

Terms of Reference (ToR) for ETSI ISG Zero touch network and Service Management (ISG ZSM)

Approved by the ETSI Director-General on **3 December 2021** following Board#135 Consultation

Scope

The “Industry Specification Group Zero touch network and Service Management” (ISG ZSM) is working on the definition of a new, future-proof, horizontal and vertical end-to-end operable architecture framework, solutions, and core technologies to enable agile, efficient and qualitative management and automation of emerging and future networks and services. Horizontal end-to-end refers to cross-domain, cross-technology aspects. Vertical end-to-end refers to cross-layer aspects, from the resource-oriented up to the customer-oriented layers. The goal is to have all operational processes and tasks (e.g., delivery, deployment, configuration, assurance, and optimization) executed automatically, ideally with 100% automation.

The highest priority of the ISG ZSM is to progress and finalize the second term work (e.g., end-to-end cross-domain automated service orchestration, closed-loop automation solutions and advanced topics, study of intent-driven autonomous networks, enablers for artificial intelligence-based network and service automation, CI/CD automation, security capabilities, etc.).

In addition, the ISG plans to maintain and enhance the existing specifications, and produce new specifications addressing the next level of details needed to enable full end-to-end automation of network and service management.

The ISG intends to analyse existing specifications and solutions (both ETSI and external ones) and where appropriate leverage them to avoid duplication and maximize synergies.

The ISG will continue to strengthen the collaboration with the relevant standardization bodies, open-source projects and fora in order to promote the adoption of and alignment with the ZSM architecture and solutions to ensure automated end-to-end network and service management can be achieved. It will also utilize the collaboration to discuss and align on gaps that need to be filled. The ISG ZSM plans to work constructively with open-source communities to ensure alignment that will allow integrating open-source software components in ZSM-based solutions. The ISG ZSM aims to act as a central point for end-to-end network and service automation and facilitate the coordination and cooperation between relevant standardization bodies and open-source projects. The unique value of ISG ZSM will be in providing guidance to the implementation of management interfaces as well as coordinating and giving directions to achieve automated end-to-end network and service management solutions and architecture. In addition, the ZSM key automation technologies should be leveraged by other organizations (e.g. 3GPP, O-RAN), to ensure cross-use cases, cross-domains, cross-planes, interoperable, unified and consistent automated and cognitive operation.

The ISG ZSM will encourage the creation of Proof of Concepts (PoCs) to demonstrate the viability of ZSM implementations. The results and lessons learnt from the ZSM PoCs will be channelled to the ISG ZSM specification work. In its specification work, the ISG will take into consideration also feedback and findings from real deployments and operational experience.

The ISG ZSM will consider to complement the cooperation with other standardization bodies and open source projects with interoperability testing specifications, test platforms, acceptance tests, and test results dissemination (to be considered in the specifications activities) in the context of end-to-end management and automation. This work will be done in collaboration with the related organizations.

The ISG ZSM will continue its effort to disseminate its results and accelerate the development of compliant solutions.

Areas of activity include:

- further details of the Integration Fabric and the management services,
- enablers for AI/ML applications in support of network and service automation,
- intent-based automation and cognitive operations,
- unified and expressive data formats to support AI/ML,
- cross-domain data services,
- support for new IT/Telco/Enterprise business models,
- design time capabilities in support of the run-time automation, e.g. CI/CD, closed loops, Network as a Service (NaaS),
- support for network of networks,

- support for continuous testing
- security capabilities to protect the ZSM framework, services and automated processes

The ISG will assess the implications of emerging technologies on automation and consider that in its work. .
New compelling use cases may identify additional missing parts that the ISG will agree to work on.

Annex (informative): collaboration with other bodies

Close collaboration and coordination with other standard groups is required to ensure that all the organizations together provide complementary solutions. It will also be necessary to identify and agree the roles of the corresponding standardization bodies in filling the identified gaps.

ISG ZSM will setup the appropriate communication channels to the following groups both within and outside of ETSI.

ETSI groups

The ISG initially intends to establish relationship with the following ETSI groups:

- ETSI PP 3GPP
- ETSI ISG ENI
- ETSI ISG MEC
- ETSI ISG NFV
- ETSI OSG OSM

and others as identified during the progression of the work.

External groups

The ISG also intends to cooperate with a number of external organizations including:

- BBF
- DMTF
- GSMA
- IEEE
- IETF
- ITU-T FG AN
- NGMN
- OASIS
- ONAP
- ONF
- O-RAN Alliance
- MEF
- TMF

and others as identified during the progression of the work.