

Cheat Sheet

SIGENCE Scenario Tool

Version : 1.4

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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 available 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>