The 5G Infrastructure Public Private Partnership

Coordinated Control and Spectrum Management for 5G Heterogeneous Radio Access Networks

Coherent

Overview

EU Horizon2020 ICT-14

Consortium

VTT, Finland
(Coordinator)

EURECOM, France

CREATE-NET, Italy

Aalto University, Finland

SISC, Sweden

EICT, Germany

THALES, France

CommAgility, UK

University of Duisburg Essen, Germany

OTE, Greece

4GCelleX, Israel

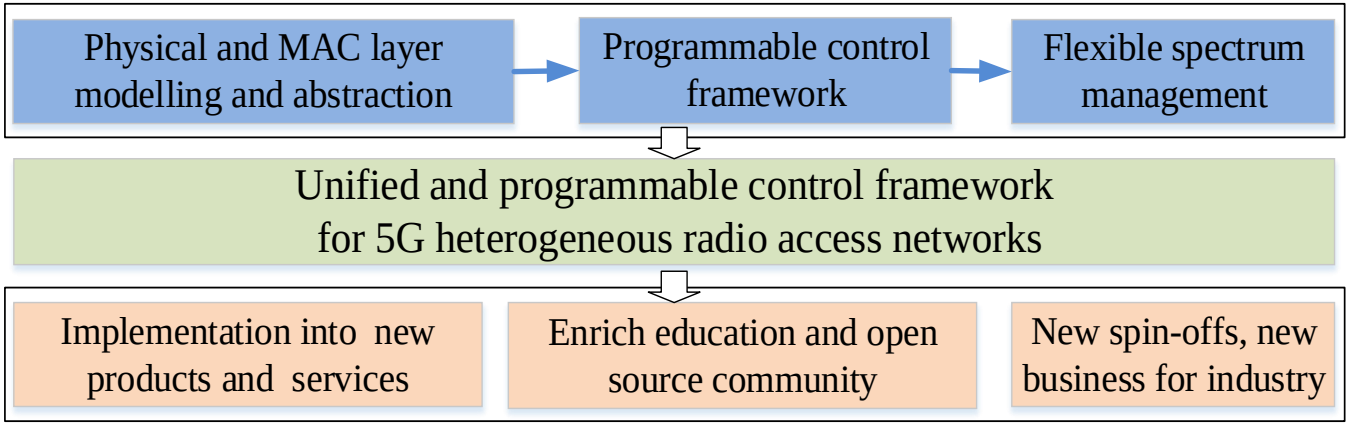
Poznan University of Technology, Poland

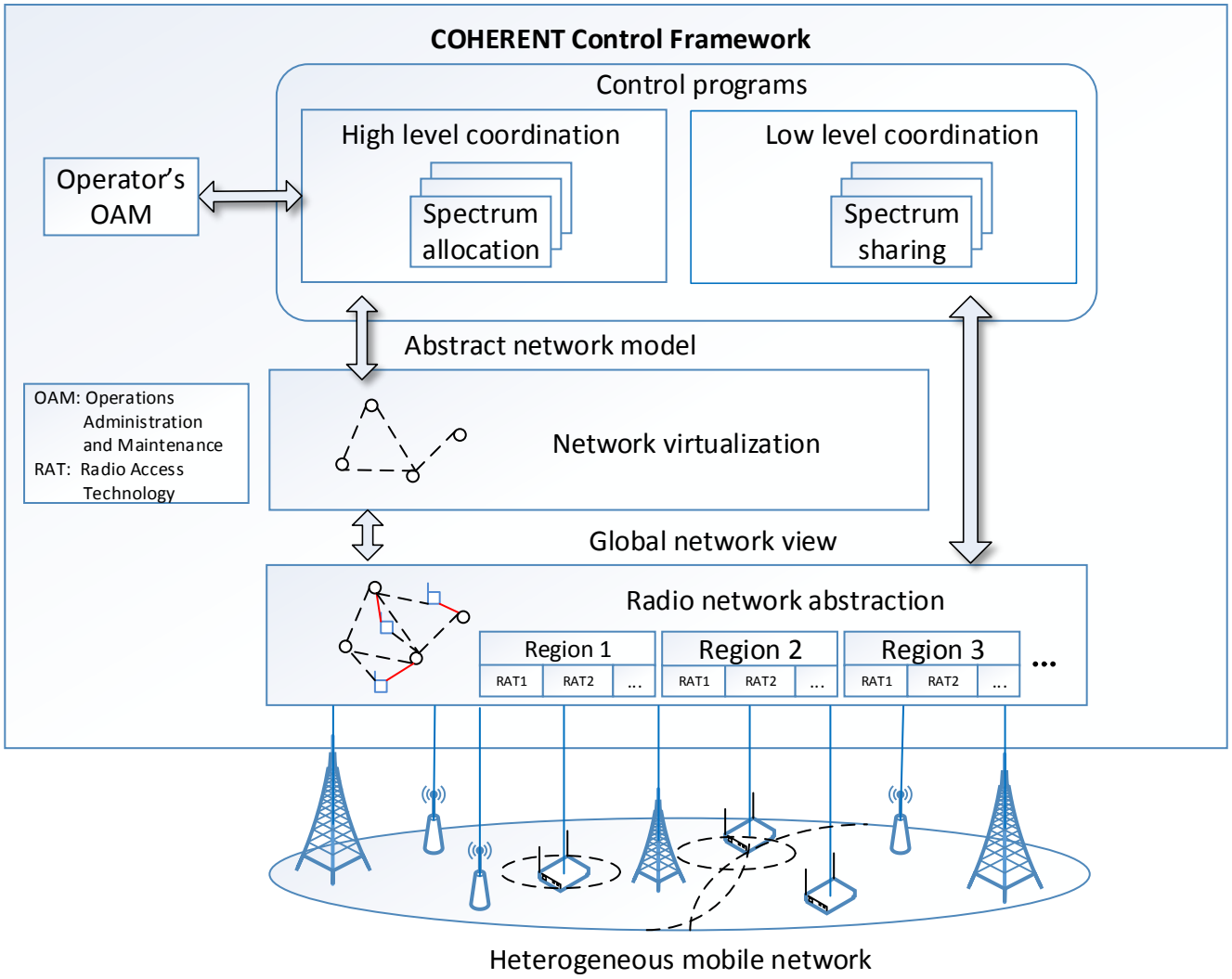
INEA, Poland

Fairspectrum, Finland

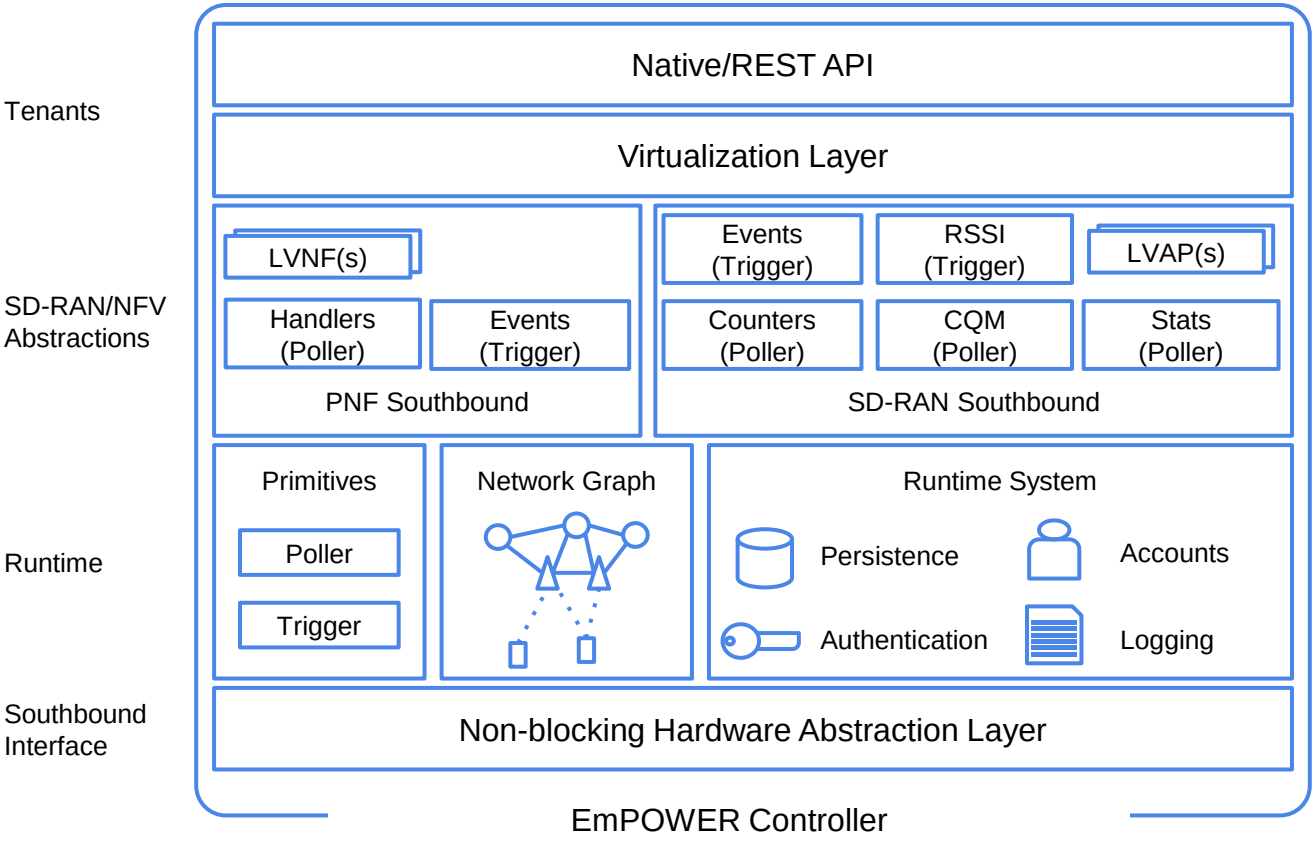
Objectives

- Research and develop a **unified control and coordination framework** for 5G heterogeneous radio access networks (RAN), with focuses on
  - software defined networking for RANs
  - efficient radio resource modelling and management in programmable RANs
  - flexible spectrum management



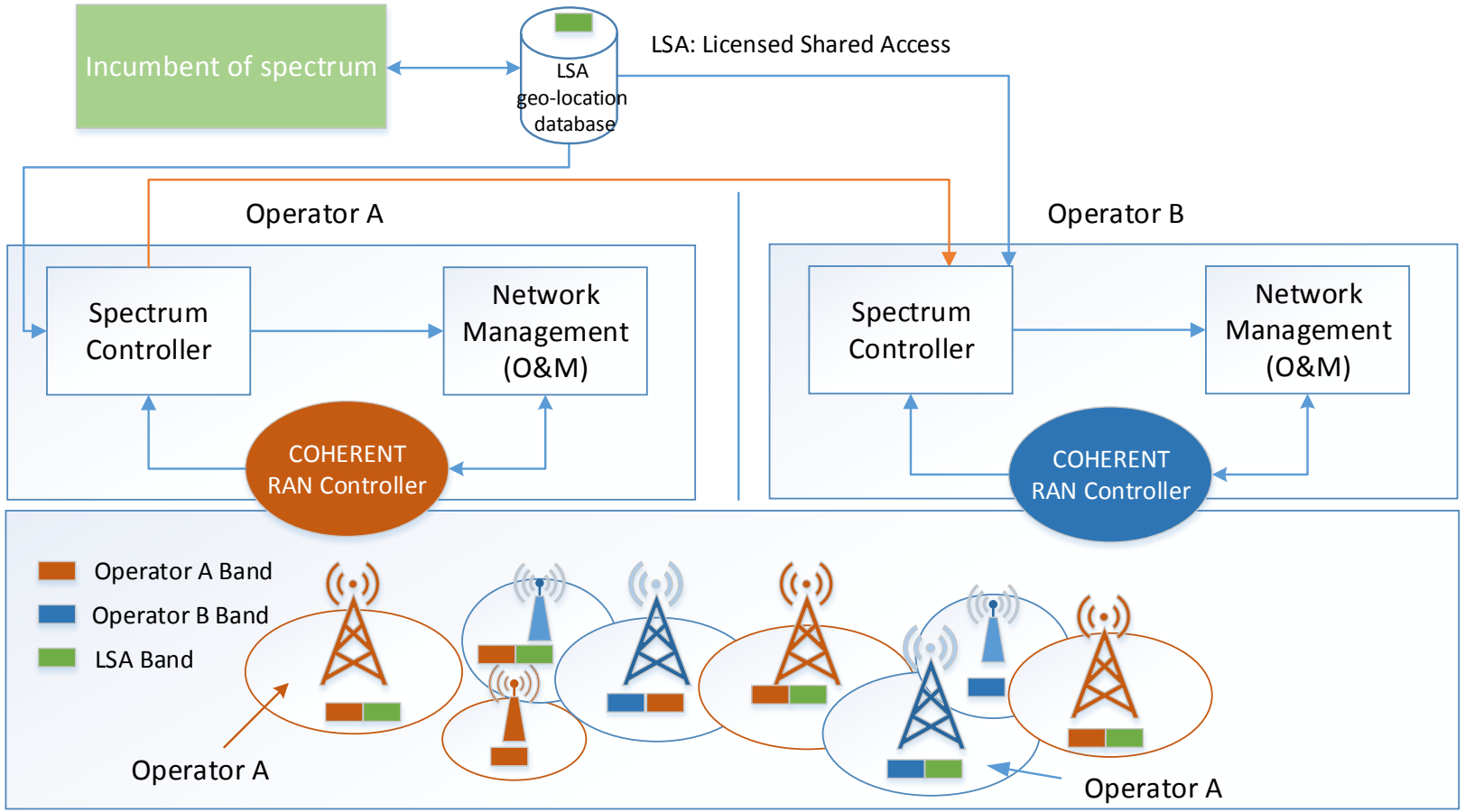

COHERENT Control Framework
Control programs
High level coordination
Spectrum allocation
Low level coordination
Spectrum sharing
Operator's OAM
Abstract network model
OAM: Operations Administration and Maintenance
RAT: Radio Access Technology
Network virtualization
Global network view
Radio network abstraction
Region 1
RAT1
RAT2
...
Region 2
RAT1
RAT2
...
Region 3
RAT1
RAT2
...
...
Heterogeneous mobile network

Example of a SD-RAN Controller



- Common runtime providing: logging, persistence, and multi-tenancy
- Soft-state, hot-swappable, network run in last know state if connection to controller is lost
- Supports both binary (e.g. GPF) and text-based (e.g. netconf) southbound protocols
- Tenants can use both the native Python API or the REST API (or develop their own DSL)
- Multi-platform (Windows, Linux, OSX, Embedded)
- More details at http://empower.create-net.org/

Spectrum Allocation and Sharing



Contact

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