

celona

PRODUCT BRIEF

# Celona Edge



# Features and Benefits

The Celona Edge OS is a scalable and resilient cloud-native network operating system that provides resolute data plane, control plane and spectrum management services for private cellular networks. Built with enterprise deployment use cases in mind, Edge OS delivers converged 4G/5G core services for cellular packet delivery combined with a full-function IP stack for seamless connectivity into enterprise LANs.

The Celona Edge OS powers Edge Node appliances, which are combined into a three-node Edge Cluster for highly available and redundant private 5G network operations.

## FEATURES

## BENEFITS



**Converged 4G/5G Core**

Single O/S supporting concurrent operation of 4G/5G services



**5G LAN Routing**

Maintain existing operational tools, visibility, network segmentation



**Security integration**

Better security, lower cost, fewer new elements in the network



**QoS orchestration with MicroSlicing™**

Deterministic QoS enforcement for critical apps/devices



**Intelligent Spectrum Management**

Dynamically optimize network performance with the available spectrum



**Auto-scaling, High Availability**

Reliability, Ease of scaling



**Pre-packaged appliance**

Zero-touch, ready to be deployed

## 5G LAN Routing

Built-into the Celona Edge OS is a full-function IP stack for seamless connectivity and routing between private 5G networks and the corporate LAN. Flexible integration options include the support for multiple IP Domain models such as network address translation (NAT) for cellular-connected devices – or VLAN forwarding/supernetting options for use cases where cellular device visibility is a requirement. Ultimately, the Edge OS provides the necessary capability and flexibility for seamless interoperability with existing networks and operational/security tools.

## Converged 4G/5G Packet Core

Built on cloud-native principles using a modern microservices architecture, the 4G/5G mobile packet core delivers standards-compliant 4G Evolved Packet Core (EPC) & 5G Standalone Core (5GC) services. These mobile core services are specially architected to operate on a common platform sharing a unified data plane for improved efficiencies and simplified migration paths.



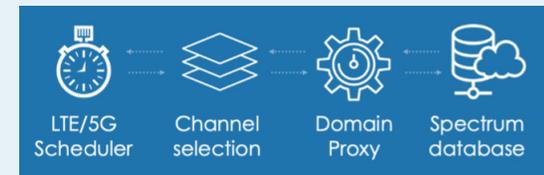
## Integration within existing security frameworks

Unlike legacy cellular architectures where all devices are hidden behind a NAT address, the Celona Edge OS allows for direct IP access between the cellular network and LAN. This means that traditional firewalls can be used to create security permit/deny rules at the IP level.

The creation of added visibility into cellular-connected endpoints also allows for modern zero trust network access (ZTNA) services to be applied that require that users/devices identify themselves and authenticate prior to gaining access to the network. SIM-based authentication also helps in this regard as each device is associated with a physical SIM or embedded SIM (eSIM) that can be strictly controlled and tracked.

## Intelligent Spectrum Management

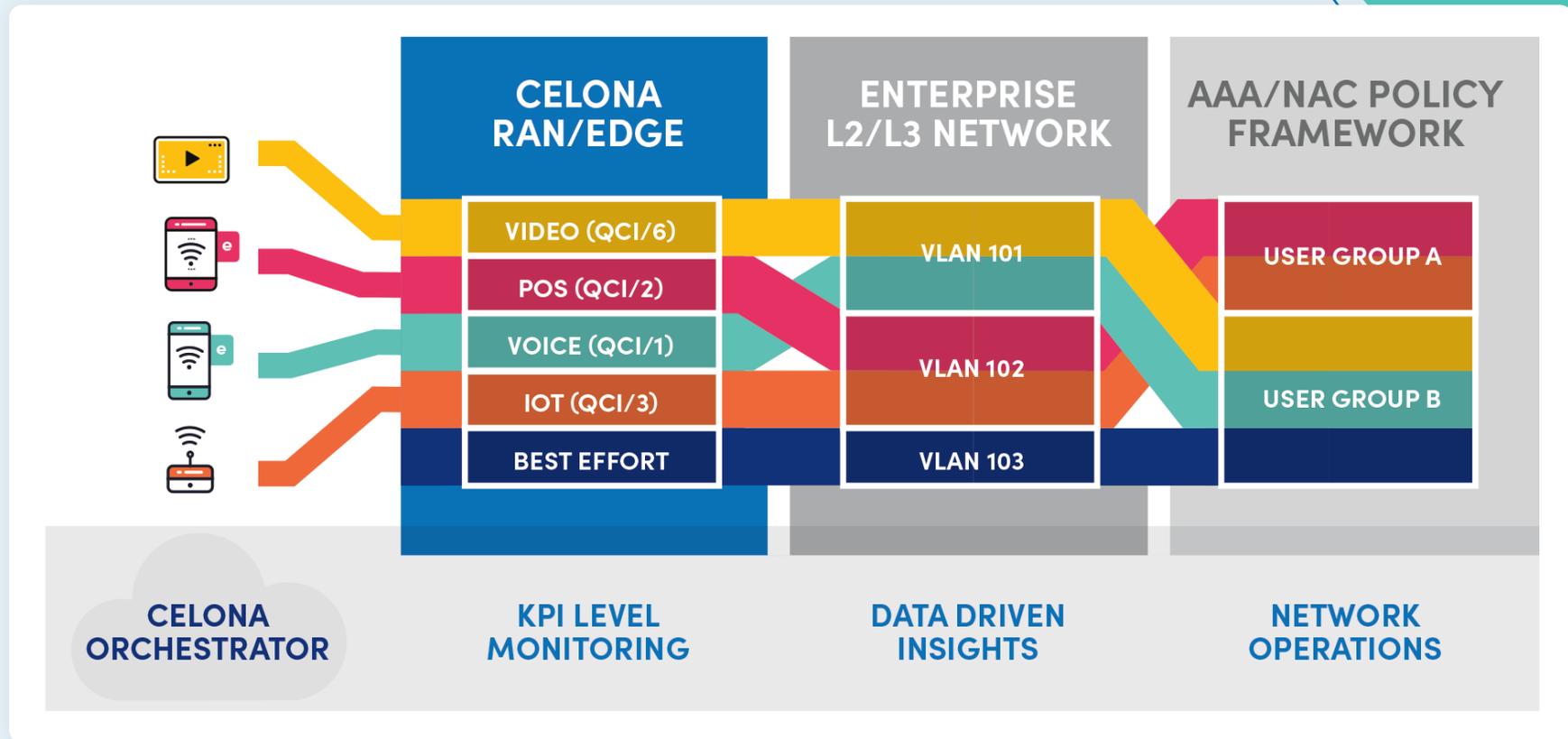
Spectrum optimization of a Celona private 5G network is completely automated thanks to a set of built-in intelligent spectrum management algorithms within the Celona Edge OS. These algorithms help maximize coverage and capacity by continuously monitoring and dynamically switching spectrum channels when interference or incumbent activity (for CBRS) is detected. Intelligent Spectrum Management works with shared, privately licensed, or unlicensed spectrum models with Domain Proxy functionality for CBRS installations.



## End-to-end Quality of Service (QoS) orchestration with MicroSlicing

Control over application-level QoS is handled within the Edge OS using MicroSlices. MicroSlices are configured on the Celona Orchestrator but enforced on the Edge Cluster. Each mission-critical application flow on the cellular network can be dynamically identified and mapped to a MicroSlice that specifies the desired QoS Class (QCI/5QI) that the network must deliver in terms of traffic priority and network latency.

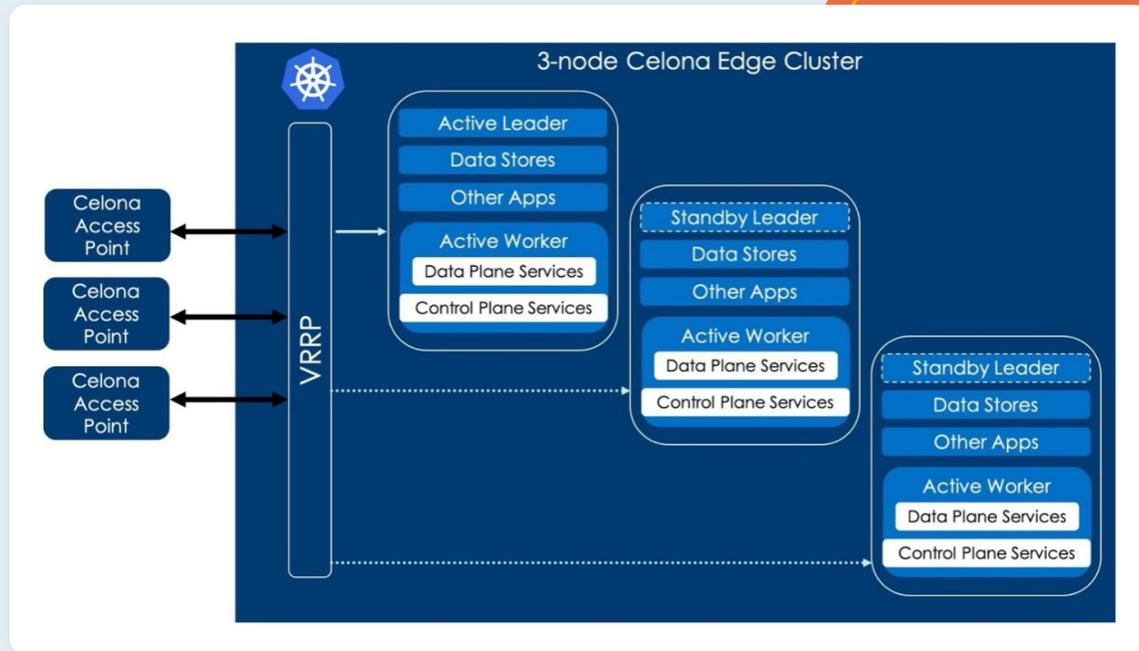
When traffic leaves the cellular network and is placed onto the enterprise L2/L3 network, the Celona Edge QCI can conveniently be mapped to traditional QoS settings to maintain service quality from end to end.



## Auto-scaling & high availability

It is recommended that a minimum of three nodes running the Celona Edge OS serve as a single Edge Cluster for a Celona private 5G network. Doing so provides the foundation for a highly redundant, scalable, and resilient cluster model.

The best-practice Edge Cluster eliminates any single point of failure, and services are automatically load-balanced across nodes for improved optimization of cellular network services. Any failure identified on one Edge Node is also detected by the others, making recovery instant and automatic.



## Pre-packaged, ready-to-deploy appliance

To streamline the integration of a Celona private 5G network into enterprise networks, Celona conveniently offers pre-packaged and pre-provisioned hardware appliances.

Each Celona appliance is delivered to customers in a zero-touch provisioning (ZTP) ready state for remote installation without the need for on-site support. Celona appliances are available in two distinct hardware form factors.

### Key Performance Specifications

	Express Node	Enterprise Node	Enterprise Cluster
<b>Recommended Deployment</b>	Branch or Small Offices	Large Branch or Medium Campuses	Branch or Small Offices
<b>Recommended Number of APs</b>	Up to 40 APs	Up to 125 APs Expandable by clustering with more Enterprise nodes	Up to 300 APs Expandable beyond 3 nodes with additional Enterprise nodes

# Ready to learn more about **Celona**?

Start the journey by starting a free trail, planning your network from your browser, getting a one-to-one personalized demo, or going on-demand to learn the basics of Celona in your own time.



**Start your journey with Celona**



**Explore Celona**



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