Cheat Sheet  
SIGENCE Scenario Tool

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# Requirements

To start and use this tool, you must have Microsoft Windows 7, at least installed the Microsoft .NET Framework 4.6.1, and have an stable internet connection for loading the map data. For viewing the cheatsheet, you’ll need an PDF Viewer. For exporting the model to an excel file, excel also is needed.

# Installation

Just download the latest version from <https://github.com/ObiWanLansi/SIGENCE-Scenario-Tool/releases> to a local folder (installer or the selfextracting executable) and use the installer or the selfextracting executable.

# Environment Variables

Currently, no environment variables or settings are needed ☺ .

# 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 |  | Latitude | double.NaN | The Latitude Of The RF Device (WGS84). |
| Longitude |  | Longitude | double.NaN | The Longitude Of The RF Device (WGS84). |
| Altitude |  | Altitude | 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 |  | Frequency | 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. |
| Bandwidth\_Hz |  | Bandwidth | 0 | The Bandwith Of The Transmitter. |
| Gain\_dB |  | Gain | 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 |  | SignalToNoiseRatio | 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 (Main Application)

|  |  |  |
| --- | --- | --- |
| 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+M | MoveRFDevice | Toggle the moving mode from the RFDevices’s. |
| F8  ALT+E | EditRFDevice | Edit the RFDevice In An Dialog. |
| F9 | ExportRFDevice | Export the RFDevice list. |
| F10 | ImportRFDevice | Import an RFDevice list. |
|  |  |  |
| STRG+L | ToggleDALF | Toggle the creating tool for RFDevice lines. |
| STRG+M | OpenInGoogleMaps | Open the current RFDevice in Google Maps. |
| STRG+SHIFT+M | MarkDevicesWithTheSameValue | Mark all RFDevice with the same property value. |
| 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* | | |
| F11  STRG+F | Fullscreen (reserved 4 later) | Switch to a fullscreen display mode. |
| F12 | ToggleInfoWindow | Toogle the information window on the map. |
| 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 | EditSettings | Open the Settings Dialog for edit the Settings. |
| *Viewer* | | |
| Shift + F5 | ViewDeviceMap | Fast switch to the RFDevice map display. |
| Shift + F6 | ViewDescriptionHypertext | Fast switch to the scenario description view. |
| Shift + F7 | EditDescriptionMarkdown | Fast switch to the scenario description editor. |
| Shift + F8 | EditDescriptionStylesheet | Fast switch to the stylesheet editor. |
| Shift + F9 | ViewValidationResults | Fast switch to the validation results. |

# 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 |  | Export The Current Scenario. |
| 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- |
| gc | - | Runs The Garbage Collector |
| git |  | Start An Webbrowser With <https://github.com/ObiWanLansi/SIGENCE-Scenario-Tool> |
| wiki |  | Start An Webbrowser With <https://de.wikipedia.org/wiki/Wikipedia:Hauptseite> |
| go |  | Start An Webbrowser With <https://www.google.de> |
| xmp |  | Create Two Specialized RF Devices. |
|  |  |  |
| exit | - | Exit The Tool. |
| close | - | Exit The Tool. |
| quit | - | Exit The Tool. |

# HotKeys (Description Editor)

|  |  |  |
| --- | --- | --- |
| HotKey | Command | Description |
| Control + A | Accept Changes | Accept the changes and update the view. |
| Control + D | Discard Changes | Discard the last changes. |
| Control + Y | DeleteLine | Delete the current line. |
| Control + B | ToggleBookmark | Toogle an bookmark at the current line. |
| Control + Cursor Up | GotoPrevBookmark | Goto the previous bookmark. |
| Control + Cursor Down | GotoNextBookmark | Goto the next bookmark. |
| Control + Shift + U | ToUpperCase | Switch the selected text to uppercase. |
| Control + Shift + L | ToLowerCase | Switch the selected text to lowercase. |
| Control + Shift + C | ToCapitalize | Switch the selected text to capitalize. |
| Control + Shift + B | ToBold | Switch the selected text to bold. |
| Control + Shift + I | ToItalic | Switch the selected text to italic. |
| Control + Shift + S | ToStrikethrough | Switch the selected text to strikethrough. |
| Control + Shift + (1-4) | ToHeader (1-4) | Switch the selected text to an header. |
| Control + Shift + X | ToogleSpecialCharacter | Switch the display of special character like spaces, tabs and eol. |
| Control + Shift + T | ConvertTabsToSpaces | Convert all tabs to space. |
| Control + Shift + R | RemoveTrailingWhiteSpaces | Remove all trailing white spaces. |
| Control + Alt + L | InsertLoremIpsum | Insert an lorem ipsum text. |
| Control + Alt + D | InsertDateTime | Insert the curent date and time. |

# 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>