Terms of Reference for TC DATA Working Group DATA Infrastructure (WG INFRA)
Approved at DATA#3, Date: 23 October 2025

Scope

This Working Group (WG), operating under the governance of the ETSI Technical Committee for Data Solutions (TC DATA), is responsible for the specification of horizontal mechanisms covering data interfaces, APIs, and governance. The WG's primary objective is to develop standards that enable secure, interoperable, and trusted data sharing and management across diverse systems and platforms.

The work will consolidate and evolve key assets from several precedent ETSI Technical Bodies, including:

- The NGSI-LD API and related specifications for context information management from ISG CIM.
- Functional architecture, interfaces, and governance models for Distributed Ledger Technology (DLT) from ISG PDL, including concepts for smart contracts and data provenance.
- IoT layer management as well as digital twin communication and architecture from TC SmartM2M.

The scope of this WG is to define the interfaces and governance frameworks necessary for the deployment and operation of distributed data solutions. This includes standardizing mechanisms for data access, discovery, usage control, and provenance traceability. The WG will address relevant requirements stemming from European policies and regulations, such as the EU Data Act and AI Act, particularly concerning data interoperability and governance.

It will provide technical expertise and specifications to support the data-related aspects of European Standardization Requests.

It will ensure alignment and harmonization with the work of other TC DATA working groups, to provide a cohesive set of standards.

Finally, to ensure harmonized and globally relevant standards while avoiding duplication of effort, the WG will actively collaborate with other groups within and outside of ETSI. It will reuse existing work where applicable and encourage other groups to fulfil requirements related to data interfaces and governance.

Areas of Activity

The activities of this Working Group will include at minimum the topics of:

- **Interoperable Data Infrastructure Services:** enabling diverse data systems, platforms, and applications to seamlessly connect and exchange information across organizational and technical boundaries.
- **A core API Framework for Data Sharing and Management,** including maintenance and evolution of the NGSI-LD API as the core ETSI standard for real-time context information exchange.
- **Frameworks for Data Governance and Trust,** specifying the architecture and interfaces required to establish trusted links between disparate data ledgers and platforms, enabling secure federation and cross-system data exchange and including mechanisms for end-to-end data provenance, integrity, and authenticity throughout the data lifecycle.
- **Interfaces for managing the capabilities of digital representations, such as Digital Twins**, including service execution, states and events management in a distributed context, building on prior work within ISG CIM and TC SmartM2M.
- **Security and Trust in Data Exchange**, defining security and privacy requirements for data interfaces, in collaboration with TC CYBER and TC ESI, including the use of digital identities and verifiable credentials.

WG INFRA also supports the transposition of the data interfaces, APIs, and governance outputs of oneM2M.