

TECHNOLOGY OVERVIEW

Signalling Core

Cellusys Signalling Core provides a single, virtualised signalling routing infrastructure that supports SS7, Diameter and 5G HTTP/2, helping operators maintain and evolve interconnect and core signalling as networks transition from legacy to 4G and 5G.

Operators face

- Fragmented signalling infrastructures across SS7, Diameter and 5G environments
- Increasing complexity in interconnect and core signalling routing
- Migration challenges from legacy to IP-based and 5G signalling
- High availability and resilience requirements across multi-network deployments
- Limited flexibility in scaling and virtualising traditional signalling platforms
- The need to consolidate routing functions while maintaining operational stability

Typical use cases

- Consolidated SS7, Diameter and 5G signalling routing within a single virtualised infrastructure
- Migration from legacy TDM-based signalling to IP-based and 5G environments
- Interconnect routing control across multi-operator and multi-network deployments
- Centralised signalling routing for multi-country or multi-tenant operations
- Load balancing and traffic distribution across redundant signalling nodes
- Gradual transition to 5G HTTP/2 signalling while maintaining legacy interoperability

Solution Portfolio

Product	Description
DSC - STP	SS7 signalling routing and interconnect control, providing reliable message distribution across legacy network environments.
DSC - Diameter	Virtualised, scalable 4G/GSM-based Diameter routing and edge agent with Interworking Function (IWF). Centralises and simplifies 4G network topology, providing a single control point to monitor and manage Diameter traffic.
DSC - 5G/SCP	Virtualised, flexible and scalable central hub for managing, routing, mediating and securing HTTP/2-based traffic between 5G network functions (NFs).

Architecture & operation

- Redundant VMs deployed across multiple VM hosts to ensure maximum nodal resiliency
- All service VMs operate in active/active mode for traffic processing
- High-availability interconnections provide resilient communication between VMs
- Redundant OA&M functions distributed across two VMs operating in active/standby mode for system management
- STP, Diameter and SCP traffic can be processed by all in-service VMs or logically partitioned and deployed on dedicated VMs per application
- Virtual network interfaces are configured within each VM to support three logical functions: management, packet processing and monitoring (IMF feed).
- Management interfaces (mgt0, mgt1) handle system management and control traffic.
- Packet interfaces (pkt0, pkt1, pkt2, pkt3) are assigned local IP addresses and used for SS7 or Diameter signalling traffic, with multiple interfaces enabling traffic separation across networks.
- Monitoring interfaces (imf0, imf1) provide traffic visibility via the Integrated Monitoring Feed or export to packet capture tools such as Wireshark.
- A virtual HA interface (ha0) ensures synchronization of provisioning data, VM status and traffic state between VMs.

Deployment & integration

- Customer-provided VM hosts are provisioned according to Cellusys sizing and infrastructure requirements.
- Server or cloud environment is prepared and activated prior to DSC application deployment.

How we work

Typical project duration

30–60 days, depending on deployment scope and environment readiness.

Implementation phases

Kickoff and planning, host preparation, configuration design and documentation, system verification, activation or migration, and post-cutover monitoring.

Proof of Concept option

Product demonstration is available; formal POC engagements are not typical but can be discussed.

Level of configuration/customisation

The DSC is configured according to customer requirements documented in a deployment-specific Configuration Book.

Operator involvement required

The operator collaborates with Cellusys Professional Services on design objectives, configuration data and infrastructure preparation, and manages all interconnected systems.

Managed service or support model

Support options include 24x7x365 for live systems or business-hours support for lab environments, with optional Professional or Managed Services available as required.