# ZSM – ZERO-TOUCH NETWORK & SERVICE MANAGEMENT

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THE LANDSCAPE

- New architectures requiring radical changes
- An extreme range of requirements
  - Massive capacity (perceivable as infinite)
  - Imperceptible latency
  - Ultra-high reliability
  - Personalized services
- Networks are transforming into programmable, software-driven, service-based infrastructures
  - NFV, SDN and Edge Computing…
- New business models
  - Most enabled by technology breakthroughs
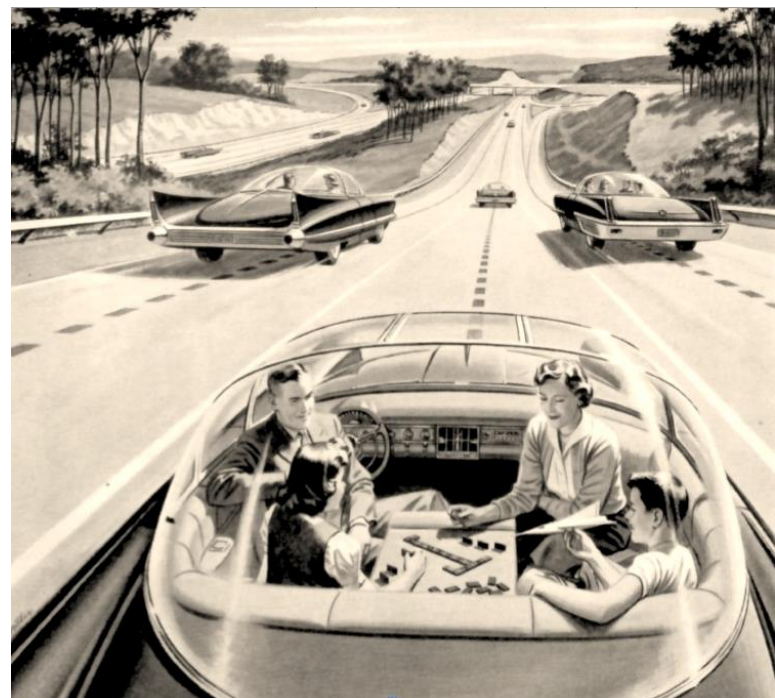
TARGETING FULL AUTOMATION

- A new network and service management paradigm
  - Abstract and cope with increasing operation complexity
  - Enable full end-to-end automation of network and service management
- Take human intervention out of the operational loop
  - Encompassing and supporting MANO and EM capabilities
- With 5G automation as the exemplar use case

MAKING FULL ANSMO HAPPEN

- ANSMO?
  - Automation of Network and Service Management and Operation
- Convergence on a single E2E network and service management architecture
  - Avoid silos and implementation monoculture
- Coordination and cooperation among relevant actors
  - Take advantage of relevant results and current industry endeavors
  - Avoid duplication and conflict
  - Leverage existing specifications and solutions
  - Address gaps discovered considering the E2E aspects of ANSMO

ETSI ISG ZSM

🌐 Formed in December 2017

14 founding members

Key objective

Enable future operational processes and tasks to be executed automatically, end-to-end

Goal

Accelerate the definition of the end-to-end service management architecture, spanning both legacy and virtualized network infrastructures

Formed as an ETSI ISG

Industry convergence

Facilitate collaboration with the relevant open-source projects, standardization bodies and fora

Interoperability

Provide a common foundation to enable a diverse ecosystem of open source groups to produce interoperable solutions

🌐 First meeting in January 2018

GROWING IN A STEADY AND HEALTHY PACE


58 participants; 17 NSPs

WORKING ON IT

- Six active work items
- ZSM 001: Use cases and requirements
- ZSM 002: Reference Architecture
- ZSM 003: End-to-end management and orchestration of network slicing
- ZSM 004: ZSM Landscape
- ZSM 005: Means for Automation
- ZSM 006: Proof of Concept Framework

PUBLISHED

WAYS OF WORKING

- Cooperation and alignment with other SDOs, forums and open- source projects
  - Promote adoption of and alignment with the ZSM architecture and solutions
  - Encourage mutual convergence
- Identify gaps and fill them
  - Ensure existing activities are not duplicated
  - Remove barriers to end-to-end automation
- Input from PoCs will be used to guide and validate specifications
- Make all drafts openly available

  https://docbox.etsi.org/ISG/ZSM/Open/Drafts
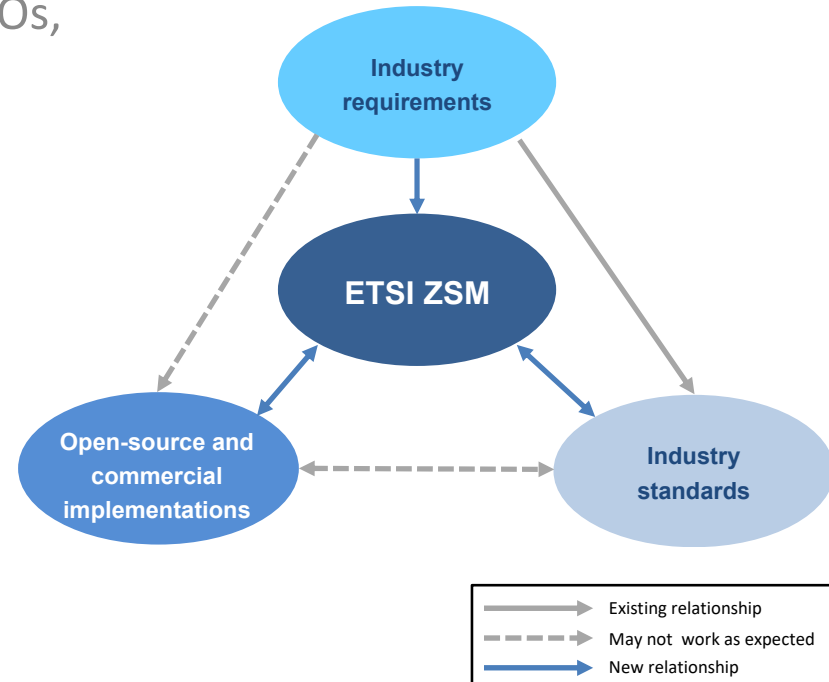
ZSM ARCHITECTURE (ZSM 002)

🌐 Agreement on the baseline for the ZSM architecture as depicted below
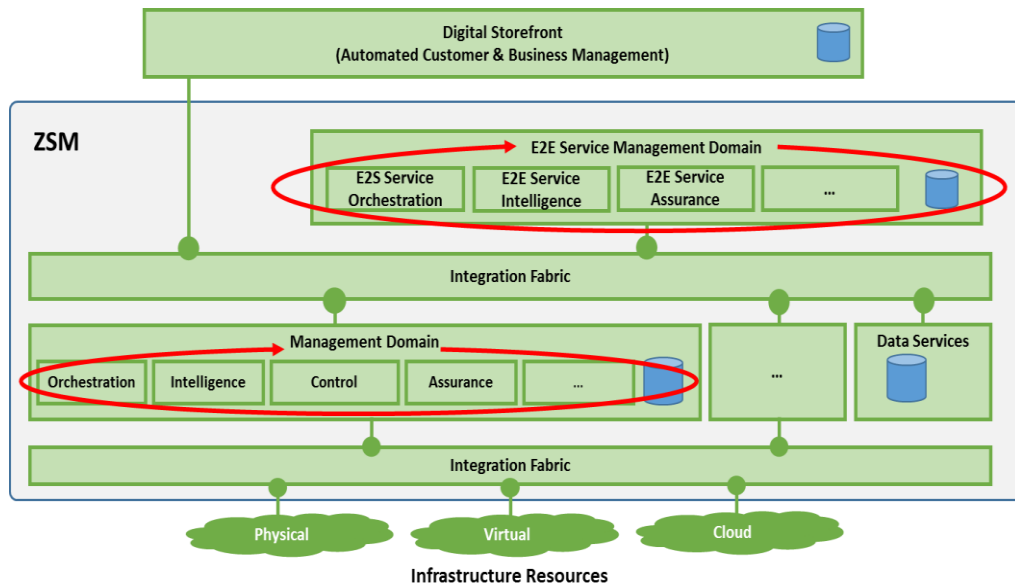
Architectural Principles

- Modular, flexible and extensible service-based architecture

- Separation of concerns: network domain management and end-to-end cross-domain service management; resources in multiple domains can be managed separately.

- Support of open interfaces

- Support of model-driven service and resource abstraction

- Enablement of adaptive closed-loop management automation, where the automated decision-making mechanisms can be bounded by rules and policies

- Support of stateless functional components

- Design for failure

Enable zero-touch automated network and service management in a multi-vendor environment
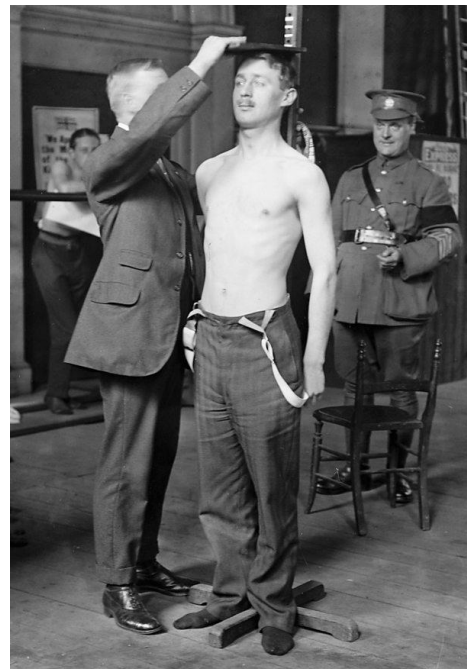
- Look for practical results
  - Demonstrate and disseminate ZSM implementations
  - Foster interoperability through multi-party projects
  - Explore technology options
  - Facilitate gap analysis
  - Contribute to guide the future ISG activity
- Lightweight process
  - Few (objective) requirements to file a PoC proposal
  - Run PoC project
  - Openly report results to the community

- We have just started an exciting journey towards the automation transformation
  - Meet network user expectations for service agility
  - Create new business opportunities
- The ISG ZSM intends to drive a highly focused and agile industry effort
  - Involving key players across the whole ecosystem
  - Open to both ETSI members and non-members
  - Collaborative with related industry initiatives
- The recruiting office is open

http://etsi.org/zsm/