DESIRE6G

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

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Co-funded by the European Union

6GSNS

DESIRE6G SUMMARY

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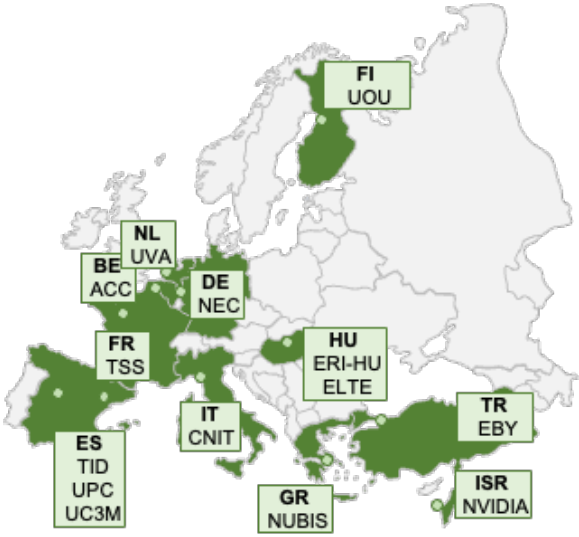
- Deep Programmability and Secure Distributed Intelligence for Real-Time End-to-End 6G Networks
  - Project number: 101096466
  - Project acronym: Call: HORIZON-JU-SNS-2022
  - Topic: STREAM-B-01-01 (System Architecture)
  - EU Contribution: €5,9 Million
  - Starting date: 1 January 2023 - End date: 31 December 2025.

- Project Coordinator: Dr. Chrysa Papagianni, University of Amsterdam
- Technical Coordination: Gergely Pongracz, Ericsson Hungary

CONSORTIUM



UNIVERSITEIT VAN AMSTERDAM

NUBIS

UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH

ELTE EÖTVÖS LORÁND UNIVERSITY

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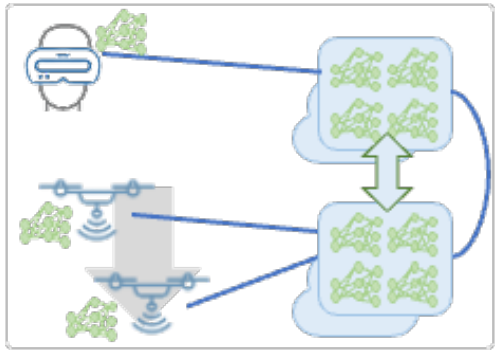
Telefónica

SOLID SHIELD

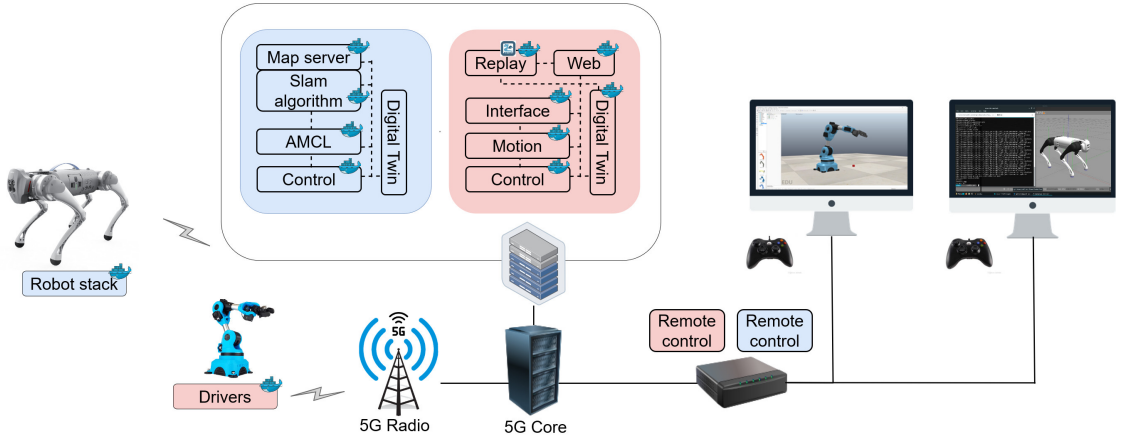
NEC

PROJECT SCOPE

- *Promoting the 6G vision, DESIRE6G will design and develop a zero-touch control, management & orchestration platform, with native integration of AI, to support eXtreme URLLC application requirements over a performant, measurable and programable data plane.*
- Use cases: AR and a Digital Twin application at two distinct experimental infrastructures.



ARNO testbed



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PROJECT OBJECTIVES

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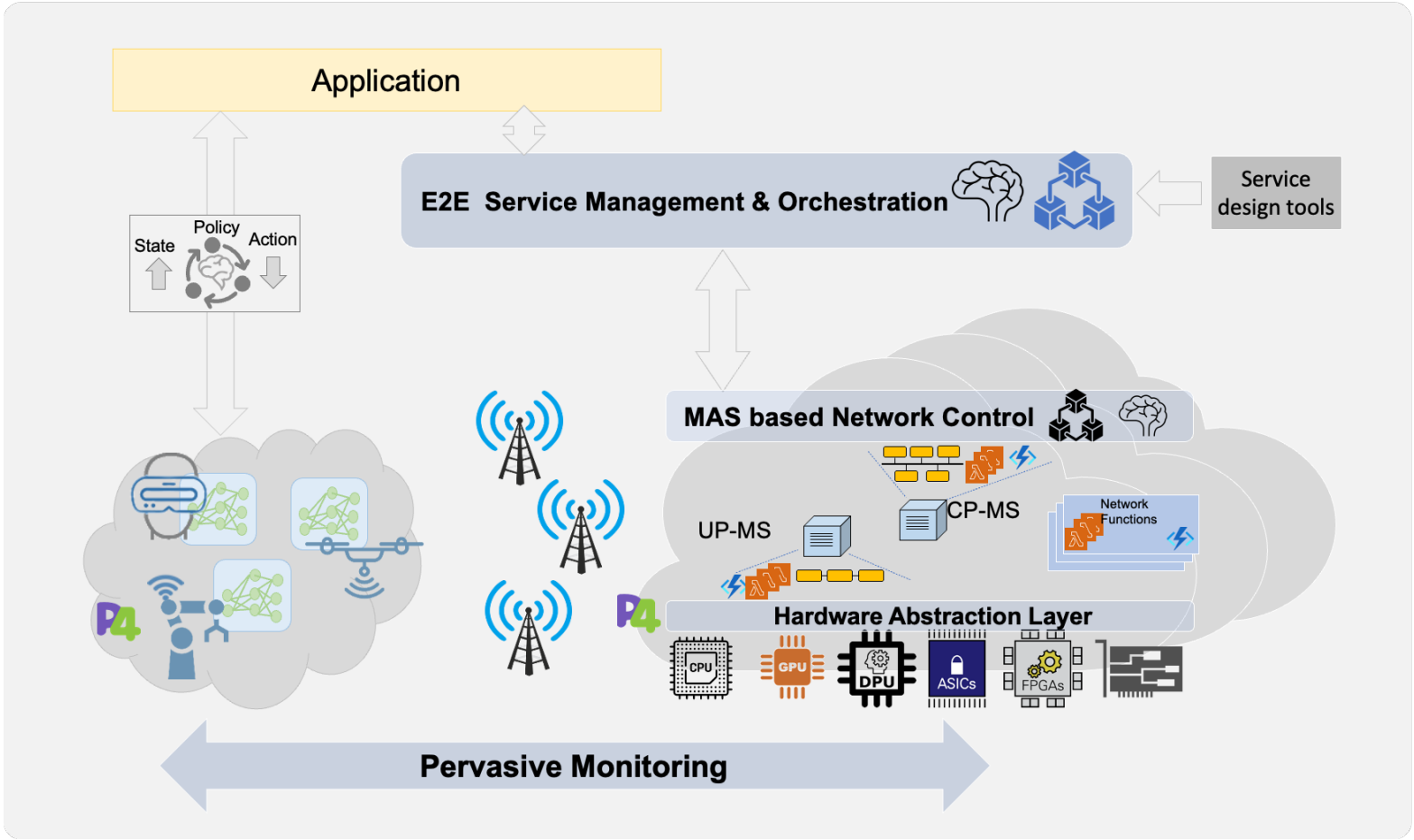
1. Design a functional architecture for 6G mobile networks to support the next generation of URLLC use cases
2. Employ a cloud-native approach to vertical service and mobile network deployments over heterogenous and dynamic resources that span across multiple administrative domains
3. Design a “AI-native architecture” for 6G systems. While 5G solutions aimed at providing machine learning solutions over-the-top, DESIRE6G seeks to update the network architecture so that it natively supports AI operations.
4. Unified management and control of heterogenous programable data planes and hardware accelerators, while enabling increased controllability for the tenant and service.
5. Develop and validate a performant, measurable, predictable, and customizable data plane that supports multi-tenancy.
6. Develop a cross-domain, infrastructure-independent, software security by executable rewriting technology enabling trustworthy immersive process monitoring and remote control backed on lightweight permissioned Distributed Ledger Technology.
7. To integrate components and to build PoC demonstrators validating the whole architecture.
8. To maximise project impact by influencing major vendors and service providers on the adoption of DESIRE-6G principles through communication, dissemination, and standardization activities and to exploit project’s results and knowledge.

KEY INNOVATIONS



DESIRE6G

Innovation

- Intelligent applications
- Intent-based orchestration
- Lightweight blockchain-based federation
- xURLLC services
- **Serverless architecture**
- **RAN-core convergence**
- **Cloud-to-edge continuum**
- Secure distributed intelligence
- E2E data plane programmability
- Multi HW acceleration
- E2E telemetry

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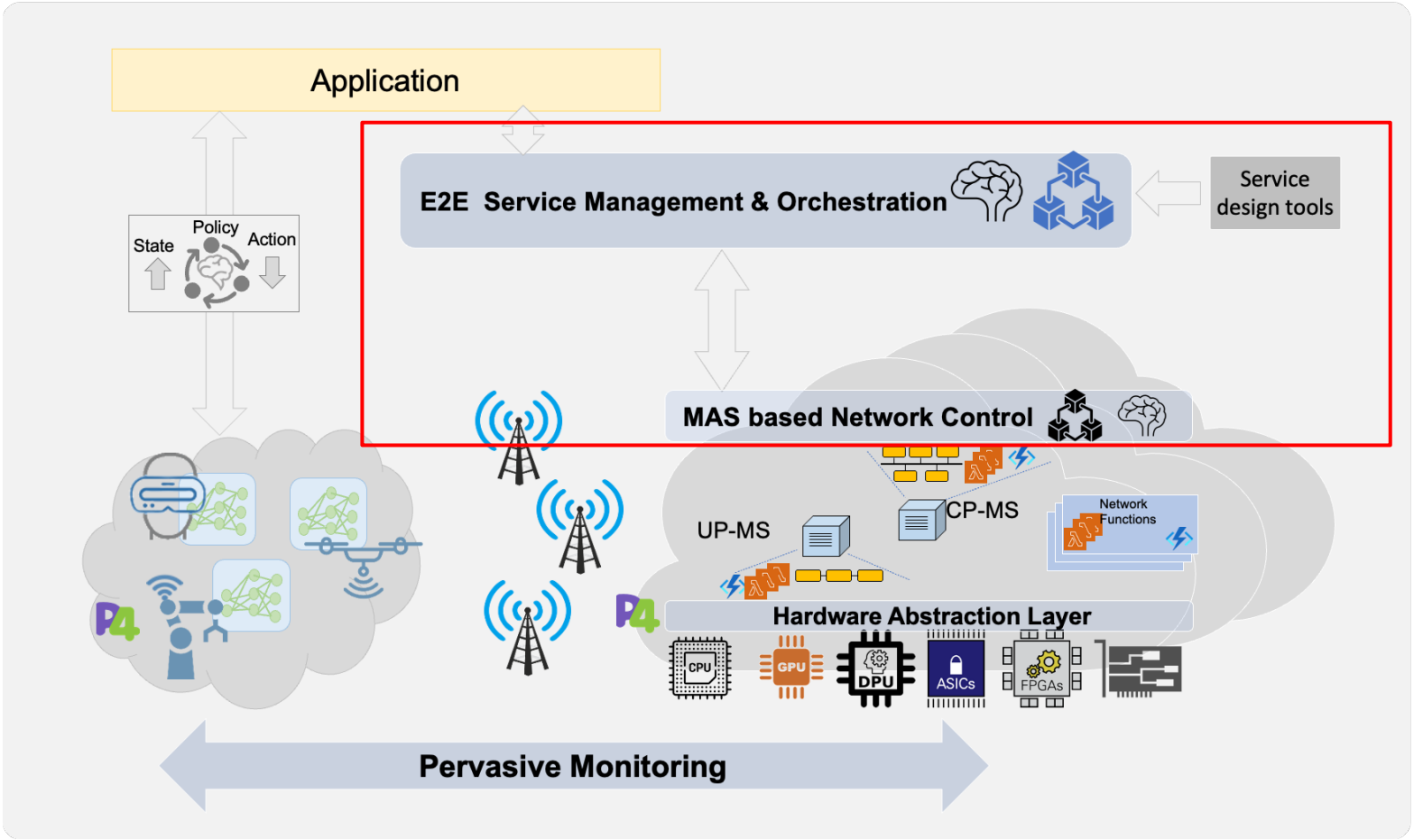

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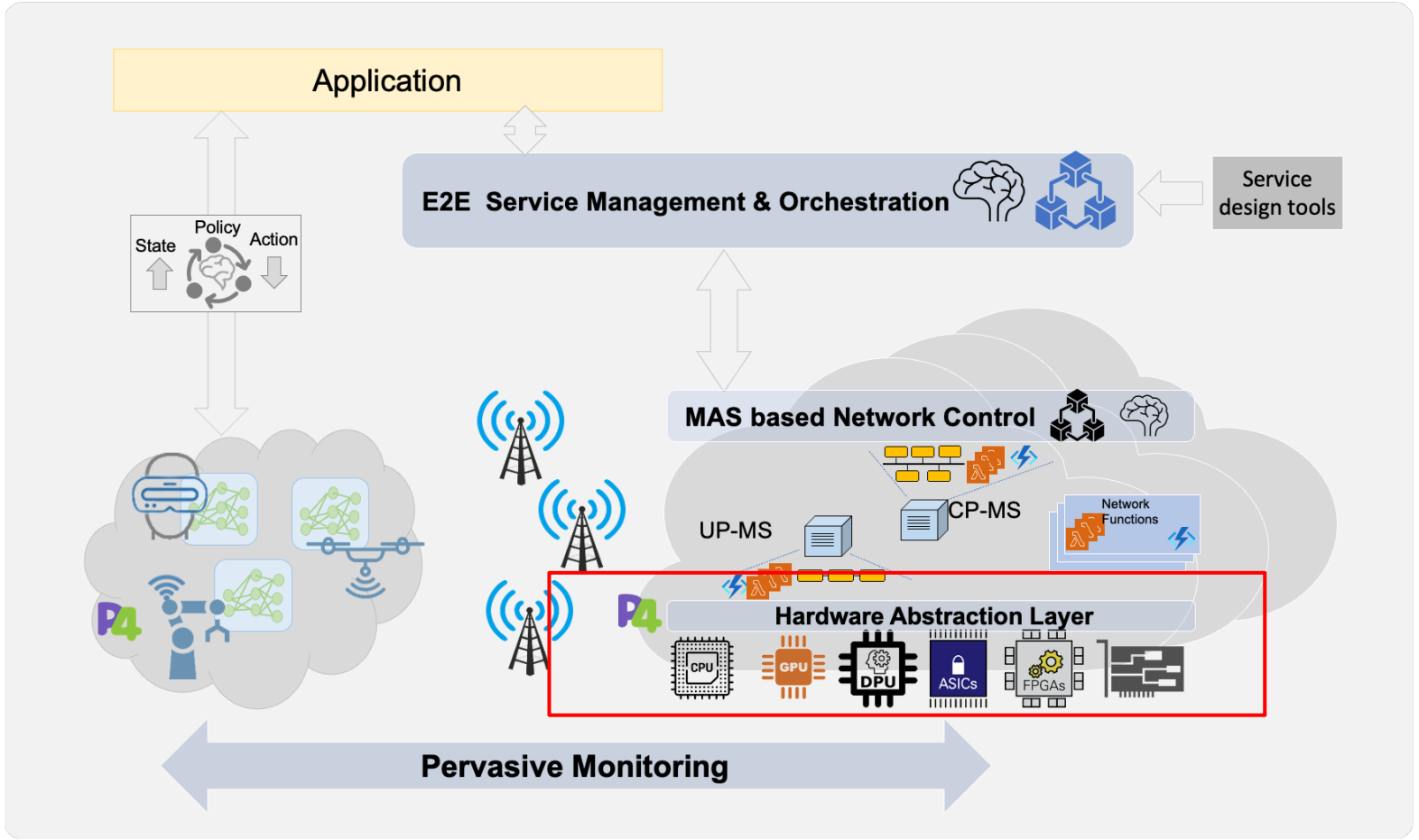

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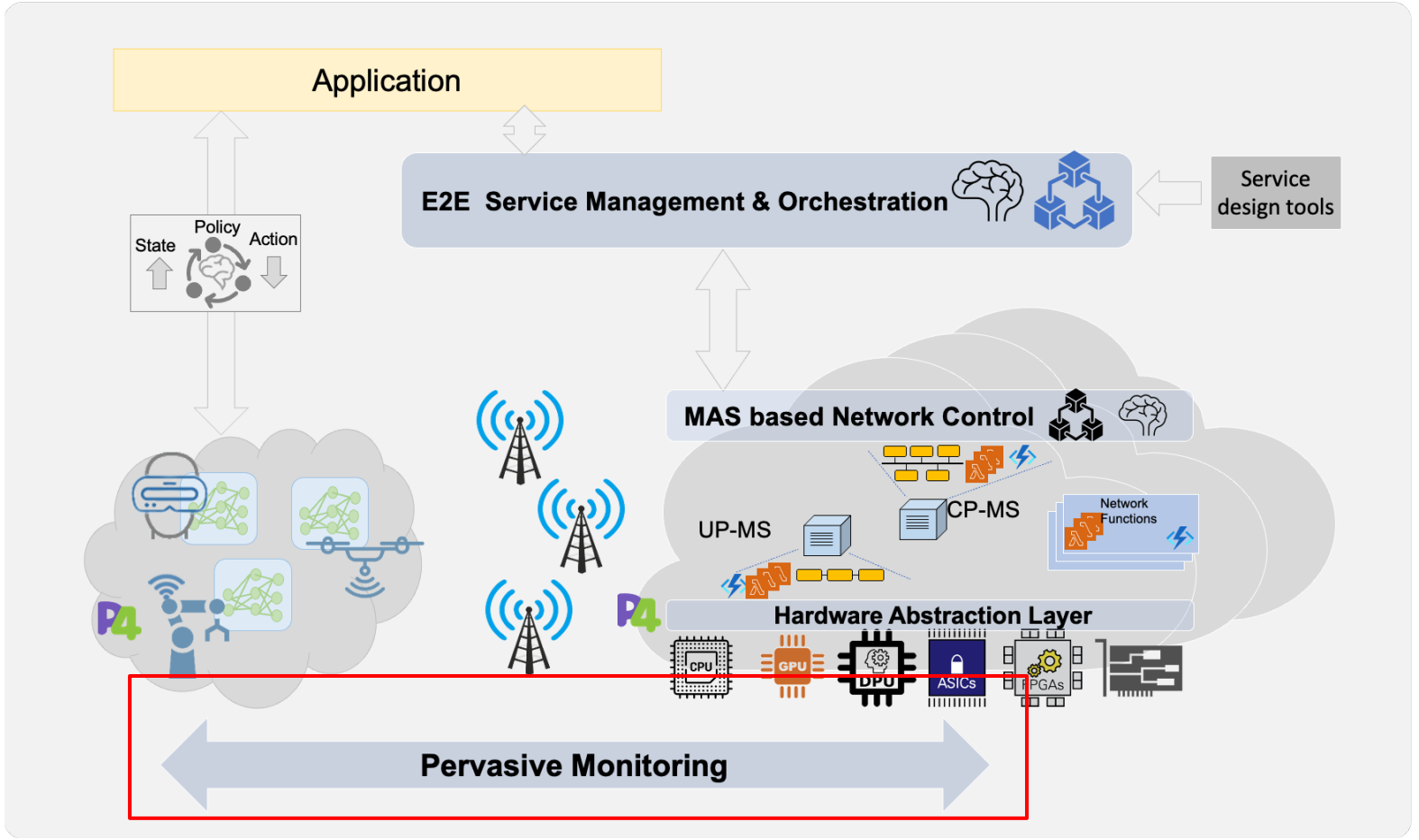

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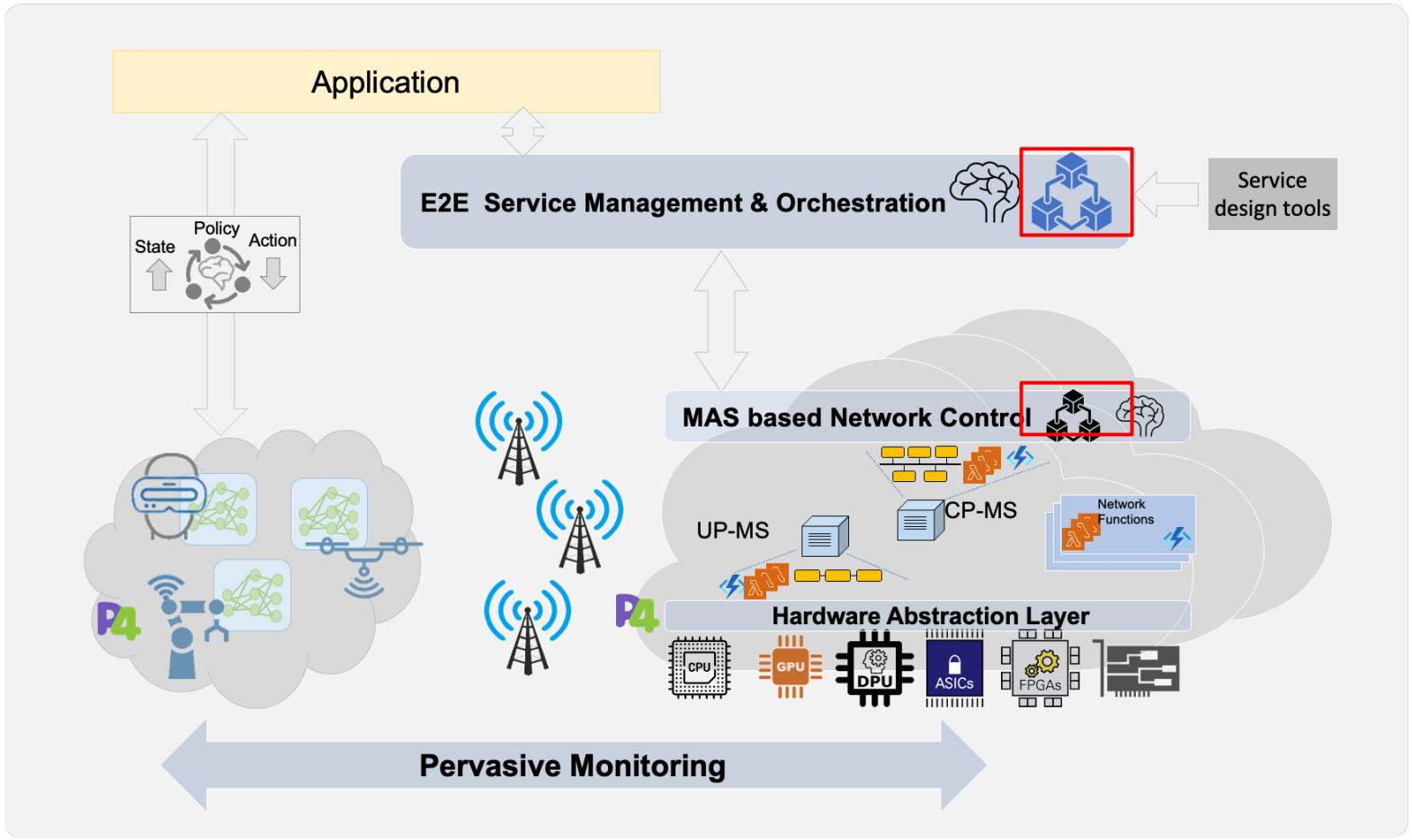

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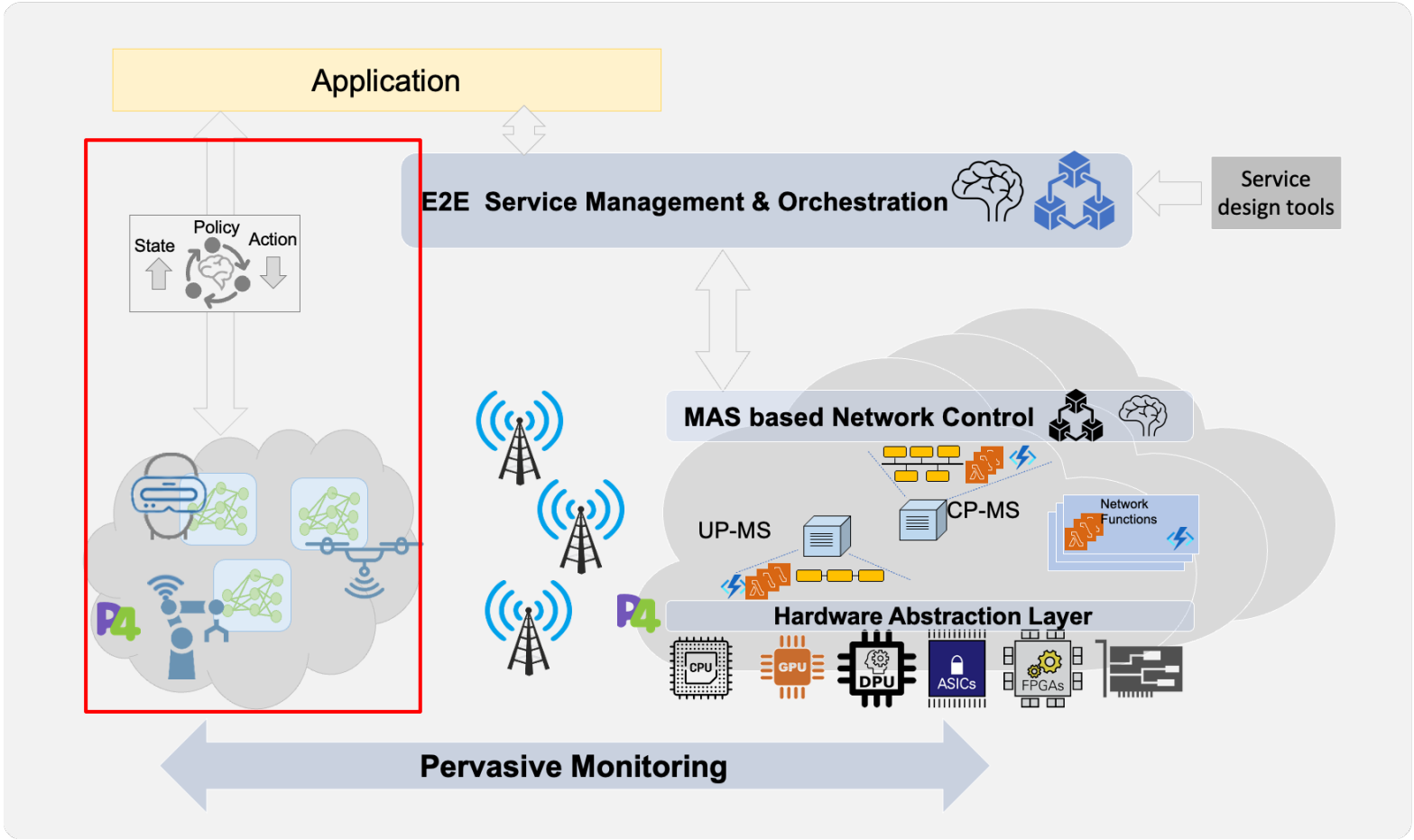

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Questions? mail-to: c.papagianni@uva.nl


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