

SMS Connectivity

Frequently Asked Questions



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1 General Questions

1.1 What is Tieto Connection?

Tieto Connection is a service that Tieto offers for 3rd parties. Through Tieto Connection 3rd parties can offer the subscribers of selected mobile operators services based on SMS/MMS/WAP protocol. The list of available mobile operators can be obtained from vascenter@tieto.com.

1.2 Where can I find a detailed brochure about Tieto Connection?

The Tieto Connection service package contains all relevant documentation. The package consists of a service description, price lists, description of available charging models, agreements, and T&Cs. The Service Package can be requested by emailing vascenter@tieto.com.

1.3 I've heard the terms MO and MT. What do they mean?

Both MO and MT are terms used for SMS messages. MO stands for Mobile Originated SMS – an SMS that a subscriber sends from his/her handset to a service. MT stands for Mobile Terminated SMS – an SMS that a service sends to a subscriber's handset.

1.4 Is there a ready-made tool that I can use to send and receive text messages, for example via a web application?

Tieto Connection is available for 3rd parties through two different programming interfaces (API). To send and to receive text messages, service providers must technically implement one of these APIs. Tieto does not offer any other ways or applications for connecting to the messaging platform. However, there are several companies operating in this field in Finland and we may be able to help you find them. Please contact vascenter@tieto.com.

1.5 What is the API interface that Tieto Connection offers? How do I use it to send and receive text messages?

An API (application programming interface) is a documented technical programming interface. APIs are a standard way of connecting two or more applications together – here the two applications being the service providers application and the Tieto Connection platform. Tieto Connection API offers programming methods to send and receive messages. It is the service provider's responsibility to technically implement one of these APIs. A typical implementation is for example a Java program running on top of a database, maximising security and taking advantage of all the features offered, including delivery receipts.

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1.1 Can I act as a foreign Company (sign the contract), or it is necessary be a Finnish Company to use Tieto Connection?

Yes, you can act and sign the contract as a foreign company. However, you will have to follow the rules and regulations imposed on Finnish service providers by Viestintävirasto, the Finnish Communications Regulatory Authority. Please see <http://www.ficora.fi/englanti/index.html> for more information.

1.2 I would like to offer premium rate services for mobile subscribers (ring tones and logos). Is the subscriber billed when he/she sends a message or when I send the content to him/her?

In order to offer premium-rate services, i.e. services that are charged to the subscriber's mobile phone bill, you first apply for a service number (a short code) from Viestintävirasto (Finnish Communications Regulatory Authority). Then you must select premium-rate service in the Tieto Connection agreement.

In premium-rate services, charges can only be made for subscribers within the networks offered through the Tieto Connection Service. A list of currently available operators can be obtained from vascenter@tieto.com. Service providers can select whether billing takes place on MO or MT basis.

If MO-billing is used, the cost of the service is invoiced when the subscriber sends a message to the service (on the MO leg of the service transaction). Service provider then offers the service or delivers it to the subscriber's handset using a free-to-subscriber route.

For MO billing, it is possible to establish differently priced keywords on a single service number. For example, all text messages that begin with 'CHAT' cost 1.00 euro whereas all those that begin with 'TV' cost 0.50 euro. Configuring and managing keywords and routing SMS traffic is done by Tieto. There is a cost per keyword, charged to the service provider according to applicable Tieto Connection tariff.

Another option is to use MT-billing, where the cost of the service is charged to the subscriber's account when he/she receives a message back from the service (on the MT leg of the service transaction). The service provider signals the tariff when sending the MT message through one of Tieto Connection interfaces. The tariff can change for each single MT message as long as it's within a pre-defined range of acceptable values as configured for each service.

When running premium rate services, the service provider can select from three different charging models as described in Tieto Connection SMS Connectivity Service Description document. Charging models determine the used billing mechanism (MO or MT), charge traffic costs differently and offer different revenue share schemes. Please contact vascenter@tieto.com for more information.

1.3 Does Tieto Connection offer access to subscribers of another mobile network?

Tieto Connection enables sending non-premium (free-to-subscribers) MT messages to all subscribers, regardless which network they are with. Premium MT traffic is possible to only subscribers of offered mobile operators as well as to any mobile numbers that have been ported over to these mobile networks. A list of available mobile operators can be obtained from vascenter@tieto.com. MO traffic, whether premium or not, can only be received from mobile numbers within the mobile networks offered through Tieto Connection service.



If you wish to run MO-based or premium-rated (whether MO or MT) services to subscribers in all Finnish mobile networks, you will have to build connectivity with each of the operators or use connectivity partners.

1.4 How do I get a service number and how much does it cost?

Service numbers are 5-6 digit short codes administrated by Finnish Communications Regulatory Authority. Service providers can order a service number through the web site www.ficora.fi. The authority charges a yearly management fee. Service numbers are categorised and have different prefixes depending on the services run on the number (general, business related, entertainment, etc). More information is available directly from the authority and on their web site.

1.5 I plan to run a small text messaging campaign. Do I have to deal with Viestintävirasto - Finnish Communications Regulatory Authority?

Yes, you must apply for a service number. Every SMS campaign must use a service number registered to the service provider's usage by the Finnish Communications Regulatory Authority.

In some cases, it may be easier to use a broker or a service provider specialising in text-based applications. We may be able to help you find such a partner. Please contact us for further information.

1.6 Can I use premium SMS for all kind of content (adults services, horoscopes, etc)?

You can run SMS services that comply with the industry regulations. Please see the rules and regulations imposed on Finnish service providers by the Finnish Communications Regulatory Authority Ficora (<http://www.ficora.fi/englanti/index.html>). Premium SMS can be used to charge for different kind of services but you will have to separate SMS traffic on differently numbered service numbers. You must register a service number through Ficora. You can do this on their web site. Please see http://www.ficora.fi/englanti/tele/lyhytsanomapalveluiden_numerointi.htm

1.7 Is it possible to run several services with different pricing on a single service number?

Yes, it is. There can be several differently priced services on one single service number simultaneously.

If MT-billing is used, the service provider manages pricing and keywords in the client application. In this billing model, Tieto opens up a range of tariff classes that the service provider can signal when sending MT messages. It is up to the service provider to select a tariff class for each incoming keyword.

If MO-billing is used, the keywords and the associated tariff classes are administrated within the Tieto Connection platform.

1.8 How much does it cost to receive and send SMS messages with Tieto Connection?

Sending free-to-subscriber MT messages is possible to subscribers with any network. The cost of sending is charged to the service provider according to the applicable Tieto Connection tariff.

Receiving MO messages is only possible from subscribers of the mobile networks currently offered through Tieto Connection service. A list of offered networks can be obtained from vascenter@tieto.com. The cost of the MO message from a subscriber to a service is either charged to the service provider or factored in the revenue share scheme. In some cases, the cost of sending an MO message can be charged to the subscriber's account.

1.9 What's the revenue share scheme like in Tieto Connection? How much is the service provider's share in premium-rate SMS services?

Tieto Connection Tariff lists all available tariff classes and the corresponding price charged to the subscriber. This tariff also shows service provider's share of the income, based on the selected charging model (MO-SMS, MT-SMS or Push). Please contact vascenter@tieto.com for applicable tariff documentation.

1.10 What is the monthly running cost for me if there is no SMS traffic for/from my service? Is there a monthly minimum charge?

Currently, there is a monthly charge per a service number per month. In addition, there is a 20 euro minimum fee per every tariff class (each service number can have several tariff classes, according to service provider's requirements). If there is SMS traffic, but not enough premium rate traffic (Tieto's share of the revenue) to cover that 20 euro minimum charge, Tieto will charge 20 euro per tariff class, except that the monthly service number fee covers one (1) tariff class. If there is no traffic at all on a tariff class, then Tieto will not charge the 20 euro.

For example, if you have one short number with two tariff classes open on it and no traffic at all on either tariff class. Say the monthly fee is 40 euro, then Tieto will charge you a 40 euro fee. Alternatively, if you have one short number with two tariff classes with enough traffic to leave 10 and 15 euros to Tieto after the revenue share, Tieto will pay out your share of the premium traffic and charge you 40 + 20 euro (40 for the service number fee, and 20 for one of the tariff classes producing under 20 euro. The first tariff class is exempt from the 20 euro fee)

In addition to Tieto fees, service providers pay an annual fee to the Finnish Communications Regulatory Authority per each service number.

1.11 What information will I get from Tieto about my service number and the SMS traffic on it?

Every month, each service provider gets a report from Tieto that details all changes, new configurations, SMS traffic and turnover per service number. Message traffic is presented per tariff class, separating free-to-subscriber and premium rate traffic, detailing messages chargeable from the service provider and failure reasons for undelivered traffic.

2 Technical Questions

2.1 What technical interfaces does Tieto Connection offer for SMS?

Tieto Connection offers access through either CIMD2 or HTTP protocol. CIMD2 is a Nokia specific data exchange protocol for connecting application programs to a short message service centre (SMSC) and offered by several operators as the connectivity interface protocol. CIMD2 specification and related tools can be found at <http://forum.nokia.com>. The HTTP interface offers access through HTTP or HTTPS.

2.2 How do I know what the values are for my username and password?

When you have made an agreement with Tieto, we will let you know your username/password.

2.3 In what format is the MSISDN?

The format used in Tieto Connection is the international format including the + sign.

For example:

+358440441234

+447799123456

2.4 What happens if I submit wrong or missing parameters when sending MT messages? Can I assume that the MT messages are still delivered?

When possible, default values are used for missing parameters as described in interface documentation. If a mandatory value is missing, Tieto Connection issues an error message and the transaction is aborted. This means that no MT messages are accepted for delivery.

2.5 I have posted an MT message and got an acknowledgement statuscode=0 back. Does this mean the message has been successfully delivered?

No, it does not. Getting an acknowledgement back means that your MT message has been successfully accepted for delivery. It still has to go through the operator's SMSC that sends it to a handset. Sending may fail for a number of reasons, the most typical of which are that there is not enough credit on a prepaid handset or the handset is switched off.

The only way to know for sure that a message has been delivered all the way to a handset is to utilise Delivery Service Reports (DSR). Please see Question **Error! Reference source not found.**

2.6 What is a DSR? Why should I use DSRs?

DSRs are status reports that confirm the delivery or a failure of an MT message. DSRs are typically used with MT-billable services when it is important to confirm that the billing has been successful, for example before any content is sent to the subscriber. If the service provider wishes to receive DSRs, they must be explicitly turned on per each MT. When the client application submits an MT to Tieto Connection for delivery, it must request a DSR for that MT message.



Tieto Connection

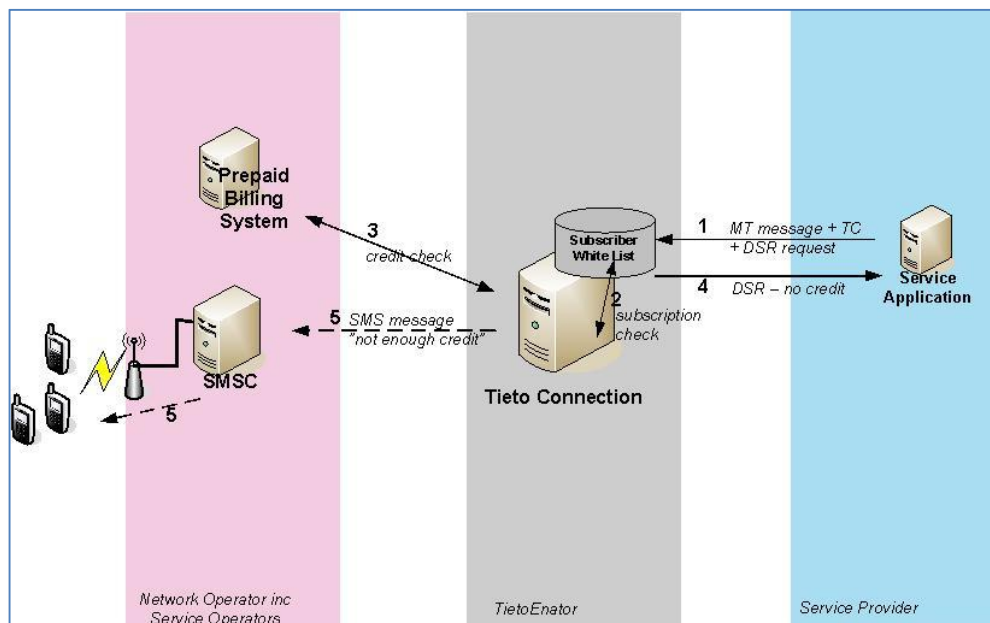
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The service provider's client application can follow the delivery process of MT messages (success or failure) using DSRs. The operator's SMSC returns one or more DSR messages per each MT message if the client application has requested the DSR upon submitting the MT message for delivery. The client application must store the MSISDN and a timestamp used for the MT message in order to match each received DSR with the correct MT message.

How to request a DSR and the possible status values within a DSR message are documented in the Tieto Connection API documents (CIMD2 or HTTP).

Using DSRs is strongly recommended as they provide run-time feedback to the service provider of the billing success rates. DSRs are the only tool available to confirm that the subscriber has been successfully billed. Monthly revenue statements show only a collective total of failures, but DSRs offer a per-message confirmation of successful deliveries. Using DSRs is extremely important for premium-rate services that are offered to prepaid subscribers, as there are no guarantees that there will be enough credit on the prepaid account to receive the premium-rate MT message.

The pictures below show two cases where DSRs are being used. The first presents a situation where a prepaid subscription does not have enough subscription credit on it to receive intended MT message. A DSR - *delivery failed* report is generated and transmitted to the client application.



Prepaid subscription does not have enough credit.

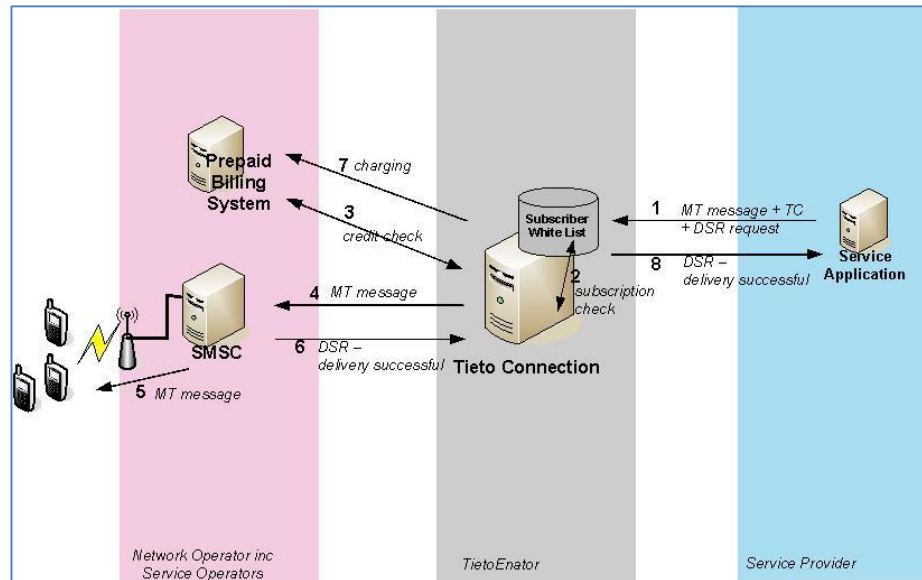
1. Client application submits an MT message and desired tariff class (TC) and a DSR request to Tieto Connection using the selected API
2. Tieto Connection checks the MSISDN subscription type: prepaid or postpaid.
3. If it is a prepaid subscription, Tieto Connection executes a credit query. If there is not enough subscription credit to cover the desired tariff class,
4. Tieto Connection generates a DSR – *no credit* and transmits it to the client application

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- At the same time, Tieto Connection generates a “not enough credit to order the service” text message and sends it to SMSC for delivery to the end-user

In the second example the delivery of the MT message and the charging is successful. A DSR – *delivery successful* is transmitted to the client application.



Successful delivery to a prepaid subscription

- Client application submits an MT message and desired tariff class (TC) and a DSR request to Tieto Connection using the selected API
- Tieto Connection checks the MSISDN subscription type: prepaid or postpaid.
- If it is a prepaid subscription, Tieto Connection executes a credit query. If there is enough subscription credit to cover the desired tariff class,
- Tieto Connection transmits the message to SMSC for delivery to the handset, and deducts the signalled tariff from the subscription
- SMSC delivers the MT message to the handset
- SMSC generates a DSR – *delivery successful* and transmits it to Tieto Connection
- Tieto Connection charges the amount signalled in TC parameter to the subscriber’s prepaid account
- Tieto Connection transmits the DSR to the client application .

2.7 How many MSISDNs can I include when sending a group message? What happens if I send more than Tieto Connection interface accepts?

HTTP Interface: we recommend a maximum of 1000-2000 MSISDNs per one command (one single HTTP POST or GET)

CIMD2 Interface: we recommend a maximum of 10 MSISDN per each submit.

If there are more MSISDN values than the interface can accept, the response will detail which MSISDNs were accepted and which were not.

If required, the maximum values can be adjusted for high-volume campaigns. Please contact us for further information.

2.8 What happens if I send premium-rate messages to subscribers of mobile networks that are not available through Tieto Connection?

If a service provider's client application sends a premium-rate (TC>0) MT message to an MSISDN number that is not a subscriber of any of the operators offered through Tieto Connection, the sending will fail. The client application receives a DSR – if it requested one when submitting the MT message – with value “3-1 Delivery Failed – Unknown Subscriber”. For the time being, the service provider is not charged for sending attempts that lead to the DSR value 3-1. However, we expect service providers to maintain and develop their service in such a manner that attempts leading to DSR 3-1 can be minimised. In push services, the MSISDN status and operator must be checked using the Numpac service prior to sending.

On the other hand, if the client application sends a free-to-subscriber (TC=0) MT message to an MSISDN number that is not a subscriber of any of the operators offered through Tieto Connection, the message will be delivered, a DSR “4-0 Delivery Successful – No Error” will be issued, and the service provider will be charged for the message according to the applicable Tieto Connection tariff.

2.9 I want to send messages to my subscribers and make it look like the message has come from someone else. How can I fake the sender of MT messages?

Finnish Communications Regulatory Authority rules that the sender of every MT message coming from a mobile service must be the registered service number or a valid MSISDN. Although there is a “from” parameter in both of the interfaces, by default, the value must be a service number you have registered for the service. Tieto Connection will not accept any other value.

2.10 Does Tieto Connection do content conversion into binary?

No. If a service provider wants to send binary content, the client application does the encoding and submits binary content to Tieto Connection.

2.11 How do I send a WAP push message?

WAP push message must first be encoded into a binary format and then sent via Tieto Connection as a binary message. The WAP push message format must be as specified in the industry specification by the Open Mobile Alliance (www.openmobilealliance.org). Additional tools and samples can be found in Forum Nokia (<http://forum.nokia.com>)

2.12 Does Tieto Connection support Unicode?

Yes, it does. If an MO message is sent to a service number using a handset that supports Unicode, Tieto Connection will forward the message to client application in Unicode.

For MT traffic, the client application must send the data in Unicode format using a 16-bit character set and set the encoding parameter correctly within the request.



2.13 My applications operate in Java environment. Is there a Java library / toolkit that would make integration to Tieto Connection easier?

Yes, there is. Nokia offers a free Java library for the CIMD2 interface. See <http://forum.nokia.com> for more information.

2.14 If my client application is down or the internet link is broken, what happens to my MO messages? And the DSRs I have requested?

Tieto Connection will retry sending the MO messages and DSRs according to a predefined retry schedule until successful or the validity expires (by default for 7 days). The delivery is first retried every few seconds, expanding to minutes and hours.

It is the service provider's responsibility to ensure the availability of the client application. It is a good policy to implement a monitoring process that sends an alert if the client application is not available.

2.15 How is my service's MT-SMS traffic prioritised?

When submitting MT traffic for delivery, a client application can set the priority of the traffic. For campaigns where time is not a critical factor, a lower priority should be used. It's possible to offer a higher priority for time-critical sends. Please contact vascenter@tieto.com for further information.

