# *第26回 国連CEFACT フォーラム会議報告*

２０１５年１０月３１日～１１月８日
マルセーユ（フランス）

報告者：国連 CEFACT 日本委員会
一般社団法人サプライチェーン情報基盤研究会
菅又　久直

## *1. 会議日程：*

10 月 31 日（土）　　東京発　マルセーユ着
11 月 1 日（日）　　国連 CEFACT フォーラム準備
11 月 2 日（月）～11 月 6 日　　国連 CEFACT フォーラム会議
11 月 7 日（土）　　マルセーユ発
11 月 8 日（日）　　東京着

## *2. 会議目的と参加者：*

国連CEFACTは、貿易手続の簡易化と電子ビジネスの促進、およびそれらに関するグローバルなポリシーや技術仕様の制定を目的として設立された国連組織である。

小生は、国連CEFACT新組織の中で、手法技術分野およびサプライチェーン分野の開発に貢献するとともに、今後のアジアおよび日本における電子ビジネス関連標準の推進方策を見通すことを目的に、一般財団法人日本貿易関係手続簡易化協会の依頼により本フォーラムに参加した。

今回の参加者は登録ベースで125名、日本からは次の6名が参加した。

石垣　充　（一般財団法人日本貿易関係手続簡易化協会）
鈴木　耀夫（NPO法人観光情報流通機構：旅行ドメイン･コーディネーター）
堀田　和雄（NPO法人観光情報流通機構）
遠城　秀和（NTTデータシステム技術(株)：品質評価コーディネーター）
鬼頭　吉雄（コンサルタント）
菅又　久直（一般社団法人サプライチェーン情報基盤研究会）

フォーラムでは、PDA（Program Domain Area）ごとに会議が進められる。小生は、サプライチェーンPDAおよび手法・技術PDAを中心に参加した。

## *3. 会議報告：*

1.　サプライチェーン PDA

サプライチェーン PDA（担当副議長は Raffaele Fantetti（イタリア経済開発省））は、次の４つのドメインで活動している。

Finance and Payment Domain（リーダー：Lillianna Fratini Passi）
Procurement Domain（リーダー：Jostain Fromyr）
Supply Chain Management Domain（リーダー：Edmond Grey）
Transport and Logistics Domain（リーダー：Rudolf Bauer, Sue Probert）

今回は、

① Finance and Payment ドメインの会合に出席し、SIPS が進める支払通知メッセージの拡張につき最終報告を行った。
② Supply Chain Management ドメインにおいて、ジャストインタイム製造プロセス（Scheduled Just In Time）の提案を行った。
③ 新プロジェクト SCRDM（Supply Chain Reference Data Model）のメンバーとして参加することになった。

１．１　Remittance Advice 拡張プロジェクト（添付１）

SIPS（一般社団法人サプライチェーン情報基盤研究会）の金流商流情報連携タスクフォースで進めている金融 EDI 実証実験に基づく、Remittance Advice メッセージの拡張要件は以下の通りである。

① 目的
・取引当事者の入金消込業務を改善する。
・商取引情報を金融セクターと共有する。
・日本、アジア、世界の商取引慣行に適合させる。

② Remittance Advice 主要拡張点
・月次支払慣行への適用。➔「締日」の設定。
・関連課税情報の追加。➔税込か否か、および税額の指定。

・複数の支払手段の適用。➔振込と電子債権の併用。
・相殺機能の追加。➔相殺明細の電子化。
・関連商取引情報の追加。➔取引製品、価格、数量の追加。

上記要件を国連 CEFACT 標準 Remittance Advice に反映させるため、昨年秋の国連 CEFACT フォーラム（2014 年 10 月　ニューデリー）において金融 EDI 実証実験の結果を紹介し、2015 年 4 月には国連 CEFACT ビューローにてプロジェクト提案が承認された。

その後、業務要件定義書（BRS）の改訂を行い、公開レビューが本年 10 月末に完了。また共通辞書（CCL）への CC/BIE 追加・変更要求を提出し、ハーモナイゼーションおよびバリデーションが本フォーラムにて完了した。

以上の経過を Finance & Payment ドメイン会議にて報告し、了承を得た。

今後、ビューローへプロジェクト完了報告を行い、新 BRS の公開を依頼する。また、追加・変更された CC/BIE は、CCL 2015B 版として本年中に公開される予定。

１．２　ジャストインタイム製造プロセス（添付２）

SIPS にて展開している業界横断 EDI の、業務ドメイン（自動車部品、中小企業）からの要件を共通辞書に反映させるため、ジャストインタイム製造プロセス（Scheduled Just In Time）対応メインテナンス要求を打診した。

当メインテナンス要求は、欧州の航空機製造組合（Boostaero International Association）が、2006 年に BRS を公開し、2010 年に共通辞書に登録された CIDF（Cross Industry Scheduling Demand Forecast）および CISSI（Cross Industry Scheduling Supply Instruction）に関わるもので、更に我が国の中小企業における利用実態を含めたものである。

本フォーラムでは、Library Maintenance 要求として扱うか、New Project として扱うかの議論がなされた。本件の追加・変更要求は、CIDF/CISSI に限らず、注文や出荷通知・請求などの広範囲なメッセージにも関連してくるため、New Project として扱うこととなった。

New Project の場合、3 か国以上の HOD 支援が必要となる。日本の他、フランス、オランダ、タイへ HOD 支援を依頼することとした。

チーム体制案は次の通り。

リーダー：Samy Scemama（Boostaero のプロジェクト担当）
エディター：菅又　久直（要求者）
Karina Duvinger（SCM Order project 担当）
Edmond Grey（SCM Delivery/Invoice project 担当）

今後、小職にてプロジェクト提案書を起案し、リーダー／エディターの合意のもと、ビューローへの提案を行う予定。

１．３　サプライチェーン参照データモデル（添付３）

ビジネスプロセスをベースとした、共通辞書（CCL）を使ったメッセージ構築法（CCBDA: Core Component Business Document Assembly）のための参照データモデルを開発しようとする試みが新プロジェクト（SCRDM）として開始された。

・支援表明国：ドイツ、UK、日本、US
・プロジェクト体制
リーダー：Rolf Wessel
エディター：Gerhard Heemskerk, Mary Kay Blantz, Karina Duvinger, Michel Entat, Andreas Pelekies, Fabio Sorrentino, Hisanao Sugamata

今後毎週 1 回の電話会議によりプロジェクトは進められる。

２．手法・技術 PDA

PDA 担当副議長 Anders Grangard（GS1）のもと、次の４つのドメインが活動を行っている。

Specification Domain（リーダー：Christian Huemer）
Syntax Domain（リーダー：Gait Boxman）
Library Maintenance（リーダー：Mary Kay Blantz）
Validation Domain（リーダー：遠城秀和）

本フォーラムでは、

① AFACT 提出の寄書をベースに新技術への対応戦略につき審議を行った。
② Library Review Project の最終レポートの審議を行った。
③ Conformance and Interoperability Project の次ステップの新プロジェクトにつき審議を行った。

２．１　新技術への対応戦略（添付４）

小生が AFACT のために作成した「最新流行技術についての議論（A note for the discussion on Trendy Technology）」をベースに、国連 CEFACT における新技術への対応戦略について審議が行われた。

・国連 CEFACT が扱う技術は、あくまで情報交換に関するものとすべき。
・特に、情報交換のフレームワークに影響する技術には注意が必要。
  - IOT
  - Mobile
  - Cloud Computing
  - SNS
・国連 CEFACT に新技術の調査機能は必要である。
・他の標準機関（ITU、ISO TC154）との協業が必要である。

２．２　Library Review Report（添付５）

将来の国連 CEFACT ライブラリーとして、何を管理するかにつき、ドメイン対象アンケートに基づく最終報告を作成し、ビューローに提言した。

・「コア構成要素（CC）」は、他の標準機関の協力も含め、世界で唯一のライブラリーを管理すべきである。
・「ビジネス情報項目（BIE）」は、国連 CEFACT 管理（ハーモナイズ、バリデーション）のもとに保持される。他の標準機関で開発保守される BIE へのリンクも考慮すべきである。
・「メッセージ」は、シンタックス独立のビジネス文書アセンブリとしてライブラリー化されるのが望ましい。

２．３　Conformance and Interoperability

各技術標準およびビジネス標準（BRS）につき、全ての仕様に「Conformance Statement」を具備すること、および、国連 CEFACT 標準に準拠する外部の標準機関の仕様のレジストリを準備するためのプロジェクト提案が起こされた。

国連 CEFACT フォーラム会場

マルセーユ港風景

以上

（添付１）

Project Number: P1028

# Revised Remittance Advice Project

November / 2015

By SIPS of UN/CEFACT Japan Committee
SIPS: Supply Chain Information Platform Study Group



## P1028: Project Status

Project Name : Revised Remittance Advice

Project Approval : April/2015
- Supported Country ➔ Japan, Italy, Thailand
- Project Leader ➔ Hisanao Sugamata
- Project Editor ➔ Sue Probert, Carlo Salomone, Hidekazu Enjo
- Team Member ➔ Wanawit Ahkuputra, Urachada Ketprom, Sylvia Webb, Mary Kay Blantz, Gerhard Heemskerk, Edmund Gray
- Riaison Member ➔ Tapani Turunen (ISO TC68)

BRS Public Review : August – October /2015
- *Editorial issues (Typo) ➔ Corrected
- *Occurrence issues ➔ Aligned

CCL Submission : September/2015
- *CC : 14 , BIE : 64 ➔ Harmonized by End/October ➔ Published on CCL 15B

# Requirement Summary

Objective:

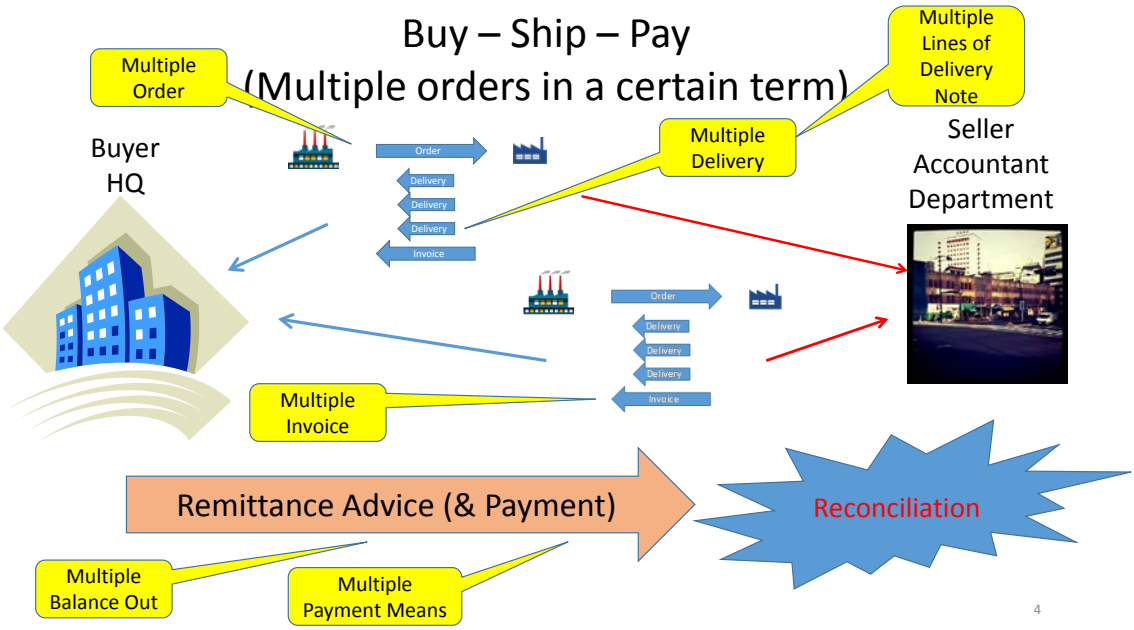
To expand the current “Cross Industry Remittance Advice” for

1. Improving reconciliation works of traders.
2. Sharing commercial information with the financial sector.
3. Adapting the commercial practice in Japanese, Asian Industry and worldwide.

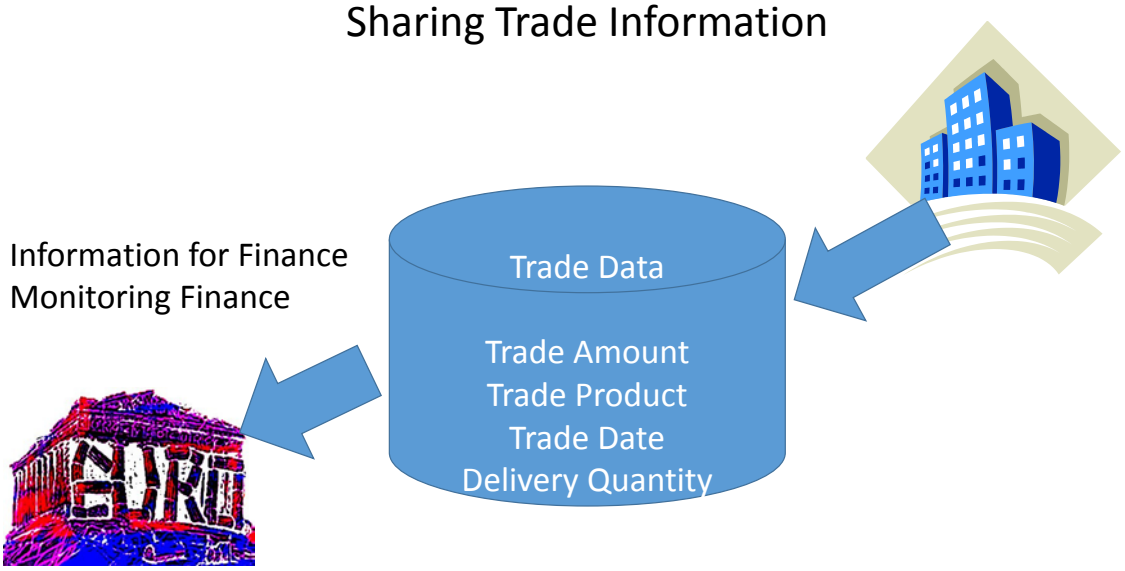
Extension Summary:

1. Monthly based payment
2. Relevant Tax information
3. Multi Payment Means
4. Introduce Balance out payment (more than Adjustment)
5. Add Trade product information (more accurate Reconciliation)

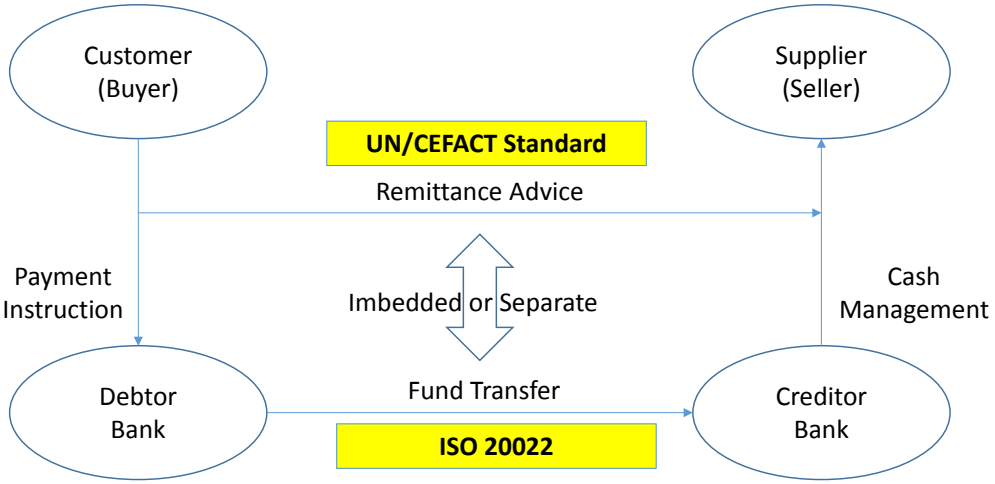


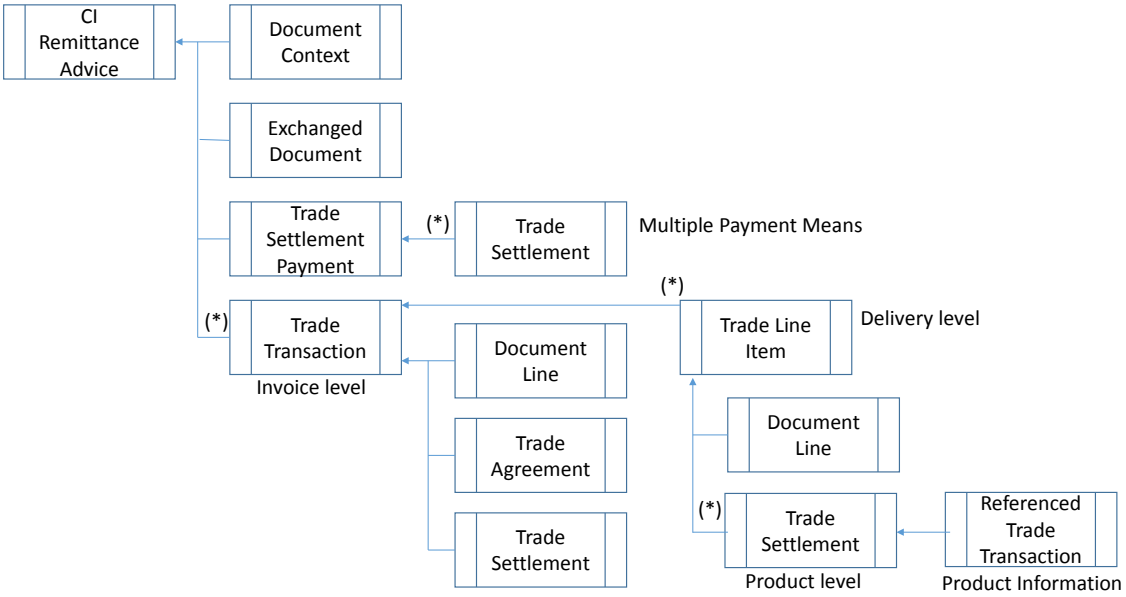


# Sharing Trade Information



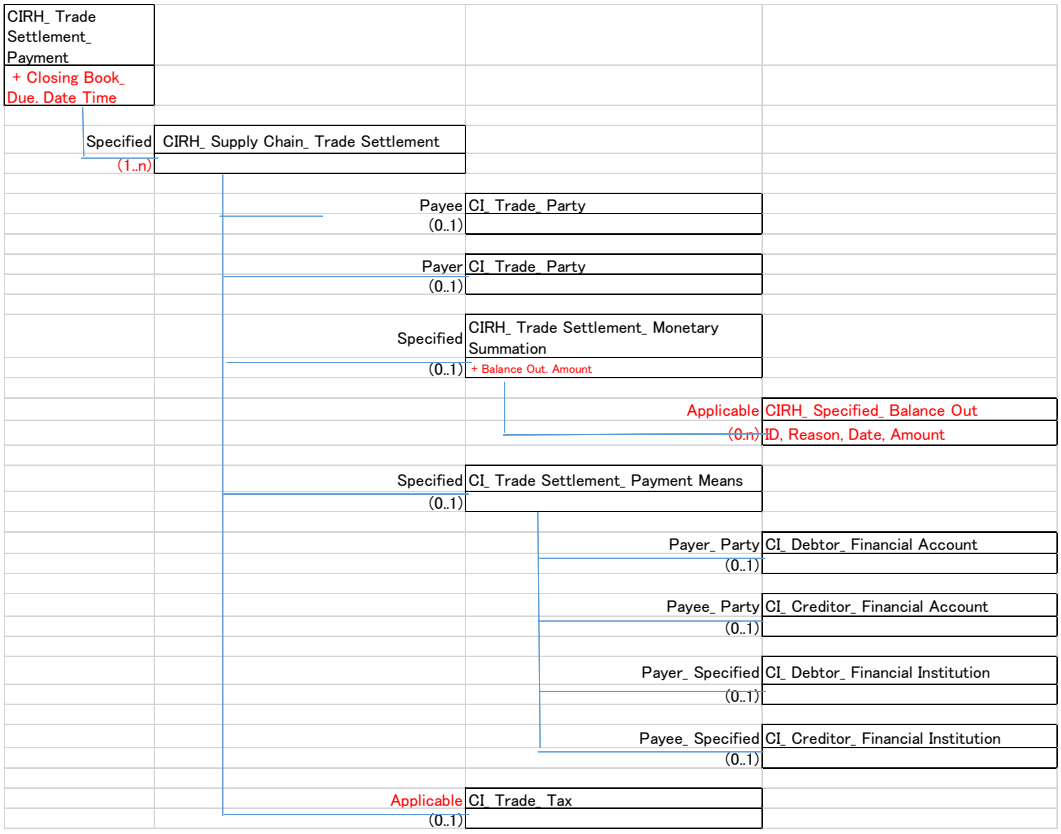


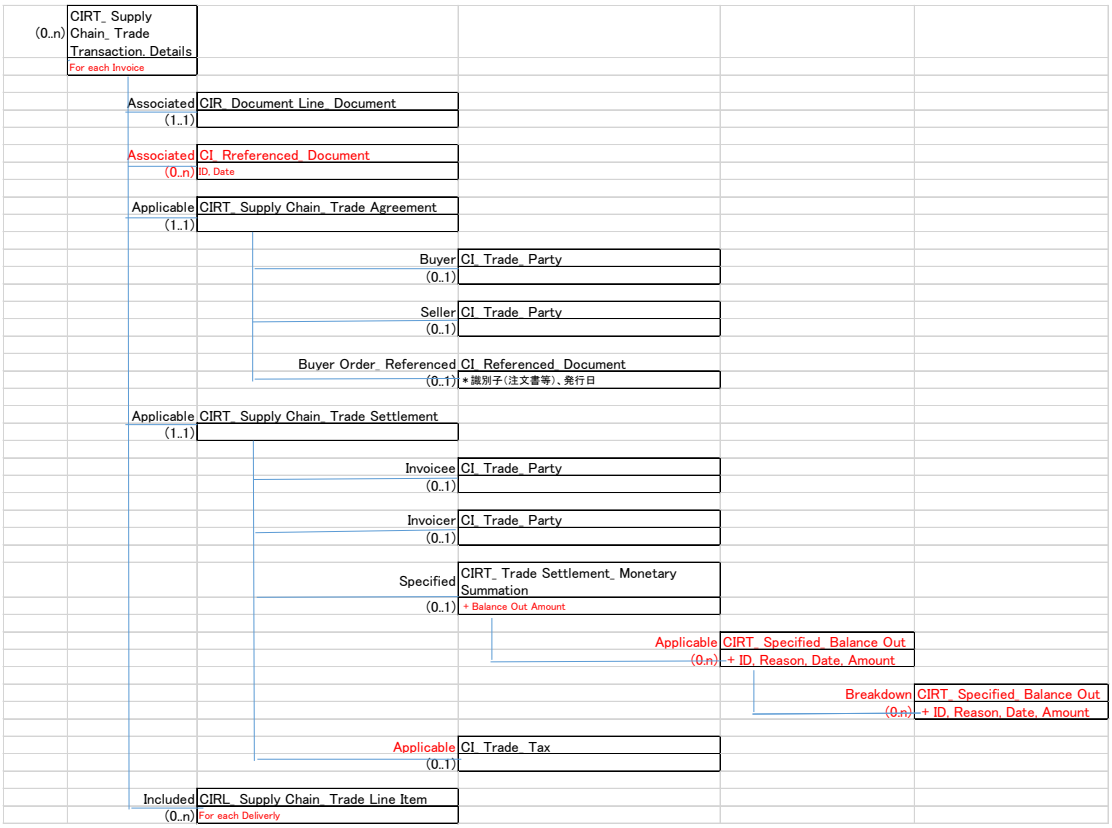





# Trade Settlement_ Payment

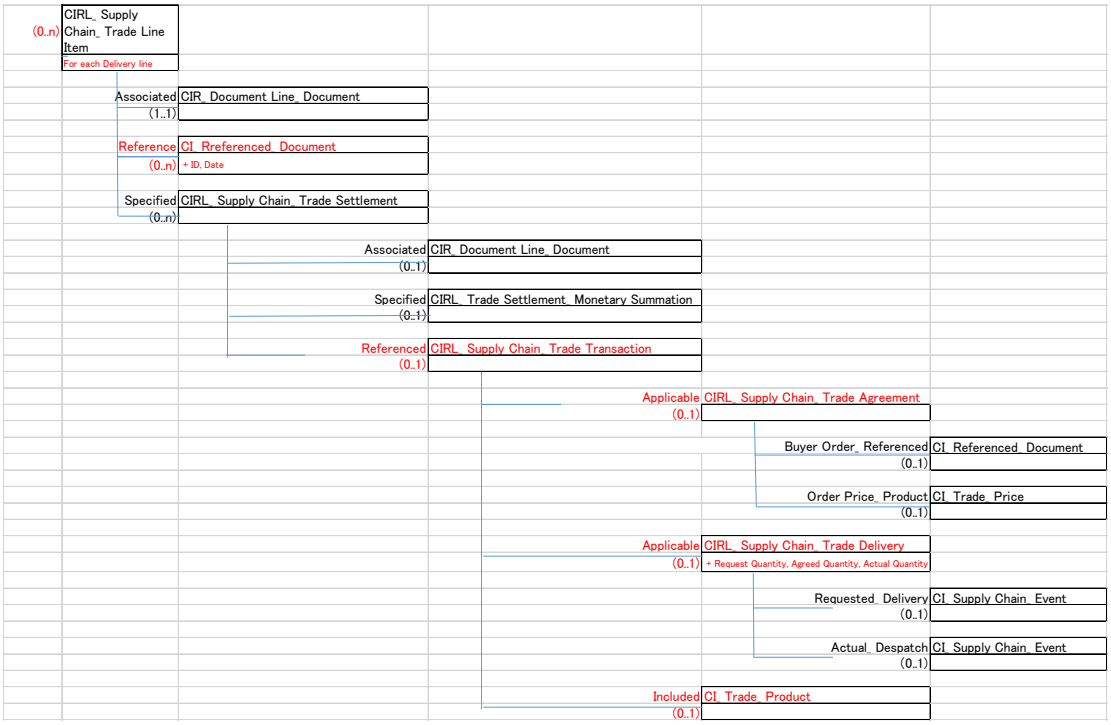


# Trade Transaction for Each Invoice






# Trade Line Item for Each Delivery



（添付２）

# SCM BIEs
# Maintenance Requests
# For Scheduled Just In Time

It can be Maintenance Request, or it should be a new Project ?

November / 2015

By SIPS of UN/CEFACT Japan Committee
SIPS: Supply Chain Information Platform Study Group



## Requirement Summary

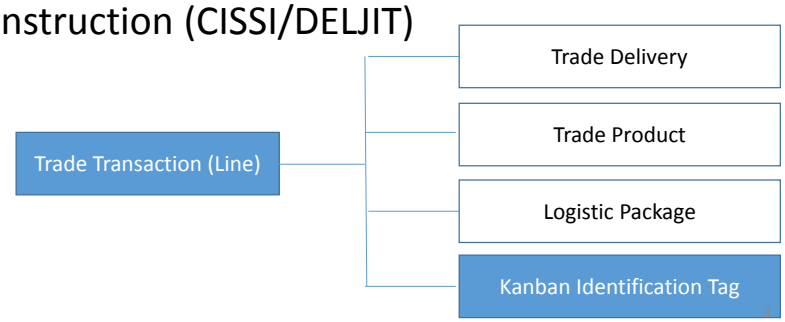
Objective:
To expand the current SCM BIEs for Manufacturing Process Supporting Scheduled Just In Time delivery

1. Enhance Cross Industry Scheduling Demand Forecast (CIDF)
2. Enhance “Kanban” information in Cross Industry Scheduling Supply Instruction (CISSI)
3. Support Supply Chain hierarchy
4. Support buyer supplied product handling
5. Adapting business practice for SME manufacturers
6. Expand “CI_ Exchanged Document_ Context”

## Scheduling Demand Forecast (CISDF /DELFOR)

| | Day-1 | Day-2 | Day-3 | Day-4 | ..... | ..... | Total | Next | ..... |
|---|---|---|---|---|---|---|---|---|---|
| A-Parts | 100 | 100 | 500 | 500 | | | 10000 | 5000 | 5000 |
| B-Parts | | | | | | | | | |
| ..... | | | | | | | | | |

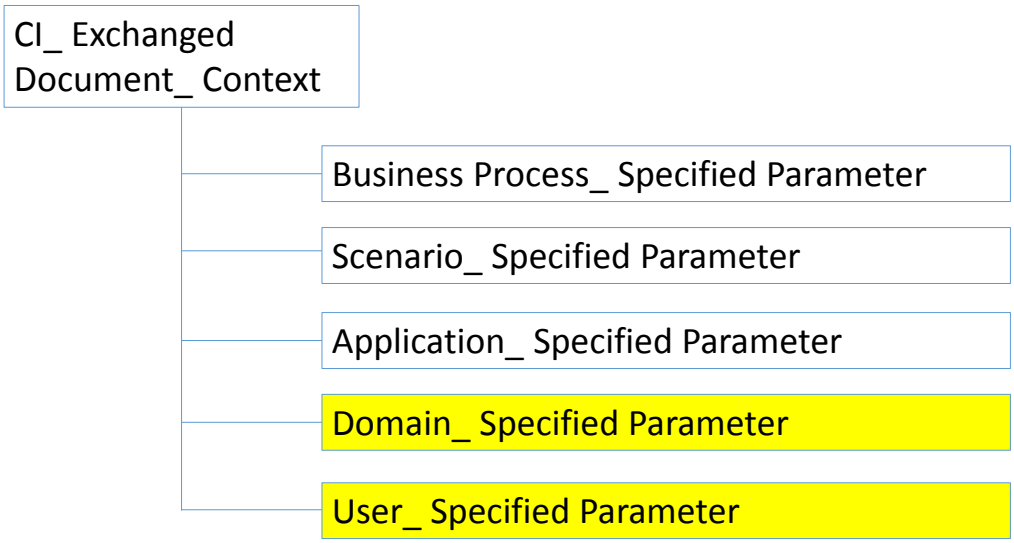
## Scheduling Supply Instruction (CISSI/DELJIT)




# Requirements for SME (DMR Backlog)

| SIPS ID | | BIE Type | BIE Dictionary Entry Name |
|---|---|---|---|
| JPS1400016 | ADD | BBIE | CIOL_ Trade Settlement_ Monetary Summation. Tax Basis Total. Amount |
| JPS1400017 | ADD | BBIE | CIOL_ Trade Settlement_ Monetary Summation. Tax Total. Amount |
| JPS1400018 | ADD | ASBIE | Procuring_ Project. Plan. Project_ Period |
| JPS1400046 | ADD | BBIE | CIOL_ Document Line_ Document. Identification. Identifier |
| JPS1500012 | ADD | BBIE | CIDDH_ Exchanged_ Document. Version. Identifier |
| JPS1500013 | ADD | BBIE | CIDDH_ Supply Chain_ Trade Settlement. Price_ Currency. Code |
| JPS1500014 | ADD | BBIE | CIDDL_ Supply Chain_ Trade Delivery. Despatched. Quantity |
| JPS1500015 | ADD | BBIE | CI_ Supply Chain_ Event. Occurrence. Time |
| JPS1500016 | ADD | BBIE | Procuring_ Project. Inspection_ Type.code |
| JPS1500017 | ADD | BBIE | Procuring_ Project. Inspection_ Description. Text |
| JPS1500018 | ADD | BBIE | CIIL_ Supply Chain_ Trade Delivery. Requested. Quantity |
| JPS1500019 | ADD | BBIE | CI_ Referenced_ Document. Category. Code |
| JPS1500020 | ADD | ASBIE | CIDDH_ Supply Chain_ Trade Settlement. Applicable. CI_ Trade_ Tax |
| JPS1500021 | ADD | ASBIE | CIDDH_ Supply Chain_ Trade Settlement. Specified. CI_ Trade_ Payment Terms |
| JPS1500022 | ADD | ASBIE | CIDDH_ Supply Chain_ Trade Settlement. Specified. CIDDH_ Trade Settlement_ Monetary Summation |
| JPS1500023 | ADD | ABIE | CIDDH_ Trade Settlement_ Monetary Summation. Details |
| JPS1500024 | ADD | BBIE | CIDDH_ Trade Settlement_ Monetary Summation. Line Total. Amount |
| JPS1500025 | ADD | BBIE | CIDDH_ Trade Settlement_ Monetary Summation. Tax Total. Amount |
| JPS1500026 | ADD | BBIE | CIDDH_ Trade Settlement_ Monetary Summation. Grand Total. Amount |
| JPS1500027 | ADD | BBIE | CIIL_ Supply Chain_ Trade Delivery. Received. Quantity |
| JPS1500028 | ADD | BBIE | CIDDL_ Supply Chain_ Trade Delivery. Requested. Quantity |
| JPS1500030 | ADD | ASBIE | CIDDL_ Supply Chain_ Trade Settlement. Applicable. CI_ Trade_ Tax |
| JPS1500031 | ADD | ASBIE | CIDDL_ Supply Chain_ Trade Settlement. Specified. CIDDL_ Trade Settlement_ Monetary Summation |
| JPS1500032 | ADD | ABIE | CIDDL_ Trade Settlement_ Monetary Summation. Details |
| JPS1500033 | ADD | BBIE | CIDDL_ Trade Settlement_ Monetary Summation. Line Total. Amount |
| JPS1500034 | ADD | BBIE | CIDDL_ Trade Settlement_ Monetary Summation. Grand Total. Amount |
| JPS1500035 | ADD | BBIE | CIIL_ Trade Settlement_ Monetary Summation. Grand Total. Amount |
| JPS1500063 | ADD | ASBIE | CIDDH_ Supply Chain_ Trade Agreement. Specified. Procuring_ Project |

# CI_ Exchanged Document_ Context



（添付３）

# UN/CEFACT Project Proposal

Supply Chain Reference Data Model (SCRDM)

Date: 2015-08-05

## 1. Project Purpose

The project's purpose is to develop and publish an international "Supply Chain Reference Data Model" for international & national trade.

## 2. Project Scope

Since 2013 a number of important developments have taken place affecting international trade. These developments, which could provide significant trade facilitation opportunities for UN/CEFACT, include:

- **World Trade Organisation (WTO)** Trade Facilitation Agreement;
- **UNECE-UN/CEFACT** Trade Facilitation Implementation Guide (TFIG) which has been published and is being widely disseminated worldwide.

During the 25th UN/CEFACT Forum in Geneva in April 2015, a recommendation was developed by the experts on the use of a single core component technical specification for future UN/CEFACT eBusiness developments. This recommendation has been adopted by the Bureau.

UN/CEFACT will now be able to provide stakeholders with a business process driven approach and a coherent set of specifications and tools to develop their requirements.

The proposed project is, therefore, to develop an international Supply Chain Reference Data Model, with the following objectives:

- Development of a reference data model which will be based on the Reference ABIE structures of the Core Component Library and designed to be easily maintainable by UN/CEFACT
- Provide, through this reference data model, a standardized and harmonized semantic framework fully compliant with UN/CEFACT Core Components which will be easy to use and which will encourage interoperability between syntaxes for data exchange structures
- Provide links between UN Layout Key documents, UN/EDIFACT message implementation structures and the Core Component Library for reuse in syntax (including XML) implementations
- Produce guidelines for using the reference data model to define subset document structures

e-Business communication in the Supply Chain sector is extensive and often conducted through UN/EDIFACT messaging systems, which were developed and are maintained by UN/CEFACT. For the purposes of also supporting XML and other data exchange syntaxes, UN/CEFACT has in the last decade developed the Core Components Library, a neutral and syntax independent business data library using modern data modelling techniques based on CCTS v2.01.

UN/CEFACT has published a series of *document-centric* XML schemas; this project will develop a reference data model which will enable *business process-driven* CCBDA- conformant schemas to be developed, published and maintained by UN/CEFACT.

The reference data model will be based on the BRS documents (Business Requirements Specifications) for supply chain management developed according to the UN/CEFACT Modeling Methodology (UMM). This project will be the culmination of many years of previous work and will not be starting from scratch. The project will review and update existing work together with the named contributions in order to deliver a reference model which not only provides a basis for future domain work but also very importantly provides a comprehensive set of links to legacy, specifically UN/EDIFACT.

The business process-driven approach to be taken follows the principles enshrined in the UN Layout Key (Recommendation 1), the UNTDED, UN/EDIFACT and the UN/CEFACT CCL.

The scope of the project is international, cross-border, domestic and cross-industry.

## 3. Project deliverables

The deliverables from the project will be:

a) A structured reference data model based on the latest release of the CCL
b) Semantics links with UN/EDIFACT messaging and the TDED to support increased interoperability between data exchange structures
c) Guidelines to produce exchange syntax neutral message structures based on the UN/CEFACT CCBDA v1.0

All deliverables will be produced for publication in formats such as MS Word, MS Excel and HTML that are in line with the ODP and UN/CEFACT publication practices.

## 4. Exit criteria

a) A structured CCL-based reference data model
    - Internal and external review logs showing how comments have been addressed
    - Final version ready for publication
b) Semantics links with UN/EDIFACT and UNTDED
    - Internal and external review logs showing how comments have been addressed
    - Final version ready for publication
c) Guidelines to produce exchange syntax neutral message structures
    - Internal and external review logs showing how comments have been addressed
    - Final version ready for publication

## 5. Project Team membership and required functional expertise

The project team is open to experts with broad knowledge and experience in the area of supply chain and related activities as well as in modelling techniques. In addition, Heads of Delegations may invite technical experts from their constituency to participate in the work. Experts are expected to contribute to the work based solely on their expertise and to comply with the UN/CEFACT Code of Conduct and Ethics.

## 6. HoD support (required for technical standards, business standards and UNECE recommendations)

Four Country Heads of delegation have given their support to this project - Germany, UK, Japan and US. Their written expressions of support are included at the end of this proposal document.

## 7. Geographical Focus

The geographic focus of the project is global.

## 8. Initial contributions

Initial contributions will be sourced from existing documentation and standards including:

- UN/CEFACT Core Components Library (CCL)
- UNECE Recommendations and Code Lists
- UN/EDIFACT EDI documents/messages relating to Supply Chain
- Cross-Industry BRSs for supply chain processes

There are no known IPR issues and there are no planned formal collaborations.

## 9. Resource requirements

Participants in the project shall provide resources for their own participation.
The continued existence and functioning of the project team shall not require any additional resources from the UN/ECE secretariat other than:

- Establishing and maintaining the project team's public Web site pages with appropriate links, document download facilities, and items of interest

## 10. Project Leadership

The following project team is proposed: Project
Leader: Rolf Wessel
Lead Editor: Gerhard Heemskerk
Other Editors (initial list): Mary Kay Blantz, Karina Duvinger, Michel Entat, Andreas Pelekies, Fabio Sorrentino, Hisanao Sugamata

## 11. Milestones

| **Project Stages** | **Expected Completion Dates** |
|---|---|
| Project Approval | 2015-09-11 |
| Structured reference data model<br>• Requirements gathering<br>• Draft development<br>• Public draft review<br>• Publication | <br>2015-11-01<br>2016-02-01<br>2016-04-01<br>2016-06-01 |
| Semantic links with UN/EDIFACT & UNTDED<br>• Requirements gathering<br>• Draft development<br>• Public draft review<br>• Publication<br>• Maintenance – as necessary | <br>2016-02-01<br>2016-04-01<br>2016-06-01<br>2016-08-01 |
| Guidelines to produce CCBDA structures<br>• Requirements gathering<br>• Draft development<br>• Public draft review<br>• Publication | <br>2015-11-01<br>2016-02-01<br>2016-04-01<br>2016-06-01 |
| Project Exit | 2016-08-01 |

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# A note for the discussion on Trendy Technologies

2015 July

By the TMC Chair, Hisanao Sugamata

1. Intention of the note

   It was proposed by the members that Strategy on new technology among AFACT community needs to be discussed and explored at the pre-meeting of the 33rd AFACT midterm meeting held on 15th of June, 2015. The chair of AFACT TMC has prepared this note for the 1st draft paper on the matter of AFACT strategy on the emerging technologies based on the discussion within the TMC-CSC joint meeting.

2. Background

   Information technology has been rapidly evolved during this 50 years. Since EDI introduced to the industry in the 1980s, several ITs have been impacting on the implementation of EDI, such as Personal Computer, Internet, XML. Through the evolution of the information technology, EDI has been expanded in various business processes with the new ITs.
   When the new technologies are introduced, ITs always face resistance such as;

   PC is just for personal use but not for business use;
   Internet is jeopardy because of lack of security;
   XML is too garrulous for EDI.

   Sometimes a new technology proposed by IT vender is also something which isn't directly connected with the user's advanced convenience. However we neither like an investment to a new technology nor break from a former technology, EDI produces gap to the surrounding information technologies, and there is also often a case that itself will become obsolete and be cost overrun.

   AFACT is not an organization for R&D. But while the IT environment of the world develops, we cannot ignore it. Since the internet was introduced, the technological environment around EDI has been drastically changed and is changing, such as Cloud computing, Smart phone, IOT (Internet of Things), etc.

   This note gives some idea from AFACT stance how to treat the new technologies around EDI.

3. Basic Principles

(1) The technology engaged in is to be user driven.
(2) The potentials of the new technology must be understood by the users.
(3) Technology for technology's sake should be avoided.
(4) Technology should not be vendor locked-in.

4. Trendy Technologies

In this note the four categories of the trendy technology for the business information infrastructure are introduced.

(1) The widely used technologies which are not effectively used in EDI
   - Mobile computing
   - SNS (Social Networking Service)
   - Cloud Computing
   - Bit Coin

(2) The emerging technologies may have big influence on the business information infrastructure
   - IOT (Internet of things)
   - Big Data
   - AI (Artificial Intelligence)

(3) The technologies defending against threats which are conspicuous around new technologies
   - Cyber security
   - Privacy protection
   - Disaster recovery

(4) The business models which are using emerging technologies
   - Industry 4.0 including;
     - ✧ CPS (Cyber Physical System)
     - ✧ IOT
     - ✧ Smart Robot and Smart Machine
     - ✧ Energy Efficiency and Energy Decentralization
     - ✧ Virtual Industrialization
     - ✧ Big Data

5. AFACT strategy

(1) AFACT does not initiate a general R&D project for new technologies.
(2) AFACT follows the new technologies which UN/CEFACT introduces as a standard.

(3) AFACT supports the project using a new technologies based on the certain business requirements.

(4) AFACT encourages to exchange information on the country experimental projects using new technologies.

- Implementation guideline
- POC (Proof of concept)

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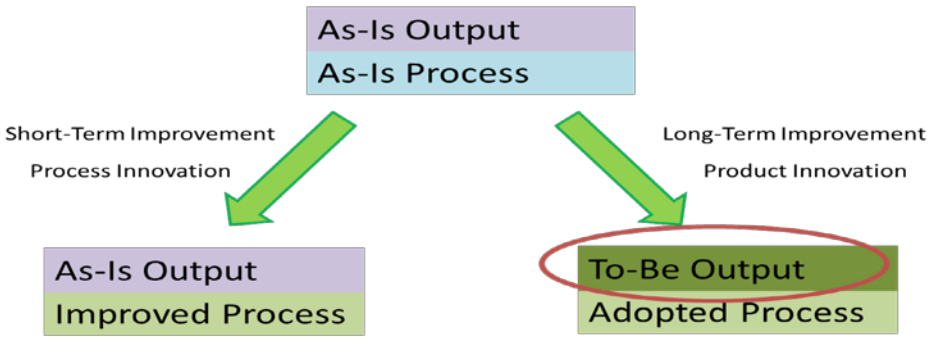
# UN/CEFACT Library Review
# Report on Future Library Content

## Background Information

The purpose of the Library Review project is to ensure the long-term sustainability of UN/CEFACT's libraries of business process and information models and associated technical artifacts.

In order to ensure long term sustainability it is critical to reassess the output – or in other words what artifacts are offered by the library – before adopting the library maintenance process. Accordingly, this document is not about improving the current process to create today's output, rather it is about expectations on a future UN/CEFACT library.




## The Process to Deliver this Report

The goals of the Library Review project were presented at the 23rd UN/CEFACT Forum, 7 – 11 April 2014, Geneva. Following this presentation, the project team asked representatives of various domains for input on their view on the to-be-output of a future UN/CEFACT library. All the input received until the 24th UN/CEFACT Forum, 27 – 31 October 2014 was taken into account and structured into a set of identified criteria which were presented to the Forum participants. Based on these criteria the project team developed a questionnaire on UN/CEFACT library items (see Annex 1) which was distributed to all UN/CEFACT domain coordinators. After a short extension of the original deadline (15 December 2014), the project team received replies from 14 domain coordinators by February 2015. All UN/CEFACT domains – except for Customs where the domain coordinator position was vacant at that time – participated in the questionnaire. The results of the questionnaire were presented to the participants of the 25th UN/CEFACT, 20 – 24 April 2015 (see Annex 2). The results and, in particular, the resulting conclusions were discussed in a project team meeting during this forum. The conclusions are summarized in this report – which was discussed/approved by the Methodologies and Technologies Domain – and presented at the 26th UN/CEFACT Forum, 2 – 6 November 2015, Marseille.

## Terminology

It should be noted, that instead of different libraries each including a specific type of artifact (Core Components Library, Business Information Entity Library, …), we may envision a single UN/CEFACT library for all types of artifacts. Evidently, this single library will have dedicated sections for the different types of artifacts (still allowing cross references between artifacts of different sections). A section in the library may be realized by the concept of a package which is used to group elements, and to provide a namespace for the grouped elements. A package may contain other packages, thus providing for a hierarchical organization of packages.

## Core Components

There is unanimous consent that UN/CEFACT is not only the home of the *Core Components Technical Specification (CCTS)*, but also uses this specification to standardize core components and publishes these core components as part of the CEFACT library. UN/CEFACT considers itself as the natural home of core components. This means, that although other organizations may feel free to use the CCTS to develop their own set of core components, UN/CEFACT should invite/urge these organizations to rather contribute to the UN/CEFACT library of core components as a unique semantic foundation. The fact that there should be only one semantic base is also underpinned by the fact that the library should include only a single library package of core components. There should be no sub-packaging for a conceptual or logical grouping of core-components (such as sub-packages for core components that are of primary interest for a certain domain). Sub-packages of the single library package of core components may only refer to the different types of core components: core component data types, basic core components, aggregate core components, and associate core components. Furthermore it is worth to mention that core component data types are rather semantic data types (e.g. Amount) in contrary to primarily syntactic types (Integer).

## Business Information Entities

The majority of the domain coordinators expects UN/CEFACT to standardize business information entities. Accordingly, UN/CEFACT should maintain a set of business information entities that are under control of UN/CEFACT. For these business information entities UN/CEFACT has to provide an appropriate quality assurance and governance process. All business information entities that undergo such a process will be published in a library package for UN/CEFACT business information entities. Similarly to the core components, a business information entity library package may contain sub-packages for the different types of business information entities. The project did not evaluate any specific structuring mechanism to logically group business information entities for a given business context, but, evidently, this has to be elaborated in a library implementation project.

As said above, UN/CEFACT business information entities will undergo a quality assurance and governance process. Currently, the majority feels that this process is best centrally coordinated by the

library maintenance team. It should be noted that this approach depends on a rather small team of very knowledgeable and committed persons. When these scare human resources become unavailable, one may reconsider the approach in favor of a decentralized approach where the governance process is subject to the different domains.

The current quality assurance process involves the harmonization of business information entities. Whether or not to continue this approach (which is only feasibly in a centrally coordinated process) should be subject to further investigations. Today a slight majority prefers this harmonization, but there is no clear indication that everyone appreciates this kind of harmonization.

Other organizations may decide to use not only CCTS, but also the UN/CEFACT core components as a starting point to develop their business information entities. However, they may not be willing to undergo the quality assurance and governance process for UN/CEFACT business information entities. Whether or not these business information entities should become part of the UN/CEFACT library is discussed in the section “Artifacts maintained elsewhere”.

## Business Document Assembly

The strategic framework for UN/CEFACT activities mentions the following: “Semantic interoperability implies that the precise meaning of the exchanged information is preserved and well understood in an unambiguous manner, independently of the way in which it is physically represented or transmitted. Separating the model from the technology allows for the alignment of business processes while still supporting variations in both business practices and information technology. This is fundamental to the concept of technological neutrality.“

From the above lines it becomes obvious that standardizing the conceptual building blocks (core components and business information entities) in a technology neutral manner, but the documents/messages only on the level of the transfer syntax (EDIFACT/UNSMs, UN/CEFACT XML schemas) is simply not enough. Accordingly, this set of artifacts must be completed by standardized business document assemblies. A great majority feels that the UN/CEFACT library should cover business document assemblies.

Once business document assemblies become part of a UN/CEFACT library, it is desired to provide cross-links to the business information entities. This means that the library should provide information on which business document assembly uses which business information entities. Vice versa, it should also provide information on which business information entity is included in which business document assemblies.

Similarly to business information entities, UN/CEFACT should maintain a set of business document assemblies that are under control of UN/CEFACT. For these business document assemblies UN/CEFACT has to provide an appropriate quality assurance and governance process. With respect to central/distributed coordination it is advisable to follow the same process as for business information entities.

Again other organizations may base their approach on UN/CEFACT core components, but are not willing to undergo the quality assurance and governance process for UN/CEFACT business document assemblies. This is again discussed in the section “Artifacts maintained elsewhere”.

## UN/EDIFACT Messages

Although not all domains are asking for UN/EDIFACT messages anymore, UN/CEFACT should create new and maintain existing UN/EDIFACT messages and parts thereof. These messages should be included in the UN/CEFACT library.

Implementation Guidelines for UN/EDIFACT messages are usually developed by other organizations. Therefore, there is no need for a governance process of these guidelines. Accordingly, the UN/CEFACT library should not directly include any message implementation guidelines (in order to avoid the impression that they are governed by UN/CEFACT). However, it is recognized that an overview of existing message implementation guidelines may be of interest to the community and, thus, the access to them is discussed in the section “Artifacts maintained elsewhere”.

## UN/CEFACT XML Messages

Even if not all domains are requiring XML schemas that are developed by UN, the majority is in favor of standardizing XML messages within UN/CEFACT and hardly anyone is against it. However, this does not mean that a UN/CEFACT XML schema has to be developed for each and every project/business document assembly. Rather it is advisable to develop an XML schema for a project/business document assembly only if someone has a need for the schema and requests it. In most cases the project team will be aware of such a need already prior or at least during the project and the XML schema will be developed as part of the project. However, UN/CEFACT should also stipulate an organizational procedure in case that a project delivers only a business document assembly (without the need for an XML schema at that time) and later on after the successful completion of the project someone requests a corresponding XML schema.

Even if it is not the most urgent issue, cross links between XML schemas and business documents may provide useful information. Accordingly, the library should provide information on which business document assembly results in which XML schema. Vice versa, it should provide the information on which XML schema is based on which business document assembly.

Again XML messages that follow the UN/CEFACT Naming and Design Rules may be developed by other organizations. Accordingly, this case is also considered in the section “Artifacts maintained elsewhere”.

It should be noted, that the answers to a question on whether or not XML schemas should include enumerations for code lists did not give a clear indication on this subject. Accordingly, this matter should be reconsidered in case of a revision of the UN/CEFACT Naming and Design Rules.

## Other Library Artifacts

The UN/CEFACT library should also contain code lists. Thereby, the publication of code lists should contain all entries, also the expired ones. According to the survey, code lists should be managed, maintained, and published independent of the transfer syntax (EDIFACT/XML). Evidently, this issue has to be aligned with the general guidelines on the library format as discussed in the section “Library Implementation”.

Currently, a project delivers a business requirements specification (BRS) and a requirements specification mapping (RSM). The quality, in particular of the former ones, is rather poor. An improved quality of the BRS documents is a precondition to include them in a UN/CEFACT library (which is still considered worthwhile by the domain coordinators), otherwise the BRS should be removed from the library. Surprisingly, most domain coordinators do not want to update the BRSs and RSMs when the underlying BDA/BIEs change. Thus, it should be reconsidered whether or not to publish BRS documents in the UN/CEFACT library at all.

In addition, it may be desirable that UN/CEFACT provides some reference material that serves as best practice for its user community. Since most of the below listed items are requested by about half of the domain coordinators we consider these as “nice to have” and do not set them as top priority. The reference material in the order of their importance are as follows:

- ☐ Guides describing business value, technical difficulties in implementation, etc
- ☐ Schematron (or other rule language)
- ☐ Reference Implementations
- ☐ Samples (for one or two popular languages)
- ☐ Background material
- ☐ good definitions, explanatory notes
- ☐ Best practices, technical instructions and configuration specifications for set up, test and deployment of Web Services (low priority)
- ☐ Guidelines for Setting up Web Services or other transport channels (email, ftp, …) (low priority)

## Library Implementation

A critical issue for the future of UN/CEFACT is a registry implementation of the library. In this report, we do not address any issues on how to realize and maintain such a registry implementation. Nevertheless it is important to address the issue in the near future. This means one has to outline different options on who develops the registry, who hosts the registry, who (technically) maintains the registry, who serves as registration authority, and how to interface with external content.

It is needless to mention that an easy access to the library content is essential. A key issue in this respect is the format to retrieve (and also submit) library content. From a pragmatic point of view it is desirable to allow browsing of the library content by humans and, at the same time, to provide the content in a machine-processable format that may easily integrated by tool providers. For the former purpose, the library content should be presented as hyperlink documents, accordingly (X)HTML is a suitable format. For the later purpose, we see a number of options. However - as also most often mentioned in the survey – an XML-based formatting is preferred. Hereby, the format should follow the specifics of the library content, or in other words the library content should follow the XML schema specification of XML4CCTS (where appropriate, for other content [e.g. business processes] a similar specification should be developed).

In order to have clear rules in case of (undesired) inconsistencies – which evidently should be avoided – a primary format should be defined. This format should be a machine processable format. From the above descriptions one can conclude that the primary format should be XML4CCTS. Any other formats, be it human readable ones such as (X)HTML and Excel or machine processable ones such as UML/XMI or the vendor-specific GEFEG FX format may be derived by transformations from the primary format. Some of the "secondary" formats may be provided by UN/CEFACT, others may be provided by external parties as external content (see again "Artifacts maintained elsewhere")

The current practice on releasing a new version of the library twice a year seems to be appropriate for the business domains. As long as there is no mechanism within the specifications to allow partial updates, i.e. updating dedicated artifacts without affecting any other, there is no need to change the current practice.

## Artifacts Maintained Elsewhere

Even if it is not the first priority, it would be desirable to provide a full picture on how UN/CEFACT's artifacts are used in practice. In other words, we could envision links to artifacts that are based on UN/CEFACT artifacts and are conformant/compliant to UN/CEFACT artifacts, but are created and maintained by other bodies.

Accordingly, the UN/CEFACT library may provide links to such artifacts. However, such a mechanism must follow a careful user interface design. It must be clear which artifacts are “approved” by UN/CEFACT and which are maintained elsewhere in order to avoid the impression that all artifacts are “approved” ones by UN/CEFACT.
One may consider links to the following artifacts that could also be maintained elsewhere:

- Business Information Entities
- Business Data Types
- Business Document Assemblies
- XML Messages
- UN/EDIFACT Implementation Guides
- Any kind of support documents (see listing in section “Other Library Artifacts”)

Furthermore, external parties may provide the content of the CEFACT library in other alternative formats. For example, if UN/CEFACT decides to publish the library content by means of XML4CCTS, external parties may deliver the same content in another format, e.g. UML/XMI. Again it must be clear for a library user that officially approved library is always the one in the primary format – which is important in case of undesired inconsistencies.