BASIC COMMANDS (COM)

Short description

Sample program code (various programming languages) showing how to perform several basic tasks through the Vissim COM interface.

Requirements

- ▶ PTV Vissim Module: COM Interface

For use of most of the programming languages, additional software needs to be installed on your computer:

- ▶ VBA: any Microsoft Office software which has an integrated VBA editor (for example Microsoft Excel, Microsoft Word)
- ▶ Python: PTV Vision Python (https://cgi.ptvgroup.com/php/vision-setups/)
    or a manual installation of Python including pyWin:
    - ▶ Python 2.7 (https://www.python.org/downloads/)
    - ▶ pyWin Build 218 or higher (http://sourceforge.net/projects/pywin32/files/)
- ▶ C++, C#: Suitable development environment (e.g. Visual Studio)
- ▶ Matlab: Installed version of Matlab
- ▶ Java: COM Bridge in Java. For more information please refer to COM JAVA BRIDGE FOR ECLIPSE.DOCX

The VBS (Visual Basic Script) example does not need any additional software installation.

Objective

A Vissim sample network COM BASIC COMMANDS.INPX with a T-junction is provided which is common to all programming languages. In addition, for each programming language dedicated code files are included:

- ▶ C++   File: COM BASIC COMMANDS.CPP

- C#   File: COM BASIC COMMANDS.CS
- Matlab   File: COM BASIC COMMANDS.M
- Java   Files: COM BASIC COMMANDS.JAVA,
                        COM BASIC COMMANDS – UTILS.JAVA
- Python   File: COM BASIC COMMANDS.PY
- VBA[1]   File: COM BASIC COMMANDS.BAS1
- VBS   File: COM BASIC COMMANDS.VBS

While for most of the programming languages additional actions (such as compiling) are necessary to run the code, the VBS (Visual Basic Script) example can be run right away from within Vissim:

1. Open COM BASIC COMMANDS.INPX
2. Load layout file COM BASIC COMMANDS VBS.LAYX
3. Go to the **Scripts** list
4. In the column **FuncName**, right click and select **Execute** from the context menu to run the code for the selected function. Please note that all of the result functions will return decent results only if all simulation runs were deleted and then the function **Run3Simulations** was executed first.

For further information please refer to the comments in the corresponding code files. You can read all files by using a simple text editor.

[1] To run the Visual Basic for Applications (VBA) script, open Microsoft Excel, then open the VBA Editor (ALT + F11) and drop the contents of the file COM BASIC COMMANDS.BAS per drag & drop into the VBA Editor.

List of commands included in the example

- Connect to the COM Server and open a new Vissim window[2]
- Load a Vissim network[2]
- Load a Vissim layout
- Read and set a link name
- Set a signal controller program
- Set relative flow of a static vehicle route
- Define vehicle input with vehicle composition
- Set random seed
- Run the simulation (single step, continuously)
- Get the state of a signal head
- Get information about all vehicles in the network (various methods)
- Set desired speed to a vehicle
- Place a new vehicle into the network, move it and remove it from the network
- Get a list of all simulation runs
- Get the results of vehicle travel time measurements, data collection and queue length
- Save a Vissim network and layout
- End Vissim[2]

[2] These commands are not necessary for the VBS example because the program code is run from within Vissim.