



POINTER



Cellocator Division
Pointer Telocation Ltd.



CELLOCATOR

Cello IQ Configurations & Operations

Cello-IQ – Driving Intelligence Delivered. January, 2013.

Objectives

By the end of this lesson you will be able to:

- Know how to set up the Cello-IQ Evaluation Environment
- Understand and manage the configuration of Cello IQ
- Understand the necessary validation of configured parameters
- Adapt Cello-IQ configuration to your operation needs

Topics

- **Introduction**
- **Evaluation**
 - Setting up evaluation environment
 - First Steps with Cello IQ
 - Initial setup scenario
- **PL configuration Scenarios**

Introduction

- **The Evaluation kit is used for appraisal and testing of the Cellocator Cello-IQ units and is a strong tool during Cellocator products integration**
- ❖ The Evaluation kit provides the option to test Cello-IQ without requiring a connection to an operational server
- ❖ The kit contains a complete set of components that simplify bench testing of the system
- ❖ The kit serve as a demonstration platform for understanding the operational aspects of the system
- ❖ It facilitates the development of Cellocator interfaces by integrators
- ❖ It also includes hardware and software required for in-vehicle installation



Introduction

■ The Evaluation Kit includes:

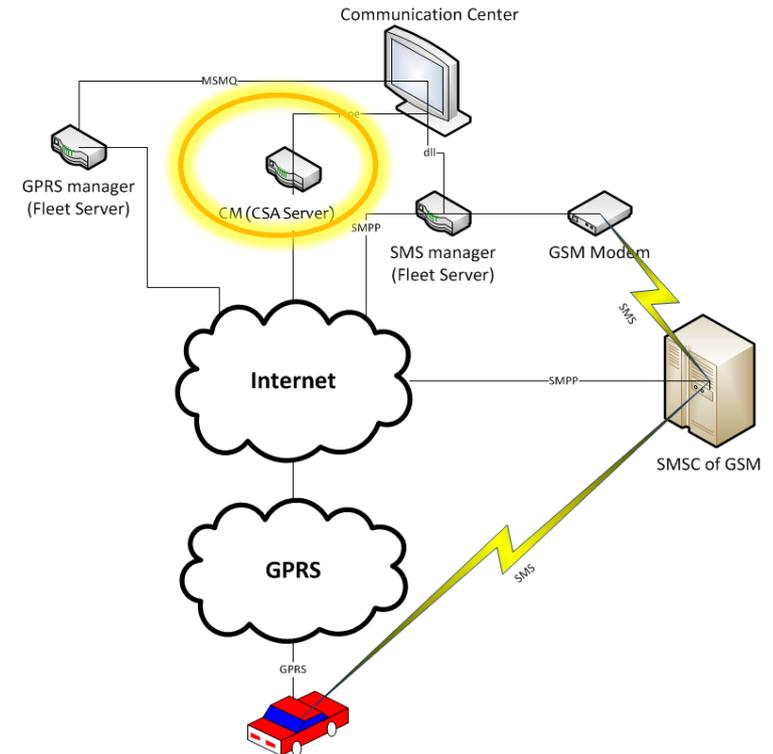
- ❖ Cello-IQ device, simulator kit, cables, Cello-IQ harness, DFD and other components needed to simulate the device different functions
- ❖ Cello Evaluation Kit can be upgraded to Cello-IQ Evaluation Kit
- ❖ Software elements and documents which are available on the Pointer website



Cello-IQ Communication Center

- Cello-IQ new CSA Server

- ❖ The **CSA** server was added to the **GPRS** and **SMS** servers, used in Cellocator's Communication Center for Fleet management, to support Cello-IQ's safety features

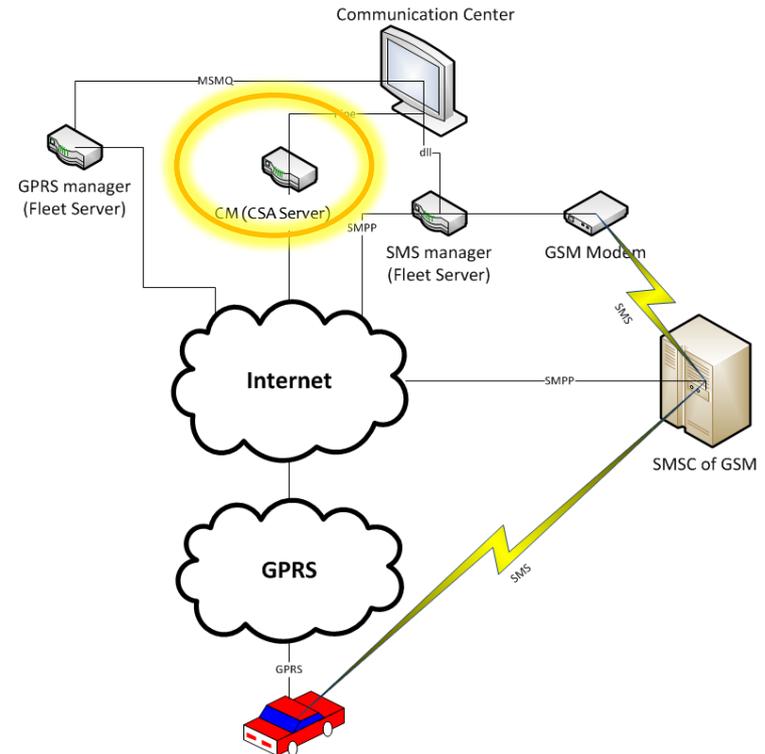


Cello-IQ Communication Center

- Cello-IQ new CSA Server feature

- ❖ Cellocator's CM Application interfaces with the **Communication Center**. It processes CSA uplink messages received from Cello-IQ units and sends them *TO* the Comm. Center. On the other direction it receives downlink commands *FROM* the Comm. Center

- ❖ CSA Server operates independently and can be installed on the same of different machine



Cello-IQ Communication Center

■ Cello-IQ – FTP/TFTP server

- ❖ **FTP / TFTP** servers - required to enable the Cello-IQ unit to upload CSA information files (Raw data) via FTP or TFTP
- ❖ FTP / TFTP servers are not included in the Cellocator Evaluation Suite
- ❖ Download the server from <http://filezilla-project.org/>
- ❖ Follow the installation procedure till the FTP server is installed and running

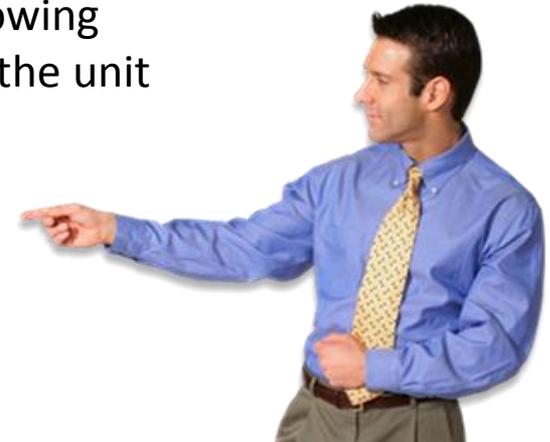


Topics

- Introduction
- **Evaluation**
 - **Setting up evaluation environment**
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Typical Evaluation Setup Scenario

- ❖ **Prepare** hardware and software components
- ❖ **Set up** communication environment - including LAN configuration, Communication Server, GPRS manager and CSA Server and FTP server
- ❖ **Validate** proper operation of Communication Center - using the GPRS Unit Simulator Software
- ❖ **Set up** Cello-IQ unit and the vehicle simulator
- ❖ **Program** communication parameters of Cello-IQ unit - allowing communication between the Communication Center and the unit
- ❖ **Validate** evaluation environment proper functioning



Hardware and software components

■ Prerequisite Components Preparation

- ❖ **Download** the Evaluation Suite Software Tools files from Cellocator website
- ❖ **Provide** a computer running Windows XP or Windows 7
- ❖ **Ensure** GSM/GPRS good reception (avoid working in basements)
- ❖ **Provide** a SIM card that is open for GPRS and SMS use
- ❖ **Obtain** the Access Point Name (APN) for GPRS traffic, from the cellular provider
- ❖ **Provide** a 12-24 VDC, 2A min power supply
- ❖ **A USB** to serial multiport device is optional but is recommended

Evaluation Kit software components

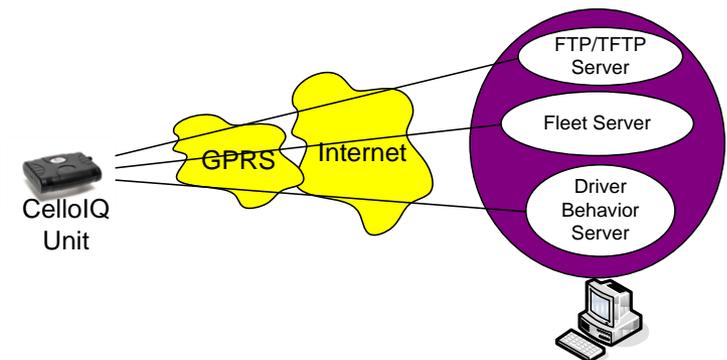
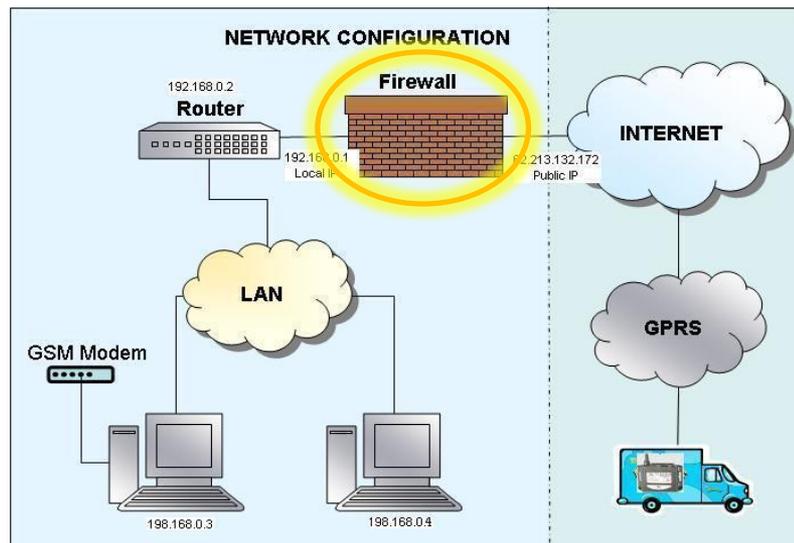
■ Software Components available on Pointer website

<ul style="list-style-type: none">• Wire communication used to configure the unit <p>Cellocator Programmer</p> 	<ul style="list-style-type: none">• OTA communication (IP or SMS) with the Cellocator unit <p>Communication Center</p> 	<ul style="list-style-type: none">• TCP/IP and UDP/IP communication stack with Cellocator units <p>GPRS Manager</p> 	<ul style="list-style-type: none">• SMS communication Dll with the unit• GSM modem connection to communication center software <p>SMS Manager</p> 	<ul style="list-style-type: none">• TCP/UDP server designed to communicate with the Cello-IQ unit on a different port from the Fleet socket <p>CSA Manager</p> 
<ul style="list-style-type: none">• Simulates OTA activities of the unit• Can integrate with GPS Simulator module <p>GPRS Unit Simulator</p> 	<ul style="list-style-type: none">• Simulates OTA messages associated with CSA events <p>CSA Unit Simulator</p> 	<ul style="list-style-type: none">• Debugging tool recording the unit's internal communication• Allows listening to communications between microcontroller and GSM modem <p>Communication Logger</p> 	<ul style="list-style-type: none">• PL information comparison• Simplifies the customer's PL generation for different hardware & firmware configurations <p>Configuration Files Comparison Tool</p> 	<ul style="list-style-type: none">• Server managing the uploaded CSA raw data and EDR files• CSA server must be installed with an FTP/TFTP server <p>FTP / TFTP server</p> 

Setting up the Communications Environment

■ Network and LAN Configuration

- ❖ **Make** sure your working station is connected to the internet
- ❖ **Set up** the Fire wall to allow communication between the unit and the evaluation environment thru predefined IP and ports
- ❖ **Set up** IP addresses for the 3 servers – FTP/TFTP (for Raw data), Fleet (for Fleet management) and CSA (for Safety messages) servers

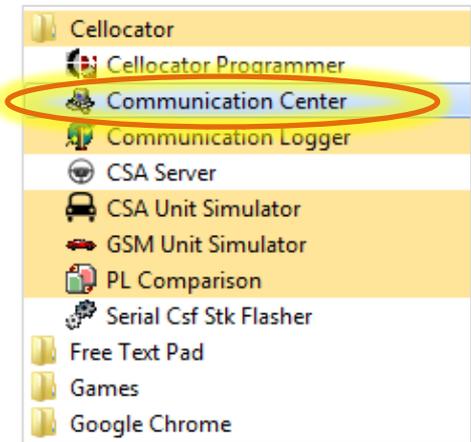


- **Configure** the three concurrent communication sessions

Install Cellocator Evaluation Suite

■ Installing Cellocator Evaluation Suite for Cello-IQ

- ❖ In the Evaluation suite installation wizard select the option of **Cello-IQ (Full installation)**. This installation includes all the applications and tools used for evaluating any Cello unit
- ❖ Upon a successful installation, Cellocator applications and debugging tools will appear in the **Start** menu, including CSA Server and CSA Unit simulator, unique to Cello-IQ
- ❖ The next step is to activate each of the installed applications



Communication Center Validation

■ Validation of Communication Center Proper Operations

- ❖ Validation can be performed using the **GSM Unit Simulator** for validating the GPRS Manager
- ❖ Set up the **GPRS settings** in the unit simulator and connect the unit
- ❖ **Change input states** (open/close door, turn ignition ON/OFF) and verify the simulator and the Communication Center PC receives the messages
- ❖ On the Communication Center PC, **send status requests** and verify that replies are received
- ❖ On the Communication Center PC **send commands** to activate outputs, e.g. Activate Siren and validate that the appropriate LED on the unit simulator lights up



CSA Communication Activation

■ CSA Communication Manager Server Setup

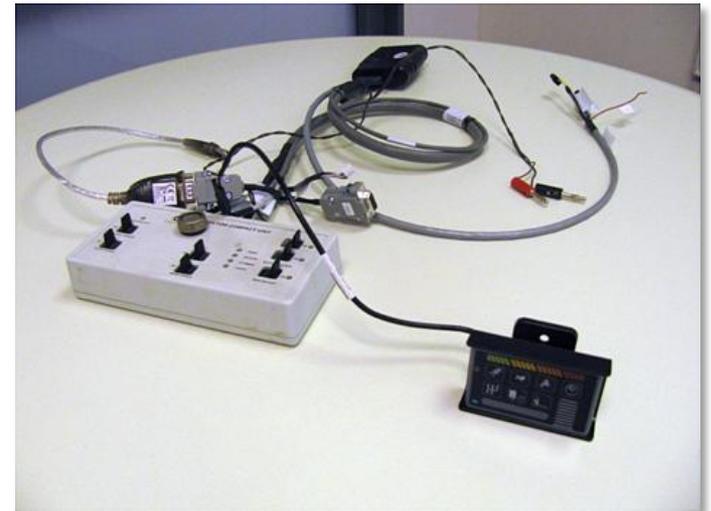
- ❖ The Communication Center uses the **CSA Server** for communication with the Cello-IQ unit regarding the CSA information
- ❖ Open the CSA server from the Cellocator program folder
- ❖ In the **CSA Communication Manager Server** you can view the TCP and UDP ports used by the CSA Server
- ❖ The ports can be edited in the CM APP.ini



Setting up Hardware

- **Set up Cello-IQ and vehicle simulator**
 - ❖ Set up Cello-IQ's SIM card and battery (if provided)
 - ❖ Set up the evaluation hardware environment

For more information on the setting up of Cello-IQ SIM and battery and the evaluation hardware, please refer to the **Cellocator Evaluation Suite Manual**, chapter 3.6
 - ❖ Note that the PC and the DFD use the same serial port and cannot be connected together
 - ❖ If the DFD is required, disconnect the serial port from the PC and plug in the DFD connector to the simulator's connector named "DFD"



Programming Communication Parameters

- **Program communication parameters of Cello-IQ**
 - ❖ The Cellocator Programmer is designed for wire communications with the unit, via a serial port, thus the DFD has to be disconnected
 - ❖ The DFD can be connected and tested upon finalizing setting up of the communication between the unit and the Comm. Server
 - ❖ Set up communication channels for the Fleet GPRS and SMS (if required) with the addition of CSA and FTP channels



Testing the Evaluation Set Up

- **Test Evaluation setup for Fleet Management and CSA**
 - ❖ Check proper messages appear in the **Incoming Message Log** section in the CommCenter window as a result of manipulations of unit simulator
 - ❖ Verify appropriate LEDs are activated and deactivated accordingly as a result of different commands in the CommCenter
 - ❖ To Test CSA evaluation setup, shake the unit to simulate car crash
 - ❖ Validate the expected CSA event and FTP file are received by the CSA server and can be viewed in the Communication Center screen
 - ❖ This test is depended on the EDR feature being enabled in the unit's Communication Parameters. The default value is EDR enabled.

Congratulations! Your Evaluation Environment is set.



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CSA Communication Manager Server

- **What is the CSA Communication Manager Server?**
 - ❖ Cellocator's **CSA Communication Manager Server** supports the CSA OTA protocol
 - ❖ The CSA Server communicates directly by sending downlink commands and processing CSA related uplink messages from Cellocator units while communicating with the Communication Center
 - ❖ From the CSA Communication Manager main window you can view the ports used and modify them, update the list of units, define which log settings to display in the main window and save the messages to and from the CSA Server

The screenshot shows the main window of the CSA Communication Manager Server. It features a 'Controls' section with buttons for 'Reset Counter', 'Load INI file', and 'Log Settings'. Below this is the 'Units List' section, which includes an 'Update List' button and an 'Auto Update' checkbox. A table displays the following data:

Unit ID	Protocol	Address	Last Message
350120	UDP	109.253.195.33:235	10:16:21.1961067
350121	TCP	46.210.120.61:7727	10:16:25.7991067

Below the table, there are status indicators for 'TCP:1', 'UDP:1', 'ID's:2', and 'Sockets:2'. A log window at the bottom shows several entries, including 'Pipe client disconnected' and 'Set ini file to...'. At the very bottom, a status bar shows 'Incoming: 1162/1162 bytes', 'TCP:520 UDP:642', and 'Tasks:0'. Three callout boxes are present: 'Update List' points to the 'Update List' button; 'View used ports' points to the status bar; and 'Define Log settings' points to the 'Log Settings' button.

Communication Center Main Window

- Incoming messages log - Traffic Filter

The screenshot displays the 'Communication Center Ver 3.1.1.53' interface. A red box highlights the 'Traffic Filter' panel on the left, which includes options for Direction (Uplink, Downlink, Error, Downlink...), Unit ID, Channel, Application (Fleet, Safety, Auto), and an 'Apply' button. A yellow callout points to this panel with the text: 'Use the **Traffic Filter** panel to filter messages according to the options selected (Direction, Unit ID, Channel, and Application).' Below the filter is a table of incoming messages. A yellow callout points to the 'Sub Types' column of this table, stating: 'The **Sub Types** column is only relevant to **Safety** messages and displays a number which is a form of message type or ID.' Another yellow callout points to the 'Application' column, noting: 'Note that the Application column displays either **Fleet** or **Safety**, according to the channel of communication.' The table shows columns for Dir, Date Time, Unit, Channel, Application, Numerator, Type, and Sub Types. The right side of the window shows detailed message data for a selected entry, including CSA Header, Raw Data, CSA Full Event, and Maneuver Statistics.

Dir	Date Time	Unit	Channel	Application	Numerator	Type	Sub Types
	31/01/2012 12:16:50	208202	FileDecode	Safety	57	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	58	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	59	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	60	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	61	0	30
	31/01/2012 12:16:50	208202	FileDecode	Safety	62	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	63	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	64	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	65	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	66	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	67	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	68	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	69	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	70	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	71	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	72	0	30,31
	31/01/2012 12:16:50	208202	FileDecode	Safety	75	0	30
	31/01/2012 12:16:50	208202	FileDecode	Safety	76	0	30
	31/01/2012 12:16:50	208202	FileDecode	Safety	77	0	30
	31/01/2012 12:16:50	208202	FileDecode	Safety	78	0	30
	31/01/2012 12:16:50	208202	FileDecode	Safety	79	0	30
	31/01/2012 12:16:50	208202	FileDecode	Safety	80	0	30
	31/01/2012 12:16:50	208202	FileDecode	Safety	81	0	30
	31/01/2012 12:16:50	208202	FileDecode	Safety	82	0	30
	31/01/2012 12:16:50	208202	FileDecode	Safety	83	0	30
	31/01/2012 12:16:50	208202	FileDecode	Safety	84	0	30

CSA options in the Communication Center

- Additional CSA options in the Communication Center



KML file to view trip
"story" in Google Earth



CSA File Display window



CSA Commands & Programming
options in the Safety tab

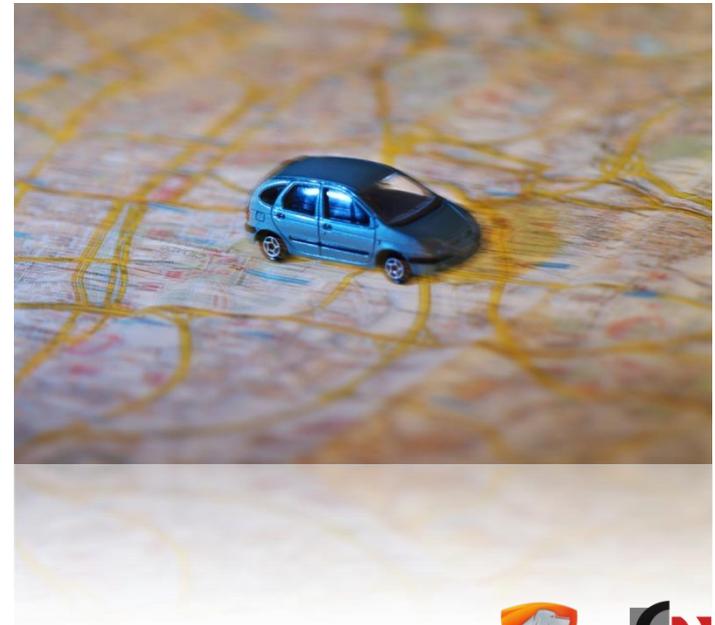
Communication Center



Viewing trip “story” in Google Earth

- **Keyhole Markup Language (KML)**

- ❖ **KML** - an XML notation for expressing geographic annotation and visualization within Internet-based, such as **Google Earth**, **Google Maps**, and **Google Maps for mobile**
- ❖ **Assists** in evaluating Cello-IQ functionality by visualizing CSA trips with their driving maneuvers detailed statistics, trip scores and other relevant information



Viewing trip units in Google Earth

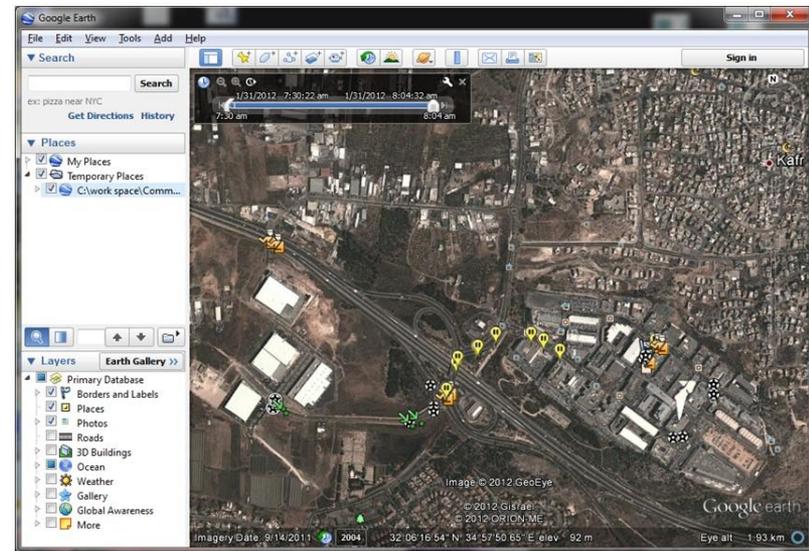
■ Keyhole Markup Language (KML)

- ❖ Comm.Center allows to export Cello-IQ trips into KML files with dedicated icons
- ❖ Clicking Export automatically launches Google Earth if installed locally
- ❖ At the end of the trip an additional node is displayed which details the trip summary, including safety and eco scores



Icon sample:

Speeding Stop: Icon colored according to severity of safety score (green/yellow/red)



CSA File Display window

- **CSA File Display - enables analyzing trip maneuvers and crashes**

2 file Types of Raw data sent by the unit via the FTP/TFTP server



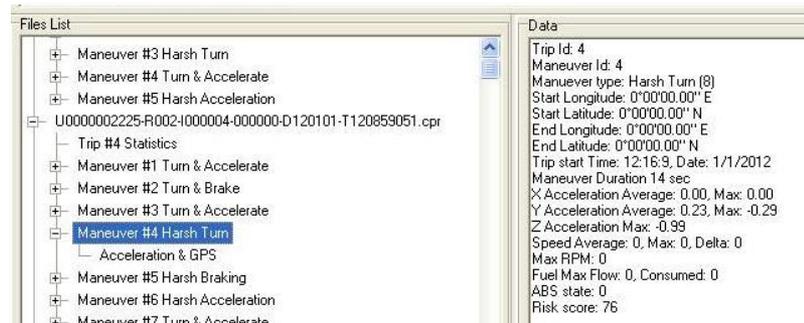
.ncp

- non-compressed file
- does not include GPS and acceleration data
- Can contain only maneuver statistics information

.cpr

- Compressed file
- Raw data for GPS and acceleration events

- **Double-clicking on a maneuver parses the data and displays it in summary**
- **The file can be exported to .CSV format**



CSA Commands & Programming

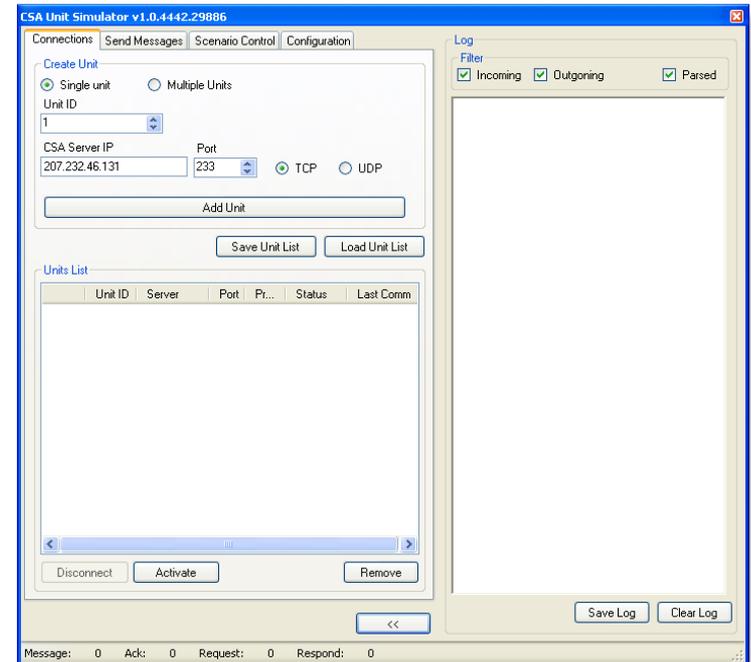
■ Safety - the Cello-IQ CSA application

- ❖ The **Safety** tab is located at the bottom of the Communication Center main window
- ❖ The **Safety Commands** dialog enables you to send commands to units by selecting the unit and then the command from a list of default commands
- ❖ Click **Show OTA Strings** checkbox, which opens an expanded pane, to enter customized commands to the selected unit
- ❖ Useful while debugging command building routines / components in your SW platform
- ❖ You can configure the unit parameters by opening the **OTA Programmer** via the **Programming tab**



CSA Unit Simulator

- **Simulates Cello-IQ unit CSA communication**
 - ❖ Provide the developer with a testing tool for his new application
 - ❖ The software simulates OTA messages associated with the CSA events
 - ❖ Enables the sending of CSA messages that include modular messages
 - ❖ The simulator can simulate one or more units
 - ❖ The simulator includes **Setting and Control** tabs, **Messages Log** and **Status bar** for CSA events and requests sent between the unit and the simulator
 - ❖ CSA messages scenarios sent by the active unit simulators, can be edited and controlled via the **Scenario Control** tab



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 - **Initial setup scenario**
- PL configuration Scenarios

Initial configuration

In the **Cellocator Programmer**, select the relevant PL that matches the tested unit (Cello-F, Cello-R, Cello-IQ etc.), the application version number used etc.

The screenshot shows the Cellocator Programmer software interface. The title bar reads "Cellocator Programmer Ver 8.1.0.71". The menu bar includes "File", "Edit", "Search", "View", "Communication", "CAN", and "Help". The toolbar contains various icons for file operations and configuration. The main window displays a tree view of configuration options. A callout box points to the "Open" icon in the toolbar, with the text "Click Open to browse for the relevant PL." The status bar at the bottom shows "Unit ID: 50000", "Unlocked", "Hardware ver.: 31", "Software ver.: 32d", "Protocol ver.: 4", "Telit GE864 Automotive", and "COM 7".

Value	Type	Address	Units	Size/Bit
01	Communication and Configuration			
02	Distance&Speed events			
03	Time&Trip events			
04	Inputs Events			
05	Power Events			
06	Geo-Fences and Towing			
07	CSA Configuration			
08	External Keyboard			

Initial configuration

At this point, proceed to initial configuration of IP addresses of GRPS, CSA and FTP/TFTP servers, APN password and other parameters are (as done for Fleet applications).

Open the **Communication and Configuration** folder for the communication settings.

The screenshot shows the Cellocator Programmer interface. On the left, a tree view shows the configuration structure under '01 Communication and Configuration'. The 'GPRS Settings' folder is expanded, and the 'APN' parameter is highlighted in the main table.

Name	Value	Type	Address	Units	Size/Bit index	Modif
APN	intereal	AnsiString	0036	string	30	7 19
Default target DNS Address (operati...		AnsiString	2464		32	3 11
Default target IP Address (E...			0066		4	7 19
GPRS PPP password		string	0141	string	24	1 00
GPRS PPP username		string	0008	string	24	6 78
GPRS Self Port			0107		2	1 00
GPRS Target Port	231	Decimal	0109		2	1 00
Modem type code for Operational S...	4 (TCP/IP over ...	Decimal	0074		1	11 00

A dialog box titled 'APN - AnsiString' is open, showing 'Enter value:' with 'intereal' entered in the text field. The 'Units:' field shows 'string'. There are 'OK' and 'Cancel' buttons at the bottom.

Initial configuration

The screenshot shows the Cellocator Programmer Ver 8.1.0.71 interface. The main window displays a tree view on the left with 'GPRS Settings' expanded. The right pane shows a table of configuration parameters. The 'Default target IP Address (For GPRS)' parameter is highlighted with a red box. A yellow callout bubble points to this parameter with the text: 'Click Default target IP Address (for GPRS). Enter the address.' A dialog box titled 'Default target IP Address (For G...' is open in the foreground, showing the value '62.0.95.28' entered in the 'Enter value:' field. The dialog has 'OK' and 'Cancel' buttons.

Name	Value	Type	Address	Units	Size/Bit index	Modif
APN	interal	AnsiString	0036	string	30	7179
Default target DNS Address (operati		AnsiString	2464		32	3 111
Default target IP Address (For GPRS)	62.0.95.28	Unix IP				7179
GPRS PPP password		AnsiString				1107
GPRS PPP username		AnsiString				6 78
GPRS Self Port	231	Decimal				1107
GPRS Target Port	231	Decimal	0109		2	1107
Modem type code for Operational S...	4 (TCP/IP over ...	Decimal	0074		1	11 13

Initial configuration

The screenshot shows the Cellocator Programmer interface. The main window displays a table of configuration parameters under the 'GPRS Settings' category. The 'GPRS Target Port' parameter is highlighted in red. A dialog box titled 'GPRS Target Port - Decimal' is open, showing the value '231' entered in the 'Enter value:' field. A callout bubble points to the 'GPRS Target Port' row in the table with the text 'Set up the GPRS Target Port.'

Name	Value	Type	Address	Units	Size/Bit index	Modif
APN	intercal	AnsiString	0036	string	30	7179
Default target DNS Address (operati...		AnsiString	2464		32	3111
Default target IP Address (For GPRS)	62.0.95.28	Unix IP	0066		4	7179
GPRS PPP password		AnsiString	0141	string	24	1107
GPRS PPP username		AnsiString	0008	string	24	6181
GPRS Self Port	231	Decimal	0107		2	1107
GPRS Target Port	231				2	1107
Modem type code for Operational S...	4 (TCP/IP)				1	1113

Initial configuration

In the CSA Configuration\Communication Settings you will set up the communications relevant to the CSA.

The screenshot shows the Cellocator Programmer interface with the following configuration table:

Name	Value	Type	Address	Units	Size/Bit index	Modif
Configuration						Neve
RT Event server CSA - IP Address	62.0.95.28	Unix IP	1900		4	719
Connection type to event CSA server	3 (TCP/UDP)	Bitscript	1940		1	100
Listening UDP Port	233					719
RT Event server CSA - DNS Address		AnsiStr			2	100
Target Port (UDP and TCP)	233	Decima				719

A dialog box titled "RT Event server CSA - IP Address..." is open, showing the "Enter value:" field with "62.0.95.28" entered. A callout bubble points to this field with the text: "Set up the RT Event server CSA IP Address."

Initial configuration

The screenshot shows the Cellocator Programmer interface. The main window displays a configuration table for the Real Time Event CSA Server. A dialog box titled "Listening UDP Port - Decimal" is open, showing the value 233 entered in the "Enter value:" field. A callout bubble points to the "Listening UDP Port" row in the table with the text "Set up the Listening UDP Port."

Name	Value	Type	Address	Units	Size/Bit index	Modif
Configuration						Neve
RT Event server CSA - IP Address	62.0.95.28	Unix IP	1900		4	719
Connection type to event CSA server	3 (TCP/IP)	Bitscript	1940		1	1100
Listening UDP Port	233	Decimal				719
RT Event server CSA - DNS Address		Ansium			2	1100
Target Port (UDP and TCP)	233	Decimal				719

Listening UDP Port - Decimal

Enter value:

233

OK Cancel

Initial configuration

The screenshot shows the Cellocator Programmer interface. The main window displays a configuration table with the following data:

Name	Value	Type	Address	Units	Size/Bit index	Modif
Configuration						Neve
RT Event server CSA - IP Address	62.0.95.28	Unix IP	1900		4	719
Connection type to event CSA server	3 (TCP/IP)	Bitscript	1940		1	110ק
Listening UDP Port	233	Decimal	1936		2	719
RT Event server CSA - DNS Address		AnsiString	1904		32	110ק
Target Port (UDP and TCP)	233	Decimal	1938		2	719

A dialog box titled "Target Port (UDP and TCP) - Dec..." is open, showing "Enter value:" with the number "233" entered in the text field. A callout bubble points to this dialog with the text "Set up the Target Port." The status bar at the bottom right shows "COM 7".

Initial configuration

The screenshot shows the Cellocator Programmer interface with the following configuration table:

Name	Value	Type	Address	Units	Size/Bit index	Modif
Configuration						Neve
RT Event server CSA - IP Address	62.0.95.28	Unix IP	1900		4	719
Connection type to event CSA server	3 (TCP/IP)	Bitscript	1940		1	1107
Listening UDP Port	233	Decimal	1936		2	719
RT Event server CSA - DNS Address		Ans				1107
Target Port (UDP and TCP)	233	Decimal				719

A callout box points to the 'Connection type to event CSA server' row with the text: "Select Connection type to the CSA server, either TCP/IP or UDP/IP."

A dialog box titled "Connection type to event CSA se..." is open, showing a dropdown menu with the following options: TCP/IP (selected), UDP/IP, Not supported, and Not supported.

Initial configuration

The screenshot shows the Cellocator Programmer Ver 8.1.0.71 interface. The main window displays a configuration table for '07 CSA Configuration\Communication Settings\FTP(TFTP) CSA Server\'. The 'FTP (TFTP) Server IP Address' row is highlighted in yellow, with a callout box pointing to it that says 'Set the FTP/TFTP server IP address.' Below the main window, a smaller dialog box titled 'FTP (TFTP) Server IP Address - U...' is open, showing the value '62.0.95.28' entered in the 'Enter value:' field. The dialog has 'OK' and 'Cancel' buttons.

Name	Value	Type	Address	Units	Size/Bit index	Modif
FTP (TFTP) Port	69	Decimal	2080		2	1101
FTP (TFTP) Server DNS Address		AnsiString	2046		32	1107
FTP (TFTP) Server IP Address	62.0.95.28	Unix IP	2042		4	7119
FTP authentication password		AnsiString	2106			
FTP authentication username		AnsiString				
FTP or TFTP selection	0 (TFTP)	Bitscript	1940			
TFTP Self UDP Port	232	Decimal	2078			

Initial configuration

The screenshot shows the Cellocator Programmer interface. The main window displays a table of configuration parameters for the 'FTP (TFTP) Port'. The 'FTP (TFTP) Port' parameter is highlighted in yellow, and its value '69' is shown in the 'Value' column. A dialog box titled 'FTP (TFTP) Port - Decimal' is open, showing the value '69' entered in the 'Enter value:' field. A callout bubble points to the dialog box with the text 'Set the FTP/TFTP Port number.'.

Name	Value	Type	Address	Units	Size/Bit index	Modif
FTP (TFTP) Port	69	Decimal	2080		2	1101
FTP (TFTP) Server DNS Address		AnsiString	2046		32	1107
FTP (TFTP) Server IP Address	62.0.95.28	Unix IP	2042		4	719
FTP authentication password		AnsiString	2106			
FTP authentication username		AnsiString				
FTP or TFTP selection	0 (TFTP)	Bitscript	1940			
TFTP Self UDP Port	232	Decimal	2078			

Set the FTP/TFTP Port number.

Initial configuration

The screenshot shows the Cellocator Programmer Ver 8.1.0.71 interface. The main window displays a configuration table for the '07 CSA Configuration\Communication Settings\FTP(TFTP) CSA Server\'. The table has columns for Name, Value, Type, Address, Units, Size/Bit index, and Modif. The 'FTP or TFTP selection' row is highlighted in red, and a callout box points to it with the text 'Select either FTP or TFTP.'.

Name	Value	Type	Address	Units	Size/Bit index	Modif
FTP (TFTP) Port	69	Decimal				1101
FTP (TFTP) Server DNS Address		Address				1102
FTP (TFTP) Server IP Address	62.0.95.28	Un				1103
FTP authentication password						1104
FTP authentication username						21 11
FTP or TFTP selection	0 (TFTP)	Bitscript				1101
TFTP Self UDP Port	232	Decimal	2078		2	1101

A dialog box titled 'FTP or TFTP selection - Bitscript' is open, showing a 'Select Value:' dropdown menu with the following options: TFTP (selected), TFTP, FTP, Reserved, and Reserved.

Initial configuration

Launch the **CSA Communication Manager Server** to enable viewing CSA messages in the **Communication Center**.

CSA Communication Manager Server v1.1.4855.23718

Controls

Reset Counter Load INI file Log Settings

Units List

Update List Auto Update

Unit ID	Protocol	Address	Last Message
---------	----------	---------	--------------

Clear

TCP:233 UDP:233 Incoming: 0/0 bytes TCP:0 UDP:0 Tasks:0

Topics

- Introduction
- Evaluation
 - Setting up evaluation environment
 - First Steps with Cello IQ
 - Initial setup scenario
- **PL configuration Scenarios**

Introduction to PL Configuration

- ❖ Once the Evaluation environment is set up, you can proceed to test the unit, learn it's functionalities and test your settings, by checking different scenarios using PL configurations
- ❖ You will use the **Cellocator Programmer** for configuration and the **Communication Center** for viewing the results

We have prepared for you some scenarios that will demonstrate different PL parameters. Let's start!



Scenario 1 – EDR enabled

Parameter name	PL configuration Scenario C	Simulation	Output expected
EDR	Enabled + custom pre and post values.	Crash (Impact on the table)	Unit Transmit pre and post EDR to FTP/TFTP + Crash event message to CSA server (GPRS or SMS)
Vehicle type	LCV	-	-

Scenario 1 – EDR enabled

Before you proceed to configure the PL according to Scenario 1, make sure to perform the initial setup as described in the previous chapter.

Open the **CSA Configuration\Application Configuration** folder. Click on **Vehicle Type** to edit it.

The screenshot shows the Cellocator Programmer interface. The left sidebar displays a tree view of configuration folders, with 'Vehicle type' highlighted in red. A dialog box titled 'Vehicle type - D...' is open, showing a dropdown menu with 'Large Van' selected. A callout bubble points to this selection with the text 'Select Large Van from the dropdown menu.' The main window displays a table of configuration parameters.

Name	Value	Type	Address	Units
Auto-send	1 (1 - Enable)	Flag	1944	
Crash Tre	0 (EDR)	Flag	1942	
Enable Au	0 (0 - Disable)	Flag	1942	
Enable Dr	1 (1 - Enable)	Flag	1943	
Enable ev	1 (1 - Enable)	Flag	1944	
Enable Go	1 (1 - Enable)	Flag	1943	
Enable Ign	1 (1 - Enable)	Flag	1943	
Enable Trip EN	1 (1 - Enable)	Flag	1943	
Enable Trip Start Event			1942	
Go Halt Speed Detection Threshold			2142	km/h
Go Halt Time Threshold filter			2143	seconds
Sampling rate	3 (20Hz)	Decimal	1950	
Upload raw data when maneuver ends (real time FTP)	0 (0 - Disable)	Flag	1944	
Vehicle type	0 (Private)	Decimal	2004	

Scenario 1 – EDR enabled

The screenshot shows the Cellocator Programmer Ver 8.1.0.71 interface. The left sidebar displays a tree view of configuration categories, with 'GPRS Settings' expanded. The main window shows a list of configuration items. The 'Crash Treatment' item is highlighted with a red box. A green callout bubble points to this item with the text: 'Use the **Crash Treatment** menu to define it as either a **Maneuver** or **EDR**. The default value is **EDR enabled**.' A 'Crash Treatment...' dialog box is open, showing a 'Select Value:' dropdown menu with 'EDR' selected. A yellow callout bubble points to the dropdown with the text: 'Select **EDR** from the **Crash Treatment** dropdown list.'

Name	Value	Unit	Units
Auto-send trip statistics upon trip end			
Crash Treatment			
Enable Auto-start calibration upon error			
Enable Driver ID update event	1 (1 - Enable)	Flag	1943
Enable event upon end of file upload	1 (1 - Enable)	Flag	1944
Enable Go-Halt event	1 (1 - Enable)	Flag	1943
Enable Ignition Start-Stop event	1 (1 - Enable)	Flag	1943
Enable Trip End Event	1 (Enable)	Flag	1942
Enable Trip Sta	(Enable)	Flag	1942
Go Halt Speed		Decimal	2142 km/h
Go Halt Time T		Decimal	2143 seconds
Sampling rate	(20Hz)	Decimal	1950
Upload raw dat	(0 - Disable)	Flag	1944
Vehicle type	(Private)	Decimal	2004

Scenario 1 – EDR enabled

Open the **CSA Configuration\Crash EDR** to edit the **pre and post crash data log duration**. Note that the **summary of both cannot exceed 60 seconds**.

Open the **Heavy/Light crash** folders to edit other parameters such as their **Thresholds (in G)**, **File Upload** enabled or not, **File Save** after upload etc.

Enter the value to determine the number of seconds to record prior to a crash event.

Name	Value	Type	Address	Units
Heavy crash				
Light crash				
SMS				
Voice Call				
Crash reminder period			1970	minutes
Post-Crash data log duration			1959	5 secs
Pre-Crash data log duration	10	bitscript	1959	5 secs

Unit ID: 200201 Unlocked Hardware ver.: 31 Software ver.: 32d Protocol ver.: 4 Telit GE864 Automotive COM 7

Scenario 1 – EDR enabled

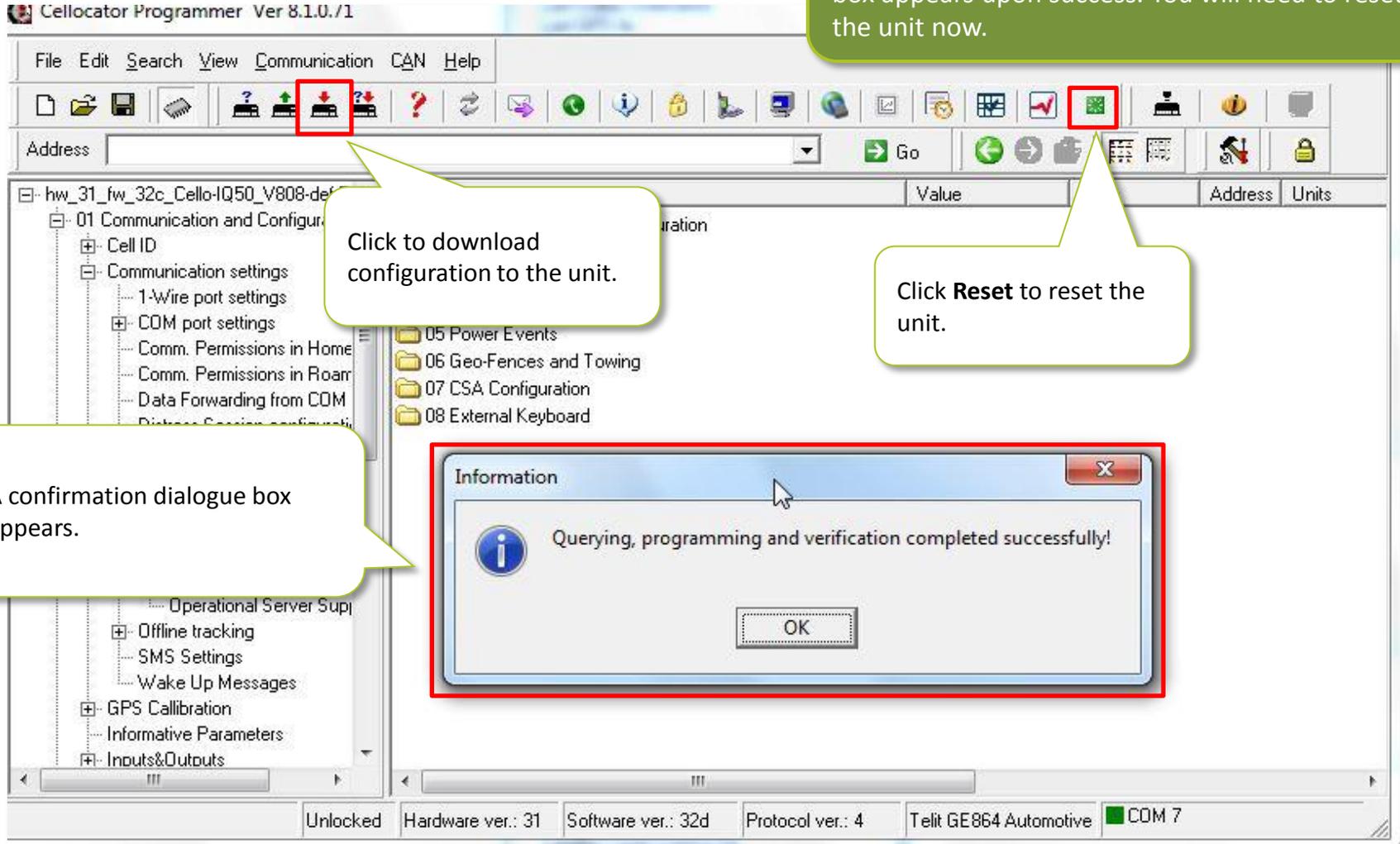
The screenshot shows the Cellocator Programmer interface. The 'Search' menu is open, showing options: 'by Address', 'by Parameter Name', and 'Last Search'. A green callout box points to the menu with the text: 'You can search for a certain configurable parameter by using the **Search** menu.'

Another green callout box points to the 'Search' menu with the text: 'Click the **Search** menu to open the dropdown list. Here you can choose to search by different criteria.'

Name	Value	Type	Address	Units	Size/Bit index	Modif
Attributes Per Severi						Neve
Continuous maneu						Neve
Maneuver Detection						Neve
Logged post-maneu			2003	sec	1	1101
Logged pre-maneu			2002	sec	1	1101
Minimum Speed for M			1992	km/h	1	1102

Scenario 1 – EDR enabled

Once the PL configuration is complete, download the settings to the unit. A confirmation dialogue box appears upon success. You will need to reset the unit now.



A confirmation dialogue box appears.

Click to download configuration to the unit.

Click **Reset** to reset the unit.

Scenario 1 – EDR enabled

To test EDR configuration, you need to simulate a crash event. This is done by shaking and or slamming the unit on a hard surface.

The crash event report appears according to the **Pre/Post data log duration**, configured in the previous steps.

The screenshot shows the Communication Center interface with a list of messages on the left and detailed data on the right. A red box highlights the message list, and another red box highlights the detailed data for a selected message.

Dir	Date Time	Unit	Channel	Application	Numerator	Type	Sub Types
	18/04/2013 14:32:32	200201	GPRS	Fleet	2	0	
	18/04/2013 14:32:32	200201	GPRS	Safety	0	0	30
	18/04/2013 14:32:33	200201	GPRS	Safety	14	0	30
	18/04/2013 14:32:33	200201	GPRS	Safety	15	0	30
	18/04/2013 14:32:33	200201	GPRS	Fleet			
	18/04/2013 14:32:38	200201	GPRS	Safety			
	18/04/2013 14:34:44	200201	GPRS	Safety			
	18/04/2013 14:35:49	200201	GPRS	Safety			
	18/04/2013 14:35:50	200201	GPRS	Safety			
	18/04/2013 14:36:42	200201	GPRS	Fleet			
	18/04/2013 14:37:09	200201	GPRS	Safety			
	18/04/2013 14:37:14	200201	GPRS	Safety			

CSA Header	
Message Length	72
Message ID	18
Message Type	CS
Protocol Version	1
Message Direction	Out
Message Initiator	Active

Basic Data	
Data	43534148001200C8090E03001E2E020012001100000000000000007000000200000001000404020A1345A30

CSA Full Event	
Maneuvers data usage	0 %
Crash #1	Occupied
Crash #2	Empty
HDop	4
Mode 1	4
Mode 2	2
Number of satellites used	10
Longitude	34°58'07.44" E
Latitude	32°06'27.36" N
Altitude	135.51 M'
Ground Speed	0 Km/h
Speed direction (true course)	0.00 °
Date & Time	11:36:01 18/04/2013

Crash Attributes	
Crash ID	1
Vehicle Type	LCV
Crash Type	light crash
Max G Recorded	3.24
Accident Information	Rear, Normal
Duration in seconds	40
num Of Init Accel	4
amount Of Post Samples	82
pre Data Len In Sec	10
post Data Len In Sec	30

Note: The CSA Communication Manager Server should be up and running in order for CSA messages to be display in the Communication Center!

The Fleet and CSA messages display. The first messages will be reporting the unit is up, it's i.d. and current status.

The data includes CSA Full Event and Crash Attributes. Here you can see the Crash Type, i.e. Light or Heavy, the G Forces involved, where the car was hit, the Event Duration etc.

Scenario 1 – EDR enabled

Once the file upload to the FTP/TFTP is complete, you can view the raw data via the **CSA File Display**.

The screenshot shows the 'Communication Center (Cello) Ver 3.1.0.76' interface. The 'Actions' menu is highlighted with a red box. A yellow callout box points to the 'Actions' menu with the text: 'Access the CSA File Display via the Actions menu.' The main window displays a table of messages with columns: Dir, Date Time, Unit, Channel, Numerator, Type, and Sub Types. The selected row is: 18/04/2013 14:35:49, 200201, GP, Safety, 21, 0, 30. The right pane shows 'CSA Header' and 'Crash Attributes' details for the selected message.

Dir	Date Time	Unit	Channel	Numerator	Type	Sub Types
18/04/2013 14:32:32	18/04/2013 14:32:32	200201	GPRS			
18/04/2013 14:32:33	18/04/2013 14:32:33	200201	GP			
18/04/2013 14:32:33	18/04/2013 14:32:33	200201	GP			
18/04/2013 14:32:33	18/04/2013 14:32:33	200201	GP			
18/04/2013 14:32:38	18/04/2013 14:32:38	200201	GP			
18/04/2013 14:34:44	18/04/2013 14:34:44	200201	GP			
18/04/2013 14:35:49	18/04/2013 14:35:49	200201	GP	Safety	21	0 30
18/04/2013 14:35:50	18/04/2013 14:35:50	200201	GP			
18/04/2013 14:36:42	18/04/2013 14:36:42	200201	GP			
18/04/2013 14:37:09	18/04/2013 14:37:09	200201	GPRS			
18/04/2013 14:37:14	18/04/2013 14:37:14	200201	GPRS			

CSA Header

Message Length	72
Message ID	18
Message Type	CSA Event / Reply to command
Protocol Version	1
Message Direction	Outbound
Message Initiator	Active

43534148001200C8090E03001E2E020012000100000000000000700000200000001000404020A1345A30

Crash Attributes

Crash ID	1
Vehicle Type	LCV
crash Type	light crash
Max G Recorded	3.24
Accident Information	Rear, Normal
Duration in seconds	40
num Of Init Accel	4
amount Of Post Samples	82
pre Data Len In Sec	10
post Data Len In Sec	30

Selected: 1 Displayed: 12 Total: 21

Header: CSA
Checksum: 7C(Pass)

Scenario 1 – EDR enabled

The screenshot shows the 'CSA file display' application window. The 'Files List' on the left contains several .ncp files, with one selected. The 'Data' window on the right shows a table of acceleration values for X, Y, and Z axes. Below the data are two graphs: 'Accelerations' showing acceleration in G over time, and 'Speed & Heading' showing speed and course over time. Callouts provide instructions on how to interact with the interface and describe the data content.

Click on the file you wish to view.
It contains **EDR data** and **Acceleration & GPS** samplings for each of the seconds configured in the **Pre and Post event** thresholds. This information can be used to reconstruct the event.

The uploaded files appears in the **Files List** window.
Select the desired file and double-click to view the data in the window on the right.

The first scenario simulation is complete!

Scenario 2 – EDR disabled

Parameter name	PL configuration Scenario B	Simulation	Output expected
EDR	Disabled	Crash (Impact on the table)	Crash event is reported thru CSA only just like a maneuver but without any EDR / raw data to FTP at the end of the trip

- ❖ The crash can be detected and reported as an event only. In this scenario the EDR functionality is disabled.

Scenario 2 – EDR disabled

Open the **CSA Configuration\Application Configuration** folder. Click on **Crash Treatment** to edit it.

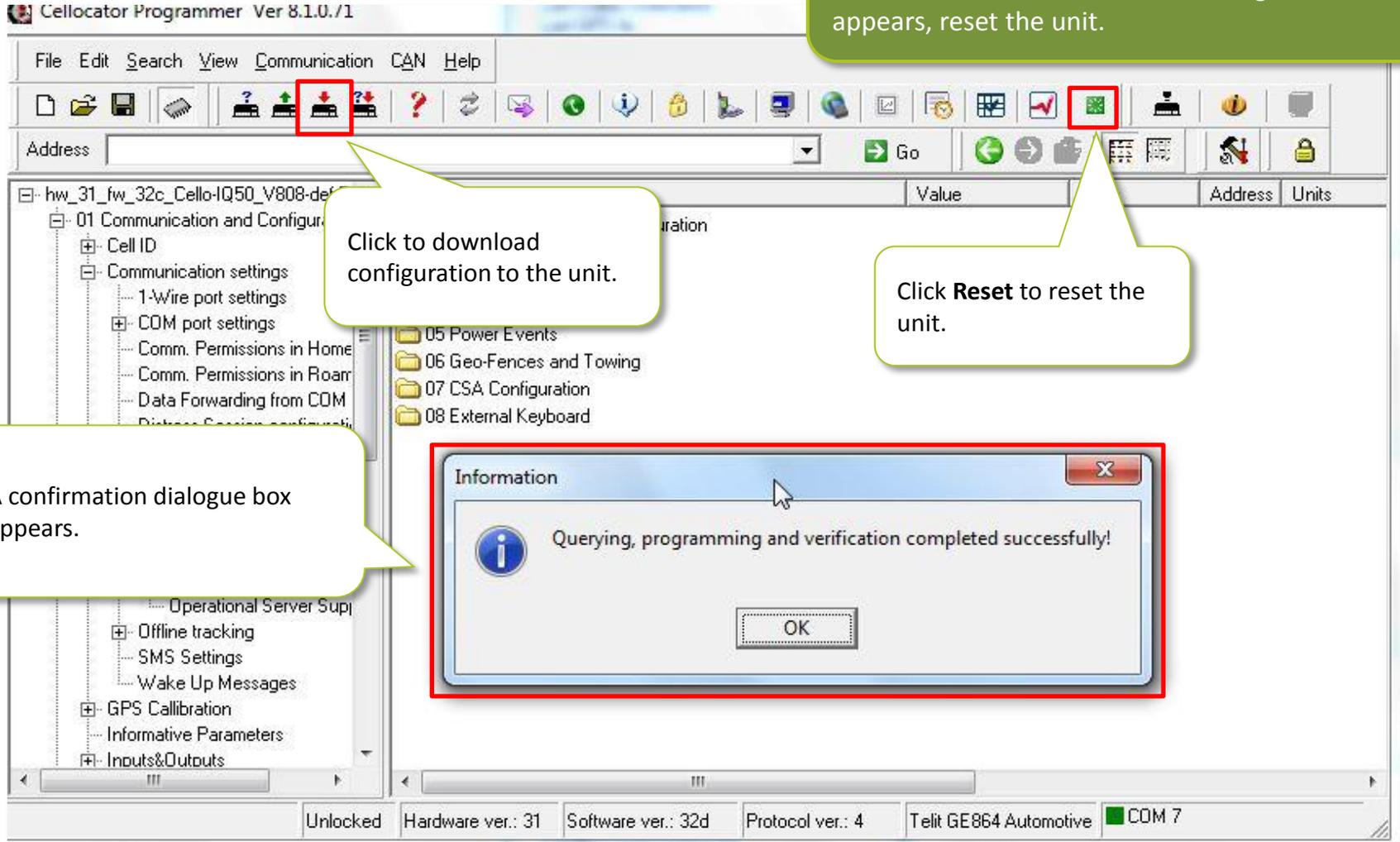
The screenshot shows the Cellocator Programmer interface. The left sidebar displays a tree view of configuration folders, with '07 CSA Configuration' expanded to show 'Application Configuration'. The main window displays a table of configuration parameters. A 'Crash Treatment - Flag' dialog box is open, showing a 'Select Value:' dropdown menu with 'Maneuver' selected. A callout bubble points to this selection with the text: 'Select **Maneuver** from the dropdown list to define the crash event as a maneuver.'

Name	Value	Type	Address	Units	Size/Bit
Auto-send trip statistics upon trip end	1 (1 - Enable)	Flag	1944		0
Crash Treatment - Flag			1942		6
Enable			1942		2
Enable			1943		4
Enable			1944		5
Enable			1943		2
Enable			1943		3
Enable			1943		5
Enable					4
Go Halt Speed Detection Threshold	5			h	1
Go Halt Time Threshold filter	3			onds	1
Sampling rate	3 (20				1
Upload raw data when maneuver e...	0 (0 - Disable)	Flag	1944		6
Vehicle type	0 (Private)	Decimal	2004		1

Scenario 2 – EDR disabled

Download the new settings to the unit.

After the success confirmation dialogue box appears, reset the unit.



Scenario 2 – EDR disabled

Simulate a crash event by shaking and or Switch to the **Communication Center**, where you can view and monitor the **CSA** messages the unit is reporting. Make sure the **CSA Communication Manager Server** is up and running.

The screenshot shows the 'Communication Center (Cello) Ver 3.1.0.76' interface. On the left, a table lists messages with columns: Dir, Date Time, Unit, Channel, Application, Numerator, Type, and Sub Types. A red box highlights a row with Date Time '22/04/2013 11:07:11', Unit '200250', Channel 'GPRS', Application 'Safety', Numerator '8', Type '0', and Sub Types '30,31'. Below this table, a callout box explains that Fleet and CSA messages are displayed and that the first messages report unit status.

On the right, the 'CSA Header' and 'Raw Data' sections are visible. A red box highlights the 'CSA Full Event' section, which contains detailed information about a crash event, including Event Reason (Crash occurred), Event Sub-Reason (Maneuver Light), Event Numerator (8), Standby Engine (On), Driving (Idling), Calibration (Ready), Raw logging (Off), Engine (Off), Driver ID (000000000000), Trip ID (2), Maneuver ID (3), and Maneuvers data usage (0%). Below this, the 'ABC Maneuver Statistics' section provides location data (Start Location: 34°58'06.98" E, 32°06'27.48" N; End location: 34°58'06.98" E, 32°06'27.48" N), Start Time (08:07:08.22/04/2013), and various G-force and speed statistics.

At the bottom of the interface, a status bar shows 'Selected: 1', 'Displayed: 15', and 'Total: 24'. A callout box at the bottom right states that the second scenario simulation is complete.

The **Fleet** and **CSA** messages are displayed.

The first messages will be reporting the unit is up, it's i.d. and current status.

The data will not include **Crash Attributes, Pre/Post data and Raw data** upload to the **FTP/TFTP** server.

The **CSA Full Event** will display the type of maneuver (crash), it's severity (Light/Heavy), engine status, date and time etc.

The **Maneuver Statistics** will include information of the event type, momentary statistics on the event's location, G forces, etc. but will not show important data such as where the car was hit, the overall duration of event etc.

The second scenario simulation is complete!

Scenario 3 – Maneuvers & DFD settings

Parameter name	PL configuration Scenario C	Simulation	Output expected
DFD	Disabled	DFD connected but does not project any kind of information. Notifies communication problem.	-
Maneuver reporting attributes	Event reporting – Yellow & Red. Statistics – Red only Raw data – Red & Yellow.	Test drive – Green events are not projected to server.	Yellow events are sent as events only. Red events are sent with statistics. Yellow and Red events send Raw data. However – trip score does not change. Demonstrated on KML file
RPM	Disabled	-	-
Speed	Off-board	Test drive	Over speeding events are not sent. GPS profile sent at the end of the trip.
Off-road	Disabled (this car is allowed to drive off-road as part of its job)	Test drive	Off road event is not reported.

Scenario 3 – Maneuvers & DFD settings

In Celloicator Programmer, configure the PL settings according

Open the **CSA Configurations\Application Configuration** to select the Vehicle type.

The screenshot shows the Celloicator Programmer interface with the following configuration table:

Name	Value	Type	Address	Units	Size/Bit
Auto-send trip statistics upon trip end	1 (1 - Enable)	Flag	1944		0
Crash T			1942		6
Enable			1942		2
Enable			1943		4
Enable			1944		5
Enable			1943		2
Enable			1943		3
Enable					5
Enable					4
Go Halt Speed Detection Threshold	3			km/h	1
Go Halt Time Threshold filter	3			seconds	1
Sampling rate	3 (20Hz)	Decimal			1
Upload raw data when maneuver e...	0 (0 - Disable)	Flag	1944		6
Vehicle type	0 (Private)	Decimal	2004		1

A dialog box titled "Vehicle type - Decimal" is open, showing a list of options: Private, Private, Large Van, Light Truck/bus, and Heavy Truck. The "Large Van" option is selected. A red box highlights the "Vehicle type" parameter in the main table.

Select the Vehicle type.

Scenario 3 – Maneuvers & DFD settings

Open CSA Configuration\Driver Feedback Screen to edit the settings of the DFD.

Name	Value	Type	Address	Units	Size/Bit
Audio DFD Feedback messages la...	1 (English)	Decimal	2133		1
DFD audio volume level	70	Decimal	2144	%	1
Enable DFD	0 (Disable)	Flag	2131		0
Enable DFD Acc RMS display	1 (Enable)	Flag	2132		1
Enable DFD audio feedback upon	1 (Enable)	Flag	2131		5
Enable DFD visual upon short Idling	1 (Enable)	Flag	2132		2
Enable DFD visual upon long Idling	1 (Enable)	Flag	2132		3
Maneuver's severity level display ti...	5	Decimal	2020	0.2sec	1

The default value of the DFD will 0, i.e. Disabled.

Leave the settings as is.

Scenario 3 – Maneuvers & DFD settings

The screenshot shows the Cellocator Programmer interface. The left pane displays a tree view with '07 CSA Configuration' expanded to 'Maneuver settings' and 'Attributes Per Severity'. The right pane shows three folders: 'Green-Normal Severity', 'Red-Dangerous Severity', and 'Yellow-Moderate Severity'. The 'Green-Normal Severity' folder is highlighted with a red box. A mouse cursor is positioned over the 'Green-Normal Severity' folder. The status bar at the bottom shows 'Unit ID: 200250', 'Unlocked', 'Hardware ver.: 31', 'Software ver.: 32c', 'Protocol ver.: 4', 'Telit GE864 Automotive', and 'COM 7'.

Open CSA Configuration\Maneuver settings to edit the severity of the maneuvers.

Here you will configure the different parameters of the three severities, their thresholds, whether they will generate just an event, or raw data as well, determine the type of feedback provided, i.e. visual or vocal or both, etc.

Open the **Green-Normal Severity** folder.

Scenario 3 – Maneuvers & DFD settings

In **Green maneuvers**, it is recommended to minimize distraction for the driver. Consider disabling the vocal feedback such as beeps etc.

In this scenario, the Green maneuvers will not be reported and will not generate any vocal or visual alerts.

The screenshot shows the Celloator Programmer interface with a configuration tree on the left and a settings table on the right. The table lists various configuration items with their values and types. A dialog box titled 'Enable Event - F...' is open, showing a checked 'Enable Event' checkbox. Callouts provide instructions on how to interact with these settings.

Name	Value	Type	Address	Units	Size/Bit
Attach Statistic to event	1	Flag	1984		1
Enable Event			1984		0
Enable log of maneuver s			1984		3
Enable Raw + Stat Log			1984		2
Enable Sound (Beep) feedback			1984		6
Enable Visual feedback			1984		5
Enable Vocal feedback	0	Flag	1984		4

Uncheck **Enable Event** to disable it.

Click **Enable Event**.

Click **Enable Event**.

Scenario 3 – Maneuvers & DFD settings

Proceed to set the **Yellow** maneuvers.

In this scenario, Yellow maneuvers will be reported but will not upload **Statistics** file.

The screenshot shows the Cellocator Programmer interface. The left pane shows a tree view with '07 CSA Configuration' expanded to 'Yellow-Moderate Severity'. The right pane shows a table of configuration items. The 'Attach Statistic to event' item is highlighted with a red box. A dialog box titled 'Attach Statistic ...' is open, showing the checkbox 'Attach Statistic to event' is unchecked. A callout bubble points to this checkbox with the text 'Uncheck Attach Statistic to event to disable this option.' The status bar at the bottom shows 'Unit ID: 200250', 'Unlocked', 'Hardware ver.: 31', 'Software ver.: 32c', 'Protocol ver.: 4', 'Telit GE864 Automotive', and 'COM 7'.

Name	Value	Type	Address	Units	Size/Bit
Attach Statistic to event	1	Flag	1985		1
Enable Event	1	Flag	1985		0
Enable log of maneuver statistics only	1	Flag	1985		3
Enable Raw + Stat Log	1	Flag	1985		2
Enable Sound (Beep) feedback	1	Flag	1985		6
Enable Visual feedback	1	Flag	1985		5
Enable Vocal feedback	1	Flag	1985		4

Scenario 3 – Maneuvers & DFD settings

The screenshot shows the Cellocator Programmer Ver 8.1.0.71 interface. The main window displays a configuration tree on the left and a table of settings on the right. The 'Enable Raw + Stat Log' setting is highlighted in red. A dialog box titled 'Enable Raw + S...' is open, showing a checked checkbox for 'Enable Raw + Stat Log'. A callout box points to this dialog with the text 'Enable Raw + Stat Log is Enabled.' The status bar at the bottom right shows 'COM 7'.

Name	Value	Type	Address	Units	Size/Bit inc
Attach Statistic to event	0	Flag	1985		1
Enable Event	1	Flag	1985		0
Enable log of maneuver statistics only	0	Flag	1985		3
Enable Raw + Stat Log	1	Flag	1985		2
Enable Sound (Beep) feedback	1	Flag	1985		6
Enable Visual feedback	1	Flag	1985		5
Enable Vocal feedback	1	Flag	1985		4

Scenario 3 – Maneuvers & DFD settings

Proceed to set the **Red** maneuvers.

In this scenario, Red maneuvers will be reported and upload **Statistics** file and **Raw data**.

The default value for **Attach
Statistic to Event** is 1, i.e.
Enabled.

Leave the settings as is.

**Enable Raw + Stat
Log** is Enabled.

Name	Value
Attach Statistic to event	1
Enable Event	1
Enable log of maneuver statistics only	1
Enable Raw + Stat Log	1
Enable Sound (Beep) feedback	1
Enable Visual feedback	1
Enable Vocal feedback	1

Flag	Value	Size/Bit inc
Flag	1986	6
Flag	1986	5
Flag	1986	4

Scenario 3 – Maneuvers & DFD settings

Open CSA Configuration\Maneuver settings\Maneuver Detection bitmask. Here you will find all the available maneuvers. Edit the RPM settings.

The screenshot shows the Cellocator Programmer interface. The left sidebar displays a tree view with '07 CSA Configuration' expanded to 'Maneuver settings' and 'Maneuver Detection bitmask'. The main window shows a table of configuration items. The 'Excessive RPM (Red only)' item is highlighted with a red box. A dialog box titled 'Excessive RPM ...' is open, showing a 'Select Value:' dropdown menu with 'Disable' selected. A callout bubble points to the 'Disable' option with the text 'Select Disable.'.

Name	Value	Type	Address	Units	Size/Bit
Acceleration detection	1 (Enable)	Flag	1982		0
Brake detection	1 (Enable)	Flag	1982		1
Excessive RPM (Red only)	0 (Disable)	Flag	1982		7
Heavy Crash detection (Red only)	1 (Enable)	Flag	1983		2
Light Crash detection (Red only)	1 (Enable)	Flag	1983		1
Long idling detection Enable	1 (1 - Enable)	Flag	1943		6
Off Road detection (Red only)	1 (Enable)	Flag	1982		6
Sharp Lane crossing	1 (Enable)	Flag	1982		2
Short idling Detection Enable	1 (1 - Enable)	Flag	1943		5
Speeding detection	1 (Enable)	Flag	1983		0
Turn detection	1 (Enable)	Flag	1982		3
Turn& Accel detection	1 (Enable)	Flag	1982		4
Turn& Brake detection	1 (Enable)	Flag	1982		5

Unit ID: 200250 Unlocked Hardware ver.: 31 Software ver.: 32c Protocol ver.: 4 Telit GE864 Automotive COM 7

Scenario 3 – Maneuvers & DFD settings

Continue to edit **Off Road detection**. By default this option is Enabled, but as this vehicle is allowed to drive off road, you will disable it, so the unit will not report it as events.

The screenshot shows the Cellocator Programmer interface. The main window displays a list of configuration items under '07 CSA Configuration \ Maneuver settings \ Maneuver Detection bitmask'. The 'Off Road detection (Red only)' item is highlighted with a red box. A callout bubble points to this item with the text 'Select Disable.'.

Name	Value	Type	Address	Units	Size/Bit
Acceleration detection	1 (Enable)	Flag	1982		0
Brake detection	1 (Enable)	Flag	1982		1
Excessive RPM (Red only)	0 (Disable)	Flag	1982		7
Heavy Crash detection (Red only)	1 (Enable)	Flag	1983		2
Light Crash detection (Red only)	1 (Enable)	Flag	1983		1
Long idling detection Enable	1 (1 - Enable)	Flag	1943		6
Off Road detection (Red only)	1 (Enable)	Flag	1982		6
Sharp Lane crossing	1 (Enable)	Flag	1982		2
Short idling Detection Enable	1 (1 - Enable)	Flag	1943		5
Speeding detection					0
					3
					2
					4
					5

An 'Off Road detect...' dialog box is open, showing a 'Select Value:' dropdown menu with 'Disable' selected. The dialog also has 'OK' and 'Cancel' buttons.

Unit ID: 200250 | Unlocked | Hardware ver.: 31 | Software ver.: 32c | Protocol ver.: 4 | Telit GE864 Automotive | COM 7

Scenario 3 – Maneuvers & DFD settings

Open CSA Configuration\Maneuver settings\Continuous maneuvers configuration.

Here you will handle continuous maneuvers such as Speeding, Idling and Off-Road.

The screenshot shows the Cellocator Programmer interface. The left sidebar lists configuration categories, with '07 CSA Configuration' expanded to show 'Maneuver settings'. The main window displays a table of configuration parameters:

Name	Value	Type	Address	Units	Size/Bit
Disable Speed Profiling	1 (Disable profil...	Flag	1942		0
Threshold for Speed Profiling-GPS ...	30	Decimal	1988	km/h	1

A dialog box titled 'Disable Speed ...' is open, showing a 'Select Value:' dropdown menu with options: 'Disable profiling', 'Enable Profiling', and 'Disable profiling'. The 'Enable Profiling' option is selected. The dialog also has 'OK' and 'Cancel' buttons.

At the bottom of the window, status information is displayed: Unit ID: 200250, Unlocked, Hardware ver.: 31, Software ver.: 32c, Protocol ver.: 4, Telit GE864 Automotive, COM 7.

The default for Speed Profiling is **Disabled**.

Select **Enable Profiling**.

This option will disable the reporting of the 3 speeding types, and will generate Speed Profiling upon the end of the trip.

Scenario 3 – Maneuvers & DFD settings

Click to download the PL to the unit.

Click Reset.

Once the configuration is complete, download the PL to the unit and reset it.

Name	Value	Type	Address	Units	Size/Bit
Disable Speed Profiling	1 (Disable pr				0
Threshold for Speed Profiling-GPS ...	30			km/h	1

Unit ID: 200250 Unlocked Hardware ver.: 31 Software ver.: 32c Protocol ver.: 4 Telit GE864 Automotive COM 7

Scenario 3 – Maneuvers & DFD settings

The DFD will announce communication error, its status LED will blink continuously, and no visual and/or vocal announcements will be delivered.



Status LED blinking continuously.

Scenario 3 – Maneuvers & DFD settings

Communication Center (Cello) Ver 3.1.0.76

File Communication Actions Help

Traffic Filter

- Filter
- Direction
 - Uplink
 - Downlink
 - Downlink pending (SMS)
 - CSA server Ack
- Unit ID
 - 200
 - 200202
 - 200250
 - 50000
- Channel
- Application

Filter Active

Unit

- Message
- Message
- Message
- Hardware
- Hardware

Person

- Location
- Code
- Reason ID
- Reason Specific ID
- Reason
- Reason Specific Data
- Content

Not available/Error
Standby Engine Off
32
0
IP changed / connection up

Backward compatibility mode (to FW 27c and below), Driver ID (Dallas field)
0
0000
00000000
Day 0 Time 0:0
HOME GSM
42502
Invalid Time
Invalid Time Unit
Hibernation
No
Telit GE864 automotive
Modem Type
Disconnected
Trailer Status
Garmin compatibility mode is
Disabled
Garmin communication is
Not available
CFE Status
Not Applicable (Legacy state)

Inputs

- "Driving" status Inactive
- Ignition Port Status Off
- Accelerometer status Not Moving
- Door sensor Inactive
- Shock Sensor Inactive
- Distress Button Inactive
- Lock Sensor Inactive
- Unlock Sensor Inactive

Outputs

- All Outputs 000000000000000000
- Siren Inactive
- Gradual Immobilizer Inactive
- GPS Power Status Active
- Standard Immobilizer Inactive
- Blinker (External Lights) Inactive
- LED out Inactive
- Charger status Not Charging

Analog Inputs

- Main Power Level
- Battery Voltage
- Temperature
- Shock(2.5v)

GPS Data

- Location Status
- PMODE_I
- PMODE_II
- Satellite Count Used

Selected: 0 Displayed: 4 Total: 6

Dir	Date Time	Unit	Channel	Application	Numerator	Type	Sub Types
	22/04/2013 11:46:34	200202	GPRS	Safety	0	0	30
	22/04/2013 11:46:35	200202	GPRS	Fleet	3	0	
	22/04/2013 11:47:31	200202	GPRS	Safety	0	0	30
	22/04/2013 11:47:32	200202	GPRS	Fleet	4	0	

Header: MCGP
CheckSum: D4(Pass)

Switch to the **Communication Center** to view the messages.

Verify that indeed the unit is sending messages according to the settings configured in the previous slides.

You can filter the messages to view those generated by the tested unit.

The unit's first messages will be IP UP, it's current status etc.

Note: You can test the same unit using another PL with opposite configuration to see the differences.

Scenario 3 – Maneuvers & DFD settings

The screenshot shows the Communication Center (Cello) Ver 3.1.0.76 interface. On the left, a table lists various events. The event at 22/04/2013 11:52:57 is highlighted in blue. On the right, the 'CSA Full Event' details are shown, with a red box highlighting the 'Event Sub-Reason' field, which is set to 'Yellow severity'.

Dir	Date Time	Unit	Channel	Application	Numerator	Type	Sub Types
	22/04/2013 11:51:32	200202	GPRS	Safety	0	0	30
	22/04/2013 11:51:33	200202	GPRS	Fleet	0	0	
	22/04/2013 11:51:33	200202	GPRS	Fleet	0	0	
	22/04/2013 11:51:58	200202	GPRS	Fleet	1	0	
	22/04/2013 11:52:04	200202	GPRS	Fleet	2	0	
	22/04/2013 11:52:04	200202	GPRS	Safety	1	0	30
	22/04/2013 11:52:05	200202	GPRS	Safety	2	0	30
	22/04/2013 11:52:08	200202	GPRS	Safety	3	0	30
	22/04/2013 11:52:42	200202	GPRS	Safety	4	0	30
	22/04/2013 11:52:45	200202	GPRS	Safety	5	0	30,31
	22/04/2013 11:52:55	200202	GPRS	Fleet	3	0	
	22/04/2013 11:52:57	200202	GPRS	Safety	6	0	30
	22/04/2013 11:53:00	200202	GPRS	Safety	7	0	30
	22/04/2013 11:53:32	200202	GPRS	Safety	8	0	30
	22/04/2013 11:53:53	200202	GPRS	Safety	9	0	30,31
	22/04/2013 11:53:59	200202	GPRS	Safety	10	0	30
	22/04/2013 11:54:41	200202	GPRS	Safety	11	0	30,31
	22/04/2013 11:55:23	200202	GPRS	Safety	12	0	30
	22/04/2013 11:57:04	200202	GPRS	Fleet	4	0	
	22/04/2013 11:57:09	200202	GPRS	Safety	13	0	30
	22/04/2013 11:58:32	200202	GPRS	Safety	14	0	30,31
	22/04/2013 11:58:50	200202	GPRS	Safety	15	0	30,31
	22/04/2013 11:58:56	200202	GPRS	Safety	16	0	30,31
	22/04/2013 12:00:00	200202	GPRS	Safety	17	0	30
	22/04/2013 12:00:25	200202	GPRS	Safety	18	0	30
	22/04/2013 12:00:30	200202	GPRS	Safety	19	0	30
	22/04/2013 12:00:42	200202	GPRS	Safety	20	0	30

CSA Full Event Details:

- Event Reason: Turn & Accelerate
- Event Sub-Reason: Yellow severity
- Event Numerator: 20
- Standby Engine: On
- Driving: Driving
- Calibration: Ready
- Raw logging: Off
- Engine: On
- Driver ID: 000000000000
- Trip ID: 7
- Maneuver ID: 18
- Maneuvers data usage: 0%
- Crash #1: Empty
- Crash #2: Empty
- HOp: 4
- Mode 1: 4
- Mode 2: 5
- Number of satellites used: 5
- Longitude: 34°55'51.07" E
- Latitude: 31°40'42.62" N
- Altitude: 319.26 M
- Ground Speed: 65 Km/h
- Speed direction (true course): 176.01 °
- Date & Time: 14:52:13 01/01/2012

Yellow events are reporting only CSA Full Event, without maneuver statistics.

Also, speeding and On-Road are not reported, as configured.

Scenario 3 – Maneuvers & DFD settings

The screenshot shows a software interface with a table of communication events and a details pane on the right. A red box highlights a specific event in the table and its corresponding details in the right-hand pane.

Dir	Date Time	Unit	Channel	Application	Numerator	Type	Sub Types
	22/04/2013 11:51:32	200202	GPRS	Safety	0	0	30
	22/04/2013 11:51:33	200202	GPRS	Fleet	0	0	
	22/04/2013 11:51:33	200202	GPRS	Fleet	0	0	
	22/04/2013 11:51:58	200202	GPRS	Fleet	1	0	
	22/04/2013 11:52:04	200202	GPRS	Fleet	2	0	
	22/04/2013 11:52:04	200202	GPRS	Safety	1	0	30
	22/04/2013 11:52:05	200202	GPRS	Safety	2	0	30
	22/04/2013 11:52:08	200202	GPRS	Safety	3	0	30
	22/04/2013 11:52:42	200202	GPRS	Safety	4	0	30
	22/04/2013 11:52:45	200202	GPRS	Safety	5	0	30,31
	22/04/2013 11:52:55	200202	GPRS	Fleet	3	0	30
	22/04/2013 11:52:57	200202	GPRS	Safety	6	0	30
	22/04/2013 11:53:00	200202	GPRS	Safety	7	0	30
	22/04/2013 11:53:32	200202	GPRS	Safety	8	0	30
	22/04/2013 11:53:53	200202	GPRS	Safety	9	0	30,31
	22/04/2013 11:53:59	200202	GPRS	Safety	10	0	30
	22/04/2013 11:54:41	200202	GPRS	Safety	11	0	30,31
	22/04/2013 11:55:23	200202	GPRS	Safety	12	0	30
	22/04/2013 11:57:04	200202	GPRS	Fleet	4	0	
	22/04/2013 11:57:09	200202	GPRS	Safety	13	0	30
	22/04/2013 11:58:32	200202	GPRS	Safety	14	0	30,31
	22/04/2013 11:58:50	200202	GPRS	Safety	15	0	30,31
	22/04/2013 11:58:56	200202	GPRS	Safety	16	0	30,31
	22/04/2013 12:00:00	200202	GPRS	Safety	17	0	30
	22/04/2013 12:00:25	200202	GPRS	Safety	18	0	30
	22/04/2013 12:00:30	200202	GPRS	Safety	19	0	30
	22/04/2013 12:00:42	200202	GPRS	Safety	20	0	30

The details pane on the right shows the following information for the selected event:

- CSA Header:** Message Length: 112, Message ID: 9, Message Type: CSA Event / Reply to command, Protocol Version: 1, Message Direction: Outbound, Message Initiator: Active.
- Raw Data:** Data: 43534170000900C8040E03001E2E08030900910000000000000700000700000000004040205CF9AATC
- CSA Full Event:** Event Reason: Harsh Turn, Event Sub-Reason: Red severity, Event Numerator: 9, Standby Engine: On, Driving: Driving, Calibration: Ready, Raw logging: Off, Engine: On, Driver ID: 000000000000, Trip ID: 7, Maneuver ID: 7, Maneuver data usage: 0%, Crash #1: Empty, Crash #2: Empty, HD Op: 4, Mode 1: 2, Mode 2: 2, Number of satellites used: 5, Longitude: 34°54'21.83" E, Latitude: 31°40'55.47" N, Altitude: 228.25 'M', Ground Speed: 96 Km/h, Speed direction (true course): 249.35 °, Date & Time: 14:45:24 01/01/2012.
- ABC Maneuver Statistics:** Trip ID: 7, Maneuver ID: 7, Maneuver Type: Harsh Turn, Start Location: 34°54'26.90" E, 31°40'58.44" N, End location: 34°54'24.64" E, 31°40'56.59" N, Start Time: 14:45:21.01/01/2012, Maneuver duration: 3.0 Seconds, X average: 0.00 'G', Y Average: 0.38 'G', X Max: 0.00 'G', Y Max: 0.58 'G', Z Max: -0.95 'G', Speed Average: 99 Km/Hr, Speed Max: 100 Km/Hr, Speed delta: 1, Max RPM: 0 RPM, Max Fuel Flow: 0, Fuel consumed: 0, ABS state: 0, Risk score: 2, Num of init frames: 0.

Whereas Red events are reporting both CSA Full Event, and Maneuver Statistics.

Scenario 3 – Maneuvers & DFD settings

Upon the end of the trip, a message of **Trip End** and is reported, including **Trip Statistics** information on the overall trip, such as trip's length, distance, Eco score and Safety score etc.

The screenshot shows the 'Communication Center (Cello) Ver 3.1.0.76' interface. On the left, a table lists various events. The right pane shows details for a selected event, including 'CSA Header', 'Raw Data', 'CSA Full Event', and 'Trip Statistics'.

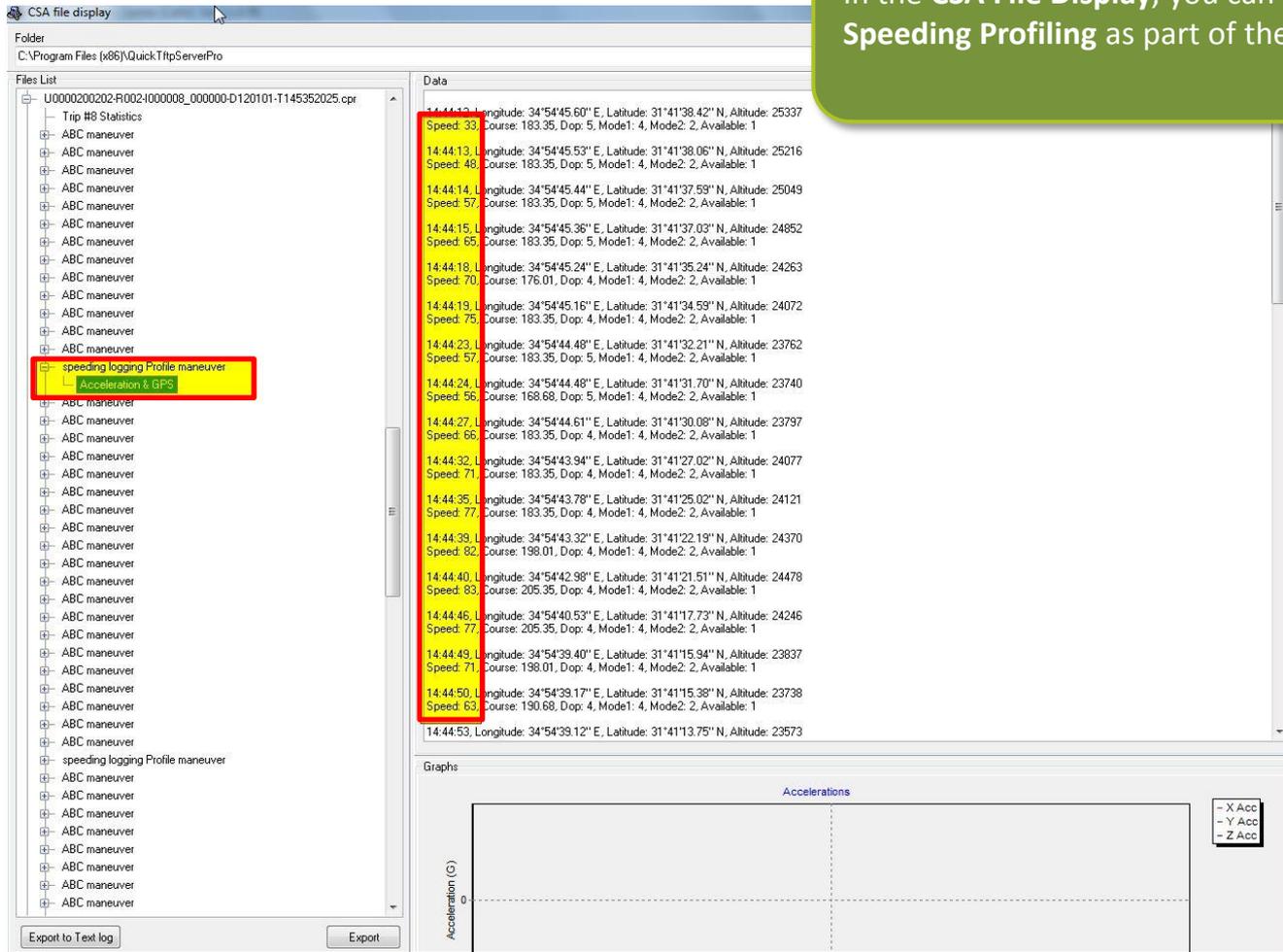
Dir	Date Time	Unit	Channel	Application	Numerator	Type	Sub Types
	22/04/2013 11:51:32	200202	GPRS	Safety	0	0	30
	22/04/2013 11:51:33	200202	GPRS	Fleet	0	0	
	22/04/2013 11:51:33	200202	GPRS	Fleet	0	0	
	22/04/2013 11:51:58	200202	GPRS	Fleet	1	0	
	22/04/2013 11:52:04	200202	GPRS	Fleet	2	0	
	22/04/2013 11:52:04	200202	GPRS	Safety	1	0	30
	22/04/2013 11:52:05	200202	GPRS	Safety	2	0	30
	22/04/2013 11:52:08	200202	GPRS	Safety	3	0	30
	22/04/2013 11:52:42	200202	GPRS	Safety	4	0	30
	22/04/2013 11:52:45	200202	GPRS	Safety	5	0	30,31
	22/04/2013 11:52:55	200202	GPRS	Fleet	3	0	
	22/04/2013 11:52:57	200202	GPRS	Safety	6	0	30
	22/04/2013 11:53:00	200202	GPRS	Safety	7	0	30
	22/04/2013 11:53:32	200202	GPRS	Safety	8	0	30
	22/04/2013 11:53:53	200202	GPRS	Safety	9	0	30,31
	22/04/2013 11:53:59	200202	GPRS	Safety	10	0	30
	22/04/2013 11:54:41	200202	GPRS	Safety	11	0	30,31
	22/04/2013 11:55:23	200202	GPRS	Safety	12	0	30
	22/04/2013 11:57:04	200202	GPRS	Fleet	4	0	
	22/04/2013 11:57:09	200202	GPRS	Safety	13	0	30
	22/04/2013 11:58:32	200202	GPRS	Safety	14	0	30,31
	22/04/2013 11:58:50	200202	GPRS	Safety	15	0	30,31
	22/04/2013 11:58:56	200202	GPRS	Safety	16	0	30,31
	22/04/2013 12:00:00	200202	GPRS	Safety	17	0	30
	22/04/2013 12:00:25	200202	GPRS	Safety	18	0	30
	22/04/2013 12:00:30	200202	GPRS	Safety	19	0	30
	22/04/2013 12:00:42	200202	GPRS	Safety	20	0	30
	22/04/2013 12:01:27	200202	GPRS	Safety	21	0	30,31
	22/04/2013 12:01:51	200202	GPRS	Safety	22	0	30
	22/04/2013 12:02:04	200202	GPRS	Fleet	5	0	
	22/04/2013 12:02:05	200202	GPRS	Safety	23	0	30
	22/04/2013 12:02:10	200202	GPRS	Safety	24	0	30,61
	22/04/2013 12:02:27	200202	GPRS	Fleet	6	0	
	22/04/2013 12:02:31	200202	GPRS	Fleet	7	0	
	22/04/2013 12:02:31	200202	GPRS	Safety	25	0	30
	22/04/2013 12:02:38	200202	GPRS	Safety	26	0	30,32
	22/04/2013 12:02:47	200202	GPRS	Safety	27	0	30

CSA Full Event	
Event Reason	Trip start / end/update
Event Sub-Reason	Trip End
Event Numerator	26
Standby Engine	Off
Driving	Idling
Calibration	Ready
Raw logging	Off
Engine	Off
Driver ID	000000000000
Trip ID	7
Maneuver ID	21
Maneuvers data usage	0 %
Crash #1	Empty
Crash #2	Empty
HDop	4
Mode 1	4
Mode 2	2
Number of satellites used	5
Longitude	34°55'59.13" E
Latitude	31°40'25.83" N
Altitude	294.19 M'
Ground Speed	0 Km/h
Speed direction (true course)	308.02 °
Date & Time	14:53:52_01/01/2012

Trip Statistics	
Trip ID	7
Driver ID	000000000000
Start date & time	14:43:35,01/01/2012
Trip duration seconds	10.6 Minutes
Distance Traveled	11000 meter
Movement Time	9.4 Minutes
Idle time - short	0.0 Minutes
Idle time - Long	0.0 Minutes
Max X	0.59 'G'
Max Y	0.68 'G'
Max Z	1.23 'G'
Max RMS	424.51 'G'
Max Speed 1	129
AVG Speed	66
Start fuel level	100 %
End fuel level	100 %
Weighted Safety Score	20
Weighted Eco Score	79
Idle Score	100
Urban driving Score	71
Highway driving Score	78
Idle Score Time	65 Sec

Scenario 3 – Maneuvers & DFD settings

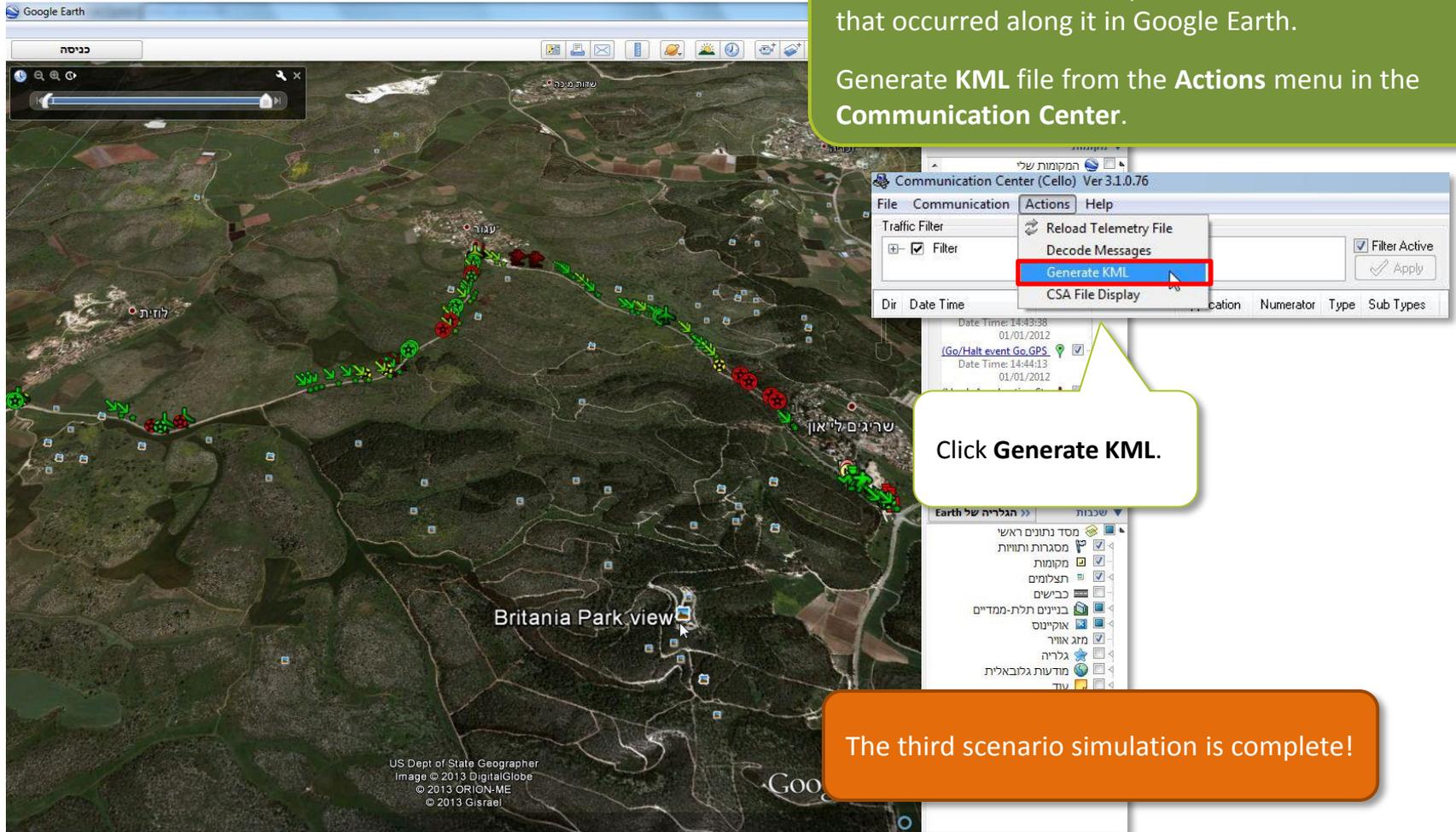
In the CSA File Display, you can view the Speeding Profiling as part of the Trip file.



Scenario 3 – Maneuvers & DFD settings

You can also view the trip and the different events that occurred along it in Google Earth.

Generate KML file from the **Actions** menu in the **Communication Center**.



Scenario 4 – Maneuvers & DFD Exercise

Parameter name	PL configuration Scenario D	Simulation	Output expected
Vehicle type	MCV/BUS	-	-
DFD	Enabled. Red – speech, yellow- beeps, green – LEDs. With driver identification Language –English> French	Test drive	DFD reporting acts according to definition.
Maneuver reporting attributes	Event reporting – all Statistics – all Raw data – yellow & red.	Test drive	All events are projected on the DFD and sent to the CSA server but only yellow and red events are sent as raw data at the end of the trip. Trip score remains unchanged. Can be demonstrated on KML file
RPM	Disabled	-	-
Speed	On-board	Test drive	Over speeding events reported thru DFD and to the CSA according to their occurrence in the video.
Off-road	Enabled	Off road scenario	Off road event+ DFD output

Check out your knowledge. Set up the PL according to the scenario and verify that you receive the expected results. Good luck!



Cellocator Cello-IQ – Let's take a ride

Cello-IQ – Driving Intelligence Delivered

