

**Terms of Reference (ToR) for  
ETSI ISG Next Generation Protocols, (NGP)  
Approved by the Director-General on 2 February 2018 following ETSI Board consultation**

## Scope

The main objectives of ISG NGP are:

ISG NGP is intended to identify the requirements for next generation infoComms protocols and where appropriate, network architectures, from all interested user and industry groups. The goal is to formulate a series of Group Specifications which focus on documenting the state of the art in future Internet research and proposals, recap what issues those proposals try to resolve and which requirements they try to meet and identify where the shortcomings exist or are likely to emerge. The scope also includes describing the requirements of evolving access network technologies and identify which communities appear to be already working on such new requirements and could be important stakeholders to engage or coordinate with and identify any gaps.

In its first term, the ISG laid the foundational work for Next Generation Protocols: identifying requirements, scenarios and example next generation technologies. For wider industry awareness and trials, further efforts are needed in order to standardize relevant specifications, validate the new protocols against near-future use cases, and compare against legacy protocols via a set of defined KPIs. The extension of NGP will serve this purpose.

## Areas of activity

The activities of ISG NGP for its second terms include the following broad areas:

- Completion of ongoing Work Items for publication, including
  - Guidance to SDOs when creating next generation protocols,
    - KPIs for next generation protocols
    - Design Principles for Next Generation Protocols
  - and network technology research:
    - Identity Oriented Networking
    - Intelligence-Defined Networks
    - Mobile deterministic networking
    - New transport technologies
    - Next generation network slicing
- New work items, including:
  - Security and Privacy
  - Hardware requirements for NGP
    - Considerations for efficient implementation of NGP user plane in packet-processing hardware
    - Timing requirements
    - Network management considerations for NGP, including data modelling.
- Industry validation for NGP
  - Demonstrating the needs from industry sectors to improve protocol capabilities, (scalability, performance, security and mobility) to realise near-future use cases.
  - Publishing an argument as to how Next Generation Protocols play a key role in realising the technical challenges of the Industrial Internet, and hence facilitate Industry 4.0 use cases including tele-medicine, smart factory, agriculture and others.
  - Documenting the low-latency edge services for verticals such as V2X, smart cities etc., including Connected AR/VR and immersive media experiences, where NGP will be required.
- Continued engagement with SDOs to standardise NGP
  - Target 3GPP R17 for next-generation protocols to be supported in the core and/or radio access networks.

- Bring NGP to IRTF, for example to present how next generation protocols and architectures can provide benefits to Network Function Virtualisation
- Continue engagement with other standards bodies, such as ISO, IEC and ITU.
- Test results and proof points
  - Benchmarked against the NGP KPIs, to demonstrate benefit in comparison to today's protocols.
  - Interworking and coexistence between non-IP NGP based domains and internet (IP based) domains.
  - Implementation guidelines and considerations, including interoperability test cases.
  - Hackathons
  - Interoperability plugtests,
  - Publication of test results.
- Increased and varied membership
  - Drive for more operator and network equipment vendor ISG members
  - Drive for members from industry sectors. This will help ensure our deliverables are relevant.
- Outreach and engagement
  - Further conference speaking
  - Engagement with other research bodies, such as 5GPPP, H2020 initiatives
  - Renewed ISG portal materials, including refreshed applicability statement to explain the exact problems we are trying to solve.

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### **Annex (informative): collaboration with other bodies**

ISG NGP will set-up the appropriate communication channels to the following groups both within and outside of ETSI.

#### **ETSI groups**

- 3PP
- ETSI ISG ENI
- ETSI ISG IP6
- ETSI ISG NFV
- ETSI ISG MEC
- ETSI TC Cable
- ETSI TC NTECH
- ETSI TC ATTM
- ETSI TC LI
- ETSI TC CYBER

#### **External groups**

- IEEE
- IETF
- IRTF
- ITU-T
- ISO/IEC

