What is CANdelaStudio?
The specification tool CANdelaStudio is a central component of the Vector CANdela solution and supports users in creating and editing a formal vehicle ECU diagnostic specification. Once a diagnostic specification has been created, it is used for the following process steps and increases thereby the consistency in the entire diagnostic development process:

- Implementing the diagnostic software
- Automated conformity tests of the diagnostic software
- Data supply for the various diagnostic testers in development, manufacturing and the service garage
- Starting point for test sequences in diagnostic testers in production and the service garage

Overview of Advantages

- Import and export from/to different exchange formats (ODX, AUTOSAR DEXT, CSV, RTF, HTML, A2L, XML, CDI) simplify reuse and further use of data
- The user is guided by a templates concept. Despite differences in requirements, the diagnostic data is always described in a similar structure, even for different automotive OEMs. This enables reusability across projects.
- Consistency checks during input assure high data quality
- Diagnostics-oriented user interface assure quick results
- Support of different protocols on different networks (UDS, KWP2000, OBD, WWH-OBD, CAN, CAN FD, LIN, MOST, FlexRay, DoIP)

Functions

In order to handle OEM-specific differences in a single tool, CANdelaStudio supports document templates. A document template corresponds to an OEM-specific diagnostic specification in content. It contains a formal description of all allowable basic services of the ECU and the set of mandatory content that must be implemented for every ECU. Document templates are provided by many automotive OEMs.

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<thead>
<tr>
<th>Data of Wheel Speed</th>
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CANdelaStudio: DID editing with graphical overview
> Comparison view: Shows changes between two versions and saves the results. Many convenient filter, search and extended navigation functions are offered.
> Import and export of diagnostic trouble codes (DTCs) in a wide variety of formats
> Different views of diagnostic trouble codes: From a table-based overview to a view of the validity of DTCs in different variants and a detailed editing view for an individual DTC.

**Highlights of Version 12**

**AUTOSAR Events**
> In an ECU fault memory implementation, system faults are mapped to so-called Events. Via the diagnostic protocol, a DTC represents one or more such Events. For code generation of Events in the ECU via the AUTOSAR DEXT format, CANdelaStudio 12 now directly supports AUTOSAR-compliant processing of Events with their detailed properties and the mapping of Events to DTCs. Several events can be mapped to one DTC (Event combination) and mass operations can also be performed.

**AUTOSAR Software Components (SWC) Sync**
> For processes where the SWC Sync is not based on the RequirementsID, CANdelaStudio 12 offers a UUID-based SWC Sync. The SWC Sync imports selected objects including their UUID into the Import Pool, from where the user manually moves them to a diagnostic instance. A later SWC Sync then updates the CANdela object based on the UUID.

**Further Optimizations**
> When creating a new diagnostic instance, a DID can now be conveniently created “on the fly” via a dialog.
> Even more convenient creation of a new variant with the variant wizard
> Refinements during a new document upgrade to an updated template. Improved visualization of variants in the integrated comparison view.
> Many minor optimizations of the user interface

**Data Exchange and Reports**

**ODX**
> Import from ODX (2.2, 2.0.1), as well as export to ODX (2.2, 2.1, 2.0.1)
> Extensive optional settings in ODX export (e.g. table or service oriented)
> Partial import of ODX data, e.g. only Layers and Services
> ODXStudio View for viewing ODX data
> Intelligent support of Object IDs (OID) and Text IDs (TID)

**Reports**
> Diagnostic specification export (RTF, HTML)
> Service overview export (CSV file)

**AUTOSAR**
> Simple import of signals and conversions from an AUTOSAR System Description
> Export function for generating the AUTOSAR Diagnostic Extract (DEXT files). The exported files correspond to the "Diagnostic Extract Template" standard of AUTOSAR 4.2.2/4.3.0.
> Automated linking of CANdela objects with the corresponding objects in the AUTOSAR System Extract (SYS-EX)

**CANdb and FIBEX**
> Adoption of signals and conversion into data objects and DTCs

**Editions**

**CANdelaStudio Standard**
Providing all important functionalities that are needed for diagnostic specification. The template concept is utilized to automatically link the diagnostic data to be exchanged (e.g. ECU identification, reading and clearing of errors) to the diagnostic services offered.
Target group: All active participants in the diagnostic process should use CANdelaStudio Standard.

**CANdelaStudio ViewX**
With the well-priced CANdelaStudio ViewX edition the user may view, compare (Diff-function), and export, but not modify diagnostic requirements and diagnostic data.
Target group: Authors of test sequences and users of test systems.

**CANdelaStudio Pro**
The Pro edition supports additionally multilingual requirements engineering. For this purpose semi-automated translation of diagnostic data is supported, which can be consistently edited in one language in the Standard edition. Additionally expandable dictionaries based on the open TMX standard can be generated and used. Besides Western European languages, Far Eastern languages (e.g. Japanese) are also supported.
Target group: International projects and projects where multilingual specifications are required or helpful.

**CANdelaStudio Admin**
Additionally diagnostic templates can also be created and modified here.
> Modify protocol services
> Definition of the fault memory (structure and properties of single DTCs)
> Modify diagnostic classes by considering diagnostic interdependencies
> Translation of template files and editing the translation memory with the help of the TMX Editor.
Target group: Users who are responsible for the global diagnostic concept of a group of ECUs or vehicle model series.

**More information:** www.vector.com/candelastudio_en