

MMS Connectivity

Service Description



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Tieto Connection Service Description

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1 General

Tieto Connection is a versatile, easy-to-implement service intended for service providers, mobile content providers and other companies. Using Tieto Connection, 3rd party developers can access the messaging and billing platforms of mobile network operators connected to the Tieto Connection service¹. Using MMS Connectivity, 3rd parties can send multimedia messages to and receive multimedia messages from mobile phone users. Pricing and subscription billing features are flexible as in SMS Connectivity service too, and suits many different kind of services.

2 Benefits for Service Providers

Premium-rate two-way messaging

Tieto Connection offers service providers access and a charging method to the mobile subscribers of Tieto Connection operators, irrespective of whether they are prepaid or postpaid customers.

Wide range of services

Tieto Connection offers versatile provisioning of service numbers and keywords. Routing and pricing can be configured based on service numbers or keywords. Depending on the service requirements, tariff classes can be restricted or selected per each MT message.

Easy deployment

Accessing Tieto Connection takes place via one of two interfaces based on either EAIF or HTTP protocol. Service providers can choose an interface that fits their existing system environment and suits the intended service.

Extensive reporting

For Tieto Connection customers, a monthly statement is generated that shows configuration fees, monthly fees and messaging traffic information. The traffic is clearly listed per service number and tariff class, detailing revenue shares and value added tax. Summary information of failed message deliveries is also supplied.

Customer Support

There is a dedicated team supporting Tieto Connection customers, configuring new services, implementing changes, and answering questions.

3 Service Description

3.1 General

Using the MMS Connectivity service, Service Providers can:

- Send MMS messages to one or many recipients. Free messages can be sent to subscribers within any network. Premium-rate messages can only be sent to subscribers of operators connected to Tieto Connection service.



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- Receive MMS messages sent from the handset of mobile subscriber of an operator connected to Tieto Connection service
- Receive Delivery Service Reports (DSR) – delivery confirmations and reasons for delivery failure for each submitted MT message

Tieto Connection MMS Connectivity service architecture is shown below.

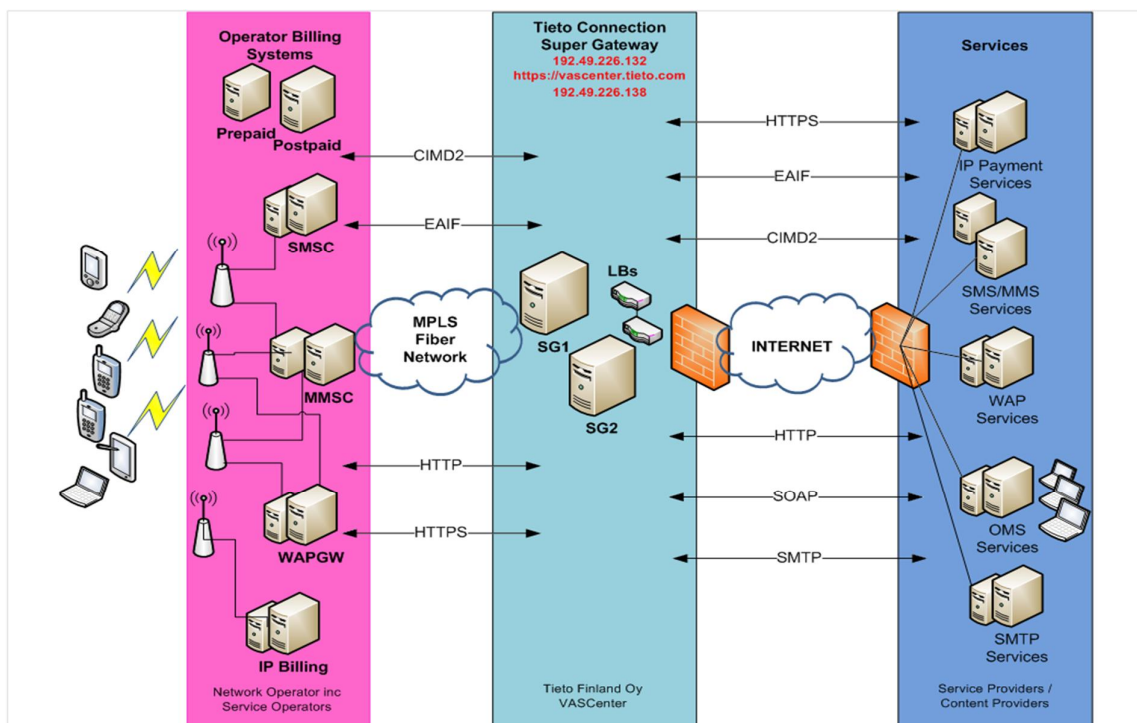


Figure 1. Tieto Connection MMS Connectivity service environment.

Connecting to Tieto Connection platform requires a fixed Internet connection and a client application that runs in the customer's environment. The client application is a customised application designed and implemented by Service Provider. It is often integrated with Service Provider's other systems. It is Service Provider's responsibility to ensure that the client application meets the Tieto Connection specifications and implements the interfaces correctly. Service Provider also installs and supports the client application.

The client application connects to Tieto Connection over one of the defined programming interfaces. For MMS Connectivity, the client application can use EAIF or HTTP protocol to connect to Tieto Connection platform.

The Tieto Connection service is connected to network operators' billing and message transmitting systems. It forwards messages from the client application to the subscribers' mobile phones and

vice versa over the GSM network. It handles possible error situations within the network, and takes care of retry management.

3.2 Sending MT Messages to Mobile Subscribers

Sending messages from the client application to mobile phones (MT-MMS) is simple. The client application initiates the sending by submitting a mobile phone number and the message content along with a number of different parameters. Tieto Connection acknowledges whether the message has been accepted for delivery. This means that the MT message is on its way to the subscriber's terminal. It does not mean that the MT message has been delivered. Each MMS message can be sent to one or several recipients (group message). The service number of the client application is shown as the sender of the message. In some cases, the sender can be shown as an alphanumeric string describing the service or Service Provider.

If the recipient of the message is unavailable, for example the handset is switched off or there is not enough credit on a prepaid number for a premium rate message, the Tieto Connection service will, depending on the failure reason, either keep retrying or disregard the message.

If the client application tries to send MT-MMS message to a handset that does not support MMS messages or to a subscription that does not have MMS configured, the operator's MMS Center stores the MMS message in the Internet. It then notifies the recipient over SMS where and how the recipient can access the MMS message.

When sending MT messages, the client application can select whether a Delivery Service Report (DSR) is required. For MMS messages, there are two kinds of DSRs: a DSR that confirms message delivery to the handset and a DSR called "read-reply" that confirms that the message has been opened in the handset. Tieto Connection supports both types of DSRs.

If Service Provider wishes to use DSRs the client application must request a DSR when submitting a MT-MMS for delivery. It is then up to the recipient of the MMS message whether DSR will be delivered to client application. Depending on the characteristics of the handset, the subscriber can disable DSRs for example for MMS messages that request a DSR or by choosing the receive MMS messages but disabling any DSRs. If the handset does not submit a DSR to the operator's MMS Center, the client application will not receive a DSR even if it has requested for one.

3.3 Receiving MO Messages from Mobile Subscribers

Messages sent from a mobile phone to a service (MO-MMS) are transmitted to the correct Service Provider and correct client application on the basis of the service number. MO messages can only be received from the subscribers of network operators currently offered through Tieto Connection service. MO messages can only be sent to Service Provider if the client application is up and running and accessible. If Service Provider's application is unavailable, Tieto Connection buffers the incoming messages while awaiting a functioning connection for a maximum of configurable period.

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With each MO message, the mobile phone number of the sender, the content elements and other parameters as described in the selected interface documentation are transmitted to the client application.

3.4 Routing by Keyword

Tieto Connection allows running multiple services on a single service number. This is achieved using keywords. Keywords and associated MO tariff are configured in Tieto Connection platform by TietoEnator according to the Service Provider's instructions. Tieto Connection then takes care of all logic required to route MMS traffic to several different destinations based on the keyword. Services can be located at different addresses and may have varying pricing. A "default" keyword, destination and pricing can also be configured.

The keyword must be the first word in an MMS message text content. Tieto Connection does not read keywords from the Subject field of an MMS message.

Keyword routing managed by Tieto only suits MO-billable services that have a definite amount of keywords that do not change often. Otherwise it is worth considering implementing a keyword routing system in the client application.

3.5 Service Numbers

The service number is a 5- or 6-digit short number that depends on the purpose of the service. The same service number can be used to offer both SMS and MMS services. Service Provider applies for a service number from the Finnish Communications Regulatory Authority that manages all short numbers in Finland. Once granted, the number is reserved for use on all Finnish mobile network operators, even if the service is only offered to the subscribers of one operator. When applying for a service number and running a service on it, Service Provider must follow the rules and regulations set for service and content providers. Available and reserved service numbers can be browsed on the Finnish Communications Regulatory Authority's list [1].

By signing both SMS Connectivity and MMS Connectivity agreements, the Service Provider can use the same short code to send and receive both SMS and MMS messages. Premium-rate services can be configured to both or either channels – for example, enable using free-to-subscriber MO-SMS to subscribe to the service and then offer the content through premium-rated MT-MMS.

4 Application Interfaces

4.1 EAIF Interface

The EAIF Interface offers a Nokia EAIF compatible interface to Tieto Connection service. When EAIF is used, the client application forms a binary message from the MMS message parts. The EAIF protocol documentation, tools and examples are available for free on Forum Nokia [2].



4.2 MMS HTTP Interface

MMS HTTP interface offers three different HTTP message formats for sending and receiving MMS messages:

- http-header
- key-value pairs
- multipart form

Each MMS service must select one of these message formats that will be used in communication between Tieto Connection and the client application. The client application sends the MMS data to Tieto Connection in the selected format and Tieto Connection then forms the binary MMS message and forwards it to operator's MMS Center.

Receiving MO-MMS messages requires a client application installed on any www server that is accessible to Tieto Connection and that can acknowledge the receipt of a message as defined in the interface documentation.

4.3 Security

If Service Provider so desires SSL secured data transfer can be used between the client application and Tieto Connection. SSL can be used both for EAI and MMS HTTP protocol.

5 Deployment

5.1 Service Agreement

The implementation of the Tieto Connection service requires the signature of a service agreement and the relevant attachments.

The following services can be selected (SMS or MMS or both):

- Two-way service to subscribers of Tieto Connection operators using a dedicated service number
- Send-only service to subscribers with other operators
- MT or MO-billing for premium-rate services
- Keyword based routing and pricing

To use MMS Connectivity service, the Service Provider must submit a completed service agreement, including the following information:

- Description of the intended service
- Selected technical interface
- Address and location of the client application

Upon receiving a signed service agreement, TietoEnator will send the customer a user ID and a password as well as selected interface documentation and the address details of the TEConnection service.



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5.2 Testing

It is the Service Provider's responsibility to ensure that the client application is tested properly and functionality is as expected, also in error situations. For premium rate services, it is extremely important to check that the billing is working correctly for all users. It is Service Provider's responsibility to make sure that service works correctly when MT-billing is used and MT messages fail to reach their destination. Service Provider must also ensure MMS content compability between different handsets.

When a new service is launched, Service Provider gets required details such as passwords and addresses of Tieto Connection. When testing, Service Provider keeps a log of sent and received messages. These logs are then double checked against Tieto's transaction and billing ticketing systems to ensure correct billing. The service is ready to launch only after testing has been completed successfully.

6 Pricing

6.1 Basic Charges

There is an activation fee and monthly fees for the Tieto Connection service, each dedicated service number and each configured keyword. Any configuration or technical change incurs an additional modification fee. For all premium rate services, an invoicing fee is charged to produce monthly revenue statements and returns. A minimum monthly fee also applies. For non-premium traffic, Service Provider is charged on a per-message basis in accordance with the applicable Tieto Connection tariff.

6.2 Traffic Charges

For non-premium rate services, Service Provider can select from three different charging models. The cost of one MMS message, either MO or MT direction, can be charged either always to Service Provider (service type 1B), or always to the subscriber (subscribers of Tieto Connection operators only, service type 1C). Alternatively the cost of sending can be charged to the sender, i.e. to the subscriber for an MO message and to Service Provider for an MT message (service type 1A).

The traffic charges are per message. When charged to the subscriber, the cost depends on the subscriber's contract agreement. When charged to Service Provider, the cost is per message in accordance with the applicable Tieto Connection tariff.

6.3 Premium Rate Services

Tieto Connection offers the possibility to run premium-rate services, i.e. services that cost more than normal text messaging and are charged to the subscriber's mobile phone bill. Charges can only be made for subscribers within mobile networks that are available through Tieto Connection. Service Provider must select the used billing model or mechanism, i.e. whether billing takes place on MO or MT basis. If the charge is added to the subscriber's account when he/she sends in an



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MO, it is called MO-billing. If the premium charge is added to the subscriber's account when the service sends an MT to him/her, it is called MT-billing.

Several different tariff classes are offered for both billing mechanisms. The tariff class can be configured per service number, keyword or if using MT-billing, per individual messages. The revenue share scheme depends on the selected tariff class. Please see applicable Tieto Connection tariff.

Please note that in general, Tieto recommends MT-billing with DSRs over MO-billing. When MO-billing is used, the subscriber is charged regardless whether he/she gets the service or content in case of failure. With MT-billing, it is straight-forward making sure that a subscriber is only charged after a successful delivery of the requested service.

6.4 Charging Models

Tieto Connection offers two different charging models that determine the revenue share scheme. The available choices are described below: MO or MT. Please note that it is only possible to apply one charging model per each service number. The charging model is selected on the basis of the services run on the service number.

6.4.1 MO Charging Model

In MO charging model, the premium fee is charged to the subscriber's account upon his/her sending a multimedia message to the service number (service type 2A). If the fee can be charged successfully (i.e. it's a post-pay subscriber or there is enough credit on a prepaid subscriber account), the message is delivered to the client application. Charging and routing the message to the client application can also take place based on the keyword found in the text message (service type 2B). This makes it possible to run differently priced services on a single service number. All keyword handling and traffic routing is automatically done on Tieto Connection platform.

6.4.2 MT Charging Model

In MT-billable services, the premium fee is charged to the subscriber's account upon his/her receiving a text message from the service number (service type 2C). The activation fee of MT charging model includes configuring five (5) different tariff classes in each service number, with the possibility of connecting further tariff classes.

The tariff class for MT-billable services is set on a per-message basis. When the client application sends MT messages, it must submit the correct tariff class to Tieto Connection. It is Service Provider's responsibility to ensure that a correct tariff class is being used. Tieto Connection charges the subscriber based on the tariff class that the client application submits. If a wrong tariff class is submitted, payouts to Service Provider are affected.



7 Guidelines for Service Providers

All MMS services are controlled by the Finnish Communications Regulatory Authority. When using a short service number, Service Provider is obliged to follow the regulations imposed by the authority. In addition and in line with the regulations, all services must meet the following guidelines:

- When sending MT messages, the originator (sender) of the MT must be Service Provider's service number unless otherwise agreed with TietoEnator in writing
- Service Provider must ensure to the best of their ability that a subscriber is charged the published price and is not charged for a service or piece of content that fails to reach him/her.
- It must be clearly advertised how the subscriber may cancel or stop the service. It is a good policy to implement a STOP command and advertise it clearly.
- On the higher price points, a confirmation message is needed to verify that the subscriber is aware he/she is going to get billed

More details about the responsibilities of Service Provider can be found in Terms&Conditions of the Tieto Connection agreement, and the MMS Connectivity – Frequently Asked Questions document.

8 Further Information and Orders

- [1] The Finnish Communications Regulatory Authority:
<http://www.ficora.fi>
- [2] Forum Nokia: <http://forum.nokia.com>
- [3] Information and Orders: vascenter@tietoenator.com
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