DESIRE6G

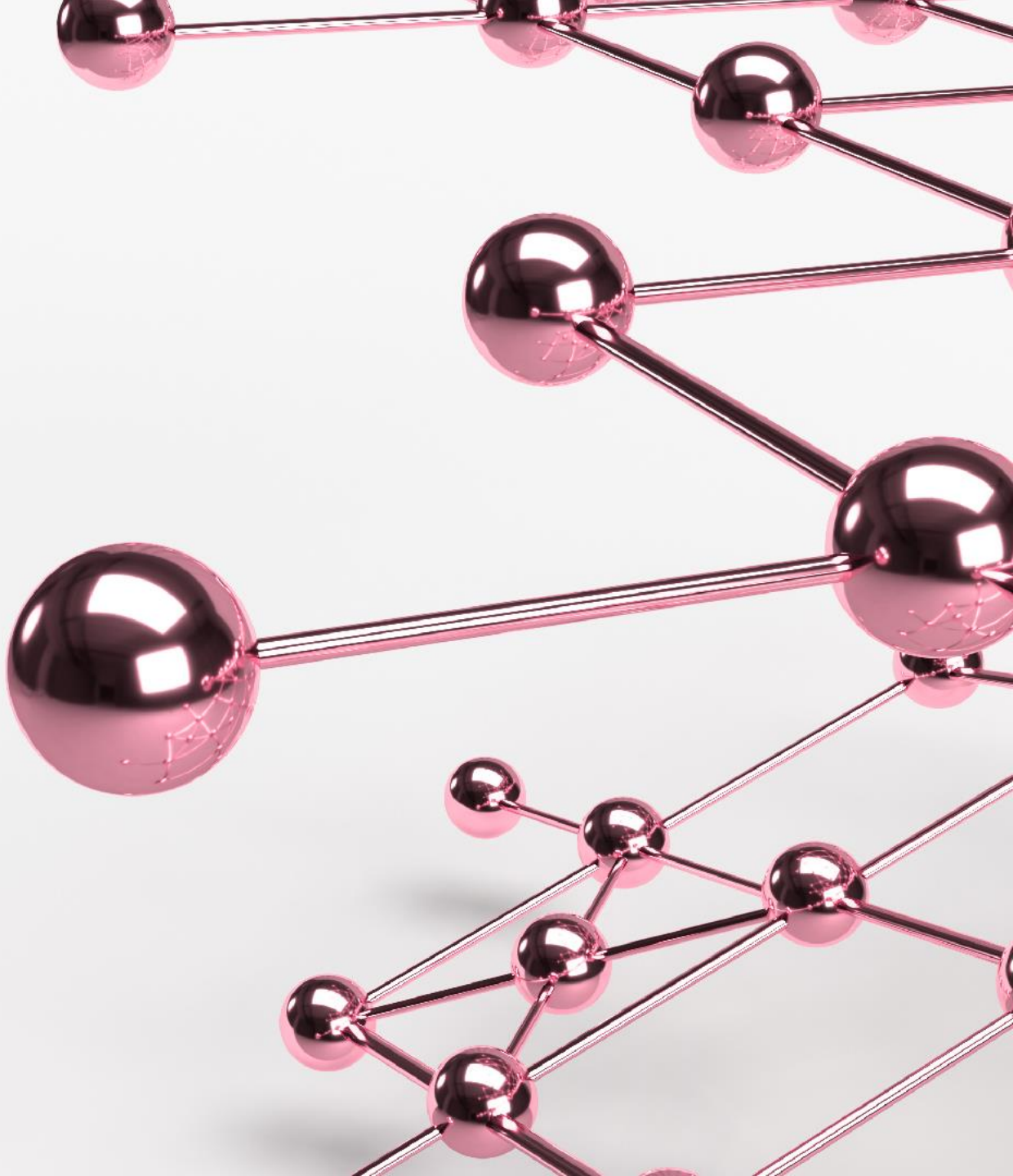
TOWARDS EXTREME NETWORK KPIS WITH PROGRAMMABILITY IN 6G

Gergely Pongrácz, Ericsson Research (Technical Coordinator)

Chrysa Papagianni, University of Amsterdam (Project Coordinator)

Co-funded by the European Union

6GSNS



DESIRE6G GENERICS

DEEP PROGRAMMABILITY & SECURE DISTRIBUTED INTELLIGENCE FOR REAL-TIME END-TO-END 6G NETWORKS

›DESIRE6G‹

Project coordination:
University of Amsterdam

Technical coordination:
Ericsson Hungary

Duration:
01/01/2023 - 31/12/2025

Total Cost:
6.227.919€

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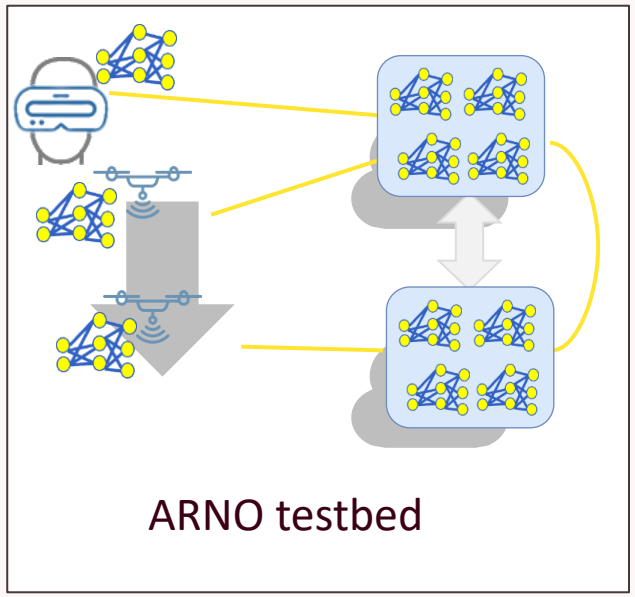
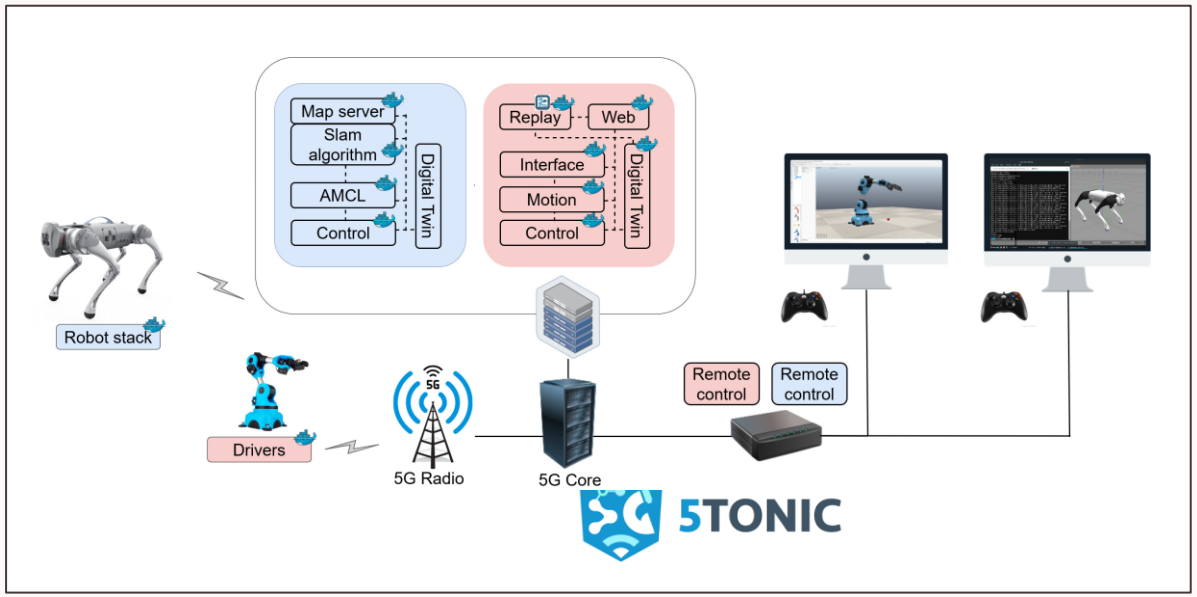
PROJECT SCOPE

- **Zero-touch control, management & orchestration platform, with native integration of AI, to support eXtreme URLLC requirements over a performant, measurable & programable data plane.**

- **Use cases: AR and a Digital Twin application at two distinct experimental infrastructures.**





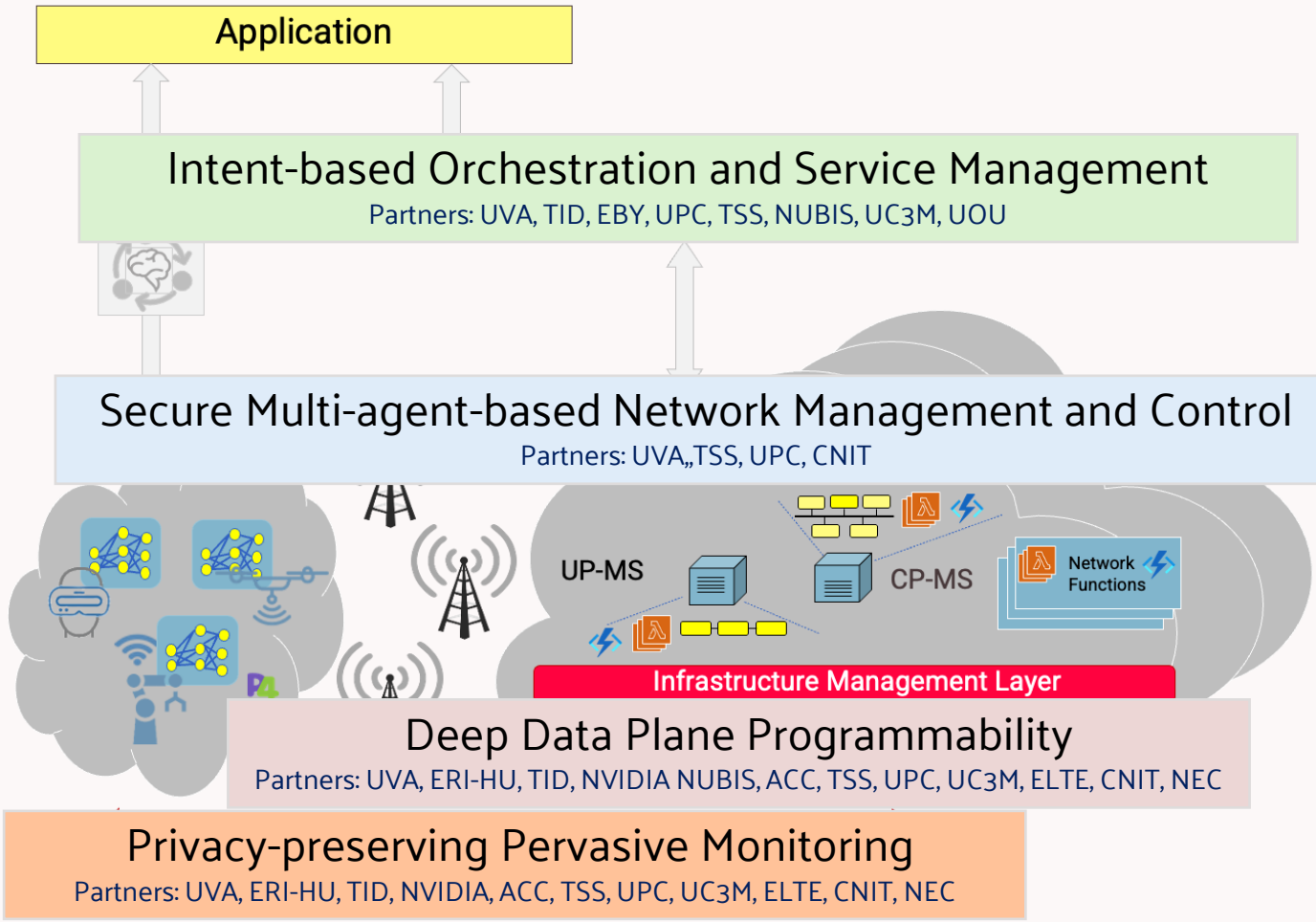
WHY DESIRE6G?

What is the difference between D6G and the other 6G projects?

We study:

- ✓ Examine how **E2E deep network programmability** aids in addressing challenging use cases / KPIs (such as sub msec latency) in a multi-service network, looking into on the flexibility - performance trade-off
- ✓ **Cloud-native** deployment of network services & components, conforming to the Serverless/FaaS concept
- ✓ Explore how a **multi agent-based system** can address the complexity and scalability issues of centralized control and optimization
- And how can we put this together as simply as possible with other innovative methods, like **AI-driven telemetry**, **blockchain-based federation** and a **DLT-backed software security framework**
- So D6G has a **bottom-up** view and focuses on proof-of-concept **demos** to validate the value proposition

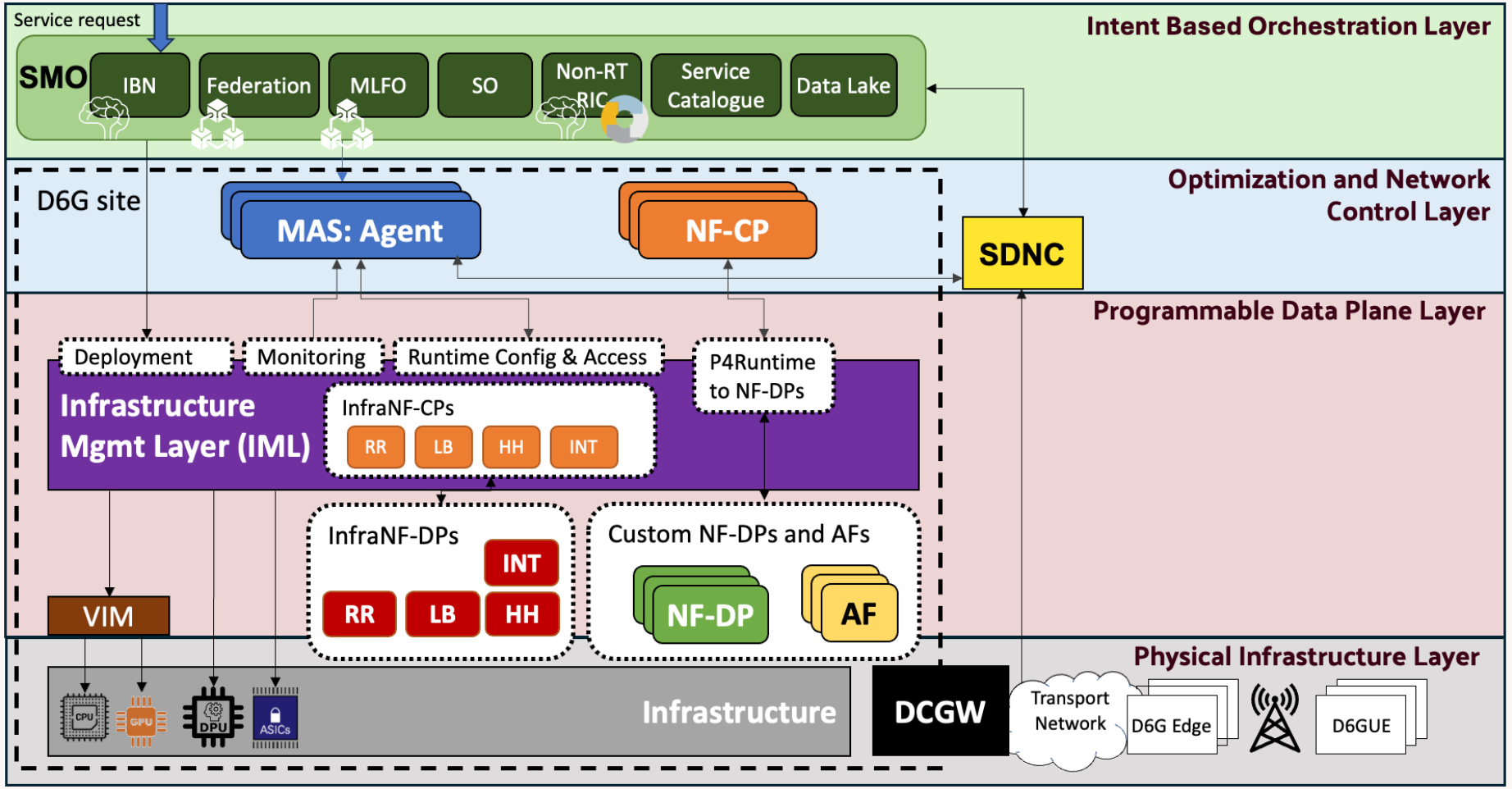
D6G KEY INNOVATIONS



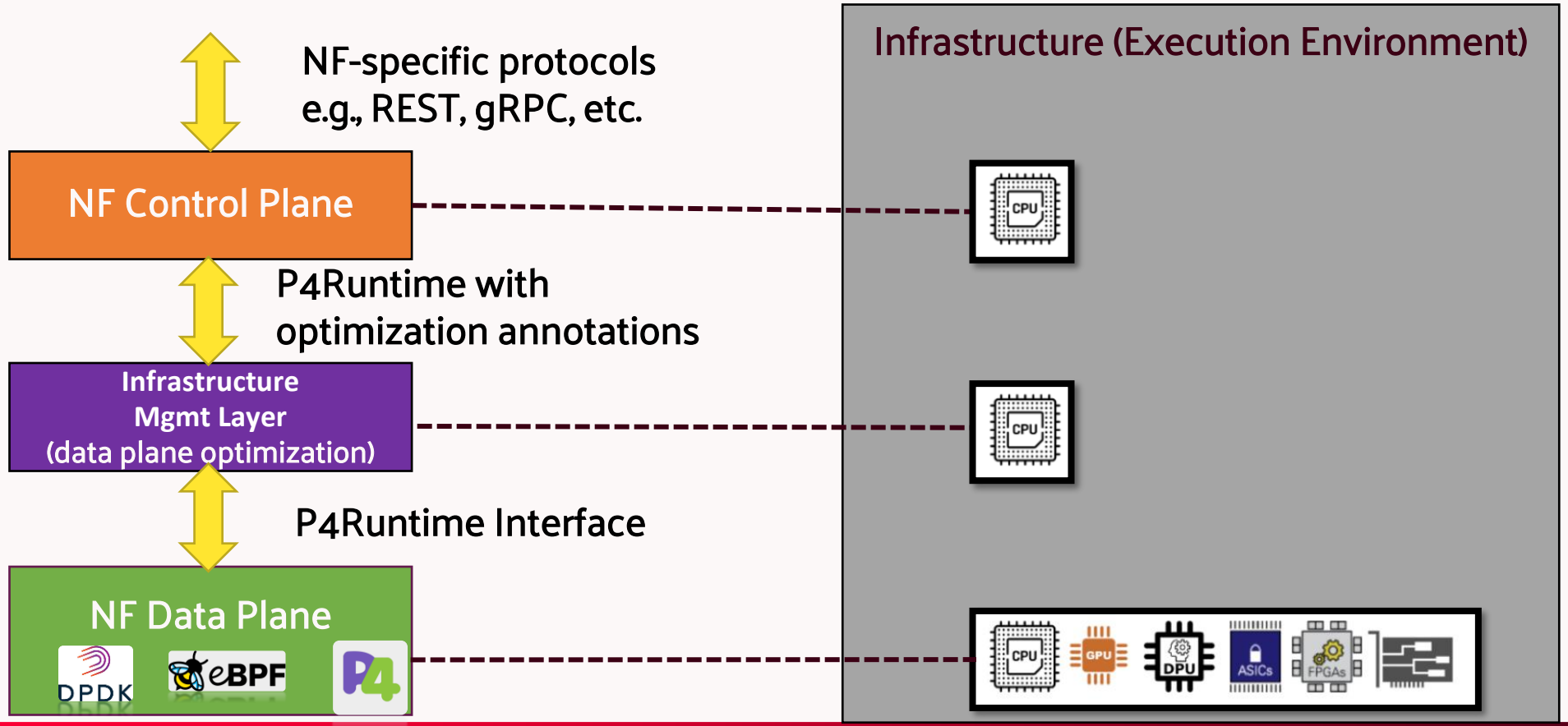
Innovation

- xURLLC services
- Edge Intelligence
- Intent-based orchestration
- Blockchain-based federation
- Secure distributed intelligence
- RAN-core convergence
- Edge-to-Cloud continuum
- Serverless architecture
- E2E programmable data plane
- Multi HW acceleration
- E2E network telemetry

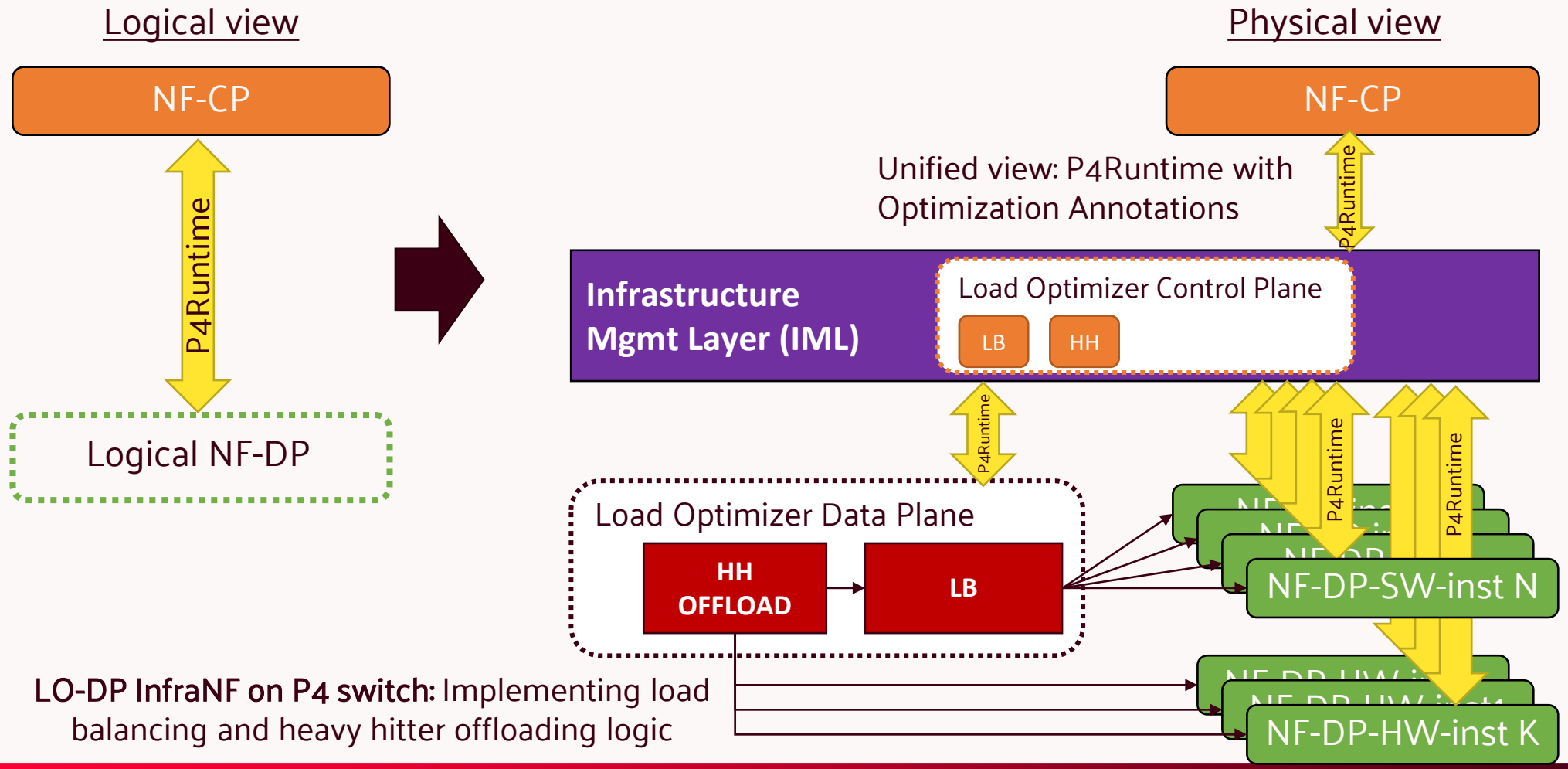
D6G ARCHITECTURE OVERVIEW



PROGRAMMABLE DATA PLANE TRANSPARENCY

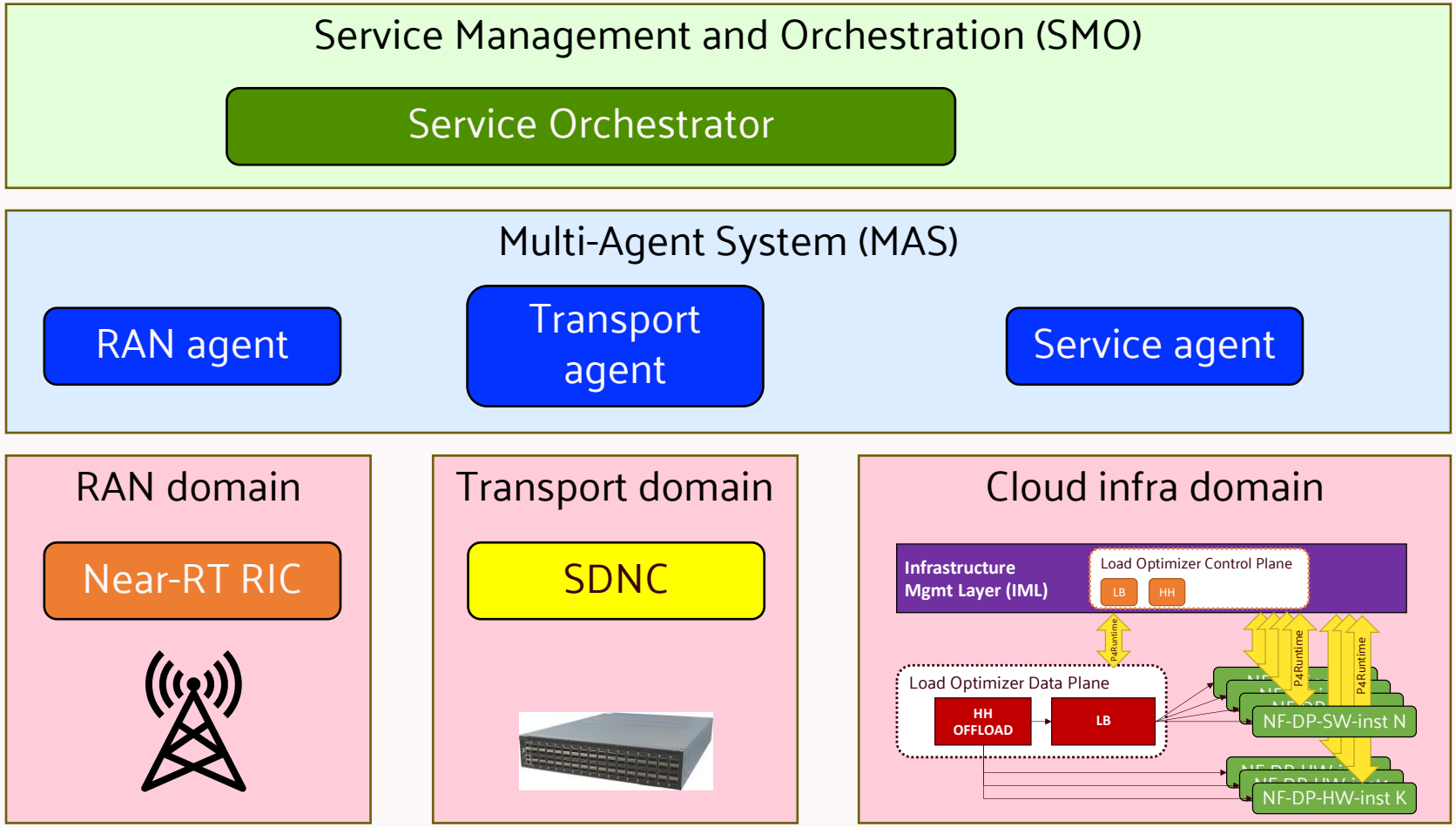


CLOUD NATIVE NETWORK SERVICES



LO-DP InfraNF on P4 switch: Implementing load balancing and heavy hitter offloading logic

THE 3 OPTIMIZATION LAYERS



Global optimizations (~10+ sec)

Service optimizations (~1 sec)

Local optimizations (~10-100 msec)

THANKS!

Gergely Pongrácz

email: gergely.pongracz@ericsson.com

DESIRE6G has received funding from the Smart Networks and Services Joint Undertaking (SNS JU) under the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101096466.
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BACKUP

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SERVICE DEPLOYMENT

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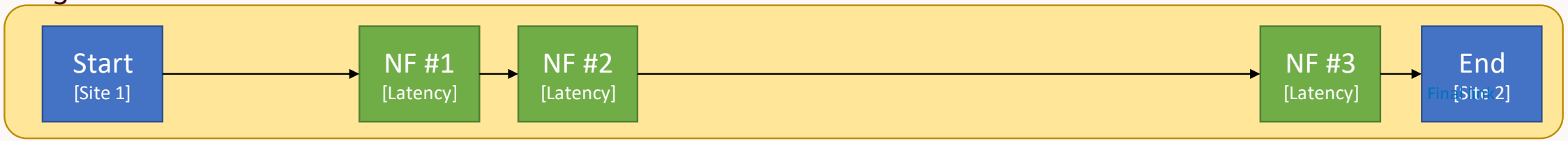
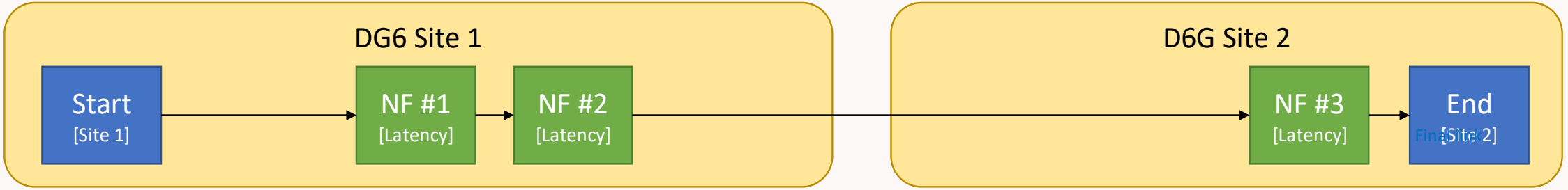
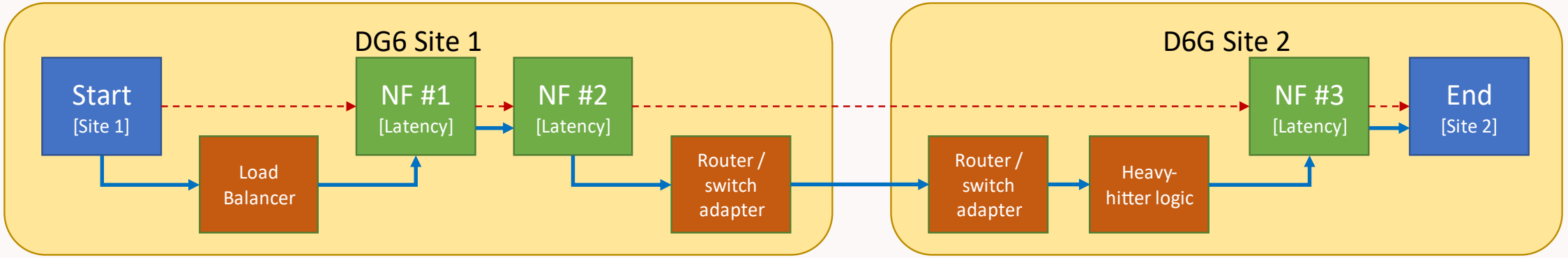
Logical view (service creation time)



Site allocation (by SMO)



Infra NFs and local connections (by IML)



SERVICE DEPLOYMENT (2)

Physical mapping to local resources (IML & VIM)