dRAX in Open RAN

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Accelleran Overview

- **dRAX Cloud Native 4G & 5G CU**
- **Vertical Open RAN Solutions** (eg NPN,...)
- **dRAX RIC/SMO**: RAN Intelligence and Automation
- **E1000 4G Small Cells**

- **15-year Track Record in RAN and Small Cell Industry**
- **Founded in 2013 by team of industry experts**
- **International Team in Belgium (HQ), UK and US.**
- **Carrier Grade Quality Software for any RAN Architecture**
- **Cloud Native 4G and 5G Open RAN Platform**
- **RAN Intelligence and Automation**
- **Private Cellular Vertical solutions**
Accelleran Proprietary
**dRAX Principles**

- dRAX = loosely coupled CU (4G + 5G) + Near-RT RIC
- Cloud Native Microservices architecture
- 4G/5G coexistence
- Scalability
- Openness
  - Data
  - Orchestration
  - RIC platform
dRAX RIC Platform

Productized Framework
- Existing customer References
- Community & Support
- Easy Installation (Helm)
- Real RAN Components support
- Cloud Native

Databus Pub/sub Messaging
- CU data & control hooks
- Inter-xApps communication
- Security
- Open to 3rd Party CU/DU/…

Core RIC Services
- xApps Lifecycle Management
- Policy Management
- Orchestration
- API Proxy
- E2 Broker*

Accelleran xApps
- PCI
- ANR
- KPI Broker
- Dashboard
- Geolocation
- Smart Handover
- Interference Mgmt

3rd party

Core RIC Services
- API Proxy
- Systems Metrics
- Service Orchestrator
- State Monitor
- E2 Broker
- Service Monitor

DataBus

Non RAN Elements (eg, Wifi,...)
dRAX RIC Platform: xApp Framework

- xApp Container Template cloned from Github
- The developer only focuses on the xApp Algorithm itself in xApp Core
- The xApp framework provides seamless integration with RIC (REST API,...)

xApp API
- REST API that exposes the run-time configuration of the xApp
- Use it to configure and inject policy in the xApp
- Endpoints exposed: /config (GET, PUT, DELETE, POST), /health/alive, /health/ready and DataBus

xApp Core
- THE ONLY FOCUS OF THE DEVELOPER
- Developer implements algorithm on xApp Core

xApp
- REST API that exposes the run-time configuration of the xApp
- Use it to configure and inject policy in the xApp
- Endpoints exposed: /config (GET, PUT, DELETE, POST), /health/alive, /health/ready and DataBus

xApp Datastore
- xAPP configuration is persisted in REDIS
- REST API talks to REDIS to expose the configuration data for the xApp
- xApp loads the configuration from REDIS and monitors it for changes to update the real-time configuration of the xApp
dRAX RIC Developer Kit

Content

• dRAX RIC Development Platform including x/rApp Developer Framework & SDK
• Hosted in AWS or on-premises
• rApp and xApp development
• Developer Guide
• Training

Scenarios

• RIC xAPP/rApp development with dRAX SDK (Python) including x/rApps Lifecycle
• Connect to the dRAX Data Bus and collect data
• Ability to create own data sources for specific use cases
**Accelleran Focus:**
Plug’nPlay/Easy Instal, ANR, MultiConnectivity, NH Multiple RIC

**Partnerships xAPPs**
- Interference Management
- RAN Intelligence and Automation
- Smart HandOver (Joint IP)

**Accelleran Proprietary**
4G+5G SA with dRAX™

EPC

ORAN SMO/Non-RT RIC

5GC

S1-MME

S1-U

Netconf/Restful

NGAP

NG-U

dRAX

SMO

Near-RT RIC

eNB CU-CP

gNB CU-CP

gNB DU (L2/UL1)
gNB RU (L1)

eNB DU/RU (L2/L1)
eNB CU-CP

gNB CU-CP

gNB DU (L2/UL1)

gNB RU (L1)

Dashboard

Accelleran Proprietary
dRAX 5G OAI in R&I 5G-RECORDS
dRAX 5G OAI in R&I Affordable5G

5GC

NG

dRAX™ RIC near-RT

dRAX™ data Bus

CU
CU
CU

3rd Party DU
3rd Party DU
3rd Party DU

3rd Party RU
3rd Party RU
3rd Party RU

EURECOM
OPEN AIR INTERFACE
KunEL

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Thank You