OPENGGD

MYSQL TABLE STRUCTURES

Version 0.0.1

This document tries to describe the structure of different tables used by OpenGGD, in order to store information of every tracking device and its positions.

1. TRACKING DEVICE TABLE

This table must be filled in with information of every tracking device that is to send its positions data to the OpenGGD server.

This table should be created by an administrator before using the OpenGGD server for the first time -a specific parameter for the OpenGGD server program automatically allows the table creation for you-.

ATTRIBUTE	DOMAIN	RESTRICTIONS
uid	int unsigned	not null, primary key
field	varchar(256)	not null, unique
user	varchar(256)	
system	int unsigned	
description	varchar(256)	
db_name	varchar(256)	
db_table	varchar(256)	
db_server	varchar(256)	
db_user	varchar(256)	
db_password	varchar(256)	
db_port	int unsigned	

uid.- Unique identifier for every tracking device. The UID can be hard-coded inside the tracking device, or can be obtained from the serial number of the tracking device.

field.- ASCII string that identifies a group of tracking devices, e.g. the name of a shipping company that owns a vehicle fleet.

user.- ASCII string that identifies the tracking device inside the previous field, e.g. a truck license plate.

system.- Tracking system that the device uses to get positions data. For current values see Appendix A in the protocol document.

description.- ASCII string that describes the tracking device.

db_name.- Database name that will store the positions data for this tracking device.

db_table.- Table name that will store the positions data for this tracking device.

db_server.- MySQL server name where db_name is hosted.

db_user.- User name for accessing the MySQL server where db_name is hosted.

db_password.- Password for accessing the MySQL server where db_name is hosted.

db_port.- MySQL server port where db_name is hosted.

Bear in mind that you could configure OpenGGD to allow some tracking devices store their positions data in the same MySQL server, database and table.

2. POSITIONS TABLE

This table stores positions data of one or more tracking devices. The required positions data tables for every tracking device are created automatically by the OpenGGD server program.

ATTRIBUTE	DOMAIN	RESTRICTIONS
uid	int unsigned	not null, primary key
date	int unsigned	
time	int unsigned	
longitude	int	not null
latitude	int	not null
altitude	int	
speed	smallint unsigned	
direction	smallint unsigned	
movement	bool	
longitude_resolution	smallint unsigned	
latitude_resolution	smallint unsigned	
accuracy	int unsigned	
quality	tinyint unsigned	

uid.- Unique identifier for every tracking device. The UID can be hard-coded inside the tracking device, or can be obtained from the serial number of the tracking device.

date.- Binary value that stores the date, according to this order: DAY as the least significant byte, MONTH as the second least significant byte, and YEAR as the two most significant bytes.

It could be calculated according to this formula: YEAR<<16 | MONTH<<8 | DAY. Values for months are from 1 to 12. Values for days are from 1 to 31

time.- Binary value that stores the UTC time, according to this order: HUNDREDTH OF A SECOND as the least significant byte, SECONDS as the second least significant byte, MINUTE as the second most significant byte, and HOUR as the most significant byte.

It could be calculated according to this formula: HOUR<<24 | MINUTE<<16 | SECONDS <<8 |

HUNDREDTH_OF_A_SECOND. Values for hours range from 0 to 23. Values for minutes and seconds range from 0 to 59.

longitude.- Binary value that stores the longitude in hundredths of a second. A negative value means a western longitude.

latitude.- Binary value that stores the latitude in hundredths of a second. A negative value means a southern latitude.

altitude.- Binary value that stores the altitude in tenths of a meter.

speed.- Binary value that stores the speed in tenths of a kilometer per hour.

direction.- Binary value that stores the movement direction of the vehicle in hundredths of a degree, from 0 to 360 degrees.

movement.- Boolean value that indicates movement detection; true means the vehicle is moving.

longitude_resolution.- Unit resolution for the longitude measurement, stored as a coded value. For current values see Appendix B in the protocol document.

latitude_resolution.- Unit resolution for the latitude measurement, stored as a coded value. For current values see Appendix B in the protocol document.

accuracy.- Binary value that stores the precision of the position measurement. It indicates the radius of a circle of uncertainty around the actual position, in tenths of a meter.

quality.- Binary value that estimates the quality of the position measurement. It's a percentage that goes from 0 -worst quality- to 100 -best quality-.