



MOSAIC5G.io

Enabling Agile 5G Service platforms

**Communication Systems Department, Eurecom, France
ITU Demo, 2018**

Presenter: Dr. Konstantinos Alexandris

What is Mosaic5G?

“A non-profit initiative fostering a community of industrial as well as academic contributors for open-source software development to realize the service-oriented vision of 5G”



Why Mosaic5G?

“Mosaic5G was formed to develop, promote, and share an ecosystem of open-source platforms and use-cases for 5G system R&D leveraging SDN, NFV, and MEC tech enablers”



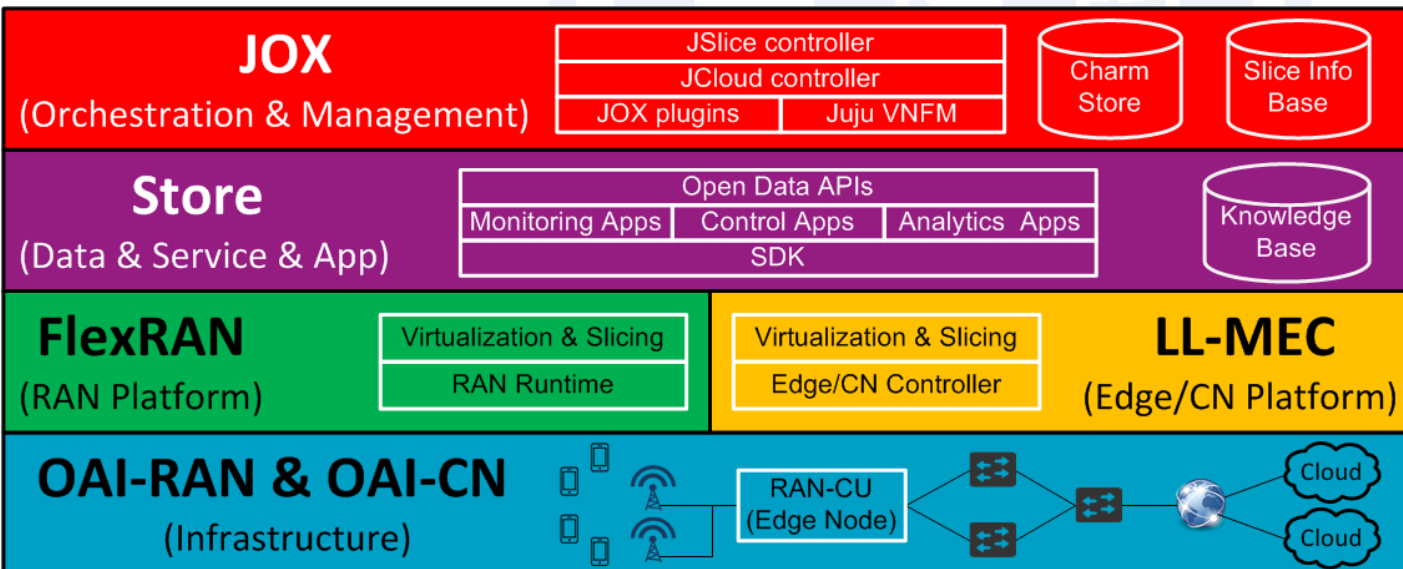
M5G Ecosystem

JOX

Store

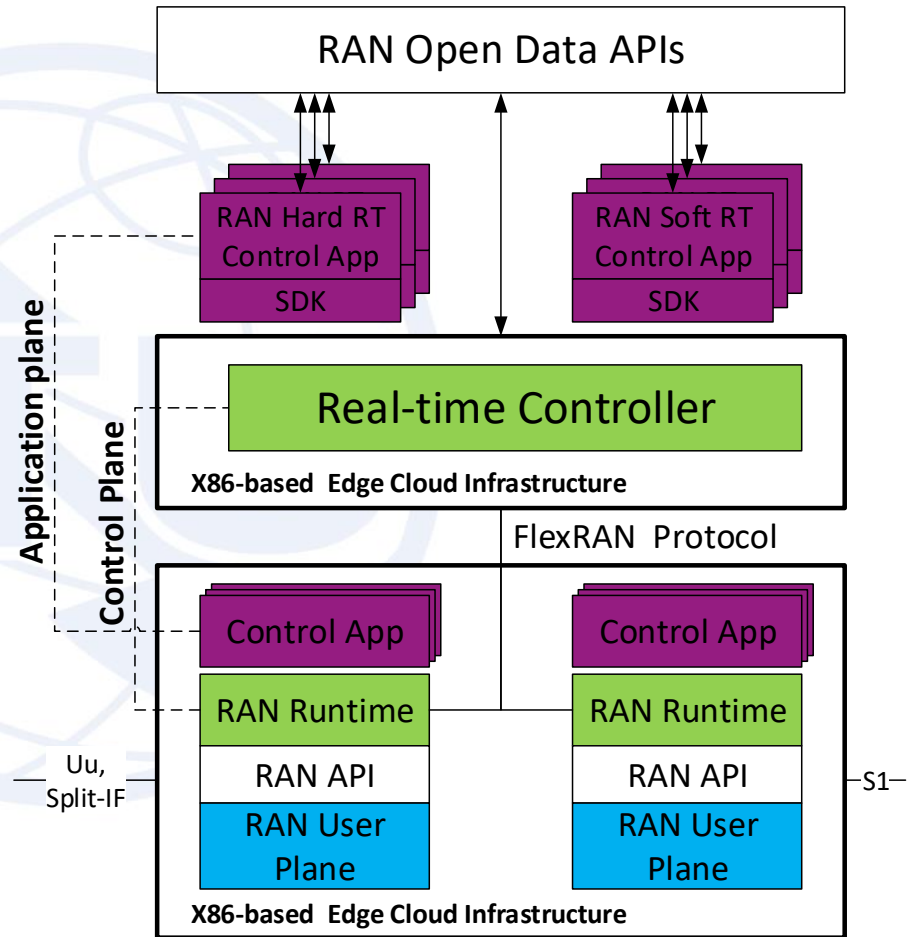
FlexRAN

LL-MEC



FlexRAN

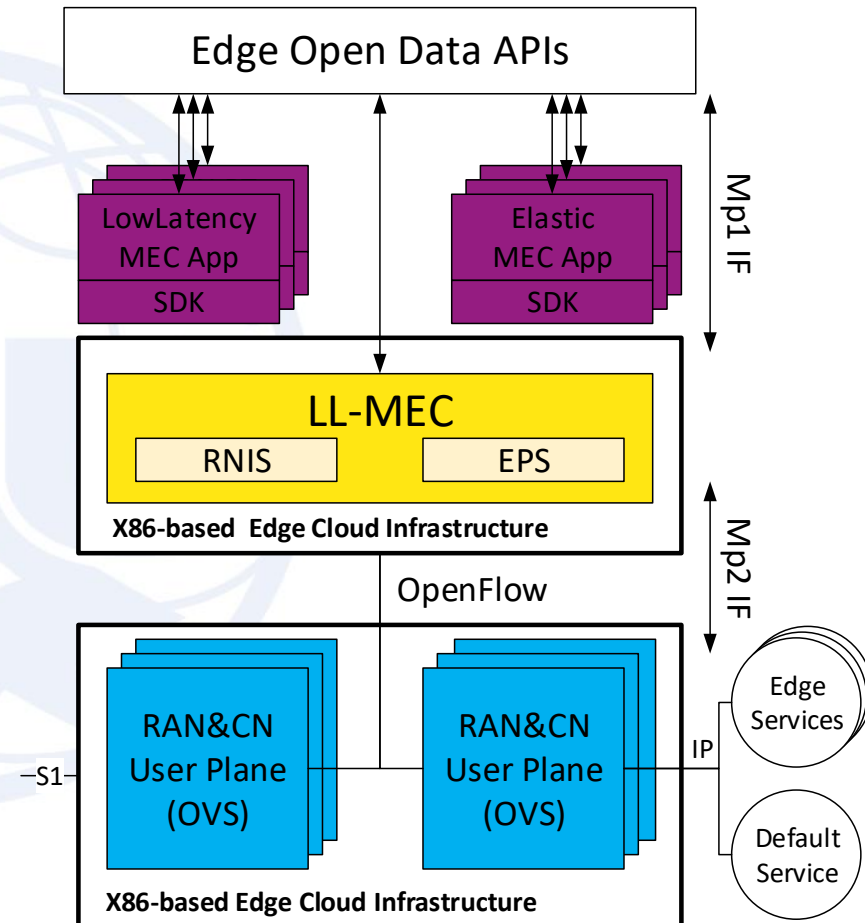
- **Plug & Play control apps**
 - SDK for App2App and App2RAN
 - RAN slicing, Spectrum mgmt
- **FlexRAN Real-time Controller (RTC)**
 - Centralized controller
 - Abstract eNB/UE state and resources
- **FlexRAN Runtime**
 - Abstraction and programmability of network functions
 - Extendable RAN APIs
 - Virtualized resources and states
 - Local controller
- **FlexRAN Protocol**
 - Statistics
 - Configurations
 - Commands
 - Event Trigger
 - Control delegation



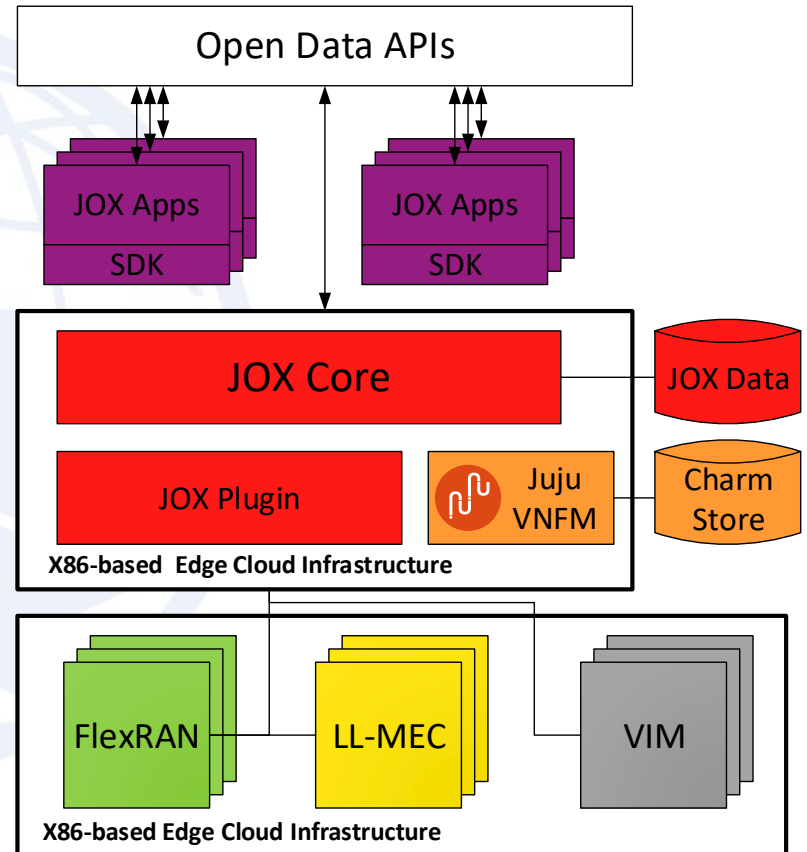
LL-MEC



- **Plug & Play control apps**
 - Video Optimization
- **Application manager (Mp1)**
 - Low-latency: CoreAPI, MBus
 - Elastic: RestAPI, MBus
- **Platform (Mp2)**
 - Edge packet service (EPS)
 - Multi OpenFlow libs
 - Static and dynamic rules
 - Radio network information service (RNIS)
 - Real-time RAN&CN information
- **Abstraction**
 - U-plane APIs: OF Agent



- **JOX: E2E service lifecycle orchestrator on slice manifest**
 - NS Templates
 - Application APIs
 - Slice manager (JSlice)
 - Plugins
- **Juju / JaaS: manages VNFs over the infrastructure**
 - Model-driven VNFM
 - Multi-cloud & multi-models
- **Network plugins**
 - RAN, CN, MEC, VIM
- **Cloud Infrastructure**
 - MaaS, LXD, AWS/GCE



Store

- Network Store Management
- Network Control Semantics and SDK
- Plug&Play Control Apps
- Access Control
- Service Registry, Inventory, and Discovery



Datasets
Models

The diagram illustrates a network store architecture. It features a central purple circle labeled 'Datasets Models'. To its right are two columns of purple circles. The first column contains four circles: 'Decision Making', 'Analytics', 'Control Apps', and 'Charms Templates'. The second column contains three circles: 'Use cases', 'Open Data APIs', and 'Platform SDKs'. A larger purple circle labeled 'Platform Snaps' is positioned at the bottom right, overlapping the 'Charms Templates' and 'Platform SDKs' circles. The background features a large, faint ITU logo.

Decision
Making

Use
cases

Analytics

Open
Data
APIs

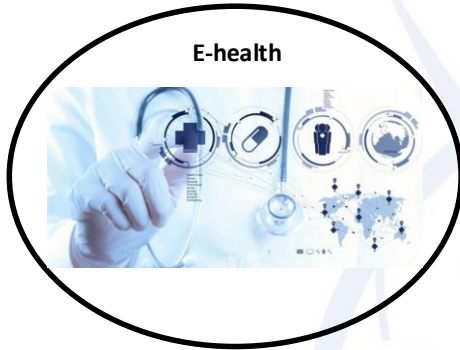
Control
Apps

Platform
SDKs

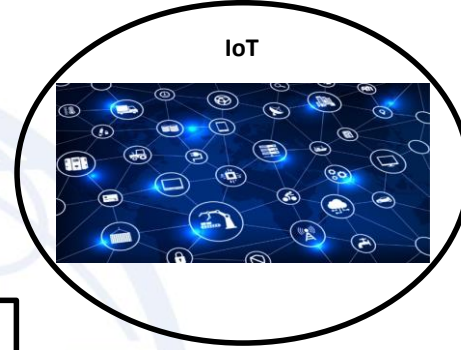
Charms
Templates

Platform
Snaps

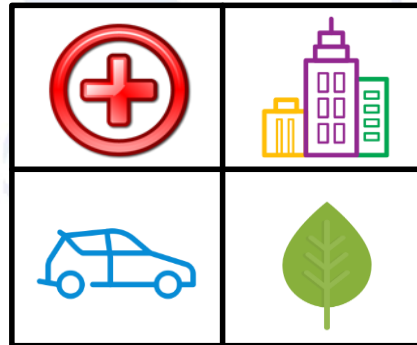
M5G use cases



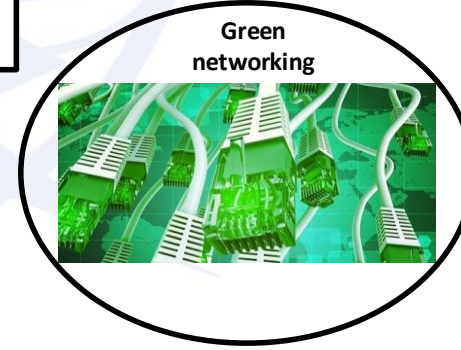
Reshape the healthcare application
in Health 4.0



Leveraging IoT, Innovation shifts
from products to solutions



Enabling future intelligence
transportation systems



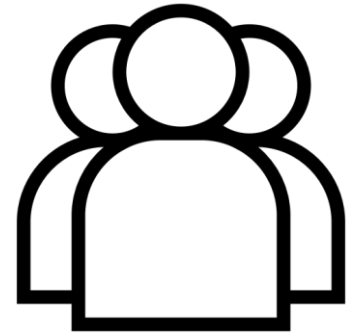
5G Network slicing leads to smart
grid innovation

M5G Membership: Our process is easy

User	Contributor	Sponsor Partner
Free of Charge	Free of Charge	Membership Fee
Access to the code and documentation	Access to the code and documentation	Establish a collaborative R&D project
Access to mailing lists and get support	Access to Training and prototyping sessions	Create a collaborative PoC
Share use-case and PoC	Access to new features and fixes	Member of advisory board
More information	Lead a collaborative R&D project	Access to the Mosaic5G lab environment
	Contribute to the source code	User and partner benefits
	More information	More information

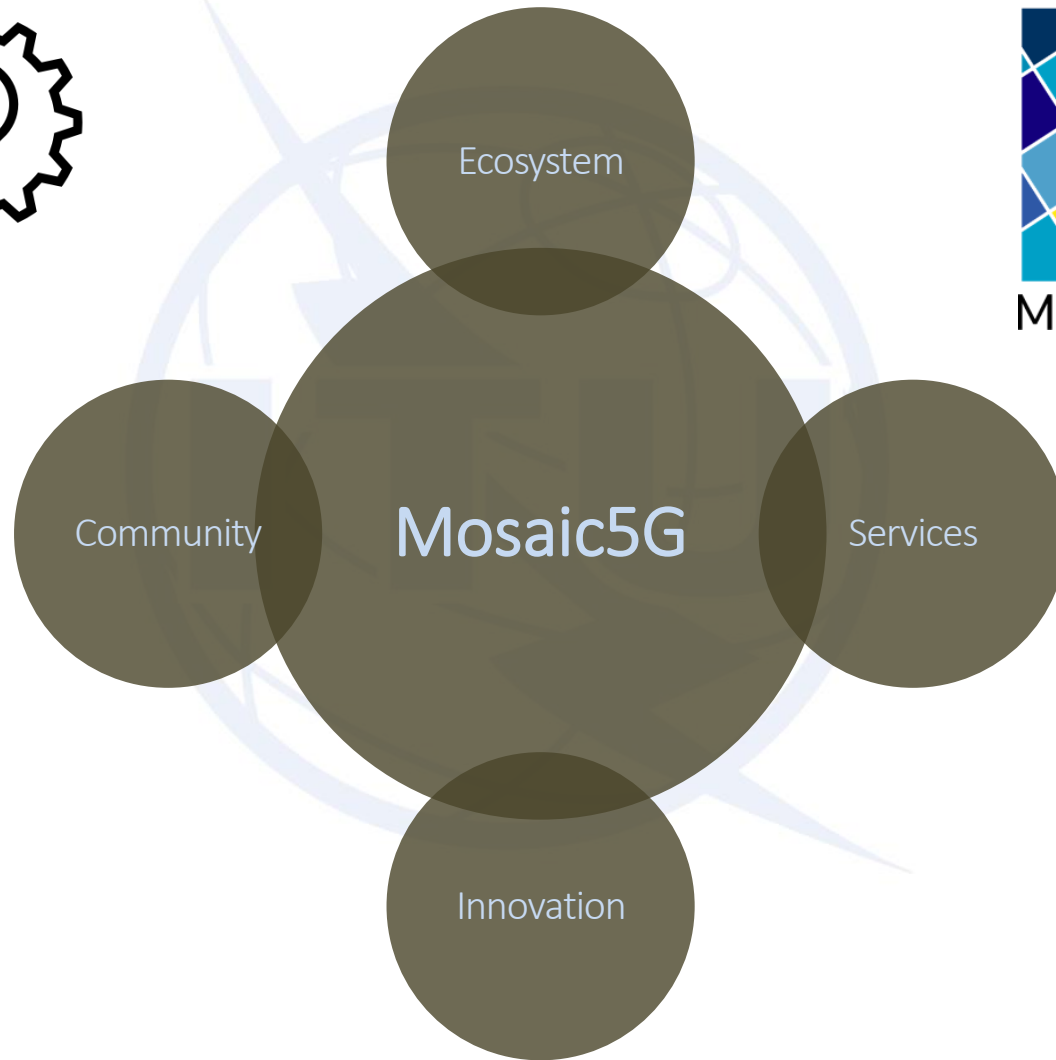
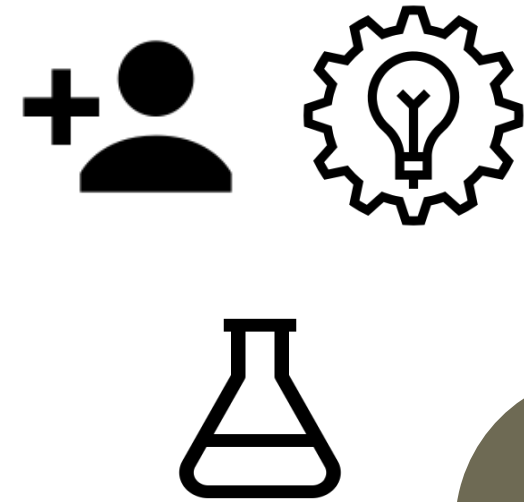


M5G Licensing model

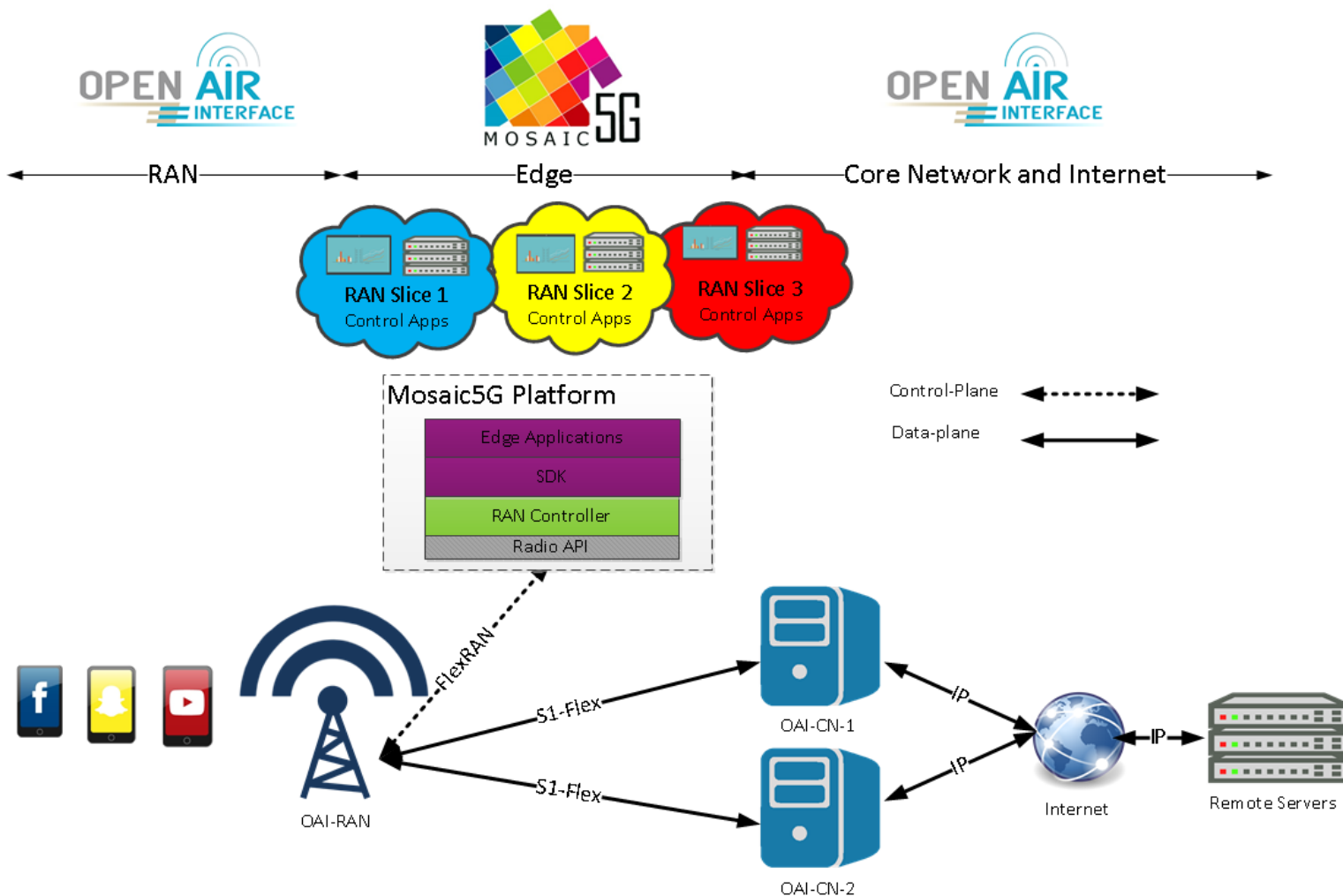


Apache V2.0 Public License
popular and widely deployed
in Open Source Communities

M5G Call to Community for Innovation



Demo Setup and Components



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