DATEX II FUTURE EVOLUTION

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Rationale

- 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?

- 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 tilted *Rules of RULES OF PROCEDURE FOR CHANGE CONTROL AND RELEASE MANAGEMENT OF DATEX II* which is available via the datex2.eu website

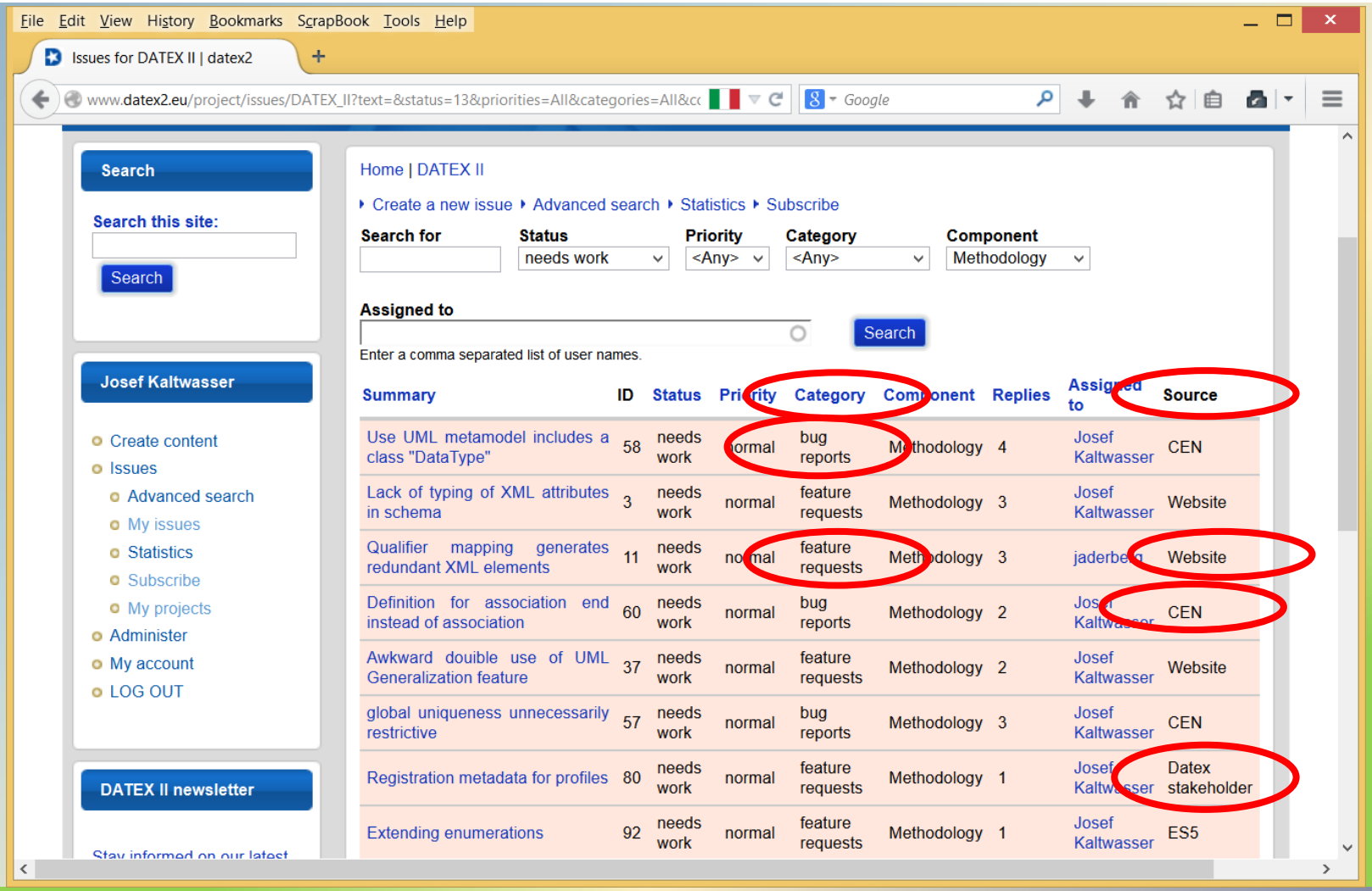
Recap: DATEX versioning policy

- 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?

- 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)
- 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
- Issue 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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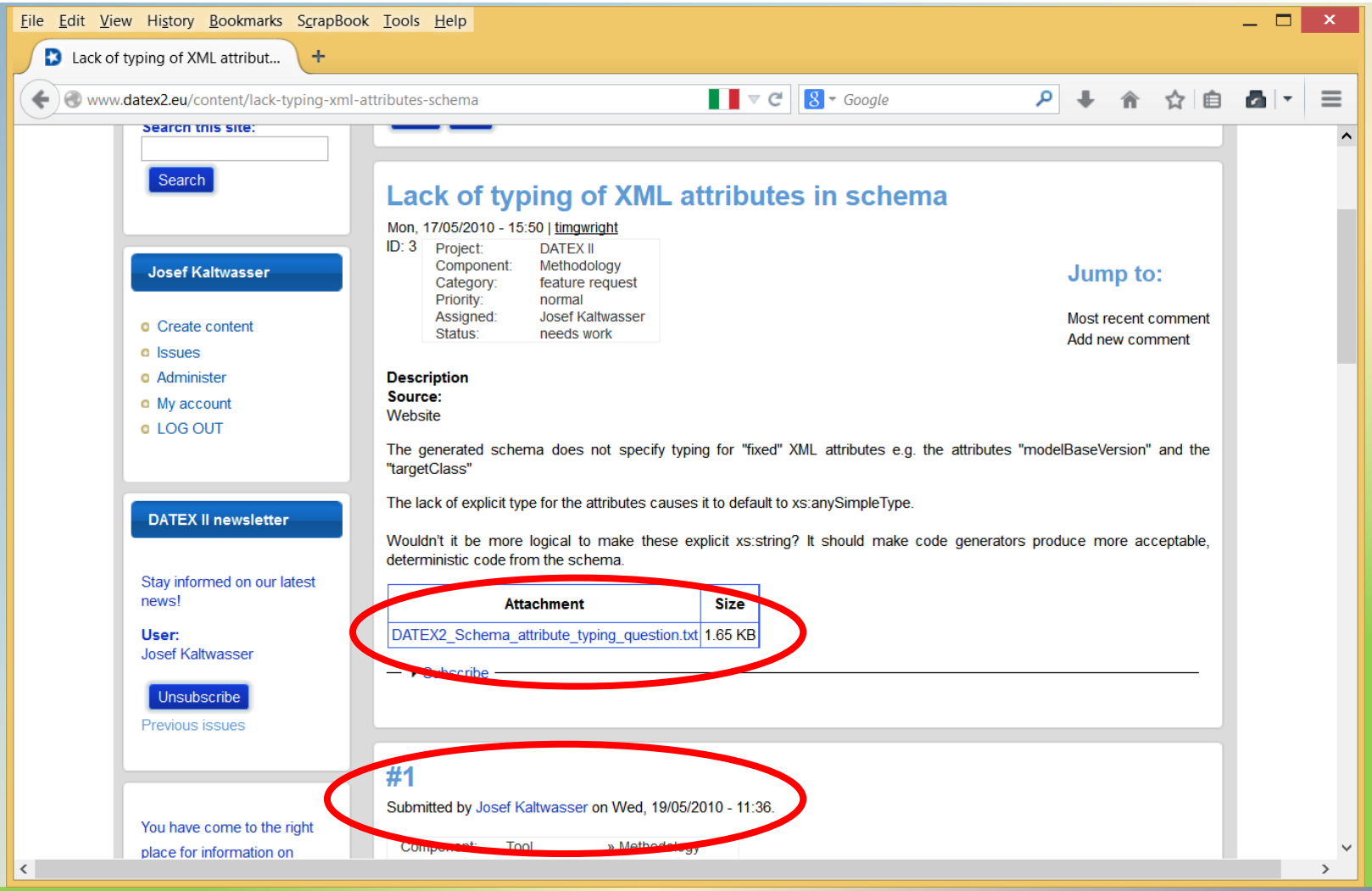

Issues Overview

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, inacceptable 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

- 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

- 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?

- Minor release step
  - The question of "migration" or "upgrade" for minor releases (2.n → 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 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