

# Specification of technical cooperation between the Parties

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## 1. Changes history

Version	Date	Author	Comment
2.0	01.06.2013	SOYUZTELECOM	Forming the document.
2.1	04.02.2014	Boyasov I. S.	Adding paragraph 4.6.
2.3	26.05.2014	Tsymbal A. Yu.	Adding parameter SP to paragraph 4.3.1
2.4	01.08.2014	Tsymbal A. Yu.	Deleting par. 4.6. Changes in par. 4.4.
2.5	09.04.2015	Tsymbal A. Yu.	Adding error codes description in par. 3.3.2. Changes in par.3.1 and par. 3.2.
2.5.1	21.04.2015	Boyasov I. S.	List of error codes in par. 3.3.2 was updated. Adding description of parameters of infoexchange.
2.5.2	30.03.2015	Tsymbal A. Yu.	Adding paragraph 7.
2.5.3	12.10.2017	Boyasov I. S.	Deleting obsolete parameter "confirm" from par. 3.3.1 and par. 3.3.2.
2.5.4	05.02.2018	Tsymbal A. Yu.	Update error codes.

## 2. Introduction

This document describes the information exchange between commercial & service enterprise (Principal, Merchant) and Soyuztelecom (Agent, ST), while users making payments in favor of Merchant:

- making payments via mobile phone account;
- making payments via cash retailers.

## 3. Receiving payments from the mobile phone accounts

Initiation method and variant of information exchange can be chosen independently during the negotiations between ST and Merchant. The choice depends on the conditions and methods of payment receive from the mobile phones accounts.

### 3.1. Payment initiation

The following methods of payment initiation are available:

- the subscriber sends SMS to ST shortphone number;
  - format of SMS and shortphone is subject to discuss during setting up the connection.
- http-request to ST system from Merchant.

#### Http-request to ST system from Merchant

The Merchant is to send the following parameters:

Parameter	Description	Limits
orderId	Unique transaction ID at the Merchant platform. Allows to correctly handle duplicate requests from the Merchant to the System.	String, maximum length 32 chars.
goodPhone	Merchant ID in the Operator's system. Is assigned during setting up the connection.	Integer, maximum length 20 chars.
ctn	Mobile phone number of the Buyer, the payment to be made from. For example, 79031234567.	Integer, length is exact 11 digits.
smsText	The format of the parameter is discussed during setting up the connection.	String, maximum length 255 chars.
dt	Date and time of payment in the format of yyyyMMddhhmmss. Moscow time.	Integer, length is exact 14 digits.
control	MD5-hash (orderId+goodPhone+ctn+smsText+dt+secret), where «+» is a sign of concatenation, secret is a secret set of characters provided to Merchant, other parameters are described above in the table.	

The System checks the request for safety (see par.5.3).

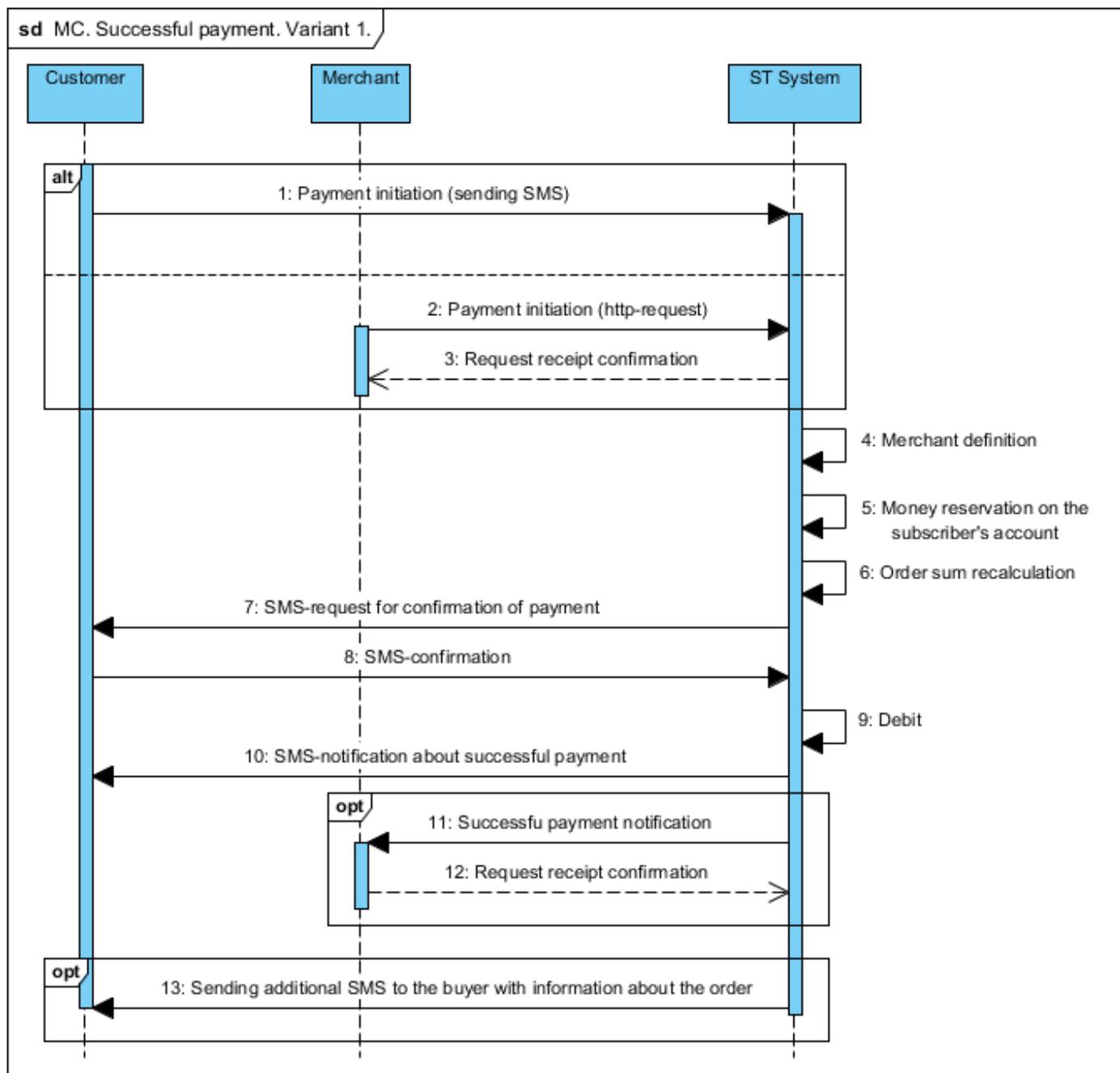
In case of safety verifying failure the System is to send HTTP Status 404 in response to Merchant's order.

In other cases ST System is forming an answer (response) in XML format, UTF-8 encoded (Content-type: text/plain):

```
<?xml version="1.0" encoding="UTF-8"?>
<response>
  <result>result</result>
  <descr>description</descr>
  <id>id</id>
</response>
```

Parameter	Description	Required parameter
result	Error code result (0 – successful initiation, error – in any other case)	*
descr	An optional description of the returned result.	
id	A unique identifier of the payment in the ST System.	Is required if result=0

### 3.2. Variant 1 of information exchange



Parameters of the request for successful payment notification:

Parameter	Description	Limits
id	Internal payment ID in the ST System.	Integer, maximum length 20 chars.
phone	Mobile phone number of the Buyer, the payment to be made from. For example, 79031234567.	Integer, length is exact 11 digits.
order	[order number], if it is not specified, then it is substituted with internal payment identifier in the ST System.	String, maximum length 32 chars.
sum	[order sum], decimal separator «point» or «comma» or absent (for integers).	Fractional, numbers of digits in fraction 0, 1, 2.
datetime	Date and time of payment in the following format: yyyyMMddhhmmss. For example: 20100701125243 – it means July 1, 2010 12:52:43. Moscow time.	Integer, length is exact 14 digits.

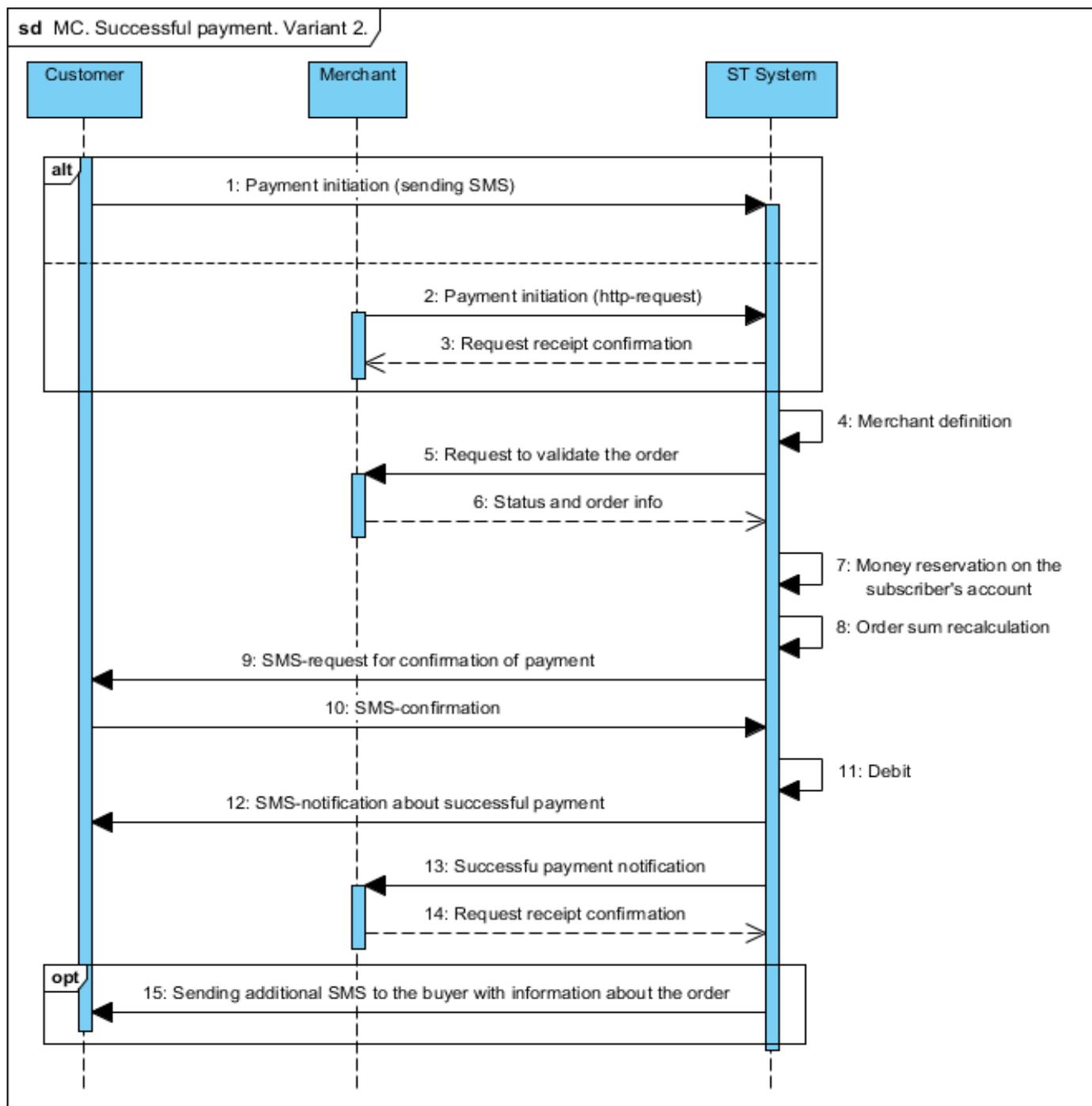
shortphone	Merchant ID in the Operator's system. Is assigned during setting up the connection. String no longer than 20 characters.	Integer, maximum length 20 chars.
source	Name of operator of cellular communication.	String, maximum length 20 chars.
control	MD5-hash (id+secret+phone+order+sum+datetime), where «+» – is a sign of concatenation, secret – is a secret set of characters provided by Merchant, the other parameters are described above in the table.	

In response to HTTP-request Merchant is to form an answer (response) in XML format, UTF-8 encoded (Content-type: text/plain):

```
<?xml version="1.0" encoding="UTF-8"?>
<response>
  <result>result</result>
  <descr>description</descr>
</response>
```

Parameter	Description	Required parameter
result	Can assume the following values: <b>0</b> – the request is successfully accepted and processed by Merchant, <b>1</b> – temporary error during processing of the request (you should send the request later), <b>2</b> – permanent error during processing of the request (for example, invalid request parameters).	*
descr	Description of the error during processing of the request.	

### 3.3. Variant 2 of information exchange



#### 3.3.1. Request to validate the order

Parameter	Description	Limits
id	Internal payment ID in the ST System.	Integer, maximum length 20 chars.
phone	Mobile phone number of the Buyer, the payment is to be made from, for example, 79031234567.	Integer, length is exact 11 digits.
datetime	Date and time of payment in the following format: yyyyMMddhhmmss. For example: 20100701125243 – it means July 1, 2010 12:52:43. Moscow time.	Integer, length is exact 14 digits.
shortphone	Merchant ID in the Operator's system. Is assigned during setting up the connection. String no longer than 20 characters.	Integer, maximum length 20 chars.

msgbody	The format of the parameter is discussed during setting up the connection.	String, maximum length 255 chars.
control	MD5-hash (id+phone+datetime+shortphone+msgbody+secret), where «+» – is a sign of concatenation, secret – is a secret set of characters provided by Merchant, the other parameters are described above in the table.	*
cmd	(command) – can assume the following values: check – is a request to check the order, status – is sending of payment status. All values are case-insensitive. For the described request <b>cmd = check</b>	*

In response to HTTP-request Merchant is to form an answer (response) in XML format, UTF-8 encoded (Content-type: text/plain):

```
<?xml version="1.0" encoding="UTF-8"?>
<response>
  <result>result</result>
  <info>order_info</info>
  <sum>sum</sum>
  <order>order</order>
  <answer>ans</answer>
  <descr>description</descr>
</response>
```

Parameter	Description	Required parameter
result	The result of checking order can assume the following values: <b>0</b> – correct order, <b>1</b> – temporary error during processing of the request (you should send the request later), <b>2</b> – permanent error during processing of the request (for example, invalid request parameters, another request with the same parameters is guaranteed to have an error)	*
info	If result = 0, it may contain a description of purchased goods in the genitive, which is to be sent to the Buyer in the service messages, such as in SMS request for payment confirmation. If result is not 0, it may contain the error description.	
sum	The amount in rubles, to be debited from the Buyer's account (it is a number of no more than two digits in the fractional part, the fractional part separated by a «dot» or «comma»).	Is required if result = 0
order*	A unique identifier of the payment at the platform of Merchant. It is used for reconciliation. If Merchant has no such identifier, you can use id, which was transferred by the ST System (equivalent as not to transfer this tag).	
answer	SMS text for sending to the Buyer. If result = 0, then the response can contain the text, which will be send to the Buyer during the successful purchase, if the result is not 0, it can contain the error text.	
descr	Optional field, Merchant may indicate here any information if necessary.	

\* If Merchant is the Aggregator, then the parameter order should look like as follows: *code:order2*. where *code* – is the unique identifier of the marketplace on the platform of the Aggregator, payment was made from, *order2* – its meaning is same as described above parameter order for ordinary Merchant.

By default, when sending SMS reply to the Buyer by the System the settings info and answer are ignored. To activate them it is necessary to inform about it during the connection setup to the System.

### 3.3.2. Order payment status notification

Parameter	Description	Limits
id	Internal payment ID in the System. It coincides with the id, transferred earlier to the request of checking order.	Integer, maximum length 20 chars.
phone	Mobile phone number of the Buyer, the payment is to be made from. For example, 79031234567.	Integer, length is exact 11 digits.
result	Payment status: 0 – successful payment, any value differs from 0 –error code.	Integer, maximum length 20 chars.
control	MD5-hash (id+phone+result+secret), where «+» is a sign of concatenation, secret is a secret set of characters provided by Merchant, id, phone and result are described above in the table.	
cmd	(command) – can assume the following values: check – is a request to check the order, status – is sending of payment status. All values are case-insensitive. For the described request <b>cmd = status</b>	

In response to HTTP-request Merchant is to form an answer (response) in XML format, UTF-8 encoded (Content-type: text/plain):

```
<?xml version="1.0" encoding="UTF-8"?>
<response>
  <result>result</result>
  <descr>description</descr>
</response>
```

Parameter	Description	Required parameter
result	The result of checking order can assume the following values: <b>0</b> – the request is successfully accepted and processed by Merchant, <b>1</b> – temporary error during processing of the request (you should send the request later), <b>2</b> – permanent error during processing of the request (for example, invalid request parameters).	*
descr	Description of the error during processing of the request.	

**Error Code List:**

<b>Error code</b>	<b>Error description</b>
0	Payment Successful
1	Insufficient funds for payment
2	The Subscriber hasn't confirmed the transaction
3	Explicit Subscriber's refusal of purchase
4	The order hasn't passed the check by merchant
5	Payment limits are not satisfied
6	Other errors
8	Wrong Subscriber's phone number
9	Payment declined by the operator without reporting reasons for rejection
10	The Subscriber hasn't passed the mobile operator identification
11	There are uncompleted transactions with this Subscriber
12	Payment amount exceeds the maximum
13	Payment amount is below the minimum

## 4. Accepting retail payments

### 4.1. Terms and definitions

**Retailers** – retail outlets, that receives cash payments in favor of merchants using the procedure of information exchange listed below.

<b>Account</b> – the user account in the merchant's system that assume making multiple payments with arbitrary amounts.	<b>Reusable code</b> – a unique identifier, generated by the system by user request, for using as an account for specific Merchant.
<b>Order</b> – a unique order identifier in the merchant's system that assume a one-time payment with the exact amount of payment.	<b>Disposable code</b> – a unique identifier, generated by the system by user request, for using as an order for specific Merchant.

### 4.2. Variants of connection by the type of payment initiation

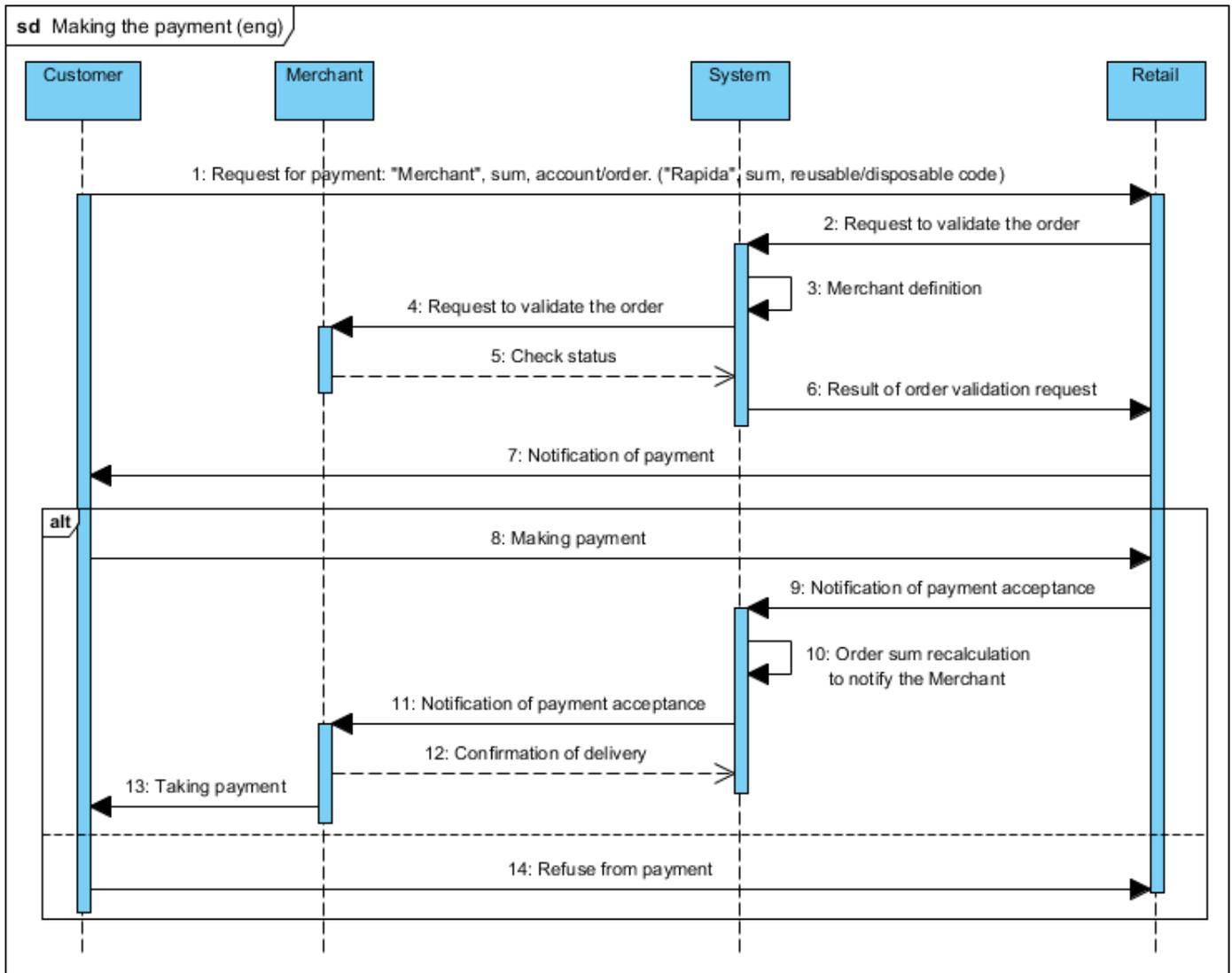
The process of payment consists of three steps:

1. Creating of a disposable or a reusable code. (optional)
  - 1.1. Request for code via WEB-initiation or via SMS-initiation.
2. Receiving the code via infoexchange protocol.
3. Making payment. (mandatory)
  - 3.1. Request to validate the order;
  - 3.2. Payment reception notification.

Variants of connection:

- Initiation at retail –«Making payment» step only.
- WEB-initiation on Merchant site – all steps.
- SMS-initiation – all steps.

### 4.3. Making the payment, the order of information exchange



#### 4.3.1. Request to validate the order

Upon the receiving of a request for payment from the retail, ST System calls on Merchant http-interface to check the order and to receive the necessary information to make a payment.

ST System sends the following parameters in a request:

Parameter	Description	Limits
id	Internal payment ID in the ST System.	Integer, maximum length 20 chars.
phone	The number of account/order in the Merchant system. The phone parameter is formed by adding number 7 in the beginning to the account/order number.	String, maximum length 20 chars.
datetime	Date and time of payment in the following format: yyyyMMddhhmmss. For example: 20100701125243 – it means July 1, 2010 12:52:43. Moscow time.	Integer, length is exact 14 digits.
shortphone	Merchant ID in the Operator's system. Is assigned during setting up the connection. String no longer than 20 characters.	Integer, maximum length 20 chars.
msgbody	Text in the format <i>[Merchant's code]&lt;space&gt;[account/order number]&lt;space&gt;[sum].</i> Parameter <i>[sum]</i> is optional. Merchant's code – identifier of the Merchant in the ST System. Assigned during setting up the connection.	String, maximum length 255 chars.

sp	The source identifier. A string length of to 20 characters.	String, maximum length 20 chars.
control	MD5-hash (id+phone+datetime+shortphone+msgbody+secret) where «+» is a sign of concatenation, secret is a secret set of characters provided by Merchant, the other parameters are described above in the table. In the example secret = test.	
cmd	(command) – can assume the following values: <ul style="list-style-type: none"> <li>• check – is a request to check the order,</li> <li>• status – is sending of payment status</li> </ul> All values are case-insensitive. For the described request <b>cmd = check</b>	

In response to HTTP-request Merchant is to form an answer (response) in XML format, UTF-8 encoded (Content-type: text/plain):

```
<?xml version="1.0" encoding="UTF-8"?>
<response>
  <result>result</result>
  <sum>sum</sum>
  <order>order</order>
  <descr>description</descr>
</response>
```

Parameter	Description	Required parameter
result	The result of checking order can assume the following values: <b>0</b> – correct order, <b>1</b> – temporary error during processing of the request (you should send the request later), <b>2</b> – permanent error during processing of the request (for example, invalid request parameters, another request with the same parameters is guaranteed to have an error).	*
sum	The amount in rubles, to be debited from the Buyer's account (it is a number of no more than two digits in the fractional part, the fractional part separated by a «dot» or «comma» Must be equal to the sum, received from the ST System in msgbody parameter.	Is required if result = 0
order*	A unique identifier of the payment at the platform of Merchant. It is used for reconciliation. If Merchant has no such identifier, you can use id, which was transferred by the ST System (equivalent as not to transfer this tag).	
descr	Optional field, Merchant may indicate here any information if necessary.	

#### 4.3.2. Payment status Merchant notification

Status of payment is to be sent to Merchant in case of successful payment and in case of any errors after successful checking the order.

ST System sends the following parameters in a request:

Parameter	Description	Limits
id	Internal payment ID in the System. It is coincides with the id, transferred earlier to the request of checking order.	Integer, maximum length 20 chars.
phone	The number of account/order in the Merchant system. The phone parameter is formed by adding number 7 in the beginning to the account/order number.	String, maximum length 20 chars.
result	Payment status: 0 – successful payment, any value differs from 0 – error code.	Integer, maximum length 20 chars.

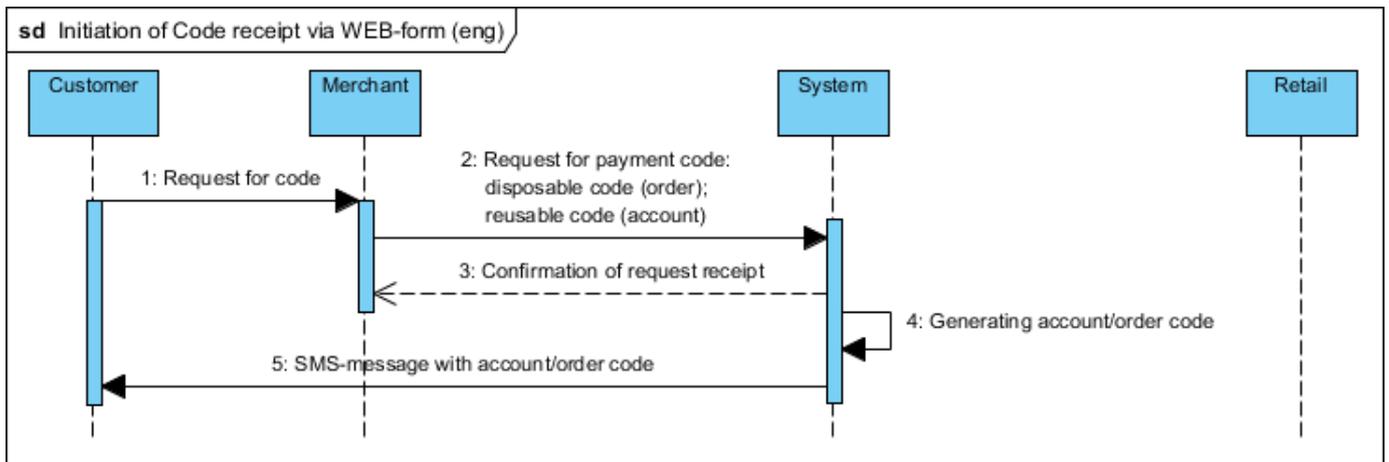
datetime	Date and time of payment in the following format: yyyyMMddhhmmss. For example: 20100701125243 – it means July 1, 2010 12:52:43. Moscow time.	Integer, maximum length 14 chars.
control	MD5-hash (id+phone+result+secret), where «+» is a sign of concatenation, secret is a secret set of characters provided by Merchant, id, phone and result are described above in the table.	
cmd	(command) – can assume the following values: <ul style="list-style-type: none"> <li>• check – is a request to check the order,</li> <li>• status – is sending of payment status.</li> </ul> All values are case-insensitive. For the described request <b>cmd = status</b>	

In response to HTTP-request Merchant is to form an answer (response) in XML format, UTF-8 encoded (Content-type: text/plain):

```
<?xml version="1.0" encoding="UTF-8"?>
<response>
  <result>result</result>
  <descr>description</descr>
</response>
```

Parameter	Description	Required parameter
result	The result of checking order can assume the following values: <b>0</b> – the request is successfully accepted and processed by Merchant, <b>1</b> – temporary error during processing of the request (you should send the request later), <b>2</b> – permanent error during processing of the request (for example, invalid request parameters, another request with the same parameters is guaranteed to have an error)	*
descr	Description of the error during request processing	

#### 4.4. Initiation of Code receipt via WEB-form



The user is to fill in special web-form (located on Merchant’s website) where he/she must indicate the mobile number to be debited and optionally sum to be debited. After receiving form’s information from the user, Merchant is to send information in a specific format to the system (possibly with the addition of other payment parameters).

Requests are to be made by POST method. The Merchant is to send the following parameters:

Parameter	Description	Limits
order	Unique transaction ID at the Merchant platform. Allows to correctly handle duplicate requests from the Merchant to the System.	String, maximum length 20 chars.
shortphone	Merchant ID in the Operator's system. Is assigned during setting up the connection. String no longer than 20 characters.	Integer, maximum length 20 chars.
phone	Mobile phone number of the Buyer. For example, 79031234567	Integer, length is exact 11 digits.
msgbody	Text in the format <i>[Merchant's code]&lt;space&gt;[account/order number]&lt;space&gt;[sum].</i> Merchant's code – identifier of the Merchant in the System. Assigned during the setting up the connection.  Parameter [sum] is optional. If it exists, it indicates to the creation of a disposable payment code, if it doesn't – for reusable payment code.	String, maximum length 255 chars.
datetime	Date and time of payment in the format of yyyyMMddhhmmss. Moscow time	Integer, length is exact 14 digits.
mode	sync	
control	MD5-hash (order+shortphone+phone+msgbody+datetime+secret), where «+» is a sign of concatenation, secret is a secret set of characters provided by Merchant, the other parameters are described above in the table.	

The System checks the request for safety (see par.5.3).

In case of safety verifying failure the System is to send HTTP Status 404 in response to Merchant's order.

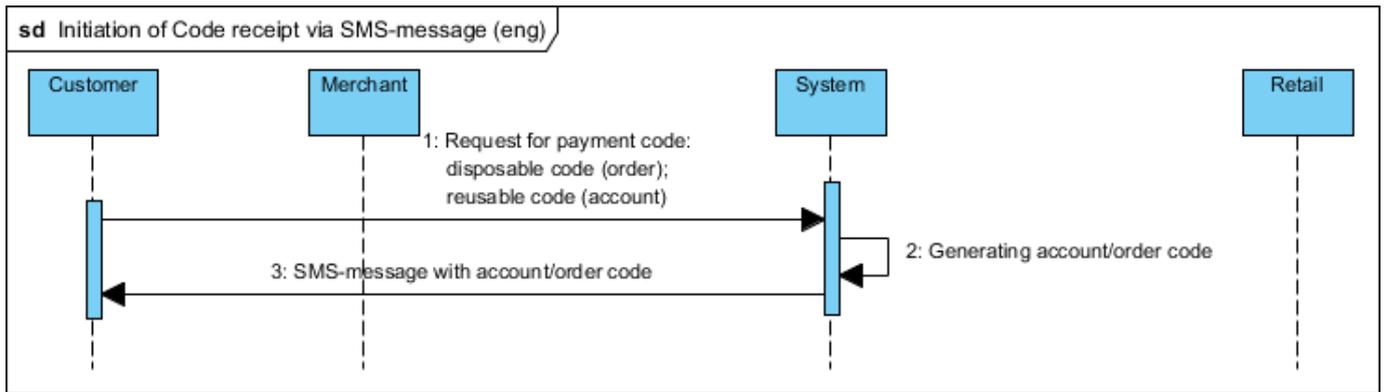
In other cases ST System is forming an answer (response) in XML format, UTF-8 encoded (Content-type: text/plain):

```
<?xml version="1.0" encoding="UTF-8"?>
<response>
  <result>result</result>
  <descr>description</descr>
  <id>id</id>
  <tid>tid</tid>
</response>
```

Parameter	Description	Required parameter
result	Error code result (0 – successful initiation, error – in any other case)	*
descr	Description of the response	
id	A unique identifier of the payment in the ST System. <i>This identifier is only a confirmation of the successful acceptance of the request for issuance of the code and has no connection with further payment identifiers.</i>	Is required if result=0
tid	The code.	Is required if result=0

Further process follows the diagram in section 4.3. Making the payment.

## 4.5. Initiation of Code receipt via SMS-message



The Buyer is to send SMS to the special short telephone number in the format like:<Merchant's code><space><account/order number><space><sum>, where

- Merchant's code – identifier of the Merchant in the System. Assigned during the setting up the connection.
- Account/order number – identifier of an existing in the Merchant's system user order/account.
- Sum – optional parameter. If it exists a new disposal code is created, if it doesn't – reusable code is created.

After successful receipt of "Request for payment code" System generates a payment code and sends it to Merchant in accordance with par.4.6.

**Further process follows the diagram in section 4.3. Making the payment.**

## 5. ST System settings

### 5.1. The logic of repeated http-requests of the System

If Merchant's API returns result equal to 1, or HTTP Status Code other than the 200, or incorrect response format (incorrect XML), ST system implements repeated request to the TSP API in accordance with the rules given below.

The logic of repeated requests to http-interface of Merchant that implemented in the System:

- The System is to make no more than httpRetry attempts to send a request to Merchant.
- Upon every attempt the interval between retries is to be increased exponentially, the initial value of the interval is to be specified by the parameter httpRetryInterval, the base of the exponential function is to be specified by httpRetryPowBase.
- The interval is calculated according to the formula:  $\text{httpRetryInterval} * \text{httpRetryPowBase}^{\text{tryIndex}}$ , if  $\text{tryIndex} > 0$  and 0, if  $\text{tryIndex} = 0$  (where tryIndex is attempt's number, starting from 0).

Default Values:

httpRetry (maximum number of attempts) = 7,

httpRetryInterval (initial value of the interval in milliseconds) = 3000,

httpRetryPowBase (the base of the exponential function) = 3.

So, the first request to the Merchant API the System is to send at once, the second one is to send 9 seconds later after the last incorrect response of Merchant, the third is to send 81 seconds later after the last incorrect response of Merchant, ..., 7th is to send 2187 seconds later.

*The logic of repeated requests that is described above may apply not to all transactions. The details can be provided by the technical curator of ST during setting up the connection.*

### 5.2. Timeout values when sending http-requests by ST System

The following timeout values are set in ST System when sending the request:

- connection timeout (timeout for connection setting) is 180 seconds,
- socket timeout (timeout for response waiting from Merchant after the connection is set) is 120 seconds.

### 5.3. Security

Current restrictions:

- MD5-hash.
  - Consists of variable parameters of corresponding request and the secret word. The receiving party must verify the signature for all requests.
- IP-addresses.
  - ST System can limit the interaction with Merchant by provided IP-addresses.
  - Merchant may provide the access restriction by IP to its http-interfaces. The System performs all the requests from the following IP-address: 195.146.74.50; 213.219.245.216; 213.219.245.217; 213.219.245.218; 213.219.245.219.
- Time of the request.
  - ST System checks that time when the request is received differs from the date-time of making the request for no more than 5 minutes.
- SSL using certificates. (upon special agreement with Merchant).

## 6. Data needed to set up a connection

The exact list of parameters, needed to set up a connection, a technical curator will tell depending on the specific of the service.

Merchant shall provide the following parameters:

No	Name	Value
1	Method of infoexchange – POST or GET.	
2	Parameter secret value.	
3	Merchant IP-addresses.	
4	URL for checking order.	
5	URL for payment status.	

ST provides:

No	Name
6	Merchant's code in ST System.
7	Merchant ID in the Operator's system.
8	URL for payment initiation.
9	The format of «smstext», «msgbody» parameters to use in infoexchange (is approved together with Merchant)

## 7. Accounting registers

Every day, from 01:00 to 04:00 am (MSK) the Agent places at the address specified in the contract the file with the register of payments confirmed for the period from the beginning of the register period 00:00:00 to 11:59:59 pm to the end of the register period (Moscow time ).

The format and description of the register fields are specified in the contract.

### SIGNATURES OF THE PARTIES:

On behalf of the PRINCIPAL

General Director

\_\_\_\_\_ /

On behalf of the AGENT

General Director

\_\_\_\_\_ / S.F. Polskoy