

◆ **Projet 3 : 6G-CLOUD : janvier 2024 – octobre 2026**



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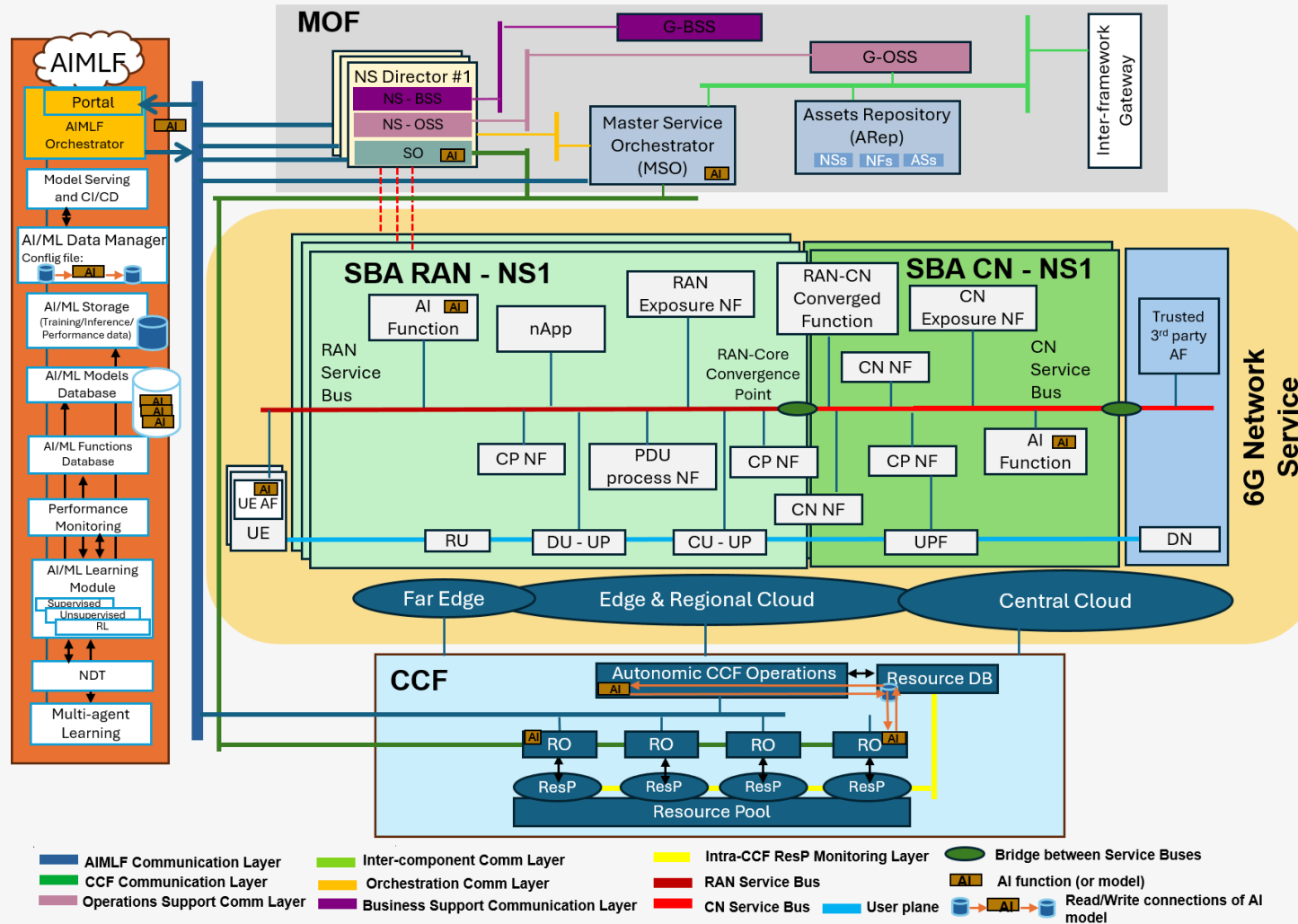
6G-Cloud

AI/ML in a service-oriented network

PoC2: RAN telemetry, interference classification
and service adaptation

Ilias Chatzistefanidis
Paris, October 2026

6G CLOUD Overall 6G-Cloud architecture



MOF

Service composition and lifecycle

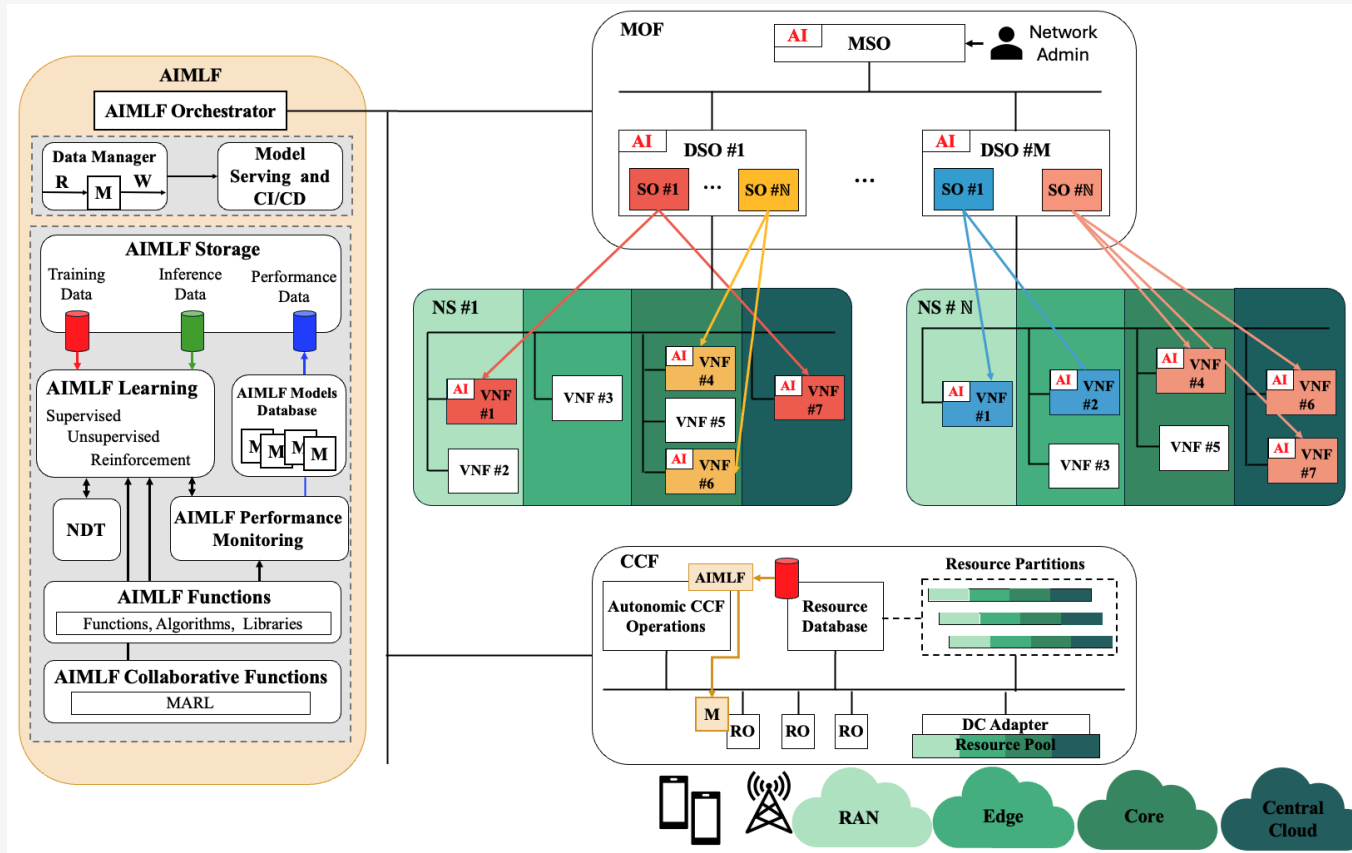
AIMLF

Data, training, inference and model monitoring

CCF

Compute and connectivity across cloud and edge

AI/ML services for network functions and orchestration



Pipeline orchestration

The AIMLF Orchestrator composes AI Functions for each network or orchestration task.

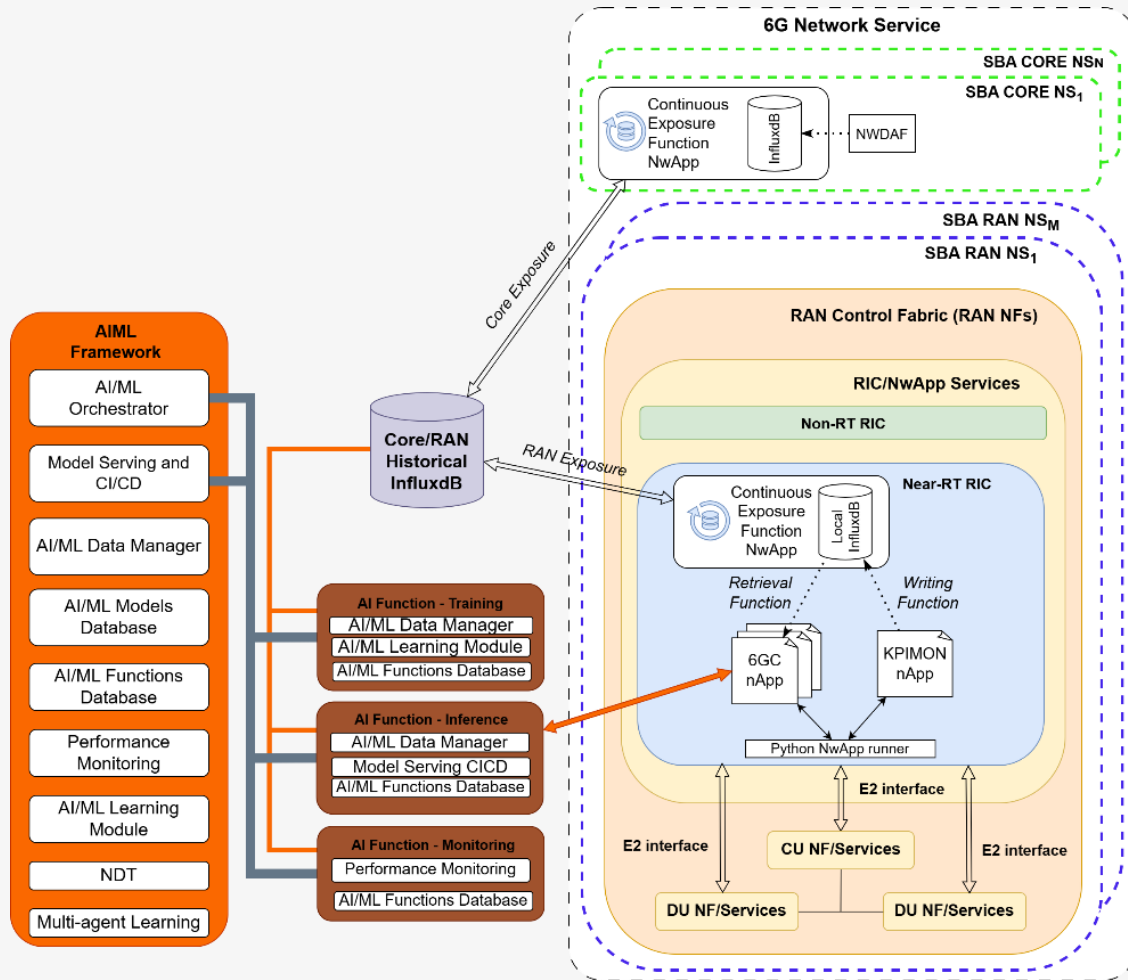
Data and model services

The Data Manager connects exposed data. Repositories retain datasets, models and metadata.

Learning and operation

Train and serve models, monitor their performance and request model updates.

6G CLOUD AIMLF workflows for network applications



Training and validation

Exposed data feeds AI/ML Learning. The Models Database stores the trained model.

Inference

Model Serving provisions a model near the consuming NwApp or network function.

Performance monitoring

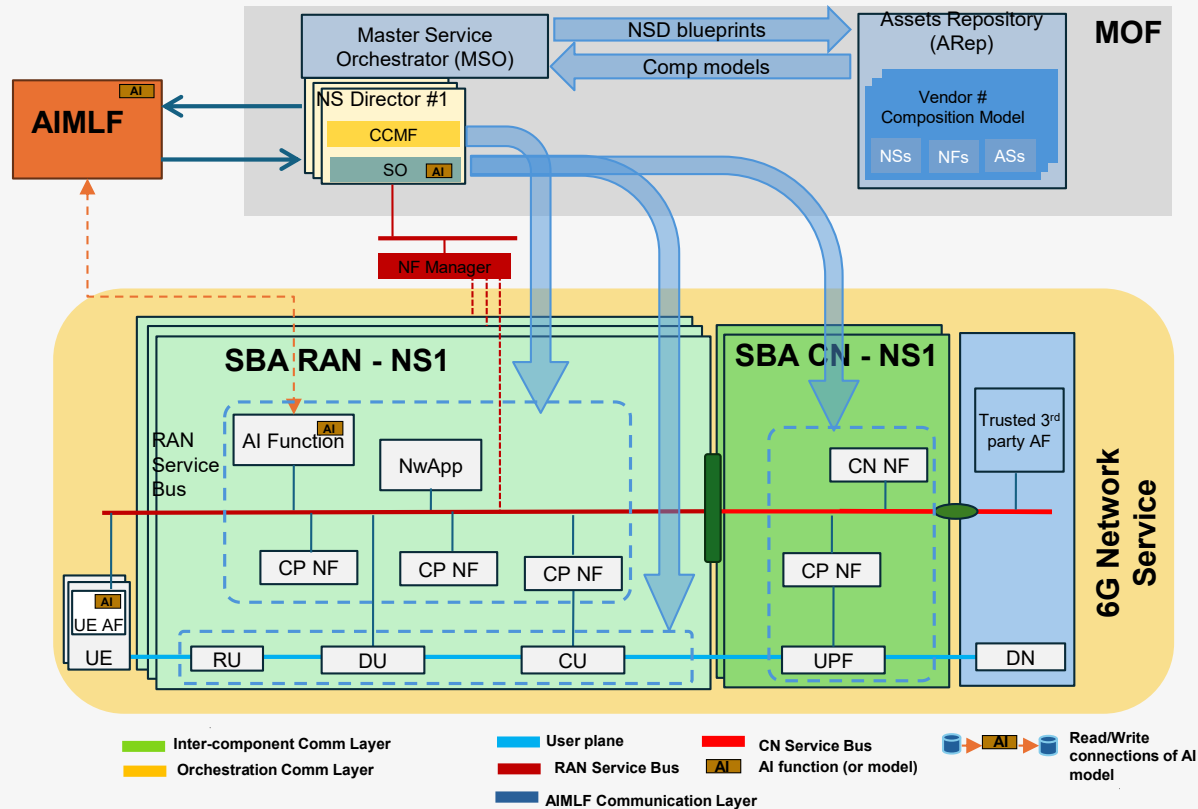
Accuracy and latency feedback can trigger retraining or model replacement.

Explainability and collaboration

Explain decisions or aggregate models trained across network domains.

6G CLOUD PoC2: service-oriented RAN

The project's second proof of concept validates service-oriented RAN composition with a flexible control fabric.



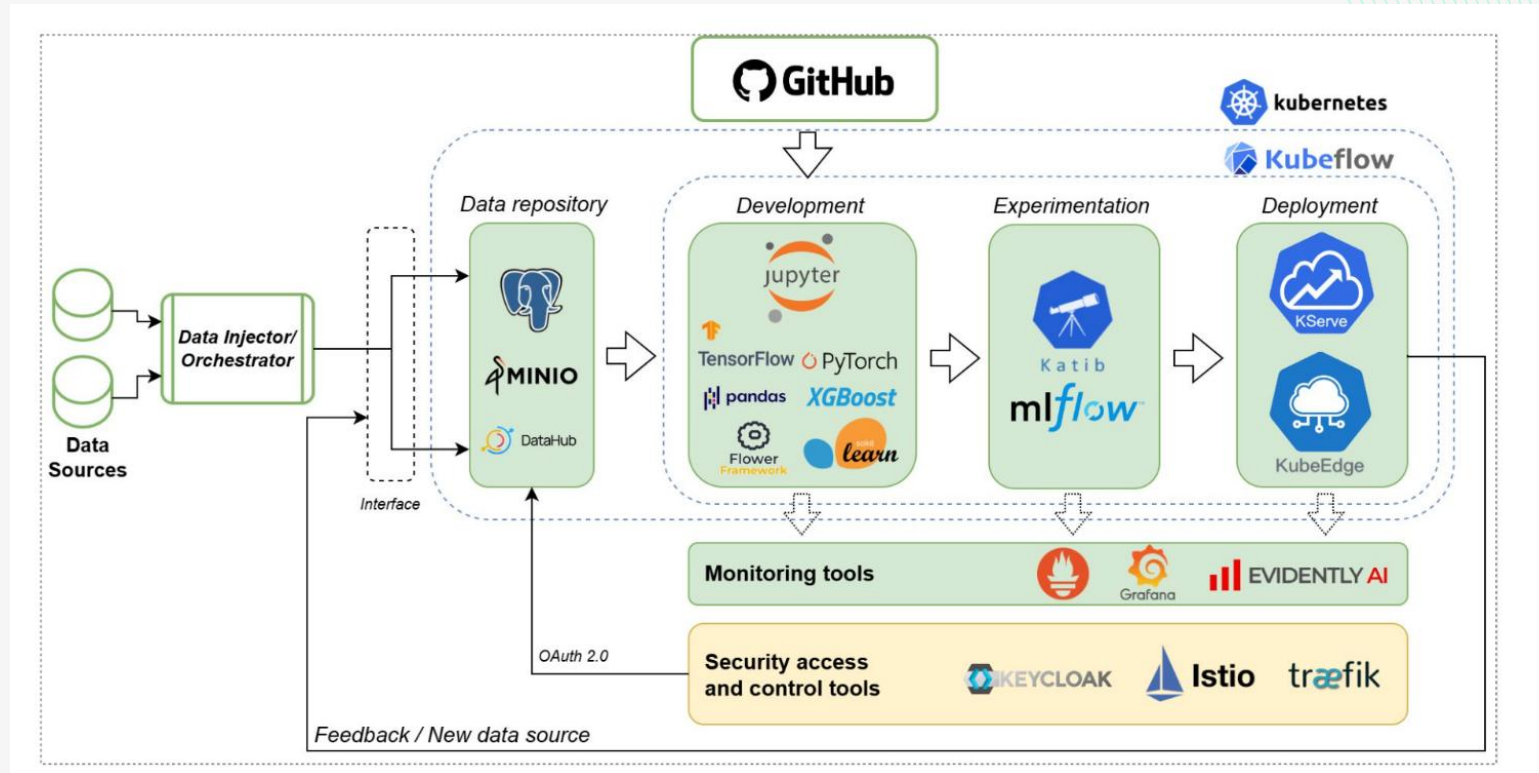
Service composition

Deploy RAN and control functions as services, then adapt their operation at runtime.

Demonstrated AI workflow

Expose telemetry, classify interference and reconfigure the affected service.

6G CLOUD AIMLF implementation used in PoC2



Training and tracking

Kubeflow and MLflow

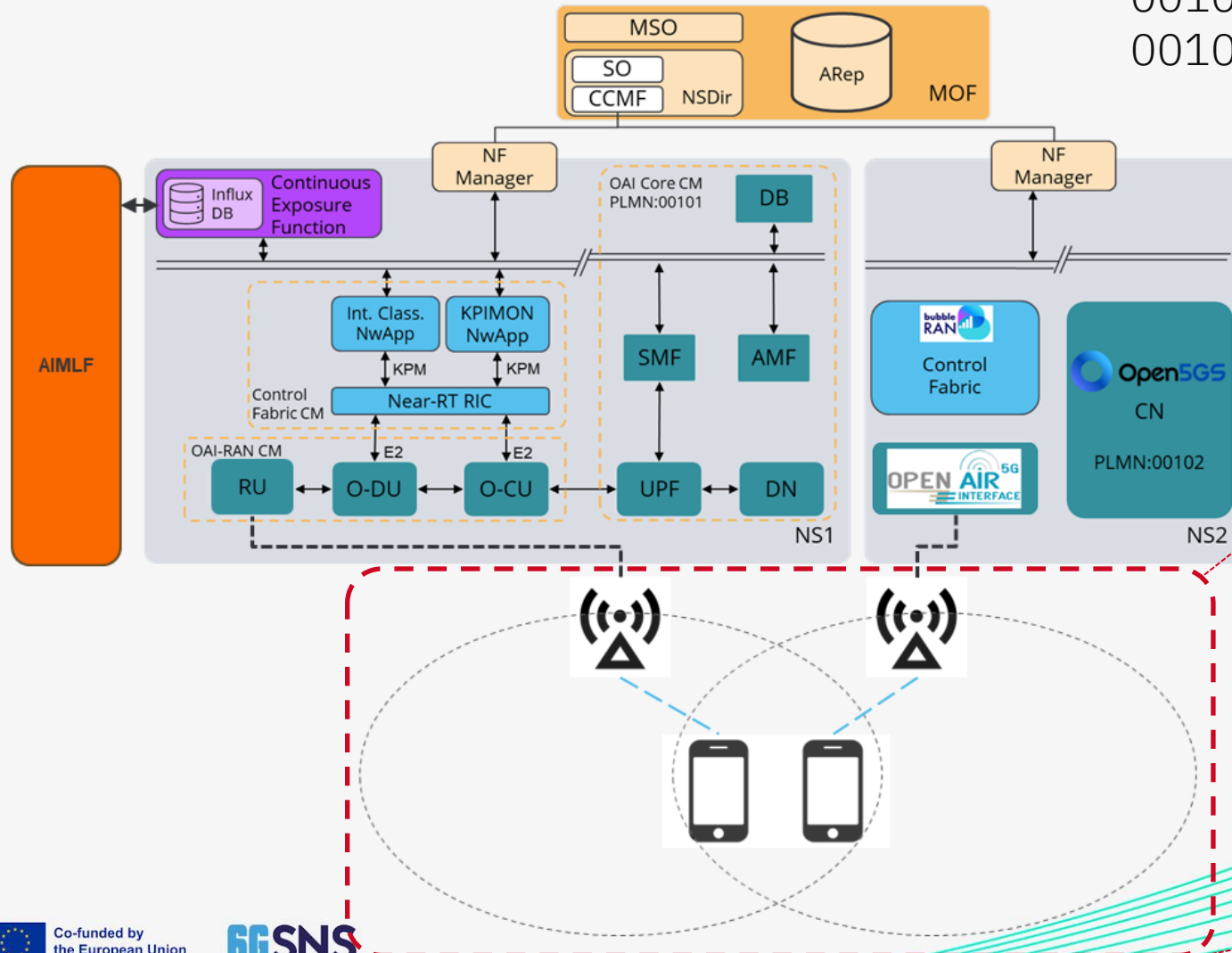
Storage and model serving

MinIO and KServe

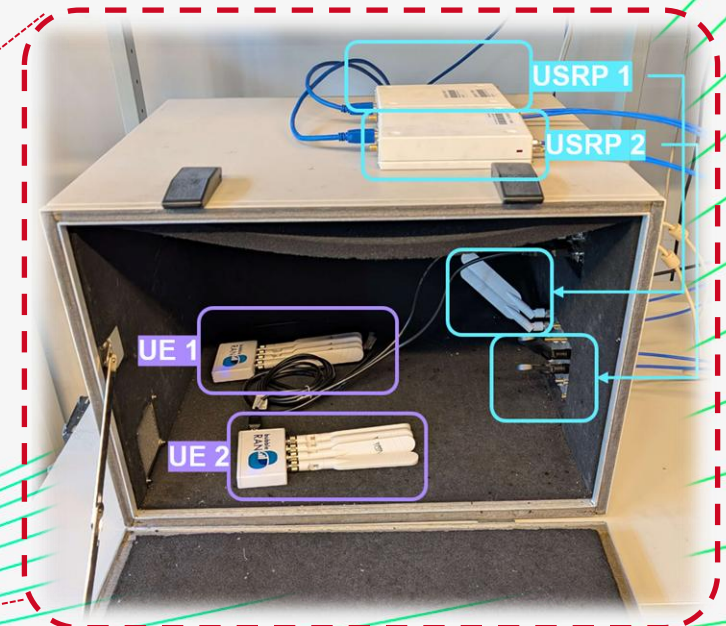


6G CLOUD Interference-management demo testbed

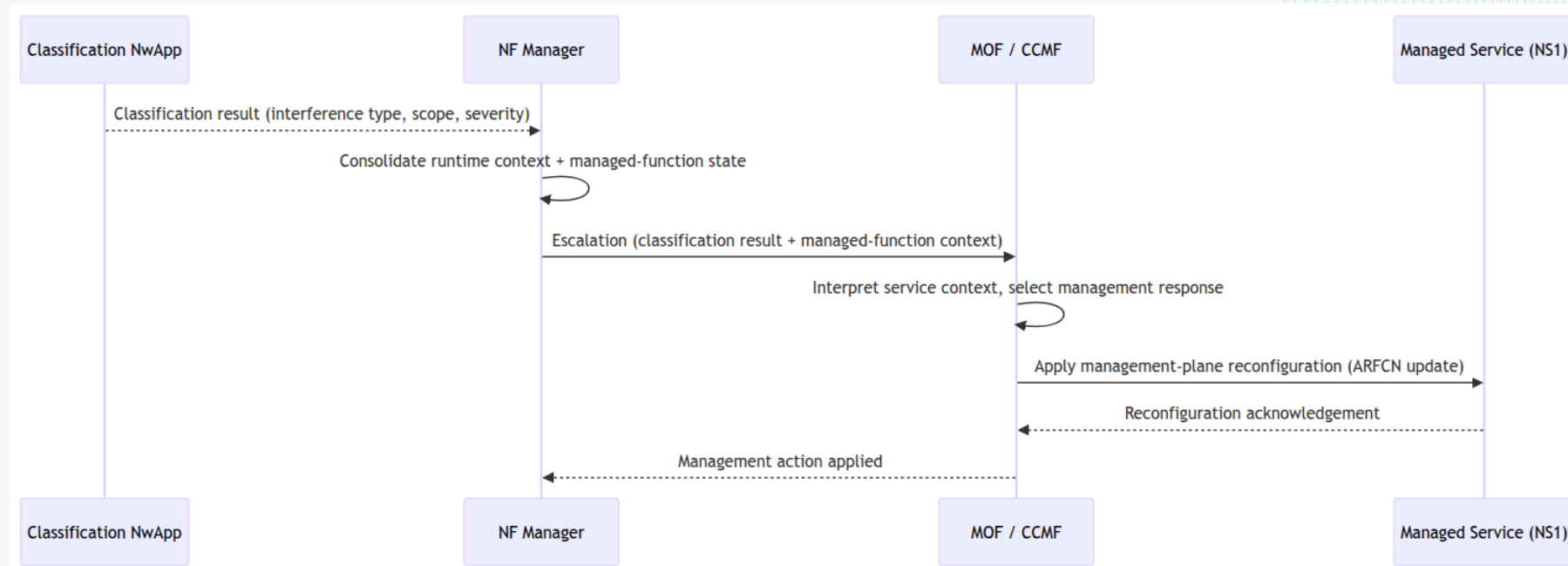
00101: OAI RAN / OAI core, monitored service
00102: OAI RAN / Open5GS, interference source



USRP B210 radios
Quectel RM520N-GL UEs
Isolated over-the-air setup



6G CLOUD Classification and network response



1 Observe

KPIMON and
selected telemetry

2 Classify

Pretrained NwApp
identifies interference

3 Escalate

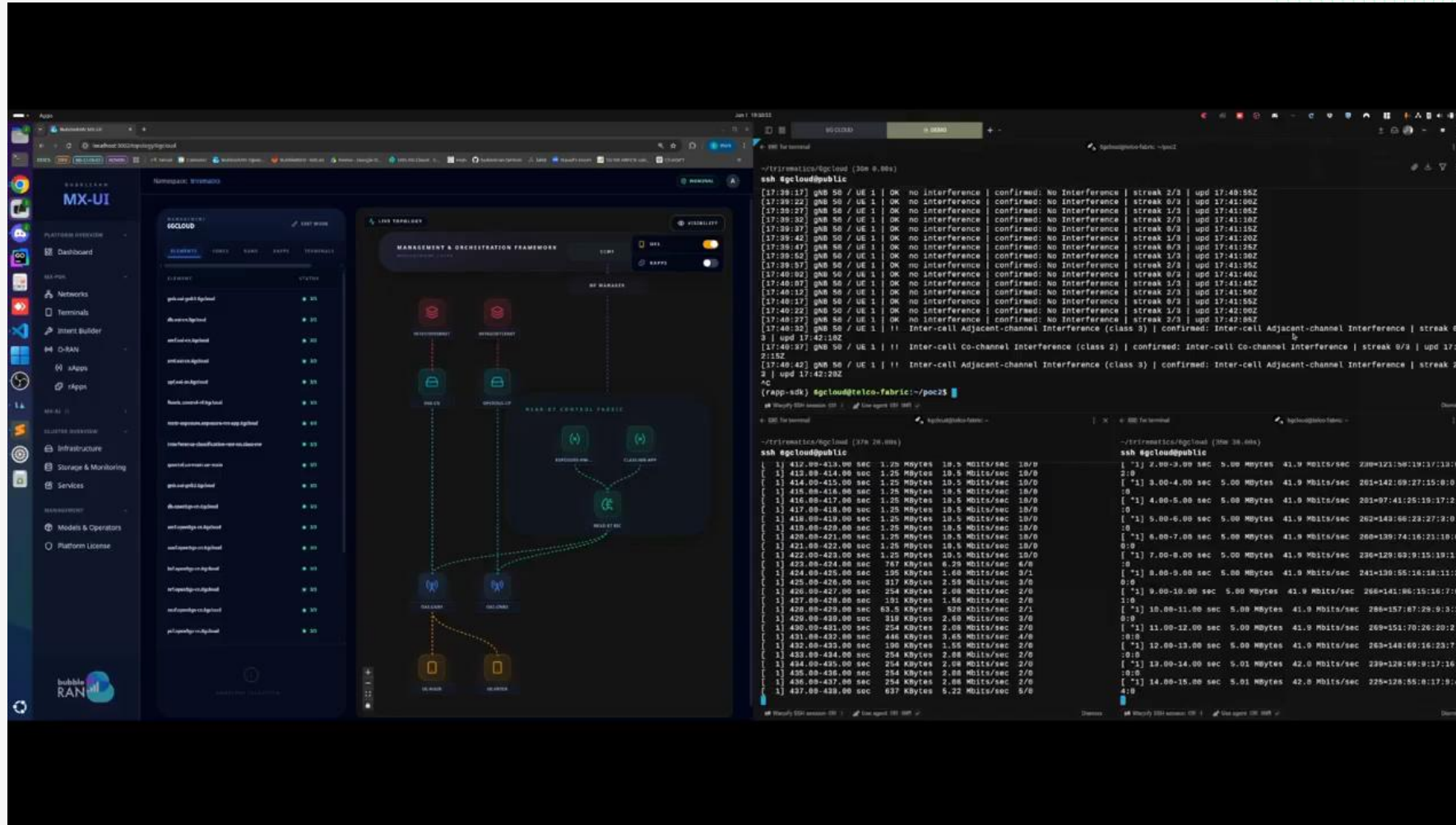
NF Manager adds
service context

4 Reconfigure

CCMF changes
the radio channel

The gNB briefly restarts. The UE reattaches and traffic resumes.

6G CLOUD Recorded PoC2 demonstration



[Full demonstration on YouTube](#)

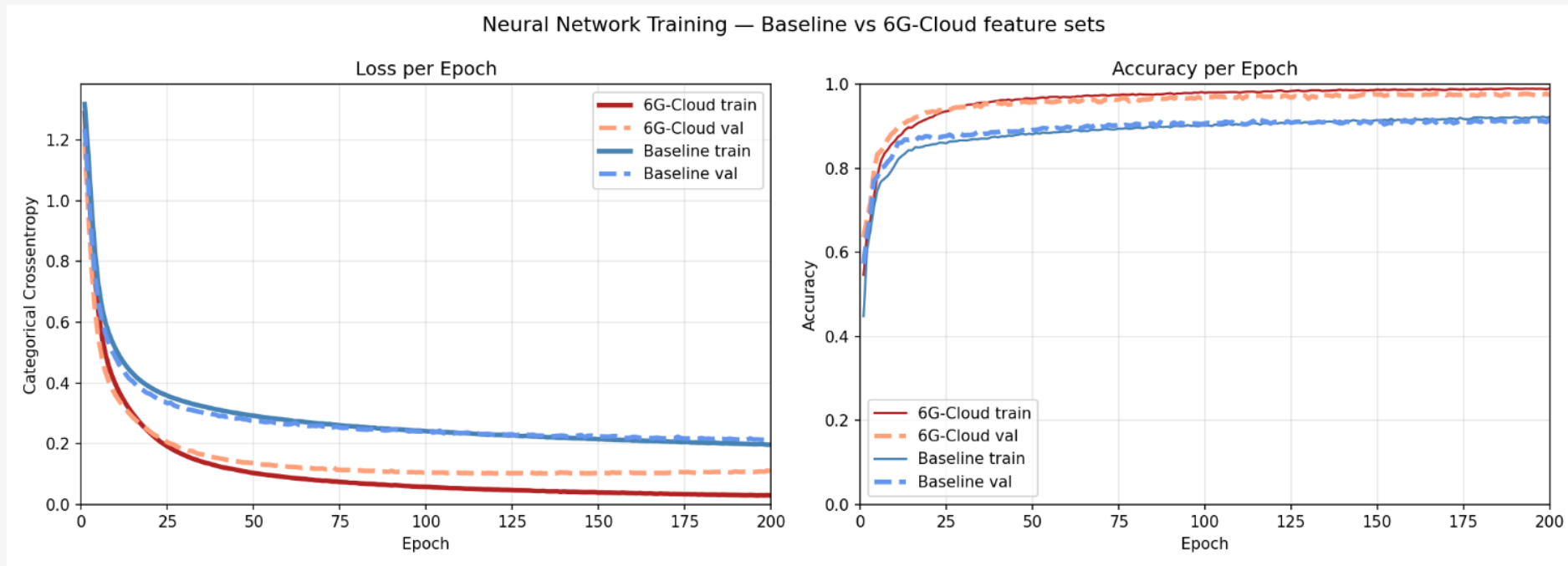
[Click the video to play 1:25](#)

24 to 13 inputs

45.8% fewer classifier input features

About 91% to 98% accuracy

Classifier evaluation after data preparation



Dataset evaluation. End-to-end radio-network gains require a separate comparison.

AIMLF

Model lifecycle services for network intelligence

Service-oriented RAN

Service composition and control for applying AI outputs

Joint PoC2 demonstration

Interference classification connected to radio reconfiguration

Public PoC2 tutorial and demonstration