

From Research to Standards

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Architecting
tomorrow

NOKIA

From Research to Standards

Innovate, invent, create and drive open end-to-end network technologies and systems



Technology Scouting

- Academic conferences
- University collaboration
- Guest lectures,
- Industrial workshops
- ...

Partnerships

- Research projects
- Industry-academia collaboration
- Prototype...

Internal Research

- Demos/PoC, ...
- Technology radar
- Industry and market trend

Systems Research

- Scouting industry needs
- Business case for excellence and expansion.
- Detailed research targeting standardization

Standardization

- SDOs
- Alliances
- Fora,
- Coalitions,
- Regulatory bodies
- ...

An aerial photograph of a large solar farm with rows of solar panels stretching into the distance. In the foreground, the white nacelle and parts of the blades of a wind turbine are visible, partially obscuring the solar panels. The sky is clear and bright, suggesting a sunny day.

Standards must enable Business values and Societal values

TCO reduction, Performance & resiliency, Foster Monetization

Environmental sustainability, Security Privacy and trust, Digital Inclusion

3GPP SA2

Terms of Reference (SP-210166)

The 3GPP TSG SA WG2 (SA2) is responsible for the definition, evolution, and maintenance of the overall system architecture including the assignment of functions to particular subsystems (e.g. RAN, CN, Terminal, USIM, IMS) and associated high-level functional interactions.

- Architecture and concepts. Examples are (but not limited to):
 - Roaming and non-roaming architecture
 - Network Functions and entities
 - Reference points between network entities
 - Service-based architecture and communication framework
 - Data Storage Architecture

- Control and user plane protocol stacks
- System Procedures, examples are (but not limited to):
 - Network Access control
 - Registration and connection management
 - Mobility Management, Paging, UE reachability
 - Session Management
 - Exposure framework etc.

<https://www.3gpp.org/3gpp-groups/service-system-aspects-sa/sa-wg2>

Research to Standards

Research phase:

1. Assess and learn from existing systems, technology trends, new business needs and trends.
2. Break them down to relevant problems / key issues.
3. Investigate solutions for the identified problem statements.
4. Ensure that the solutions are technically accurate, consistent and feasible.

Standards phase:

1. Determine a plan to how progress new services and functionality in 3GPP, starting from SA1, where new service requirements are defined.
2. Follow through until the solution is adopted and/or relevant problem is solved in respective WGs in 3GPP.

Best practices example for Research to Standards phase

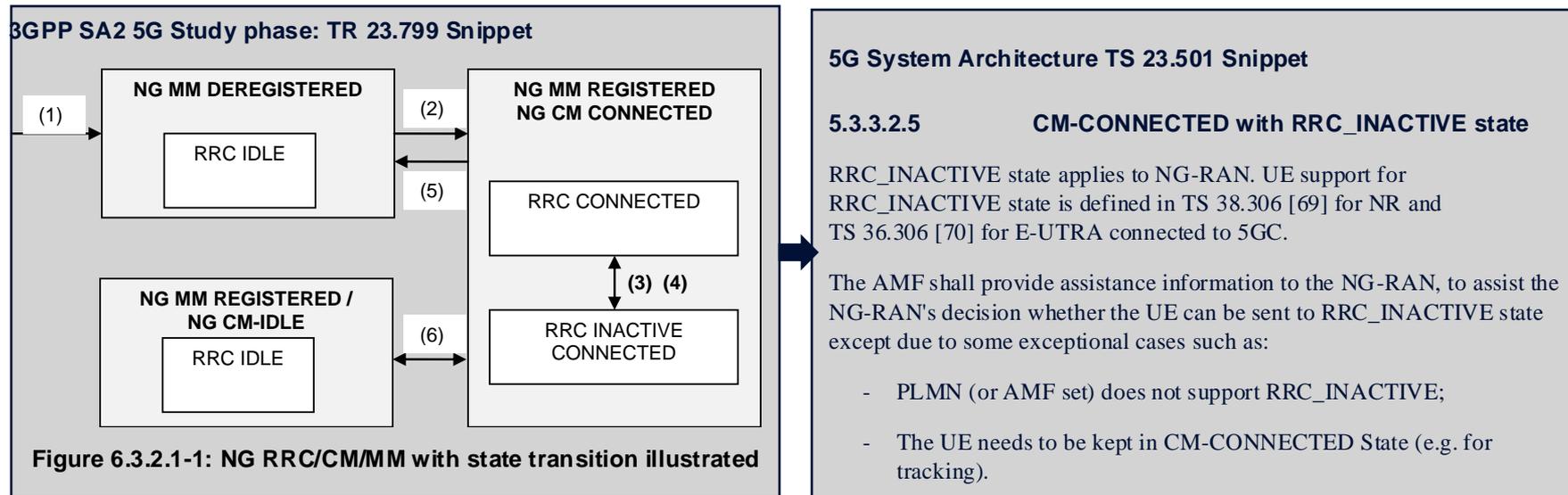
RRC INACTIVE state – 5G research phase to standards phase

Research Phase

<https://metis-ii.5g-ppp.eu/wp-content/uploads/publications/2016/2016-05-ICC-A-novel-state-model-for-5G-radio-access-networks.pdf>

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Standards Phase



Why Standards?

If you want to go fast, go alone; if you want to go far, go together!!!



Everyone should have access to clean energy, education and stay safe. First step is translating the [#SDGs](#) into real action with the help of International Standards.
- IEC



Will underpin the effort to build back better and help deliver our shared vision for a better world!
- ITU



World that is better, fairer, and more sustainable
- ISO

Standards is a “shared vision for a better world”

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