Introduction

In the Dyssol system it is possible to develop and to debug new steady-state or dynamic units and own external modules (called solvers). The installation package of Dyssol contains all necessary components for the development of such modules. It is provided with a preconfigured solution for IDE Microsoft Visual Studio 2015 (or its Community edition). The necessary software to work with this solution can be found by following links:

- Microsoft Visual Studio 2015 Community: https://go.microsoft.com/fwlink/?LinkId=615448&clcid=0x409

The development of modules for Dyssol can be done in three following steps:

1. Copy template project with necessary header files and libraries from Dyssol installation path to desired folder and configure project.
2. Copy template of the necessary unit (dynamic or steady-state) or solver, rename it and add this module to the previously copied template project.
3. Reimplement all necessary functions. In the case of dynamic units the internal DAE/NL solver can be used to solve DAE/NL systems automatically. For detailed information about implementation of units and solvers refer to 'Units development.pdf' and 'Solvers development.pdf' respectively.

Configuration of template Visual Studio project

1. Open directory where Dyssol has been installed (usually *C:\Program Files (x86)\Dyssol*) and copy folder *VCProject* to the desired location on your hard drive (further: ***<PathToSolution>***).
2. Open the copied folder *VCProject* and run file *Dyssol.sln* to open solution in Microsoft Visual Studio (should be previously installed).
3. Select startup project: select project *ModelsAPI* in solution explorer, and then choose [*Project → Set as StartUp Project*].
4. Select paths to executable files: select project *ModelsAPI* in solution explorer, then choose [*Project → Properties → Configuration Properties → Debugging*], set combo box *Configuration* in the top of the window to position *Debug*, and provide the property *Command* with the path to debug version of executable, which is located at: *<PathToSolution>\VCProject\ExecutableDebug\Dyssol.exe.* Set combo box *Configuration* in the top of the window to position *Release*, and provide the property *Command* with the path to release version of executable, which is located in the directory where Dyssol has been installed: *C:\Program Files (x86)\Dyssol\Dyssol.exe.*
5. Set combo box *Configuration* in the top of the window to position *Debug.* Press F7 (or [*Build → Build project*] in program menu) to build core project and wait until the solution is built.
6. Press F5 (or [*Debug → Run debug*] in program menu) to run program in debug mode. New window of *Dyssol* should now be opened.
7. Close Dyssol window.

Visual Studio solution is now ready to create and debug your own modules.