

◆ **Projet 7 : 6G-DALI: janvier 2025 – décembre 2027**



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6G-DALI: End-to-End AI Framework for 6G

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Why 6G needs an AI data framework

The consortium and the SNS foundations

From architecture to three use cases

What it delivers: targets, France's part, impact

Shaping standards and open source



6G-DALI Testbeds lack end-to-end data to train AI

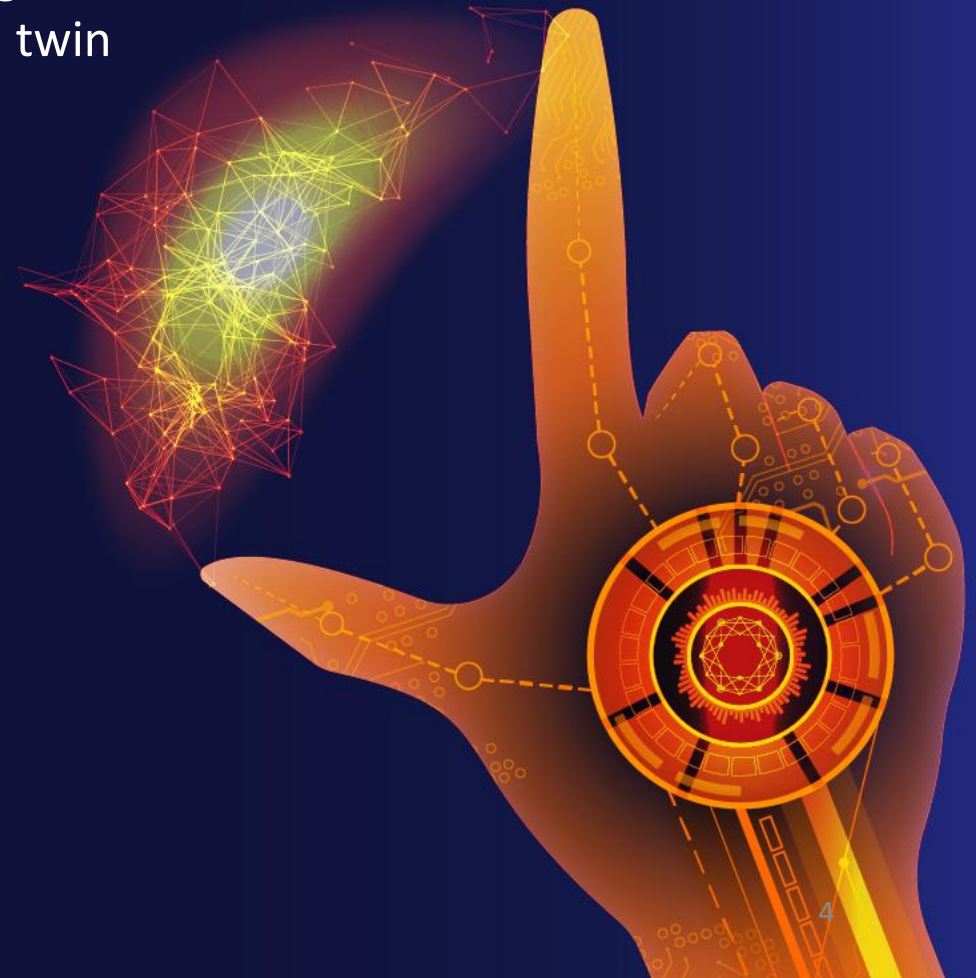


- Lack of high-quality end-to-end network datasets to train AI models.
- Ability to trigger end-to-end data generation, AI model training and evaluation in a real 6G environment or a close to reality digital twin
- Simplified scale-up (add more testbeds and data infra)

I need high-quality datasets to train AI models.

I need a testbed or digital twin for testing and evaluating AI models in a real 6G environment.

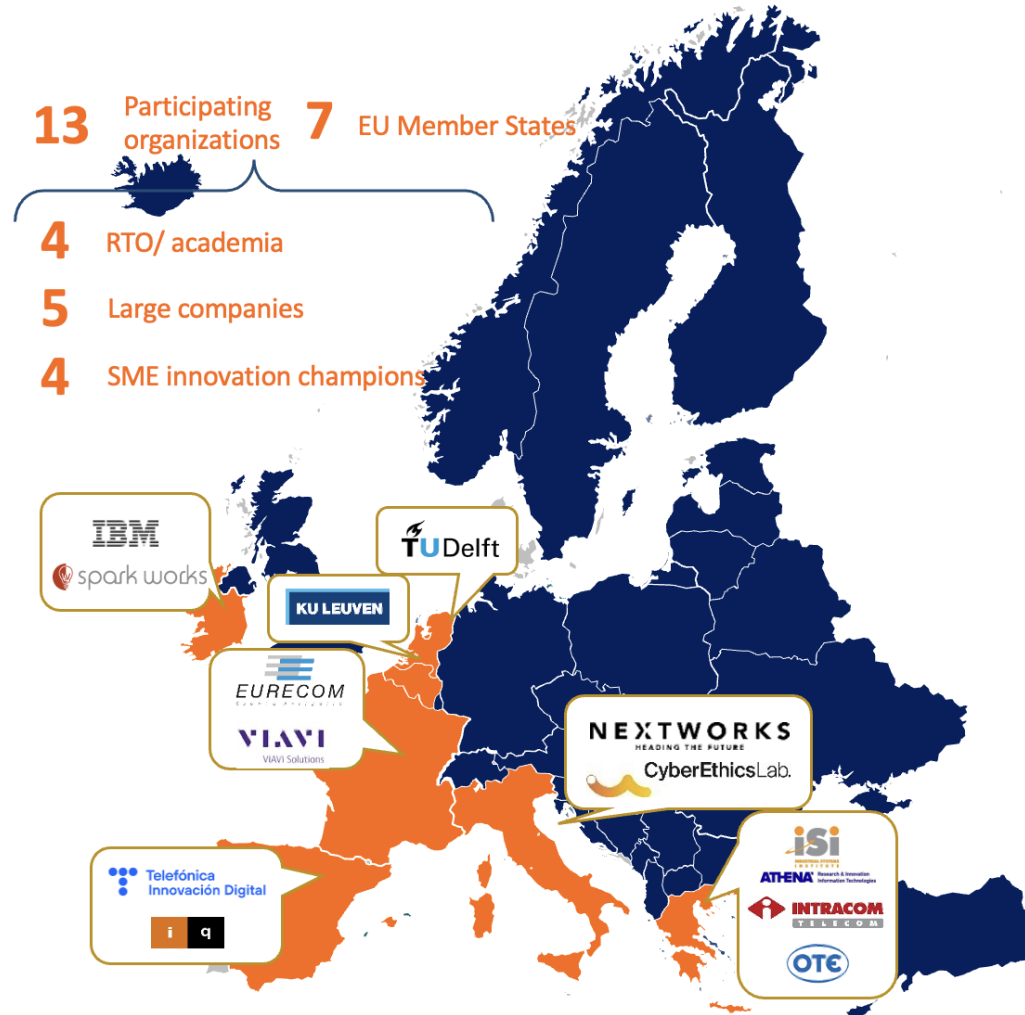
Check 6G-DALI!



6G-DALI: An End-to-End AI Framework for DataOps & MLOps in 6G

- AI experimentation as a Service through automated, distributed and trustworthy MLOps/RLOps
- Intent-driven DataOps for discovering, generating, cleaning, augmenting & preparing AI-ready 6G data
- A federated 6G Data Space enabling trusted discovery, governance and sharing of datasets, models and data services
- Experimentation-on-demand across heterogeneous physical testbeds and a scalable 6G Digital Twin
- A common Adaptation Layer abstracting testbed heterogeneity and enabling portable DataOps/MLOps workflows
- Trustworthy and regulation-aware AI, embedded across the data and ML

6G-DALI is building the data and AI experimentation fabric needed to make AI-native 6G systems operational, trustworthy and reusable across infrastructures.



Builds on

SUNRISE-6G

Flagship experimentation project. Its federated testbeds are the initial 6G-DALI testbeds.

ADROIT-6G

Collaborative AI project. Its MLOps solution is extended across several testbeds.

6G-INTENSE

Intent-based orchestration. 6G-DALI reuses its LLM intent translation, extended by EURECOM.



Complements

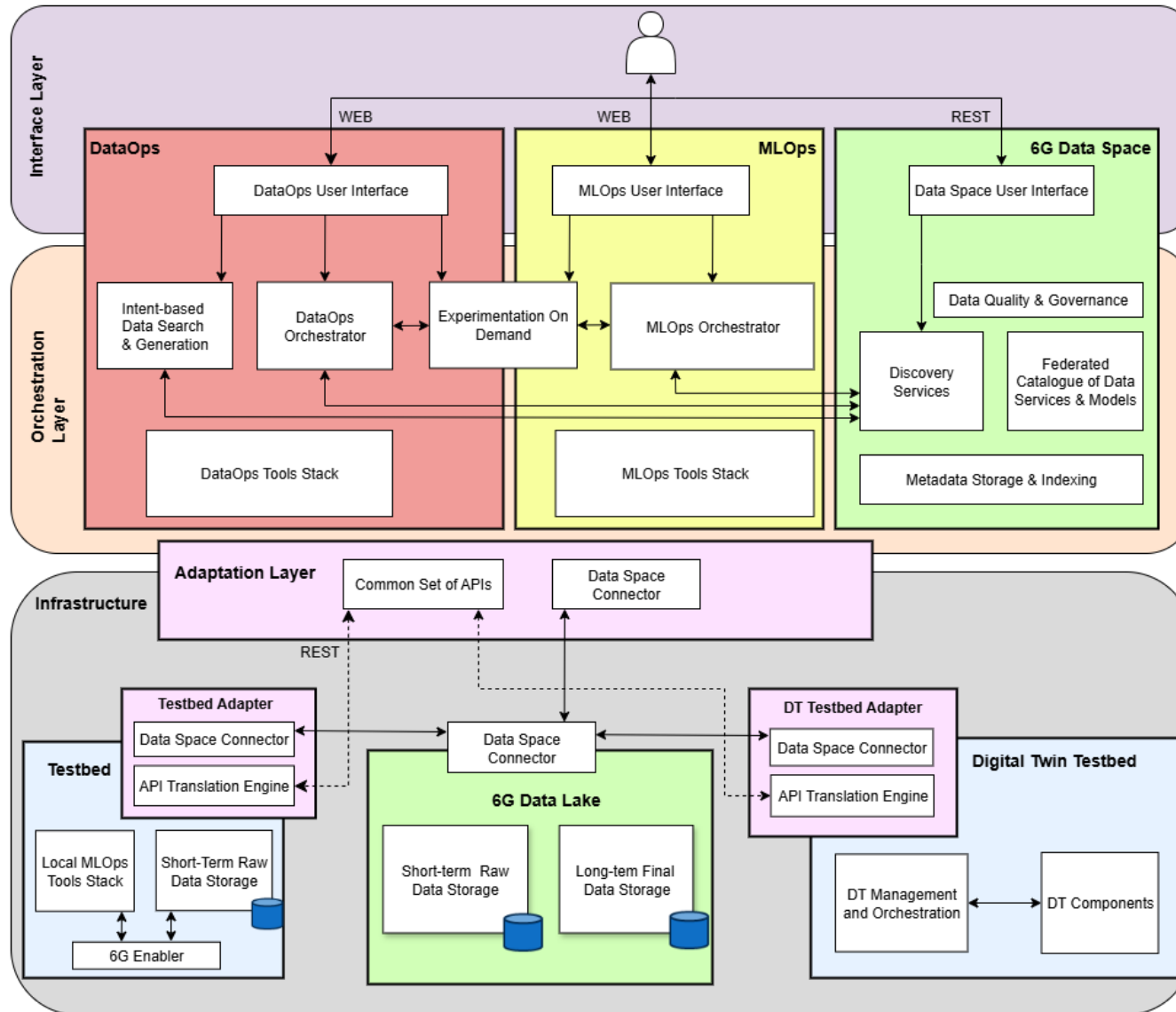
6G-XCEL

EU-US project on AI adoption and standardisation. 6G-DALI adds experiment datasets, DataOps and MLOps services.

6G-TWIN

AI-native architecture with network digital twins. 6G-DALI adds large-scale RAN and core experiments.

Also active in the SNS JU and 6G-IA working groups.



From conceptual blocks into deployable DataOps, MLOps and Data Space services

Interface Layer

- Unified user entry points / Natural Language
- DataOps / MLOps / Data Space GUIs & APIs

Orchestration Layer

- DataOps/MLOps orchestration
- Experimentation-on-Demand & DS services

Adaptation Layer

- Common APIs
- Testbed API translation & DS connectors

Infrastructure Layer

- Physical 6G testbeds & Digital Twin
- 6G Data Lake

PoC-1 TRL5

Get the data you ask for

- **1.1** Ask in plain language; an LLM finds the dataset in the Gaia-X catalogue
- **1.2** No dataset yet? Testbeds run an experiment, then the data is loaded and cleaned

PoC-2 TRL4

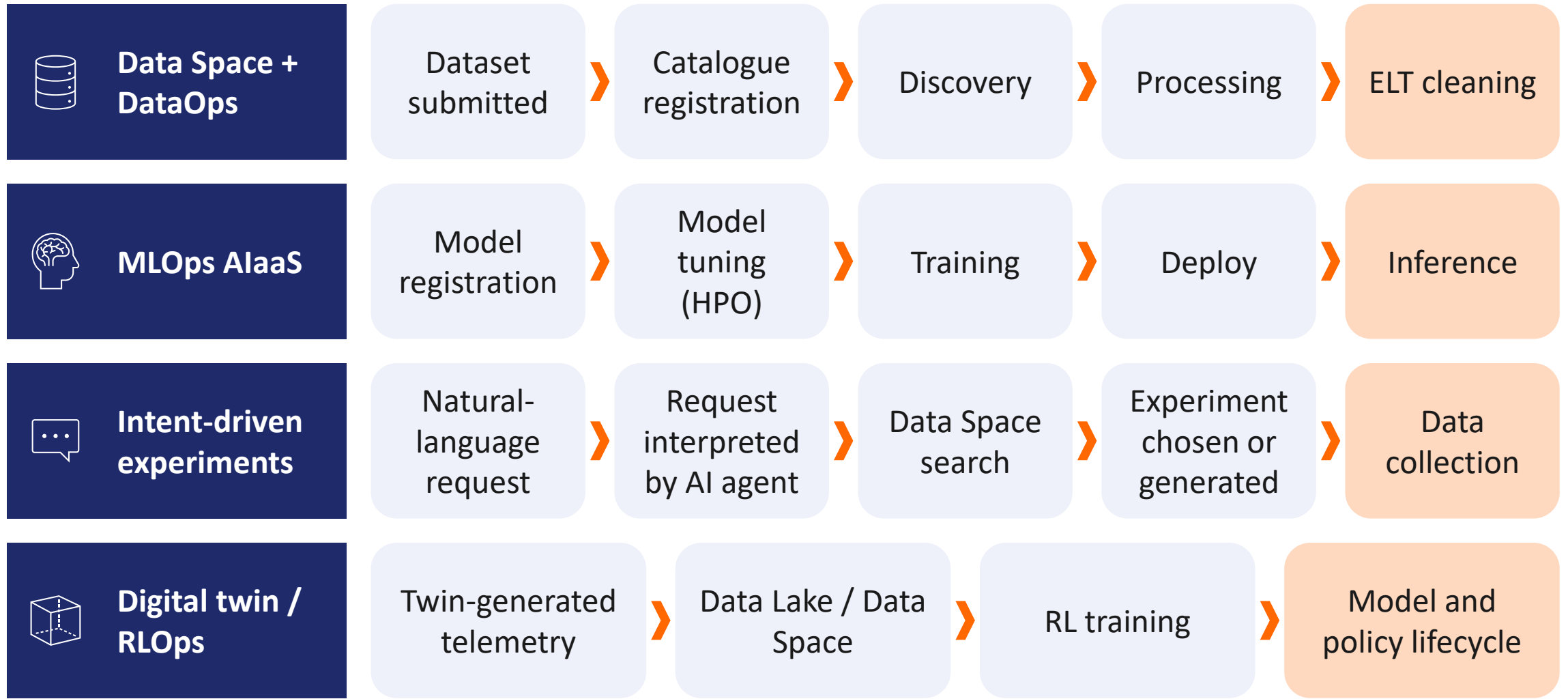
AI models for video delivery (CDN)

- **2.1** Tune models and place them where they run best, edge to cloud
- **2.2** Benchmark models and detect drift before they go live

PoC-3 TRL4

Test AI at scale on a digital twin

- **3.1** Simulate many users on a fast, low-fidelity twin to train and test RL agents
- **3.2** Medium-scale twin of an O-RAN network



2× faster

**Time to validate an AI model
on a 6G testbed**

vs. today's manual process

>90%

**Less energy to run an AI
model**

vs. the full-size model, with
under 5% accuracy loss

2× more

**AI workloads on the same
testbed**

vs. the best current methods

>20%

**Fewer broken service
guarantees for industry users**

when AI models go out of
date

70%

**Of data requests answered
from a question in plain
language**

6+

**Open datasets from 6G
testbeds**

covering 4+ network domains

VIAVI · industry

- Provides its AI-RSG radio network simulator
- Integrated with FlexRIC
- Used for data generation and RLOps validation

**Digital Twin Testbed**

- VIAVI AI-RSG running with FlexRIC
- Generates data to train AI models
- Validates reinforcement-learning agents (RLOps)

**EURECOM · academia**

- Hosts the DTT and a 5G testbed
- Builds the AI assistant that turns a plain request into an experiment
- Develops the adapter that connects its own testbed to the framework

Research

6

journal papers

15

conference papers

4

workshops organised

Standards

85

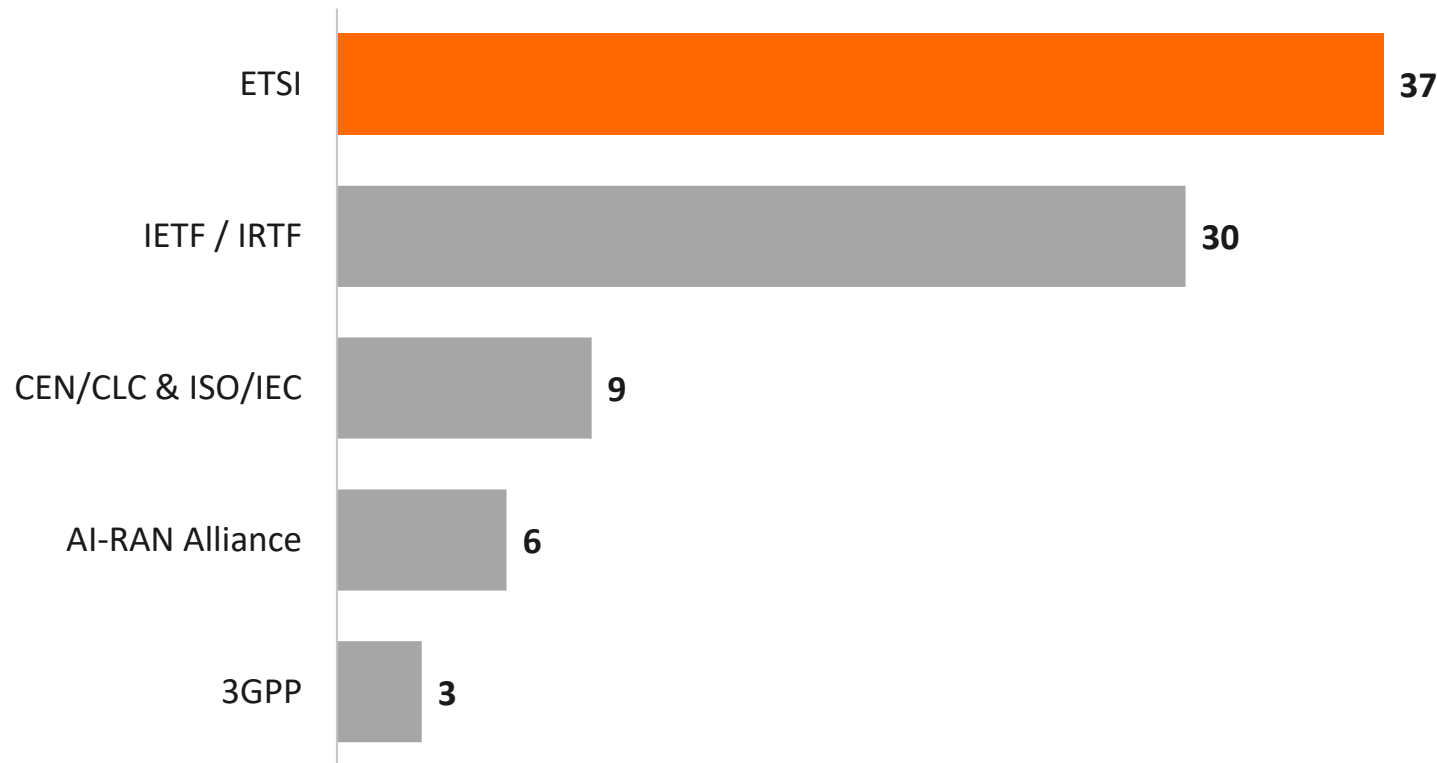
standards
contributions, 17× the
target

Also: 3 tutorials and 2 schools, and 4 open-source communities.

Standards: target vs achieved



Contributions by standards body (85 in total, target: at least 5)



Who contributes

Telefónica: ETSI, IETF/IRTF

VIAVI: 3GPP, AI-RAN Alliance

CyberEthics Lab: CEN/CLC,
ISO/IEC

Open source: Linux
Foundation, ZenML,
OpenAirInterface, ETSI
OpenOP



**6G-DALI DataOps
assets**



**ETSI OpenOP Data
Lab**



**Vision: the first EU
Data Space**

The Data Lab launch in ETSI OpenOP is a milestone toward that vision. OpenOP is one of the 4 open-source communities 6G-DALI contributes to, with the Linux Foundation, ZenML and OpenAirInterface.

6G-DALI turns Europe's 6G testbeds into one AI experimentation service: data, models and digital twins on demand.

- **For researchers and verticals:** AI-ready 6G data and trustworthy models without building their own testbed
- **For the French partners:** VIAVI and EURECOM co-build the digital twin testbed, which runs on EURECOM's OAI testbed
- **For the 6G ecosystem:** 85 standards contributions; DataOps assets feed the ETSI OpenOP Data Lab

Thank You!!!

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