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Announcing Industry-wide Multi-SDO Initiative

Autonomous Networks

Multiple Standards Developing Organizations (SDOs) announce working together for an aligned vision of AN with better collaboration between Industry Stakeholders.

The long journey towards autonomy has only just begun and the industry needs standards to guide the best way to achieve Autonomous Networks (AN). Ideally, these standards should fit well together and form a coherent whole.

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The AN Challenge

The IT and telecommunications industries are entering an interesting phase of architectural innovation. The autonomous network is defining a new paradigm for business models, operations, service offerings and supporting network architectures. It promises to optimize the production cost structure and improve the end-to-end production flexibility and business agility of digital services. As such, autonomous networks can aggregate the efforts of all stakeholders within the ICT industry. Individual initiatives, no matter how successful they are, will not be able to deliver the industry-wide change required. Industry organizations, CSPs, system integrators, and equipment/software suppliers should work together to turn the autonomous networks vision into an industrial reality.

Communications Service Providers (CSPs) face several challenges in their current Autonomous Networks initiatives:

- 1.Existing 'silo' solutions have not yet demonstrated sufficient **business value**.
- 2.**Fragmented** 'point' solutions, that only solve the problems of specific segments.
- 3.Lack of E2E view/framework, no **interoperability**, integration too complicated/costly
- 4.Lack of agreed **metrics** to measure and verify the outcome of autonomous systems.
- 5.Lack of an effective **industry ecosystem** with collaboration of operators and vendors as equal partners to achieve mutually beneficial solutions.
- 6.Adaptation inefficiency to enable "on-time" services.

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The Standardization Challenge

The business and technology challenges are multi-faceted, complex and diverse. *Industry standards* are essential to help the industry as a whole to address those challenges. However, *standards must now seek to form a cohesive whole*, i.e. 'the whole is greater than the sum of the parts' approach where multiple standards when taken together form a holistic blueprint for how operators and vendors work well together on delivering real autonomous systems capable of making decisions in uncertain situations.

Several SDOs have ongoing activities to build the standards foundation of Autonomous Networks. *However, without careful coordination, these efforts will be hampered by fragmentation (leading to gaps) or duplication of effort (leading to overlaps)*. From a standardization perspective, the main issues to be addressed are:

1. Service Providers' need for multi-vendor autonomous domains and procurement standards for operational use cases delivering zero-friction integration using common operational principles and practices to supervise, configure and maintain end-to-end AN solutions.
2. Determine commonality and alignment of key concepts (e.g. definition, framework, autonomous networks levels and key capabilities (e.g. closed loop, autonomous domain, intent, AN levels))
3. Collaborate on the development of key technical mechanisms, interoperability of the interfaces, testing, and verification of autonomous network levels, and use cases / PoCs.

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The Opportunity

Every challenge is an opportunity and so we have an opportunity to share, align and harmonize the collective achievements of the leading SDOs to make Autonomous Networks a successful business opportunity and to fully enable digital transformation. The organizations announcing this collaboration see the following high level studies as priorities to be achieved in a jointly developed Multi-SDO collaboration reference:

- 1.Information Sharing covering Basic concepts and terminology alignment.*
- 2.Alignment of Vision*
- 3.Common Business Targets*
- 4.High level Objectives and Recommendations for Standards*
- 5.Best practices to extract benefits from Multi-SDO Collaboration*

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Call to Action

All ten organizations recognize the importance of this coordination effort and agree to participate in the M-SDO Coordination Reference on Autonomous Networks to fulfill the end-to-end perspectives of Autonomous Networks. The following plan is proposed:

- **Build consensus** and alignment of fundamental concepts, terminologies, framework, and key perspectives including the definition of Autonomous Networks, Inter-domain closed loops, Autonomous Networks Levels, Autonomous Domains, Intent driven interaction using open discussions.
- **In-depth analysis** on the development of key technical mechanisms, framework, and interfaces, as well as use cases/PoCs, testing and verification mechanisms to support autonomous networks.
- **Promote** AN industry consensus and collaboration on key topics across related SDOs.

This initiative is open to all interested parties, including SDO representatives, company delegates/SMEs.

By addressing the 'big picture' vision of autonomous networks we will ensure that the real business drivers behind AN are considered from a customer perspective. With a solid foundation of industry standards to guide and inform the development of autonomous systems for their human users and supervisors, we aim to discover the emerging properties of Autonomous Networks and to build the next wave of intelligent and autonomous systems to help our industry thrive.

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Who we are

SDO	Group/Project	SDO	Role
3GPP	SA5	IETF	WG on AN
CCSA	TC7	ITU-T	FG-AN
ETSI	ENI, F5G, MEC, NFV, PDL, TC INT/AFI, ZSM	Linux Foundation*	ONAP
GSMA	Future Networks	NGMN	Automation
IEEE	Future Networks	TM Forum	AN Project

*Open Source Community