Cheat Sheet
SIGENCE Scenario Tool

Version : 1.3

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Table of content

Installation

Just download the latest version of the repository (https://github.com/ObiWanLansi/SIGENCE-Scenario-Tool/archive/master.zip) to a local folder and extract the zipfile. In the directory "Executable" is a compiled executable (SIGENCEScenarioTool.exe) and all dependencies and external libraries for direct starting the application.

Environment Variables

Currently, no environment variables or settings are needed ☺ .

Configuration Settings

For now, there are only four configuration settings avaible in the user configuration file. These are the UDPHost, the UDPPort, the UDPDelay and the MapZoomLevel setting. All four settings have meaningful default values, but in some circumstances it is useful to change them.

Setting	DataType	DefaultValue	Description
UDPHost	String	127.0.0.1	The ipadress to bind the UDP Server.
UDPPortSending	Integer	4242	The port number on wich the UDP Server sends data.
UDPPortReceiving	Integer	7474	The port number on wich the UPD Server receive data.
UDPDelay	Integer	500	The pause in milliseconds between the data is send.
MapZoomLevel	Integer	18	The zoomlevel which is used when zoom to an rfdevice on the map.
DeviceCopyTimeAddValue	Integer	5	The value that is automatically added to the StartTime Property of a RFDevice when copy and paste it in the datagrid.

Remark: There will come a time when a dialog will be available to configure these values, so forget it quickly ☺.

Starting

Just start from the extracted zipfile the main application .\SIGENCEScenarioTool.Executable\ SIGENCEScenarioTool.exe.

Stopping

- Use the standard windows hotkey ALT+F4
- or click the X in the upper right corner of the main application
- or in the mainmenu, select "SIGENCE Scenario Tool → Quit"
- or reboot your computer
- or unplug the power from your computer

RFDevice Model

Name	DataType	DefaultValue	Comment
PrimaryKey	Guid	Guid.NewGuid()	The Unique PrimarKey For This RF Device.
Id	int	0	Every Scenario Element (I.E. Transmitter, Receiver) Must Be Assigned An Unique Id. Negative Id'S Are Reserved For Receivers While All Other Id'S Are Transmitters By Default. Some Applications (I.E. Tdoa Emitter Localization) Require A Reference Transmitter. For These Applications Id=0 Is The Reference Transmitter. Receivers Must Be Assigned First In The Table, Followed Be Transmitters (With Id=0 Being The First). After The Static Scenario, Update Of Id'S Requires No Specific Order. Note That Definition Of New Transmitters/Receivers After The Static Scenario Is Prohibited.
DeviceSource	DeviceSource	DeviceSource.Unknown	The Source Of This RF Device.
StartTime	double	0	This Is The Simulation Time At Which The Parameters (Following The Time Parameter In The Same Line) Are Set. All Transmitters And Receivers Used In The Simulation Must Be Set At Start Of The Simulation, I.E. At Time=0. For Static Scenarios, Where Positions Or Characteristics Settings Never Change Throughout The Simulation, The Time Column Only Contains Zero's.
Name	string	"RFDevice"	A Short Describing Display Name For The RF Device.
Latitude	double	double.NaN	The Latitude Of The RF Device (WGS84).
Longitude	double	double.NaN	The Longitude Of The RF Device (WGS84).
Altitude	uint	0	The Elevation Of The RF Device Above The Sea Level (Meter).
Roll	double	0	These Parameters Set The Orientation Of Transmitter / Receiver Antennas. The Respective Antenna Type Is

			Defined By Antennatype. The Rf Simulation Uses The Antenna Orientation To Compute The Resulting Signal Power At The Receivers.
Pitch	double	0	These Parameters Set The Orientation Of Transmitter / Receiver Antennas. The Respective Antenna Type Is Defined By Antennatype. The Rf Simulation Uses The Antenna Orientation To Compute The Resulting Signal Power At The Receivers.
Yaw	double	0	These Parameters Set The Orientation Of Transmitter / Receiver Antennas. The Respective Antenna Type Is Defined By Antennatype. The Rf Simulation Uses The Antenna Orientation To Compute The Resulting Signal Power At The Receivers.
RxTxType	RxTxType	RxTxType.Unknown	For All Receivers (i.e. ID's < 0) This Parameter Defines The Radio Being Used.
AntennaType	AntennaType	AntennaType.Unknown	AntennaType Defines The Antenna Type Used For Transmitter And Receiver Respectively. Note: Currently, Only Omnidirectional Antenna Type Is Available / Supported.
CenterFrequency_Hz	ulong	0	For Transmitters (I.E. Id's >= 0) This Parameter Defines Transmitter Signal Center Frequency [Hz]. For Receivers (I.E. Id's < 0) This Parameter Is Currently Unused.
Bandwith_Hz	uint	0	The Bandwith Of The Transmitter.
Gain_dB	int	0	For Transmitters (I.E. Id's >= 0) This Parameter Defines Transmitter Signal Power [Dbm]. For Receivers (I.E. Id's < 0) This Parameter Is Currently Unused.
SignalToNoiseRatio_dB	uint	0	For Receivers (I.E. Id's < 0) This Parameter Is Imposes Gaussian White Noise To The Respective Receiver Signal. For Transmitters (I.E. Id's >= 0) This Parameter Is Unused.
XPos	int	0	XPos,YPos,ZPos Define The

			Transmitter / Receiver Positions In A Local Coordinate System With The Transmitter (ID=0) Being The Center Position.
YPos	int	0	XPos,YPos,ZPos Define The Transmitter / Receiver Positions In A Local Coordinate System With The Transmitter (ID=0) Being The Center Position.
ZPos	int	0	XPos,YPos,ZPos Define The Transmitter / Receiver Positions In A Local Coordinate System With The Transmitter (ID=0) Being The Center Position.
Remark	string	""	A Comment Or Remark For The RF Device.

HotKeys

HotKey	Command	Action
File		
STRG+N	New	Creates a new file for a scenario.
STRG+O	Open	Open an existing scenario file.
STR+S	Save	Save the current scenario.
ALT+F4	Close	Close the application.
F1	OpenCheatSheet	Open this cheat sheet.
RFDevice		
F5 ALT+C	CreateRFDevice	Create a new RFDevice.
F6 ALT+D	DeleteRFDevice	Delete the selected RFDevice.
F7 ALT+E	ExportRFDevice	Export the RFDevice list.
F8 ALT+I	ImportRFDevice	Import an RFDevice list.
ALT+M	MoveRFDevice	Toggle the moving mode from the RFDevices's.
STRG+L	ToggleDALF	Toggle the creating tool for device lines.
STRG+M	OpenInGoogleMaps	Open the current RFDevice in Google Maps.
STRG+Q	RFDeviceQRCode	Show a QRCode from the current RFDevice Location for scanning with a qrcode scanner.
STRG+Z	ZoomToRFDevice	Zoom to the selected RFDevice.
Tools		
F9	SendDataUDP	Send the marked RFDevices via UDP.
F10	ReceiveDataUDP	Receive RFDevices via UDP.
F11 STRG+F	Fullscreen (reserved 4 later)	Switch to a fullscreen display mode.
STRG+G	SyncMapAndGrid	Toggle the synchronizing from the selection between the map and the datagrid.
STRG+T	CreateScreenshot	Create a screenshot from the map with the current viewport.
STRG+P	OpenScriptEditor	Open the ScriptEditor for Python.
STRG+X	OpenSettings	Open the Settings Dialog (beta).

Quick Commands

Command	Parameter	Action
new	-	Create A New Empty Scenario.
rand	count	Create (count) Randomized Transmitter.
load	filename	Load The Scenario With The Given Filename.
save	filename	Save The Scenario With The Given Filename, Or If Empty, With The Current Filename.
export	filename	Export The Scenario To This File. The File Extension Also Determines The Format.
import	filename	Import The Scenario From This File. The File Extension Also Determines The Format.
set	property value	Set The Property From The Marked RFDevices To The Value.
sendudp	Delay	Start Sending The Marked Devices Over UDP With The Delay Between Every RFDevice.
goto	lat, lon	Jumps To The Latitude, Longitude In The Map-
exit	-	Exit The Tool.
close	-	Exit The Tool.
quit	-	Exit The Tool.

Useful Links

- SIGINT
  https://en.wikipedia.org/wiki/Signals_intelligence
- Git Tutorial
  https://www.tutorialspoint.com/git/index.htm
- Mastering Markdown
  https://guides.github.com/features/mastering-markdown/
- Microsoft Visual Studio
  https://visualstudio.microsoft.com/
- C# Tutorial
  https://www.tutorialspoint.com/csharp/index.htm
- WPF Tutorial
  https://www.tutorialspoint.com/wpf/index.htm
- HTML Tutorial
  https://www.w3schools.com/html/default.asp
- Python Tutorial
  https://www.tutorialspoint.com/python/index.htm
- IronPython
  http://ironpython.net/documentation/dotnet/
- SQLite
  https://sqlite.org/index.html