DISAGGREGATED CELL SITE GATEWAY SOFTWARE FRAMEWORK

Framework to rapidly build cell site gateways, access and aggregation routers for 4G and 5G networks

Disaggregated cell site gateway (DCSG) software framework

5G technology is driving growth in mobile networks with enormously increased amounts of connected clients, radios, and bandwidth. Traditional architectures cannot deliver the cost and time efficiencies necessitated by short technology lifetimes and compressed time windows for product introduction and investment recovery. The new architecture is a disaggregated, open infrastructure for agility, efficiency, and innovation. The Telecom Infra Project (TIP), through its Open Optical and Packet Transport group, addresses this.

Mature, reliable, and interoperable software is necessary to address the requirements. Capgemini Engineering's long experience with Ethernet, IP, and mobile networking, combined with the time spent in understanding the evolution of fronthaul, midhaul, and backhaul networks, has been channelled into building the software framework by addressing all the standard aspects and choices for different network deployments.

Capgemini Engineering's DCSG software

Capgemini Engineering's DCSG software framework is rich and mature, addressing the TIP specifications for the DCSG. It includes Ethernet layer 2 switching, IPv4/v6 layer 3 routing and forwarding, MPLS, segment routing, VPN, connectivity monitoring, system monitoring, quality of service, security, redundancy, and high availability capabilities. Customers can realize products for different deployments by enabling the appropriate feature set or a variety of hardware form factors ranging from single board pizza box devices to advanced multi-card systems around a single flexible software base. The framework is available integrated on the following industry leading hardware platforms from Delta Networks.

| AGC7008S | https://agema.deltaww.com/product-info.php?id=85 |

| AGCV208S | https://agema.deltaww.com/product-info.php?id=84 |

Software availability on such white box platforms accelerates time to market and improves return on investment. The disaggregated architecture allows the software to be integrated on other ASIC and FPGA based platforms. NEPs and OEMs can choose custom designs or a white box hardware solution. This enables product design optimized for deployment. Management support is available through traditional CLI and SNMP schemes as well as modern Netconf and Yang models.

Management – CLI, SSH, SNMPv3, Netconf	Resiliency – LFA, RLFA, PBR
Timing – PTP T-BC, T-SC, T-TC, SyncE	Multicast – PIM-SM/SSM, IGMP
Layer 3 – IPv4/v6 Static, OSPFv2/v3, BGP4/6, IS-IS, RIPv2/ng, ECMP, VRRP	
Services – L2VPN, L3VPN, Multicast VPN	SR – OSPF, IS-IS extensions
Layer 2 – PB, MEF, LACP, G.8032, LLDP, 802.1ag/y.1731, ETH-BN/CSF	
QoS – ACL, policing, traffic shaping and scheduling, H-QoS	Telemetry
MPLS – TP/IP-MPLS, RSVP-TE, BFD, LSP protection, PW redundancy	
Y.1564, TWAMP Lite	ZTP, system monitoring, license mgmt.

Capgemini Engineering DCSG software
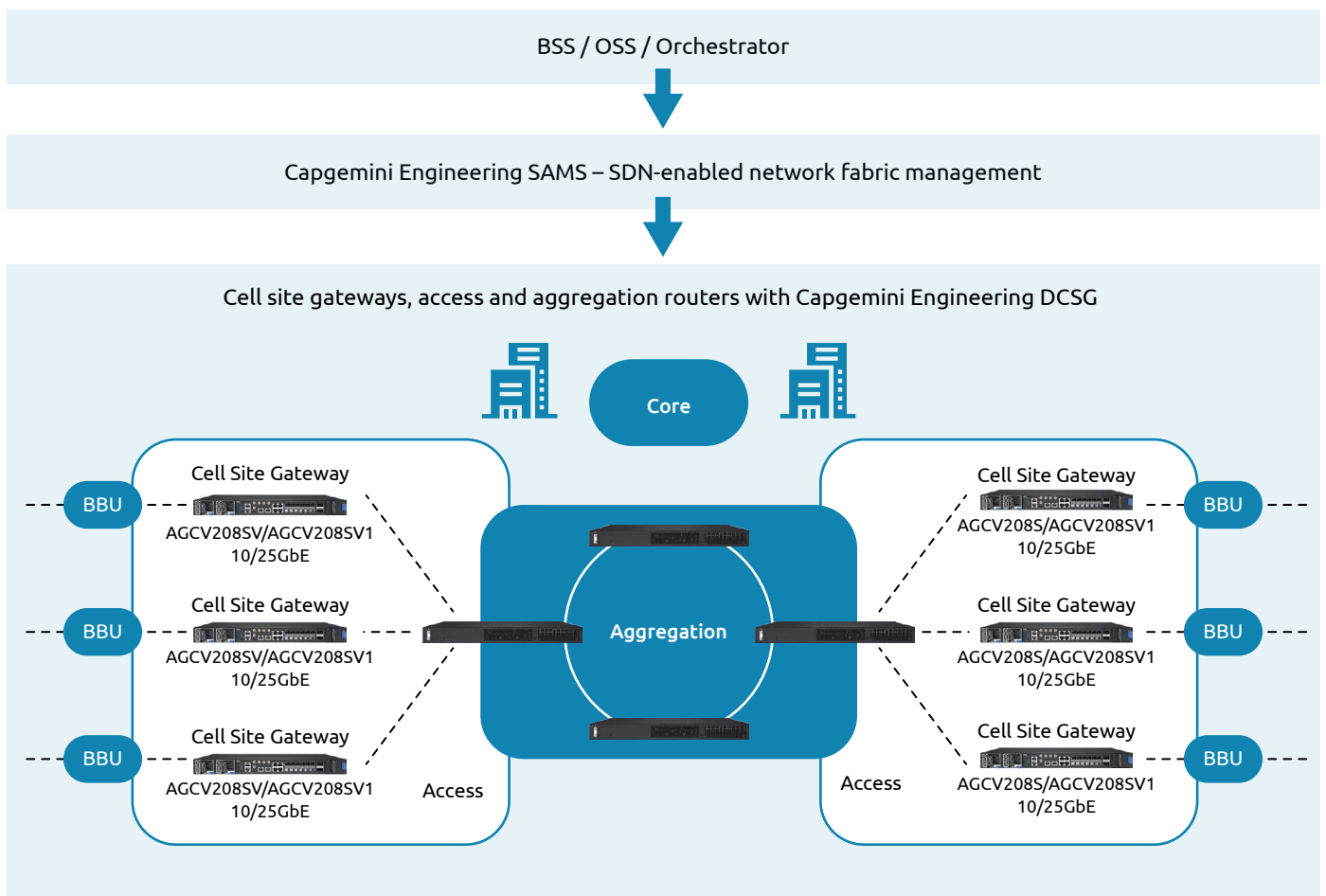

AGC7008S

AGCV208S

Advanced software tackles complexity

Leveraging a partner ecosystem nurtured over years, Capgemini Engineering's DCSG software with appropriate hardware platforms can significantly reduce R&D cycles, cost, and time required to introduce cell site gateways, and access routers and aggregation routers into networks, within optimal budgets. Complemented by Capgemini Engineering SAMS, a smart SDN-enabled network control and management platform, this enables high automation to optimize operations.

BSS / OSS / Orchestrator

Capgemini Engineering SAMS – SDN-enabled network fabric management

Cell site gateways, access and aggregation routers with Capgemini Engineering DCSG

Core

Aggregation

BBU

Cell Site Gateway
AGCV208SV/AGCV208SV1
10/25GbE

Cell Site Gateway
AGCV208SV/AGCV208SV1
10/25GbE

Cell Site Gateway
AGCV208SV/AGCV208SV1
10/25GbE

Access

Cell Site Gateway
AGCV208S/AGCV208SV1
10/25GbE

Cell Site Gateway
AGCV208S/AGCV208SV1
10/25GbE

Cell Site Gateway
AGCV208S/AGCV208SV1
10/25GbE

Access

BBU

Why Capgemini Engineering?

Software framework proven in networks across the world

Modular, extensible architecture for optimal deployments

Elegant, flexible architecture eases maintenance and evolution

Robust, quality software and documentation reduce product development and testing cycles

SDN-enabled network management and control system

Complemented by Capgemini Engineering's reputed professional services to deliver complex and demanding products

Capgemini engineering

About Capgemini Engineering

Capgemini Engineering combines, under one brand, a unique set of strengths from across the Capgemini Group: the world leading engineering and R&D services of Altran — acquired by Capgemini in 2020 - and Capgemini's digital manufacturing expertize. With broad industry knowledge and cutting-edge technologies in digital and software, Capgemini Engineering supports the convergence of the physical and digital worlds. We help clients unleash the potential of R&D, a key component of accelerating their journey towards Intelligent Industry. Capgemini Engineering has more than 52,000 engineer and scientist team members in over 30 countries across sectors including aeronautics, space and defense, automotive, railway, communications, energy, life sciences, semiconductors, software, and internet and consumer products.

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