

IQAN Simulink Toolbox

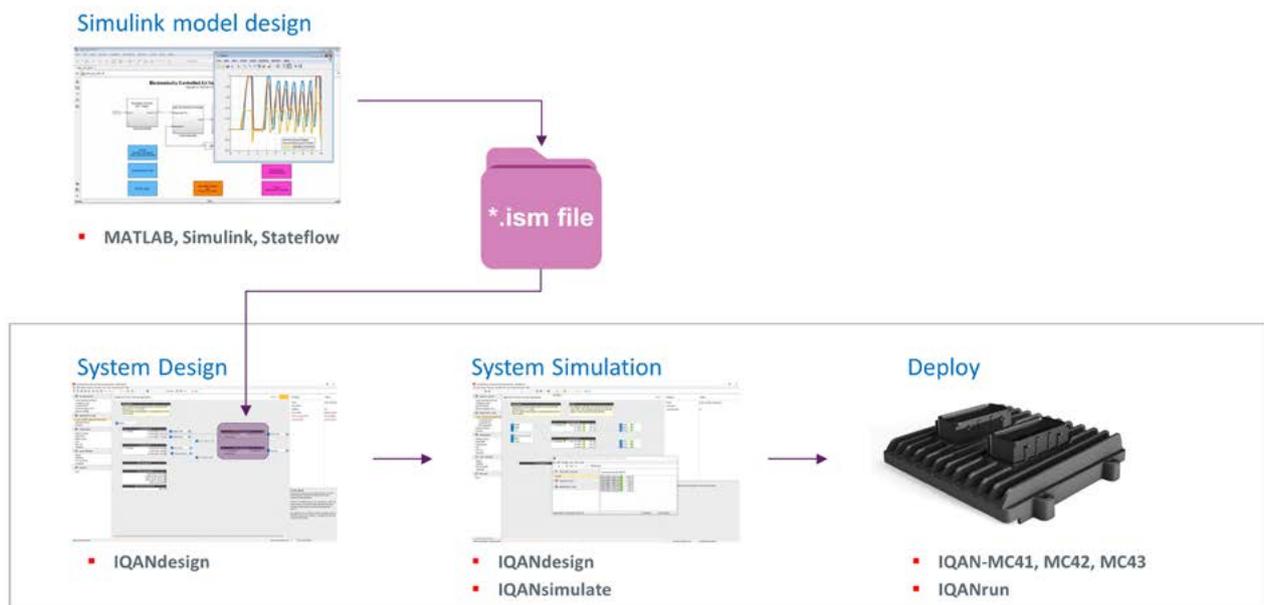
Datasheet



General

Using the IQAN Simulink Toolbox makes it easy to export Simulink models from MATLAB/Simulink for use with compatible IQAN master modules in IQANdesign. Integrate Simulink models with your IQAN application using IQANdesign, simulate using IQANsimulate and deploy the complete project to master modules with a single send operation.

Development process overview



Picture: An .ism file is generated that is imported to IQANdesign, inport and output can easily be connected to channels in the IQAN project file.

System Requirements

Parker SW tools:

- IQANdesign 6
- IQANsimulate 6
- IQANrun 6

The Mathworks SW tools:

- MATLAB®/Simulink® (version 2017b or higher)
- MATLAB® Coder™
- Simulink® Coder™
- Embedded Coder®
- Simulink® Check™
- Compiler for Tricore target
- MinGW compiler for simulation support (optional)
- MATLAB® Report generator™ (optional)
- Simulink® Report generator™ (optional)



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System Requirements

Compilers for Aurix processor (Target HW IQAN-MC4x):

- HighTec: <https://hightec-rt.com/>
- Tasking: <https://www.tasking.com/>

Compilers for IQANsimulate:

- MinGW: https://sourceforge.net/projects/mingw-w64/files/Toolchains%20targetting%20Win32/Personal%20Builds/mingw-builds/8.1.0/threads-win32/dwarf/i686-8.1.0-release-win32-dwarf-rt_v6-rev0.7z/download

Parker target HW:

IQAN-MC4x controller family. (Development ongoing for support for -FS, Functional Safety)
Application cycle time down to 1 ms.

Installation and Setup

- First, at least one of the compilers used by the toolbox must be installed
- HighTec or Tasking has to be installed to generate the files necessary for use with IQAN target hardware (not needed for simulation with IQANsimulate)
- MinGW compiler produces output that can be used with IQANsimulate
- To install the IQAN Simulink Toolbox, run the installation file; IQAN Simulink Toolbox.mltbx.

From this point follow the Integrated MATLAB help for the toolbox. (The same information is also available in the IQAN Simulink toolbox user manual.)

Simulink Model Support

- Multiple models running at different sample times
- Test point support for real-time measurement in IQAN
- Single precision floating point support (no need for fixed point integer math)
- Fixed step discrete solver supported
- Simulink model size, 2MB Flash (code space), 140KB RAM (variables)
- Model data types: All data types except double (including single precision floating point)
- Model I/O data types: Scalar datatypes (bool, signed int8/16/32,float)

For more information:

<https://forum.iqan.se/>

<https://www.iqan.se/store/>



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