

Interinstitutional Metadata and Formats Committee

Metadata subgroup

"Consolidation of IMMC - IMMC Common extension mechanism"

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1. INTRODUCTION

1.1. Purpose and audience of the document

This document is provided in the context of the IMFC Metadata subgroup Work Programme for the period 1/1/2022 - 31/12/2022, work item 2.5. Consolidation of IMMC schema versions, activity IScA1.1 Support – Common extension and deprecation mechanisms, deliverable IScD1.1 Support – Common extension and deprecation mechanisms.

The members of the IMFC Metadata subgroup are

- the intended audience of the document, and
- invited to comment it in view of its future adoption by the Metadata subgroup.

Once adopted, the content of the document (section 2) will serve the purpose of updating IMMC communication protocols.

1.2. IMMC and exchange domains

The exchange of IMMC messages between senders and recipients serves distinct (business) purposes. Business processes in many cases are supported by different IMMC messages. Such an aggregation of IMMC message types for a business process is called an **exchange domain**:

- An exchange domain contains all message (types) to support a business purpose/process.
- Exchange domains do not exist as a referable entity, but emerge from the list of their IMMC message types.
- Transmission protocol(s) describes all messages in an exchange domain.
- The IMMC messages in an exchange domain can have different root elements and can use different domain/sender specific IMMC extensions.

Any IMMC schema and the set of domain/sender specific extensions need to be structured in an appropriate way to support these diverse business purposes.

The table below is a non-exhaustive overview of the IMMC exchange domains in relation to business partners (institutions), under the IMMC schema versions in use.

Schema name	Used by institution	Used in business exchange domain (IMMC Flow in IMMC Flows inventory)	Description
IMMC Public Access +	COM	PUBACC Make pre-legislative documents from the internal procedure accessible to the public	Public access to European Commission documents, Documents like delegated and Implementing acts (DIAs) subject to a publication for feedback on Have Your Say / Better Regulation Portal, Stand-alone Staff Working Documents (SWD),
IMMCv2	COM	PRELEG exchange of pre-legislative documents	Documents and procedure/event information from the Commission for publication on EUR-Lex. These are <ul style="list-style-type: none">• Linked Staff Working Documents (SWD)• Joint proposals, communications, reports, white papers and green papers (JOIN)• Opinions of the Regulatory Scrutiny Board on impact assessments, evaluations and fitness checks. (SEC)
		OJ manuscript The Official Journal of the European Union (OJ) is the main source of EUR-Lex content.	Publication request (PUB) manuscripts from the Commission for publication in the Official Journal
			Merger Task Force - MTF (on OP side) Documents about merger activities,

Schema name	Used by institution	Used in business exchange domain (IMMC Flow in IMMC Flows inventory)	Description
			National transposition measures (NTM), collected by SecGen COM from the member states
	CONSIL	PRELEG exchange of pre-legislative documents	Documents and procedure/event information from the Council in scope of the interinstitutional legislative procedure for publication on EUR-Lex
		OJ manuscript The Official Journal of the European Union (OJ) is the main source of EUR-Lex content.	Early reading request: requests from the Council to proof read a to become manuscript for the Official Journal Publication request: manuscripts from the Council for publication in the Official Journal
	EP	PRELEG exchange of pre-legislative documents	Manuscript for the OJ and procedure/event information from the Parliament in scope of linking with previous PRELEG sending
		OJ POSTPROD Official Journal document post production transmissions	Official Journal Manuscript
	COR/EESC	PUBACC Make pre-legislative documents accessible to the public	Documents and procedure/event information from the Social and Economic Committee in the scope of their internal procedure related to the interinstitutional procedure for publication on EUR-Lex.
		PRELEG exchange of pre-legislative documents	Procedure/event information from the Committee of the regions and the Social and Economic Committee in scope of the interinstitutional legislative procedure for publication on EUR-Lex
		OJ manuscript The Official Journal of the European Union (OJ) is the main source of EUR-Lex content.	Manuscripts for the Committee of the Regions and the Social and Economic Committee for publication in Official Journal by using the IMMCbuilder tool
	ECA	PRELEG exchange of pre-legislative documents	Procedure/event information from the Court of Auditors in scope of the interinstitutional legislative procedure by using the IMMCbuilder tool for publication on EUR-Lex.
		OJ manuscript The Official Journal of the European Union (OJ) is the main source of EUR-Lex content.	Documents of the ECB to be published in the Official Journal
	ECB	PUBACC Make pre-legislative documents from the internal procedure accessible to the public	Legal acts adopted by the European Central Bank that are not subject to OJ publication, sent using the IMMCbuilder tool for publication on EUR-Lex.
		OJ manuscript The Official Journal of the European Union (OJ) is the main source of EUR-Lex content.	Documents of the ECB to be published in the Official Journal
	OP	OJ POSTPROD Official Journal document post production transmissions	
IMMCv3	CJUE	CASELAW Collection of documents issued from cases before the Court of Justice of the European Union	Manuscripts from the Court of Justice Metadata concerning previously published documents from the Court of Justice
	OP.A.4	GENPUB (cataloguing) General Publications production	
	OP.B.1	CASELAW	

Schema name	Used by institution	Used in business exchange domain (IMMC Flow in IMMC Flows inventory)	Description
		Collection of documents issued from cases before the Court of Justice of the European Union	
	OP.B.2	GENPUB (cataloguing) General Publications production	
	OP.C.1	EU Whoiswho European Institutions Who is Who	
	OP.C.2	CONSLEG Consolidation Tracking the evolution of legal acts	
		LA Legal Analysis	
		LSEU Summaries of EU Legislation	
	EP	PRELEG exchange of pre-legislative documents	
	CONSIL	PRELEG exchange of pre-legislative documents	

2. COMMON EXTENSION MECHANISM

2.1. IMMC Vocabulary

The aim of the IMMC Vocabulary is to develop a common understanding of standard items used in the exchange of metadata information. It acts as single repository of standard definitions of **concepts used by the different businesses and represented in IMMC**; the IMMC Vocabulary describes, on a business level, concepts related to the:

- Metadata of documents.
- Processes of institutions for producing documents and their metadata.

The IMMC Vocabulary constitutes the conceptual basis for the IMMC schemas which in turn express concepts in a technical language as elements, element references or attributes.

The IMMC Vocabulary arranges concepts into several areas, based on their purpose and stakeholders involved:

- Common metadata with structure based on FRBR (<https://www.ifla.org/>).
- Domain-specific metadata related to particular stakeholders using IMMC.
- Transmission-related concepts that are the basis for an implementation of IMMC metadata transfer protocols.

The IMMC Vocabulary is managed in VocBench.

2.2. IMMC schema - Definition of “common extension” mechanism

The “common extension mechanism” defines once, in one XSD file, common metadata IMMC concepts as elements to be used throughout multiple domains.

Different IMMC extensions contained in separate XSD files can refer to the commonly defined metadata element instead of re-implementing them locally

2.3. Benefits of the common extension mechanism

The common extension mechanism backs, at technical level, the aim of the IMMC Vocabulary as:

- The **consistency of common IMMC concepts usage** across domain-specific extensions XSD file **is increased**,
- The overhead of redefining the same common IMMC concept related to documents metadata multiple times as metadata elements in all domain-specific extensions XSD file is reduced.

2.4. IMMC Core metadata, Common extension and domain specific extensions

2.4.1. IMMC Core metadata

The IMMC Core Metadata exchange model is defined as *“the minimum set of **metadata elements** relative to the legal decision-making process, to be used in the data exchange between the institutions involved and the Publications Office”*.

The IMMC **Core Metadata** schema is:

- Defined in the XML Schema for Core Metadata (namespace “**cm**”) ¹
- Approved by the Interinstitutional Metadata Management Committee (IMMC) and is applicable to all domains. As such, the IMMC Core metadata structure is **used by all IMMC stakeholders**.

2.4.2. Extensions

2.4.2.1. *Common extensions design principle*

The extension mechanism allows adapting the IMMC Core Metadata schema for specific purposes.

The design principles of the core metadata and the extensions are:

- An element is equivalent to a metadata concept,
- Every element (name) shall be defined once,
- For any specific schema extension, an XSD file contains the definition of metadata elements and the context of their use, e.g. in a “Work” level extension.
- The definition and description of each metadata element are specific to that module (which is expressed and distinguished by the respective XML namespace).

2.4.2.2. *IMMC Common extension*

The IMMC **Common extension**:

- Is defined in the XML Schema for Core Metadata extensions (namespace “**cmext**”)
- Reuses and extends the Core Metadata to be used to describe the common elements **used by multiple stakeholders**.

¹ See also [IMMC Core metadata documentation](#), the core metadata schema described for [IMMC v2](#) and [IMMC V3](#)

2.4.2.3. IMMC Domain specific extensions

There are currently following domain specific extensions, covering the scope of descriptive metadata about documents, events, etc.:

Schema	Name space prefix	Documentation label	Description
IMMC v2	corext	XML Schema for the COR and EESC extensions to the Core Metadata	This format describes the extension types to be used by the European Economic and Social Committee (EESC) and the Committee of the Regions (COR) in the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC)
	councilext	XML Schema for the Core Metadata extensions of the Council of the European Union	This format describes the extension types to be used by the Council of the European Union in the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC)
	ecaext	XML Schema for the Core Metadata extensions of the European Court of Auditors	This format describes the extension types to be used by the European Court of Auditors (ECA) in the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC)
	ecext	European Commission's Core Metadata Extensions	This format describes extension types to be used by the European Commission in the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC).
	epext	XML Schema for the European Parliament extensions to the Core Metadata	This format describes extension types to be used by the European Parliament in the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC)
	ojext	XML Schema for the OJ extensions to the Core Metadata	This format describes extension types to be used by the Publication Office in the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC)
	ojactext	XML Schema for the OJ act extensions to the Core Metadata	This format describes extension types to be used by the Publication Office in the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC)
IMMC v3	caselawext	XML Schema for the Court Of Justice extensions to the Core Metadata	This format describes the business level metadata transmitted by the Court of Justice to the Publications office. It reuses and extends the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC)
	consleg	XML Extensions Schema for the Consolidation of the EU legislation	This format describes the business level metadata transmitted in the context of the "Consolidation of the EU legislation" managed by the Publications Office. It reuses and extends the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC)
	epext	XML Schema for the European Parliament extensions to the Core Metadata	This format describes the business level metadata transmitted in the General Publications context of the Publications office. It reuses and extends the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC)

Schema	Name space prefix	Documentation label	Description
	gpext	XML Schema for the General Publications extensions to the Core Metadata	This format describes the business level metadata transmitted in the General Publications context of the Publications office. It reuses and extends the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC).
	la	Legal Analysis extensions to the Core Metadata	This format describes the business level metadata required for the transmissions from the legal analysis contractor to New CERES. It reuses and extends the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC).
	lseu	Summaries of the EU legislation	This format describes the business level metadata transmitted in the context of the "Summaries of the EU legislation" project managed by the Publications Office. It reuses and extends the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC).
	oibext	XML Schema for the OIB extensions to the Core Metadata	This format describes the metadata exchanges between the Office for Infrastructure and Logistics in Brussels (OIB), the contractor and the Publications Office in the context of the project "Digitisation of the historical archives of the European Commission's Historical Archives Service". It reuses and extends the Core Metadata format defined by the Publications Office (PO) and approved by the Interinstitutional Metadata Management Committee (IMMC).
	opext	XML Schema for the Publications office extensions to the Core Metadata	This format describes the business level metadata transmitted by the Publications office (OP) to the Institutions of the European Union. It reuses and extends the Core Metadata format defined by the OP and approved by the Interinstitutional Metadata Management Committee (IMMC).
	publxt	Elements and the extension types to be used by the Publications Office in the production chain of OJ and caselaw documents	This format describes the business level metadata transmitted by the Publications office (OP) to the Institutions of the European Union. It reuses and extends the Core Metadata format defined by the OP and approved by the Interinstitutional Metadata Management Committee (IMMC).

The domain specific extensions represent in most cases different senders and their specific metadata items.

The table above does not detail additional XML Schema for the IMMC Transmission protocols, e.g. the core metadata transmission (namespace prefix "cmt"), which contains administrative metadata (about e.g. the transmission or the applicable business workflow).

3. ISSUE(S) AT STAKE

When a metadata concept (at business level)² is repeatedly defined within an IMMC schema as metadata elements in domain-specific extensions:

- The common concept is not re-used but redefined multiple times as metadata element in XSD files,
- The concept may be implemented with different metadata element characteristics (e.g. name, type, attribute structure) across different XSD files,
- The concept may be implemented in an inconsistent way across different XSD files,
- The harmonization and maintenance become increasingly difficult over time, as there may be no evident link between the same concept defined as metadata elements across different XSD files,
- More code, i.e. multiple XSD files, must be maintained due to the repetition of the same definition.

For example, the concept “Adoption date and time” is redefined multiple times in

- the IMMC v2:

concept	lang	preliminary concept id	councilext	immc2 genext	ojext	immc2.ojaba cmext
Adoption date and time	en	adoptionDateAndTime	adoption_date	adoption_date	date_adopt	[ojactext]/date_adoption

- The IMMC v3

concept	lang	immc3 cmext
Adoption date and time	en	[pubtext]/date_adoption; [genext]/date_adoption

4. IMMC SCHEMAS AND AVAILABLE DOCUMENTATION

4.1. The common extension in IMMCv3

The common extension mechanism is included in IMMCv3³, as from its launch.

The mechanism isn't however described in the current IMMCv3 communication protocol specifications, which are to be updated after adoption of this document.

4.2. The common extension in IMMCv2

The common extension mechanism is included in IMMCv2, from the version cm-20200318-0, after having been approved in cm-20200201-beta.

4.3. Documentation

The common extension elements and domain specific extension elements are described in detail in the documents delivered as part of the work programme for the period 1/1/2021 - 31/12/2021:

- [Study IMMCv2/v3 mappings](#)
- [IMMC Extensions overview](#), i.e. overview on existing elements in different extensions and correspondence/overlap between IMMC schema versions and domain specific extensions.

² See the **IMMC_vocabulary** maintained in [VocBench](#)

³ cm_common_extensions.xsd

5. FUTURE APPLICATION OF THE COMMON EXTENSION MECHANISM

The “as is” situation is described in section 2 of this document.

5.1. For future standardisation requests

This point is submitted to the members of the IMFC Metadata subgroup for decision.

It is proposed to rely on the common extension mechanism as described in this document to ensure that a **common concept** is **defined once** as **common metadata element** in the **IMMC Common extension** (namespace “**cmext**”) XSD file, and reused in domain specific extensions, especially in new ones to be created

5.2. For potential harmonisation

The section below describes a scenario for progressive harmonisation, of the current domain specific extensions.

This point is submitted to the members of the IMFC Metadata subgroup for decision: shall such a transition be planned and performed?

5.2.1. Transitioning from “domain-specific extension” to “common extension”

The common extension principles can be used to:

- Harmonize metadata element across different domain-specific extensions,
- **Replace elements in existing domain-specific extensions by elements defined in the common extension.**

To mitigate transitioning impacts, the deprecation mechanism⁴ of elements in domain-specific extensions allows to

- Keep the IMMC schema completely backward compatible regarding past IMMC descriptor instances.
- Allow past IMMC descriptor instances to be successfully validated.

as detailed in the scenario below.

However, it is important to consider that changing the namespace of an element (e.g. from genext: to cmext:) or even the name of an element (e.g. cmext:date_adoption instead of genext:adoption_date) in the scope of such a transition will require both the sender’s and the recipient’s IT system to be adapted to find (again) the specific transmitted information.

5.2.2. Example of transitioning scenario

5.2.2.1. *Replace an element definition in domain specific extension element with a common extension defined element*

A prominent example of harmonization candidate is the

*:internal_number

(complex) element used for identification information of a document.

This element is (re-)defined in almost all legal data related domain specific work level extensions with the “local” namespace prefix, e.g.

ecext:internal_number
councilext:internal_number
epext:internal_number

⁴ See document [« Deprecation mechanism »](#) submitted at the 19th IMFC Metadata subgroup meeting

although the list and meaning of the child elements are relatively similar⁵.

5.2.2.2. Harmonisation/deprecation

- Define the internal_number element as a common extension element, in the respective namespace:
cmext:internal_number
- All the child elements would then “come from” the common extension element definition, e.g.
cmext:prefix
cmext:year
- The reference to the local definition in the domain-specific work level extension would be replaced by a reference to the common extension element, enabling the use of a reference to the new common extension element. E.g.

```
<xs:element ref="ecext:internal_number"/>
```

is replaced by

```
<xs:element ref="cmext:internal_number"/>
```

- The compatibility of the domain-specific definition is ensured using substitutionGroup attribute, and for the documentation purpose, deprecated using XSD documentation annotations. E.g.

```
<xs:element name="internal_number"/>
```

is replaced by

```
<xs:element name="internal_number"  
substitutionGroup="cmext:internal_number"/>
```

⁵ Differences in names could be harmonized during the same exercise.