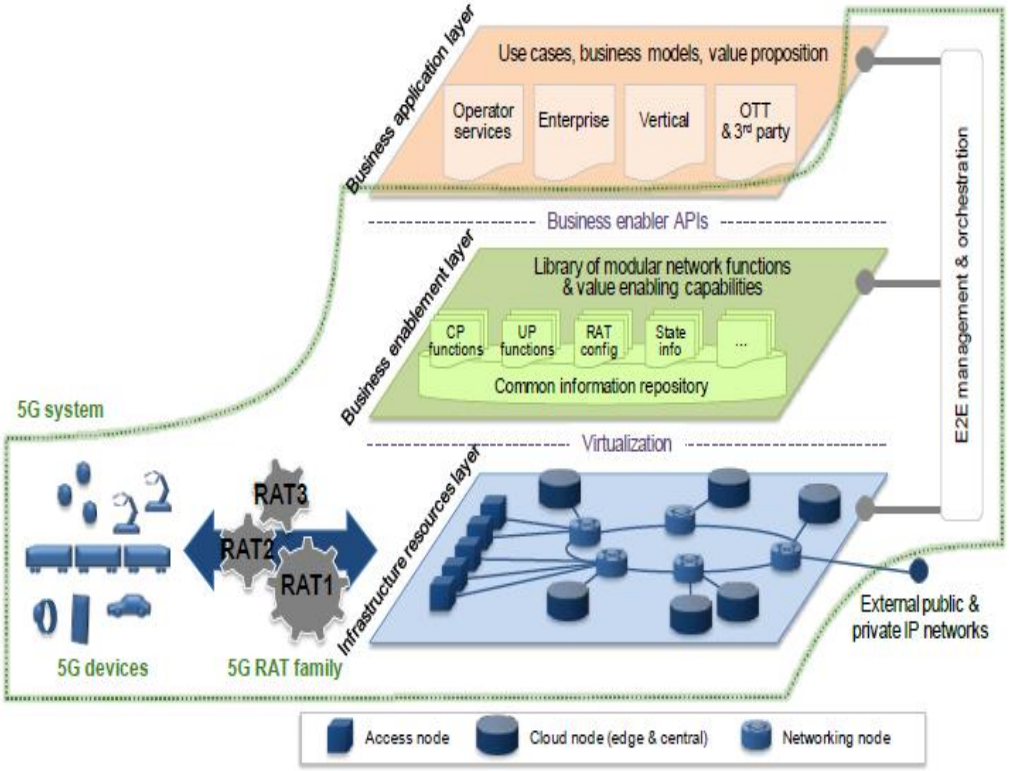


Figure 8: 5G Architecture

A Deliverable by the NGMN Alliance

NGMN 5G WHITE PAPER