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Centre for Trade Facilitation and Electronic Business (UN/CEFACT)

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Item 3 of the provisional agenda

UN/CEFACT OPEN DEVELOPMENT PROCESS WORK ITEM

Submitted by the UN/CEFACT Forum Management Group

This document is for **approval**

I. Executive Summary

1. This document describes the Forum Management Group (FMG) proposal to enhance the Open Development Process (ODP), which currently only covers the development of UN/CEFACT Technical Specifications, with additional procedures for developing other Standards, in order to ensure the openness, timeliness and applicability of all UN/CEFACT deliverables.
2. The FMG will ensure that this enhanced version of the ODP covers approval, publication, implementation, user feedback, maintenance and procedures for both minor and major revisions.
3. This document further updates the current Open Development Process for Technical Specifications in the light of the reorganization of the UN/CEFACT Forum following the tenth UN/CEFACT Plenary session in May 2004.
4. The FMG believes that the Open Development Process is fundamental to UN/CEFACT's large and accelerating acceptance as a modern standardization organisation by the international community and by Electronic Business implementers (such as software developers) around the world. It is also considered vital for the maintenance of the technical quality and cross-industry compatibility that an Electronic Business platform requires.

II. UN/CEFACT Open Development Process

5. UN/CEFACT produces Standards and makes Recommendations for their usage. The Standards can be Business or Technical Specifications and can consist of a single part or multiple parts. They are intended for all implementers and end-users. They are unique in providing specifications for any business use or technical application independent of communication protocol, underlying operating systems and hardware platforms.
6. In the past UN/CEFACT has defined an Open Development Process (ODP) for Technical Specifications only. Given the wide range of Standards UN/CEFACT is now producing, the FMG proposes to enhance the ODP to specify different procedures for each (part of a) UN/CEFACT Standard under the principles of the ODP.
7. The Open Development Process is designed to involve all materially interested parties worldwide, in the creation and evolution of Standards in an open process. UN/CEFACT's goal is to produce Standards that are timely, technically excellent, implementable on any platform, and relevant both to industry participants and to end-user communities.
8. UN/CEFACT's Open Development Process is not revolutionary. It is evolutionary because it builds upon standards development processes already used by industry consortia and other standards developing organisations.
9. Perhaps the most unique feature of this process is the use of iterative refinement and participation through the Internet, to build international consensus. The premise is that people are usually much better at reviewing and criticising a specification than they are at compiling a requirement list and writing a first working draft. UN/CEFACT's groups delegate that important task to small, dedicated editing groups that work with recognised experts.

III. Goals of the ODP

10. UN/CEFACT has five goals for developing Standards. They are: openness; worldwide participation; speed; compatibility; and technical excellence.

Openness

11. The Standard development process is open for anyone to provide comments at certain stages in the process. The resulting Standards must be open as well. That means: free of any constraints or restrictions associated with intellectual property rights (IPR). Anyone wishing to contribute to the Standard must be willing to do so without imposing IPR barriers. UN/CEFACT believes strongly in fostering competition across the technologies described by UN/CEFACT Standards. Anyone should be able to produce a complete implementation of the specifications described by the Standards without IPR-related cost or red tape.

Worldwide Participation

12. All interested parties should have the opportunity to review, comment on, and contribute to the Standards. In the age of the Internet, the best way to do this is to carry out a public review of working draft specifications, which UN/CEFACT will make freely available on their website: <http://www.unece.org/cefact>. This ensures that developers from Bangalore to Sao Paulo to Munich can help shape the Standards - without having to pay any fees and without incurring travel expenses to attend standards development meetings. The UN/CEFACT process builds consensus on a truly international scale at the cost of a simple Internet connection. Standards development projects shall maintain a log of : 1) contributing experts and their sponsoring organization(s), 2) actions taken to promote input and review by the potential stakeholder community for which the standard is intended; and 3) the resolution of comments received. This log shall be included with each posting of a version of the draft specification on the UN/CEFACT website.

Speed

13. In today's fast-changing environment, it is vitally important that the process of developing UN/CEFACT Standards should be in line with the needs of the industry, developers, and users. This requires timely availability of these Standards and a speedy, but careful, development process.

Compatibility

14. UN/CEFACT Standards must not depend on features that can only be made available using a single application or industry specification. Software developers and end-users around the world must be able to depend on technical applications that can, for example, be implemented the same way, and give the same results, on all hardware platforms and operating systems.

Technical Excellence

15. UN/CEFACT groups will develop all of their Standards with the active participation of experts, and liaisons. In this way, each specification embodies a "best of breed" experience along with innovation that benefits every user of the Standards. This approach enables companies/industries to employ their expertise and existing technology, when implementing UN/CEFACT Standards, resulting in high quality, and mature implementations which will make it into the marketplace sooner.

IV. The Open Development Process for Technical Specifications

16. UN/CEFACT's experience has proven that the best way to develop a specification that meets all its process goals is to start with a small editing group and have them write a first working draft in close consultation with industry experts who have a deep understanding of the business process in question. Consensus is then built using an iterative review process that allows an ever-widening audience to participate. This iterative improvement process allows consensus to be achieved rapidly because reviewers are able to see their comments and suggestions incorporated into successive versions of the document.

Step 1. Proposing a new specification

17. A request for a new specification that extends or enhances UN/CEFACT Standards can either be filed directly with the appropriate UN/CEFACT Permanent Group or with the UN/CEFACT Forum Management Group, in which case it will be forwarded, after review, to the appropriate group. Sometimes end-users or industry groups request a new specification. Sometimes one or more industries or expert groups propose one. In any case, the allotted UN/CEFACT host Working Group's first step is to form an editing group and assign a project editor.

18. UN/CEFACT's goal of speed demands that this group be kept as small as possible. Typically, the editing group will comprise a project editor and two or three associate editors selected from within the UN/CEFACT group's experts.

Step 2. Compiling a requirements list

19. The group begins its work by compiling a requirements list, holding discussions with the specification requesters, participating industry experts, software developers, end-users, and implementers.

They gather as much information as possible from those with expertise and those with a material interest in the specification.

20. UN/CEFACT's goal of technical excellence demands that contributors must be experts in the area that is being standardised. This allows diverse voices to comment on the details of the specification and ensures that no single organization can dominate the process. UN/CEFACT's other goals of maximum reusability and flexibility mean that contributors must try to include features that are applicable to more than one business and/or industry area.

Step 3. Writing the first working draft

21. The editors write the first working draft. To satisfy UN/CEFACT's goal of openness, everyone that has made a contribution to this working draft, or a subsequent working draft, must agree to remove any IPR constraints or restrictions that might be associated with their contribution.

22. Since most people are usually much better at reviewing and criticising a specification than they are at compiling a requirements list and writing a first working draft, the editors work to produce a document that is suitable for review and comment. It is not expected that they produce a nearly final, polished version at this early stage.

Step 4. Refining the first working draft

23. The iterative improvement process begins when the first working draft is distributed to members of the responsible UN/CEFACT Working Group, technical implementers and other interested industry experts for their review and comment. This initial review serves to identify potential problems, point out areas for improvement, and build consensus among the technical implementers (who are likely to be implementing the final specification). The editors collect the comments, revise the working draft, and re-circulate it until the reviewers are satisfied with the content. Experience has shown that 2 or 3 revisions are usually enough to arrive at a stable second working draft.

24. Speed dictates that the initial review period be limited to a month or two at the most. The goal is to get the first working draft into a form suitable for public review as quickly as possible. The technical implementers help UN/CEFACT to meet the goal of compatibility early in the development process. The implementers have a wealth of experience in implementing the specifications for different business areas and industries. They are invaluable for identifying potential problems.

Step 5. Public review

25. The UNECE secretariat publishes the second working draft on its website thereby allowing the public to review and comment on the specification. In keeping with the goal of worldwide participation, UN/CEFACT allows anyone with access to the Internet to comment on the proposed specification. The public review period lasts for at least a month (and can be extended if many comments are received).

26. This is a critical part of the development process. Comments from the public have frequently raised fundamental process and technical issues - missed by the expert reviewers - that have considerably improved the specifications.

27. The editing group collects the comments, criticisms, and suggestions from the public and uses them to further refine and improve the specification. As changes are made, the updated document is republished on the website. In UN/CEFACT's open process, everyone can see the changes, and the broad participation helps to build international consensus. Again, experience has shown that 2 or 3 iterations over a month or two suffice to address the public comments and to build consensus for the final version of the specification.

Step 6. Implementation verification

28. After approval by the Group, the final specification and its disposition log will be posted on the UN/CEFACT website to allow verification through implementation. Implementers (especially those who contributed to the working draft) are encouraged to verify the validity of the technical specifications by implementing them.

29. The verification period is the most critical part of the entire development process. Problems and issues identified will result in considerable improvement in order to move the working draft towards a UN/CEFACT Technical Specification Standard.

30. The editing group collects the problems and issues identified from the implementers and uses them to further refine and improve the specification. As changes are made, the updated document is forwarded to the implementers, as well as re-published on the website. In UN/CEFACT's open process, everyone can see the changes, and the broad participation helps to build international consensus. Again, experience has shown that 2 or 3 iterations over a month or two are enough to address the public comments and to build consensus for the final version of the specification.

Step 7. Final Technical Specification release

31. After successful verification by at least two independent implementations, and confirmation from the editing group, the UN/CEFACT group releases the Technical Specification as a UN/CEFACT Standard available for download on UN/CEFACT's website. Given the diverse group from around the world that contributed to refining the working draft, it should receive broad industry endorsement upon final release and be quickly implemented. UN/CEFACT's goal of openness ensures that the final specification contains no barriers to implementation: anyone with Internet access can freely download a copy of the specification and produce an implementation without paying any additional licensing fees or royalties.

32. Following the release of the final specification, the editing group disbands. Steps 1-7 typically consume a total of 9 to 15 months.

Step 8. Maintenance

33. As the specification is implemented in various industry and business sectors UN/CEFACT's groups begin to receive feedback pointing out problems or suggesting improvements. Maintenance of the specification is handled by forming an editing group (where deemed necessary by the Working Group) and restarting the process at step 2 with the errata and suggestions forming the core of the new requirements list. UN/CEFACT's groups will maintain a list of problems, errors and misprints on their website so that the public can access them easily.

V. Proposal

34. The ODP for Technical Specifications has already been in use for several years and is probably the most elaborate process required for developing a UN/CEFACT Standard.

35. Each type of UN/CEFACT Standard should have an independent set of procedures defined within the ODP to cover its development, approval, publication and maintenance.

36. UN/CEFACT Standards can be Technical Specifications, Business Requirement Specifications, Architecture and Business Models, Methodologies, Core Components, Libraries, Code lists, Directories, XML Schemas, Requirements Specification Mappings, Syntax implementations, Electronic Documents, Standard Messages, Naming and Design Rules, Transformation Rules and other deliverables. These will all be covered by the ODP, working from the same template, adjusting it according to the requirements of the specific deliverable.

37. This means that the existing ODP must be enhanced to cover the separate sections for the processes of different Standards. The new sections to cover a complete set of procedures for UN/CEFACT Standards and UN/CEFACT Recommendations need to be defined and added into the ODP and should include all steps from the beginning of development through to maintenance. The existing steps for the development of Technical Specifications should be the guideline for all Standards, but do not necessarily include all steps.

38. A publishable matrix of proposed and current projects will be maintained by the FMG and regularly updated to give the status of each Standard with regard to its stage in the Open Development Process and the schedule for ODP reviews measured with respect to its appropriate development procedure.

39. In addition, the UN/CEFACT Forum proposes to develop a 'fast-track' set of procedures for external deliverable submissions.
