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# DATEX II FUTURE EVOLUTION



- All successful standards face the challenge of striking a balance between stability (protect investment) and agility (serve the changing requirements of users)
  - ▣ DATEX II has played a role in a couple of recent strategic deployment decisions in European Member States, creating a substantial pressure towards stability (i.e. all amendments should ideally be fully backwards compatible or at least provide an ‘easy’ migration path)
  - ▣ On the other hand, we do have a substantial body of practical experience now, and this creates ‘bug reports’ and ‘feature requests’
- The first generation of DATEX II that has corresponding CEN standards (v2.0) is currently facing its first revision period (TSs published 2011 – 3 years revisions cycle at maximum)
- ⇒ **It's time to think about DATEX II v3!**



# Who governs DATEX II?

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- DATEX II is maintained by a cooperation of European Road Operators
  - currently as part of the EIP project
  - ▣ The technical work of analysing the reported issues, finding solutions and finally proposing specifications is done by the *Technical Group*
  - ▣ The final approval is up to the *Strategic Group*
- In case of a major release step, the final results are then incorporated in a revised version of the CEN 16157 documents in cooperation with CEN TC278 WG8
- In minor release steps, only approved level B extensions lead to new parts of CEN 16157
- The DATEX groups and CEN WG8 have agreed on this mechanism in a document titled *Rules of RULES OF PROCEDURE FOR CHANGE CONTROL AND RELEASE MANAGEMENT OF DATEX II* which is available via the [datex2.eu](http://datex2.eu) website



# Recap: DATEX versioning policy

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- Major version (1.x, 2.x...)
  - ▣ A major version scopes an area of **backwards compatibility**
  - ▣ Current DATEX standards cover only the data model and encoding in XML; backwards compatibility is defined here in terms of **XML schema validation**
  - ▣ A major version is aligned with a revision „generation“ of the corresponding CEN 16157 standards, i.e. a set of parts of 16157 that refer to each other and have been created out of the n.0 model
- Minor version (x.1, x.2...)
  - ▣ All valid instances of any profile schema created from DATEX version n.x validate against the original master schema of this generation (n.0)
  - ▣ New content can only be added as Level B extension
  - ▣ Non backwards compatible modifications have to be postponed to the next major version



# Where do the requirements come from?

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- DATEX II has a **(unique!) open policy** towards user requirements, i.e. every user can issue bug reports or feature requests:
  - Not EIP members only!
  - Not Road Operators only!
  - Not public bodies only!
  - Not Motorway Stakeholders only!
- The tool for this is the issue tracker feature on the datex2.eu website ([http://www.datex2.eu/project/issues/DATEX\\_II](http://www.datex2.eu/project/issues/DATEX_II))
- The DATEX Technical Group processes the issues when working on a new version, creating a proposal to be approved by the SG – approved proposals will then be incorporated into the next release
- Issues have a status that changes during the processing time of the issue – the status "needs work" is assigned to issues that require a solution that does not meet the criteria for a minor version amendment and therefore have to wait for the next major version

# The issue tracker user interface



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Home | DATEX II

► Create a new issue ► Advanced search ► Statistics ► Subscribe

Search for:  Status: needs work Priority: <Any> Category: <Any> Component: Methodology

Assigned to:  Search

Enter a comma separated list of user names.

Summary	ID	Status	Priority	Category	Component	Replies	Assigned to	Source
<a href="#">Use UML metamodel includes a class "DataType"</a>	58	needs work	normal	bug reports	Methodology	4	Josef Kaltwasser	CEN
<a href="#">Lack of typing of XML attributes in schema</a>	3	needs work	normal	feature requests	Methodology	3	Josef Kaltwasser	Website
<a href="#">Qualifier mapping generates redundant XML elements</a>	11	needs work	normal	feature requests	Methodology	3	jaderberg	Website
<a href="#">Definition for association end instead of association</a>	60	needs work	normal	bug reports	Methodology	2	Josef Kaltwasser	CEN
<a href="#">Awkward double use of UML Generalization feature</a>	37	needs work	normal	feature requests	Methodology	2	Josef Kaltwasser	Website
<a href="#">global uniqueness unnecessarily restrictive</a>	57	needs work	normal	bug reports	Methodology	3	Josef Kaltwasser	CEN
<a href="#">Registration metadata for profiles</a>	80	needs work	normal	feature requests	Methodology	1	Josef Kaltwasser	Datex stakeholder
<a href="#">Extending enumerations</a>	92	needs work	normal	feature requests	Methodology	1	Josef Kaltwasser	ES5

DATEX II newsletter

Stay informed on our latest





# The issue tracker user interface

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The screenshot shows a web browser window with the following elements:

- Browser Address Bar:** www.datex2.eu/content/lack-typing-xml-attributes-schema
- Page Title:** Lack of typing of XML attributes in schema
- Metadata:** Mon, 17/05/2010 - 15:50 | timwright, ID: 3
- Project Details:** Project: DATEX II, Component: Methodology, Category: feature request, Priority: normal, Assigned: Josef Kaltwasser, Status: needs work
- Jump to:** Most recent comment, Add new comment
- Description:** The generated schema does not specify typing for "fixed" XML attributes e.g. the attributes "modelBaseVersion" and the "targetClass". The lack of explicit type for the attributes causes it to default to xs:anySimpleType. Wouldn't it be more logical to make these explicit xs:string? It should make code generators produce more acceptable, deterministic code from the schema.
- Attachment Table:** A table with two columns: Attachment and Size. One row is highlighted with a red circle: DATEX2\_Schema\_attribute\_typing\_question.txt, 1.65 KB.
- Comments:** A comment is highlighted with a red circle: #1 Submitted by Josef Kaltwasser on Wed, 19/05/2010 - 11:36.
- Left Sidebar:** Search this site, Josef Kaltwasser (user profile), navigation links (Create content, Issues, Administer, My account, LOG OUT), DATEX II newsletter sign-up, and user information (User: Josef Kaltwasser, Unsubscribe, Previous issues).



# Issues Overview

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## Issue activity

Status	Overall	%	Last month
active	6	4%	0
fixed	56	39%	0
duplicate	2	1%	0
won't fix	2	1%	0
by design	2	1%	0
closed	2	1%	0
needs work	52	36%	0
submitted	20	14%	1
invalid	1	1%	0





# What are the issues then?

- Main types of issues
  - Tool problems (crashes, unacceptable performance, etc.)
    - will be fixed asap and will be included in next minor/major release or as a separate tool update in urgent cases
  - Base technology (UML, XML/XSD, HTTP, WSDL, SOAP...) related
    - Often indicate unclear documentation and/or omissions that only apply to specific implementation scenarios – will be fixed in next minor or next major version, depending on their impact
  - Model amendment requests
    - are typically not backwards compatible and therefore included in next major version
  - Methodology amendment requests
    - are almost never backwards compatible and are the real challenging requests to deal with



# Proposed features for DATEX II v3

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- Methodology (to be realised before any data model changes)
  - Upgrade to current UML version
    - needed to ensure ongoing support by current UML tools
  - Improved extensibility
    - The UML upgrade will also come with a much more structured UML profile that will make the life easier for those that need to create extensions
    - Facets on attributes in profiles allows even more tailoring of transfer syntax
- Improved modular structure and reuse
  - Modular packaging shall support users better that want to use only parts of DATEX II (e.g. only the location referencing container)
- Improved extensibility – in particular
  - Extensible enumerations
  - Scoped attribute names
  - Clearer indication of level B extensions  
(gets mixed up with level A generalisation in current notation)



# Proposed features for DATEX II v3

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- Data Model
  - Tons of additional literals for existing enumeration types
  - ‘Structural’ deficiencies  
(e.g. MeasuredDataPublication only possible for one MeasurementSiteTable)
  - Parking (likely) to be migrated to Level A  
(Note: part 6 / Parking is the first real extensions of the DATEX II v2.0 data model – parts 4 / 5 were already included from the start but lagged behind in standardisation)



# Should I upgrade? Why and when?

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- Minor release step
  - The question of “migration” or “upgrade” for minor releases ( $2.n \rightarrow 2.n+1$ ) is often overestimated!
    - Improved comments and documentation – can only serve to prevent errors. You should always use the latest release of the documentation! That will never have a negative cost impact but might (in a few cases ) have a positive one.
    - Bug fixed tool – can only make your life better. You should always use the latest release of the tool – no impact on interoperability!
    - The only cost implication a minor release can have is due to the availability of an approved level B extension of the data model (e.g. recent inclusion of approved Parking extension). If you don't need it, simply ignore it.
- Major release step
  - If you have significantly invested in a service based on a DATEX II release, plan your migration carefully – the current version will still be around and supported for many years (→ reports on migration from DATEX II v1 to v2)
- So, when should I expect DATEX II v3?
  - Not before 2016, maybe rather 2017
  - DATEX II v2 likely to be in use until the end of the decade