

# Orange GDEP

## GDEP communication protocol

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### Supported device types and versions

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This protocol is used for sending and receiving SMS messages and MMS ones, processing WAP requirements and playing SMS games.

The protocol is built on the standards such as TCP, HTTP (or HTTPS) and XML. GAP server (GAme Platform) on Orange side and an application (D2000 KOM process) are the communication partners.

The implementation in D2000 System supports the following messages:

**Table 1**

Message	Direction	Meaning
HELLO	KOM->GAP	Logging on (name + password) to GAP platform when starting the connection.
INQUIRE_LINK	KOM->GAP GAP->KOM	Testing the functionality of connection after a longer period of inactivity.
INQ_RSP	KOM->GAP GAP->KOM	Response to INQUIRE.
RECEIVE (sms)	GAP->KOM	Receiving SMS from GAP server.
RCV_RSP (sms)	KOM->GAP	Confirmation of receiving SMS by D2000 KOM.
SEND (sms)	KOM->GAP	Sending SMS message.
SND_RSP (sms)	GAP->KOM	Confirmation of receiving SMS by GAP server.
ACCEPTED	GAP->KOM	Confirmation of receiving SMS or MMS by SMS/MMS center.
ACC_RSP	KOM->GAP	Response to ACCEPTED from D2000 KOM.
RECEIPT (sms)	GAP->KOM	Confirmation of receiving SMS by an end user.
REC_RSP	KOM->GAP	Response to RECEIPT from D2000 KOM.
BY	KOM->GAP	End of connection by D2000 KOM.
BY_RSP	GAP->KOM	Response to BY from GAP server.
NAK	GAP->KOM	Unacceptable message is declined.

The following messages have not been implemented yet:

**Table 2**

Message	Direction	Meaning
RECEIVE (wap)	GAP->KOM	Receiving WAP requirement from GAP server.
RCV_RSP (wap)	KOM->GAP	WAP requirement by D2000 KOM.
RECEIVE (mms-xml)	GAP->KOM	Receiving MMS from GAP server.
RCV_RSP (mms-xml)	KOM->GAP	Confirmation of receiving MMS by D2000 KOM.
SEND (mms-xml)	KOM->GAP	Sending MMS.
SND_RSP (mms-xml)	GAP->KOM	Confirmation of receiving MMS by GAP server.
RECEIPT (mms)	GAP->KOM	Confirmation of receiving MMS by an end user.
SCORE	KOM->GAP	Changing the player's score.
SCO_RSP	GAP->KOM	Response to SCORE from GAP server.

NICK	KOM->GAP	Administration of nicknames: creation, canceling, adding, deleting and searching.
NICK_RSP	GAP->KOM	Response to NICK from GAP server.

## Communication line configuration

Communication line category: [TCP/IP-TCP](#)

TCP Parameters:

- Host: String max. 80 characters – server name in INET format (name or numerical address a.b.c.d).
- Port: TCP port number (1 to 65535).
- Line number: Not used, enter any number.

**Note:** GDEP protocol is built over HTTP or HTTPS protocol. D2000 KOM process does not include HTTPS communication. It uses the [stunnel](#) program (modular method). The stunnel program is able to wrap both the client and server communication in SSL layer. As GDEP protocol needs the implementation the both client and server on each side (both GAP server and D2000 KOM), you must start two stunnel processes:

- one of them is in a server mode, which will wait on connection of GAP server. After processing the SSL layer, it will send data to the defined port, on which D2000 KOM is waiting as GDEP server (see the parameter [Server Port](#)).
- other one is in a client mode, which waits on the defined port. D2000 KOM (client side) will be connected with it. After wrapping data in SSL layer, the stunnel will send them to a target computer and port (server port of GAP server). Therefore, in the parameter **Host** there will be *localhost* and in the parameter **Port** there will be the port number on which the stunnel process is waiting in a client mode.

## Communication station configuration

Communication protocol: **GDEP**

Station address: not used (set 1)

**Note:** There must be JUST ONE communication station on the line.

## Station protocol parameters

You can set the following station protocol parameters:

**Table 3**

Key word	Full name	Meaning	Unit	Default value
RD	Relogin Delay	Waiting before repeated attempt to log on to GAP server.	sec	10
TKI	TCP KeepInit option	KeepInit setting of TCP protocol.	-	False
CE	Station Communication Error	Number of failed attempts to connect to server when the station switches to StCOMERR status.	-	1
HE	Station Hard Error	Number of failed attempts to connect to server when the station switches to StHARDERR status.	-	3
U	User Name	User name to log on to GAP server.	-	-
P	UserPassword	Password to log on to GAP server.	-	-
HH	HTTP Host	IP address or server name, which is specified in HTTP request.	-	-
HP	HTTP Port	Port of server, which is specified in HTTP request.	-	0
SP	Server Port	Port on which KOM is listening as server.	-	1000
TSI	Timeout Send Inquire	After this timeout, KOM will send INQUIRE message (0=disabled).	sec	90
TRI	Timeout Receive Inq_Rsp	Till this timeout, KOM will wait INQ_RSP (response to INQUIRE).	sec	10
TRA	Timeout Receive Accept	After this timeout, KOM process denotes the message as expired (confirmation level 2), if ACCEPTED message does not come.	sec	10
TRR	Timeout Receive Receipt	After this timeout, KOM process denotes the message as expired (confirmation level 3), if RECEIPT message does not come.	sec	60

K1 H1 P1 K2 H2 P2	KOM Name 1 Host Address 1 Port Number 1 KOM Name 2 Host Address 2 Port Number 2	When using in D2000 System redundancy (two <b>D2000 KOM</b> ): if name of workstation, on which D2000 KOM is running, is the same than <i>K1</i> (or <i>K2</i> ) parameter, when connecting to GAP server, <i>HELLO</i> message will contain the optional parameters <i>host</i> and <i>port</i> with values <i>H1</i> and <i>P1</i> (or <i>H2</i> and <i>P2</i> ). GAP knows on which of two <b>D2000 KOM</b> shall connect.		
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## I/O tag configuration

I/O tag is defined by itsr address, which must correspond with the address specified in the tables below. I/O tag names can be different.

**SMS receiving:** After receiving SMS, the values of the following I/O tags will be set (if I/O tags have been configured).

**Table 4**

Address	Type	I/O tag name	Meaning
1	TxtO	Rcv_Id	64-bit ID of received SMS (RECEIVE message). After processing of the message by an application, KOM process should be informed, by writing into this I/O tag, to confirm the receiving by RCV_RSP message and make accessible next SMS to application (if it is in a queue). [message sequence ID on the Game Platform (64-bit number displayed decimally in ASCII format). It is used for duplicate receipt detection when a session has been re-established after the connection failure.]
2	TxtI	Rcv_Serv_Id	Parameter <b>serv_id</b> of received message. [service ID that this message belongs to.]
3	TxtI	Rcv_App Addr	Parameter <b>appaddr</b> of received message. [destination number. It can be short or long number dedicated to the service (External Application). It is identification of the game. It is never encrypted.]
4	TxtI	Rcv_App AddrType	<b>Type</b> attribute of parameter <b>appaddr</b> .
5	TxtI	Rcv_Msisdn	Parameter <b>msisdn</b> of received message. [source number. Can be encrypted, see the <b>type</b> attribute.]
6	TxtI	Rcv_MsisdnType	Attribute <b>type</b> of parameter <b>msisdn</b> .
7	Ci	Rcv_Employee	Parameter <b>employee</b> of received message. [if application have enabled mark of employee, then element employee has value 0 – if source MSISDN is NOT employee 1 – if source MSISDN is employee]
8	Ci	Rcv_Dcs	Parameter <b>dcs</b> of received message. [parameter data_coding of the GDEP protocol (DCS) [SMPP PS v3.4]. (8-bit integer defined in the ASCII). Default = 0.]
9	Ci	Rcv_Esm	Parameter <b>esm</b> of received message. [parameter esm of the SMPP protocol (DCS) [SMPP PS v3.4]. (8-bit integer defined in the ASCII). Default = 0.]
10	TxtI	Rcv_Recv_Date	Parameter <b>receive_date</b> of received message. [time of receive SMS to SMS center.]
11	TxtI	Rcv_Coding	Attribute <b>coding</b> of parameter <b>content</b> . [type of coding in the element content. Currently used are: <i>text</i> ASCII text, <i>base64</i> content is coded by code base64 – this is used for binary data.]
12	TxtI	Rcv_Content	Parameter <b>content</b> of received message. [nothing but data. Data sent by the subscriber to the External Application (SMS).]
13	TxtI	Rcv_Msg Part	Parameter <b>msg_part</b> of received message (trio ref_num/seg_num/tot_seg). [ <i>ref_num</i> - contain an originator generated reference number so that a segmented short message may be reassembled into a single original message <i>seg_num</i> - sequence number of particular message within the concatenated message <i>tot_seg</i> - indicating the total number of fragments]

**SMS sending:** When sending SMS message, you should set the values for the following I/O tags (if they have been configured). The message will be sent after setting the value of I/O tag **Snd\_AppDefId**.

The symbol (o), stated at I/O tag means that the tag is optional (it may not be configured because GDEP protocol denotes this attribute as optional).

**Table 5**

Address	Type	I/O tag name	Meaning
101	TxtO	Snd_Serv_Id	Parameter <b>serv_id</b> of sent message. [service ID that this message belongs to.]
102	TxtO	Snd_Rcv_Msg_Id (o)	Parameter <b>rcv_msg_id</b> of sent message. [ID of received message (RECEIVE) that this message is a response to]
103	TxtO	Snd_App Addr	Parameter <b>appaddr</b> of sent message. [source number. It can be either short or long (MSISDN) number assigned to the service.]

104	Co	Snd_AppAddrType (o)	Attribute <b>type</b> of parameter <b>appaddr</b> .
105	TxtO	Snd_Msisdn	Parameter <b>msisdn</b> of sent message. [destination number. In case of a mobile telephone number, it can be encrypted. In case of a short number, the destination number is the short number only. Can be encrypted, the type is present in the type attribute.]
106	Co	Snd_MsisdnType (o)	Attribute <b>type</b> of parameter <b>msisdn</b> .
107	TxtO	Snd_BillMsisdn (o)	Parameter <b>billmsisdn</b> of sent message. [MSISDN to which the message will be billed (this tag is only used with specific applications, where the billed subscriber is not the recipient of the message. This option must be approved at the Game Platform by agreement with the marketing dept.) Can be encrypted, the type is present in the type attribute.]
108	Co	Snd_BillType (o)	Attribute <b>type</b> of parameter <b>billmsisdn</b> .
109	Co	Snd_Flags (o)	Parameter <b>flags</b> of sent message. [32-bit numbers displayed decimally in ASCII format. Flags are combined with OR binary function. Unused bits are reserved. <b>SMS_FLAG_RECEIPT</b> bit 1 - delivery receipt requested <b>SMS_FLAG_REPLACE</b> bit 2 - SM replacement requested on SIM card position under bits 4-6 <b>SMS_FLAG_POSITION</b> bit 4-6 - SIM position for SM replacement position range: from 1 to 7, 0 is unused]
110	TxtO	Snd_Expiration (o)	Parameter <b>expiration</b> of sent message. [validity period of the SM in the GSM time encoding (i.e. YYMMDDhhmmss), or the character „-“, if not defined]
111	TxtO	Snd_Delivery (o)	Parameter <b>delivery</b> of sent message. [delivery time of the SM in the GSM time encoding (i.e. YYMMDDhhmmss), or the character „-“, if not defined.]
112	TxtO	Snd_BillKey	Parameter <b>billkey</b> of sent message. [billing key, 4 characters long string consisting of (0..9) and (A .. Z). Each application will have 4 keys to be used in this field]
113	TxtO	Snd_EvbillId (o)	Parameter <b>evbill-id</b> of sent message. [service identifier in the event billing in case this type of billing method should be used.]
114	TxtO	Snd_EvbillIdSeq (o)	Parameter <b>evbill-id-seq</b> of sent message. [service identifier in the event billing in case this type of billing method should be used.]
115	Co	Snd_Dcs (o)	Parameter <b>dcs</b> of sent message. [parameter data_coding of the SMPP protocol (DCS) [SMPP PS v3.4]. (8-bit integer defined in the ASCII). Default = 0.]
116	Co	Snd_Esm (o)	Parameter <b>esm</b> of sent message. [parameter esm of the SMPP protocol (DCS) [SMPP PS v3.4]. (8-bit integer defined in the ASCII). Default = 0.]
117	TxtO	Snd_Score (o)	Parameter <b>score</b> of sent message. [game is sending score for the subscriber with – MSISDN. Format: +score – Game Platform adds this score value to the daily counter -score – Game Platform subtracts this score value from the daily counter score – Game Platform replaces the daily counter by this score value (daily counter is parameter, which is bind to MSISDN, nick, game and day. This counter will be changed only by GDEP protocol)]
118	TxtO	Snd_ScoreNick (o)	Attribute <b>nick</b> of parameter <b>score</b> . [– if this attribute will be used it will define the particularly used nick of the subscriber defined by MSISDN. Score will update the daily counter for this MSISDN and nick. If this attribute will not be used daily counter for MSISDN and default value nick="" will be used.]
119	TxtO	Snd_ScoreFinish (o)	Attribute <b>finished</b> of parameter <b>score</b> . [if this attribute will be used (with the any value, default value will be empty string ""), the Game Platform will add the new issue to the table C_SCORE, where will be add each player so many time how many will finish the game successfully. Use this attribute only after successful finishing of the game by the player.]
120	TxtO	Snd_Coding	Parameter <b>content</b> of sent message. [type of coding in the element content Currently used are: <i>text</i> ASCII <i>text base64</i> content is coded by code base64 – this is used for binary data.]
121	TxtO	Snd_Content	Parameter <b>content</b> of sent message. [nothing but data. Data sent by the External Application (SMS) to the subscriber.]
122	TxtO	Snd_Category (o)	Parameter <b>category</b> of sent message. [element can be used to specify category of content that is to be sent, character string 1-64 bytes long]
123	Co	Snd_AppDefId	Any positive integer, generated by application, that (for application) defines the sent SMS. The confirmation of delivery or nondelivery will contain this number (I/O tag <b>Rsp_AppDefId</b> ), if KOM process has not been restarted.
130	TxtI	Snd_64bit_Id	64-bitový identifier that sets KOM process when setting SMS message. As GDEP protocol uses a unique 64-bit identifier (GDEP server initiates its value when connecting to D2000 KOM process), the confirmation of delivery is marked internally by this 64-bit ID. If KOM process is restarted, after start-up GAP server could send the confirmations of delivery, which have been sent before restart. In such case D2000 KOM sets Snd_AppDefId to -1. The application may couple the confirmations according to Snd_64bit_Id.

**Confirmation of SMS delivery:** After receiving the ACCEPTED, RECEIPT and NAK messages, the following I/O tags will be set (Rsp\_AppDefId will be set as the last).

**Table 6**

Address	Type	I/O tag name	Meaning
131	Co	Rsp_AppDefId	<b>Snd_AppDefId</b> of sent message or -1, if the message with this number has not been found in the list of sent and unconfirmed messages (e.g. after restart of KOM process). After processing the confirmation of delivery, the application must set Rsp_AppDefId on 0. It causes that the confirmation will be sent to GAP server (ACC_RSP message or REC_RSP, depending on message on which D2000 KOM responds) and D2000 KOM can set next value, if it has other confirmation of delivery.

132	Ci	Rsp_ErrNo	Number of error: 0 - no error, any other values are mentioned in the literature [1]. If RECEIPT message has been received, Rsp_ErrNo copies the value of <a href="#">state</a> , except the value 2 (delivered) and 6 (accepted) - the message is considered to be delivered successfully and Rsp_ErrNo=0.
133	Ci	Rsp_CnfType	Level of confirmation: <i>level 1</i> - the message has been sent to GAP server (Rsp_ErrNo=0) or an error occurred when sending (Rsp_ErrNo=-1) <i>level 2</i> - ACCEPTED message has been received (with zero or nonzero error code, whose value is in Rsp_ErrNo) or timeout <a href="#">Timeout Receive Accept</a> has expired (Rsp_ErrNo=-2) <i>level 3</i> - RECEIPT message has been received or timeout <a href="#">Timeout Receive Receipt</a> has expired (Rsp_ErrNo=-3)
134	Txtl	Rsp_ErrDesc	Text description of error (when expiring the timeout) or value err_type when there is the negative message ACCEPT. [err_type - type of error, one of SMSC, MMSC, INTERNAL  <ul style="list-style-type: none"> <li>SMSC means the error occurred in SMSC</li> <li>MMSC means the error occurred in MMSC</li> <li>INTERNAL means the error occurred in GAP</li> </ul> ]
135	Txtl	Rsp_ServId	64-bit ID of sent SMS message to which this report relates.
The values of these I/O tags are valid only when receiving RECEIPT.			
136	Txtl	Rec_SubmitDate	Parameter <b>submit_date</b> of RECEIPT message. [date of delivery of sent SMS message to SMS center]
137	Txtl	Rec_DoneDate	Parameter <b>done_date</b> of RECEIPT message. [date of delivery of sent SMS message to destination]
138	Ci	Rec_State	Parameter <b>state</b> of RECEIPT message. [state of the message, can have the following values (as described in [2] SMPP 3.4, chapter 5.2.28 message_state):  <ul style="list-style-type: none"> <li>1 – <i>enroute</i> - the message is in enroute state</li> <li>2 – <i>delivered</i> – the message is delivered to destination</li> <li>3 – <i>expired</i> – message validity period has expired</li> <li>4 – <i>deleted</i> – message has been deleted</li> <li>5 – <i>undeliverable</i> – message is undeliverable</li> <li>6 – <i>accepted</i> – message is in accepted state (i.e. has been manually read on behalf of the subscriber by customer service)</li> <li>7 – <i>unknown</i> – message is in invalid state</li> <li>8 – <i>rejected</i> – message is in rejected state</li> </ul> ] <b>Note:</b> If RECEIPT message with <i>state</i> =1 (temporary <i>enroute</i> state) has been received, the application waits once more with timeout <a href="#">Timeout Receive Receipt</a> to receive RECEIPT message of the final state.
139	Txtl	Rec_Msisdn	Parameter <b>msisdn</b> of RECEIPT message. [msisdn that the message is delivered to. It can be encrypted.]
140	Txtl	Rec_MsisdnType	Attribute <a href="#">type</a> of <b>msisdn</b> parameter.

## Identification of communication status:

Table 7

Address	Type	I/O tag name	Meaning
199	Di	GAP_SrvConnected	Information on whether GAP server is connected to D2000 KOM process. After breaking the communication, there can happen the situation when D2000 KOM will connect to GAP server, but GAP server will not connect to D2000 KOM process. If for example the value of GAP_SrvConnected is FALSE within a minute after reconnection to GAP server (the status of station is StON), we recommend you to restart D2000 KOM. If it fails, contact the responsible person for GAP server.

Attribute *type* (Rcv\_AppAddrType, Rcv\_MsisdnType) can acquire values listed in the table below (the numeric values are entered when sending SMS messages, the text ones when receiving SMS messages):

Table 8

Value	Number	Meaning
msisdn	1	Cell phone number in the format +421905123456.
alias	2	Encrypted number of user (encryption is done by GAP server). It is 32-character string (hexadecimal code). Example of encryption: 421905014940 -> 2F8E47BCAAAB12CA3E19B7DCC2DFDE84.
ow	3	The specification [1] does not contain a detailed definition, but this type is used only for MMS messages.

## Literature

- [1] Game Data Exchange Protocol Specification 2.4 (provided by Orange Slovensko, a.s.)  
[2] SMPP PS v3.4 (Short Message Peer to Peer Protocol Specification v3.4)

## Changes and modifications

## Document revisions

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- Ver. 1.0 – May 2, 2006: protocol implementation



### Related pages:

[Communication protocols](#)