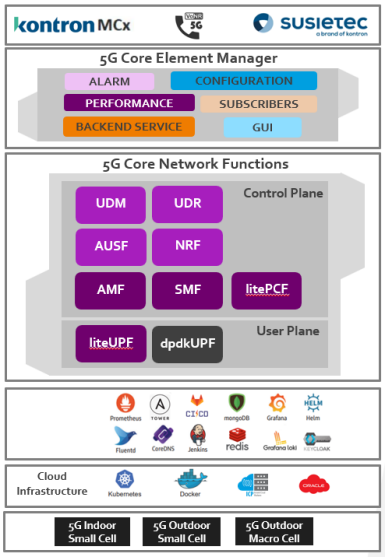
kontron Kontron 5G Core Network

Way to go for industry digitalization

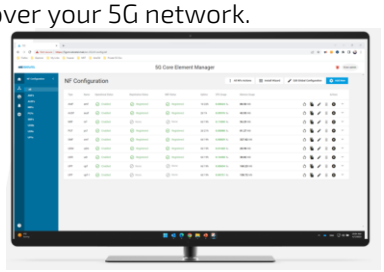
Step into the Future of Connectivity with Kontron's State-of-the-Art 5G Core Solution, seamlessly complemented by 5G Radio right at your premises. Our holistic solution merges the prowess of cloud computing and cutting-edge software-defined networking technologies to offer unparalleled performance, limitless scalability, and unmatched flexibility. It ensures efficient resource management and dynamic scaling as per your needs. The integration of our 5G Radio small cell solution brings localized coverage and streamlined implementation. It caters to a broad spectrum of devices and provides foundation for proven use cases. Welcome to the next level of connectivity.

The heart of the Kontron 5G Mobile Private Network solution is our 5G SA Core which is the centre of gravity in this complex system. Kontron 5G standalone (SA) core is a 3GPP Release 16 compliant solution which includes all fundamental Network Functions from Control Plane and User Plane perspective. The solution is cloud-native which means it's hardware agnostic and can be deployed on any COTS or in Oracle cloud, dimensioned and configured for optimized performance.

5G Standalone (5G SA) brings unprecedented levels of automation to the entire network, meeting the demands of new services and application. The 5G Core solution is flexible, programmable, and distributed, ensuring predictability and agility needed to accelerate time-to-market and achieve optimal performance and efficiency.
This advanced 5G Core operates on a security-hardened Ubuntu OS and leverages container-based virtualization, orchestrated by Kubernetes Engine.



The Kontron 5G Core Element Manager is web-based management system designed to offer a straightforward and robust portal for managing 5G network functions and subscriber provisioning across the entire 5G system. Our solution offers a user-friendly and intuitive web-based Graphical User Interface (GUI) with comprehensive dashboard for configuration and status monitoring.
This dashboard offers a clear overview of the network devices, operating status, types, and functionality. It allows you to effortlessly select and configure the required network functions, giving you full visibility and control over your 5G network.



Within the framework of the Kontron 5G ecosystem we have robust 5G RAN portfolio encompassing both integrated and disengaged small cells solutions for indoor and outdoor coverage and as well as macro-cell solutions designed to cover extensive distances and wide geographical areas.

KEY FEATURES AND BENEFITS

- Enhanced Performance: Experience lightning-fast speeds, low latency, and massive network capacity
- Scalability and Flexibility: Easily scale your network resources on-demand to accommodate changing requirements, ensuring optimal performance and efficient resource utilization.
- Investment optimization: Leverage the power of cloud infrastructure to reduce capital expenditures
- Robust Security: Protect your network and data with industry-leading security features
- Seamless Integration: Integrate with existing systems and technologies, allowing for smooth migration and interoperability, maximizing your investments, and minimizing disruptions.
- Simplified Management: Benefit from centralized management and monitoring capabilities, enabling streamlined operations, efficient troubleshooting, and proactive maintenance.
- Accelerated Time-to-Market: Rapidly deploy and test new services and applications, leveraging cloud-native capabilities, agile development methodologies, and DevOps practices.
- End-to-End Solution: Enjoy a complete end-to-end solution that encompasses 5G Core and 5G Radio components, reducing complexity, enhancing interoperability, and facilitating rapid deployment.

Technical Data

5G Core - Control Plane Function

- 3GPP R15/R16 Standards compliant
- Service Based Architecture (SBA): AMF, SMF, UDM, UDR, AUSF, NRF and PCF
  - AMF Access and Mobility Management Function
  - SMF Session Management Function
  - UDM Unified Data Management
  - UDR Unified Data Repository
  - AUSF Authentication Server Function
  - NRF Network Repository Function
  - PCF Policy Control Function

5G Core - User Plane Function

- UPF – general purpose User Plane Function HW agnostic
- DPDK-UPF – high performance UPF with acceleration
- Edge-UPF – distributed UPF on customer premisses

5G Core Key Functionalities

- Registration Management
  - Registration, Deregistration (UE, Network)
- Connection Management
  - UE triggered, Network triggered (Paging), AN Release
- Mobility Management
  - Xn based HO
- Security
- SBA architecture; Release 16
  - Using NRF
  - NF Service discovery and selection
- High Availability
- Specific use cases
  - Subscribed UE data manipulation
  - RAT restriction
  - Reregistration required
  - Subscription withdrawn
  - Framed Routing Support

5G Flavors

- 5G All-In-One – single server portable box or on-premise
- Premium HA – tree servers setup with redundancy
- Cloud – 5G on Oracle Cloud Infrastructure

Min. Resources Requirement

- Processing: 4–16 cores
- Memory: 20–64 GB
- Storage: 60–480 GB
- Num. of users: 1–10000

5G Core Element Manager

- Intuitive Web based system which provides Fault and Performance management
- Dashboard with main KPIs, statuses and statistics
- Network Function provisioning and manipulation
- Subscriber provisioning and configuration
- Network exporters and Monitoring
- Backup and Restore
- Alerting
- Logging
- SSO

5G RAN

- 5G Indoor/Outdoor Small Cell
  - FR1: n77, n78, band (others on request)
  - 2x2 MIMO and higher combination for Outdoor variant
  - Bandwidth 100 MHz
  - GPS and PTP 1588v2 support
  - Defrent option for DL and UP Centric configurations
  - AC/DC power adapter and PoE support
- Macro Option for wide area coverage
- Extensive 5G RAN partner program with deferent vRAN and ORAN bases solution, integrated and disaggregated.

Some features are hardware dependent.
Some features might not be included in dedicated software releases.

kontron
Kontron, d. o. o.
Ljubljanska cesta 24 a
SI 4000 Kranj, Slovenia
P +386 4 207 20 00
F +386 4 207 27 12
info@kontron.si
www.kontron-slovenia.com