MOSAIC5G.io

Enabling Agile 5G Service platforms

Communication Systems Department, Eurecom, France
ITU Demo, 2018

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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"

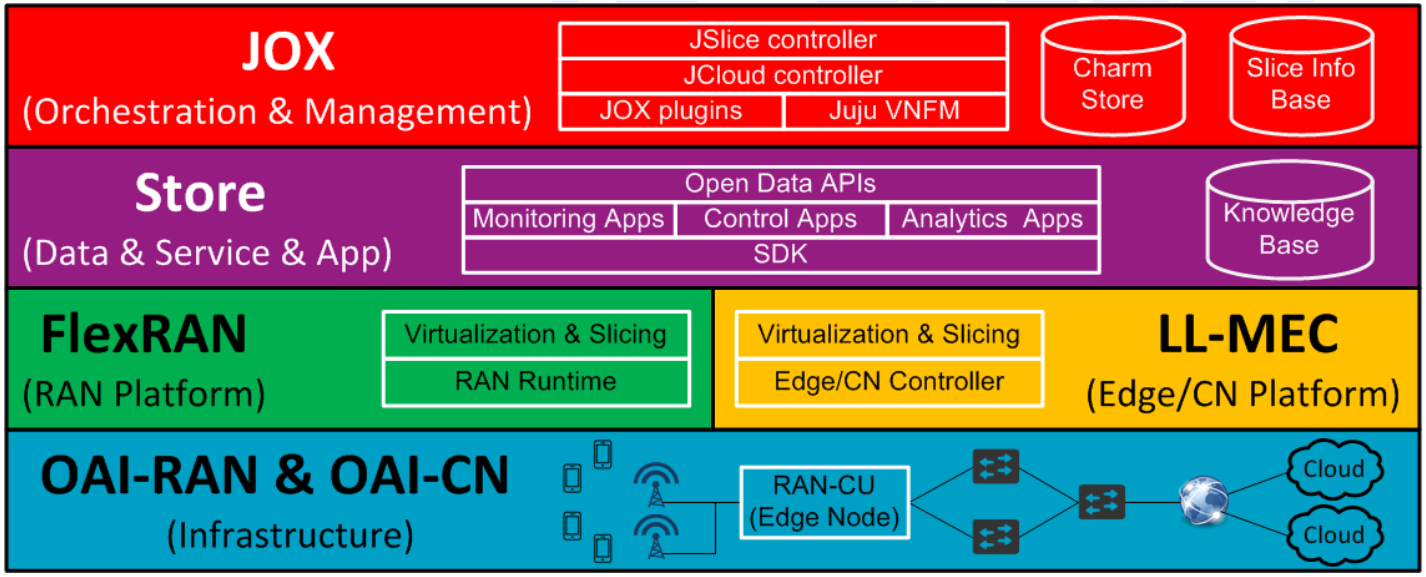
M5G Ecosystem

JOX

Store

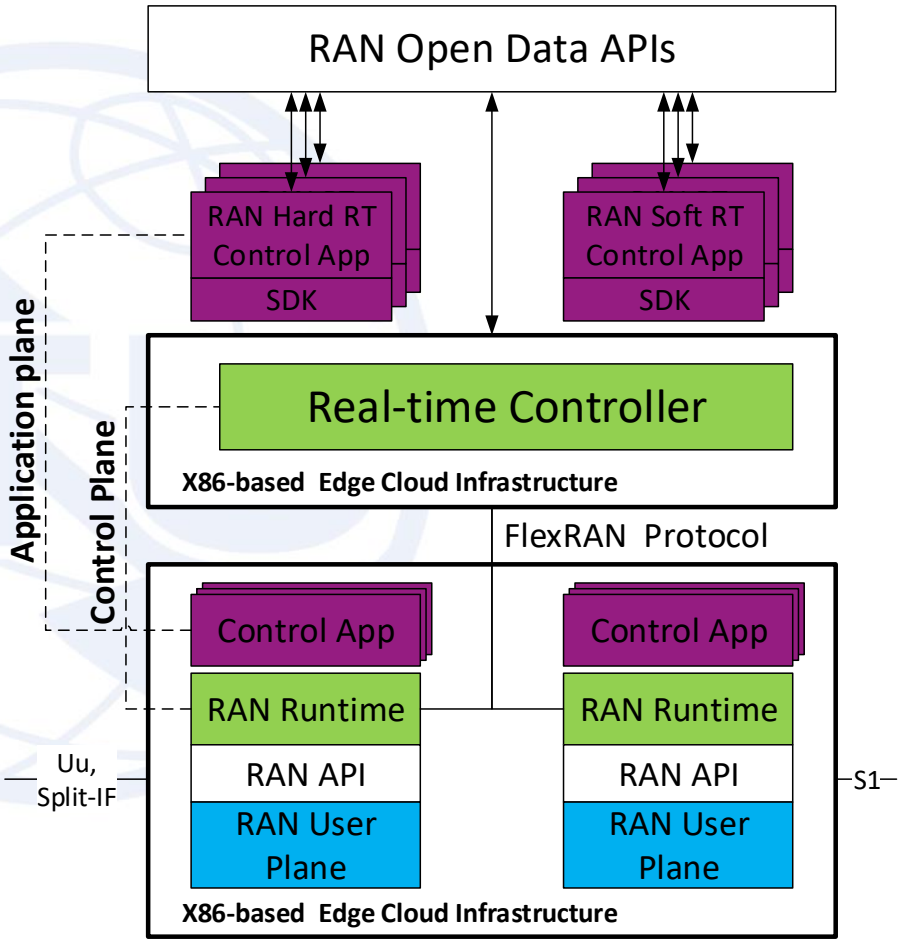
FlexRAN

LL-MEC



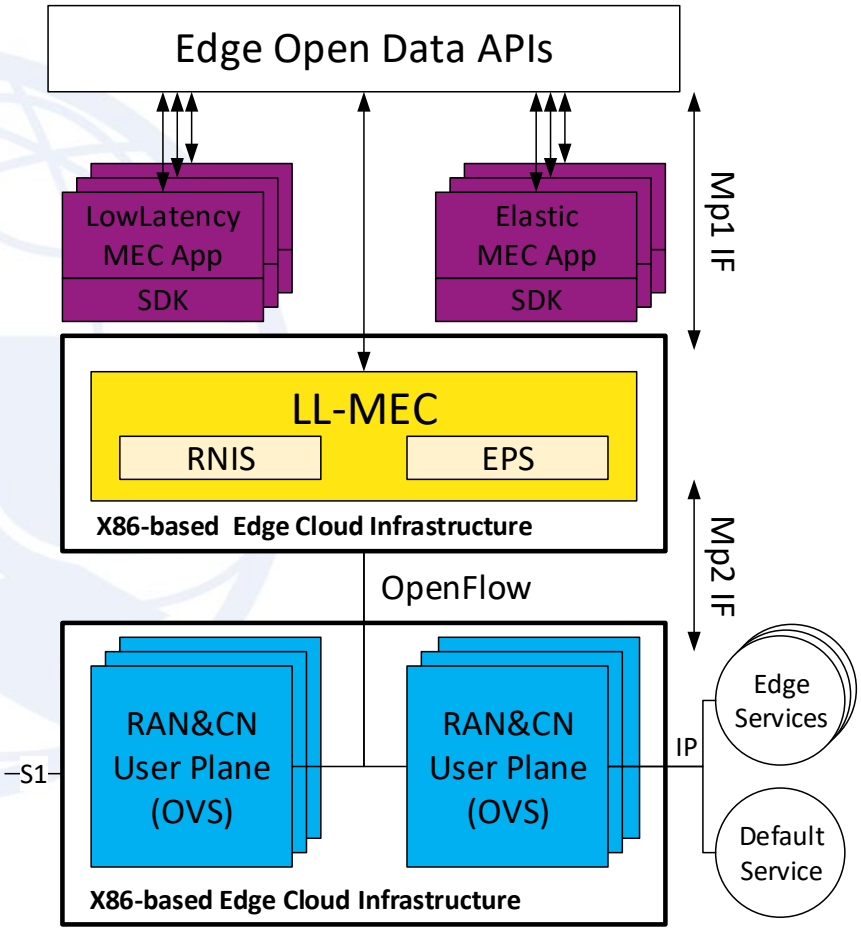
FlexRAN

- 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



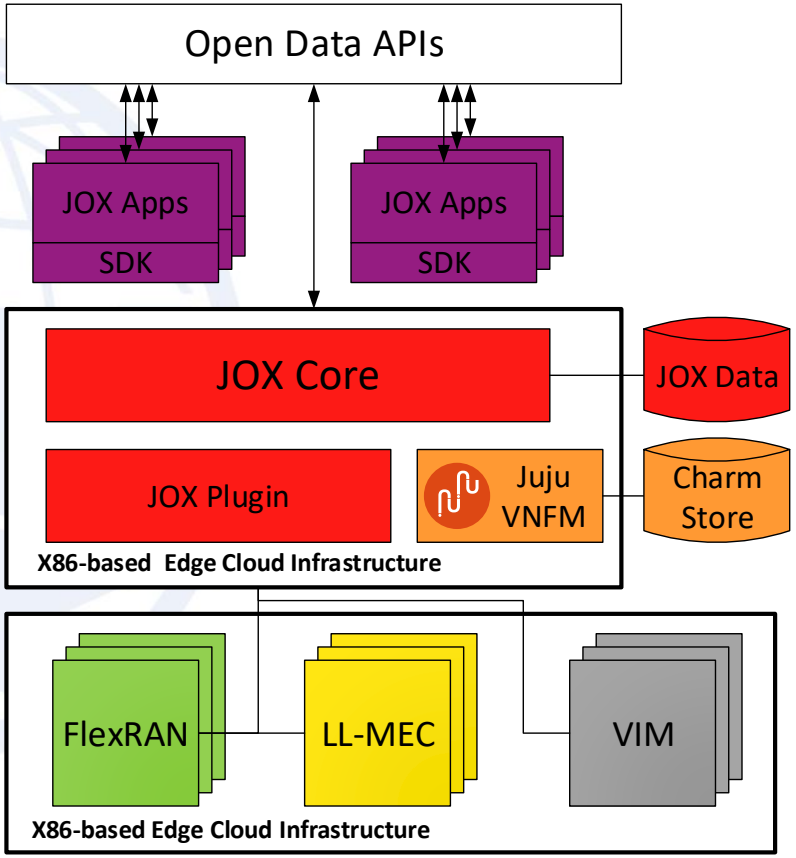
LL-MEC

- **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



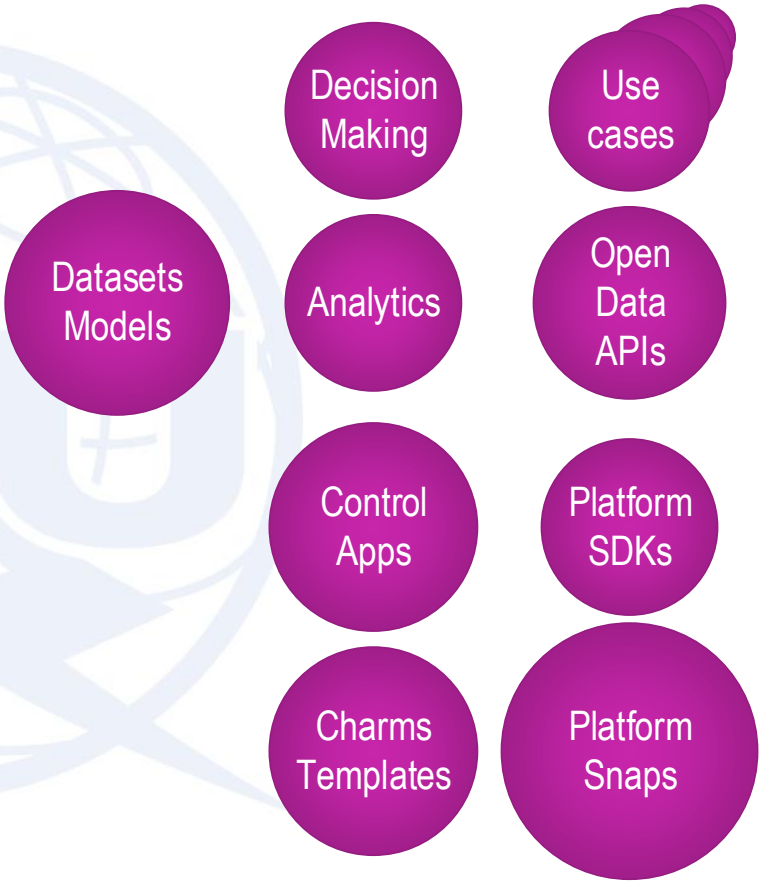
JOX

- **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

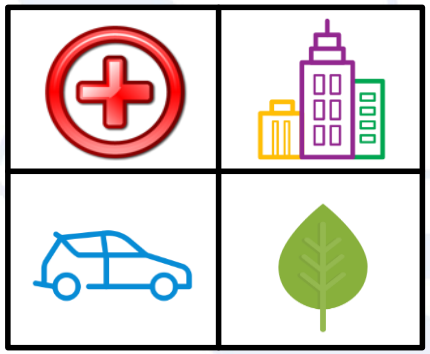


M5G use cases

E-health

Reshape the healthcare application in Health 4.0

5G



IoT

Leveraging IoT, Innovation shifts from products to solutions

V2N

Enabling future intelligence transportation systems

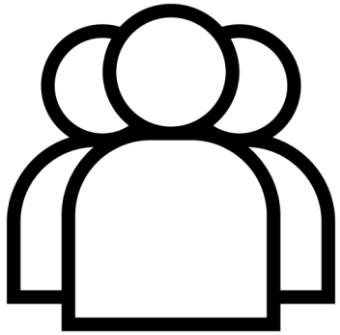
Green networking

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

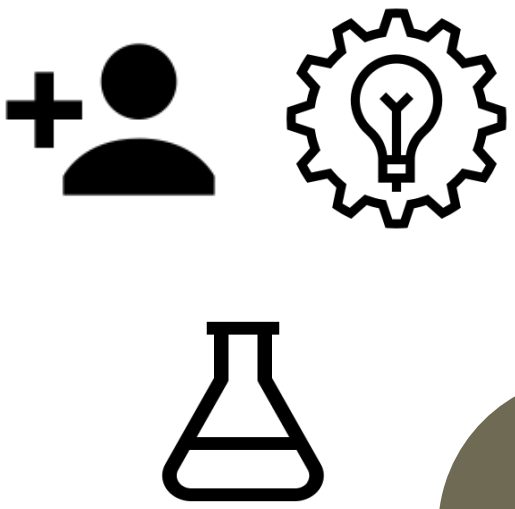


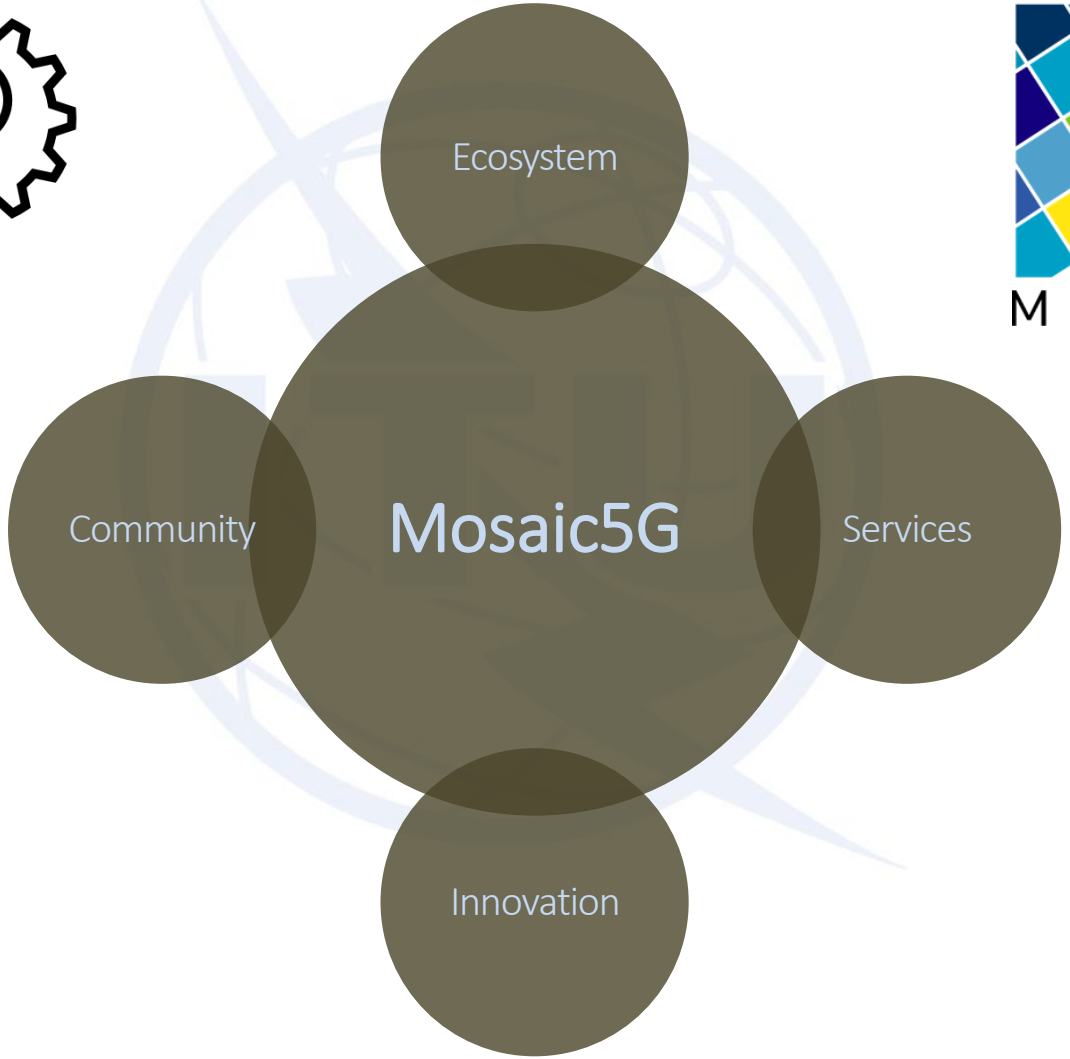
Apache V2.0 Public License

popular and widely deployed

in Open Source Communities

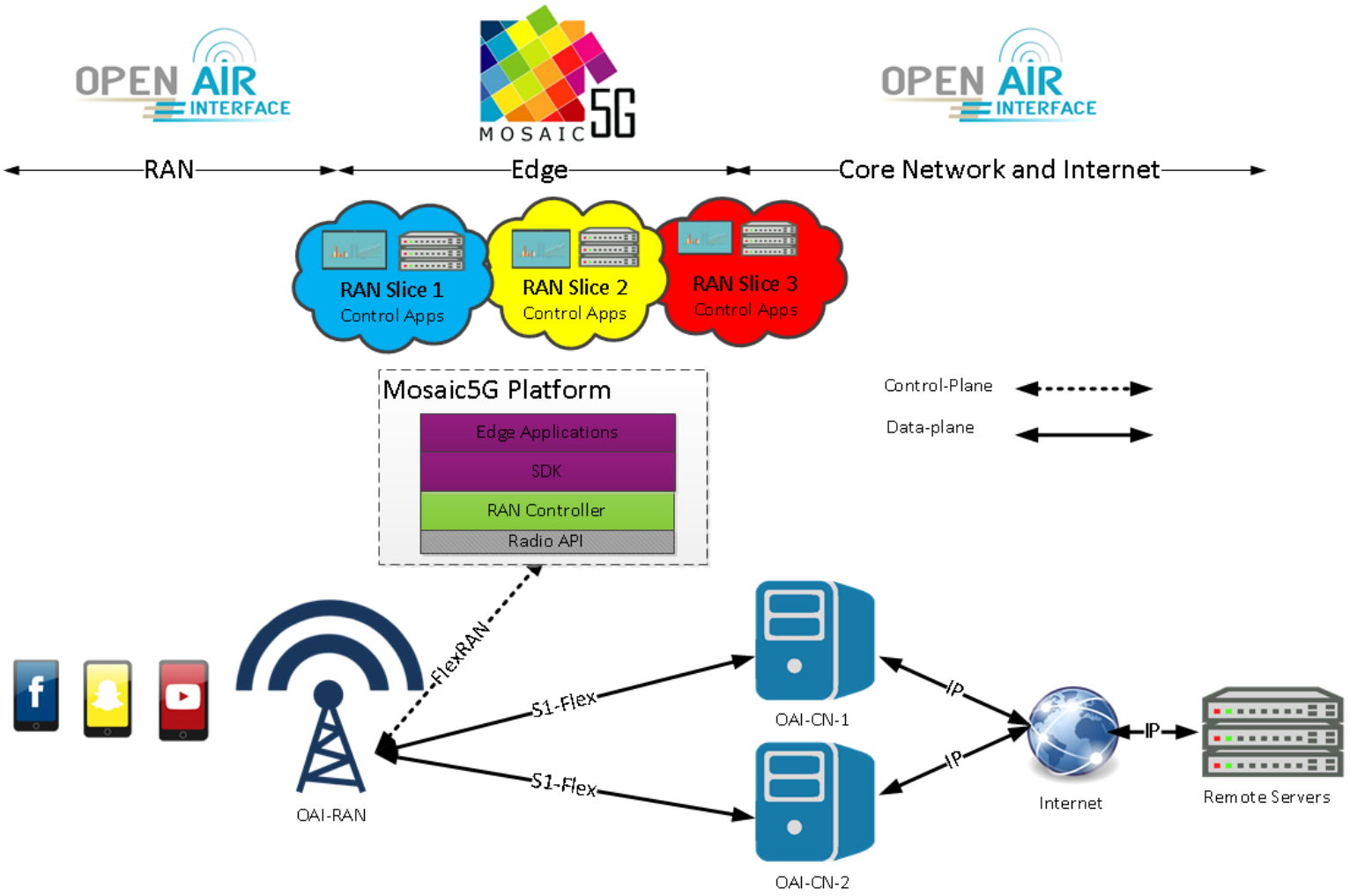
M5G Call to Community for Innovation





MOSAIC 5G

Demo Setup and Components



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