UN/CEFACTの技術(ebXMLと技術仕様)解説(その1)

# ebXMLの概要

2012年6月21日 JTREC監事 飯田善久(成蹊大学名誉教授)

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# **UN/CEFACT**

- · 国連·欧州経済委員会(UNECE)の下部機関
- United Nations Centre for Trade Facilitation and Electronic Business
- 貿易円滑化と電子ビジネスのための国連センター
- <a href="http://www.unece.org/cefact/">http://www.unece.org/cefact/</a>
- 貿易関係書類の書式統一化 ⇒国際標準仕様の策定
  - UN/EDIFACT

(Electronic Data Interchange For Administration, Commerce and Transport)

- ebXML

# UN/EDIFACT電文(メッセージ)例

UIH+RESREQ:D:96B::UN+1

MSD+1:1'

ORG++++XYZ TOURS+1'

NUN+2:9'

CON+1:03-5562-4652:1:SHIBUYA MR'

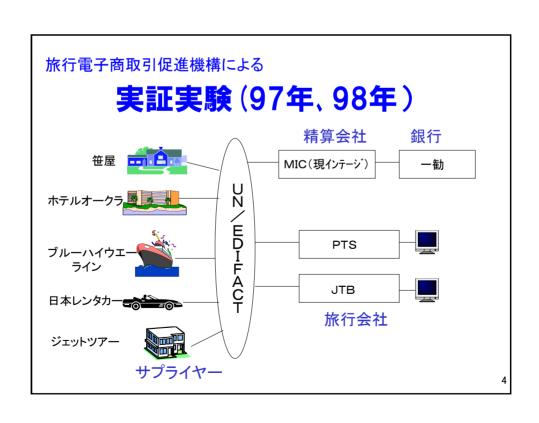
TIF+YAMADA: 21: 2+ICHIROU: 21:1: MR\*HANAKO: 21:2: MS'

CON+21:03-5690-7582:1:YAMADA MR'

PMT+2::1:86200:JPY'

TVL+951201+HND\*CTS+001JAS+JD101:Y'
TVL+951205+CTS\*HND+001JAS+JD110:Y'

UIT+1+11'



# インターネット・XMLの台頭

- 1995年「インターネット」流行語大賞 Java言語発表 Internet Explorer発表
- 1998年 XML仕様策定
- 2001年 XML Schema仕様策定

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# インターネット、XMLを利用したEDI 従来のEDI (UN/EDIFACT、CII・・・・) 情報をそのままXML化 (XML/EDI) ほっておくとバラバラになる 標準XML/EDI ・ ebXML 6

# 世界単一市場をめざして・・・ ebXML

,

# 世界単一電子市場 SML メーカー XML 小売 共通仕様 ebXML

## ebXMLの誕生

- ・UN/CEFACTとOASISの共同プロジェクト
- ・1999年11月から18ヶ月
- OASIS (Organization for the Advancement of Structured Information Standards)

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

アプリケーションに重点をおいた、Web標準 策定を行っている国際的な業界団体

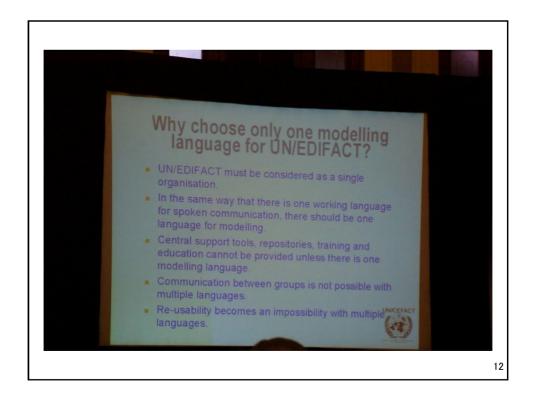
9

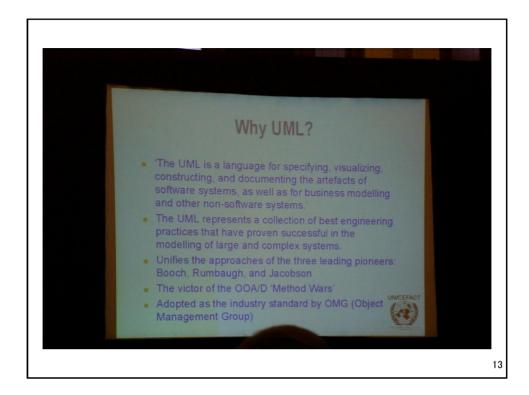
# UN/CEFACT Forumと関連事項

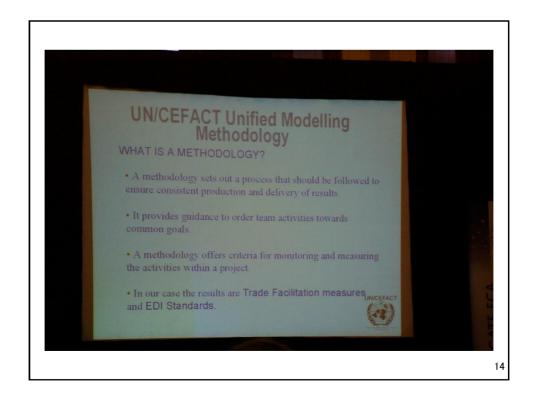
	春	秋	関連事項	
1996		Helsinki		
1997	Singapore	Anaheim		旅行実証実験
1998	Miami	Brussels		旅行実証実験 2月XML1.0勧告
1999	Atlanta	Canberra	11月 ebXMLプロジェクト発足	OTA発足
2000	Paris	Taipei		5月SOAP1.0勧告 9月UDDI発表 10月WSDL1.0
2001	Washington	Rotterdam	5月 ebXMLプロジェクト一応完結	5月XML Schema勧告
2002	Barcelona	Geneva		
2003	San Diego	Seoul		
2004	Bonn	Washington		宿泊関係情報モデル調査
2005	Kuala Lumpur	Lyon		宿泊施設情報策定
2006	Vancouver	New Delhi		同上·国際標準承認

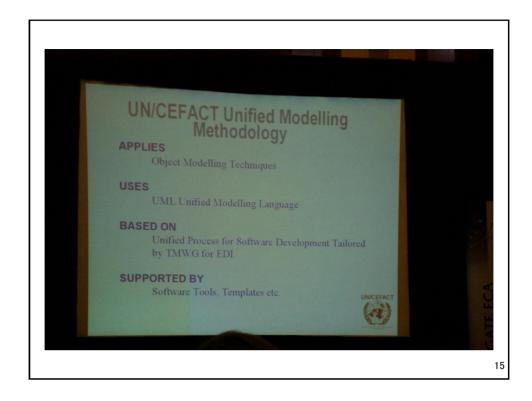
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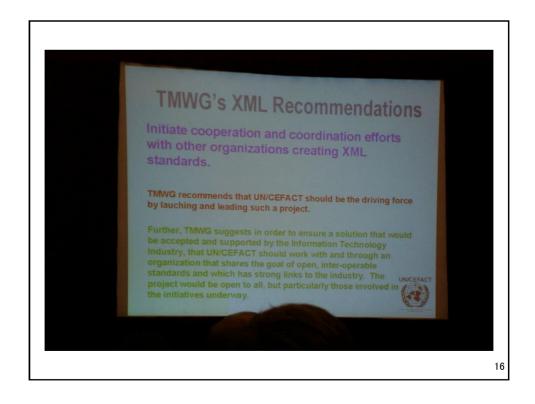


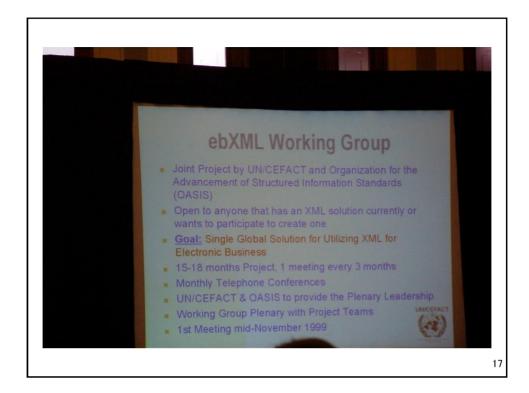










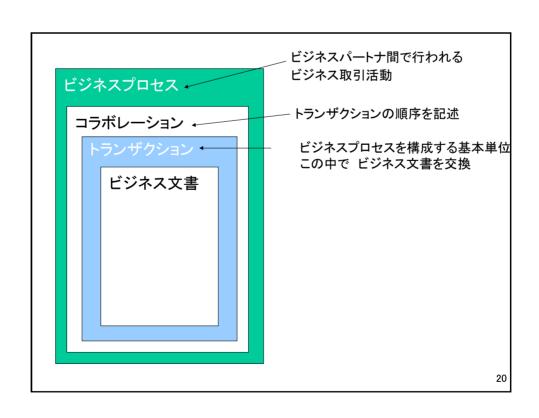


# 世界単一電子市場

- ビジネスプロセス記述の標準化
- 標準データ(コアコンポーネント)の策定
- パートナーとの合意書(コラボレーション)
- それらを登録/保管(レジストリ&レポジトリ)
- ・メッセージの通信仕様

## ビジネスプロセス

- ビジネスプロセス
  - ビジネスパートナ間で行われるビジネス取引活動
- ビジネストランザクション
  - ビジネスプロセスを構成する基本単位
  - ビジネス文書の交換
- ・ コラボレーション(トランザクションの順序)
  - choreography (振付け)



オブジェクト指向のための統一した表記法

## **UMM**

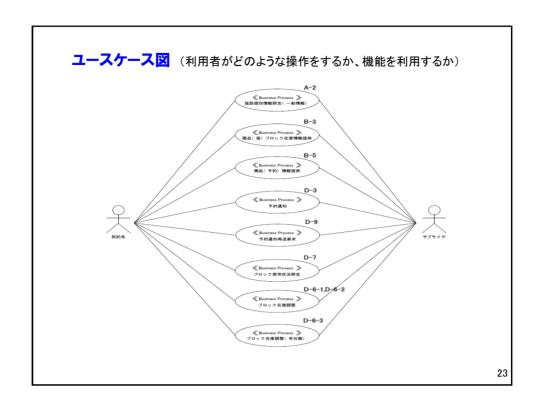
## (UN/CEFACT Modeling Methodology)

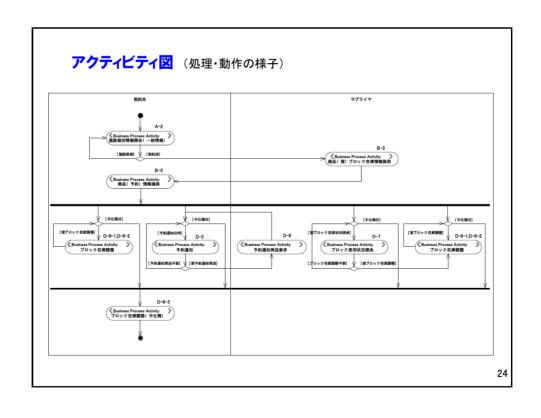
UMLを用いて、対象となるビジネスを解析し、 ビジネスプロセス、使用するデータのモデル 化をする手法

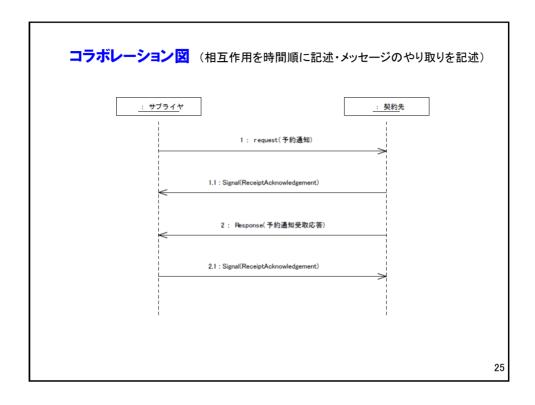
21

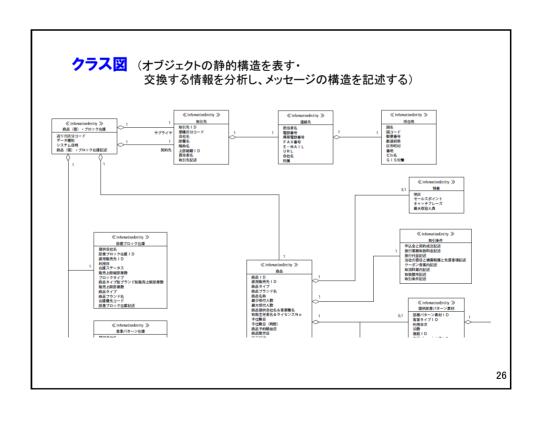
# 宿泊関係の業務を例にして・・

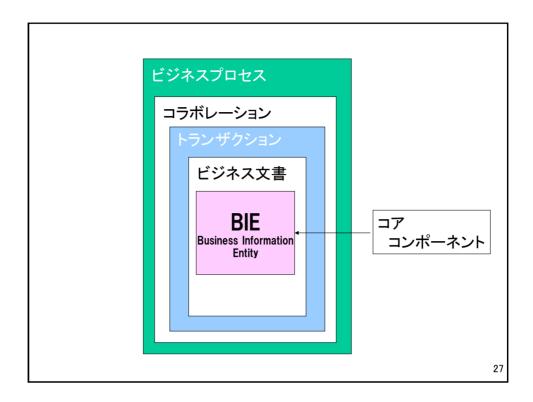
- •「旅館施設情報提供及び予約業務における業務プロセス及び情報モデル調査」 2004年3月
  - <u>JTRECのホームページ</u> http://www.jtrec.org ⇒ JTREC情報 ⇒ 沿革











コア構成要素

# <u>コア・コンポーネント</u>

- Core Component (CC)
  - 意味のある情報交換パッケージを生成する 基礎情報単位
- Business Information Entity (BIE)
  - コア・コンポーネントを特定のビジネスで使用する場合の情報単位
  - コア・コンポーネントをもとにして生成

## ・Person (コアコンポーネント)

- Name (Yoshihisa IIDA:単純な文字列)

- Birth Date (2012/06/21:単純な年月日)

- Residence (複数の内容をもつ下記のAddress)

- Official Address (複数の内容をもつ下記のAddress)

## Address

- Street (Meili St.:単純な文字列)

- Post Code (100-0001:単純な文字列)

- Town (Tokyo : 単純な文字列)

- Country (JPN : 単純な国コード)

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→ Person

- ACC (Aggregate CC)
  - 特定の意味を表すビジネス情報の集まり
- BCC (Basic CC) Name, Birth Date
  - ACCを構成する個々のビジネス特性を表わすCC
  - Data型(表現形式: Text、Date、・・・)を持つ
- ASCC (Association CC) → Residence, Official Address
  - ACCを構成する複合ビジネス特性を表わすCC

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#### JTREC講演: UN/CEFACTの技術(ebXMLと技術仕様)解説

## • Person (ACC)

Name (BCC: データ型Text)Birth Date (BCC: データ型Date)

Residence (Addressで定義されるASCC)Official Address (Addressで定義されるASCC)

## Address (ASCC)

 - Street
 (BCC: データ型Text)

 - Post Code
 (BCC: データ型Text)

 - Town
 (BCC: データ型Text)

- Country (BCC: データ型Identifier)

Person

• Name (Text)
• Birth Date (Date)

Official Address

Residence

Address

•Street

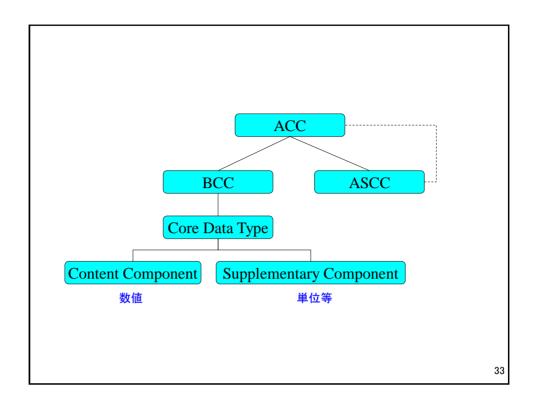
Town

(Text)

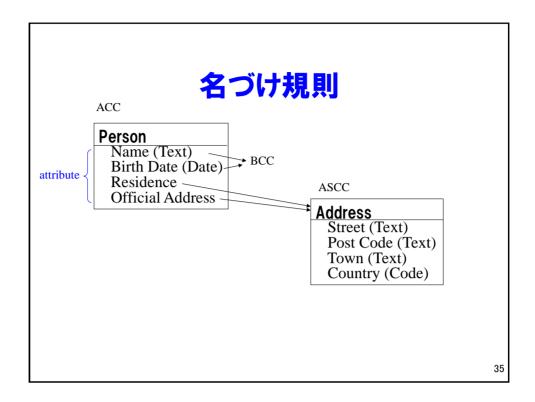
(Text)

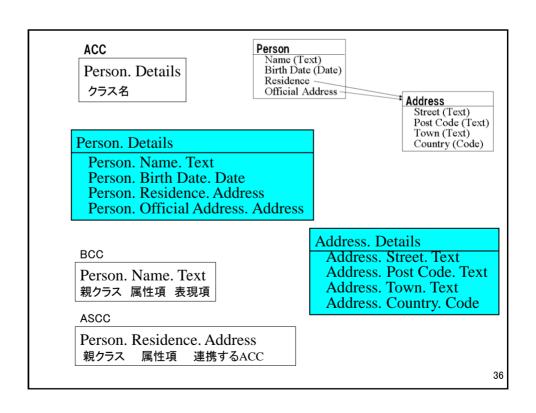
Post Code (Text)

Country (Identifier)



	Core	Data Type
Amount	金額	Ordinal
Binary Object		Percent
Code	コード	Picture
Date		Quantity 金額以外の
Date Time		Rate
Duration		Ratio
Graphic		Sound
Identifier	識別記号	Text
Indicator		Time
Measure	測定値	Value
Name		Video





# CCの辞書情報

• Dictionary Entity Name

Object class Property term Representation term, Object class term

- Definition
- Occurrence Min, Max

Dictionary Entry Name	Definition	Occurrence Min	Occurrence Max
Person. Name. Text	A name or set of names, expressed as text, by which this person is known.	0	unbounded
Person. Residence. Address	A residence address for this person.	0	unbounded

<u>CEFACTホームページ</u>⇒Standards⇒Core Components Library(UN/CCL)・BIEも含む

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			Occurrence	
	Dictionary Entry Name	Definition	MIN	MAX
ACC	Building. Details	A permanent fixed structure, such as a house, factory, hotel, or office building.		
всс	Building. Construction. Date	A date of construction for this building.	0	unbounded
всс	Building. Description. Text	A textual description for this building.	0	unbounded
всс	Building. Identification. Identifier	A unique identifier for this building.	0	unbounded
всс	Building. Name. Text	A name, expressed as text, of this building.	0	unbounded
всс	Building. Renovation. Date	A date of renovation of this building.	0	unbounde
всс	Building. Style. Text	The style, expressed as text, of this building.	0	1
всс	Building. Type. Code	The code specifying the type of building, such as an apartment, a mobile home, or a detached house.	0	1
BCC	Building. Construction Material Type. Code	The code specifying the type of construction material for this building, such as brick veneer or concrete.	0	1
всс	Building. Flat Roof. Percent	The percentage of the roof area of this building which is flat.	0	1
всс	Building. Storey. Quantity	The number of storeys (floors) in this building.	0	1
всс	Building. Apartment. Quantity	The number of apartments (separate living units) in this building.	0	1

BCC	Building. Bedroom. Quantity	The number of bedrooms in this building.	0	1
всс	Building. Room. Quantity	The number of rooms in this building.	0	1
всс	Building. Fireplace. Quantity	The number of fireplaces in this building.	0	1
всс	Building. Historical Status. Code	The code specifying the historical status of this building.	0	1
всс	Building. Construction Completion. Percent	The percent of completion of the construction of this building.	0	1
всс	Building. Construction Completion Degree. Code	The code specifying the degree of completion of this building.	0	1
BCC	Building. Drain Length. Measure	The measure of the length of the drains connecting this building to the public drainage system.	0	1
BCC	Building, Estimated Construction Completion. Date Time	The estimated date, time, date time, or other date time value when the construction of this building will be completed.	0	1
BCC	Building. Elevator. Quantity	The number of elevators in this building.	0	1
всс	Building. Roof Design. Code	The code specifying the roof design of this building, such as flat or gabled.	0	1
всс	Building. Construction Prefabrication Type. Code	The code specifying the construction prefabrication of this building, such as heavy concrete or precast concrete.	0	1
всс	Building. Floor Material. Code	The code specifying the floor material used in this building, such as wood or concrete.	0	1

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всс	Building. Modified. Indicator	The indication of whether or not this building has been modified or extended.	0	1
всс	Building. Structural Damage. Indicator	The indication of whether or not this building has any signs of structural damage.	0	1
всс	Building. Neon Sign Area. Measure	The measure of the area of neon signs in or on this building.	0	1
всс	Building. Maximum Vehicle. Quantity	The maximum number of vehicles that can be held in this building.	0	1
BCC	Building. Situation. Code	The code specifying the situation of this building to the main building, such as attached, detached or integral.	0	1
всс	Building. Ground Floor Area. Measure	The measure of the ground floor area of this building.	0	1
всс	Building. Type. Text	The type of this building, expressed as text.	0	1
всс	Building. Electrical Panel Type. Code	The code specifying the type of electrical panel in this building.	0	1
всс	Building. Wiring Type. Code	The code specifying the type of wiring in this building.	0	1
BCC	Building. Wiring Electrical Capacity. Measure	The measure of the electrical capacity of the wiring in this building.	0	1
всс	Building. Plumbing Type. Code	The code specifying the type of plumbing in this building.	0	1
всс	Building. Condition. Code	The code specifying the condition of this building.	0	1

ВСС	Building. Roof Type. Code	The code specifying the type of roof for this building.	0	1
всс	Building. Roof Type. Text	The type of roof for this building, expressed as text.	0	
BCC	Building. Construction Start. Date Time	The date, time, date time, or other date time value of the start of the construction of this building.	0	
всс	Building. Construction Cost. Amount	The monetary value of the construction costs of this building.	0	
BCC	Building. Construction Regulatory Grade. Code	The code specifying the construction regulatory grade for this building, such as Building Code Effectiveness Grade (BGEG).	0	
всс	Building. Above Ground Floor Area. Measure	The measure of the floor area of this building, counting all storeys above ground.	0	
всс	Building. Basement. Quantity	The number of basements in this building.	0	
всс	Building. Earthquake Ground Condition. Code	The code specifying the condition of the ground, with respect to earthquakes, where this building is situated.	0	
всс	Building. Exterior Wall Masonry Veneer. Percent	The percent of the exterior wall made of masonry veneer for this building.	0	
всс	Building. Storm Protection Type. Code	The code specifying the type of storm protection for this building.	0	
всс	Building. Hurricane Resistive Glass. Indicator	The indication of whether or not hurricane resistive glass is used in this building.	0	
всс	Building. Land Area. Measure	The measure of the land area on which the building is located.	0	

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BCC	Building. Hillside Incline. Percent	The percent of the hillside incline for this building.	0	1
BCC	Building. Subtype. Code	The code specifying the subtype of this building, such as for a garage type building, built in, basement or carport.	0	1
всс	Building. Basement. Indicator	The indication of whether or not this building has a basement.	0	1
всс	Building. Type. Quantity	The number of buildings of the same type as this building.	0	1
всс	Building. Wind Resistance. Code	The code specifying the wind resistance of this building.	0	1
всс	Building. Swimming Pool. Quantity	The number of swimming pools belonging to this building.	0	1
всс	Building. Real Estate Type. Code	The code specifying the type of real estate for this building.	0	1
ASCC	Building. Actual. Picture	An actual picture of this building.	0	unbounded
ASCC	Building. Distinctive. Feature	A feature that is a distinctive characteristic of this building.	0	unbounded
ASCC	Building. Installed. Air Conditioning	The air conditioning installed in this building.	0	1
ASCC	Building. Within. Bathroom	A bathroom within this building.	0	unbounded
ASCC	Building. Related. Building Accessory	A building accessory related to this building.	0	unbounded

ASCC	Building. Applied. Building Improvement	A building improvement applied to this building.	0	unbounded
ASCC	Building. Used. Inbuilt Component	An inbuilt component used in this building.	0	unbounded
ASCC	Building. Used. Construction Material	Material used in the construction of this building.	0	unbounded
ASCC	Building. Specified. Dimension	The specified dimensions of this building.	0	1
ASCC	Building. Within. Elevator	An elevator within this building.	0	unbounded
ASCC	Building. Within. Fireplace	A fireplace within this building.	0	unbounded
ASCC	Building. Installed. Heating System	A heating system installed in this building.	0	unbounded
ASCC	Building. Applied. Interior Finish	The interior finish applied in this building.	0	1
ASCC	Building. Within. Kitchen	A kitchen within this building.	0	unbounded
ASCC	Building. Specified. Mobile Home	The mobile home specified as this building (dwelling).	0	1
ASCC	Building. Applied. Modification	A modification that has been applied to this building.	0	unbounded
ASCC	Building. Attached. Porch	A porch attached to this building.	0	unbounded

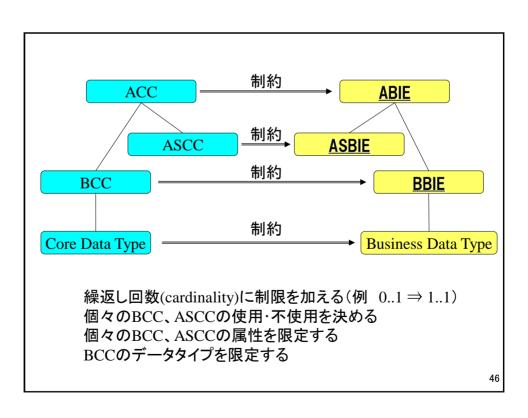
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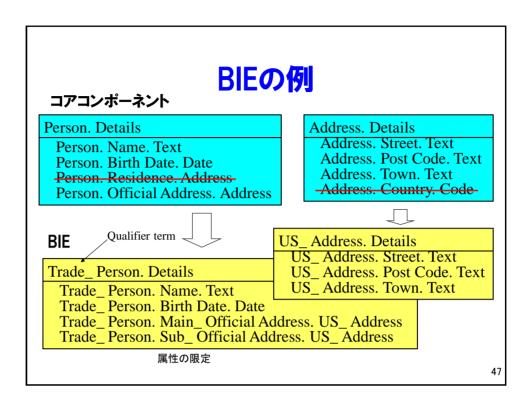
ASCC	Building. Supporting. Substructure	A supporting substructure for this building.	0	unbounded
ASCC	Building. Within. Basement	A basement within this building.	0	unbounded
ASCC	Building. Related. Swimming Pool	A swimming pool related to the building.	0	unbounded
ASCC	Building. Additional. Building	An additional building located on the same premises, which may or may not be attached to this building.	0	unbounded
ASCC	Building. Specified. Additional Interest	An additional interest specified for this building.	0	unbounded
ASCC	Building. Applicable. Building Insurance Factor	The set of building insurance factors applicable to this building.	0	1

#### ビジネス情報項目

# **BIE**

- Core Component (CC)
  - 意味のある情報交換パッケージを生成する基礎情報単位
- Business Information Entity (BIE)
  - コア・コンポーネントを特定のビジネスで使用 する場合の情報単位
  - コア・コンポーネントをもとにして生成





## BIEの辞書情報

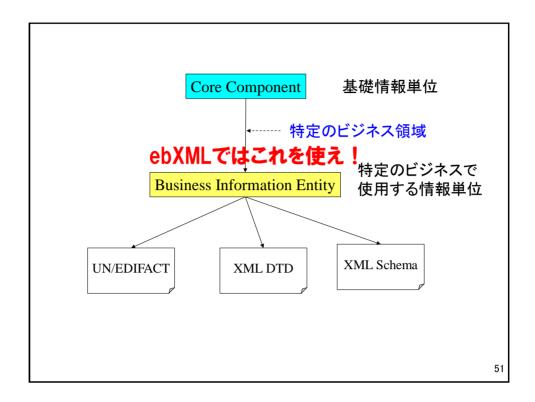
- Dictionary Entity Name
- Definition
- Sequence Number
- Occurrence Min, Max

Object class Property term Representation term, Object class term Qualifier term

	Dictionary Entry Name	Deminion	uence umber	Occi MIN	urrence MAX
ABIE	Lodging House_ Building. Details	A permanent fixed structure of the lodging house.			
BBIE	Lodging House_ Building. Identification. Identifier	A unique identifier for this lodging house building.	1	0	unbounded
BBIE	Lodging House_ Building. Formal_ Name. Text	A formal name, expressed as text, of this lodging house building.	2	1	unbounded
BBIE	Lodging House_ Building. Familiar_ Name. Text	The familiar name such as a nickname, expressed as text, of the lodging house building.	3	0	1
BBIE	Lodging House_ Building. Architectural_ Style. Text	The architectural style, expressed as text, of this lodging house building.	4	0	1
BBIE	Lodging House_ Building. Original_ Construction.  Date	The date of the original construction of this lodging house building.	5	0	1
BBIE	Lodging House_ Building. Latest_ Renovation.  Date	The date of the latest renovation of this lodging house building.	6	0	1
BBIE	Lodging House_ Building. <b>Description</b> . Text	The textual description of this lodging house building.	7	0	1
ASBIE	Lodging House_ Building. Actual. Lodging House_ Picture	An actual picture of this lodging house building.	1	0	unbounde
ASBIE	Lodging House_ Building. Distinctive. Lodging House_ Feature	A feature that is a distinctive characteristic of this lodging house building.	2	0	unbounded

# コア・コンポーネント・BIEの考え方

- ・情報の相互運用性 (interoperability)
- 構文によらない標準 (syntax-neutral)



```
< Lodging House Building >
    <ram: ID>0</ram: ID>
    <ram:FormalName>本館</ram:FormalName>
    <ram: ArchitecturalStyle>
        洋風コンクリート建築
    </ram: ArchitecturalStyle>
    <ram: OriginalConstructionDate>
        1923-01-01
    </ram:OriginalConstructionDate>
    <ram:LatestRenovationDate>
        2010-04-01
    </ram:LatestRenovationDate>
    <ram: ActualLodgingHousePicture>
    </ram:ActualLodgingHousePicture>
    <ram: DistinctiveLodgingHouseFeature>
    </ram:DistinctiveLodgingHouseFeature>
</LodgingHouseBuilding>
                                                      52
```

## UN/CEFACT標準制定までの流れ

- プロジェクトの申請・認可
  - SLH (Small Scaled Lodging House )関係
  - 日本の旅館のような複合商品を提供する「小規模 宿泊施設」
    - SLH Information (宿泊施設情報)
    - SLH Travel Product Information (宿泊商品情報)
    - SLH Reservation Information Process (宿泊予約情報)

<u>CEFACTホームページ</u>⇒Projects⇒Sectoral (Sign upが必要)

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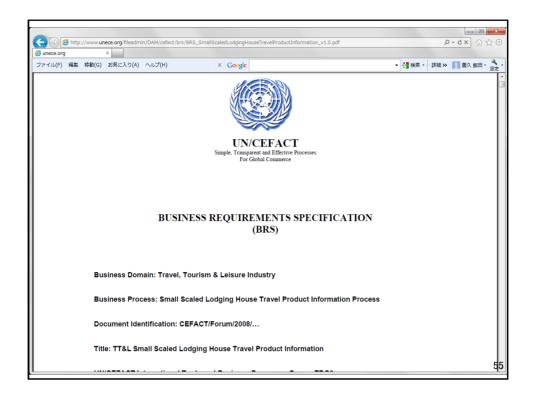
## BRS

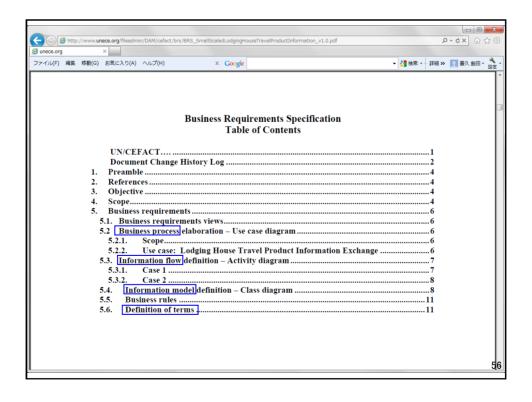
- Business Requirements Specification
- ビジネス要件仕様
- 対象業務の目的、範囲、業務プロセス、情報フロー、情報 モデル、業務ルール、用語の定義を記述した文書
- <u>CEFACTのホームページ</u>⇒ Outputs⇒Standards⇒BRS

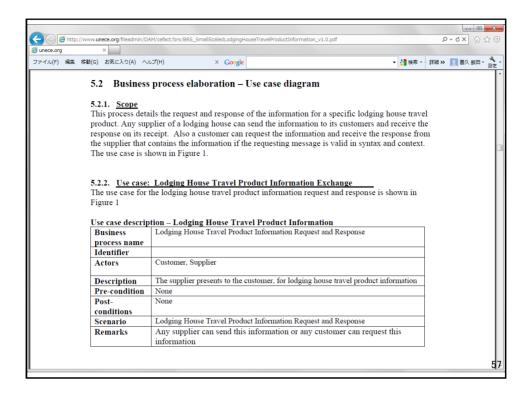
## · RSM

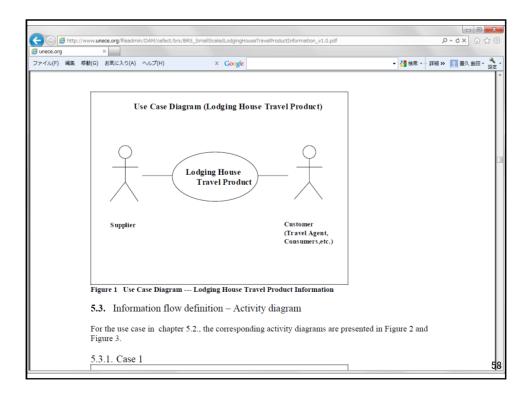


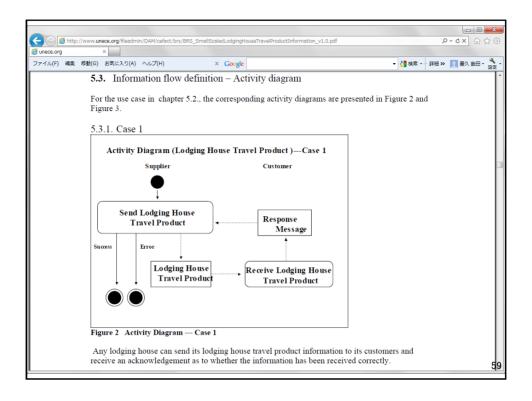
- Requirements Specification Mapping
- 要求仕様マッピング
- 情報モデルをより詳細に記述した文書
- ・XMLスキーマの自動生成
  - RSMのBIEを記述したExcel表からXMLスキーマを自動 生成

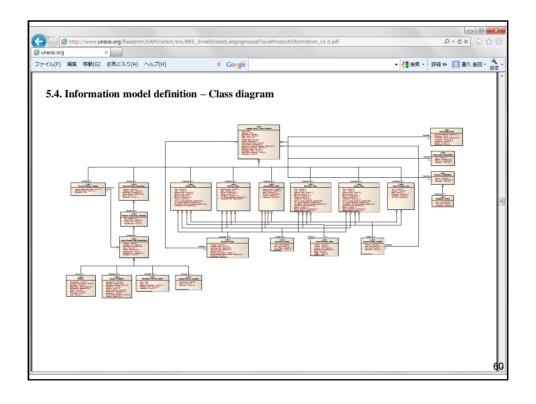


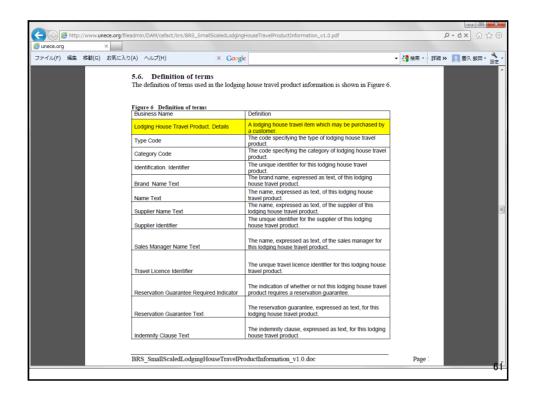












## · BRS

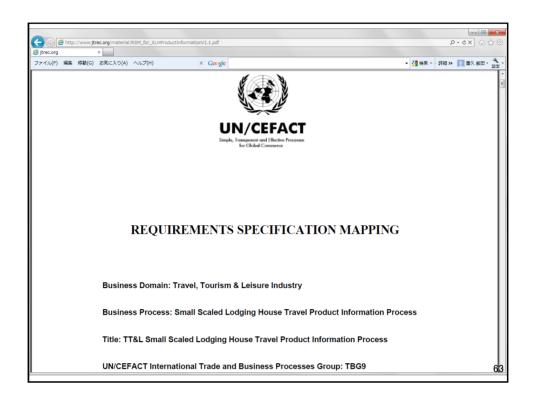
- Business Requirements Specification
- ビジネス要件仕様
- 対象業務の目的、範囲、業務プロセス、情報フロー、情報 モデル、業務ルール、用語の定義を記述した文書

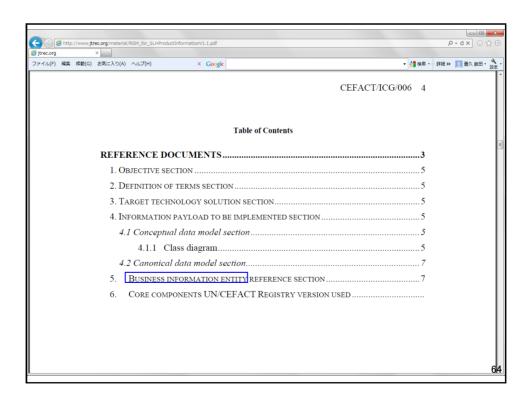
## · RSM

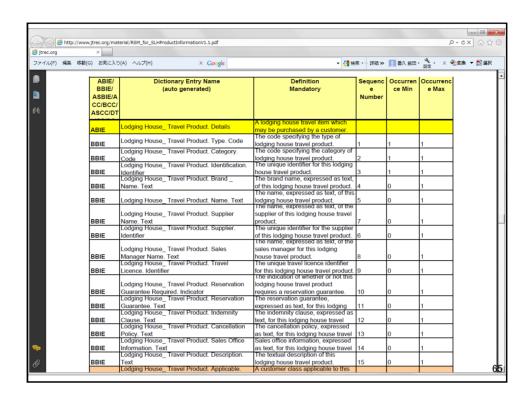
- Requirements Specification Mapping
- 要求仕様マッピング
- 情報モデルをより詳細に記述した文書
- <u>JTRECのホームページ</u>⇒ 成果・報告

#### JTREC

- ・XMLスキーマの自動生成
  - RSMのBIEを記述したExcel表からXMLスキーマを自動 生成







## · BRS

- Business Requirements Specification
- ビジネス要件仕様
- 対象業務の目的、範囲、業務プロセス、情報フロー、情報 モデル、業務ルール、用語の定義を記述した文書

## · RSM

- Requirements Specification Mapping
- 要求仕様マッピング
- 情報モデルをより詳細に記述した文書

## ·XMLスキーマの自動生成

- RSMのBIEを記述したExcel表からXMLスキーマを自動 生成
- <u>CEFACTのホームページ</u> → Outputs→Standards→XML Schemas **(愛**)





## 復習

- UN/CEFACT
- UN/EDIFACT
- ebXML
- コアコンポーネント(ACC、BCC、ASCC)
- BIE (ABIE, BBIE, ASBIE)
- SLH
- BRS
- RSM

