HawkSpid4G-5G - MVNO Solution
Comprehensive. Powerful. Easy.

HawkSpid5G Enterprise 5G Solution

HawkSpid5G Enterprise Solution is a high-performance, end-to-end private wireless solution designed to meet the emerging needs of enterprises exploring new-age 5G and IoT use cases. HawkSpid5G Enterprise Solution delivers high-speed, secure, and reliable networks, improving enterprise productivity, connectivity, and operational efficiency. Our solution helps organizations across industry verticals realize the true potential of 5G.

A Comprehensive Solution

HawkSpid5G Enterprise Solution comprises a Range Radio Access Network, a 5G SA Core and a high-performance User Plane Function. The end-to-end solution ensures that enterprises don't have to look elsewhere for their private 5G deployment needs.

Why Spectrum's *HawkSpid5G*?

subscriber Data Management (SDM)
enables operators to secure their investments by providing a unified platform to store and manage subscriber data.

Virtual Network Functions
Supports the virtualization of network functions, increasing network scalability & agility and eliminating the need for expensive purpose-built hardware.

Policy Control function
enables operators to manage and configure high-value policy use cases effectively.

Cloud-native functions
improve the scalability and efficient creation and consumption of network resources.

Key Management
The 5G Core components are deployed in containers as N+k redundant systems, fully orchestrated by Kubernetes.

KPI Monitoring
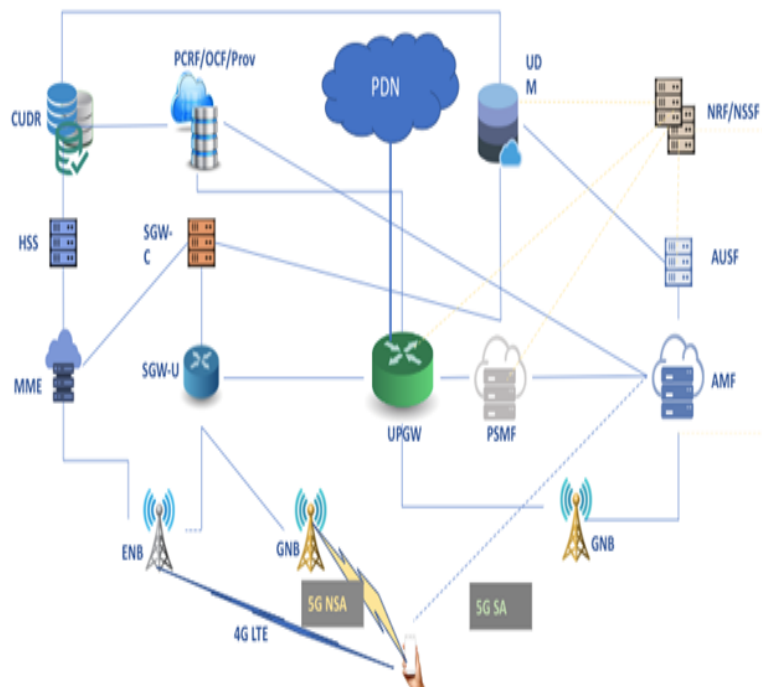Measure how effectively the 5G Core network serves the user with KPI monitoring feature

Mobility
Control plane can easily predict mobility and enable proactive decision-making, making operations more efficient, valuable, and agile.

Network Architecture

4G EPC Core:

HawkSpid core 4G network components

•	Mobility management Entity (MME)

•	Home Subscriber Service (HSS)

•	 Serving Gateway CP (SGW-C)

•	 Serving Gateway UP (SGW-U)

•	Policy Based & Charging Function (PCRF)

•	Central User Data Repository (CUDR)

Web Based GUI Management System for config and Reports:
Highly secure and Very cost effective solution with light on budget, ability to scale from few thousand to million subscribers.
Fully supports cloud based solution and can work on AWS/AZURE/Google cloud, we also support with complete redundancy on COTS servers using Intel based processor or on private cloud also.

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AMF	Registration, connection, reachability and mobility Management, RAN CP Termination, NAS Termination ciphering & integrity protection, UE Authentication and Authorization, 5G GUTI allocation and distribution
SMF	UE Session and Tunnel Management, IP Address Allocation and MS Routing Management and, UP Function Management, Control Policy enforcement and QoS, DDN
UPF	PDU and PDN interconnection, Fast-Path Packet routing and Forwarding, UE Data report, Traffic-flow to DN Routing, QoS Enforcement and SDF mapping, DL Packet buffer
UDM	3GPP AKA Authentication credential and SSUCI Generation, User Identification handling, User Access Authorization, SMS Delivery Support, subscription Management
UDR	UDM Subscription data Storage, PCF Policy Data Storage,
AUSF	EAP Authentication Server Function, Retrieve UE subscription info from UDM, Send Security info to SMF, Perform UE Authentication
PCF	Post-paid Pre-paid Policy management, Distribute policy bw CP functions, Storage Subscription and policy data in UDR
NSSF	Network Slice and UE instance serving Management, Network Slide selection assistance information management, UE AMF Allocation
NRF	Service Discovery Function, Available NF information Management, Support PLM, Shared and Specific Slice deployment
CHF	Inter and Intra-AMF N2 handover,4G to 5G and 5G to 4G N26 Handover, SMF UE session creation and modification ,Session level and rating-group level charging trigger, Charging update notification

Core Functionality and Features:

Functionality	AMF	SMF	UPG
Core Functions	• Support authentication function • User equipment identification function • 5G-GUTI distribution function • NAS (N1 interface) signalling and its security • AS security context issuance function • Registration area management • Connection management function • Registration and deregistration • Service request, storage , Modify, delete user mobility context and bearer context	• Supports PDU session establishment • PDU session modification • PDU session release • Activation or deactivation of UP connections • Service continuity (SSC) • Network element selection • UPF, UDM selection • PCF selection • QoS Flow binding • Policy control request event reporting function • 5GS and EPC policy integration control function • Reflection QoS function • Basic location management function	• Support PDU session management function • Manage PDU session information • Support multiple SMF control UPF • Session level (APN-AMBR, TDF session UL and DL bit rate, or UL and PDN connection DL rate) bearer level (GBR, MBR carried by GBR) • QoS Flow level (for 5GC), service data flow (SDF) or application, support upstream and downstream traffic classifiers and merge functions
Interface Support	N1, N2, N8, N12, N11, N15	N1, N2, N4, N7, N10	N3, N4, N9, N6, S5,SGI
Service Oriented Interface	NAS, NGAP	NAS PFCP/GTP-U, Nudm	GTP-U, PFCP
Security			