



PROTOCOL ADAPTERS

DATA SHEET

API **MANAGEMENT**

Access to the telecommunications core network.

Network Protocols



Carrier-grade implementation of low-level telecommunications protocols interfacing core nodes of the Network Switching Subsystem and presenting their functions as more convenient, HTTP-based interface. Turnkey installation on popular API Management platforms.

KEY BENEFITS

- ◆ Independent of the core network.
- ◆ Use industry standards to interface nodes of the switching subsystem.
- ◆ Translate low-level binary protocols into human-readable format.
- ◆ Enable API Management layer with the telecommunications stack.
- ◆ Can be used in real-time charging, messaging and location scenarios.

Telecom
Core Access

Protocol Adapters

Diameter Adapter

Diameter Adapter is a Java-based implementation of Diameter-compliant Credit-Control Application interfacing an *Online Charging System (OCS)*.

SMPP Adapter

SMPP Adapter is a Java-based implementation of Short Message Peer-to-Peer (SMPP) protocol that enables SMS transfer between *External Short Messaging Entities (ESME)* and a *Short Message Service Centre (SMSC)*.

MM7 Adapter

MM7 Adapter is a SOAP-based implementation of Multimedia Messaging 7 (MM7) protocol that enables MMS transfer between *Value-added Service Providers (VASP)* and a *Multimedia Messaging Service Centre (MMSC)*.

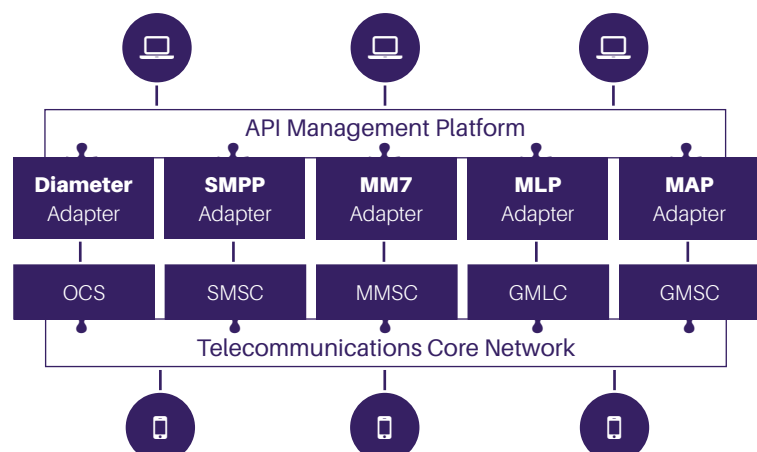
MLP Adapter

MLP Adapter is an HTTP-based implementation of Mobile Location Protocol (MLP) for receiving geographical position and distance of mobile terminal devices from a *Gateway Mobile Location Centre (GMLC)*.

MAP Adapter

MAP Adapter is an HTTP-based implementation of Mobile Application Part (MAP) protocol for receiving network connection status of mobile terminal devices from a *Gateway Mobile Switching Centre (GMSC)*.

Protocol Adapter	Core Node
Diameter Adapter	OCS ⇒ online charging
SMPP Adapter	SMSC ⇒ text messaging
MM7 Adapter	MMSC ⇒ multimedia exchange
MLP Adapter	GMLC ⇒ terminal positioning
MAP Adapter	GMSC ⇒ call handling



Mobile Services

OneAPI Services

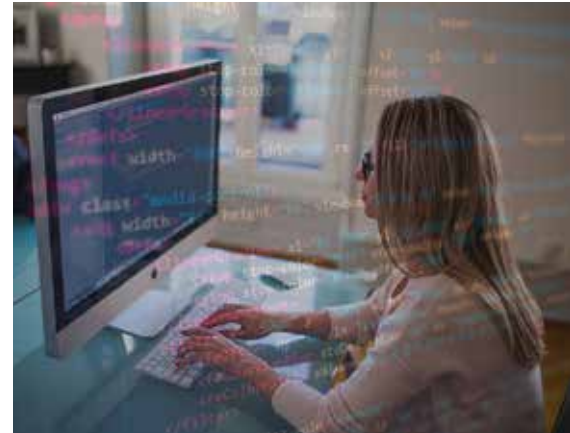
Modern converged applications demand intuitive, industry standard APIs for connecting to the telecommunications core network. This ensures ease of integration, minimal maintenance and operator portability.

Protocol Adapters are shipped with an application service layer which is fully compliant with OneAPI Profile 4.0 of RESTful Network APIs. Enterprise and mobile applications that utilize OneAPI interface are shielded from the low-level details of telecommunications protocols specific to the Network Switching Subsystem, and can be delivered much faster.

API Management Platform

Once deployed on an API Management platform, *Protocol Adapters* provide additional carrier-grade features, including automatic payload validation, High Availability, secure access and usage control. In doing so, a general-purpose API Management gateway turns into the industry standard, single and convenient entry point into the telecommunications core.

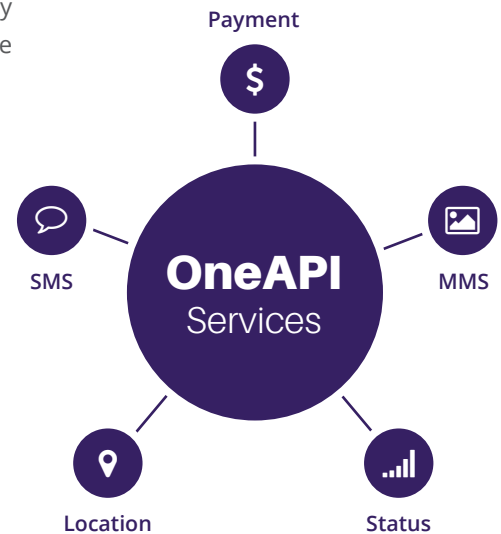
Third-party developers can easily register client applications with *Identity Provider*, update their profile and manage API access credentials. Not only this expands market reach to emerging platforms, but also allows mobile operators boost their revenue through API monetization.



Protocol Adapters are exposed to third-party applications as OneAPI services.

API Management platform ensures scalability, security and control of application service access.

Protocol Adapter	OneAPI Service
Diameter Adapter	Payment
SMPP Adapter	Short Messaging
MM7 Adapter	Multimedia Messaging
MLP Adapter	Terminal Location
MAP Adapter	Terminal Status



COMMON FEATURES

- REST interface with JSON and XML format.
- Schema validation and error handling.
- High Availability with clustering.

The complexity of low-level telecommunications system integration is hidden behind the implementation. Modern enterprise and mobile applications can take advantage of convenient OneAPI interface to enable service charging, mobile messaging, location awareness and network connection status check for wireless subscribers.

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