

Enable rapid launch of 5G use cases with Alepo's cloud-native 3GPP standards-compliant 5G core network functions, including subscriber data management, policy control, and charging.

Converged Core Solution

Implement subscription services, provide users with secure network connectivity to services, and handle charging and policy management on the 5G network.

- Framework from 5G Service-Based Architecture (SBA)
- Supports 4G+5G combo, 5G NSA, and 5G SA deployments with the following NFs:
 - **AUSF** (Authentication Server Function) ensures secured network access using 5G-AKA
 - **UDM+HSS** (Unified Data Management + Home Subscriber Server) authenticates and authorizes user access to services in 4G and 5G networks
 - **PCF+PCRF** (Policy Control Function + Policy Control Rules Function) combo enables data and voice services over SBI REST and Diameter interfaces; supports AM (access and mobility management) and SM (session management) policies, and UE (User Equipment) policy control
 - **UDR** (Unified Data Repository) provides a common and scalable repository for 4G and 5G subscriptions
 - Also includes **EIR** (Equipment Identity Register), **NEF** (Network Exposure Function), **CHF** (Charging Function)
- 4G+5G interworking helps manage session continuity and mobility
- Web-based portals: PCF portal to configure and manage static and dynamic policies and rules; SDM portal for SIM provisioning, service configurations, managing subscriptions, and troubleshooting
- HTTP2/REST Open API 3.0 compliant interfaces
- Rich library of open APIs for external CRM and IT systems for subscription management and service configurations
- Mutual TLS for authentication; OAuth 2.0

5G Transformation

Our experience in digital transformation helps modernize operational architecture without service disruption, shifting to a fully virtualized service-based environment as operators evolve to 5G.

- Seamless migration for existing 4G core to the converged core without any change to existing IT systems
- Dual-radio connectivity support to quickly roll out 5G radio coverage and services
- 3GPP-compliant standard interfaces interoperable with any best-of-breeds network to prevent vendor lock-in, enabling a multi-vendor network for better price and performance and lower network costs
- Supports provisioning with API gateway that consumes APIs from different vendor modules

5G Core

Solution Segments

- Enhanced Mobile Broadband (eMBB)
- Fixed Wireless Access (FWA)
- Private 5G Networks (Compact Core)

Cloud-Native Microservice Architecture

The cloud- and PaaS-agnostic microservice-based architecture supports public, private, and hybrid cloud deployment as well as on the local data center. Deployed as a one-box solution, it is ideal for enterprise customers; also supports containerized and VNF-based deployments.

- KPI-based monitoring for performance, and alert or alarm management
- Support for horizontal and vertical scaling based on traffic needs
- Implements CI-CD for automated release management support
- Centralized logging support using EFK (Elasticsearch, Fluentd, and Kibana for visualization)
- Distributed tracing to carry out real-time and offline root cause analysis
- Centralized user access management with clearly defined operations and access controls
- Operation and management module provides complete FCAPS support, including fault management, configuration management, alarm monitoring, KPI monitoring, performance management

Why Choose Alepo

Cutting-edge network technologies. Founded by internet pioneers, Alepo has created some of the first carrier WiFi, WiMax, and LTE solutions. Today, we are committed to being at the forefront of 5G.

Early-mover advantage. We were early adopters of SBA, open REST APIs, and virtualization – attributes fundamental to 5G.

Secure, flexible, and scalable authentication framework. We're working with industry leaders on other components like AMF and SMF.

5G-ready Digital BSS for high-value use cases. Supports billing and charging for complex business models; IoT/M2M; next-gen partnership and interconnect agreements; omnichannel customer engagement through automation; and more.

Business Benefits

- Ensure a hassle-free evolution to 5G with swift TTM
- Leverage new partnerships
- Unlock new revenue streams
- Save costs with flexible deployment
- Enable edge cloud deployment with low footprint
- Support advanced use cases like V2X and VoNR

