EXPLANATORY REPORT
OASIS Submission of OpenDocument v1.2 to ISO/IEC JTC 1

OASIS (the Organization for the Advancement of Structured Information Standards) respectfully submits the following OASIS Standard to ISO/IEC Joint Technical Committee 1, for transposition into an International Standard under its Publicly Available Specifications disposition process:

OASIS Open Document Format for Office Applications ("ODF" or "OpenDocument") v1.2

The relevant documentation is enclosed (in a ZIP file) with this communication. ODF v1.2 is an eligible Publicly Available Specification as defined by JTC 1. OASIS is a Recognized PAS Submitter, having been approved by JTC 1 national bodies originally in 2004, and most recently reaffirmed through May 2015.

INTRODUCTION

Draft SD 9, Annex B, Excerpt: JTC 1 PAS and Fast Track Explanatory Report Template

The Submitter is further invited to comment on the following items in the Explanatory Report:
a) Clearly define the technical concepts used in the submission (see the definition of Explanatory Report in JTC 1 Supplement F.3.1 and SD9 clause 5) * * *

The OpenDocument Format specification defines open, XML-based schema for office applications and their semantics. The schema are suitable for office documents, including text documents, spreadsheets, charts and graphical documents like drawings or presentations, but are not restricted to these kinds of documents. The schema provides for high-level information suitable for editing documents. It defines suitable XML structures for office documents and is friendly to transformations using XSLT or similar XML-based tools. OpenDocument was originally based on the open source community-developed OpenOffice.org XML file format.

As an open and freely-available standard, ODF provides an alternative to proprietary technologies, lowering the cost of electronic document creation, publication and re-use.

ODF v1.0 was developed by OASIS, submitted by OASIS to JTC 1 as a PAS submission for transposition in 2006, and approved as ISO/IEC IS 26300. ODF v1.1 was submitted by OASIS as a proposed amendment to JTC 1/SC34 in 2010, pursuant to the joint development process set forth in the agreed Terms of Maintenance in Annex A below, and approved by SC34 as IS 26300/Amd.1.

The current version, ODF v1.2, was approved by the membership of OASIS as an OASIS Standard in October 2011. Copies of the relevant notices of approval and public review are enclosed with this communication, as is the normative copy of the approved OASIS standard specification. The ODF v1.2 specification submitted here also is available in various formats at the following publicly accessible locations:

Master Table of Contents:
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os.odt (ODF)
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os.pdf (PDF)

OpenDocument v1.2 part 1: OpenDocument Schema:
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os-part1.odt (ODF)
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os-part1.pdf (PDF)

OpenDocument v1.2 part 2: Recalculated Formula (OpenFormula) Format:
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os-part2.odt (ODF)
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os-part2.pdf (PDF)

OpenDocument v1.2 part 3: Packages
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os-part3.odt (ODF)
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os-part3.pdf (PDF)

Related Schemas and Ontologies:
OpenDocument v1.2 Relax NG Schema
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os-schema.rng

OpenDocument v1.2 Manifest Schema
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os-manifest-schema.rng

OpenDocument v1.2 Digital Signature Schema
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os-dsig-schema.rng

OpenDocument v1.2 Metadata Manifest Ontology
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os-metadata.owl

OpenDocument v1.2 Package Metadata Manifest Ontology
http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os-package-metadata.owl

Copies of the specification are enclosed with this submission. OASIS also provides a complete package of the specifications, supporting documents and schema in a ZIP distribution file, which can be downloaded here:

http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os.zip

ORGANIZATIONAL CRITERIA

SD 9 Excerpt: JTC 1 PAS and Fast Track Explanatory Report Template

Once a PAS originator has been recognized, a PAS submission to the JTC 1 Secretariat may occur within the technical scope identified in the PAS submitter application. This PAS submission must be accompanied by an Explanatory Report produced by the Submitter, and a statement that the conditions for recognition of the PAS submitter have not changed, or an indication of the nature of changes that have occurred (see SD9 clause 6.2.2). * * *

OASIS and its ODF TC are pleased to offer the following additional information relevant to the PAS submission criteria for JTC 1. The conditions for PAS submitter recognition of OASIS that were in place at the time of our last successful PAS recognition renewal have not changed. The material below is simply a summary.

-- Cooperative stance

OASIS, as a consortium, interoperates and liaises, broadly and productively, with international *de jure* standards organizations and many relevant industry consortia of various types, and has formal working relationships with:

-- ISO, IEC, ITU, UN-ECE Global MoU for E-Business Management Group
-- The European Commission Multi-Stakeholder Panel on open standardization
-- ISO TC 154, TC 184/SC04 and TC 211
-- ITU-T (A.4 and A.5 recognition)
-- IEC PC 118
-- ISO/IEC JTC 1 SC34, SC38
-- ANSI, CalConnect, CEN/ISSS, CSCC, EEMA, ETSI, FixML, HL7, Kantara Initiative, NAESB, NSTIC IDESG, OECD, OpenGeoSpatial Consortium, ODCA, SNIA, SWIFT, UPU, W3C and WCO, among other standards development and policy organizations.

OASIS enters into working agreements (as contemplated by JTC 1 criteria) with each organization to which it submits OASIS Standards, pursuant to our Liaison Policy, posted at:

https://www.oasis-open.org/policies-guidelines/liaison

The submission terms applicable to this submission by OASIS of ODF are attached as Annex A to this report. These terms are consistent with the applicable rules of OASIS, comply with the criteria established by JTC 1's PAS Disposition process, and constituted a ***shared maintenance plan***, explicitly negotiated and approved by OASIS and JTC 1/SC34 in 2008. SC34 has established its Working Group 6 to conduct joint maintenance activities on behalf of JTC 1.

OASIS technical committees continue to actively produce ICT specifications that may, over time, provide additional opportunities for convergence, or feature expansion of this work, towards related domains of activity.

-- Characteristics of the Organization

OASIS is a member-led, international standards consortium, incorporated as a Section 501(c)(6) not-for-profit corporation under the law of the State of Pennsylvania in the United States, concentrating on structured information and global e-business standards, and organized in 1993. As of 2014, approximately 50% of the over 550 members are technology providers, 35% are technology users and influencers, and 15% are government and academic entities. As verified during our PAS recognition applications and renewals, OASIS is one of the largest and most widely recognized open standards consortia developing data and methodology specifications for e-business and public administration. All organizational members of OASIS may vote on OASIS standards (and on governance issues such as election of its Board of Directors); and any member (including Associate and Individual members) may join any OASIS technical committee as a voting member.

-- Intellectual Property Rights

The OASIS IPR Policy imposes a clear set of disclosure and license-notification procedures that ensures predictable detection and resolution of claims from contributors to OASIS work. It is posted here:

https://www.oasis-open.org/policies-guidelines/ipr

In its submission, OASIS is willing to comply with the ISO/IEC Common Patent Policy, and the disclosures in this report comply with its disclosure requirements.

Under the OASIS IPR Policy, members actively participating in the development of the ODF TC's work are obligated to disclose any intellectual property rights they hold in the approved standard, and to provide license rights to implementers of the standard, in the manner described in the policy. All declared claims of rights in the ODF v1.2 standard are required to be posted here:

https://www.oasis-open.org/committees/office/ipr.php

The only claims made on that page, by contributor Sun Microsystems, Inc., are accompanied by a nonassertion covenant providing licensure consistent with the free and open use of the specification, consistent with the terms of the OASIS IPR Policy. Any later-claimed rights held by OASIS members actively participating in the ODF TC's work also would be licensed to implementers on the terms set forth in the OASIS IPR Policy.

Additionally, OASIS holds a copyright in the submitted specification. Under the terms of its liaison policy (above), OASIS will agree either (a) to have its copyright notice and associated disclaimers retained on a JTC 1 print of the transposed work, or (b) to have only the ISO/IEC copyright notice appear, so long as OASIS' retention of its independent copyright is properly memorialized in the working agreement referenced above. OASIS has no objection to joint or dual distribution of the transposed standard.

OASIS holds a trademark in the name of the specification, but otherwise knows of no claimed trademark rights in the normative elements of the submitted specification. OASIS will grant such permissions to refer to that name, if any, as might be necessary for joint or dual distribution of the transposed standard.

Under the OASIS IPR Policy referenced above, all contributions provided by members into its technical committees are made with the assurance that they are freely available for incorporation, derivation and republication into the committee's output.

DOCUMENT RELATED CRITERIA

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Please be sure to address the following Document Related Criteria when making any PAS or Fast Track submission to JTC 1. The paragraphs follow the clause numbering in SD9 section 7.4.

-- Quality: Completeness and Stability

The submitted specification is a complete and final approved version. The ODF standard has been in widespread production use since 2005, and enjoys being embraced as the default electronic office document format by a number of governmental agencies across the globe. ODF presently also enjoys broad implementation in leading open-source office software, including LibreOffice, Apache OpenOffice, Calligra Suite and Gnumeric, as well as being incorporated into multiple commercial software products, including Microsoft Office 2013, Lotus Symphony and EuroOffice.

The specification will remain perpetually available as provided under OASIS rules. The OASIS Standard approval process also requires that multiple OASIS members publicly acknowledge successful implementation of the specification. In this case that acknowledgment is provided by:

– IBM:
https://lists.oasis-open.org/archives/office/201103/msg00090.html
– KDE e.V.:
https://lists.oasis-open.org/archives/office/201103/msg00095.html
– Microsoft:
https://lists.oasis-open.org/archives/office/201310/msg00067.html

– Novell:
https://lists.oasis-open.org/archives/office/201103/msg00096.html
– Oracle:
https://lists.oasis-open.org/archives/office/201103/msg00091.html

as evidenced by the enclosed notices. These notices applied to the stable version that was approved as an OASIS Standard and is submitted here.

The ODF standard has been in widespread production use for almost a decade, and presently enjoys broad implementation in widely-used open-source and commercial office software, as noted above.

-- Quality: Clarity and Testability

The ODF specification provides detailed textual description, explanation and examples of each specified layer. Interfaces for the specification are clearly defined using the RelaxNG (ISO/IEC 19757-2) schema definition language. Part 2 of ODF ("OpenFormula") uses standard mathematical notation to define the required behavior of many of the spreadsheet functions. Toolmaker vendors and the internal ICT departments of existing financial institutions have successfully implemented the specification, relying on the existing published materials, as noted above. Because the schema is defined by RelaxNG, there already exists a variety of validator software programs that can be used to verify conformance with that portion of the ODF standard. There are are also several ODF-specific validators that check for constraints that extend beyond the XML schema, such as constraints on the packaging of an ODF document. For example, the Apache Software Foundation publishes an ODF Validator as a component in its ODF Toolkit project: See: *http://incubator.apache.org/odftoolkit/conformance/ODFValidator.html*

-- Quality: Availability

There are no required costs associated with OASIS specification availability. The ODF specification is widely available and widely implemented. Under the OASIS IPR Policy referenced above, users are unqualifiedly permitted to implement the submitted OASIS Standard without any requirement of a license, permission or royalty from OASIS; other parties with claims are permitted to assert those claims and make any license terms known. All participants in the OASIS ODF TC have agreed, under the terms set forth in the OASIS IPR Policy, to make any licensed rights available as needed to permit royalty-free licenses to any implementer of the ODF OASIS Standard, under the terms provided in the "RF on Limited Terms" IPR mode as defined in that policy. The progressive versions of the specification have been publicly-available from OASIS' Internet portals since the TC's inception. The current form of the specification has been posted and available since it was finalized for OASIS TC approval in March of 2011. Prior versions were posted and available since 2005. Distribution of the specification from OASIS is unlimited and free of charge, and OASIS requests that the transposed ISO/IEC International Standard also be offered at no charge.

-- Consensus: Development Consensus

ODF v1.2 was developed by the multi-national and cross-industry membership of the OASIS ODF Technical Committee, whose roster can be seen here:

http://www.oasis-open.org/committees/office

It was approved by that committee, and then approved by the OASIS membership at OASIS' highest level of approval, under the OASIS IPR Policy (see above) and the OASIS TC Process rules, found here:

http://www.oasis-open.org/committees/process.php

The above OASIS rules, as previously confirmed during JTC 1's examination of OASIS' PAS eligibility, assure transparent public feedback; broad quality review under a consensual process; and a declared and clear regime for the resolution of any intellectual property rights claims (although none have been asserted against this work).

-- Consensus: Response to User Requirements

OASIS policies require that each technical committee maintains a public, transparent record of all comments received to a proposed standard, as well as acknowledgment of their resolution. As a result, the course of development in OASIS technical committees always is open to input from the needs of user communities. The development and approval of the ODF specification complied with our open process methods and requirements, as evidenced by the enclosed notices. The ODF Technical Committee has direct participation from the consumers of the standard, including the top commercial and open source office software productivity suites.

Member experts of the TC have proposed new features, and these were evaluated and adopted in the ordinary course of OASIS technical process. We also received and adapted useful feedback from technical experts from JTC 1/SC34 and members of the public who submitted remarks to us during the public reviews. The rapid adoption of the new ODF v1.2 specification by implementers, including those submitting the "statements of use" described above, is one demonstration of satisfaction.

-- Consensus: Market Acceptance and Credibility

Multiple software toolmakers, open source platforms and institutional end-users have announced their implementations of ODF, in a variety of applications and vertical domains. ODF v1.2 is implemented by the leading commercial and open source office productivity suites, including Microsoft Office 2013, Apache OpenOffice, LibreOffice, Lotus Symphony, Calligra Suite and

Gnumeric. It is also supported via programmatic libraries in a variety of languages, including Java, Perl and Python. See also the Statements of Use above.

See also the following academic reviews and discussions of ODF:

- Boyer, J. and Wiecha, C., "Enriching the interactive user experience of Open Document Format", *Proceedings of the 9th ACM symposium on Document Engineering.* (2009), pp. 153-156
- Gang, Z., "A cookbook generator of Java code based on Open Document Format", *2012 International Conference on Computer Science and Information Processing (CSIP).* (2012), pp. 996 - 999
- Huy, J. and Wuwongse, V., "Application of the Open Document Format for legal normative documents in the National Assembly of Vietnam", *International Journal of Electronic Governance*, Volume 5, Number 2. (2012), pp. 151-171
- Weir, R, "OpenDocument Format: The Standard for Office Documents", *IEEE Internet Computing*, Vol. 13, No. 2. (2009), pp. 83-87
- Strobbe, C., Frees, B. and Engelen, J., "Accessibility Evaluation for Open Source Word Processors", *Lecture Notes in Computer Science,* Volume 7058. (2011), pp. 575-583

– Alignment: Relationship to Existing Standards

ODF defines open, XML-based schema for office applications, suitable for office documents, including text documents, spreadsheets, charts and graphical documents like drawings or presentations, but are not restricted to these kinds of documents. We are unaware of any conflicts of alignment with other JTC 1 standards. ODF is related to other projects in SC34, such as a possible future method that consumes the document packaging specification work, occurring in WG1, and also relevant to WG4 and WG5.

Each of the normative references made in ODF either rely on (a) existing standards issued by *de jure* standards organizations (such as ISO and ITU), or (b) are "Referenced Specifications" from "Approved RS Originators (ARO)" (such as OASIS, ETSI and W3C), as defined by ISO/IEC JTC 1 Standing Document No. 5 on Normative Referencing ("SD 5"), or (c) are accompanied by Referencing Explanatory Reports enclosed with this submission, as specified by SD 5.

-- Alignment: Adaptability and Migration

Although a number of systems profitably can use ODF, there appears to be no need for a migration path or defined relationship with existing International Standards. The ODF specification is stable and in production use in office applications and productivity software globally. Further work on the specification is expected to be additive, not to substantially change the base specification's methods. The OASIS ODF TC is currently working on a revision of the standard, tentatively called ODF v1.3. Enhanced change tracking is a focus of this effort.

-- Alignment: Substitution and Replacement

Upon approval as an International Standard, ODF v1.2 would replace ISO/IEC IS 26300:2006. The entire submission package is integrated and should be transposed as a whole. The multi-part structure of ODF v1.2 is intended to encourage implementation of some of the self-contained capabilities described within the specification (such as the Packaging specification or the Formula specification). Each part specifies its own conformance targets, to permit users of the specification easily to invoke only the parts they need.

-- 7.4.3.4. Alignment: Document Format and Style

The OASIS committee developed this version 1.2 to conform to ISO/IEC Style according to the ISO/IEC Directives Part 2, Rules for the structure and drafting of International Standards. By way of example and not an exhaustive listing:

(a) RFC 2119 verbal forms were reviewed and replaced by verbal forms drawn from ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards, Annex H.

(b) All "hanging paragraphs" as defined by ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards, 5.2.4. Paragraph, have been corrected.

(c) All note and examples as defined by ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards, 6.5.1. Notes and examples integrated in the text, have been revised in conformance with 6.5.1.

(d) Cross-references in ODF v1.2 conform to the requirements of ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards, 6.6.7 References.

(e) For clarity of reference, every element and attribute of ODF v1.2 is defined in a separately numbered clause with all defined information about such element or attribute. In earlier versions, any single clause reference might be addressing different subjects. This change was to further conform to the intent of ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards, 6.6.7. References.

(f) The schema fragments were removed from ODF v1.2 as such fragments served to make clause references ambiguous. A clause reference might be to the schema fragment or to normative prose. This change was to further conform to the intent of ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards, 6.6.7. References.

There were numerous other stylistic and organizational changes made over approximately twelve hundred (1200) pages of text to bring ODF v1.2 into conformance with ISO/IEC Directives, Part 2.

-- 7.4.4. Maintenance

The OASIS rules and practices for maintenance of specifications have not changed since our last PAS Submitter renewal. After significant feedback from JTC 1 experts improved ODF v1.0, at the time of its original 2006 PAS submission, OASIS and JTC 1/SC34 explicitly negotiated a joint maintenance process for future versions of the ODF standard, as set forth in Annex A.

It is OASIS' expectation that the OASIS and JTC 1 publications of any given version of the specification will be identical in all substantive and technical respects, so as not to disrupt or confuse users of the work, nor render their implementations non-interoperable.

STRATEGIC CHARACTERISTICS

SD 9 Excerpt: JTC 1 PAS and Fast Track Explanatory Report Template
The Submitter is further invited to comment on the following items in the Explanatory Report: * * * b) Explicitly reference the JTC 1 common strategic characteristics (interoperability, portability, cultural and linguistic adaptability, and accessibility) (see SD9 clause 4).

The proposed transposition also meets the higher-level strategic goals of JTC 1 represented by common strategic characteristics defined for JTC 1's Technical Directions: interoperability, portability, cultural and linguistic adaptability and accessibility.

-- Interoperability

Open-standards-based office documents are a ubiquitous part of modern business and government environments. The ODF specification offers a vendor-neutral, stable and testable set of data structures that facilitate interoperation across heterogeneous systems, storage, publication methods and networks.

-- Portability

ODF v1.2 is explicitly vendor-neutral, device-neutral and language-neutral, and built on widely-tooled and tested structured data methods (XML and RelaxNG) which can be implemented by practically any document-handling system.

-- Cultural and linguistic adaptability

ODF was carefully designed, from its first version, to accommodate multiple languages and linguistic structures. Among other things, specific useful feedback on localized and bidirectional

character sets was provided and incorporated from JTC 1 national bodies' recommendations during the development of version 1.0.

-- Accessibility

ODF includes specific functions to supply alternative readability and user accessibility, including significant work completed and included in version 1.1, which was explicitly noted by JTC 1/SC34 in its resolutions on accessibility from its Oslo plenary in 2008.

END OF BODY

OASIS would like to thank its designated JTC 1 PAS mentor, Josée Auber, for her helpful assistance and suggestions in the development of this report. However, all contents are the sole responsibility of OASIS and its OpenDocument TC.

ANNEX A

PROPOSED TERMS OF TRANSPOSITION

OASIS and JTC 1/SC34 have agreed to collaborate on the future development of the OpenDocument specification in the manner set forth in SC34 N 1148 and SC34 N 1149, under which any comments and suggestions that are offered during JTC 1 reviews are fed back to the OASIS TC for review and action. It is a goal and requirement of both OASIS and JTC 1 that the published versions of the standards not be forked into multiple conflicting future versions.

Copyright permissions: OASIS, as PAS submitter, grants permission to JTC 1 to cause the submitted textual specification to be re-formatted into JTC 1 document styles as necessary to achieve appropriate transposition, but requests that the specification remain otherwise unchanged throughout the transposition process. OASIS retains its independent copyright in the submitted specification and any related OASIS materials, and may continue to distribute them freely as it has done in the past. Subject to the foregoing, OASIS grants permission to JTC 1 either (a) to have the OASIS copyright notice retained on a JTC 1 print of the transposed work, or (b) to have only the ISO/IEC copyright notice appear. OASIS has no objection to dual distribution of the standard, and at JTC 1's option also would be pleased to consider the creation of a jointly-published single document. These are the same permissions and arrangements as have been adopted in prior OASIS PAS submissions.

END OF ANNEX