

Terms of Reference (ToR) for the ETSI ISG “Reconfigurable Intelligent Surfaces” (ISG RIS)

Approved by the Director-General on **8 June 2023**, following ETSI Board consultation

Scope

ETSI ISG RIS will provide an opportunity for ETSI members to coordinate their research efforts on RIS technology across various EU/UK collaborative projects, extended with relevant global initiatives, towards paving the way for future standardization of the technology.

ETSI ISG RIS will consequently concentrate in producing informative and normative elements related to applications of RIS technology in future wireless systems.

The scope of the ETSI ISG RIS is summarized below:

- RIS use cases, KPIs, and deployment scenarios;
- RIS channel modelling and evaluation frameworks;
- RIS air-interface technologies and mechanics;
- RIS systems and architectures;
- RIS implementation, practical considerations, and prototyping.

Areas of Activity

ETSI ISG RIS will focus on informative and normative work including assessing the technology potential and providing technical requirements, including:

- Provide gaps and recommendations of existing and required standards for RIS.
- Define use cases, channel models, and deployment scenarios, and specify technical requirements related to link and system aspects in the following areas:
 - Fixed and Mobile Wireless Access;
 - Fronthaul and Backhaul;
 - Sensing and Localisation;
 - Energy and EMF Exposure Limits;
 - Security and Privacy.
- Provide a Gap Analysis for RIS microelectronics and enabling technologies.
- Provide and demonstrate PoCs and test case descriptions to validate standards-based approaches.
- Provide implementation and practical considerations.
- Provide and demonstrate proof-of-concepts.

Outreach and engagement (collaboration with other stakeholders)

ETSI ISG RIS activities and deliverables will be complementary to existing ETSI work. ETSI ISG RIS will establish relationships with other ETSI bodies and the wider industry to avoid duplication, maximize synergies and act to ensure broad industry adoption. Of particular note are the relationships` with the following ETSI bodies and external bodies listed in the Annex.

Annex (informative): collaboration with other bodies

ISG RIS will set up appropriate communication channels to the following groups:

ETSI groups

- EPP 3GPP
- ISG THz
- ISG ENI
- ISG MEC
- ISG mWT
- ISG SAI
- ISG ZSM

and others as identified during the progression of the work.

External groups

- EC Horizon Europe/H2020 programme
- IEEE and ACM Initiatives
- INNOVATE UK programme
- ITU-R (ITU Radiocommunication Sector)
- ITU-T (ITU Telecommunication Standardization Sector)

and others as identified during the progression of the work.