Management summary

This report contains the evaluation report as well as the proposed advice of the ICT multi stakeholder platform on the submission of the eXtensible Markup Language (XML) version 1.0, to be identified in accordance with Article 13 and Annex II of Regulation (EU) No. 1025/2012\(^1\).

The report covers mainly following structure:

1) Assessment of the compliance with the "coherence criteria"; providing information on the proposed ICT technical specification against the background of the formal European standardisation system and existing and/or on-going standardisation activities in the relevant domain.

2) Assessment of the compliance against the requirements for the identification of ICT technical specifications, set by Annex II of Regulation (EU) No. 1025/2012, a set of evaluation criteria similar to those established by the WTO\(^2\) Agreement on Technical Barriers to Trade.

Further to the assessments above, it is proposed that the ICT standardisation multi-stakeholder platform comes to the conclusion that a "positive" recommendation should be given on the identification of the submitted ICT technical specification XML version 1.0 Fifth Edition\(^3\).

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\(^2\) World Trade Organisation

\(^3\) Extensible Markup Language (XML) 1.0 (Fifth Edition) W3C Recommendation 26 November 2008: http://www.w3.org/TR/xml/
Evaluation Working Group XML

Report to the Platform

1  Objective for the report

1.1  The background

Economic growth and responsiveness to citizens’ expectations in a digital world requires interoperability between services, applications and products. Achieving interoperability requires standards and specifications. Public authorities should make use of the full range of standards and technical specifications when procuring hardware, software and information technology services; this will allow them to efficiently fulfil their tasks. The Pillar II of the Digital Agenda for Europe recognised the need of sound standards and common technical specifications to promote interoperability, and advocates public authorities to make the use of available standards and common technical specifications when commissioning hardware, software and IT services from external suppliers.

To that objective the Regulation 1025/2012 on European standardisation lays down in its Chapter IV a procedure for the identification of ICT technical specifications which are not issued by European, International or national standardisation organisations that could be referenced in public procurement acts by public authorities, provided that these ICT specifications, proposed by the Commission or by Member States, comply with the requirements set by annex II of the same Regulation.

These requirements cover the coherence of the proposed ICT specification with the formal standardisation environment, the qualities of the standardisation process implemented in the standards setting organisation that issued the proposed ICT specification and some aspects of the proposed specification itself. Compliance with these requirements guarantees the public authorities that the proposed ICT specification are set in accordance with the founding principles recognised by the World Trade organisation (WTO) in the field of standardisation.

The objective for this report was to allow the European multi-stakeholder platform on ICT standardisation (“The Platform”) evaluating compliance of the proposed ICT specification with the requirements set in annex II of the regulation. The Platform will subsequently provided its positive advice to the Commission on the potential “identification” of the submitted ICT specification.

The European multi-stakeholder platform on ICT standardisation platform is an expert group set up by The Commission Decision of 28th November 2011; it is composed of representatives of Member States, Industry, societal organisations, formal standards organisation and fora & consortia. The art. 2.f of this Decision states that one of the tasks of the Platform is “to advise the Commission on the identification of the technical specifications in the field of ICT which are not national, European of international standards”. The Platform agreed on a process for such identification (doc. ICT/MSP (2012) 057), in accordance with art. 13 of the Regulation 1024/2012.

1.2  The process

• On 13th September 2012 the European Commission has submitted a list of potential the ICT specifications to the evaluation process in view of their identification as an ICT specification eligible for referencing in public procurement, in accordance with article 13 of the Regulation on standardisation 1025/2012. Out of this list the Platform agreed at its meeting of 25th October 2012 to start an identification procedure of the technical specifications “XML” issued by World Wide Web Consortium (W3C), selected by the Platform with other two (“ECMA Script” and “IPv6”). The “identified ICT specifications” resulting from this process, in accordance with art. 14 of Regulation 1025/2012, shall constitute a “common technical specification” referred to in Directives 2004/17/EC and 2004/18/EC and 2009/81/EC and therefore become eligible for direct referencing in public procurement

• An informal team was set up, chaired by the Commission and with the help of a representative of the organisation originating the technical specification, W3C, to complete the submission file.

• The secretariat of the ICT standardisation multi stakeholder platform has verified whether the information on the evaluation submission form is complete. The submission form has subsequently been forwarded on 14th January 2013 to the members of the Platform for discussion and for the establishment of an evaluation group to assess this information with respect to the requirements set by the Annex II of the Regulation

• The Platform noted the submission of the ICT specification XML version 1.0 issued by W3C at its meeting of 7th February 2013; the Platform decided to established an ad hoc evaluation working group
to carefully analyse the data provided by the submission form; to seek, if necessary, further information form the submitter and the specification originating organisation and to consolidate the information in an evaluation report addressed to the Platform, which will allow the Platform to prepare its advice on the identification of the proposed ICT specification to the Commission.

- The MSP discussed the report and approved it at its meeting of 17th October 2013.
- The final draft advice will be submitted for broad consultation to all interested stakeholders via the YourVoice in Europe web site; the consultation will last at least one month.
- The MSP Secretariat will consolidate the comments received during the open consultation and submit to the Platform for further action.
- The Platform will, depending on the outcome of the consultation, decide on the finalisation of its draft advice to the Commission or on further discussion within the MSP.
- Further to a positive advice of the MSP, the Commission will, in accordance with the internal procedures, prepare the relevant Commission decision on the identification of the ICT specification.

1.3 Evaluation task force

Following its decision of 25th October 2013, the Platform agreed on its meeting of 7th February 2013 to create an evaluation group for XML version 1.0 on a voluntary basis: all the members of the Platform could volunteer to be part of this task force. A representative of W3C as specification setting organisation, participated in an advisory basis. A Commission representative ensures the Secretariat of the Platform.

The Evaluation group was composed of representatives from the following Platform members:

1. European Commission
2. W3C (advisor)
3. DIGITALEUROPE
4. OASIS
5. Switzerland

The secretariat of the group was assured by the Commission.

The evaluation group has performed its tasks by electronic means, including call conferences when needed. The group and delivered its preliminary report to the MSP secretariat on 30th May 2013 and presented the results to the Platform on its meeting of 13th June and 17th October 2013.

1.4 Subject of the evaluation

XML was developed and is published by the World Wide Web Consortium (W3C), a global ICT standards consortium. See http://www.w3.org/Consortium/. W3C was founded in 1994 and serves as a platform for the development of data specifications used over, and indeed defining, the Internet and most particularly the World Wide Web.

The eXtensible Markup Language (XML) is a package of related data structuring specifications that promote widely-scalable sharing of information and computational resources. XML originated as a simple, text-based format for representing documents, data, configuration, books, transactions, invoices, and the like. It was derived as a specialization and extension of an older specification for electronic publication called SGML (ISO 8879). The core technology includes the following seven components, all of which are evaluated in this report for potential recognition as a package:


The XML specification was first issued as a W3C Recommendation in February of 1998. XML version 1.0 is in its Fifth Edition, approved by W3C in November of 2008. It continues to be one of the most widely-used formats for sharing structured information today. Its pervasive use as both a person-to-person and computer-to-computer format for communicating information makes it an inextricable element of most Internet usage.

Originally designed to meet the challenges of large-scale electronic publishing, XML is also playing an increasingly important role in the exchange of a wide variety of data on the Web and elsewhere. XML is almost ubiquitously used in informatics today, from XML as the *lingua franca* of database exchange, down to application preference configuration files.

Many other data format specifications are built on or extensions of XML. Huge volumes of global data are stored natively in the XML format. Other data-structuring methods also are in use, including SGML, RelaxNG, JSON, and the later version 1.1 of XML. However, the widespread penetration of XML v 1.0 into the world's data stores and networks ensures that it will be a key format for global ICT interoperability for decades to come. Obviously not every procurement file of XML will need to refer to the complete list of core technologies. Procurers will need to understand which requirements for which they need to procure and select the specifications that match those requirements.

### 1.5 Possible links with other ICT technical specifications or standards

A large set of additional functional additions and extensions to the XML package also have been developed. Within W3C, these include: XLink, XPath, EXI (an XML-specific compression format), XPointer, Canonical XML, XML Signatures, XML Schema 1.1, XSLT, XQuery, XProc, XSL-FO and XHTML, an XML-compliant version of the basic web document format HTML (HyperText Markup Language).

W3C and many other consortia have developed and published additional open specifications using XML as their base structuring language. For example, the following open specifications widely used in public administration today all have XML representations:

- The Resource Description Framework (RDF) for semantic content from W3C.
- The eSignature infrastructure for PEPPOL, the Pan-European Public Procurement Online project.
- The document structure for content exchanged via e-CODEX, the e-Justice Communication via Online Data EXchange project.

A recent search in the ISO Online Browsing Platform reveals 136 references to XML in ISO Specifications.

### 2 Evaluation of compliance with the general conditions: part II, §6 doc ICT/MSP(2013) 14 rev

#### 2.1 Market acceptance

The use of XML increased interoperability among applications, services and products. XML promotes broad open data interchange by providing a universally available and readily-tooled interoperable structure for almost any kind of structured information. Instances of its deployment are widespread, and noted above. Further XML is referenced in a very large number of other specifications and public documents listed under section 4. See generally: [http://www.w3.org/XML/](http://www.w3.org/XML/)
The XML specification promotes the use of innovative and promising solutions in the market. XML is globally implemented in widespread use, with many open source and proprietary tool sets available for its production, processing and publication. The extensible nature of XML strongly facilitates innovation and improvement on the base specification, as well as adaptation and re-use of data expressed with it.

2.2 Coherence with the formal European standardisation environment

No replacement or substitution of a new European standard or standardisation deliverable is anticipated or deemed necessary, at this time.

Several older and other mark-up methods exist, including SGML, and many can co-exist compatibly in a publication or computation system; but none are substitutable for XML in terms of functionality.

The XML specification is a mature, stable specification in widespread production use, with its freely-available license and use rights already established at W3C. Transposition by a European Standardisation Organisation is not presently anticipated.

3 Evaluation of compliance with the attributes: part II, §7

doc ICT/MSP(2013)14 rev

3.1 The organisation developing the specification

W3C is a non-profit global consortium, in which its members develop specifications by voluntary agreement, managed and facilitated by a neutral professional staff of domain experts. Its finances are described here: [http://www.w3.org/Consortium/facts#revenue](http://www.w3.org/Consortium/facts#revenue).

W3C is not a European standardisation organisation, national or international standardisation body as defined the Regulation (EU) No 1025/2012. The W3C mission is to lead the World Wide Web to its full potential by developing protocols and guidelines that ensure the long-term growth of the Web.

W3C is a rule-based organisation, with detailed and publicly-documented procedures (noted below) for conducting its business and developing its recommendations and other output. The development of the specifications is based on open and transparent processes, participation by all relevant stakeholders is possible, and decisions are taken on the basis of consensus. The specification has been developed and is maintained by the W3C. It is international in scope and membership, including substantial European participation. The above mentioned characteristics including external communication are outlined in a detailed manner at their website. The organisation adequately complies with the above mentioned criteria.

3.2 The development process

W3C specifications-setting is conducted in accordance with the W3C Process Document: [http://www.w3.org/Consortium/Process/](http://www.w3.org/Consortium/Process/). The maintenance process (rules, participants, consensus building) including possible public consultation on the updated version complies with the above mentioned criteria.

3.2.1 Openness

The W3C Process Document and membership criteria provides for open access to participation in the development of its specifications. The terms of membership are noted here: [http://www.w3.org/2009/12/Member-Agreement](http://www.w3.org/2009/12/Member-Agreement).

3.2.2 Consensus

The decision-making process was collaborative and consensus based and did not favour any particular stakeholder. Consensus means a general agreement, characterised by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments. Consensus does not imply always unanimity. The W3C Process Document explicitly applies consensus decision rules to its specification advancement criteria. Professional neutral staff facilitates outreach and inclusiveness among stakeholder viewpoints.

3.2.3 Transparency

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4 An overview appears here: [http://www.w3.org/standards/about.html](http://www.w3.org/standards/about.html)

5 See the current W3C membership list at: [http://www.w3.org/Consortium/Member/List](http://www.w3.org/Consortium/Member/List)
W3C rules require public review periods, for specifications in development, and the genuine consideration of all feedback received, in meetings with archived records and historical drafts kept perpetually available for review by persons who may wish to examine or research a specification's development or inputs.

Additionally, W3C's policies and practices were explicitly evaluated for openness, consensus and transparency by ISO/IEC Joint Technical Committee 1 on Information Technology in 2012, and approved as appropriate for global standards promulgation, as part of its successful application for JTC1 Publicly Available Specification (“PAS”) Submitter status:

http://isotc.iso.org/livelink/livelink?func=ll&objectId=8913248&objAction=browse&sort=name.

W3C complies with the criterion that (i) all information concerning technical discussions and decision making was archived and identified; (ii) information on new standardisation activities was publicly and widely announced through suitable and accessible means; (iii) participation of all relevant categories of interested parties was sought with a view to achieving balance; and (iv) consideration and response were given to comments by interested parties.

3.3 The specification

3.3.1. Maintenance

W3C has maintained the XML specification and a host of similar works as persistently available, with regular maintenance and updates where deemed useful, through the standard’s 15-year history.

3.3.2. Availability

All W3C specifications, including each element of the XML package, are available online at no cost from the consortium’s website as a matter of policy.

3.3.3. Intellectual Property rules

Several of the specifications in the XML package were developed under the W3C Current Patent Practice that applied from 24 January 2002 until 5 February 2004: http://www.w3.org/TR/patent-practice (CPP). The subsequent editions were produced under the presently-applicable W3C Patent Policy: http://www.w3.org/Consortium/Patent-Policy/. Both rule-sets provide for public notice and publication of any claims. Overall W3C seeks to issue recommendations that can be implemented on a Royalty-Free (RF) basis. Subject to the conditions of this policy, W3C will not approve a Recommendation if it is aware that Essential Claims exist which are not available on Royalty-Free terms. So far, W3C is not aware of any patent encumbrance of any of the submitted Recommendations. W3C maintains a notice site for each specification, as follows:

1. Extensible Markup Language (XML) 1.0 (Fifth Edition):
   Disclosures at
   - http://www.w3.org/2004/01/pp-impl/18796/status
   - http://www.w3.org/2002/08/xmlcore-IPR-statements

2. XML Base (Second Edition), 28 January 2009:
   Disclosures at http://www.w3.org/2004/01/pp-impl/18796/status

3. xml:id Version 1.0, 9 September 2005:
   Disclosures at http://www.w3.org/2004/01/pp-impl/18796/status

4. Namespaces in XML (Third Edition), 8 December 2009:
   Disclosures at
   - http://www.w3.org/2004/01/pp-impl/18796/status
   - http://www.w3.org/2002/08/xmlcore-IPR-statements

5. XML Infoset 2nd Edition, 4 February 2004:
   Disclosures at
   - http://www.w3.org/2004/01/pp-impl/18796/status
   - http://www.w3.org/2002/08/xmlcore-IPR-statements

6. Associating Style Sheets with XML documents 1.0 (Second Edition), 28 October 2010:
   Disclosures at
   - http://www.w3.org/2004/01/pp-impl/18796/status
3.3.4 Relevance

XML is widely and demonstrably successful as an effective, open method for data structuring in a simple, text-based manner that has facilitated broad adoption.

The specification respond to market needs and takes into account potential regulatory requirements. Further XML is referenced in a very large number of other specifications and public documents, including:

- German SAGA v5 page 75, 3 Nov 2011
- French General Interoperability Repository Version 1.0, 12 May 2009:
  [http://www.references.modernisation.gouv.fr/rqi-interoperabilite](http://www.references.modernisation.gouv.fr/rqi-interoperabilite)
- Poland National Interoperability Framework, 16 May 2012:
- Spanish Catalogue of Standards, 20 Apr 2012:
  [http://administracionelectronica.gob.es/recursos/pae_020003103.pdf](http://administracionelectronica.gob.es/recursos/pae_020003103.pdf)

While XML is of such broad application and pervasive use that it may not be seen as relating primarily to any one domain of regulation, its structured nature facilitates data comparison and sharing generally. As such, it is a key enabler to the “open data” and citizen transparency initiatives of member states, local jurisdictions and the Commission’s Directorates. See, for example, the UK Open Data Initiative: [http://data.gov.uk/](http://data.gov.uk/)

3.3.5. Neutrality and stability

XML is openly available for implementation by any toolset, and many exist, none of which have a particular advantage from the specification.

XML is believed to be a major driver for global data interoperability, and has been ubiquitous for a sufficiently long period that there is little to no apparent risk of conflict likely from its recognition as an identified specification.

3.3.6. Quality

XML has successfully generated a robust ecosystem of implementations, tools and extensions for 15 years. See, for example, the Balisage series of industry conferences and projects described there: [http://www.balisage.net/](http://www.balisage.net/)

The logical structure of XML is simple and open to inspection, leaving little room for specific technology restrictions or product isomorphism. As such competing implementations are possible (without hampering interoperability) and no hidden interfaces controlled by other organisations than W3C are included.

4. Summary and conclusion

The Platform approved the assessment of the Evaluation Group stating that “XML version 1.0 technology” complies with the requirements for the identification of ICT technical specifications, set by Annex II of Regulation (EU) No. 1025/2012.

In particular XML version 1.0 fulfills the general conditions indicated in the Annex II, i.e., has market acceptance and is coherent with the standards published by the formal European standardisation organisations, i.e., there is no duplication with existing standards or on-going standardisation activities. The proposed ICT specification is complementary to the European standards established by CEN, CENELEC and ETSI. No transposition of XMl version 1.0 into a formal European or international standard is currently foreseen.

The Organisation that develops the XML version 1.0 specifications, W3C, complies with the attributes referred in the Annex II, i.e., is an open, transparent, non-profit organisation with expertise in developing
standards in the field of ICT. Participation to XML standardisation activities is open to all interested parties. Decisions are based on consensus building within the technical committees; XML is taking care of maintenance. The XML specifications are freely available for download. W3C does not impose IPR on its specifications. W3C favours that IPR are provided on a licence-free basis.

XML version 1.0 is a stable technology, there is ample expertise available with respect to the use of the specifications and products implementing XML version 1.0 are available on the market.

XML version 1.0 has the potential to increase interoperability; implementing XML version 1.0 may contribute to avoidance of vendor lock in.

The implementation of XML version 1.0 will provide better accessibility and continuity especially for public services to be delivered by the public administrations. Continuity with future development is guaranteed.

Therefore the Platform issued a positive advice on the identification of XML version 1.0 technology in the sense of art. 14 of the Regulation 1025/2012.