Accelleran dRAX™ RAN Intelligent Controller: Where RAN Meets AI

Bringing real time control and optimisation to your Radio Access Network

Accelleran's Near Real-time RAN Intelligent controller (RIC) was first launched in 2019 and is a key milestone in the transformation of the RAN network to more open, fully interoperable, and virtualised network.

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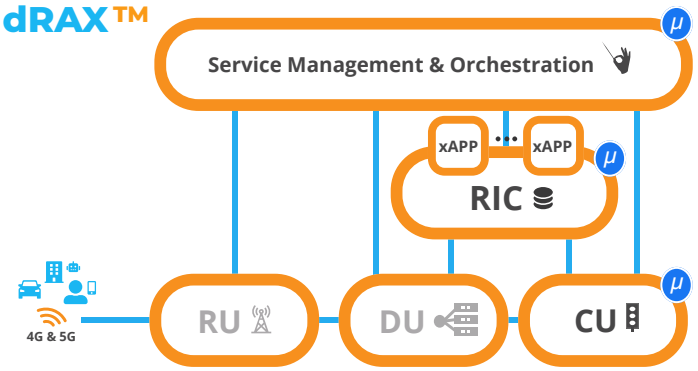
RIC: The 'Operating System' of the RAN

Accelleran's RIC platform is O-RAN aligned, distributed, and genuinely cloud native. It greatly simplifies and enhances the operation of the RAN network.

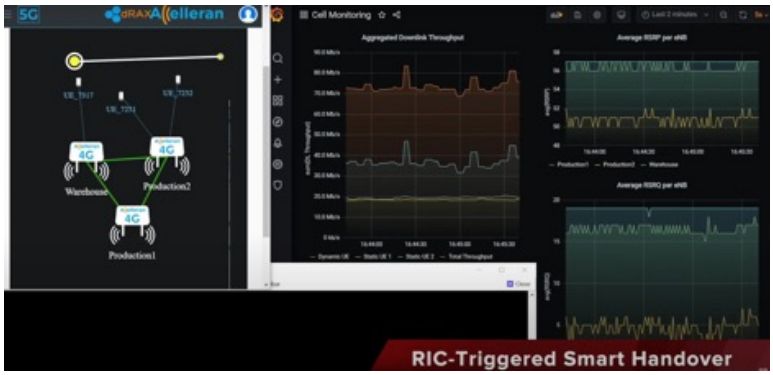
Accelleran RIC Key features:

- Real-time network control
- Distributed Architecture
- Non Real Time and Near Real time capabilities
- Rich xApp/rApp Developer Ecosystem
- Productised Software Development Kit



Accelleran RIC brings automation and intelligence to the RAN network, allowing the creation of 3rd party applications that will simplify and optimise operations at scale. The distributed architecture allows it to run on the edge of the network or entirely on cloud.

By leveraging the ever-growing system of xApps and rApps, the RIC is ready to enhance the service provider environment, but also with benefits applicable to private networks.



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xApps and rApps: Providing Intelligent Automation of the RAN

Accelleran's RIC platform supports both xApps and rApps. The control loop timescales required for applications makes all the difference. The non-real-time (Non-RT) and near-real-time (Near-RT) components handle separate functions of the RAN to implement different use cases.

As defined by the O-RAN alliance:

- Applications hosted on the near-RT RIC are referred to as "xApps", this is for applications that operate in timescales of under a second. It controls the network infrastructure at the cloud edge – continuously enhancing the efficiency of the RAN.

- Applications hosted on the non-RT RIC are referred to as "rApps", for applications that need to execute at timescales greater than a second. It handles lifecycle management for all the network elements and other essential functions of the network.
  These apps, created by Accelleran and 3rd parties, allow for the network to enable new business models, improve quality of service, and reduce CAPEX and OPEX.

A Growing Developer Ecosystem

Accelleran has partnered with a multitude of vendors to create an "App store" of available xApps and rApps. This partner ecosystem of developers is helping to expedite the automation, service, and optimisation of the RAN. Accelleran believes that the RAN should be a developer friendly environment. The Accelleran dRAX RIC includes a Software Development Kit (SDK) with open APIs, running on cloud infrastructure, enabling app developers to easily create new applications for the RIC. It is a fully productised solution, including a comprehensive training programme and a myriad of intuitive developer resources.

Our partners include:

aws VIAVI VIAVI Solutions BT HCL TIMEDO LABS

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Accelleran RIC: Advanced use cases across multiple industries

Multiple partners are already conducting trials with Accelleran's dRAX RIC Platform. Accelleran's software is aligned with the standards of the O-RAN Alliance. A rich, ever-growing ecosystem of xApps and rApps is bringing true intelligence and automation to the RAN.

Use cases:

Many of these use cases have been demonstrated by our partners across multiple industry events, including MWC Barcelona.

Smart Interference Management: Interference is a hindrance to any RAN deployment. In collaboration with our partners at British Telecom, deployed Smart Interference Management xApps ensure improved edge-of-cell performance for connected devices. Cells that cause interference will utilise AI-based algorithms to automatically manage their transmission power and co-ordinate cell resources, resulting in cell edge users having a much improved SNR.

Other use cases:

Smart Handover: Accelleran has deployed smart handover xApps to support an automotive manufacturer in a private cellular environment with Automated Guided Vehicles (AGV) moving between a warehouse and a production environment. As the AGV moves into the production area, it has the choice of handover to two different small cells. if one of these small cells which has the strongest signal is already loaded by other UEs such as surveillance cameras, the RIC will trigger a smart handover process to the less loaded one, albeit still strong enough to provide a good service. This Smart Handover algorithm ensures that the overall system throughput is maximised as the AGV moves between the warehouse cell and the production environment cell.

Energy efficiency management: The RIC can potentially be used to increase the overall energy efficiency of components by an automatic adjustment of the cells transmission powers or by switching cells or carriers completely off when they are not needed. In the future, it could also optimise power usage further managing the computing resources required in the cloud or enable more advanced power saving modes in the radios.

And many more including:

- Anomaly detection
- Traffic Streeting
- Automated PCI allocation
- ANR
- Coverage and capacity optimisation
- Mobility and robustness optimisation

Accelleran RIC: O-RAN Aligned, Network Ready

Accelleran fully supports the development of the OpenRAN ecosystem which will enhance the customer experience and foster innovation throughout the telecommunications industry and beyond.

To facilitate the collection of data from the RAN, Accelleran's RAN Intelligent Controller platform is aligned to the O-RAN Architecture and uses pre-standard or standard interfaces such as O1, E2, A1.

Conclusion: Why choose Accelleran for your RIC?

The Accelleran team has decades of experience in the telecommunications industry. We stand ready to implement our RIC and bring intelligence, automation, and enhanced user experience to your RAN network.

Operators and integrators alike are already utilising Accelleran's dRAX-RIC as a production ready development platform. The implementation of AI and Machine learning-based algorithms is enhancing the overall intelligence of the RAN, collecting data in real time and utilising it to further optimise the performance efficiency of the network.

Accelleran architecture agnostic and xApps/rApps enabled dRAX RAN intelligent Controller was selected as the winner of the Small Cell Forum Awards 2020 in the category of "Development of New Architecture Providing a Clear Path to Future Networks (5G, Hyperdensity, vRAN)".

More recently, Accelleran was selected by the Telecom Council's innovation showcase class of 2021.

Accelleran has been a pioneer of Open Radio Access Networks since its foundation in 2013. The software-driven approach to RAN will bring immense benefits to the business landscape, enabling a multi-vendor RAN ecosystem that creates greater flexibility, efficiency and reduced costs for operators and private networks.

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