Content Charger
API

Version 3.0

Content Charger

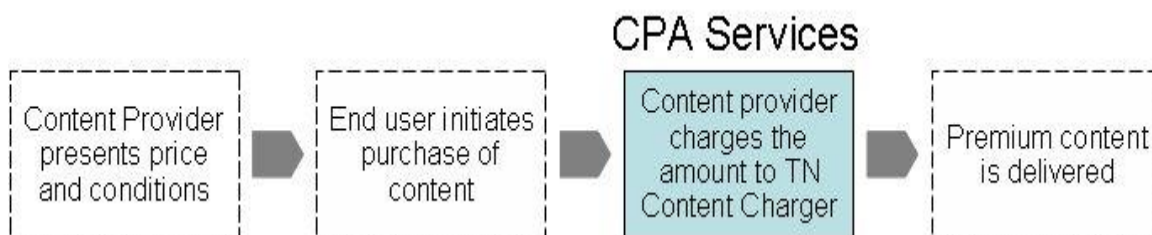# Content Charger

1. General

The Telenor Content Charger is a real-time charging service offered to content providers who wishes to charge end-users for premium content. The service is independent of the carrier over which the premium content is delivered. The content may be delivered over SMS, MMS, WAP, WEB, voice, video or any other available carrier.

The following steps need to be accomplished prior to the launch of the content provider's commercial service,

1. Sign the Content Charger agreement with Telenor.

2. Complete the service details template and send it to Telenor.

3. Integration instructions and integration details are sent from Telenor.

2. Overview

The purchase process is briefly described below,

> *Note!* The content provider is responsible for presenting price and any conditions related to the purchase of the premium content to the end-user. Also, the content provider's implementation must eliminate the risk of multiple charge requests for one single purchase.
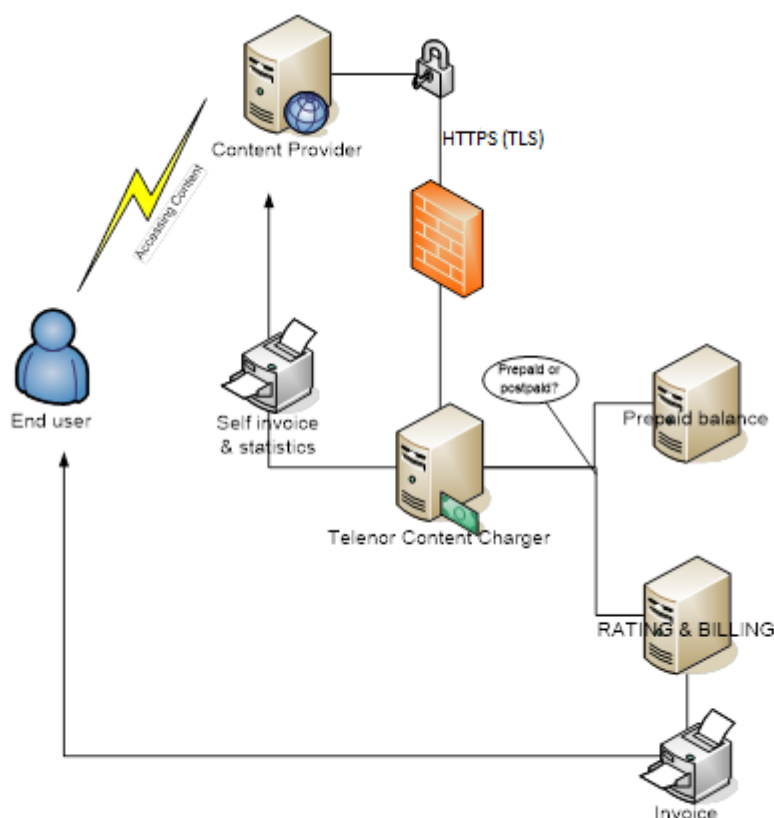
Content Charger

The charge service is available for all subscribers in the Telenor network. The charge service is aimed for micro payments and the content provider sets the price as long as the price does not exceed the maximum limit. The granularity is 0, 01 SEK (one Öre). For details on maximum limit, please see the section 'Limitations in service'.

End-users may be restricted to buy content services, for example if the end-user has a corporate subscription. If such a subscription receives a charge attempt, the Content Charger will respond with the error-code '*not allowed*'.

> *Note!* For details regarding error-codes and error-code categories, pleases refer to chapter 6.4 in this document.

The settlement for revenue and transaction fee is calculated and reported on a monthly basis per content provider or, when applicable, per content aggregator.

The Content Charger uses web-services based on WSDL 1.1 and SOAP 1.1 over TLS and HTTP 1.0. Alternatively REST/JSON.

Content Charger

3.   Services overview

In this section, the requests are described. Each request is preferably in the context of a purchase dialogue presented to the end-user by the content provider. The actual purchase dialogue is omitted in this description.
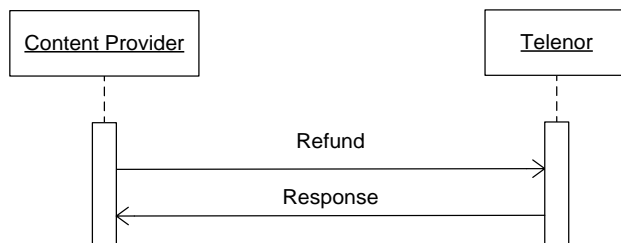
3.1   Charge

The charge request is the easiest way to charge an end-user. The request is followed by a response from the Telenor Content Charger.
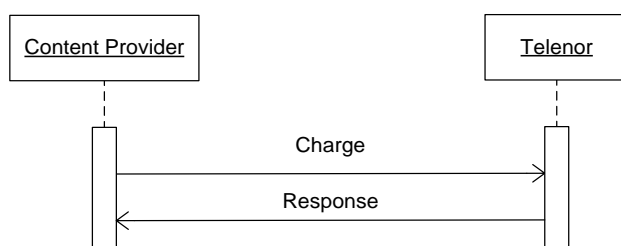
> **Note!** Make sure to save the TransactionID from the response for future references.

3.2   Refund

The refund always refers to one specific charge transaction, using a reference TransactionID and will result in a complete rollback of the charge transaction. When a charge transaction is refunded, revenue and transaction fee will be re-calculated as if the original charge has never occurred. The refund request shall be used when the content provider wishes to rollback a transaction, e.g. in case an end-user has called the content provider claiming the premium content was never delivered and the content provider has agreed to refund the amount. An optional Amount has been added in version 2.3, making it possible to do partial refunds. If an Amount is not given, the refund is assumed to be for the full amount of the original charge transaction. This way we are not breaking existing implementations, since a Refund without Amount will be treated in the same way as before version 2.3.

> **Note!** A refund can be performed up to six months after the charge transaction.

4. Security

The Telenor Content Charger uses TLS (HTTPS) for transport layer encryption.

The ContentProviderID in the API-call will be matched with the provided password in the API-call for validation of the transaction.

The content provider must define a limited list of IP-addresses to be used for the service. The IP-addresses will be granted access through the Telenor firewall.

It is the legal responsibility of the content provider to protect the log-in credentials and prevent unauthorized usage of the content provider's account.

5. Limitations in the service

In the current version of the Content Charger, the content provider needs to respect some limitations. These limitations are listed below.

- The Content Charger has a maximum permissible internal timeout of 10 seconds. If the duration of a transaction exceeds the timeout limit, the Content Charger will automatically refund the charge and return an error code to the content provider. It is recommended that the timeout of any system using the Content Charger should be set to more than 10 seconds.

- The operations reserve, capture and release (defined in the WSDL-definition) are not implemented in this release of the Content Charger.

- Several transaction fields (defined in the WSDL definition) are unused in this version.

- Only ISO/IEC 8859-1 strings are allowed.

- No XML mark-up is permitted in any field.

- The Content Charger service must not be used for operator inquiries.

- The maximum charge amount in an External Content request is set to 50000 (500 SEK).

- For External Content, the maximum total amount which a subscriber (MSISDN) may be charged during a calendar month is 3 000 SEK. Exceeding the amount results in status code 211.

Content Charger

6. Services details

6.1 Charge

6.1.1 The charge service

Name	Type	Size	Mandatory	Description
ContentProviderID	String	1-10	YES	The content provider's ID received from Telenor when the Content Charger agreement has been signed.
Password	String	16-20	YES	Password provided by Telenor.
MerchantID	String	1-10	YES	The MerchantID points out the name and contact details to the content provider's/merchant's customer support. These contact details will be printed on the end-user invoice. When the content provider account is created, the content provider must provide a list of merchants who may supply content to the end-user. Merchant details are: name (20 characters) and contact details (60 characters).
MSISDN	String	11-15	YES	Identifies an end-user. Use international format, e.g. 46708222222.
Product	String	2-20	YES	For the content provider's own convenience. Used for grouping transaction types on the settlement from Telenor.
Amount	Integer	-	NO	The amount including VAT in the selected currency. The unit is 100 times the currency. For example, the end-user price 3 SEK is sent as the amount 300. Amount or ServiceID is mandatory.
ServiceID	Integer	-	NO	The service identifier used by internal Telenor systems to rate a service. For internal use only. Amount or ServiceID is mandatory.
VAT	Integer	-	NO	The VAT-rate for the purchase. The field will be transferred to the end-user's invoice only as information. The unit is 100 times the VAT percentage. For example 6 percent VAT is presented as 600. Default value is 2500, which will be printed as "(25% moms ingår)" on the end-user invoice next to the InvoiceText field.
Currency	String	3	YES	3 character ISO-4217 code for currency. "SEK" is the only value allowed.

Content Charger

Name	Type	Size	Mandatory	Description
RSID	String	1-10	NO	RSID is used for special business agreements. It will be supplied by Telenor if needed.
ClientTransactionID	String	1-50	YES	For the content provider's own convenience and for transaction safety. Transferred from the request to the response in order to help the content provider match a response to a request.
InvoiceText	String	2-40	NO	Description of the purchased item. The field will be transferred to the end-user invoice along with the VAT, merchant name and merchant contact details. The default value is "Förmedlad tjänst".
Quantity	Integer	-	NO	Default 1. Used with Flexible Billing. Max value is 99999.
ArticleID	String	1-40	NO	Example:"BA32455". Used with Flexible Billing.

6.1.2 The charge service response

Name	Type	Size	Mandatory	Description
TransactionID	String	6-15	YES[1]	This is the ID used by Telenor to identify the charge request. Every reference to a single transaction from the content provider must use this ID as reference.
StatusIndicator	Int	-	YES	Indicator of transaction status. Zero (0) indicates success. A complete list of status indicators can be found at the end of this document.
StatusDescription	String	2-60	NO	A text describing the error (if any).
ClientTransactionID	String	1-50	YES	For the content provider's own convenience and for transaction safety. Transferred from the request to the response to help the content provider match a response to a request.

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[1] The value can be empty in case of an internal error.

Content Charger

6.2 Refund

6.2.1 The refund service

Name	Type	Size	Mandatory	Description
ContentProviderID	String	1-10	YES	The content provider's ID received from Telenor when the Content Charger agreement has been signed.
Password	String	16-20	YES	Password provided by Telenor.
ClientTransactionID	String	1-50	YES	For the content provider's own convenience and for transaction safety. Transferred from the request to the response to help the content provider match a response to a request.
ReferenceTransactionID	String	6-15	YES	Identifies the transaction request to be refunded. This is the ID sent by Telenor in the TransactionID field of the charge response.
Amount	Integer	-	NO	The amount including VAT in the selected currency. The unit is 100 times the currency. For example, the end-user price 3 SEK is sent as the amount 300.
Quantity	Integer	-	NO	Default 1. Used with Flexible Billing. Max value is 99999.
ArticleID	String	1-40	NO	Example:"BA32455". Used with Flexible Billing.

6.2.2 The refund service response

Name	Type	Size	Mandatory	Description
TransactionID	String	6-15	YES [2]	This is the ID used by Telenor to identify the refund transaction request.
StatusIndicator	Int	-	YES	Indicator of transaction status. Zero (0) indicates success. A complete list of status indicators can be found at the end of this document.
StatusDescription	String	2-60	NO	A text describing the error (if any).
ClientTransactionID	String	1-50	YES	For the content provider's own convenience and for transaction safety. Transferred from the request to the response to help the content provider match a response to a request.
ReferenceTransactionID	String	6-15	YES [2]	Identifies the transaction request to be refunded. Copied from the ReferenceTransactionID field of the refund request.

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[2] The value may be empty in case of an internal error.

Content Charger

6.3 Examples

Some examples of SOAP-requests and responses are illustrated below.

```xml
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:con="http://charging.telenor.se/ContentCharger/">
    <soapenv:Header/>
    <soapenv:Body>
        <con:ChargeRequest>
            <ContentProviderID>CP12345</ContentProviderID>
            <Password>secret1234567890</Password>
            <MerchantID>M12304</MerchantID>
            <MSISDN>46708123456</MSISDN>
            <Product>Star Wars Game</Product>
            <Amount>3050</Amount>
            <VAT>600</VAT>
            <Currency>SEK</Currency>
            <ClientTransactionID>12233</ClientTransactionID>
            <InvoiceText>Star Wars Game for Sony Ericsson W880i</InvoiceText>
        </con:ChargeRequest>
    </soapenv:Body>
</soapenv:Envelope>
```

Example 1: Charge request

```xml
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
    <soapenv:Header/>
    <soapenv:Body>
        <ns1:ChargeResponse
                xmlns:ns1="http://charging.telenor.se/ContentCharger/">
            <TransactionID>CC1-12034534</TransactionID>
            <StatusIndicator>0</StatusIndicator>
            <ClientTransactionID>12233</ClientTransactionID>
        </ns1:ChargeResponse>
    </soapenv:Body>
</soapenv:Envelope>
```

Example 2: Successful charge response

Content Charger

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
    <soapenv:Header/>
    <soapenv:Body>
        <ns1:ChargeResponse
                    xmlns:ns1="http://charging.telenor.se/ContentCharger/">
            <StatusIndicator>201</StatusIndicator>
            <StatusDescription>The end-user is barred.</StatusDescription>
            <ClientTransactionID>12233</ClientTransactionID>
        </ns1:ChargeResponse>
    </soapenv:Body>
</soapenv:Envelope>
```

Example 3: Failed charge response

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:con="http://charging.telenor.se/ContentCharger/">
    <soapenv:Header/>
    <soapenv:Body>
        <con:RefundRequest>
            <ContentProviderID>CP1</ContentProviderID>
            <Password>secret1234567890</Password>
            <ClientTransactionID>12234</ClientTransactionID>
            <ReferenceTransactionID>CC1-12034534</ReferenceTransactionID>
        </con:RefundRequest>
    </soapenv:Body>
</soapenv:Envelope>
```

Example 4: Refund request

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
    <soapenv:Header/>
    <soapenv:Body>
        <ns1:RefundResponse
                    xmlns:ns1="http://charging.telenor.se/ContentCharger/">
            <TransactionID>CC1-12034535</TransactionID>
            <StatusIndicator>0</StatusIndicator>
            <ClientTransactionID>12234</ClientTransactionID>
        </ns1:RefundResponse>
    </soapenv:Body>
</soapenv:Envelope>
```

Example 5: Successful refund response

Content Charger

6.4 Flexible Billing

Flexible Billing (FB) is an alternative way of billing Telenor MSISDNs, used for Telenor Internal content only. Same URLs are used for Charge and Refund, but we add two optional parameters to use with FB.

Article/service price and description will be owned by Telenor. When partner execute FB, they supply ArticleID for the billed article and quantity. The description and price itself are held by Telenor and price can be dependent of a customer unique priceplan, or a general base price.

For FB transactions the amount should be Telenor purchase price ("Inköpspris").

Refunds of purchases where Quantity was larger than 1 can only be made in whole Quantity items. Example: Purchase was for 5 items, refund can then either be full (all items) or partial (3 of 5 items). It is not possible to refund fractional items, like 1,3 items.

Maximum quantity is 99999.

A Telenor partner who wants to start using FB needs to provide Telenor with a list of ArticleIDs and corresponding invoice texts well in advance.

Content Charger

7. Status codes

Status codes are divided into the following four categories:

- *API-errors* – Errors related to invalid data in the request, such as value out of range, invalid value etc. The transaction should not be resent.

- *End-user based errors* – Errors related to the end-user, for example if the end-user is not allowed to buy content or the end-user is barred. The transaction should not be resent.

- *Temporary internal errors* – Temporary internal errors, for example if the system is in a start-up phase or have errors in communication with internal systems on the Telenor side. Transactions can normally be resent within 1-2 minutes.

- *Other internal errors* – Internal system errors. When receiving these status codes, please contact Telenor technical support for further details and assistance. Retries might help after 1-2 hours.

The following status codes apply:

Status Code	Description
0	Transaction completed successfully.
100-199 API Errors	
100	Invalid MSISDN.
101	Invalid content provider ID.
102	Content provider not active.
103	Invalid password.
104	Invalid merchant ID.
105	Invalid UCI.
106	Unrecognised UCI.
107	Invalid reference transaction ID.
108	Invalid product group.
109	Invalid product.
110	Invalid sub product.
111	Invalid amount.
112	Invalid VAT.
113	Invalid currency.
114	Invalid invoice text.
115	Invalid client transaction ID.
116	Invalid revenue share ID.
117	Invalid content provider statistical ID
118	Invalid reservation time.
119	Missing mandatory parameter.
120	Transaction already refunded.
121	Not allowed to refund transaction. Belongs to another content provider.
122	Illegal operation. Content provider administrator can only do refunds.
123	Client Transaction ID is ongoing or has already been used. It cannot be reused within the next 5 to 10 minutes to avoid double charge of an end-user.
124	Invalid transaction fee ID in the RSID field.

Content Charger

125	Invalid amount. The charge amount should be less than the configured maximum amount.
126	Invalid amount. The charge amount should be more than the configured minimum amount.
127	Invalid service id.
128	Bad transactionfee type
129	The amount exceeds the refundable amount
130	Invalid SOAP action.
131	Invalid article ID.
132	Quantity can be between 1 and 99999.
133	Not compatible for flexible billing.
134	Partial refund using amount is not allowed for the content purchased using article id.
135	A refund transaction cannot have both the amount and the quantity.
136	Quantity is not allowed in this transaction.
137	Amount is not allowed in this transaction.
200-299 End-user errors	
200	The end-user does not exist.
201	The end-user is barred.
202	The end-user belongs to a mobile virtual network operator which does not allow charge.
203	The end-user is not allowed to purchase premium services.
204	The end-user has not sufficient funds.
206	The end-user is barred from using the specific service.
207	The end-user needs to be registered by Telenor Sweden to buy this content.
208	The end-user is not allowed to buy this content due to Swedish law.
209	The end-user has not completed registration, which means purchase is blocked
210	Mandatory customer data missing in operators backend systems
211	The end-user has reached the purchase limit for the current invoice month.
212	Customer has reached Vimlas amount limit
213	This content is not allowed for the customers network operator

Content Charger

300- 399 Temporary internal errors	
300	Communication error with internal Telenor systems.
301	Communication error with internal Telenor systems.
302	Communication error with internal Telenor systems.
303	Communication timeout with internal Telenor systems. Please retry again in a few minutes
304	Communication timeout with internal Telenor systems. Please retry again in a few minutes
330	Limited access to network resource. Please retry the transaction. Retries can normally be performed directly.
331	A transaction is already occurring for this customer. Please retry the transaction.
332	Shutdown/restart of the application is in progress. Please retry the transaction later.
333	Internal communication delay. Please retry the transaction.
356	Prepaid system generated an error. Please retry the transaction.
357	Not in use.
360	Communication error with Telenor Internal system TOR
361	Communication error with with Telenor Internal system SPD
362	Bad transactionfee type in with Telenor Internal system PRISA

400-499 Other internal errors	
400-409	Internal system error. Please note the status code and contact technical support.
499	Fatal system error. Please note the status code and contact technical support.

Content Charger

8. Telenor Content Charger REST API

8.1 Example Charge Request

```
POST https://charging.telenor.se/content/charge
{
  "contentProviderId": "CP12345",
  "password": "secret1234567890",
  "merchantId": "M12304",
  "msisdn": "46708123456",
  "product": "Star Wars Game",
  "amount": "3050",
  "vat": "600",
  "currency": "SEK",
  "rsid": "ABC1",
  "clientTransactionId": "CLIENTTX-12233",
  "invoiceText": "Star Wars Game for Sony Ericsson W880i"
}

Successful Response:  200 OK
{
  "transactionId": "CC1-12034534",
  "statusIndicator": "0",
  "statusDescription": "Charge OK",
  "clientTransactionId": " CLIENTTX-12233"
}

Failed Response: 200 OK
{
  "transactionId": "CC1-12034534",
  "statusIndicator": "201",
  "statusDescription": "The end-user is barred.",
  "clientTransactionId": " CLIENTTX-12233"
}
```

Content Charger

8.2   Example Charge Request with flexible billing

```
POST https://charging.telenor.se/content/charge
{
  "contentProviderId": "CP12345",
  "password": "secret1234567890",
  "merchantId": "M12304",
  "msisdn": "46708123456",
  "product": "Star Wars Game",
  "amount": "3050",
  "vat": "600",
  "currency": "SEK",
  "rsid": "ABC1",
  "clientTransactionId": "CLIENTTX-12233",
  "invoiceText": "Star Wars Game for Sony Ericsson W880i",
  "quantity": "5",
  "articleId": "ART001"
}

Successful Response:  200 OK
{
  "transactionId": "CC1-12034535",
  "statusIndicator": "0",
  "statusDescription": "Charge OK",
  "clientTransactionId": " CLIENTTX-12233"
}

Failed Response: 200 OK
{
  "transactionId": "CC1-12034535",
  "statusIndicator": "131",
  "statusDescription": "Invalid article ID.",
  "clientTransactionId": " CLIENTTX-12233"
}
```

Content Charger

8.3 Example Refund Request

```
        POST https://charging.telenor.se/content/refund
        {
          "contentProviderId": "CP12345",
          "password": "secret1234567890",
          "clientTransactionId": " CLIENTTX-12234",
          "referenceTransactionId": "CLIENTTX-12233",
          "amount": "1550"
        }

        Successful Response:  200 OK
        {
          "transactionId": "CC1-12034536",
          "statusIndicator": "0",
          "statusDescription": "Refund OK",
          "clientTransactionId": " CLIENTTX-12234"
        }

        Failed Response: 200 OK
        {
          "transactionId": "CC1-12034536",
          "statusIndicator": "120",
          "statusDescription": "Transaction already refunded.",
          "clientTransactionId": " CLIENTTX-12234"
        }
```

If the amount is not sent in the request, then the whole charge amount will be refunded.

Content Charger

8.4   Example Refund Request for flexible billing

```
POST https://charging.telenor.se/content/refund
{
  "contentProviderId": "CP12345",
  "password": "secret1234567890",
  "clientTransactionId": " CLIENTTX-12234",
  "referenceTransactionId": "CLIENTTX-12233",
  "quantity": "3"
}

Successful Response:  200 OK
{
  "transactionId": "CC1-12034537",
  "statusIndicator": "0",
  "statusDescription": "Refund OK",
  "clientTransactionId": " CLIENTTX-12234"
}

Failed Response: 200 OK
{
  "transactionId": "CC1-12034537",
  "statusIndicator": "120",
  "statusDescription": "Transaction already refunded.",
  "clientTransactionId": " CLIENTTX-12234"
}
```

If the quantity is not sent in the request, then the amount for all the quantities will be refunded.

Content Charger

9.   Change history

API ver.	Doc.ver	Changes
Version 1.0	A	First release.
Version 2.0	B	Removed limitation of 10 requests per minute. Merchant ID no longer identifies the invoice text of a purchased item. Instead the field InvoiceText will be printed on the end-user invoice together with the VAT-rate, merchant name and contact details. VAT is no longer mandatory in the API. The agreement will specify how VAT is handled between Telenor and the Content Provider. A transaction fee is calculated for every charge request.
Version 2.0	C	The description of Status Code 123 has been changed. Addition of Status Codes 124-126. The description of the RSID-field has been changed. 10 seconds timeout added in section 5 Limitation.
Version 2.1	D	ServiceID parameter added to the charge request. Addition of status code 127 and 356.
Version 2.2	E	Addition of status code 206, 207, 208 and 209 (End-user errors).
Version 2.3	F	Added an optional Amount to the Refund transaction, see 3.2 and 6.2.1.
Version 2.3	G	Added missing error codes (128, 129, 360,361,362)
Version 2.4	H	Updated with new error codes for Vimla (212), SPs blocked from certain content (213) and Amount limit (211, according to Swedish Financial Supervisory Authority). Also a new code (210) pointing at incomplete customer data on Telenors side, which makes it impossible to process the transaction. Expect this error to be rare.
Version 2.5	I	Added error codes 357 and 407-409. 357 indicates that the amount is higher than supported for prepaids, currently 327:50 SEK is the limit. 407-409 are internal error conditions, please get in touch with Telenor support if they appear frequently (like more than 1-2 times per day). Normally they should not occur at all.
Version 2.6	J	The limitation for prepaid subscribers, described in version 2.5 has been removed. Changed "The maximum charge amount in a request": from 200 to 500 SEK in section 5. Added the calendar monthly 3 000 SEK per MSISDN limit to section 5.
Version 3.0	K	Changed SSL to TLS. Corrected the number of months that refund is possible (six months). Added Error Codes 130 – 137. Added section 8 with the new REST/JSON-interface, which is supported in parallel to the existing SOAP/WSDL-interface. Minor update to the figure in section 2. Added section 6.4 for Flexible Billing. Clarified the amount limits in section 5.