



Telecommunications
Standards Development
Society, India

TECH DEEP DIVE

TTDD 2026 CONFERENCE (9th EDITION)

**SHAPING NEXT DECADE OF TELECOMMUNICATIONS:
6G STANDARDS, SYSTEMS AND CROSS-SECTOR SYNERGIES**

 **Date:** 7-10 July 2026

**Session #6 - Open and Interoperable Systems for seamless connectivity of
heterogenous networks**

9 July 2026

**Context Data Fabric
for 6G Smart Ecosystems**

by

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The AI Era Needs Context, Not Just Connectivity

"Connectivity is the highway. Context is the GPS."

1

Raw data is noise

A sensor reads 32.

Without context - who, where, when, in relation to what - that number means nothing to any AI system.

2

Context is intelligence

32°C at Road Node X, near a school, during peak traffic, at 08:45.

Now an AI agent can take meaningful, safe action.

3

6G connects everything

But without a common context model, every vertical speaks a different language.

Context-poor networks waste 6G's full potential.

6G will generate the world's largest dataset. The question is not speed - it is meaning.

Who Controls the World's Digital Twin?

Two paths, one choice - in the AI + 6G era, the real question is who owns the *context*

THE DARK SIDE

Proprietary Intelligence

Vendor locked & closed platforms

☐ Vendor lock-in

Your data, their proprietary format

☐ Opaque governance

One corporation decides everything

☐ Sovereignty risk

Geopolitical exposure, surveillance roots

☐ Perpetual cost

Pay for every insight, forever

THE OPEN WAY

Open Context Platform

FIWARE & NGSI-LD

☒ Open standards

ETSI NGSI-LD — no one owns it, everyone benefits

☒ Community governed

300+ members, EU non-profit

☒ Full data sovereignty

Your data, your rules, fully auditable

☒ Vendor neutral

Run anywhere, combine freely

NGSI-LD: The Open Language of Context

Any architecture powered by FIWARE gravitates around a **digital twin representation** of the real world — not just physical objects, but events, processes, and relationships — constantly updated and analyzed to automate decisions.

Smart Cities

Smart Health

Smart Energy

Smart Agriculture

Manufacturing

Smart Mobility

ETSI NGSI-LD — Simple yet powerful REST API

- Geo-queries, subscriptions, federation, temporal operations
- Linked Data (JSON-LD) — semantic interoperability built in
- 900+ open Smart Data Models across all domains

IoT Devices / 6G

Smart Systems

NGSI-LD Context Broker

Enterprise Data

3rd Party APIs

Applications · AI Services · Digital Twins

FIWARE · Open Source · EU Foundation · 15+ Years

Proven at Scale - Including India

1000s

Deployments worldwide

900+

Smart Data Models

15+

Years in production

200+

Member organisations

12000+

Community

Global Endorsements

India - Already Leading

TSDSI

TSDSI Cloud Interoperability Standard - TSDSI STD 5005 V1.0.0

BIS - Bureau of Indian Standards

NGSI-LD as part of its national standard IS 18003 (Part 2)

IUDX - India Urban Data Exchange

India’s trusted data exchange framework for the Smart Cities & Agri Data Exchange has adopted NGSI-LD as its API standard.

IUDX is also a key contributor to FIWARE Smart Data Models.

ETSI

NGSI-LD is a formal ETSI TC Data specification

GSMA

IoT Reference Architecture recommends NGSI-LD

TM Forum

Collaboration on real-time context data APIs

EU CEF

Selected as Connecting Europe Facility building block

Japan, Spain,
Brazil &
Slovenia

NGSI-LD mandatory for national smart cities

MCP: The Open Protocol for AI Agents

Model Context Protocol — open-sourced by Anthropic — lets AI agents connect to any data source or tool through a standard interface

What is MCP?

MCP is to AI agents what HTTP is to web browsers

A universal, open standard that lets any AI agent securely connect to external data sources, tools, and services - without custom integration code.

Open-sourced by Anthropic. Adopted across the industry.

Any AI agent	Claude, GPT, Gemini, local LLMs
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Any data source	Databases, APIs, live sensor feeds
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Fully open	Open spec, no vendor lock-in
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NGSI-LD as an MCP Server

The NGSI-LD Context Broker can be exposed as an MCP server.

This means any AI agent can directly query the live digital twin of the world - entities, relationships, geo-queries, real-time subscriptions - through a standard MCP interface.

No custom adapters. No proprietary middleware. Just open standards talking to each other.

**AI Agent
(MCP client)**

MCP

**NGSI-LD
Context Broker**

MCP (Anthropic, open) + NGSI-LD (ETSI, open) = A fully open, vendor-neutral stack from the physical world to AI reasoning

NGSI-LD + MCP: The Open AI Agent Stack

Both NGSI-LD (ETSI) and MCP (open) are open standards — together: a fully vendor-neutral stack from sensor to AI decision, over any 6G access technology



EXAMPLE — AI agent query via MCP over 6G

```
GET /ngsi-ld/v1/entities?type=TrafficZone&geoQ=near;SchoolA;200m
```

Agent receives: 47 vehicles, 2 incidents, AQI 145 → triggers adaptive signal timing & rerouting

Any AI agent - Claude, GPT, local LLM
- accesses live context via MCP

Over any 6G access: cellular, WiFi,
NTN - same query, same semantic
answer

No proprietary middleware - fully
open from sensor to decision

MAY THE OPEN-SOURCE BE WITH YOU

1

Adopt NGSI-LD

Push for the ETSI standard in 6G application layer discussions and national programmes

2

Build on NGSI-LD + MCP

Create AI agents that understand the world, not just the network

3

Join FIWARE

fiware.org - open, free, community-driven, 10+ years proven globally

The future of 6G is not just about faster pipes - it is about smarter context.

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Thank You
<Speaker Coordinates>