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Interinstitutional Metadata and Formats Committee

Plenary

IMMC context and perspectives

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1. EXECUTIVE SUMMARY

EU institutions and bodies need to exchange publication data in an industrialised and automated way, based on standards, for obvious efficiency, scalability and quality reasons.

The standardisation of exchanges in and between the various services of the European Union in the framework of the interinstitutional decision making process was achieved by the Interinstitutional Metadata Maintenance Committee (IMMC).

The acronym IMMC remained as the name given to the mechanism technically supporting these exchanges. Formally, IMMC is an exchange protocol allowing two participants of a data exchange to speak the same, clear metadata language. The main benefits from this standardisation are consistency, correctness, and automated transfers.

IMMC supports several business purposes: “Public Access” to European Parliament, Council and Commission documents, ordinary legislative procedure, case-law, document production and archiving, general publications.

Work on the development of IMMC was initiated in 2011, and there are currently two main IMMC schemas available (IMMC v2 and IMMC v3). The historical choice of names suggests that these are subsequent versions of the same kind, but they support different business purposes and are based on different, incompatible methodologies, which is misleading for stakeholders.

IMMC is broadly used, as demonstrated by the volume of exchanges (150 bilateral data flows based on IMMC between OP and its partners, and 90 IMMC data flows between the European Commission and its partners, leading to more than 1 million IMMC messages reliably processed per year). IMMC is used currently between EU institutions, with contractors and for exchanges with stakeholders at national level.

Despite the operational success of IMMC with the coexistence of the IMMC v2 and IMMC v3 schemas, with both delivering for the respective business purposes for which they have been designed, there is a recurring discussion as to whether this coexistence should continue, or both schemas should be merged into a single one. This situation negatively reflects on the work of the Metadata Subgroup at operational level and thus may adversely impact the pace of development of important interinstitutional projects (OJ Act-by-Act, JLP).

There is no documented strategic decision or consensus that EU institutions should migrate towards a single IMMC schema. Doing so would require a jointly agreed schedule and an approved budget for migration (mainly of IT systems processing IMMC) in all involved institutions, and presupposes that the existing schemas continue to be used for their respective business purposes as long as no fully functioning single schema would be operational.

It is necessary, as a matter of urgency, to reach a consensus between EU institutions on the future evolution of IMMC and to agree on an implementation strategy.

To facilitate reaching a consensus, the Publications Office presents three alternatives:

1. Coexistence of two IMMC schemas, clearly dedicated to different business purposes
2. Selection of an existing IMMC schema as single IMMC schema for all business purposes, implying migrations for some institutions
3. Creation of a new single IMMC schema for all business purposes, implying migrations for all institutions.

While alternatives 2 and 3 would lead to greater standardisation (single schema), alternative 1 seems the most realistic and operational, especially bearing in mind the context of scarce resources and limited budgets in several institutions and at the Publications Office. The Publications Office recommends to proceed on the basis of alternative 1.

2. INTRODUCTION

2.1. Purpose and audience of the document

This document describes:

- the context of use of IMMC schemas as of 2022, and
- potential perspectives about its future use.

The intended audience of this document is:

- The Senior management of the EU institutions involved in Interoperability decisions, and
- other stakeholders interested in a standardised and secure way of exchanging metadata.

The members of the IMFC Plenary are invited to take position concerning the perspectives presented in this document under section 4.

3. CONTEXT

3.1. Business context

EU institutions generate many kinds of documents and associated metadata published under legal obligations e.g. in the [Official Journal](#) (OJ) or directly on [EUR-Lex](#). EU institutions also extensively use publications in their communication activities with the aim to inform the public about their various activities. Furthermore, they exchange documents and metadata with each other in the scope of their institutional duties such as the decision-making process.

The exchange of publication data is thus a basic – administrative – activity of all EU institutions and bodies, including the contractors in charge of producing publications in desired formats based on raw document data. Industrialised and automated data exchanges can support such aims, which in turn require (to a certain extent) standardisation of exchange formats easily readable by all involved parties.

3.2. What is IMMC?

3.2.1. *The meaning of the IMMC acronym*

The Interinstitutional Metadata Maintenance Committee (IMMC) was created in 2010. Its mission was to provide a governance structure for the standardisation of metadata and of the data (documents) exchange in and between the various services of the European Union, in the context of the interinstitutional decision-making process. The involved stakeholders agreed on the metadata to be used in the exchange and defined a corresponding metadata description, implemented as an XML schema. Currently, IMMC is synonymously used as the name of XML schema¹ definitions, although the name of the governance body was changed to [Interinstitutional Metadata and Formats Committee \(IMFC\)](#).

3.2.2. *What was the situation before IMMC?*

EU institutions exchanged data in various formats with their different partners by means of e-mail or FTP. The disadvantages were a high degree of manual interventions, cost due to multiple reception and conversion solutions maintained by each institution, no or low transmission security, no well-defined and reliable minimum set of metadata and consequently reduced possibilities to assess and validate the quality of the transmitted data and metadata with negative impacts on their usability.

¹ The Extensible Markup Language (XML) is a simple text-based format for representing structured information: documents, data, configuration, books, transactions, invoices, and much more. It was derived from an older standard format called SGML (ISO 8879), in order to be more suitable for Web use. An XML Schema is a language for defining a structure of XML documents. (source: W3C)

3.2.3. Why do we need IMMC?

“Both participants of a data exchange speak the same, clear metadata language“

IMMC can be seen as a framework for streamlining the document and metadata exchanges by standardising the metadata messages: someone sends an IMMC message to someone else for a specific exchange purpose.

Formally, **IMMC is an exchange protocol**:

- IMMC serves to standardise metadata messages exchanged between EU institutions, ensuring that the same minimum metadata set is used;
- It is based on the common agreement between institutions to use a **core metadata set**, but also offers the possibility to include additional metadata specific to an institution, grouped in business specific **extensions**.

3.2.4. What are the benefits of IMMC?

From an operational point of view, the main advantages brought by IMMC are:

- **Automated processing** of transmissions and reception of data thanks to **standardisation** of the message exchange format;
- A **low occurrence of manual interventions** (limited to exception handling);
- High **speed of processing** can be achieved, with a high number of transmissions;
- A homogeneous view on data transfers, clear **monitoring and reporting**;
- Transparency on exchanges, and **traceability of exchanges**;
- **Content validation**, thus **assurance of quality**.

3.2.5. The governance of IMMC

IMMC development and evolution is governed by the **Metadata coordination subgroup of the IMFC**, which is responsible for the harmonisation and standardisation of metadata at business, technical and operational levels.

The governance procedure² defines all applicable common processes in the Metadata coordination subgroup for changes to the IMMC XML schema definitions, i.e. the **standardisation requests**.

3.3. Business view on IMMC

3.3.1. What is an IMMC message?

IMMC is a point-to-point type of communication: a sender addresses a message³ to a recipient for a given communication purpose. Importantly, this exchange has been agreed in advance; the sender knows exactly the recipient(s) of each type of IMMC message; every recipient knows exactly what types of IMMC messages to receive from whom and how to handle them properly. Sender and recipient agree during the implementation phase on which IMMC schema to use in their exchange. This needs to be the same. It is therefore not possible to send an IMMC v2 message to a recipient who expects an IMMC v3 message or vice versa.

Most institutions have established (IT) systems to send, receive, and process IMMC messages.

3.3.2. How does IMMC support the business?

There are currently three IMMC schemas in use which cover distinct business purposes:

² https://op.europa.eu/documents/3938058/4024542/IMMC_procedure_gouvernance_2020.pdf

³ An IMMC message is uniquely defined by:

- **Data** i.e. metadata and content such as documents, manuscripts, etc.
- A source of data i.e. **sender**, usually an institution,
- A target i.e. **recipient**
- A **transmission purpose** i.e. production, publication, archiving, etc.
- Underlying **operations** related to data validation, transformation and in broader terms curation as well.

- IMMC v2: exchanges between institutions in the scope of interinstitutional (legislative) procedures and related activities;
- IMMC v3: jurisprudence document production (CASELAW) and other document production domains, mostly in OP such as General Publications or Consolidated Legislation;
- IMMC Public Access: a derivative from IMMC v2 used by the Commission in the scope of their internal pre-legislative procedure.

The data flows by domain and schema used are further detailed in the [annex](#).

3.4. Technical view on IMMC

3.4.1. The development and maintenance of IMMC schemas

3.4.1.1. *The project development phase*

IMMC was initially developed in 2011 around the minimal set of metadata (Core Metadata) for legal information. Institutions could implement the minimum set of core metadata progressively and at their own pace. A consensus on the structure of the 1st IMMC XML schema, including its use of Authority Tables to assign reference values to exchanged metadata, was reached by the end of 2011.

IMMC v2 was released in November 2012 and was in use by first institutions for inter-institutional (legislative) procedures, by 2014.

The project launched in 2014 for the development of IMMC v3 aimed at:

- Meeting business requirements for Court procedure that had not been initially addressed (in IMMC v2), i.e. for the Court of Justice of the European Union;
- Achieving technical improvements (standardising common elements in Core Metadata Extensions, harmonising XML namespaces element types).

IMMC v3 started to be used in 2015.

The IMMC v3 schema extension for general publications (OP) was delivered in October 2016.

It was unfortunate that the above-mentioned IMMC schemas, created for different domains and purposes, received names suggesting that they are subsequent versions of the same kind. This naming convention is misleading for many stakeholders, therefore, in the long-term, it should be modified.

3.4.1.2. *Evolutive maintenance*

For the period 2018 to 2021, there were only minor changes to the IMMC schemas. Consequently, IMMC is to be regarded now as a stable solution in evolutive maintenance.

The common characteristics of IMMC schemas are:

- Same approach to the structure definition, maintenance, publication;
- Reliance on the IMMC Vocabulary, which is the common definition of (metadata) concepts used in IMMC exchanges;
- The maintenance within IMMC schemas is done in a backward compatibility compatible way: messages remain valid throughout the delivered releases.

The key differences between IMMC schemas lie essentially in the:

- Difference of supported business purposes (v.2 exchanges between institutions in the scope of interinstitutional (legislative) procedures and related activities, v.3 jurisprudence document production and other document production domains) which is technically visible by the different specific extensions across the IMMC schemas;

- A number of more technical points⁴.

3.4.2. Operations

There are currently approximately 150 bilateral data flows based on IMMC between OP and its partners, and 90 IMMC data flows between the European Commission and its partners. The OP processes between 2.000 and 10.000 IMMC packages per day; on a yearly basis this amounts to more than 1 million packages.

4. PERSPECTIVES

4.1. Issue at stake: different IMMC schemas used for their specific business purposes.

4.1.1. IMMC Public Access and IMMC v2

The European Commission uses an IMMC schema Public Access that is slightly different from the officially published IMMC v2, however, it is based on the same methodology. The Publications Office and the European Commission are currently analysing how to integrate the Public Access IMMC schema variant into the IMMC v2 schema. This can be resolved in the context of the standard changes to IMMC schemas, within the established IMMC governance.

4.1.2. IMMC v2 and IMMC v3

IMMC v2 and IMMC v3 were designed sequentially over time yet are used to support different business purposes and **are not compatible**. Both, IMMC v2 and IMMC v3, correctly play their roles supporting the exchanges in the domains for which they were designed.

Despite the operational success of IMMC with the coexistence of the IMMC v2 and IMMC v3 schemas, with both delivering for the respective business purposes for which they have been designed, there is a recurring discussion as to whether this coexistence should continue, or both schemas should be merged into a single one. This situation negatively reflects on the work of the Metadata Subgroup at operational level and thus may adversely impact the pace of development of important interinstitutional projects (OJ Act-by-Act, JLP).

There is no strategic decision or consensus that EU institutions should migrate towards a single IMMC schema. Doing so would require a jointly agreed schedule and an approved budget for migration (mainly of IT systems processing IMMC) in all involved institutions, and presupposes that the existing schemas continue to be used for their respective business purposes as long as no fully functioning single schema would be operational

4.1.3. Approach for resolution so far and current state of play

From 2019 to 2021, the IMMC Work Programmes⁵ (established on a yearly basis) foresaw activities related to the “proposal of a consolidated version of IMMC schemas”, then the “finalisation of a consolidated version and implementation roadmap”, and finally the “generation of schemas, protocols and examples for each domain”.

In this context, the Publications Office provided analysis documents⁶ and the prototype of a “converter solution” to convert IMMC messages from one to another IMMC schema⁷.

At the Interoperability Steering Committee held on 2nd February 2021, institutions voiced different views about usage of IMMC schemas:

⁴ Mechanisms (transmission header, Authority Table handling), Workflow handling, Procedure/Work element nesting, Publication request handling.

⁵ <https://webgate.ec.europa.eu/fpfis/wikis/display/OPIMFC/General+information+Metadata#OP-IMFC-Metadata--2065912538>

⁶ Usage of IMMC schema versions, the scope of technical consolidation between IMMC schema versions, and 3 alternatives to consolidate the IMMC schema versions, see also [annex](#)

⁷ This prototype is a tool requiring configuration on a case-by-case basis. It has not yet been tested against use cases from institutions.

- The European Parliament wishes to engage further in the usage of IMMC v3;
- The Council of the European Union wishes to further evaluate the impact of a change of IMMC schema on their systems (it has been followed-up by an e-mail exchange in which the Council indicated that it has no plan to migrate to IMMC v3);
- The European Commission wishes to continue to use IMMC v2 at least until 2024.

It is necessary, as a matter of urgency, to reach a consensus between EU institutions on the future evolution of IMMC and to agree on an implementation strategy. To facilitate reaching a consensus, the Publications Office presents three alternatives, which are detailed below.

4.2. Alternatives

Several alternatives can be considered about the future of the IMMC schemas.

4.2.1. Alternative 1: “Coexistence of two IMMC schemas, clearly dedicated to different business purposes”

4.2.1.1. Proposal

This alternative acknowledges the fact that there are different schemas in use, covering different business purposes, and which are regularly maintained.

Under this alternative, the main proposals are to:

- Qualify and name IMMC schemas according to their purpose

Current schema name	Purpose – Would become the schema name
IMMC v2	IMMC for ordinary legislative procedure (including Official Journal)
IMMC v3	IMMC for document production and archiving

- Pursue systematic improvements in maintenance mode. From a business perspective, the improvements would focus on strengthening the inventory of IMMC data flows (which would help to better assess impacts of changes, and support the testing of these changes) and extending the IMMC vocabulary, which is the common definition of (metadata) concepts used in IMMC exchanges. From a technical perspective, the attention would mostly go to alignment efforts at technical level between IMMC v2 and IMMC v3.

4.2.1.2. SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none">• Gradual changes/improvements limited scope• Compatible with a context of scarce resources and limited budgets in several institutions and at the Publications Office	<ul style="list-style-type: none">• There will not be one single IMMC schema• Sub-optimal in terms of standardisation
Opportunities	Threats
<ul style="list-style-type: none">• Pursue synergies/alignment between schemas• Allows to put the focus on business support through provision of<ol style="list-style-type: none">1. Knowhow & consultancy on how to use online resources (schemas, tables)2. Providing tools that are agnostic of IMMC schema• New or refurbished dataflows can choose the IMMC schema best suited for their business domain	<ul style="list-style-type: none">• This alternative will require perpetual parallel support by the Publications Office of two IMMC schemas

4.2.2. Alternative 2: “Selection of an existing IMMC schema as single IMMC schema for all business purposes, implying migrations for some institutions”

4.2.2.1. Proposal

This alternative sets an existing target schema, i.e. an updated IMMC v3, to be used for all business purposes.

Under this alternative, the main proposals are to ensure that:

- The [IMMC flows inventory](#) correctly and thoroughly identifies all IMMC v2 and IMMC public access based flows;
- The Publication Office and the EU institutions proceed with all actions for the “Finalisation of a consolidated version and implementation roadmap” and the “Generation of schemas, protocols and examples for each domain” yet based on updating/extending IMMC v3. This is to be regarded as a programme, i.e. a collection of projects in the Publication Office and the EU institutions.

4.2.2.2. SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • Optimised in terms of standardisation: aims at a single common schema • Relies on a basis that already exists i.e. updating/extending IMMC v3 	<p>Significant migration effort for several EU institutions (Council, European Commission, ECB, ...) and the Publications Office on existing IMMC v2 based data flows and systems, as</p> <ul style="list-style-type: none"> • All dataflows have to be migrated • All underlying IT systems using IMMC v2 have to be adapted, tested and in sync with all communication partners redeployed • All references to Authority Tables have to be adapted (prefixed codes in IMMC v3) • Adaptations to IMMC v3 will have to be made to make ALL domain specific extensions available in IMMCv3
Opportunities	Threats
<ul style="list-style-type: none"> • Enforce the review and update of the IMMC flows inventory 	<ul style="list-style-type: none"> • This alternative will require parallel support by the Publications Office of two IMMC schemas over a long period of time as the migration will take time • This alternative is unrealistic in the current and foreseeable context of limited budgets and staff

4.2.3. Alternative 3: “Creation of a new single IMMC schema for all business purposes, implying migrations for all institutions”

4.2.3.1. Proposal

This alternative sets a new target schema to be used for all purposes.

Under this alternative, the main proposals are to ensure that:

- The [IMMC flows inventory](#) correctly and thoroughly identifies all IMMC v2, IMMC v3 and IMMC public access based flows;
- The Publication Office and the EU institutions proceed with all actions for the “Finalisation of a consolidated version and implementation roadmap” and the “Generation of schemas, protocols and examples for each domain”. This is to be regarded as a programme, i.e. a collection of projects in the Publication Office and the EU institutions, of large scale.

4.2.3.2. SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none">• Most optimal in terms of standardisation: aims at a single common schema	<ul style="list-style-type: none">• Certainly the most resource and time intensive alternative, with impacts for all EU institutions• All IMMC v2 and IMMC v3 based data flows and systems of all institutions and all their communication partners will have to undergo a migration• Will require complete retesting (schema, data flows)
Opportunities	Threats
<ul style="list-style-type: none">• Enforce the review and update of the IMMC flows inventory• Green fields approach, allowing all institutions to contribute to and adopt a new schema, possibly reflecting on all lessons learned from past decade	<ul style="list-style-type: none">• This alternative will require parallel support by the Publications Office of three IMMC schemas over a long period of time since the elaboration of a new schema and subsequent migrations will take time• Most complex transition, with long parallel runs, multi-annual efforts• This alternative is unrealistic in the current and foreseeable context of limited budgets and staff

5. RECOMMENDATION

Bearing in mind

- 1) that both existing schemas deliver for the respective business purposes for which they have been designed,
- 2) that migrating towards a single IMMC schema would require a jointly agreed schedule and approved budget for migration (mainly of IT systems processing IMMC) in all involved institutions, and would presuppose that the existing schemas continue to be used for their respective business purposes as long as no fully functioning single schema would be operational,
- 3) the context of scarce resources and limited budgets in several institutions and at the Publications Office,

the Publications Office recommends to proceed on the basis of alternative 1 (co-existence of 2 schemas for specific business purposes), as the most realistic and operational way forward.

6. ANNEX

6.1. Business view - IMMC flows overview

IMMC flows serve distinct purposes, in different business **domains** (non-exhaustive list):

Schema name	Used by institution	Used in business domain	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),
IMMC v2	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 Documents about merger activities(handled in IMMC internally by OP, legacy transmission format from COM)
			National transposition measures (NTM), collected by SecGen COM from the member states (handled in IMMC internally by OP, legacy transmission format from COM)
	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.

Schema name	Used by institution	Used in business domain	Description
		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 ECA 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	
IMMC v3	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 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	

6.2. Technical view

6.2.1. IMMC message, syntax & vocabulary

An **IMMC message** is an IMMC descriptor file in XML format, and is specific to:

- A sender;
- A recipient;
- A purpose of transmission.

In order for every sender and recipient to understand each other, i.e. in the direction “the recipient understands the message from the sender”, they need to speak the same language, on syntax and vocabulary levels:

- The **syntax** corresponds to the IMMC data structures formulated in the IMMC schema format, and
- The **vocabulary** covers all the possible metadata items that can be used in an IMMC exchange.

6.2.2. The IMMC constituents

The IMMC can be regarded as consisting of three interlinked constituents:

- The **IMMC vocabulary** is the list of IMMC elements (metadata concepts), with lexicalisations, business domain specific descriptions and properties.
- The **IMMC flow inventory** is the list of flows in respective business domains. It allows to manage the dependencies on sets of metadata in given business domains: the inventory:
 - Is the register of all types of messages for the exchange of metadata
 - Lists the sender, the recipient(s), and the purpose of a specific message type
 - Describes implicitly the domain specific extension in use, and metadata items to be used.
- The **IMMC schema structure** holds information about the IMMC schemas, it is the definition of each IMMC schema. Two levels of metadata are defined in an IMMC schema to support any exchange:
 - Level 1: the **core metadata** (i.e. the XML schema for Core Metadata and the XML schema for Core Metadata Common Extensions) is the set of metadata fields and structures which serve as basis for all message types between all exchange partners. A change to the core metadata of an IMMC schema can impact all exchange partners using that IMMC schema
 - Level 2: **extension metadata** is used specifically in the scope of a business domain of a sender. A change to an extension metadata impacts only exchange partners using that domain specific extension.

All this is applicable across the different IMMC schemas.

6.2.3. Tools provided by the Publications Office which support IMMC?

The Publications Office supports IMMC with several tools:

- **IMMCbuilder**: service to construct well defined and valid IMMC packages; as service to institutions and contractors to spare them developing their own IMMC construction applications;
- **XMLparser**: validating/caching XML parser module for IMMC (JAVA);
- **Metadata controller**: [Schematron](#) based validation module (JAVA).

6.2.4. IMMC v2 and IMMC v3 – short summary of previous discussions

In May 2016, the IMMC Multilateral Technical Group meeting n°1⁸ included a point about the migration strategy towards IMMC 3, which stated:

⁸ [Minutes Presentation](#)

“1st step: guarantee stability of IMMC2, do mapping to IMMC3 on reception at OP

- *Proposal presented at IMMC plenary, 2015-10-15*
- *IMMC V3 is the preferred format for new chains outside the original field of interinstitutional procedures*
- *Long period in which both versions of IMMC will co-exist*

2nd step: combine future migrations with alignment to OP's schema

- *OP to bilaterally organize migration strategies*
- *to be coordinated in the Technical Coordination Group*

IMMC V2 will remain for the foreseeable future the preferred format for transmission related to interinstitutional procedures. IMMC V3 is the preferred format for new developments.

All participants agree with this approach.

Decision D1.6: IMMC V2 will remain for the foreseeable future the preferred format for transmission related to interinstitutional procedures. IMMC V3 is the preferred format for new developments”

The Commission issued in that same meeting following comment that is still valid as of today *“[EC] requests that questions of schema evolution, its particular challenges and migration planning be put on the agenda of future meetings. He underlines that maintenance of IMMC chains needs to be foreseen in the budget not only for development, but also for maintenance. Action A1.8: Add schema evolution on the agenda for the next meeting.”*

6.3. Statistical information on IMMC processing in OP

Cumulative number of IMMC packages processed per year

2019	1.308.082
2020	1.087.442
2021	1.461.788
2022	353.346 (period until #/2022)

Average number of IMMC packages processed per (working) day

2019	5107
2020	3678
2021	6715
2022	5024