



## ASAM Open Diagnostic data eXchange (ODX) Export

The Woodward Custom ISO15765 Blockset has the ability to generate an ODX file to allow you to share diagnostic data electronically. In the past, it would be common to use a text based description in Word (or Excel) to store requirements on how the diagnostic protocol was expected to perform. The protocols, in this format, would then be difficult or impossible to share across tools.

### What is ODX?

ODX is an international standard for publishing the diagnostic capabilities of an ECU (Electronic Control Unit). This is accomplished through the use of an XML based file containing the descriptions of the parameters available in the ECU and the diagnostic services available to interact with the ECU.

For more information on the ODX standard, see the [ASAM website](#).

### Making an ODX File

After a successful build of a MotoHawk model containing the [Woodward Custom ISO15765 Instance Definition](#) and related blocks, you can issue the following command at the MATLAB command line:

```
>> woodward_custom_odx_generate  
=== Transform Application to ODX format  
=== Create HelloWorld.pdx output
```

```
ans =  
1
```

*See below for optional woodward\_custom\_odx\_generate parameters*

The currently active model's build products will be used to describe the ISO15765 services, DTCs, security requirements, and other information. Several XML files will be generated with this data, and depending on the capabilities of the tool which will import the ODX information, you may want to find the [MODEL\_NAME].odx file in your model's build directory, or the [MODEL\_NAME].pdx file in the same location.

The [MODEL\_NAME].pdx file is known as the "Packaged ODX" file and is a collection of all the relevant XML files. The PDX package can also contain other related files of any type. Woodward strongly recommends the use of the PDX file where at all possible.

Diagnostic tools typically import the ODX file prior to being able to start communications with a controller. The import process will vary from tool manufacturer to tool manufacturer.

## Capabilities exposed through ODX export

- Compliance to version 2.0.1 of standard
- Vehicle-specific OBD diagnostics
- Comprehensive description of protocol service parameters
- List of DTCs available
- Conversion to engineering units of parameter data (PIDS)
- Conveys CAN identifiers used by the controller
- Fast iteration cycles for rapid development of diagnostic interface

## Help for `woodward_custom_odx_generate`

`success = woodward_custom_odx_generate([model], [filename])`

- Generates a packaged ODX file via a transform that queries the application for the services, DTCs, and other information.

- model must be a Simulink model on the path.

It may be omitted, which will use `bdroot`, the currently open model.

- filename is the new target file. This script will attempt to copy the pdx output to the location specified.

If omitted, then the file will not be copied.

- success returns whether all actions taken were successful. If the filename is specified, then the copy must succeed as well as the .pdx construction