https://www.t42.co.uk

t42 Online
Application Program Interface

Technical Specification

Updated: 2 November 2023

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Contents

1 Introduction

t42 Online Application Program Interface (API) is delivered as part of the t42 Online service. Its purpose is to allow t42's operators to develop and adapt 3rd party software applications to the t42 Ltd.

Usage of this API is not included as part of the basic t42 Online subscription – please contact your t42 Online representative for pricing information.

Session samples of this document begins with '>' when the data is sent by the client, and '<' when the data is sent by the server.

2 Network Protocol

As a Web system, all the communication is done via HTTP(S) requests (either GET or POST - whatever is more convenient for the developer) to a URL that will be supplied by t42 Ltd. (in this document the URL will be http://t42/scriptname). The data received can be either in CSV format, which includes a header that contains the fields information, unless otherwise stated, or in XML format, or in a JSON format (REST-Compatible), depending on the 'format' optional field.

Fields in the response may be changed without prior notice, therefore it's recommended to always pay attention to the header line regarding the position of each field.

Whenever an error exists, the first line of the response will be "ERROR: <information>". Whenever data is not available, the response would be "No matching data".

Each one of the commands described in this document has two mandatory parameters, that must be sent in order to gain access to the commands:

Name	Description

user	User name
pass	Password

Table 2.1 – Global Parameters

The user name that will be sent will be the user that the operations will be done for. For example - when you set a new perimeter, the perimeter will be added to that user's perimeters list.

Alternatively, you can get a token for the session using the "session_create" command, and then use a "*sid*" parameter instead of *user* + *pass*. See sample session 6.5 below.

An optional field is 'format'. This field can be set to 'csv', 'xml1', or 'json1'. Choosing CSV will generate the output in CSV format, choosing 'xml1' will generate the output in XML format, choosing 'json1' will generate the output in JSON format. See Chapter 5 (Sample Sessions) for an example.

Dates format in the system are always appear in the following format: yyyymmddhhnnss (for example: August 22nd, 2006 at 15:35:24 will appear as 20060822153524). The timezone used is the same as the user who initiated the API call.

Positions are always in WGS84 degrees format. For example, the location of Geneva, Switzerland will appear as Longitude: 6.15; Latitude: 46.2

3 Session management

Session management API is used to receive a session id (or token) that can be used instead of the password during subsequent queries, and to set/update the notification token for that session.

3.1 session_create

Creates a new session. No parameters are required, but a user/pass parameters as below can be used to skip the *session_login* command. The command returns the session ID as “sid”.

3.1.1 parameters

Name	Description
user	User name
pass	Password

Table 3.1.1 – session_create parameters

3.1.2 response

The response contains one field – “sid” that contains the session ID to be used for any subsequent command by the client.

3.2 session_login

Login a user into the session. Note that this must be done within 30 seconds of creating the session.

3.2.1 parameters

Name	Description
user	User name
pass	Password

Table 3.2.1 – session_login parameters

3.2.2 response

If the user and pass are correct, the response will contain one field – “result” with “ok” as its data.

3.3 session_destroy

Ends an existing session.

3.3.1 parameters

Name	Description
sid	Session ID

Table 3.3.1 – session_destroy parameters

3.3.2 response

The response will contain one field – “result” with “ok” as its data.

4 Data Retrieval

The following is the list of the available commands that can be used to retrieve data from the API .

4.1 get_history

This command can be used to receive the information of all the messages sent by a specific vehicle in a specific time period.

4.1.1 parameters

Name	Description
unitnumber	Unit number
start	Starting date
end	Ending date

Table 4.1.1 – get_history parameters

Note: The maximum time range is 2 days for Helios/LCU500, or two weeks for all others.

4.1.2 response

The response can be some or all of the fields below, depending on the unit's model. The "Model" column describes fields that are model-specific, based on the following key: L=LCU500 (obsolete), H=Helios, T=Tetis, TR=Tetis R, K=Kylos, KA=Kylos Air, W = Watchlock:

Name	Model	Description
unitnumber		End unit number
name		Unit's name
unittype		*Appendix F*
unitmodel		*Appendix G*
mileage		Mileage (km)
software_version		Internal firmware version
logic_state	H	*Appendix B*
reason		*Appendix C*
response		1 = message is a response to remote command
driver	H	Driver code used
longitude		Longitude in WGS84 degrees
latitude		Latitude in WGS84 degrees
altitude		Altitude in meters
gps_valid		GNSS validity last time it was on
gps_connected		GNSS component on/off
uncertainty		Inaccuracy distance in meters (hepe), available only when Location is provided by Cellular triangulation.
satellites		GNSS satellites last time it was on
velocity		Ground speed in Kph
heading		Degrees (0=North)
emergency		Input (for Kylos/Tetis – device's button, 1 = pressed, 0 = released)
shock	H	Input
ignition	H	Input
installed	T/TR	Device installed button (0 = Not installed, 1 = installed)

door		Input (for Tetis – 0 means opened, 1 closed)
hood	H	Input
volume	L	Input
water_temp	L	Input
oil_pressure	L	Input
main_voltage		In volts, Helio/LCU500: Main power, other: Battery power
analog1	H/L	Raw analog input data
siren	H/L	Output
lock	L	Output
int_lights	L	Output
datetime_utc		Timestamp for the last valid location information as above (longitude, latitude, altitude, etc). Term “UTC” is used here for backward compatilbity only!
datetime_actual		Timestamp for the entire message
perimeter		Smallest perimeter that covers the location above, based on the user’s perimeters list
color		Recommended color for the unit, 1=Yellow, 2=Gray, 3=White, 4=Red, 5=Light blue
temperature_ext	TR/K	External temperature (celsius degrees)
temperature_int	TR	Internal temperature (celsius degrees)
temperature	T/W	Measured temperature (celsius degrees)
humidity	TR	% of relative humidity
light	T/TR/K	Measured light (lux)

Table 4.1.2 – get_history response

4.2 get_last_transmit

This command can be used to receive the information of the last transmission received from a specific device.

4.2.1 parameters

Name	Description
unitnumber	Unit number

Table 4.2.1 – get_last_transmit parameters

4.2.2 response

The response is identical to the get_history command.

4.3 get_last_transmits

This command can be used to receive the information of the last transmission received from all registered devices.

4.3.1 parameters

None.

4.3.2 response

The response is identical to the get_history command.

4.4 get_units

This command can be used to receive the list of the units available for the user.

4.4.1 parameters

None.

4.4.2 response

Name	Description
unitnumber	Unit number
name	Vehicle's name
address	Cellular number
vehiclemodel	Vehicle's model
vehiclecolor	Vehicle's color

Table 4.4.2 – get_units response

4.5 get_userinfo

This command can be used to receive the information about the current user.

4.5.1 parameters

None.

4.5.2 response

Name	Description
phone	User's phone number
email	User's email address
country	User's origin country
utcdifference	Difference in hours from GMT (Note: can be a fraction - 3.5 hours)
language	See appendix 6.3
distanceunits	0: Kilometers. 1: Miles.
speedunits	0: Kilometers per hour. 1: Miles per hour.
dateformat	See appendix 6.4
timeformat	See appendix 6.5
allowstatus	User can send a status request
allowcommands	User can send various commands
allowstop	User can stop the vehicles
allowlogic	User can change the logic states
allowclearfleet	User can clear the fleet's memory

Table 4.5.2 – get_userinfo response

4.6 get_direct_link

This command can be used to receive a direct link to a specific screen on t42 Online, that can be used to log in within 1 hour.

4.6.1 parameters

Name	Description
type	The type of the link to be retrieved. Can be one of the following: unitonmap: Shows a specific unit on the map unitonmapgoogle: Shows a specific unit on the google map addresslookup: Shows a specific address on the map addresslookupgoogle: Shows a specific address on the google map
minutes	Optional: Validity time of the link – default = 60 minutes. Maximum value is 1440 (one day)

Table 4.6.1.1 – get_direct_link parameters

In case that type is unitonmap or unitonmapgoogle, the following extra paremeters are used:

Name	Description
unitnumber	The unit number to be shown on the map

In case that type is addresslookup or addresslookupgoogle, the following extra paremeters are used:

Name	Description
country	Name of the country to look up
state	Name of the state to look up
city	Name of the city to look up
street	Name of the street to look up

4.6.2 response

Name	Description
url	The URL to be used

Table 4.6.2 – get_direct_link response

4.7 get_unit_params

Retrieves a list of a unit's parameters and their values (where available). For list of parameters see Appendix I. Important: The list retrieved is the list of the last known parameters to t42 Online. To force a read of the parameters, use set_unit_param with "param" set to "_read", and "value" set to "0".

4.7.1 parameters

Name	Description
unitnumber	Unit number
unittype	Unit type

Table 4.7.1 – get_unit_params parameters

4.7.2 response

Name	Description
unitnumber	Unit number
unittype	Unit type
last_updated	Time the information was last updated
params	List of the unit's parameters and their values

Table 4.7.2 – get_unit_params response

5 Data Submittal

The following is the list of the available commands that can be used to submit data to the service.

5.1 set_perimeters

This command can be used to set, remove, or receive the information of the perimeters attached to the user.

5.1.1 parameters

To set the perimeters' information, simply send a list of the required perimeters' name as the parameter name, and in the parameter value, include 3 fields: Longitude,Latitude,Radius.

For example:

```
http://t42/scriptname?commandname=set_perimeters&user=myuser&pass=myp
ass&Niagara+Falls=-79.075856,43.078916,0.0017
```

This will either create a new perimeter for "myuser", called "Niagara Falls", in Longitude -79.075856, Latitude: 43.078916, and a radius of 0.0017 degrees, or update the existing parameter to these values.

You can specify more than 1 perimeter at each request.

Note: The Radius, is given in WGS84 degrees value.

To remove a perimeter, specify the value 1000 for all three fields. For example:

```
http://t42/scriptname?commandname=set_perimeters&user=myuser&pass=myp
ass&Niagara+Falls=1000,1000,1000
```

5.1.2 response

The response to set_perimeters command will always be the list of all the perimeters set to the user.

Name	Description
name	Perimeter's name
longitude	Longitude
Latitude	Latitude
radius	Radius

Table 5.1.2 – set_perimeters parameters

5.2 set_routes

This command can be used to set, remove, or receive the information of the routes attached to the user.

5.2.1 parameters

To set the routes' information, simply send a list of the required routes' name as the parameter name, and in the parameter value, include 2 fields per coordinate on the route, in the following way: Longitude1,Latitude1,Longitude2,Latitude2,Longitude3,Latitude3, and so on.

For example:

```
http://t42/scriptname?commandname=set_routes&user=myuser&pass=mypass&
Triangle+Route=0,0,1,1,2,0,0,0
```

The 3 points in the route will be (0,0), (1,1),(2,0) which is a triangle shape.

To remove a route, assign only one coordinate to the route with the value of 1000 to both longitude and latitude fields. For example:

```
http://t42/scriptname?commandname=set_routes&user=myuser&pass=mypass&
Triangle+Route=1000,1000
```

5.2.2 response

The response to set_routes command will always be the list of all the routes set to the user.

Name	Description
name	Route's name
index	Index of the coordinate inside the route (starts from zero)
longitude	Coordinate's Longitude
latitude	Coordinate's Latitude

Table 5.2.2 – set_routes parameters

5.3 set_unit_param

Queue a change to one of the unit's parameters. Parameters for the units can be retrieved using the "get_unit_params" command. For list of parameters see Appendix I. To force a read of the parameters, use set_unit_param with "param" set to "_read", and "value" set to "0".

5.3.1 parameters

Name	Description
unitnumber	Unit number
unittype	Unit type
param	Parameter name
value	Parameter's new value

Table 5.3.1 – set_unit_param parameters

5.3.2 response

Name	Description
unitnumber	Unit number
unittype	Unit type
last_updated	Time the information was last updated
params	List of the unit's parameters and their values

Table 5.3.2 – set_unit_param response

6 Sample Sessions

6.1 get_history

Retrieving all the messages arrived from unit 217 between August 22nd, 2006 at 07:00 until 09:30:

```
>GET
/scriptname?commandname=get_history&user=myuser&pass=mypass&unitnumbe
r=217&start=20060822070000&end=20060822093000 HTTP/1.1
>
>
<HTTP/1.1 200 OK
<Content-Type: text/plain
<Expires: Mon, 26 Jul 1997 05:00:00 GMT
<Last-Modified: Wed, 23 Aug 2006 10:15:47 GMT
<Cache-Control: no-cache, must-revalidate
<Pragma: no-cache
<
<message_number,mileage,software_version,logic_state,reason,response,
longitude,latitude,gps_valid,gps_connected,satellites,velocity,headin
g,emergency,shock,ignition,door,hood,volume,water_temp,oil_pressure,m
ain_voltage,analog1,analog2,siren,lock,int_lights,datetime_utc,dateti
me_actual
<246,35986,060506,3,28,0,-
102.2872,21.9017,1,0,7,0,0,0,0,0,0,0,0,0,0,13.39,5,0,0,0,0,2006081611
5440,20060816120239
<247,35986,060506,3,32,0,-
102.2871,21.9017,1,1,6,0,360,0,0,0,0,0,0,0,0,13.39,5,0,0,0,0,20060816
120536,20060816120536,"(-102.2871,21.9017)"
<248,35986,060506,3,28,0,-
102.2872,21.9018,1,0,7,0,0,0,0,0,0,0,0,0,0,13.39,5,0,0,0,0,2006081612
0540,20060816121039
<249,35986,060506,3,28,0,-
102.2872,21.9017,1,1,5,0,0,0,0,0,0,0,0,0,0,13.39,5,0,0,0,0,2006081612
1542,20060816121542
<250,35986,060506,3,28,0,-
102.2872,21.9017,1,0,7,0,0,0,0,0,0,0,0,0,0,13.45,5,0,0,0,0,2006081612
1641,20060816122045
<251,35986,060506,3,28,0,-
102.2871,21.9015,1,1,5,0,0,0,0,0,0,0,0,0,0,13.39,5,0,0,0,0,2006081612
2548,20060816122548
<252,35986,060506,3,28,0,-
102.2870,21.9016,1,0,7,0,0,0,0,0,0,0,0,0,0,13.45,5,0,0,0,0,2006081612
2741,20060816123051
<253,35986,060506,3,28,0,-
102.2870,21.9016,0,1,0,0,0,0,0,0,0,0,0,0,0,13.39,5,0,0,0,0,2006081612
2741,20060816123554
<254,35986,060506,3,28,0,-
102.2874,21.9016,1,0,6,0,0,0,0,0,0,0,0,0,0,13.45,5,0,0,0,0,2006081612
3840,20060816124057
<255,35986,060506,3,28,0,-
102.2874,21.9016,1,0,6,0,0,0,0,0,0,0,0,0,0,13.39,5,0,0,0,0,2006081612
3840,20060816124600
<0,35986,060506,3,28,0,-
102.2872,21.9018,1,0,5,0,0,0,0,0,0,0,0,0,0,13.39,5,0,0,0,0,2006081612
4939,20060816125103
<1,35986,060506,3,28,0,-
102.2872,21.9018,1,0,5,0,0,0,0,0,0,0,0,0,0,13.39,5,0,0,0,0,2006081612
4939,20060816125606
```

```
<2,35986,060506,3,28,0,-
102.2872,21.9018,0,0,0,0,0,0,0,0,0,0,0,0,0,13.39,5,0,0,0,0,2006081612
4940,20060816130109
<3,35986,060506,3,28,0,-
102.2872,21.9018,0,0,0,0,0,0,0,0,0,0,0,0,0,13.39,5,0,0,0,0,2006081612
4940,20060816130612
```

6.2 get_history (xml format)

Retrieving all the messages arrived from unit 217 between August 22nd, 2006 at 07:00 until 09:30 in XML format:

```
>GET
/scriptname?commandname=get_history&user=myuser&pass=mypass&format=xm
l1&unitnumber=217&start=20060822070000&end=20060822093000 HTTP/1.1
>
>
<HTTP/1.1 200 OK
<Content-Type: text/xml
<Expires: Mon, 26 Jul 1997 05:00:00 GMT
<Last-Modified: Wed, 23 Aug 2006 10:15:47 GMT
<Cache-Control: no-cache, must-revalidate
<Pragma: no-cache
<
<?xml version="1.0" encoding="utf-8"?>
<data>
<item>
<message_number>246</message_number>
<mileage>35986</mileage>
<software_version>000000</software_version>
<logic_state>3</logic_state>
<reason>28</reason>
<response>0</response>
<longitude>-102.2872</longitude>
<latitude>21.9017</latitude>
<altitude/>
<gps_valid>1</gps_valid>
<gps_connected>0</gps_connected>
<satellites>7</satellites>
<velocity>0</velocity>
<heading>0</heading>
<emergency>0</emergency>
<shock>0</shock>
<ignition>0</ignition>
<door>0</door>
<hood>0</hood>
<volume>0</volume>
<water_temp>0</water_temp>
<oil_pressure>0</oil_pressure>
<main_voltage>1.16</main_voltage>
<analog1>0.09</analog1>
<analog2>0</analog2>
<siren>0</siren>
<lock>0</lock>
<int_lights>0</int_lights>
<datetime_utc>20060816085440</datetime_utc>
<datetime_actual>20060816090239</datetime_actual>
</item>
<item>
…
```

6.3 get_history - invalid

Retrieving all the messages arrived from unit 217 between August 22nd, 2006 at 07:00 until 09:30, but sending the wrong password:

```
>GET
/scriptname?commandname=get_history&user=myuser&pass=WRONG&unitnumber
=217&start=20060822070000&end=20060822093000 HTTP/1.1
>
>
<HTTP/1.1 200 OK
<Content-Type: text/plain
<Expires: Mon, 26 Jul 1997 05:00:00 GMT
<Last-Modified: Wed, 23 Aug 2006 10:15:47 GMT
<Cache-Control: no-cache, must-revalidate
<Pragma: no-cache
<
<ERROR: Unauthorized user (myuser)
```

6.4 set_perimeters

Adding a new perimeter in the Red Square of Moscow, and removing the existing Niagara Falls perimeter (another perimeter already exists for that user - Mount Everest):

```
>GET
/scriptname?commandname=set_perimeters&user=myuser&pass=mypass&Red+Sq
uare=55.7525,37.62,0.0017&Niagara+Falls=1000,1000,1000 HTTP/1.1
>
>
<HTTP/1.1 200 OK
<Content-Type: text/plain
<Expires: Mon, 26 Jul 1997 05:00:00 GMT
<Last-Modified: Wed, 23 Aug 2006 10:15:47 GMT
<Cache-Control: no-cache, must-revalidate
<Pragma: no-cache
<
<name,x,y,radius
<Red Square,55.7525,37.62,0.0017
<Mount Everest,27.9880,86.925,0.1
```

6.5 session_create

Using session management to get a session ID and then request the units list (get_units) in JSON format:

```
>GET
/scriptname?commandname=session_create&user=myuser&pass=mypass&format
=json1 HTTP/1.1
>
>
<HTTP/1.1 200 OK
<Content-Type: text/plain
<Expires: Mon, 26 Jul 1997 05:00:00 GMT
<Last-Modified: Wed, 23 Aug 2006 10:15:47 GMT
<Cache-Control: no-cache, must-revalidate
<Pragma: no-cache
<
```

```
<{"result":"ok","sid":"1b5af28c4c4af31357164a400b35ac3a834344eff61e9d
577686b3b01fcdb96d"}

>GET
/scriptname?commandname=get_units&sid=1b5af28c4c4af31357164a400b35ac3
a834344eff61e9d577686b3b01fcdb96d&format=json1 HTTP/1.1
>
>
<HTTP/1.1 200 OK
<Content-Type: text/plain
<Expires: Mon, 26 Jul 1997 05:00:00 GMT
<Last-Modified: Wed, 23 Aug 2006 10:15:47 GMT
<Cache-Control: no-cache, must-revalidate
<Pragma: no-cache
<[{"unitnumber":"123456","name":"My 1st vehicle","address":
<"+1-555-291-8392","vehiclemodel":"","vehiclecolor":"",
<"unittype":"5","icon":"10","active":"1","unitmodel":"6",
<"custom":[]},{"unitnumber":"123457",
<"name":"My 2nd vehicle","address":"+1-555-291-8393",
<"vehiclemodel":"","vehiclecolor":"","unittype":"5",
<"icon":"0","active":"1","unitmodel":"6","custom":[]}]
```

7 Appendixes

7.1 Appendix A – Logic States

7.1.1 Helios

Code	State
1	Idle
2	Armed
3	Silent Delay
4	Alarm Triggered
5	Garage Mode

Table 7.1.1 – Helios Logic States

7.1.2 LCU-500

Code	State
0	Idle On
1	Idle Off
2	Passive Arming
3	Armed
4	Silent Delay
5	Alarm Triggered
6	Emergency
7	Garage Mode

Table 7.1.2 – LCU-500 Logic States

7.2 Appendix B – Transmit Reasons

7.2.1 Helios

Code	Reason
0	No Reason Recorded
1	Response
2	Tracking
3	Theft
4	Custom Event
5	Ignition Off
6	Ignition On
7	Main Power Low
8	Door Off
9	Door On
10	Accident
11	Emergency Off
12	Emergency ON
13	Harsh Braking
14	Arm Off
15	Arm On
16	Emergency By Remote Control
17	Disarm Off

Code	Reason
18	Disarm On
19	New driver
20	Curve
21	Tow
22	Extra Input 1 Off
23	Extra Input 1 On
24	Extra Input 2 Off
25	Extra Input 2 On
26	Extra Input 3 Off
27	Extra Input 3 On
28	Entering Low Power
29	Power on
30	Wrong code
37	Jamming
43	Backup battery disconnected
44	Disarm by code
255	Ping

Table 7.2.1 – Helios Transmit Reasons

7.2.2 LCU-500

Code	Reason
0	No Reason Recorded
1	Periodic Transmission
2	Tracking
3	Emergency Button
4	Ignition
5	Door
6	Hood

Code	Reason
21	Spare Low
22	Spare1 High
23	Spare1 Low
24	Speed High
25	Speed Low
26	Mileage
27	Wrong Code

7	Shock		28	TCP Notice
8	Volume		32	Entering Perimeter
9	Oil		33	Leaving Perimeter
10	Water Temperature		34	Not Entering Perimeter
11	Hotwire		35	Not Leaving Perimeter
12	Tow		36	Fleet Emergency
13	By Command		37	Fleet Ignition
14	Main Power High		38	Fleet Door
15	Main Power Low		39	Fleet Hood
16	Battery High		40	Fleet Shock
17	Battery Low		41	Fleet Volume
18	Battery Temp High		42	Fleet Oil
19	Battery Temp Low		43	Fleet Water Temp
20	Spare High			

Table 7.2.2 – LCU-500 Transmit Reasons

7.2.3 Tetis/Tetis R/Kylos Forever/Air

Code	Reason		Code	Reason
0	No reason recorded		16	Flight: Landed
1	Response		29	Power on
2	Tracking		30	Light off
4	Event		31	Light on
5	Deinstalled		32	Temperature low
6	Installed		33	Temperature high
7	Low battery		35	Humidity low
8	Door opened		36	Humidity high
9	Door closed		37	Jamming
10	Strong impact		38	Logging
11	Button off		40	Temperature normal
12	Button on		41	Humidity normal
13	Weak impact		42	Tail disconnected
14	Location update		43	Tail connected
15	Flight: Take-off		255	Ping

Table 7.2.3 – Tetis/Tetis R/Kylos Forever/Air Transmit Reasons

7.2.4 Watchlock/Lokies/Kylos Compact

Code	Reason	Code	Reason
0	No reason recorded	23	Unlocked
1	Response	24	Maintenance
2	Tracking	25	Break-in
4	Event	26	Opened
6	Emergency	29	Power on
7	Low battery	30	Light off
8	Static pin IN	31	Light on
9	Static pin OUT	32	Temperature low
10	Strong Impact	33	Temperature high
11	Mobile pin IN	37	Jamming
12	Mobile pin OUT	38	Logging
13	Weak impact	40	Temperature normal
14	Location update	255	Ping
22	Locked		

Table 7.2.4 – Watchlock/Kylos Compact Transmit Reasons

7.3 Appendix C – Languages

Abbreviation	Language	Abbreviation	Language
al	Albanian	it	Italian
ar	Arabic	jp	Japanese
bg	Bulgarian	nl	Dutch
cn	Chinese	pa	Papiamento
de	German	pl	Polish
en	English	pt	Portuguese
es	Spanish	ro	Romanian
fr	French	ru	Russian
gr	Greek	tr	Turkish
he	Hebrew		

7.4 Appendix D – Date formats

Format	PHP date()	Example
0	Y/m/d	2007/01/15
1	d/m/Y	15/01/2007
2	m/d/Y	01/15/2007
3	d-m-Y	15-01-2007

Format	PHP date()	Example
4	m-d-Y	01-15-2007
5	d.m.Y	15.01.2007
6	m.d.Y	01.15.2007

7.5 Appendix E – Time formats

Format	PHP date()	Example
0	H:i:s	15:01:00
1	G:i:s	15:01:00

Format	PHP date()	Example
2	h:i:s A	03:01:00 PM
3	g:i:s A	3:01:00 PM

(Format 1 has no leading zeros, while format 0 has leading zeros)

7.6 Appendix F – Unit types

Number	Description
0	LCU500
5	Helios
7	Tetis/Tetis R/Kylos Forever/Air

Number	Description
9	Watchlock/Kylos Compact
16	Zeppos

7.7 Appendix G – Unit models

Number	Description
1	LCU500
6	Helios Adv
7	Helios Basic
8	Helios TT
10	Tetis
11	Tetis R
12	Kylos Forever
13	Kylos Air
15	Watchlock

Number	Description
16	Watchlock Pro
17	Kylos
18	Kylos Compact
24	Zeppos
30	Kylos Air 24G
35	Watchlock Cube
37	Lokies
40	Kylos Connect
42	Helios Adv BLE

7.7 Appendix H – Intervals

Code	Interval	Code	Interval	Code	Interval
0	Off	20	15 min	40	5 hour
1	10 sec	21	20 min	41	6 hour
2	15 sec	22	25 min	42	7 hour
3	20 sec	23	30 min	43	8 hour
4	25 sec	24	35 min	44	9 hour
5	30 sec	25	40 min	45	10 hour
6	40 sec	26	45 min	46	12 hour
7	50 sec	27	50 min	47	14 hour
8	1 min	28	60 min	48	16 hour
9	1.5 min	29	70 min	49	18 hour
10	2 min	30	80 min	50	20 hour
11	2.5 min	31	90 min	51	1 days
12	3 min	32	100 min	52	1.5 days
13	4 min	33	110 min	53	2 days
14	5 min	34	2 hour	54	2.5 days
15	6 min	35	2.5 hour	55	3 days
16	7 min	36	3 hour	56	3.5 days
17	8 min	37	3.5 hour	57	4 days
18	9 min	38	4 hour	58	4.5 days
19	10 min	39	4.5 hour	59	5 days

7.8 Appendix I – Unit parameters

Note: The list below contains all the parameters available for the various t42's products. To know which parameters are supported by a specific unit model – simply use get_unit_params on one of your units and use the list below as a legend.

Content types:

A(x) = Alphanumeric up to x characters

B = Bit. 0 for off, 1 for on

IF = Impact force: 24g devices: Range of 0-23, where 0 is disabled, 1 is 1g, and 23 is 23g, linear (1g steps); 8g devices: Range of 0-7, where 0 is disabled, 1 is 1.1g, and 7 is 8g, linear (~1.1g steps).

ID = Impact duration: 24g devices: Range of 0-7, where 0 is 0ms, 1 is 5ms, and 7 is 35ms, linear (5ms steps); 8g devices: Range of 0-14, where 0 is 0ms, 1 is 2.5ms, and 14 is 35ms, linear (2.5ms steps)

Parameter	Description	Content	Example
general_mileage	Current meters counted	0-4294967295	100000
general_mileagefixingfactor	A factor to use when calculating the mileage by GPS. The default is 100%. If for example there's a constant offset of 25% below the actual mileage, this shoudl be changed to 125%	0-3276.7	100

general_mileagefromodometer	Method use for mileage calculation (0=GPS, 1=Odometer)	B	1
general_odometercurrent	Current odometer pulses counted	0-16777216	12345
general_odometerpulsesperkm	Odometer pulses per one kilometer	0-65535	2500
network_smsdestination	Target phone number to send SMS messages to. This should be the phone number of the SIM card in the unit connected to the Routing application, or a SMPP target number.	Valid phone number, usually with '+' to indicate international number	+15551234567
network_gprsapn	Cellular data Access Point Name	A(40)	internet
network_gprsusername	Cellular data login username	A(40)	user
network_gprspassword	Cellular data login Password	A(40)	pass
network_firstserver	First host name (or IP number) that the unit will try to connect. This should be a Routing host name (or IP number)	A(40)	domain.tld
network_firsttcpport	Routing port number for the first server	0-65535	6600
network_secondaryserver	Secondary host name (or IP number) that the unit will try to connect. This	A(40)	domain.tld

	should be a Routing host name (or IP number)		
network_secondarytcpport	Routing port number for the secondary server	0-65535	6600
transmissionsrates_homesms1	Transmission rate on home network and ignition on	0-59, see Appendix H	0 (=Off)
transmissionsrates_homesms0	Transmission rate on home network and ignition off	0-59, see Appendix H	0 (=Off)
transmissionsrates_roamsms1	Transmission rate on roaming and ignition on	0-59, see Appendix H	0 (=Off)
transmissionsrates_roamsms0	Transmission rate on roaming and ignition off	0-59, see Appendix H	0 (=Off)
transmissionsrates_homedata1	Transmission rate on home network, cellular data available, and ignition on	0-59, see Appendix H	14 (=5 minutes)
transmissionsrates_homedata0	Transmission rate on home network and ignition off	0-59, see Appendix H	46 (=12 hours)
transmissionsrates_roamdata1	Transmission rate on roaming, cellular data available, and ignition on	0-59, see Appendix H	0 (=Off)

transmissionsrates_roamdata0	Transmission rate on roaming, cellular data available, and ignition off	0-59, see Appendix H	0 (=Off)
transmissionsrates_offline1	Transmission rate when out of coverage and ignition on	0-59, see Appendix H	14 (=5 minutes)
transmissionsrates_offline0	Transmission rate when out of coverage and ignition off	0-59, see Appendix H	46 (=12 hours)
transmissionsrates_transmission	Transmission rate	0-59, see Appendix H	28 (=1 hour)
transmissionsrates_gpspeek	How often the GPS will be turned on to check for location	0-59, see Appendix H	23 (=30 minutes)
transmissionsrates_logging	Logging will wake up the unit for 5 seconds to log its current status to the memory without activating a transmissions. The logs will later be sent along with any regular transmission	0-59, see Appendix H	20 (=15 minutes)
transmissionsrates_nomovement	Time without movement before a “No movement” alarm is sent	0-59, see Appendix H	14 (=5 minutes)
transmissionsrates_transmitonlywhenweakimpactdetected	When on, tracking messages will only be sent if during the selected period a	B	1

	weak impact was detected. NOTE: This will disable the weak impact transmissions.		
transmissionsrates_gpspeekonlywhenweakimpactdetected	When on, GPS peek will only be done if during the selected period a weak impact was detected. NOTE: This will disable the weak impact transmissions.	B	1
transmissionsrates_memorymessagesbysms	When on, missed and buffered messages will be sent by SMS as well	B	0
transmissionsrates_memorymessagesbyroaming	When on, missed and buffered messages will be sent by cellular data in roaming networks as well	B	1
transmissionsrates_satelliteintervalshybridonly	Satellite transmission interval	0-59, see Appendix H	28 (=1 hour)
transmissionsrates_satellitetriggersbutton	Use satellite to send Button events	B	0
transmissionsrates_satellitetriggersdoor	Use satellite to send Door events	B	0
transmissionsrates_satellitetriggerslight	Use satellite to send Light events	B	0
transmissionsrates_satellitetriggersbatterylow	Use satellite to send Battery low events	B	1

transmissionsrates_satellitetriggerstemperature	Use satellite to send Temperature events	B	1
transmissionsrates_satellitetriggersimpacts	Use satellite to send Impact events	B	0
transmissionsrates_satellitetriggershumidity	Use satellite to send Humidity events	B	0
transmissionsrates_satellitetriggerseventfromgenerator	Use satellite to send Custom events	B	0
transmissionsrates_hybrid1	Satellite transmission interval when ignition is on	0-59, see Appendix H	28 (=1 hour)
transmissionsrates_hybrid0	Satellite transmission interval when ignition is off	0-59, see Appendix H	28 (=1 hour)
transmissionsrates_hybridemergency	Use satellite to send Emergency events	B	1
transmissionsrates_hybriddoor0	Use satellite to send Door Opened events	B	0
transmissionsrates_hybriddoor1	Use satellite to send Door Closed events	B	0
transmissionsrates_hybridmainpowerlow	Use satellite to send Main Power Low events	B	0
transmissionsrates_hybridtheft	Use satellite to send Theft events	B	0
transmissionsrates_hybridaccident	Use satellite to send Accident events	B	0
transmissionsrates_hybridtow	Use satellite to send Tow events	B	0

transmissionsrates_hybridevent	Use satellite to send Custom events	B	0
inputs_mainpowerlowalert	Voltage threshold for Main Power Low alert (in Volts)	0-30	12.5
inputs_harshbrakingforce	Force threshold for the Harsh Braking alert	IF	1 (=1.1g)
inputs_harshbrakingduration	Duration threshold for the Harsh Braking alert	ID	1 (=2.5ms)
inputs_accidentforce	Force threshold for the Accident alert	IF	2 (=2.2g)
inputs_accidentduration	Duration threshold for the Accident alert	ID	4 (=10ms)
inputs_installedinvert	Invert: Installed	B	0
inputs_keyinvert	Invert: Key	B	0
inputs_doorinvert	Invert: Door	B	0
inputs_emergencyinvert	Invert: Emergency	B	0
inputs_buttoninvert	Invert: Button	B	0
inputs_arminvert	Invert: Arm	B	0
inputs_disarminvert	Invert: Disarm	B	0
inputs_extra1invert	Invert: Extra Input 1	B	0
inputs_extra2invert	Invert: Extra Input 2	B	0

inputs_extra3invert	Invert: Extra Input 3	B	0
inputs_installed_mask	Mask: Installed	B	0
inputs_key_mask	Mask: Key	B	0
inputs_door_mask	Mask: Door	B	0
inputs_emergency_mask	Mask: Emergency	B	0
inputs_button_mask	Mask: Button	B	0
inputs_arm_mask	Mask: Arm	B	0
inputs_disarm_mask	Mask: Disarm	B	0
inputs_extra1_mask	Mask: Extra Input 1	B	0
inputs_extra2_mask	Mask: Extra Input 2	B	0
inputs_extra3_mask	Mask: Extra Input 3	B	0
inputs_installedalertoff	Alert when OFF: Installed	B	0
inputs_keyalertoff	Alert when OFF: Key	B	0
inputs_dooralertoff	Alert when OFF: Door	B	0
inputs_emergencyalertoff	Alert when OFF: Emergency	B	0
inputs_buttonalertoff	Alert when OFF: Button	B	0
inputs_armalertoff	Alert when OFF: Arm	B	0
inputs_disarmalertoff	Alert when OFF: Disarm	B	0
inputs_extra1alertoff	Alert when OFF: Extra Input 1	B	0

inputs_extra2alertoff	Alert when OFF: Extra Input 2	B	0
inputs_extra3alertoff	Alert when OFF: Extra Input 3	B	0
inputs_installedalerton	Alert when ON: Installed	B	0
inputs_keyalerton	Alert when ON: Key	B	0
inputs_dooralerton	Alert when ON: Door	B	0
inputs_emergencyalerton	Alert when ON: Emergency	B	0
inputs_buttonalerton	Alert when ON: Button	B	0
inputs_armalerton	Alert when ON: Arm	B	0
inputs_disarmalerton	Alert when ON: Disarm	B	0
inputs_extra1alerton	Alert when ON: Extra Input 1	B	0
inputs_extra2alerton	Alert when ON: Extra Input 2	B	0
inputs_extra3alerton	Alert when ON: Extra Input 3	B	0
inputs_installedalertarm	Alert when Armed: Installed	B	0
inputs_keyalertarm	Alert when Armed: Key	B	0
inputs_dooralertarm	Alert when Armed: Door	B	0
inputs_emergencyalertarm	Alert when Armed: Emergency	B	0
inputs_buttonalertarm	Alert when Armed: Button	B	0
inputs_armalertarm	Alert when Armed: Arm	B	0
inputs_disarmalertarm	Alert when Armed: Disarm	B	0

inputs_extra1alertarm	Alert when Armed: Extra Input 1	B	0
inputs_extra2alertarm	Alert when Armed: Extra Input 2	B	0
inputs_extra3alertarm	Alert when Armed: Extra Input 3	B	0
inputs_installedarm	Use for Arm: Installed	B	0
inputs_keyarm	Use for Arm: Key	B	0
inputs_doorarm	Use for Arm: Door	B	0
inputs_emergencyarm	Use for Arm: Emergency	B	0
inputs_buttonarm	Use for Arm: Button	B	0
inputs_disarmarm	Use for Arm: Disarm	B	0
inputs_extra1arm	Use for Arm: Extra Input 1	B	0
inputs_extra2arm	Use for Arm: Extra Input 2	B	0
inputs_extra3arm	Use for Arm: Extra Input 3	B	0
inputs_installeddisarm	Use for Disarm: Installed	B	0
inputs_keydisarm	Use for Disarm: Key	B	0
inputs_doordisarm	Use for Disarm: Door	B	0
inputs_emergencydisarm	Use for Disarm: Emergency	B	0
inputs_buttondisarm	Use for Disarm: Button	B	0
inputs_armdisarm	Use for Disarm: Arm	B	0
inputs_disarmdisarm	Use for Disarm: Disarm	B	0

inputs_extra1disarm	Use for Disarm: Extra Input 1	B	0
inputs_extra2disarm	Use for Disarm: Extra Input 2	B	0
inputs_extra3disarm	Use for Disarm: Extra Input 3	B	0
outputs_lockingpulses	Number of pulses to emit when locking the vehicle	1-2	1
outputs_lockingpulsewidth	Locking pulse width (in 0.2s interval, starting from 0.2s)	0.2-3.2	3 (=0.8s)
outputs_lockingpulseinterval	Interval between locking pulses (in 0.4s interval, starting from 0.2s)	0.2-3	3 (=1s)
outputs_unlockingpulses	Number of pulses to emit when unlocking the vehicle	1-2	1
outputs_unlockingpulsewidth	Unlocking pulse width (in 0.2s interval, starting from 0.2s)	0.2-3.2	3 (=0.8s)
outputs_unlockingpulseinterval	Interval between unlocking pulses (in 0.4s interval, starting from 0.2s)	0.2-3	3 (=1s)
outputs_immobilizeronwhen	Condition for activating the immobilizer	0=Not used, 1=Armed, 2=Idle	0
outputs_graduslstopmethod	Gradual stop method	0=Not used, 1=ON constantly, 2=ON Pulses,	2 (=ON Pulses)

		3=OFF constantly, 4=OFF Pulses	
outputs_usekeypadimmobilizer	Use RF keypad instead of Immobilizer input	B	0
logic_disarmfromignition	Ignition: Use for disarm	B	0
logic_autounlockfromkey	Auto (un)lock from Ignition	B	0
logic_gpsoffwhenignitionoff	GPS Off when Ignition Off	B	1
logic_transmitonstartup	Transmit on start-up	B	1
logic_idletoarm	Unarmed -> Armed	0-59, see Appendix H	0 (=Disabled)
logic_silenttotriggered	Silent delay -> Alarm triggered	0-59, see Appendix H	0 (=Disabled)
logic_triggeredtotransmit	Alarm triggered -> Transmission	0-59, see Appendix H	0 (=Disabled)
logic_maximumgaragetime	Maximum Garage time	0-59, see Appendix H	0 (=Disabled)
hardware_use57600baud	Use 57600 baud rate	B	0
hardware_rs232function	RS232 function	0=Not used, 1=Garmin, 2=Hybrid, 6=9600	0 (=Not used)
hardware_savefailedtext	Save failed text messages	B	0
hardware_lockfromrc	(Un)lock from Remote Control	B	0
hardware_acceptanydriver	Accept any driver code	B	0
hardware_usesirenrc	Use siren when (dis)arming by driver	B	0

hardware_usercemergency	Use Remote Control's small button as an Emergency	B	0
hardware_transmitnewdriver	Transmit when new driver is detected	B	0
hardware_rawspeedvalues	Raw speed values	B	0
hardware_fulllowpower	Full low power	B	0
hardware_transmitlowpowermode	Transmit when entering low power mode	B	0
hardware_lowpowertiming	Low power timing	0-59, see Appendix H	0 (=Disabled)
hardware_transmitcurve	Transmit on turnings	B	0
hardware_towdetection	Tow detection	B	0
hardware_rpmfromodometer	RPM from odometer	B	0
hardware_jammingdetection	Jamming detection	B	0
hardware_onewireibutton	One-wire iButton	B	0
hardware_analoginput1	Analog 1	0=0-27.5v, 1=0-15v	0 (0-27.5v)
hardware_analoginput2	Analog 2	0=0-27.5v, 1=0-15v	0 (0-27.5v)
hardware_fuelinput	Fuel input	0=Analog 1 - Positive slope, 1=Analog 1 - Negative slope, 2=Analog 2 - Negative	0 (=Analog 1 – Positive slope)

		slope, 3=Analog 2 - Positive slope	
hardware_fuelalgorithm2	Fuel algorithm v2	B	0
hardware_flightmonitoring	When on, device will shut down during flight take-off, and resume its transmissions upon landing. Available only on devices with Barometer support	B	1
hardware_flightlogging	When on, device will log sensors data to improve flight mode detection in future versions	B	0
hardware_lightalerts	When on, Light On and Light Off transmissions will be activated based on the device light sensor	B	0
hardware_locationupdates	When on, the GPS will be turned on upon any transmission, and once a position was found - a notification will be sent	B	0

hardware_locationbycellular	When on, location lookup will be done according to cellular antennas if GPS is not available	B	0
hardware_transmitonstartup	When on, a "Power On" message will be transmitted whenever the unit is either powered on for the first time, or got restarted	B	1
hardware_useagps	When on, Assisted GPS data will be downloaded from the GPRS to get better and faster GPS fix	B	0
hardware_remainactivewhenstartedfromusb	When on, the device will remain on when connected to the USB even if the Power On button wasn"t pressed	B	1
hardware_disablepowerofffrombutton	When on, the button will not be able to turn the device off	B	0
hardware_enablechargingled	When on, the internal led will turn on while charging	B	1

hardware_humiditylow	Relative humidity below this threshold will trigger a Humidity Low event	0-100, where 0 is 0%, and 100 is 100%, linear (1% steps)	90
hardware_humidityhigh	Relative humidity below this threshold will trigger a Humidity High event	0-100, where 0 is 0%, and 100 is 100%, linear (1% steps)	10
hardware_temperaturelow	Temperatures below this threshold (in celsius degrees) will trigger a Temperature Low event	0-255, where 0 is disabled, 1 is -127c, and 255 is 127c, linear (1c steps)	118 (=-10c)
hardware_temperaturehigh	Temperatures above this threshold (in celsius degrees) will trigger a Temperature High event	0-255, where 0 is disabled, 1 is -127c, and 255 is 127c, linear (1c steps)	126 (=-2c)
hardware_weakimpactforce	Determines the force threshold needed to be measured as weak impact	IF	4 (=4g)
hardware_weakimpactduration	Determines the duration of the force needed to be measured as weak impact	ID	5 (=20ms)

hardware_strongimpactforce	Determines the force threshold needed to be measured as strong impact	IF	17 (=17g)
hardware_strongimpactduration	Determines the duration of the force needed to be measured as strong impact	ID	2 (=10ms)