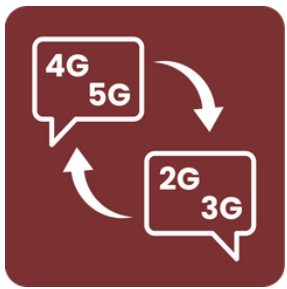




Open Source Telecom Signaling

PAiCore IP-SM-GW

Reigniting telecom innovation and sustainable profitability via open source signaling solutions



IP-SM-GW

Interworking, Intelligent & IP-Optimized SMS

PAiCore IP-SM-GW ensures reliable SMS delivery by bridging traditional signaling with **IMS architectures**, preserving service continuity through network modernization.

It facilitates **interworking** between **SIP, SS7/MAP**, and **Diameter**, allowing operators to integrate legacy SMSCs into modern messaging cores without impacting the subscriber experience.

Its 3GPP-compliant architecture provides an efficient, future-ready solution for managing SMS across hybrid and transitional network deployments.

Key Features



Enables interoperability with legacy SMSCs and SIP signaling



Multi-protocol interworking across SIP, Diameter, and MAP



Maximizes SMS delivery via automated error handling



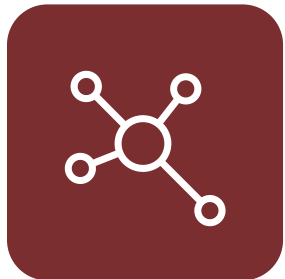
3GPP identity mapping via IMS 3rd party registration

IP-SM-GW



Multiple Commercial Options

The free Basic Version, publicly available as open source, fosters continuous innovation. PAiCore also offers PT Bundles for professional services, and CT Editions available through OPEX plans with 24/7 technical support and usage rights, or CAPEX models that provide ownership of enhanced, carrier-grade CT products.



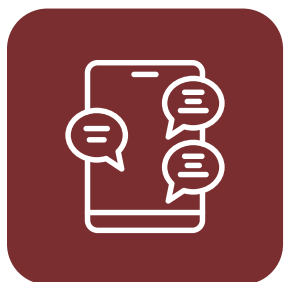
Reliable Interworking Across Legacy and IMS Networks

Enables SMS routing across legacy and IMS networks by supporting key telecom protocols, including SS7/SIGTRAN (MAP), SIP (IMS) and Diameter (SGd/S6c), for flexible integration and interoperability.



Automated 3GPP Identity Mapping

Facilitates cross-domain routing by automating IMSI/MSISDN mapping through IMS 3rd party registration and 3GPP-compliant HSS synchronization.



Resilient SMS Delivery & Reachability

Maximizes delivery success by utilizing real-time reachability subscriptions (SNR/PNR) to automatically trigger message retries the moment a subscriber becomes available following a delivery failure.



Policy-Driven Service Authorization

Ensures network security by validating subscriber permissions and Operator Determined Barring (ODB) settings in real-time before processing inbound or outbound SMS flows.



Cross-domain MO/MT routing and delivery

Manages bidirectional SMS flows – Mobile Originated (MO) and Mobile Terminated (MT) – across hybrid network environments, ensuring continuity between legacy and IMS domain.

PAiCore Technology IP-SM-GW Versions

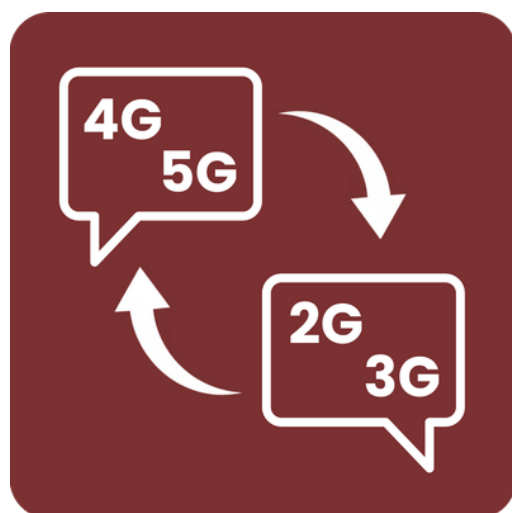
Feature	Free Basic Version	Technical Support Plans
General		
User's Management	✓	✓
Official Docker image available	✓	✓
Registration		
3rd Party REGISTER Handling (SIP)	✓	✓
Identity Derivation logic (TS 24.341 compliant)	✓	✓
Reg-Event Subscription (SUBSCRIBE/NOTIFY)	✓	✓
Standard Identity Mapping (1:1 MSISDN/IMSI)	✓	✓
HSS/HLR Update via MAP ATM (SS7/SIGTRAN)	✓	✓
HSS/HLR Update via Diameter Sh (PUR/PUA)	-	✓
MO Handler		
SIP (IMS SIP Message Inbound)	✓	✓
SS7/SIGTRAN (Legacy Interworking - MAP MO-ForwardSM)	✓	✓
Diameter (SGd Interface)	-	✓
SMPP (External Entity Relay - v3.4/v5)	-	✓
HTTP	-	✓
MT Handler		
SIP (IMS SIP Delivery - Relay)	✓	✓
SS7/SIGTRAN (Legacy Termination - MAP MT-ForwardSM)	-	✓
Diameter (SGd/S6c Interface)	-	✓
SMPP (A2P Inbound Submission - SMPP Server)	-	✓
HTTP (REST SMS Submission)	-	✓
Advanced Features		
SMSC (Native SMSC Core Integration (Direct Protocol Bypass))	-	✓



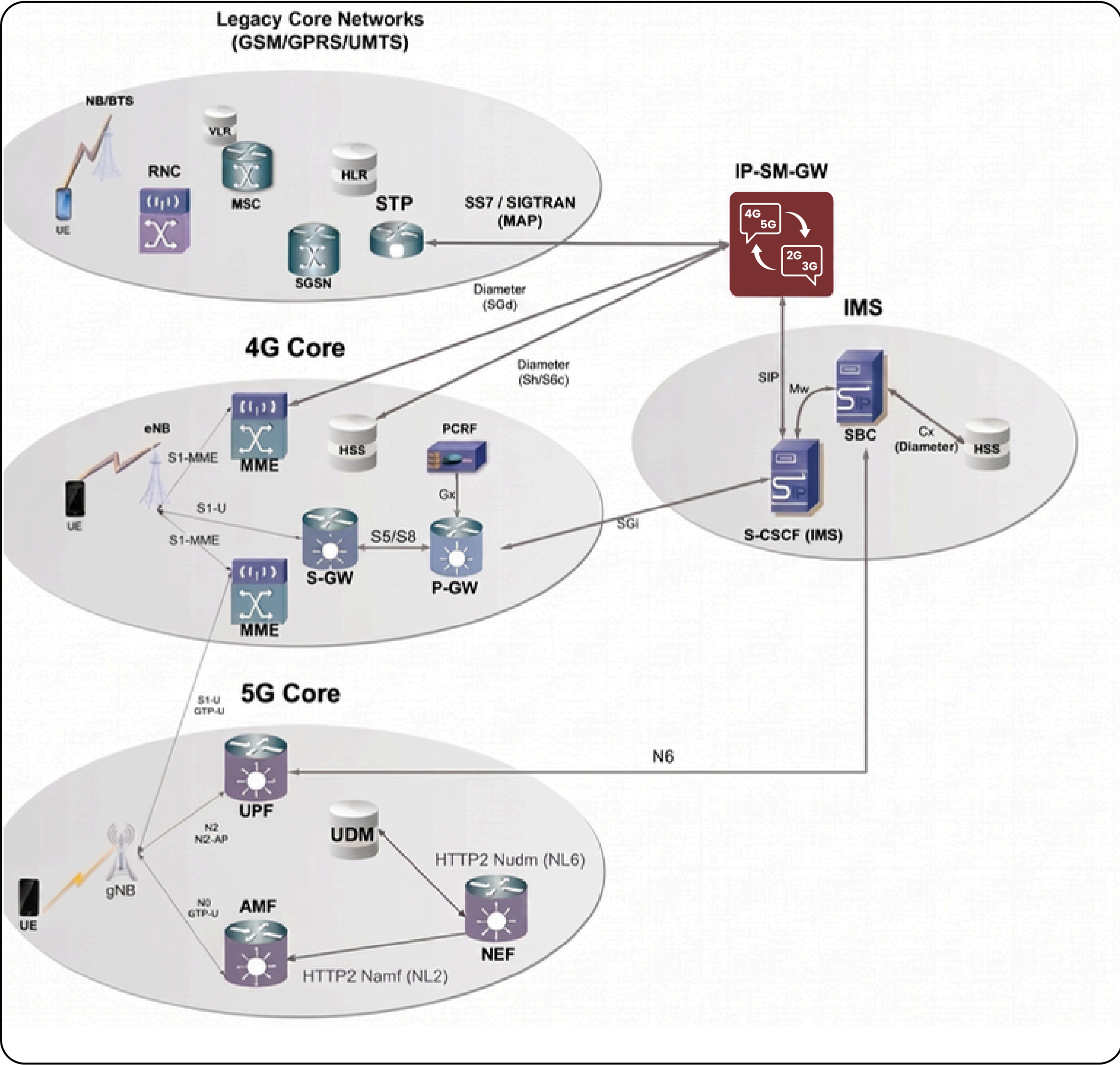


Open Source Telecom Signaling

Appendix – Technical Information



Architecture



TPS & Connectivity Requirements

TPS & Recommended HW

Protocol	TPS	Transactions per message	Messages per second
SMPP	100,000	8→ SubmitSM (2)(R&A), DeliverSM (2) (R&A)	12,500
HTTP	12,000	8 → POST-Send (2) (R&A), POST-DLR (2) (R&A)	3,000
SS7	8,000	10→ MO (R&A), SubmitSM (R&A), DeliverSM (R&A), SRI (R&A) and MT (R&A)	1,000
SIP	3,200	8 → POST-Send (2) (R&A), SIP MESSAGE (R&A), POST-DLR (2) (R&A)	400

R&A: Requests and Answers

Environment	vCPU	RAM	Storage	Estimated Throughput
Test / PoC	8	32 GB	40 GB SSD	≈ 500 msg/s
Production – Low throughput	16	32 GB	100 GB NVMe	≈ 2,000 msg/s
Production – Medium throughput	32	128GB	≥ 150 GB NVMe	≈ 5,000 msg/s
Production – High throughput (single node)	64	192GB	≥ 200 GB NVMe	≈ 12,500 msg/s

Note: Our software products are fully tested and optimized for deployment in AWS EC2 instances, ensuring peak performance and reliability. While they are compatible with any Linux-based virtual environment, performance may vary depending on the underlying infrastructure and configuration.

For the following interconnection tables, the displayed values must be taken as examples.

For SMPP interconnection

No	Description	Value	Comments
1	System ID	smpp_account_1	Identifies the External Short Message Entity (ESME) requesting to bind with the SMSC.
2	Password	*****	The password used by the SMSC to authenticate the ESME requesting to bind.
3	Peer IP	2.2.2.2	IP address used by the ESME to send or accept bind procedures with the SMSC.
4	Peer Port	2775	Port number used by the ESME to initiate or accept bind procedures with the SMSC.
5	Host IP	1.1.1.1	IP address used in bind procedures when the SMSC is acting as ESME or Service Centre (SC).
6	Host Port	2776	Port number used on bind procedures when the SMSC is acting as ESME or Service Centre (SC).
7	SMPP Bind Type	Transceiver	Binding type value: Transmitter, Receiver or Transceiver.
8	SMPP Session Type	Client	SERVER (SMSC will act as a server, listening for incoming SMPP binds) or CLIENT (SMSC will act as a client, initiating SMPP binds to remote servers).
9	System Type	smpp_account	Used to categorize the type of ESME that is binding to the SMSC.



For SIP interconnection

No	Description	Value	Comments
1	SIP IP	1.1.1.1	S-CSCF IP Address
2	SIP Port	5090	S-CSCF SIP Port
3	Domain	ipsmgw.mnc001.mcc748.3gppnetwork.org	IMS Core Domain (o IMS Home Domain)
4	Target Host (SCSF Domain)	scsf.customer.com	SIP domain used for user registration and sessions/messages
5	IP-SM-GW User	ipsmgw	SIP identity user of the IP-SM-GW. Together with ipsmgw_domain, it forms the SIP URI used to identify the IP-SM-GW as the source of traffic to the IMS

For Diameter interconnection

No	Description	Value	Comments
1	Host IP	1.1.1.1	Diameter IP address(es) assigned to the PAiCore Technology platform (SMSC, GMLC & CAMARA LBS, DRA, etc.).
2	Host Port	3868	Diameter port number(s) assigned to the PAiCore Technology platform (SMSC, GMLC & CAMARA LBS, DRA, etc.).
3	Host Realm	epc.mcc748.mnc012.3gppnetwork.org	The string(s) in the Network Access Identifier (NAI) that immediately follows the "@" character assigned to the PAiCore Technology platform (SMSC, GMLC & CAMARA LBS, DRA, etc.).
4	Host User Name	host_name.epc.mcc748.mnc012.3gppnetwork.org	The string(s) which contains the User-Name in a format consistent with the NAI specification assigned to the PAiCore Technology platform (SMSC, GMLC & CAMARA LBS, DRA, etc.).
5	Host Number	861684684	ISDN (E.164) number assigned to the PAiCore Technology platform (SMSC, GMLC & CAMARA LBS, DRA, etc.).
6	Peer IP(s)	2.2.2.2	Diameter IP address(es) of the peer side (DSC or DRA or DEA or IWF).
7	Peer Port(s)	3869	Diameter port number(s) of the peer side (DSC or DRA or DEA or IWF).
8	Peer Port Range	3868-3869	Port range to use for establishing SCTP associations.
9	Peer Realm	epc.mcc748.mnc01.3gppnetwork.org	The string in the DSC/DRA/DEA/IWF Network Access Identifier (NAI) that immediately follows the "@" character.
10	Peer User Name	peer_name.epc.mcc748.mnc01.3gppnetwork.org	The string which contains the DSC/DRA/DEA/IWF User-Name in a format consistent with the NAI specification.

For HTTP/1.1 and HTTP/2 integrations

No	Comments
1	The required API documentation is available.

For SIGTRAN (SCTP/M3UA) interconnection

Description	Value	Comments
IP and Port at peer side	1.1.1.1	Peer (usually SGW) SCTP endpoint IP address(es) and port number list.
IP and Port at host	2.2.2.2	Host (usually AS) SCTP endpoint IP address(es) and port number list.
SCTP mode	peer	Side that shall initiate the SCTP association and act as client: Host or Peer?
M3UA type	AS	Process that shall run on the platform host at M3UA: AS or SGW or IPSP?
Routing Context	12345	The Routing Context assigned to the platform identifying its MTP3 routing key.
Network Appearance	3	Identifier of the SS7 network context for the routing key. Not required if SGW operates in the context of a single SS7 network, or if individual SCTP associations are dedicated to each SS7 network context.
Traffic mode	Override	Traffic mode type: Override or Loadshare. Override: ASP takes over all traffic overriding any currently active ASPs in the AS. Loadshare: the ASP will share in the traffic distribution with any other currently active ASPs.
Message Exchange	SE	IPSP model defining if each exchange of ASPTM or ASPSM messages can be initiated by either IPSP (Double Exchange, DE) or not (Single Exchange). SE if unknown.
MUA ASP ID	1	Optional ASP ID (provide it only if it has been set by the operator).
Originating Point Code (OPC)	1-1-1	The local SS7 signaling point code assigned to the platform in the network.
Destination Point Code (DPC)	2-2-2	The SS7 signaling point code of the remote peer (SGW or STP).
Global Title (GT)	123456789	The Global Title address assigned to the platform for SCCP routing (e.g., E.164 format).

