Web Services API Manual
v 3.14.0

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1   System Overview

This document is intended to help a client developer integrate to the web service offering API provided by **3Dtracking**.

A full breakdown of all client-facing web services offered by 3Dtracking can be found here - https://api.3dtracking.net. The full list of partner-facing web services can be found here - https://partnerapi.3dtracking.net.

2   User Authentication

All web services in the **3Dtracking** system are based off a client user and their respective access. For this reason, the initial step for any new web service request is send a request to the UserAuthenticate web service in order to obtain values for the following 2 parameters:

UserIdGuid   The primary identifier for a client user

SessionId   ID to ensures that the client user is verified and allowed to perform a web service request

The UserAuthenticate web service found at this address:

Client-facing: https://api.3dtracking.net/Api/V1.0/Authentication/UserAuthenticate
Partner-facing: https://partnerapi.3dtracking.net/Api/V1.0/Authentication/UserAuthenticate

The UserAuthenticate web service requires the client user to submit their username and password to the server, and the response includes the 2 parameters listed above. These 2 parameters should be stored on the clients system and they are used for all other web service requests.

These parameters should continue to be used until such time that a web service response indicates that the SessionId has expired, at which point the client should return to the UserAuthenticate web service and send a new request to obtain new UserIdGuid and SessionId details. It is very important to note that the details returned by the UserAuthenticate web service can change over time, so the latest parameters should always be stored on the client system and should be updated each time a request is sent to the UserAuthenticate web service.

3   Available Web Services

The **3Dtracking** web service system is grouped into a number of different categories. Expand each category to see the list of web service requests available underneath that section. There is also a description of each web service provided, as well as the ability to generate a web service request on the page.

Note that all active web services are based on the UserIdGuid and the SessionId.

3.1   Data Receiver

The Data Receiver web service (https://partnerapi.3dtracking.net/Api/V1.0/Receiver/GPSPosition) allows partner's to submit tracking data to the 3Dtracking system. This is useful for scenario's where data is required to be collected from 3rd party systems.

Below are the data fields and their descriptions for the data receiver web service.

Required/Mandatory Data Fields

UserIdGuid	This identifies the user account that is transmitting the data. The UserIdGuid is obtained from the UserAuthenticate web service request.
SessionId	This verifies the user account that is transmitting the data. The UserIdGuid is obtained from the UserAuthenticate web service request.
Identifier	This is the identifier (e.g. IMEI) of the tracker that is transmitting the data.
DateTimeUTC	This is the time and date of the position being transmitted. Each position has it's own time and date. All times and dates must be in UTC/GMT time.
Latitude	This is the latitude of the position being transmitted. Each position has it's own latitude. This is measured as a decimal value in degrees.
Longitude	This is the longitude of the position being transmitted. Each position has it's own longitude. This is measured as a decimal value in degrees.
Speed	This is the speed of the position being transmitted. Each position has it's own speed. This is measured in kilometers per hour (kph).
Heading	This is the heading of the position being transmitted. Each position has it's own heading. This is measured in degrees.

Optional Data Fields

Odometer	This is the odometer value of the tracker at each position. This is measured in meters.
Satellites	This is the number of satellites visible to the tracker at each position.
Ignition	This is the ignition status of the tracker for each position. It is a boolean value that is either 'true' or 'false'.
Inputs	This is a bitwise number representing the status of the inputs. The list of supported inputs can be found in the Inputs/Outputs section of this document.
Outputs	This is a bitwise number representing the status of the outputs. The list of supported outputs can be found in the Inputs/Outputs section of this document.
DriverId	This is the tag of the driver. It should correspond to the tag details captured within the relevant driver in the system.
InternalBattery	This is the internal battery percentage, represented as a decimal number (e.g. a value of 90 will show as 90%).

AnalogInputs	This is a comma-separated list of up to 4 analog inputs (e.g. 40,0,0,0 means that analog input 1 = 40 and analog inputs 2, 3, 4 are all 0)

3.1.1   Inputs/Outputs

The inputs and outputs of the tracking device are represented as bitwise numbers in decimal format. These 2 numbers provide the status of all the supported inputs and outputs of the tracker for each position transmitted to the system. The lists for each of these values are provided below.

Inputs

Bit 0	Panic (1 = Active, 0 = Inactive)
Bit 1	Aggressive Acceleration (1 = Active, 0 = Inactive)
Bit 2	Harsh Braking (1 = Active, 0 = Inactive)
Bit 3	Rapid Turn / Lane Change (1 = Active, 0 = Inactive)
Bit 4	Accident (1 = Active, 0 = Inactive)
Bit 5	Main Power Disconnected (1 = Active, 0 = Inactive)
Bit 6	GSM Signal Jammed (1 = Active, 0 = Inactive)
Bit 7	Reserved
Bit 8	Custom Input 1 (1 = Active, 0 = Inactive)
Bit 9	Custom Input 2 (1 = Active, 0 = Inactive)
Bit 10	Custom Input 3 (1 = Active, 0 = Inactive)
Bit 11	Custom Input 4 (1 = Active, 0 = Inactive)
Bit 12	Custom Input 5 (1 = Active, 0 = Inactive)
Bit 13	Custom Input 6 (1 = Active, 0 = Inactive)
Bit 14	Custom Input 7 (1 = Active, 0 = Inactive)
Bit 15	Custom Input 8 (1 = Active, 0 = Inactive)

Outputs

Bit 0	Engine cut-off / Immobilizer (1 = Active, 0 = Inactive)
Bit 1	Custom Output 1 (1 = Active, 0 = Inactive)
Bit 2	Custom Output 2 (1 = Active, 0 = Inactive)
Bit 3	Custom Output 3 (1 = Active, 0 = Inactive)

4   Example

Here is a detailed walk-through example of how a client would perform the following tasks:

1   - Authenticate the client user
2   - Use the authentication parameters to make a web service request

The client user that we will authenticate has the username and password of 'demo'. Once authenticated, we will use the saved parameter values to send a request to the PositionList web service.

4.1   UserAuthenticate

The following is an example of an HTTP GET request sent to the UserAuthenticate web service for a client user with the username and password of 'demo':

https://api.3dtracking.net/api/v1.0/Authentication/UserAuthenticate?UserName=demo&Password=demo

The response from the server is as follows:

```
{
  "Status": {
    "Result": "ok",
    "ErrorCode": "0",
    "Message": "ok"
  },
  "Result": {
    "UserIdGuid": "c0d6835b-d55b-4906-a0cc-113687374020",
    "SessionId": "c211353c-fb27-4b91-b2f1-669874d0b566"
  }
}
```

In this example, the key parameters that the client system needs to record are:

UserIdGuid   c0d6835b-d55b-4906-a0cc-113687374020
SessionId   c211353c-fb27-4b91-b2f1-669874d0b566

4.2   PositionList

Using the parameter values from the UserAuthenticate web service in the previous section, the following is an HTTP GET request for the PositionList web service. Note how the UserIdGuid and SessionId are used from the UserAuthenticate results:

https://api.3dtracking.net/api/v1.0/Data/PositionsList?UserIdGuid=c0d6835b-d55b-4906-a0cc-113687374020&SessionId=c211353c-fb27-4b91-b2f1-669874d0b566