vector

CANeds 3.7

The EDS Generator for CANopen Systems

CANopen® is an open, CAN-based communication protocol used in range of applications including transport and control technology, measurement systems, medical technology, railway technology, maritime applications, in general, wherever great flexibility and rapid data transmissions are in demand. The CANopen specification drew on the experience of many component manufacturers and users, resulting in an established standard that is maintained by the CAN in Automation (CiA®) user organization.

CANopen Electronic Data Sheets (EDS) are device description files similar to the Profibus GSD. These files make it possible to use manufacturer-independent project planning, configuration, and analysis tools. A proper EDS file is required to pass the CiA CANopen conformance test.

Features and Advantages

The editor/generator CANeds is a tool for creating and testing EDS files. CANeds also supports the XML format for EDS or DCF files specified in CiA311.

CANeds takes over the difficult and error-prone task of creating EDS files manually. CANeds enables device manufacturers and system integrators to avoid problems when working with corresponding CANopen configuration programs.

Application Areas

Creating EDS files for the development of CANopen modules is the primary application area for CANeds. System integrators use CANeds either to modify incomplete EDS files or create EDS files when they are missing.

Functions

In terms of specifics, CANeds provides the following functions:
> Creation of new EDS files
> Convert EDS/DCF files
> Modification of EDS files
> Testing of EDS files
> Scanning of devices, with EDS files generated semi-automatically
> Define signal descriptions for objects

Creating EDS files is very easy due to the ability of accessing standard objects and their attributes via CiA-CADB databases.

CANeds displays the structure of an EDS in a hierarchical tree structure (see figure) and represents CANopen object attributes such as object and data types symbolically. The user can drag the desired object dictionary entries and drop them into the tree view of the EDS file that is being created. An object dictionary entry that deviates from the specified default values is flagged with a red exclamation mark. The numerous types required in EDS files are automatically converted to their numeric values. This eliminates the time-consuming task of manual processing that was required
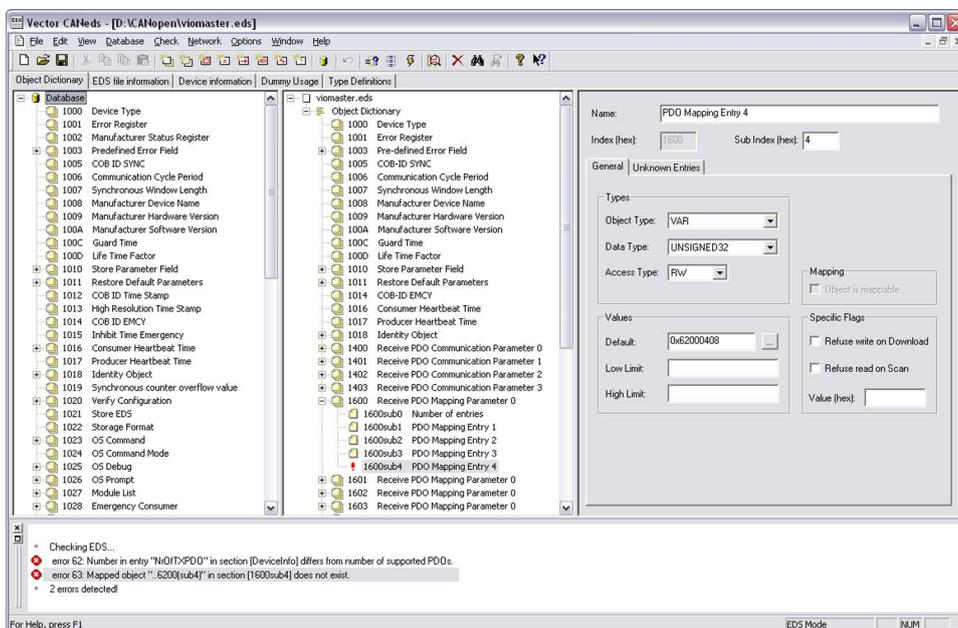
The CANeds interface for creating EDS files. The desired object entries can be taken over comfortably.

previously. User-specific data types can also be created and are available for defining the object dictionary. Of course, modular devices are also supported in a user-friendly way.

Objects that are created from user-specific data types can also be used. Furthermore, CANeds handles the representation of ARRAY values in a compact format. This results in EDS files using less hard disk space.

The CANeds product includes the EDS checking program CANchkEDS, which is also part of the CANopen Conformance Test. This program checks EDS files that have been created for compatibility with the CiA DSP-306 "EDS specification" standard.

Special Functions

It is possible to significantly speed up the process of creating a new EDS file with the aid of a device scan.

All entries that are possible in a CANopen object dictionary are checked and if present the respective attributes are brought in from the database. If no attributes are present, then the default attributes will be assigned. Creating EDS files using the device scan is limited to adapting object names and attributes of manufacturer-specific objects.

Conversion of EDS files

Existing EDS/DCF files can be converted to other formats. CANeds supports the following conversion directions:

> EDS (Electronic Data Sheet) to XDD (Device Description),
> DCF (Device Configuration File) to XDC (Device Configuration)
> EDS to DCF

Hardware Interfaces

The appropriate CAN hardware must be present to make it possible to generate EDS files automatically. CANeds works together with all original Vector CAN cards.

CANeds available as freeware

CANeds is integrated in the proven tools CANoe.CANopen and CANalyzer.CANopen. In the new Vector CANopen Forum the tool is available free-of-charge as a stand-alone EDS Editor with a full range of features.

The user can learn everything there is to know about the EDS Generator as well as useful additional information on EDS files at www.canopen-forum.com. General issues related to CANopen are also discussed there.