



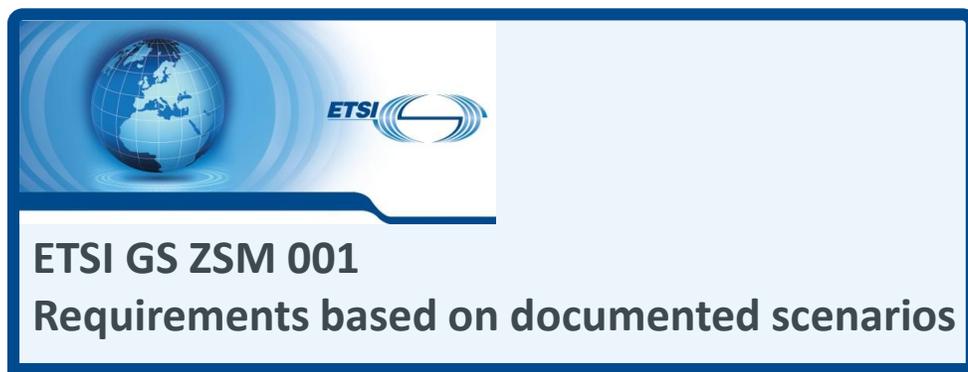
# ZSM Scenarios and Key Requirements

Presented by: **Farni Weaver**

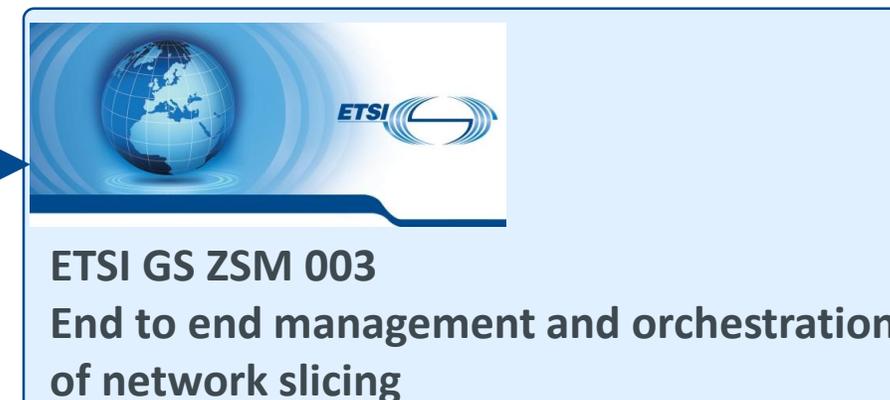
For: **Zero Touch Automation Congress 2019**  
**ETSI ZSM Forum**

March 2019

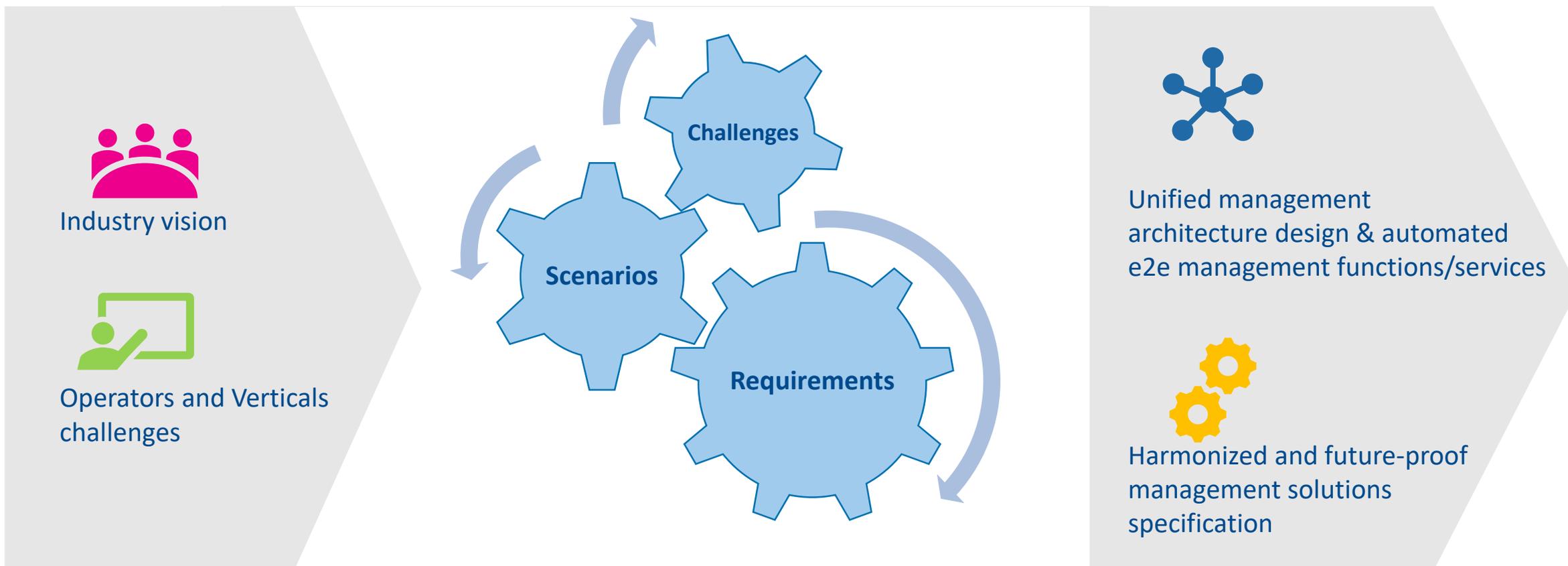
# ETSI GS ZSM 001: Purpose, Goal and Approach



*Define requirements for end-to-end management capabilities, services and functions*



# ETSI GS ZSM 001: Mechanism



## ETSI GS ZSM 001: Status

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- ✔ Scenarios identify business-oriented and automation-related challenges faced by operators and vertical industries
- ✔ Scenarios analysis derives architectural, functional and operational requirements
- ✔ Contributions: 39 scenarios and 159 requirements
- ✔ Stable draft: March 6, 2019
- ✔ Final draft (target): April 30, 2019

# Grouping Scenarios

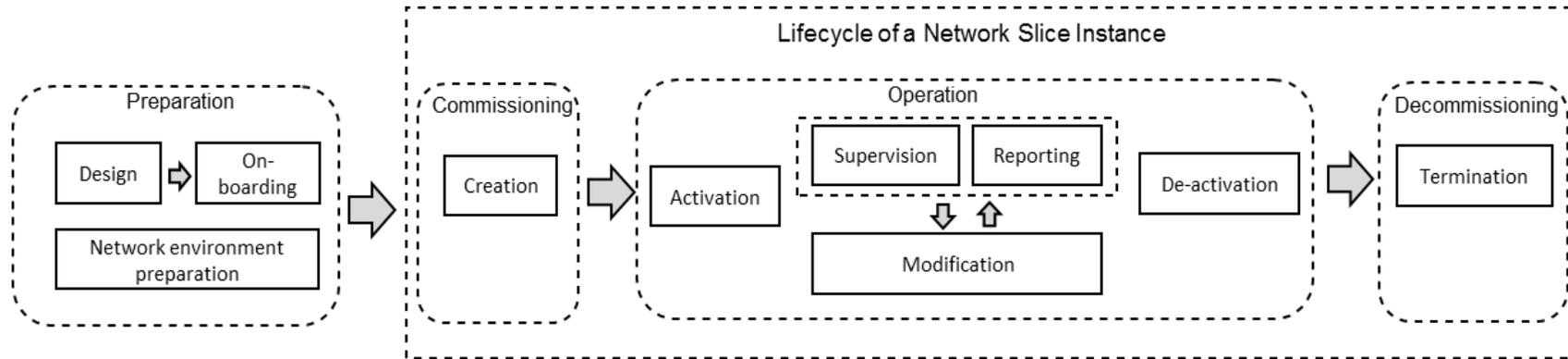
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Scenarios are categorized into the following groups:

- ✓ Automation of end-to-end network and service management
- ✓ End-to-end automation of 5G network slice management
- ✓ Analytics and Machine Learning
- ✓ Automated Testing
- ✓ NaaS lifecycle and exposure with slicing
- ✓ Collaborative/Federated Service Management
- ✓ Security
- ✓ Integration/Interoperation



# Grouping Scenario: Automation of End-to-End Network and Service Management



## Deploy, install, and upgrade:

- Verify status of the impacted network infrastructure conditions before, during, and after deployment of a new service
- Support automatic installation and upgrade of physical and virtualized network functions software.

## Monitor & Troubleshooting:

- Capability to automatically perform troubleshooting and determine RCA of network issue
  - a) Automatically correct the network issue (e.g. configuration change, re-route traffic, software LCM, etc), or
  - b) Intervention capability - Alert the operator of network issue, report RCA, and suggest how to fix the issue. Operator to allow ZSM framework to proceed with the fix, or manually perform the fix.

# Grouping Scenarios: Analytics & Machine Learning

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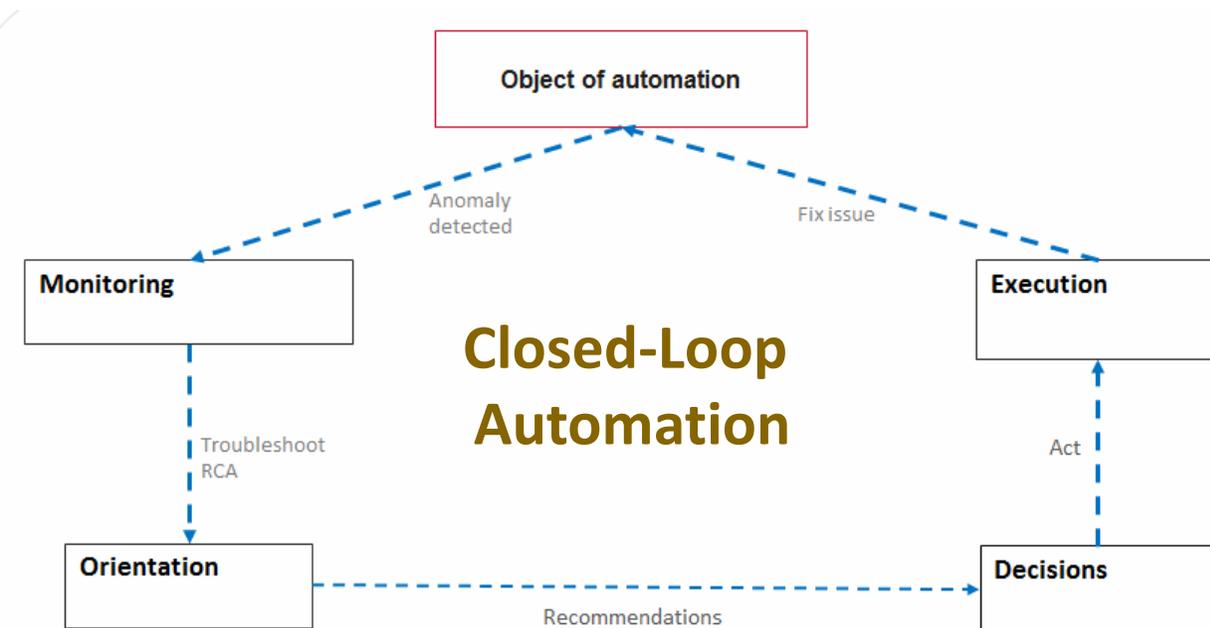
Analytics & Machine Learning scenario includes:

- ✓ Real-time monitoring analysis
- ✓ Machine learning for network and service automation
- ✓ Closed-loop automation
- ✓ Access to accurate telemetry data
- ✓ Predictive analytics
- ✓ CI/CD for ZSM framework functional components

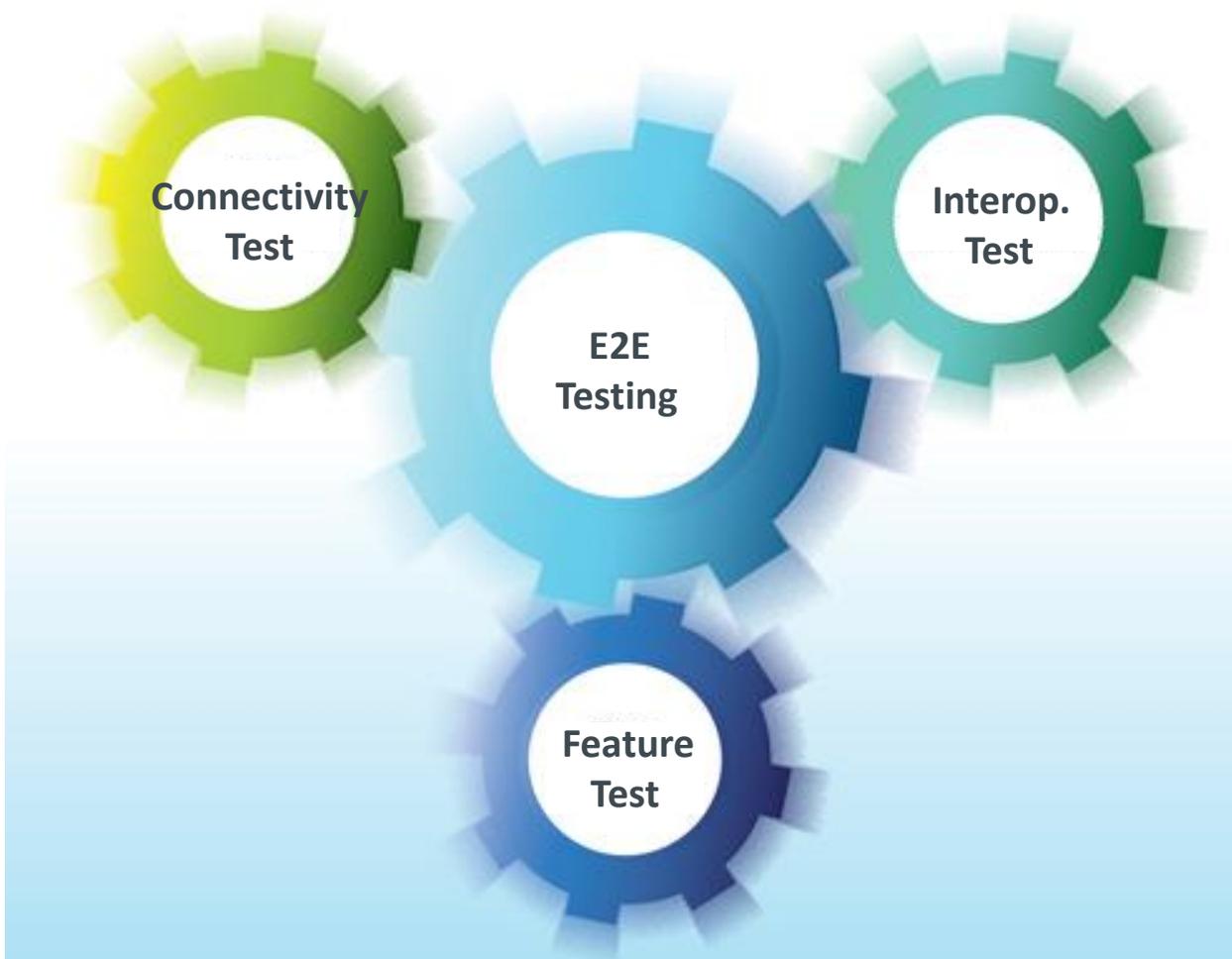
# Grouping Scenarios: Analytics & Machine Learning

## Key requirements:

- ZSM framework shall have the capability to support common access to the collected up-to-date telemetry data, both inside a domain and cross-domain.
- ZSM framework shall have the capability of enforcing a data governance scheme for the common access to telemetry data.
- ZSM framework shall support loosely coupled composite services, e.g. Machine-Learning-as-a-Service, Analytics-as-a-Service.
- ZSM framework shall provide interfaces that facilitate the integration of Machine Learning-as-a-Service frameworks into a zero-touch automation environment.
- ZSM framework shall have the capability to store historical data that is needed for the prediction and make it accessible to the analytics.
- ZSM framework shall have the capability to make ZSM framework functional components as managed entities that can be deployed independently.



# Grouping Scenarios: Automated Testing



## Key requirements:

- ZSM framework shall support the capability to automatically deploy and configure necessary testing functions for automated system tests across multiple network domains
- ZSM framework shall support the capability to perform system tests of a network services without interfering other unrelated services
- ZSM framework shall support the capability of enabling the provisioning and the support of automated testing capabilities for service tests to support the finding of the root cause
- While network services are upgraded and tested in CI/CD pipeline, ZSM framework shall support the capability of additional automated tests of network services. .

# Conclusion

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1) ZSM001 defines the base of the ZSM ISG work

✔ Triggered by problem statements **and challenges from the operators and the industry including the verticals**

✔ Deriving **architectural, functional and operational** requirements

✔ Design of the ZSM Architecture (002)

✔ End-to-end network slicing management (003)

✔ Inter-management domain LCM (008)

✔ Towards requirements for an E2E automated management capabilities/services/functions

2) Outlines key areas for automation and zero-touch operation with the scenario groups

3) Proof-of-Concept

✔ Topic: Automation in Multi-Stakeholder Ecosystem

# The (Specification) Source

- ✓ Draft of specification available here:  
[https://docbox.etsi.org/ISG/ZSM/Open/Drafts/001ed111\\_UCs](https://docbox.etsi.org/ISG/ZSM/Open/Drafts/001ed111_UCs)
- ✓ More information on ZSM:
  - ✓ ZSM Wiki: <https://zsmwiki.etsi.org/>
  - ✓ ZSM Proof-of Concept:  
[https://zsmwiki.etsi.org/index.php?title=PoC\\_Topics](https://zsmwiki.etsi.org/index.php?title=PoC_Topics)
  - ✓ ZSM Technology Page: <http://www.etsi.org/zsm>
  - ✓ ZSM Open Area (Drafts): <http://docbox.etsi.org/ISG/ZSM/Open>
  - ✓ ZSM Portal (members' working area): <http://portal.etsi.org/zsm>

V 0.2 (2018-08)



**ETSI GS ZSM 001**

Zero-touch Network and Service Management (ZSM);  
Requirements based on documented scenarios