

Data Declaration System

What's new in Version 5.0.0?

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1 Purpose and scope

This document describes the improvements and changes of DDS V5.0.0 compared to V4.2.0.

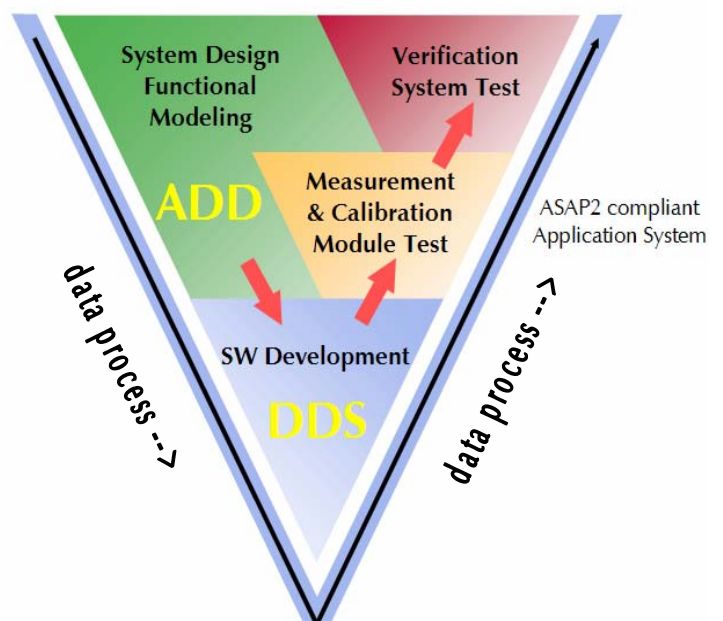
2 What's new in Version V5.0.0?

2.1 Highlights

2.1.1 Data Dictionary Link

Visu-IT! offers two tools handling ECU variable declarations:

1. The tool **ADD** (Automotive Data Dictionary) serves as a global, central database which handles several versions of objects/labels defined in the ECU system specification. This tool is mainly used from system engineers. For more information about ADD, please see <http://www.visu-it.de/add>
2. The tool **DDS** operates on project scope and focuses on the support of the ECU software development as well as the support of measurement and calibration needs. It is used from software as well as calibration engineers, but not from system engineers.



At the moment, there is no real link between these tools. Consequently there is also a process gap between system engineers and software engineers.

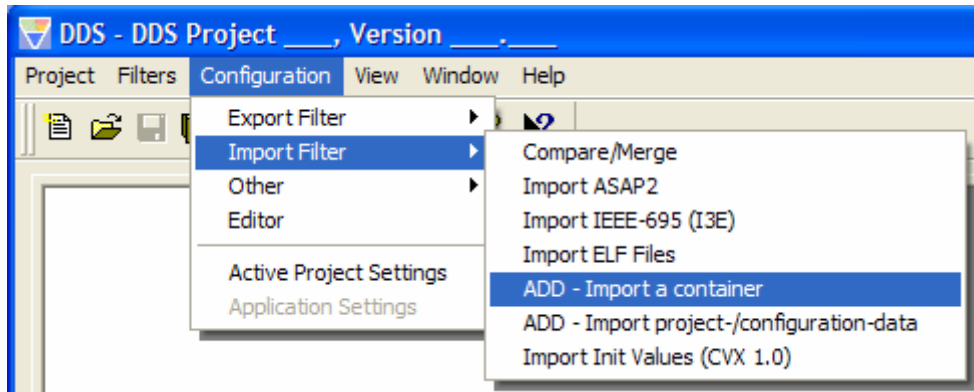
The objective was to close this process gap and to ensure data consistency between the two tools

General philosophy/concept:

DDS uses ADD as a global data dictionary (data warehouse) for the ECU variable declarations. The data dictionary contains all variables/objects which are described in the ECU system specification. These variables/objects are reused in DDS by linking/referencing the ADD objects from corresponding DDS entities. If such a logical link is established, the attributes of the ADD-DataObjects are reused in DDS and extended with further – mainly development and calibration related – attributes. The attributes of the ADD-DataObjects have a higher priority and should/must not be overwritten in DDS.

DDS is extended to be able to link/reference to the ADD-system.
DDS accesses the data dictionary in 'readOnly' mode.

DDS offers two Data Dictionary Import Filters: "ADD – Import a container" and "ADD – Import project/configuration-data"



...for more information please see the DDS Online Help.

2.1.2 Attribute Wizard (#96)

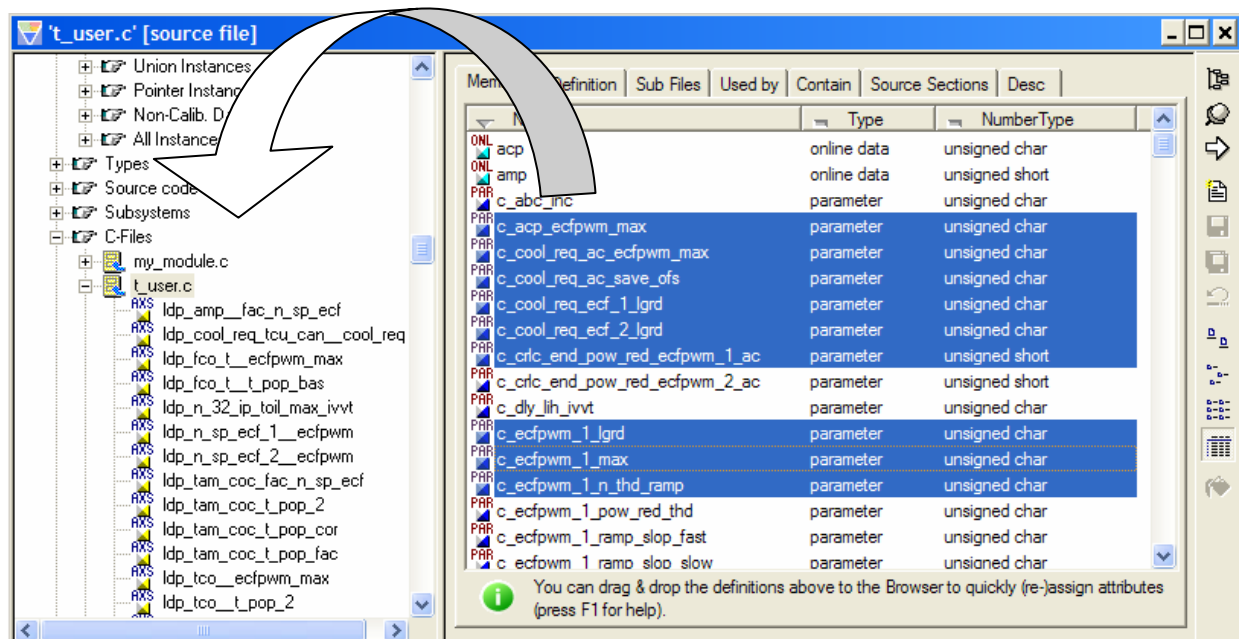
The purpose of the *Attribute Wizard* is to help DDS users in their daily work, when assigning the attributes:

- declFile (h-File)
- defFile (c-File)
- calFunction
- sourceSection (both for decl- and defFile)

Until DDS version V4.2.0, each of these attributes had to be set manually while working on each entity. This took a huge amount of time, and was not convenient.

With the *Attribute Wizard* it is now possible to multi-select a set of entities and assign them to a certain attribute in one single step via Drag & Drop:

Drag & Drop



In the example above, a set of entities which are currently assigned to the cFile 't_user.c' can be (re-)assigned in one single step to the cFile 'my_module.c'

2.2 New Features, Major Improvements

2.2.1 Complex C Type Wizard

The purpose of the *Complex C Type Wizard* is to help DDS users managing C structure and C union entities. Idea is to 'convert' global entities to members of structures/unions and vice versa via Drag & Drop. This version provides only a first, basic functionality: DDS allows to 'convert' global entities to struct/union members but it is not yet possible to 'convert' them back.

2.2.2 Easy handling of XCP protocol inside SysConf (#68)

The XCP protocol is already fully supported in DDS V4.2.0. However, since XCP will be the 'main' protocol in the future, the handling in DDS was improved for version V5.0.0:

- the DDS data model now supports 'DAQ-Lists' and 'EVENT's
- there exists a number of smart variables (xcpDaqList, xcpEvent, ...) which can be used to increase the flexibility of the XCP configuration
- the XCP template now covers both 'XCP on CAN' and 'XCP on USB'
- SysConf provides a nice and powerful **GUI** for the XCP settings

2.3 Minor Improvements

2.3.1 Official support of Metrowerks compiler (#91)

This compiler is supported in V5.0.0

2.3.2 'Internal'/'Phys' display of lower/upper limits at entity level (#69)

Limits can be now assigned both in internal and in phys format.

2.3.3 ASAP2 export: partial export via (sub-)function (#36)

In version V4.2.0, it is not possible to select **sub**-functions for the ASAP2 export feature "partial export via function". This problem is solved in V5.0.0

2.3.4 Support of square brackets for DISPLAY_NAME – per default (#41)

Previous versions of the ASAP2 standard didn't allow square brackets inside the 'DISPLAY_IDENTIFIER' attribute. Since newer versions support these characters, the default handling in DDS has to be updated: The ASAP2 export filter option "AllowASAP1_3IdentsAlso4NonInstrData" is replaced with the new one "ApplyOldIdentSyntax4NonInstrData".

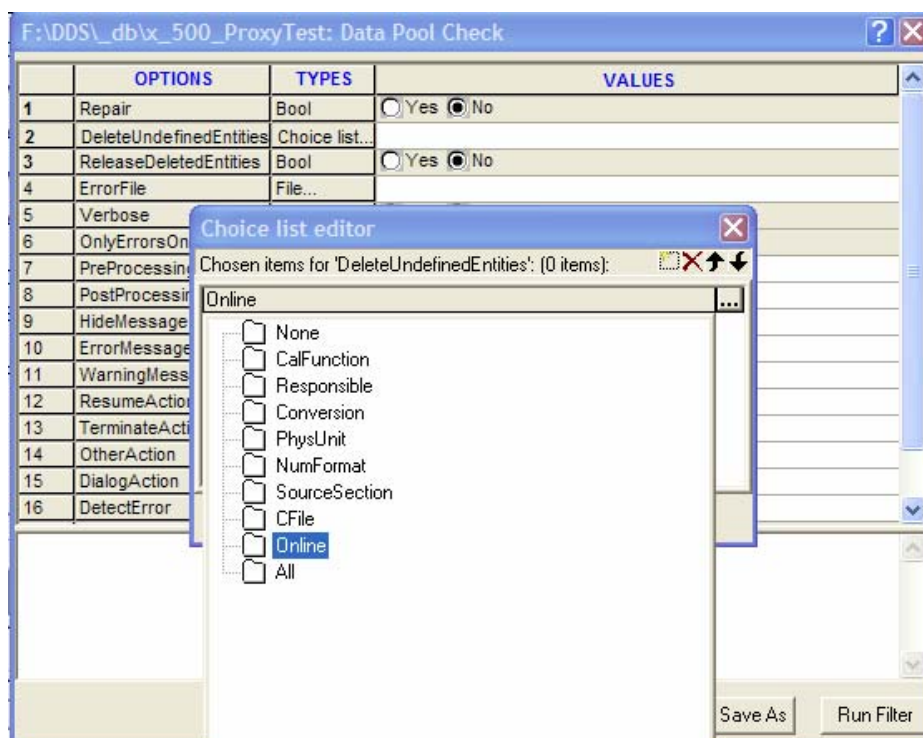
2.3.5 CVX Import into read only container (#72)

Improvements:

- CVX import must not break and try to import values for 'normal' containers.
- But the read-only feature has to remain the same: when a container is set to read-only, it must not be changed in any case!

2.3.6 Data Pool Check: Allow deletion of undefined online data (#51)

When an online data is referenced by an axis (for the working point visualisation in calibration tools), but is not defined inside DDS, there is now a possibility to remove it from the database:



1. Open the "Data Pool Check" Filter Configuration dialog
2. Select option #2 "DeleteUnreferencedEntities"
3. Select the option value "Online"

2.3.7 Data Pool Check: Check of (only) one definition (#78)

There is a new command in the context menu "Check Entity", just below the command "Quick Girl Export"

2.3.8 ASAP2-Export: Support '0'-address (#106)

Until version V4.2.0, the ASAP2 export considered the address '0' as 'No address'. This is improved in V5.0.0, in order to not 'lose' 2 bytes in the RAM.

2.3.9 Support of Tasking TriCore compiler V2.2r3p1

Support of modified handling of bitfields with Tasking TriCore compiler V2.2r3p1 (DDS V4.2.0 Hotifx 2)

2.3.10 Detection of bitfields during ASAP2 import

When using bitfields in DDS and generating an ASAP2 file, the real bitfield information gets lost, since ASAP2 is not able to cover software related information. The ASAP2 export calculates for each bitfield member

- a correct address
- a correct bitmask (as a result from the bitfield-width and the address)

When importing such an ASAP2 file into another DDS database, the original bitfield information is missing. As a consequence, DDS creates a normal structure with non-bitfield members.

In version V5.0.0, the ASAP2 import is enhanced: There is a new filter option *"SkipDetectionOfBitfields"*. If this filter option is set to 'false' (default), the ASAP2 import searches for bitfield members and creates appropriate bitfield-definitions in DDS.

Note: The bitfield detection requires valid addresses in the ASAP2 file.

2.3.11 DServer extensions

The DServer component is extended:

- Support of additional attributes:
 - o The attribute 'members' of the entity 'cTag' is supported at the function "GetAttribute(..)"
 - o The attribute 'calFunctionLocal' of the entity 'base' is fully supported
 - o The attribute 'version' of the entity 'calFunction' is fully supported
 - o The attributes 'inputData', 'outputData' and 'localData' of the entity 'ddContainer' are fully supported

- New API method 'GetAttribute2(...)'

This method behaves similar to the already existing method 'GetAttribute(...)'. However this method directly returns the requested attribute value (via return value of method) instead of passing the value by 'reference'.

2.3.12 Export ASAP2: Namespace extension

DDS Version V5.0.0 supports separate namespaces for different types of ASAP2 definitions (e.g. the ASAP2 definition FUNCTION has its separate namespace)

2.4 Correction of Bugs

2.4.1 DDS Editor: CTRL+F on a CLabel (#93)

This problem is fixed in V5.0.0

2.4.2 CVX import: Equidistant axis (#42)

The problem "Import of init values of axes which are already initialised with Start value / Shift value is not possible", is fixed now.

2.4.3 Address Import: Pointer size is not well-calculated (#99)

The pointer size was not well-calculated when pointing on structure types. This problem is fixed in V5.0.0

2.4.4 CompareMerge: 'change' flag is not set in some cases (#107)

This problem is fixed in V5.0.0

3 No longer supported filters/components

The DDS components/filters:

- Report generator (ExpRep filter) and
- Import Configuration Unit (ImpGrl)

are no longer supported.

That means also that these filters are not included in the DDS installation disks.

4 Questions?

If you have any questions about this release, please contact the Visu-IT! DDS Hotline:

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