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**UN/CEFACT  
Core Components Technical Specification  
Version 3.0**

**2<sup>nd</sup> Public Review  
16 April 2007**

**20 Abstract**

21 The Core Components Technical Specification defines meta models and rules  
22 necessary for describing the structure and contents of conceptual and  
23 physical/logical data models, process models, and information exchange models.  
24 The CCTS is dependent on the Unified Modelling Language (UML) in terms of how it  
25 is expressed in this specification, but does not require UML in its implementation.

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## 301 **1 Status of This Document**

302 This UN/CEFACT Technical Specification is being developed in accordance with the  
303 UN/CEFACT/TRADE/22 Open Development Process (ODP) for technical  
304 specifications. The CCTS Project Team has approved it for internal review.

305 This document contains information to guide in the interpretation or implementation.

306 The document formatting is based on the Internet Society's Standard RFC format.

307 Distribution of this document is unlimited.

308 This version: UN/CEFACT Core Components Technical Specification, Version 3.0  
309 2<sup>nd</sup> Public Review of 16 April 2007

310 Previous version: Core Components Technical Specification Version 2.2 Working  
311 Draft B of 31 March 2006

312 This document may also be available in these non-normative formats: XML, XHTML  
313 with visible change markup. See also translations.

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315 document use rules apply.

## 316 **2 ISO 15000-5: Core Components Technical Specification** 317 **Project Team Participants**

318 We would like to recognize the following for their significant participation to the  
319 development of this specification.

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### 337 **2.1 Disclaimer**

338 The views and specification expressed in this document are those of the authors and  
339 are not necessarily those of their employers. The authors and their employers  
340 specifically disclaim responsibility for any problems arising from correct or incorrect  
341 implementation or use of this technical specification.

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## 346 **3 Introduction**

347 This specification describes and specifies a semantic-based approach to the well-  
348 understood problem of the lack of information interoperability within and between  
349 applications and data bases in the e-business arena. Traditionally, data has been  
350 designed for specific applications and databases without regard to interoperability.  
351 Standards for the exchange of that business data between applications and  
352 databases have been focused on static message definitions that have not enabled a  
353 sufficient degree of interoperability or flexibility. A more flexible and interoperable  
354 way of standardizing business semantics has long been required.

355 The UN/CEFACT (United Nations Centre for Trade Facilitation and Electronic  
356 Business) core component solution described in this technical specification presents  
357 just such a methodology. This *Core Component Technical Specification* (CCTS)  
358 describes a revolutionary approach for developing a common set of semantic  
359 building blocks that represent the general types of business data in use today. This  
360 approach provides for the creation of new business vocabularies as well as  
361 restructuring of existing business vocabularies to achieve semantic interoperability of  
362 data.

### 363 **3.1 Summary of Contents of Document**

364 This specification consists of the following Sections.

- 365 • [Abstract](#)
- 366 • Table of Contents
- 367 • [Section 1: Status](#)
- 368 • [Section 2: Project Team](#)
- 369 • [Section 3: Introduction](#)
- 370 • [Section 4: Objectives](#)
- 371 • [Section 5: Overview](#)
- 372 • [Section 6: Core Component Model](#)
- 373 • [Section 7: Business Information Entity Model](#)
- 374 • [Section 8: Data Types](#)
- 375 • [Section 9: Context](#)
- 376 • [Section 10: Definition of Terms](#)

377 The [Abstract](#), Table of Contents, and Sections [1](#), [2](#), [3](#), [4](#) and [5](#) are informative – with  
378 the exception of [Section 4.2.1 Conformance](#) which is normative. Sections [6](#), [7](#), [8](#) and  
379 [9](#) are normative, complementary and interdependent. Section [10](#) is normative.

380 In addition, the UN/CEFACT Forum will prepare supplemental documents that may  
381 be used in conjunction with this specification. These supplemental documents will  
382 include:

- 383 • Core Component Message Assembly (CCMA) – expands on the  
384 assembly principles contained in the CCTS and provides specific

- 385 methodology for assembling higher level business information entities  
386 (BIEs) for electronic messages.
- 387 • UN/CEFACT Context Methodology (UCM) –The context methodology  
388 provides a mechanism for business driven customization of BIEs.
  - 389 • Data Type Catalogue – The collection of UN/CEFACT Permissible  
390 Representation Terms, Core Data Types, and Business Data Types.
  - 391 • UML Profile for Core Components – Defines a UML profile for  
392 expressing core components in UML models.
  - 393 • Core Components Library (CCL) – represents the work of various  
394 organizations working in a joint endeavour to develop and publish  
395 semantically correct and meaningful information exchange parcels.

### 396 3.1.1 Notation

397 The keywords MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD,  
398 SHOULD NOT, RECOMMENDED, MAY, and OPTIONAL, when they appear in this  
399 document, are to be interpreted as described in [Internet Engineering Task Force  
400 \(IETF\) Request For Comments \(RFC\) 2119.1](#).

401 **[Definition]** – A formal definition of a term. Definitions are normative.

402 **[Example]** – A representation of a definition or a rule. Examples are informative.

403 **[Note]** – Explanatory information. Notes are informative.

404 **[Rn]** – Identification of a rule that requires conformance to ensure discovered core  
405 components (CCs) are properly defined, named and stored. The value R is a prefix  
406 to categorize the type of rule where R=A for Conformance rule, R=B for BIE rule,  
407 R=C for CC rule, R=X for Context rule, or R=D for Data Type (DT) rule. The value n  
408 (1..n) indicates the sequential number of the rule]. Rules are normative.

409 ***Italics*** – All words appearing in italics, when not titles or used for emphasis, are the  
410 first occurrences of special terms defined in Section 10.

411 ***courier*** – All words appearing in bolded 10 point *courier font* are values or  
412 objects.

### 413 3.2 Audience

414 The CCTS can be employed wherever data is being defined, stored, used, shared or  
415 exchanged. It is especially well suited for defining data models and for creating data  
416 exchange standards for information flows amongst and between enterprises,  
417 governmental agencies, and/or other organizations in an open, global environment.

418 This specification forms the basis for international cross-industry standards  
419 development work of business analysts, business users and information technology  
420 specialists. The user community consists of business people, data modellers,  
421 business document modellers, business process modellers, and application

---

Key words for use in RFCs to Indicate Requirement Levels - Internet Engineering Task Force, Request For  
Comments 2119, March 1997, <http://www.ietf.org/rfc/rfc2119.txt?number=2119>

422 developers of different organizations that require common understanding and  
423 interoperability of information.

### 424 **3.3 Related Documents**

425 The following documents provided significant levels of influence in the development  
426 of this document:

- 427 • [Information Technology – Metadata registries \(MDR\) – Part 1:  
428 Framework International Standardization Organization, ISO 11179-  
429 1:Second Edition 2004-09-15](#)
- 430 • [Information Technology – Metadata registries \(MDR\) – Part 2:  
431 Classification, ISO 11179-2:Second Edition 2005-11-15](#)
- 432 • [Information Technology – Metadata registries \(MDR\) – Part 3: Registry  
433 Metamodel and Basic Attributes, ISO 11179-3\(e\):Second Edition  
434 2003/Cor 1:2004](#)
- 435 • [Information Technology – Metadata registries \(MDR\) – Part 4:  
436 Formulation of Data Definitions, ISO 11179-4:Second Edition 2004-07-  
437 15](#)
- 438 • [Information Technology – Metadata registries \(MDR\) – Part 5: Naming  
439 and Identification Principles, ISO 11179-5:Second Edition 2005-09-01](#)
- 440 • [Information Technology - Metadata registries: Registration, ISO  
441 11179-6: Second Edition 2005-01-15](#)

## 442 **4 Objectives**

### 443 **4.1 Goals of the Technical Specification**

444 The CCTS has been developed to provide for standards based semantic data  
445 modelling. CCTS data modelling supports traditional data models, syntax specific  
446 instantiations of those data models, and syntax specific business information  
447 exchanges. CCTS data models are independent of any specific technology platform,  
448 operating system, or native language they are being employed on.

### 449 **4.2 Requirements**

450 Users of this specification should have an understanding of basic data modelling  
451 concepts and basic business information exchange concepts.

#### 452 **4.2.1 Conformance**

453 Applications will be considered to be in full conformance with this technical  
454 specification if they comply with the content of normative sections, rules and  
455 definitions.

456 [A1] Conformance shall be determined through adherence to the content of  
457 normative sections, rules and definitions.

### 458 **4.3 Caveats and Assumptions**

459 The components created as a result of employing this specification should be  
460 maintained in a universally freely accessible Core Component Library (CCL).  
461 UN/CEFACT will maintain their CCL in an ebXML compliant registry and make its  
462 contents available to the entire core component community. It is recommended that  
463 all users of this specification submit their components for inclusion in the  
464 UN/CEFACT CCL.

465 **5 Overview**

466 This Core Components Technical Specification (CCTS) provides a way to identify,  
 467 capture and maximize the re-use of business information to support and enhance  
 468 information inter-operability across multiple business situations. The specification  
 469 focuses both on human-readable and machine-processable representations of this  
 470 information.

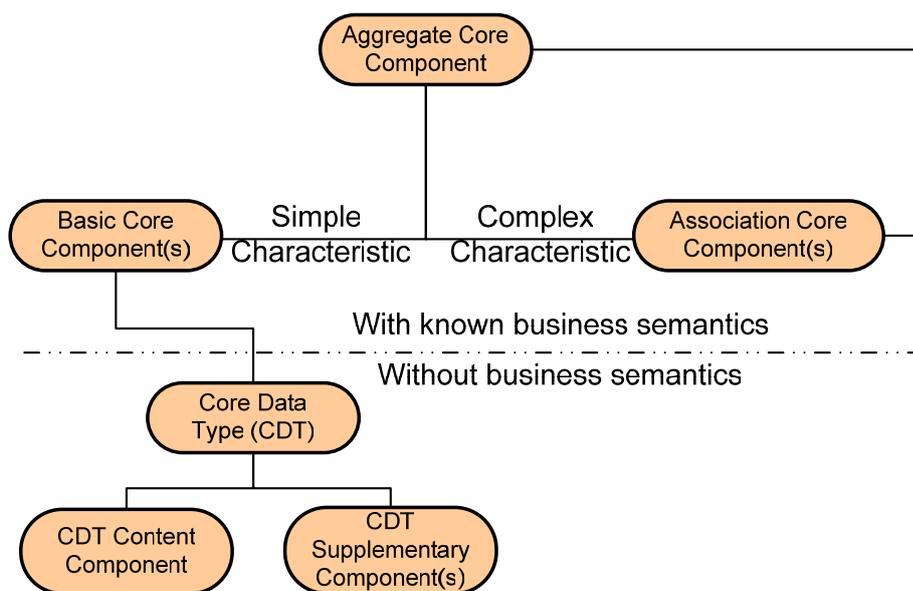
471 The CCTS approach is more flexible than current data and information exchange  
 472 standards because the semantic standardization is done in a syntax-neutral  
 473 fashion. This syntax-neutral semantic based methodology allows for the richness  
 474 inherent in natural language to be used to create data and information exchange  
 475 models that are devoid of computer-driven syntax limitations and requirements.

476 UN/CEFACT business process and core component solutions capture a wealth of  
 477 information about the business reasons for variation in data model and message  
 478 semantics and structure. In the past, such variations have introduced  
 479 incompatibilities. The core components mechanism uses this rich information to  
 480 allow identification of exact similarities and differences between semantic models.

481 The CCTS key concepts encompass two focus areas— core components and  
 482 business information entities.

483 **5.1 Core Components**

484 The foundational concept of this specification is the core component. Core  
 485 components are semantic building blocks that can be used for all aspects of data  
 486 and information modelling and exchange. Core components are the linchpin for  
 487 creating interoperable business process models and business documents. Core  
 488 components are conceptual in nature, they are used for creating context specific  
 489 BIEs as defined in [Section 5.6.2](#). Figure 5-1 shows three different categories of  
 490 core components – aggregate, basic, and association that are discussed in the  
 491 following subsections.



492

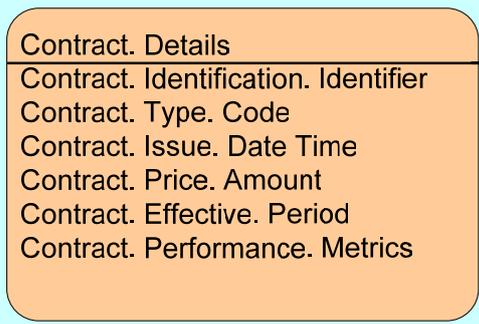
493 **Figure 5-1. Core Component Overview**

494

495 **5.1.1 Aggregate Core Component**

496 An Aggregate Core component (ACC) is a collection of related pieces of  
 497 information that together convey a distinct meaning, independent of any specific  
 498 context. In data modelling terms, an ACC is the representation of an entity or object  
 499 class, and contains attributes or properties.

500 [Example] – Aggregate Core Component with Basic Core Component  
 501 and Association Core Component properties



502

503 **Contract. Details** ACC

504 A contract is an agreement between two or more parties, especially one that is  
 505 written or spoken and enforceable by law.

506 **Contract. Identification. Identifier** BCC

507 A unique identification for this contract.

508 **Contract. Type. Code** BCC

509 A code specifying a type of contract such as a fixed price contract or a time and  
 510 materials based contract.

511 **Contract. Issue. Date Time** BCC

512 A date or date time or other date time value of the issuance of this contract

513 **Contract. Price. Amount** BCC

514 Monetary value of a price of this contract

515 **Contract. Effective. Period** ASCC

516 A period within which the provisions of this contract are, or will be, in force or  
 517 effective.

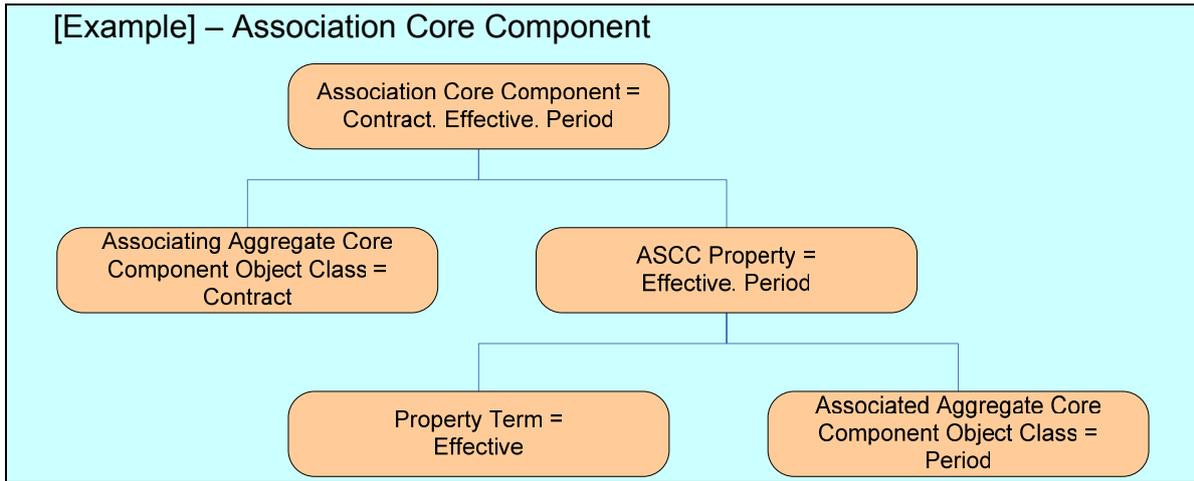
518 **Contract. Performance. Metrics** ASCC

519 Performance metrics for this contract.

520 **5.1.2 Association Core Component**

521 An Association Core Component (ASCC) is a complex property of an ACC that  
 522 associates two ACCs, where one ACC is a property of the other. An ASCC consists  
 523 of an ASCC Property plus the object class of the parent ACC. The ASCC Property  
 524 is reusable across object classes, but once it has been given the object class of a  
 525 parent ACC, it becomes an ASCC that is unique to the object class to which it is  
 526 assigned.

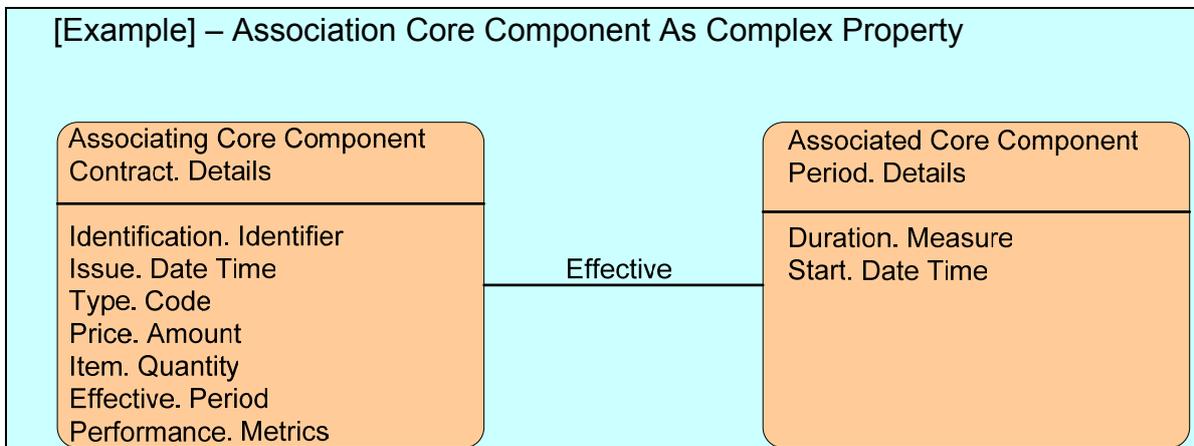
527



528

529 Because ASCCs represent hierarchical structures, in CCTS constructs they are  
530 equivalent to UML aggregation associations.<sup>2,3</sup>

531



533

534

535

The example shows two ACCs:

536

- `Contract. Details`

537

- `Period. Details`

538

Each ACC has a number of properties.

539

The ACC `Period. Details` has:

540

- two simple BCC Properties:

541

- `Duration. Measure`

542

- `Start. Date Time`

543

- no complex ASCC Properties

544

<sup>2</sup> UML Association – A UML Association defines a relationship between classes of objects. UML associations can be either aggregation associations or composition associations.

<sup>3</sup> UML Aggregation – An Aggregation is a special form of UML Association that specifies a whole-part relationship between the aggregate (whole) and a component part.

545 [Example] – Association Core Component as Complex Property (Continued)•  
546 two complex ASCC properties:

547 The ACC `Contract.Details` has:

- 548 • five simple BCC properties:
  - 549 • `Identification.Identifier`
  - 550 • `Issue.Date Time`
  - 551 • `Type.Code`
  - 552 • `Price.Amount`
  - 553 • `Item.Quantity`
- 554 • two complex ASCC properties:
  - 555 • `Effective.Period`
  - 556 • `Performance.Metrics`

557 The simple properties are BCC properties. They represent a singular  
558 characteristic and their set of allowed values is defined by a CDT.

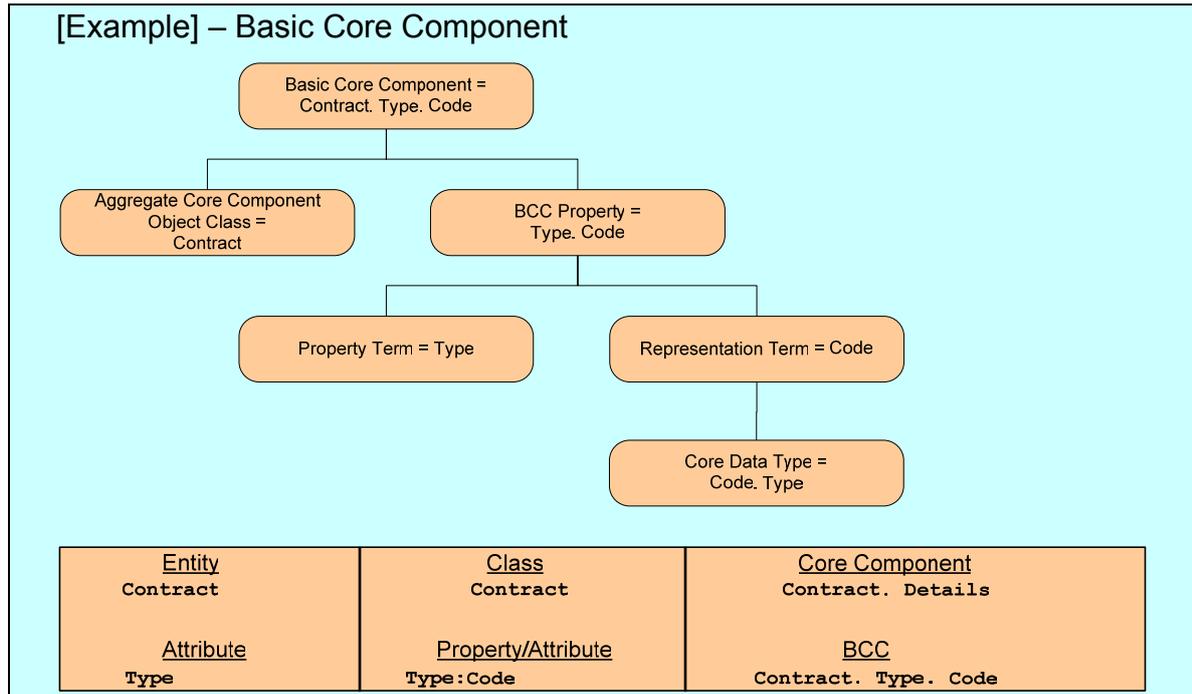
559 The complex properties are ASCC properties. They represent complex  
560 characteristics and their structure is defined by another ACC. For example, the  
561 structure of `Contract.Effective.Period` is described by `Period.Details`.

562 In a UML diagram, the effective association between the `contract` and `period`  
563 classes are simply represented by connectors and roles. However, since CCTS  
564 is a semantic model, it is necessary to represent the associations as part of the  
565 content of the associating `contract` class. Thus, the ASCC as represented by  
566 the ASCC property is actually contained in the content model of the associating  
567 `Contract.Details` ACC.

### 568 5.1.3 Basic Core Component

569 A Basic Core Component (BCC) represents a unique property of an ACC. A BCC  
570 consists of a BCC Property plus the object class of the parent ACC. The BCC  
571 Property is reusable across object classes, but once it has been given the object  
572 class of a parent ACC, it becomes a BCC that is unique to the object class to which  
573 it is assigned. In data modeling terms, a BCC is the equivalent of a traditional entity  
574 attribute or class property (See section 5.7).

575

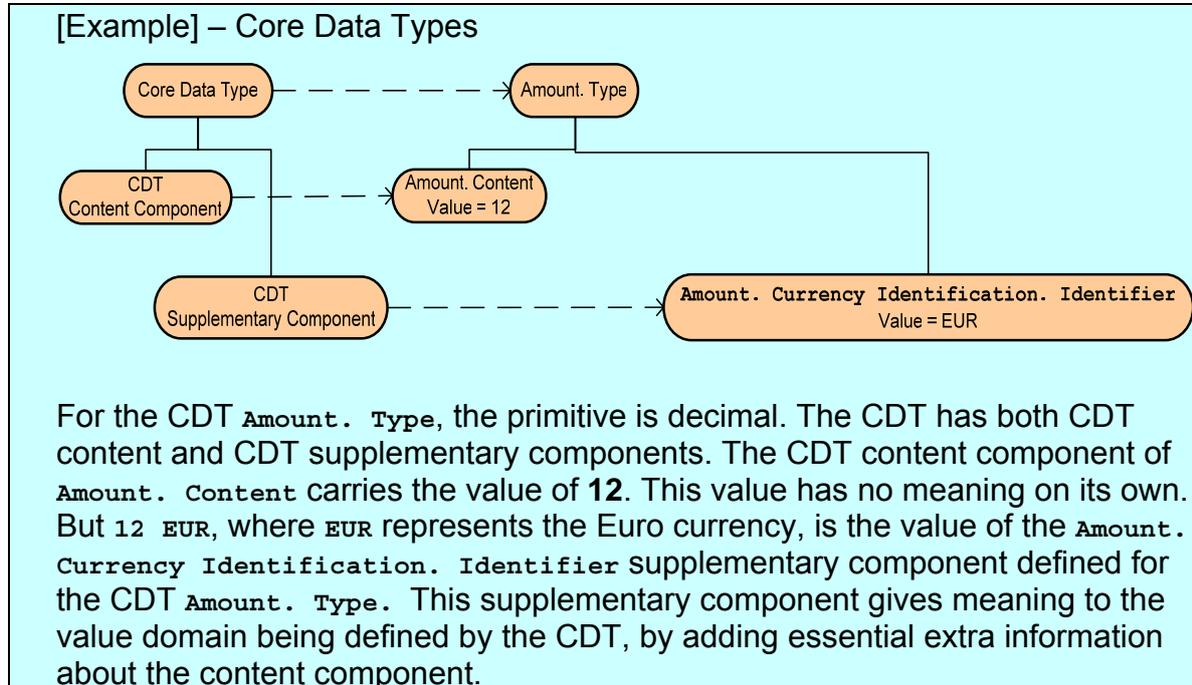


576  
577

## 578 5.2 Core Data Types

579 CCs (and BIEs) have properties that include their data type. As identified in ISO  
580 11179, a data type constitutes the value space for the allowed values for a  
581 property. For CCs this data type is called a core data type (CDT).

### 582 [Example] – Core Data Types



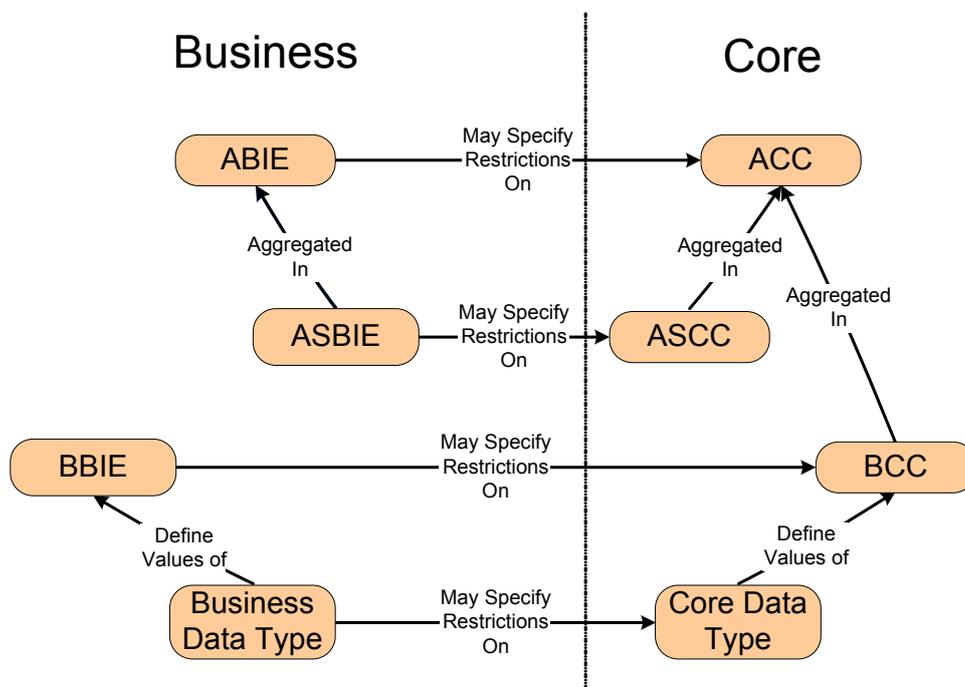
593 A CDT represents the full range of values that shall be used for the representation  
594 of a particular CC property. Every CDT has a primitive type, a content component,  
595 and one or more supplementary components. As shown in Figure 5-1, the value  
596 domain of the CDT is defined by the union of the CDT content component (the  
597 actual value of the data element), and the CDT supplementary components.

598 Supplementary components give meaning to the value domain by adding essential  
 599 extra information about the content component. The number of defined  
 600 supplementary components varies by CDT, and is determined by the number of  
 601 attributes necessary to fully define the value domain of the CDT.

602 CDTs have no business semantics. Because CDTs form the bedrock for  
 603 interoperability of CC's, all CDTs are reviewed and approved at the point of use as  
 604 part of the overall CCTS standards stack.<sup>4</sup>

605 **5.3 Business Information Entities**

606 Core Components act as conceptual models that are used to define Business  
 607 Information Entities (BIEs). BIEs are the expression of the conceptual core  
 608 components as logical/physical data model objects and information exchanges.  
 609 BIEs are created through the application of context and may be qualified to  
 610 guarantee unique business semantics. A specific relationship exists between CCs  
 611 and BIEs; BIEs are always derived from their source CC. Thus, the structure of  
 612 CCs and BIEs are complementary in many respects.



613  
 614 **Figure 5-2. Relationships Between Core Components and Business Information**  
 615 **Entities**

616 The features of the relationship between CCs and BIEs are described in Figure 5-2.  
 617 The key differentiator between CCs and BIEs is the concept of business context.  
 618 Business context is a mechanism for qualifying and refining CCs according to their  
 619 use under particular data model or business information exchange circumstances.  
 620 In CCTS, business context is formally described for specific business circum-  
 621 stances for each BIE. This is accomplished by assigning values to a set of context

<sup>4</sup> Approved CDTs and their corresponding data type terms, representation terms, allowed restrictions, and supplementary components are published by the UN/CEFACT Applied Technology Group in the Data Type Catalogue.

622 categories (See Section 8). Once these business contexts are identified, BIEs can  
 623 be differentiated to take into account any necessary qualification and refinement  
 624 needed to support the use of the CC in the given business context.<sup>5</sup>

625 [Note] – Generic Terms

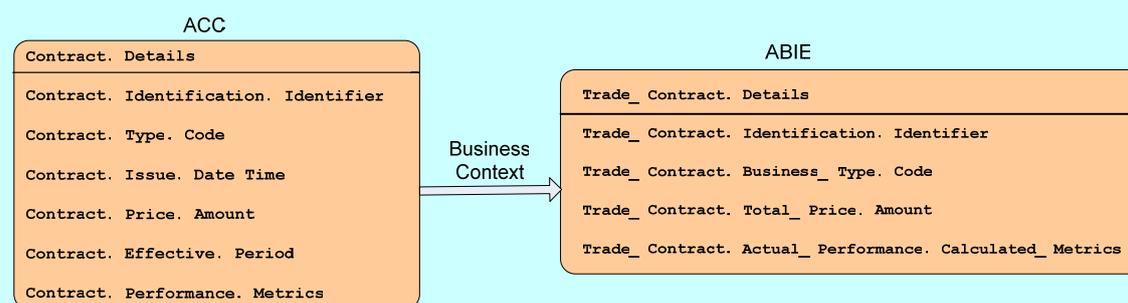
626 The term core component is used as a generic term that encompasses ACCs,  
 627 BCCs, and ASCCs and their properties. Equally, the term business information  
 628 entity is used as a generic term encompassing ABIEs, BBIEs, and ASBIEs and  
 629 their properties.

630 Each of the BIEs is derived from its source CC as shown in figure 5-2.

631 **5.3.1 Aggregate Business Information Entity**

632 An Aggregate Business Information Entity (ABIE) is an ACC that has a unique  
 633 business semantic definition in a specific business context. An ABIE is always  
 634 derived from an ACC through the application of business context. Just as an ACC  
 635 is the representation of an object class, so too are its derived ABIEs. An ABIE may  
 636 be qualified at the object class level, and its properties may be qualified at the

637 [Example] – Aggregate Business Information Entity with context driven  
 638 restrictions and qualifications



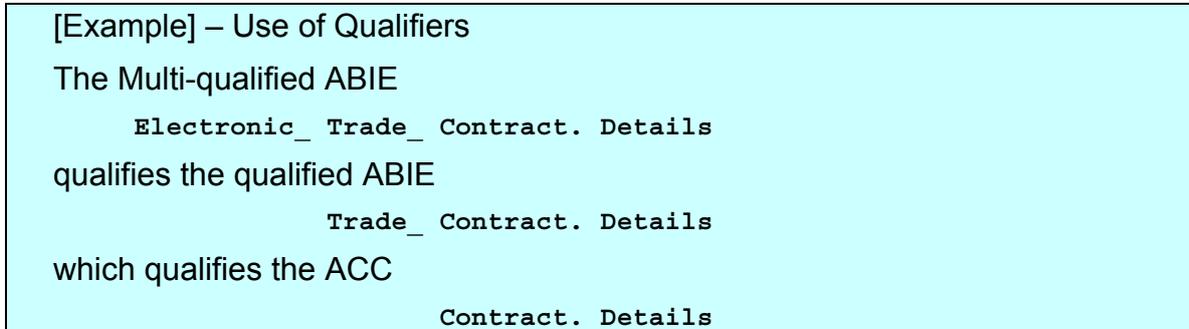
639 For the ABIE `Trade_Contract. Details`, business context has been applied to  
 640 the ACC of `Contract. Details`. This context has resulted in qualification of the  
 641 object class, qualification of selected property terms, and restriction on the  
 642 content model.  
 643

644 property term level. The content model of the ABIE can reflect restrictions on the  
 645 content model of the ACC through:

- 646 • Restrictions on the cardinality of the BCCs and ASCCs
- 647 • Use and non-use of individual BCCs and ASCCs
- 648 • Qualification of individual ASCC and BCC properties
- 649 • Restrictions on the content model of an associated ACC for an  
 650 ASCC
- 651 • Restrictions on the data type of the BCC
- 652 • Restrictions on the concept or conceptual domain of the ASCC or  
 653 BCC property as reflected in the definition and usage rules.

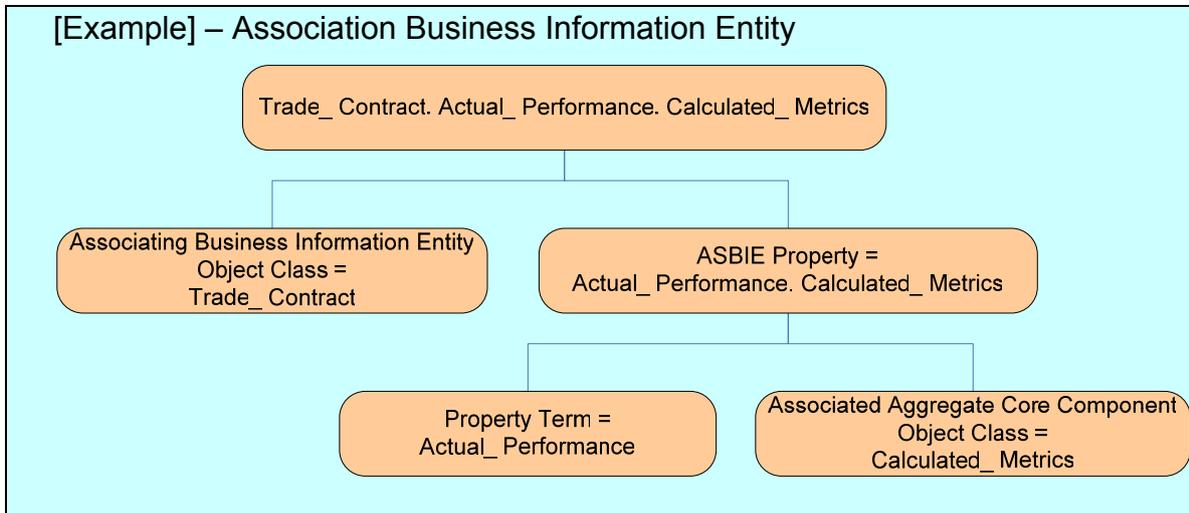
<sup>5</sup> The *Core Components' Context* mechanism provides the more detailed linkage between specific business data and the exact circumstances of its business use.

654 ASCC and BCC properties may have different qualifiers applied. This may result in  
 655 the ABIE having a greater number of qualified properties than its corresponding  
 656 ACCs unqualified properties. This is still considered a restriction since each BIE  
 657 property represents a restriction to its corresponding core component property.  
 658 ASCC and BCC properties may also have multiple qualifiers applied. Multiple  
 659 qualifiers create a qualifier hierarchy, with each additional qualifier reflecting a  
 660 further restriction to its less qualified BIE property.



668 **5.3.2 Association Business Information Entity**

669 An Association Business Information Entity (ASBIE) is a BIE that represents a  
 670 complex property of an ABIE. An ASBIE has the structure of, and represents  
 671 another ABIE. An ASBIE is based on an ASCC, but exists in a business context. As  
 672 its source ASCC, an ASBIE consists of an ASBIE Property plus the object class of  
 673 the parent ABIE. The ASBIE Property is reusable across object classes, but once it  
 674 has been given the object class of a parent ASBIE, it becomes an ASBIE that is  
 675 unique to the object class to which it is assigned.

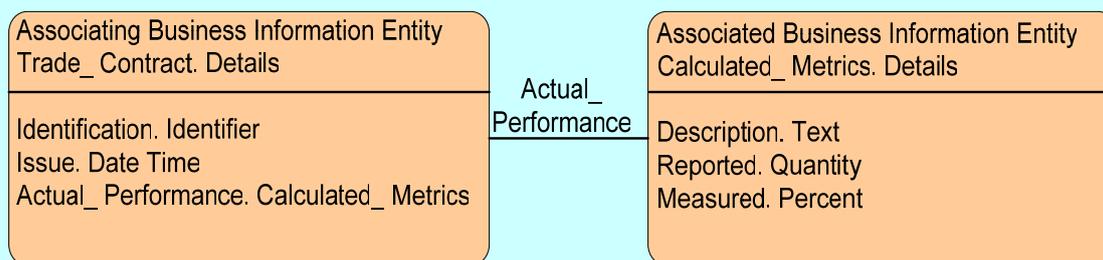


677 ASBIEs are equivalent to UML aggregation and composition associations.<sup>6</sup>

<sup>6</sup> Composition – A form of aggregation which requires that a part instance be included in at most one composite at a time, and that the composite object is responsible for the creation and destruction of the parts. Composition may be recursive.

680  
681

[Example] – Aggregation Representation of an Association Business Information Entity



682

683

The example shows two ABIEs:

684

- **Trade\_Contract. Details**

685

- **Calculated\_Metrics. Details.**

686

Each ABIE has a number of properties (i.e. business characteristics).

687

The ABIE **Calculated\_Metrics. Details** has:

688

- three simple properties:

689

- **Description. Text**

690

- **Reported. Quantity**

691

- **Measured. Percent**

692

- no complex properties

693

The ABIE **Trade\_Contract. Details** has:

694

- two simple properties:

695

- **Identification. Identifier**

696

- **Issue. Date Time**

697

- one complex property:

698

- **Actual\_Performance. Calculated\_Metrics**

699

The simple properties are BBIEs. They represent a singular business characteristic and their set of allowed values is defined by a BDT.

700

701

The complex property is an ASBIE. It represents a complex business characteristic and its structure is therefore defined by another ABIE. The structure of **Actual\_Performance. Calculated\_Metrics** is described by **Calculated\_Metrics. Details**.

702

703

704

705

### 5.3.3 Basic Business Information Entity

706

A Basic Business Information Entity (BBIE) is a BCC used in a specific business context. Multiple BBIEs can be derived from a single BCC. A BBIE has a unique business semantic definition. A BBIE consists of a BBIE Property plus the object class of the parent ABIE. The BBIE Property is reusable across object classes. In data modelling terms, a BBIE is the equivalent of a traditional entity attribute or class property (11179)/attribute (UML) (see [section 5.7](#)).

707

708

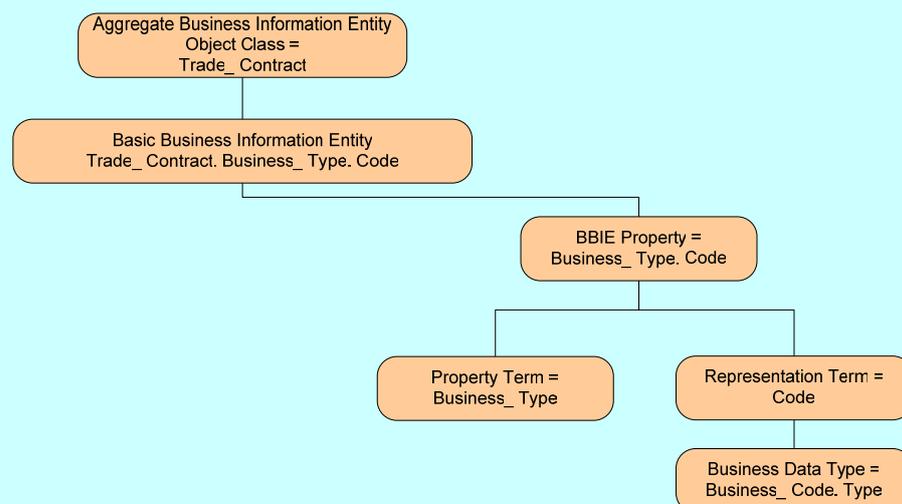
709

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711

712

## [Example] – Basic Business Information Entity with Qualifiers



713

714

Basic Core Component

715

`Contract.Type.Code`

716

Basic Business Information Entity

717

`Trade_Contract.Business_Type.Code`

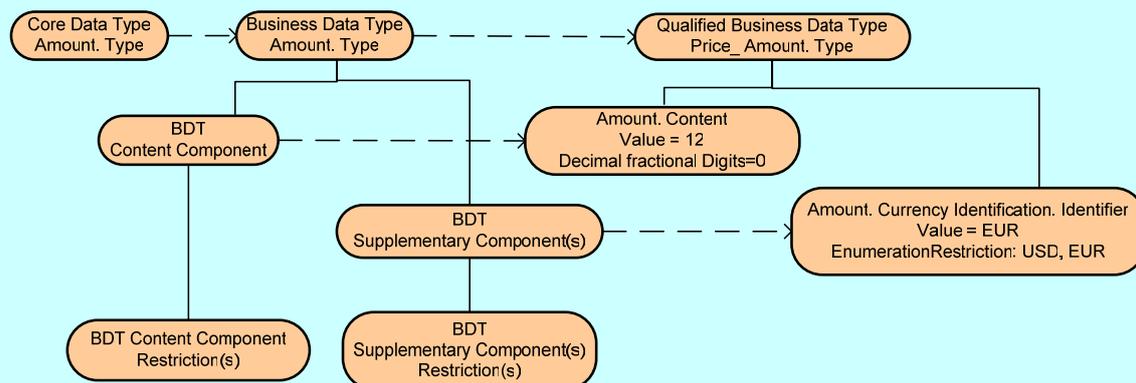
718 Every BBIE Property is derived from a BCC Property. Like their BCC Property  
 719 counterparts, BBIE properties are reusable across object classes, but once it has  
 720 been given the object class of a parent ABIE, it becomes a BBIE that is unique to  
 721 the object class to which it is assigned. Each BBIE Property has a [Business Data](#)  
 722 [Type \(BDT\)](#) that describes its value domain. BBIE BDTs are derived from the CDT  
 723 of the BCC.

724 **5.4 Business Data Types**

725 For every approved CDT, a corresponding unrestricted business data type will be  
 726 created. This business data type will have no restrictions of the set of values of its  
 727 source CDT's content component or supplementary components. Additional  
 728 business data types may also be created that include restrictions of the set of  
 729 values of its source CDT's content component and/or Supplementary  
 730 Component(s). The restrictions represent a qualification of the BDT similar to the  
 731 qualification of ABIEs. Both the content component and supplementary  
 732 component(s) have allowed component restrictions that provide all information  
 733 necessary to understand the value domain for a specific BBIE. In addition to  
 734 allowed component restrictions, BDTs may restrict the content model (only use a  
 735 subset) of the allowed supplementary components from its source CDT. Restricted  
 736 BDTs may be further restricted in hierarchical fashion through additional, more  
 737 restrictive, content and/or supplementary component restraints.

738  
739

### Example – Business Data Type with BDT Content Component and BDT Supplementary Component Restrictions

740  
741  
742

The BDT of `Price_Amount. Type` is derived from the BDT of `Amount. Type` which is derived from the CDT of `Amount. Type`.

743  
744  
745  
746

For the BDT `Price_Amount. Type`, the primitive is decimal. The BDT qualifier of `price` semantically conveys the data type value domain restrictions being applied to the source BDT of `Amount. Type` for its specific use as the value domain for a type of payment.

747

The BDT has both BDT content and BDT supplementary components.

748  
749  
750  
751

In the example, the BDT content component of `Amount. Content` carries the value of 12. The allowed value range for the content component has been restricted using the BDT content component restriction of `Decimal Fractional Digits = 0`.

752  
753  
754  
755  
756

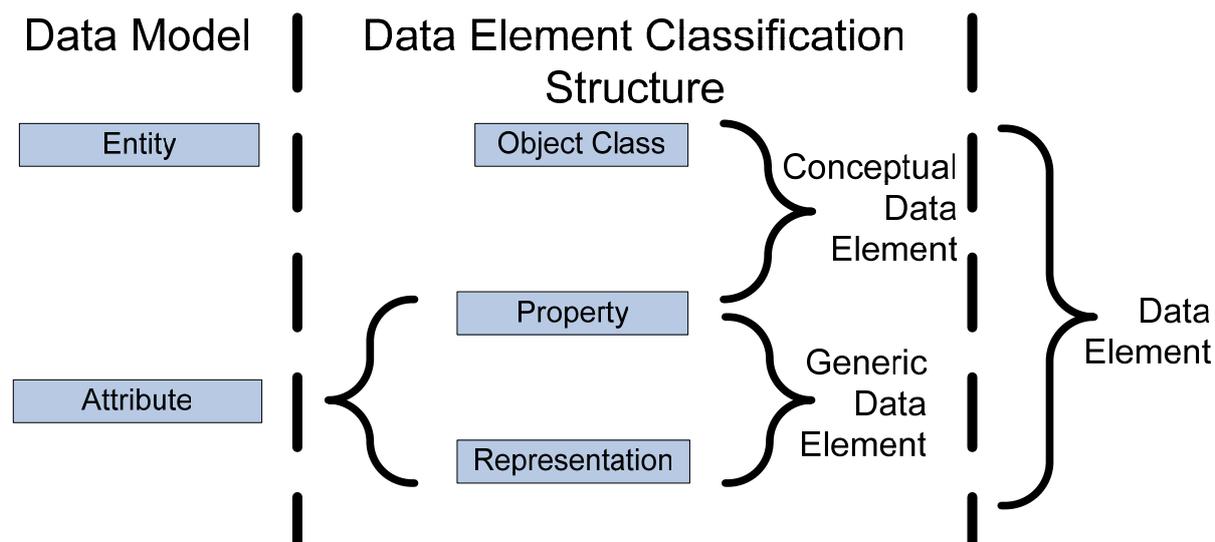
In the example, the BDT `Amount. Currency Identification. Identifier` supplementary component carries the value of `EUR`, where `EUR` represents the Euro currency. The BDT `Amount. Currency Identification. Identifier` supplementary component has been restricted using the enumeration component restriction to allowed values of `USD` or `EUR`.

757  
758

## 5.5 Relationship between ISO 11179 Data Element Concepts and Core Components Constructs

759  
760  
761  
762  
763  
764  
765  
766  
767  
768  
769  
770

There is a direct relationship between the constructs of CCTS and those of ISO 11179. As shown in figure 5-3, the ISO 11179 data element concept consists of object class, property term, and representation term. The representation term, combined with a property term, constitutes a generic data element. This generic data element is the equivalent of Basic Core Component properties and Basic Business Information Entity properties. In ISO 11179, these generic data elements are reusable across object classes, and inherit the name of the object class in which they occur. Similarly, in CCTS, these properties are reusable across ACCs and ABIEs, and inherit the name of the object class in which they occur. However, once a property is included in an object class, it becomes fixed in that class by inheriting the object class term, and may have different value domain restrictions defined for it through qualified business data types.



771  
772 **Figure 5-3. ISO 11179 Data Element Model**

773 The ISO 11179 object class and property term constitute a conceptual data  
774 element. These conceptual data elements do not have a specific representation  
775 (value domain), and are reusable by applying different representations that create  
776 conceptually similar but distinct data elements. This concept is not currently  
777 included in the CCTS metamodel, but can be accommodated by implementers who  
778 choose to maintain such constructs in a registry.

779 The ISO 11179 object class, property term, and representation term together  
780 constitute a data element. These data elements are the equivalent of BCCs,  
781 ASCCs, BBIEs and ASBIEs. In ISO 11179 and UML, these data elements (classes)  
782 are unique in their occurrence, but can be associated with other object classes  
783 through UML association. When such UML associations of object classes occur,  
784 they are instantiated as ASCCs and ASBIEs in the CCTS model.

## 785 **5.6 Relationship between UN/CEFACT Modelling Methodology** 786 **and Core Components Constructs**

787 UN/CEFACT has developed the *UN/CEFACT Modelling Methodology* (UMM). The UMM  
788 base and foundation modules define a UML profile for modeling choreographies of  
789 business collaborations and their business document exchanges.<sup>7</sup> The UMM is the  
790 recommended business process and information modelling methodology for developing  
791 CCTS artefacts. Modelling business documents within UMM should follow the *UML*  
792 *Profile for Core Components*.

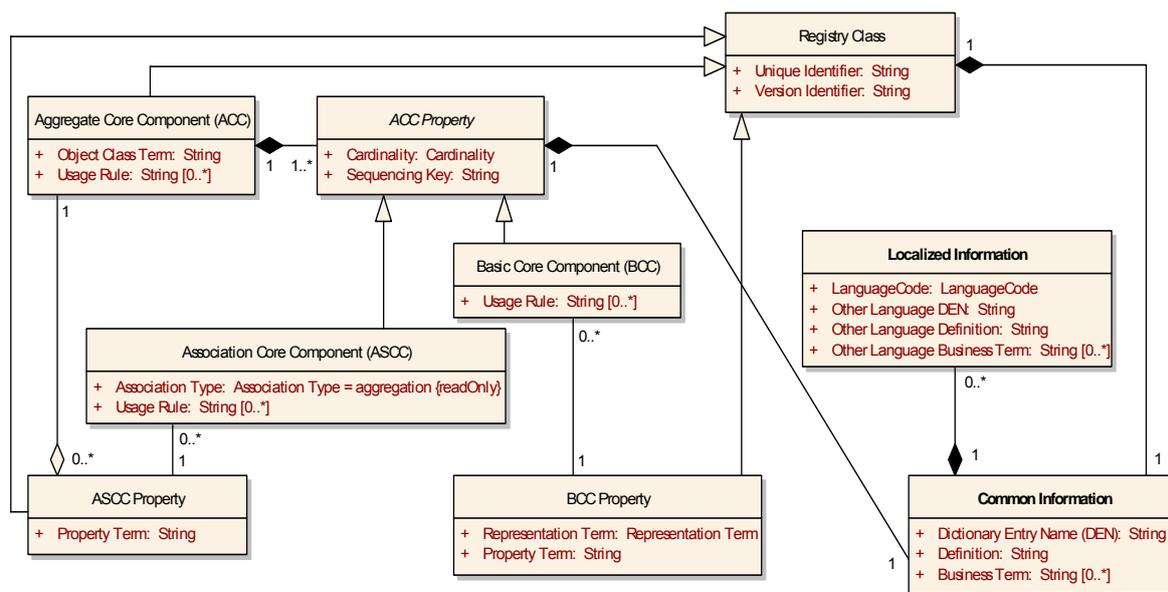
<sup>7</sup> The UN/CEFACT Modelling Methodology (UMM) is a methodology for *Business Process* and information modelling that is based on the Object Management Group's Unified Modelling Language.

## 793 6 Core Component Model

794 This section provides a detailed technical explanation of the Core Component  
795 metamodel as seen in the UML diagram figure 6-1.

### 796 Note – Models

797 Models are UML conformant figures and are normative to the level of detail at which  
798 they exist.



799  
800 **Figure 6-1. UML Diagram of Core Component Basic Definition Model**

### 801 6.1 Overview

802 A core component is a building block for the development of a semantically correct  
803 and meaningful business information exchange 'parcel' containing the information  
804 pieces needed to describe a specific concept.

#### 805 [Definition] – Core Component (CC)

806 A Core Component is a semantic building block for creating clear and meaningful  
807 data models, vocabularies, and information exchange packages. Core  
808 Components are used as the basis for creating Business Information Entities.

809 There are five categories of Core Components (CCs):

- 810 • Aggregate Core Component (ACC)
- 811 • Association Core Component (ASCC)
- 812 • Basic Core Component (BCC), and
- 813 • ASCC Property
- 814 • BCC Property

815 [C1] A CC shall be an ACC, ASCC, BCC, ASCC Property, or BCC Property.

816 [Note] – ACC Property

817 An ACC property is a generalization of a BCC or an ASCC, and not a property in its  
818 own right.

819 ACCs, ASCCs, BCCs, ASCC Properties, and BCC Properties are collectively called  
820 CCs and are typically stored in a registry, database, or other mechanism to  
821 maximize their reuse.

## 822 **6.2 Core Component Naming and Definition Conventions**

823 A naming convention is necessary to gain consistency in the naming and defining of  
824 all CCs. The resulting consistency facilitates comparison during the discovery and  
825 analysis process, and precludes ambiguity, such as the development of multiple CCs  
826 with different names that have the same semantic meaning.

827 The CC naming and definition conventions are derived from the guidelines and  
828 principles described in *ISO 11179 Part 4 – Definitions* and *ISO 11179 Part 5 –*  
829 *Naming and Identification Principles*. In certain instances, these guidelines have  
830 been adapted to the overall CC environment. In particular, the guidelines have been  
831 extended to cover the naming and defining of all CCs defined in this standard.

832 The official language for UN/CEFACT CCs is English. All official dictionary entries  
833 will be in English. CC discovery work may very well occur in other languages;  
834 however official submissions for inclusion in the UN/CEFACT component library  
835 must be in English. In order to ensure absolute clarity and understanding of the  
836 names and definitions it is essential to use words from the *Oxford English Dictionary*.  
837 A supplementary controlled vocabulary will be developed to identify the definition to  
838 be used for any words that are potentially ambiguous. This controlled vocabulary  
839 shall also be used to identify the preferred word in cases where more than one word  
840 might be used to cover the same definition. The controlled vocabulary will also  
841 contain terms not found in the *Oxford English Dictionary*. This will ensure that each  
842 word within any of the names and definitions is used in a consistent and  
843 unambiguous way. The resultant semantic integrity will also mean that translation  
844 into other languages retains the precise original meaning.

845 [Note] – CamelCase

846 The use of CamelCase for DENs has been considered, but has been rejected for the  
847 following reasons:

- 848 • Use of CamelCase will not allow the use of spell checkers
- 849 • Strict use of CamelCase makes it impossible to use separators (“.”)  
850 and therefore doesn’t allow an unambiguous identification of the  
851 composing parts of the DEN.  
852

853 [Note] – UN/CEFACT Controlled Vocabulary

854 Implementers are encouraged to use the UN/CEFACT controlled vocabulary as the  
855 authoritative source for terms and definitions.

## 856 **6.3 Registry Class**

857 A registry class represents a cohesive set of information associated with a single  
858 CC.

859 [Definition] – Registry Class

860 A registry class is the formal definition of all the common information necessary to  
861 be recorded in the registry by a registry artefact – core component, a business  
862 information entity, a data type or a business context.

863 Each registry class contains the following information:

- 864 • Unique Identifier
- 865 • Unique Version Identifier

866 [Note] – CC Identifier Structure

867 There are no specific rules for the structure of the CC identifiers. Implementers are  
868 free to choose any structure providing it guarantees uniqueness within the library to  
869 which it belongs.

870 [C2] A registry class shall be created for each ACC, BCC Property, and ASCC  
871 Property.

872 [Note] – Registry Class

873 Although the term registry class is used, no normative requirement exists to actually  
874 use a registry. Other storage mechanisms such as data bases may also be used to  
875 uniquely store registry classes and their associated subordinate classes.

## 876 6.4 Core Component Common Information

877 The CC common information class provides necessary component information that  
878 is applicable to components either directly or through inheritance. The CC common  
879 information class contains the following information:

- 880 • **DEN** – this is the unique official name of the CC in the dictionary.
- 881 • **Definition** – this is the unique business semantic meaning of the CC.
- 882 • **Business Term(s)** – this is a synonym term under which the  
883 component is commonly known and used in business. A CC may have  
884 several business terms or synonyms.

885 [C3] CC common information content shall be in the English language following  
886 the complete *Oxford English Dictionary*. Where conflicting spellings exist,  
887 the spelling listed as the primary British spelling shall be used.

### 888 6.4.1 Core Component Dictionary Entry Name

889 CC naming rules are based on the following concepts as defined in ISO 11179:

- 890 • **Object Class** – represents the logical data grouping or aggregation (in  
891 a logical data model) to which a property belongs. The object class is  
892 expressed by an object class term. Thus, the object class is the part of  
893 a CCs DEN that represents an activity or object. Object classes have  
894 explicit boundaries and meaning and their properties and behaviour  
895 follow the same rules.
- 896 • **Property Term** – represents a distinguishing characteristic of the  
897 object class and shall occur naturally in the definition.

- 898           • **Representation Term** – an element of the component name which  
899           describes the form in which the component is represented.
- 900    [C4]    CC DENs shall be in the English language following the latest version of the  
901           complete *Oxford English Dictionary*. Where conflicting spellings exist, the  
902           spelling listed as the primary British spelling shall be used.
- 903    [Note] – Oxford English Dictionary
- 904    Users may choose to utilize any version of the Oxford English Dictionary to create  
905    the spelling and definitions of components; however the complete Oxford English  
906    Dictionary will be the authoritative source for conflict resolution between competing  
907    spellings of component names or definitions.
- 908    [C5]    A CC DEN shall be unique amongst all DENs within the library of which it is  
909           a part.
- 910    [C6]    A CC DEN shall be extracted from the CC definition.
- 911    [C7]    A CC DEN shall not include consecutive identical words.
- 912    [C8]    A CC DEN and all its components shall be in singular form unless the  
913           concept itself is plural.
- 914    [Example] – Singular versus Plural
- 915           The singular `GOOD` does not exist as a semantically meaningful term for a supply  
916           chain item, whereas `GOODS` is a plural noun whose concept involves one or  
917           multiple (plural) items
- 918    [C9]    A CC DEN shall only use alphabetic characters plus the period and space  
919           characters.
- 920    [C10]   A CC DEN shall only contain verbs, nouns, adverbs and adjectives unless a  
921           different part of speech is part of an official title, part of a term listed in the  
922           Oxford English Dictionary, or part of a Controlled Vocabulary.
- 923    [Note] – Parts of Speech
- 924    Articles, prepositions and related parts of speech that are not verbs, nouns, adverbs  
925    and adjectives normally add no semantic clarity and should never be used unless as  
926    part of an official title or in a controlled vocabulary as part of a common business  
927    term that can not otherwise be expressed.
- 929    [Example] – Exception use of Preposition
- 930           Goods Item. Free On Board Value. Amount
- 931           Where `Free On Board` is a globally recognized term and integral part of the  
932           property term for this BCC.
- 933    [C11]   Abbreviations and acronyms that are part of the CC DEN shall be expanded  
934           or explained in the definition.
- 935    [C12]   CC DEN object class terms, property terms, and representation terms in  
936           shall be separated by dots.
- 937    [C13]   The space character shall separate words in multi-worded CC object class,  
938           property, and representation terms.

939 [C14] Each word in a CC DEN shall start with a capital letter.

940 [C15] The dots after CC object class, property and representation terms shall be  
941 followed by a space character.

942 [Note] - CamelCase

943 The use of CamelCase for DENs has been considered, but has been rejected for  
944 following reasons:

- 945 • Use of CamelCase will not allow the use of spell checkers.
- 946 • Strict use of CamelCase makes it impossible to use separators (“.”)  
947 and therefore doesn’t allow an unambiguous identification of the  
948 composing parts of the DEN.

#### 949 **6.4.2 Core Component Definitions**

950 CC definitions are based on the requirements for data element definitions defined in  
951 ISO 11179-4.

952 [C16] Each CC shall have its own unique semantic definition within the library of  
953 which it is a part.

954 [Note] – Order of Development of Definition and DEN

955 In the interest of quality, it is recommended that the CC definition be developed first  
956 and the DEN extracted from it.

957 [C17] The CC definition shall be in the English language following the latest  
958 version of the complete *Oxford English Dictionary*. Where conflicting  
959 spellings exist, the spelling listed as the primary British spelling shall be  
960 used.

961 [C18] The CC definition shall be consistent with the requirements of ISO 11179-4  
962 and shall provide an understandable meaning, which should also be  
963 translatable to other languages.

964 [C19] The CC definition shall take into account the fact that the users of the CC  
965 library are not necessarily native English speakers. It shall therefore contain  
966 short sentences, using normal words. Wherever synonym terms are  
967 possible, the definition shall use the preferred term as identified in the  
968 Controlled Vocabulary.

969 [C20] Whenever both the definite (i.e. ~~the~~) and indefinite article (i.e. a) are  
970 possible in a definition, preference shall be given to an indefinite  
971 article (i.e. a).

972 [Note] – Definition Quality

973 To verify the quality of the definition, place the DEN followed by is before the  
974 definition to ensure that it is not simply a repetition of the DEN.

#### 975 **6.4.3 Core Component Business Terms**

976 CC business terms are those terms commonly used for day-to-day information  
977 exchanges within a given domain. As such, no specific rules apply to business term  
978 structures. Interoperability of business terms will be given by linking them within the  
979 CC common information class.

## 980 6.5 Core Component Localized Information Class

981 While the normative expressions of components are in the English language, non-  
 982 native English speakers may choose to create native language variations of the  
 983 DEN, definition, and business term. The CC localized information class contains the  
 984 relevant information necessary to associate the native language expressions to their  
 985 normative English language counterparts. Other language CC DENs will only consist  
 986 of alphabetic characters unless required by language rules. In addition to other  
 987 language DEN, definition, and business term(s), a mandatory language code  
 988 identifies the language in which the components are being expressed for storage in  
 989 the registry. The localized information class contains:

- 990 • **Language Code** – A code which identifies the language being used.  
 991 *ISO 639-1 Codes for the Representation of Languages* will be used as  
 992 the authoritative source for code values.
- 993 • **Other Language DEN** – The official name of the component in a  
 994 language other than English.
- 995 • **Other Language Definition** – the semantic meaning of the  
 996 component in a language other than English.
- 997 • **Other Language Business Term** – A synonym term in another  
 998 language under which the component is commonly known and used in  
 999 a business expression in that language.

1000 The DEN and definition in the localized information class must only be expressed in  
 1001 the language identified by the language code property of that class. The business  
 1002 terms must only be expressed in the language identified by the language code  
 1003 property of that class, or a recognized dialect of the language.

## 1004 6.6 Aggregate Core Components

1005 Each ACC represents the logical data grouping or aggregation (in a logical data  
 1006 model) of the concept of the ACC.

1007 [Definition] – Aggregate Core Component (ACC)

1008 An Aggregate Core Component is a collection of related pieces of business  
 1009 information that together convey a distinct business meaning, independent of any  
 1010 specific business context. Expressed in modelling terms, it is the representation of  
 1011 an object class, independent of any specific business context.

### 1012 6.6.1 Aggregate Core Component Object Class Term

1013 The ACC object class is expressed by an object class term. The ACC object class  
 1014 term is a semantically meaningful name for the object class that is represented by  
 1015 the ACC. It serves as basis for the DEN of the ACC and for the DEN of all BCCs and  
 1016 ASCCs that are properties of the ACC.

1017 [C21] The name of an ACC object class term shall be unique amongst the set of  
 1018 object class names in the library of which it is a part.

1019 [C22] A multi-worded ACC object class term shall have a unique semantic  
 1020 meaning compared to the words separately and compared to any other  
 1021 combination of these words.

1022	[Example] – Single versus Multi-Worded Object Class Terms
1023	Currency Exchange. Details is not the same as Currency. Details
1024	Currency Exchange. Details is not the same as Exchange. Details
1025	
1026	Thus Currency Exchange has a unique semantic meaning compared to Currency
1027	and Exchange.

## 1028 6.6.2 Aggregate Core Component Usage Rule

1029 ACCs may have usage rules. Each usage rule defines a constraint that describes  
 1030 specific conditions that are applicable to the ACC. ACC usage rules represent the  
 1031 specific application of an ACC in its role as an object class. Usage rules are  
 1032 expressed as free form text.

1033 [C23] An ACC shall have zero or more usage rules.

1034 Usage rules will only be defined at the level of the hierarchical structure to which  
 1035 they apply.

1036 [C24] ACC usage rules shall not replicate BCC, ASCC, or CDT usage rules.

## 1037 6.6.3 Aggregate Core Component Identifiers

1038 In order to ensure uniqueness, every ACC will have assigned a:

- 1039 • **Unique Identifier:** The identifier that references an ACC instance in a  
 1040 unique and unambiguous way.
- 1041 • **Version Identifier:** An indication of the evolution over time of an ACC  
 1042 instance.

1043 [C25] Each ACC shall have a unique identifier within the library of which it is a  
 1044 part.

1045 [C26] Each ACC shall have a unique version identifier within the library of which it  
 1046 is a part.

## 1047 6.6.4 Aggregate Core Component Common Information

1048 The ACC common information class provides necessary ACC metadata information.

1049 [C27] Each ACC shall have a common information class.

1050 [C28] The ACC common information class shall conform to all CC common  
 1051 information rules.

1052 [C29] The ACC common information class shall consist of:

- 1053 • **DEN (mandatory):** The official name of the ACC.
- 1054 • **Definition (mandatory):** The semantic meaning of the ACC.
- 1055 • **Business Term (optional, repetitive):** A synonym term under which  
 1056 the ACC is commonly known and used in business.

1057 [Example] – ACC Common Information  
 1058 DEN – *Contract. Details*  
 1059 **Definition** – A contract is an agreement between two or more parties, especially  
 1060 one that is written or spoken and enforceable by law.  
 1061 Business Term – *Purchasing Agreement*

#### 1062 6.6.4.1 Aggregate Core Component Dictionary Entry Names

1063 [C30] Each ACC shall have a formally defined DEN.  
 1064 [C31] Each ACC DEN shall conform to all CC DEN rules.  
 1065 [C32] The DEN of an ACC shall consist of a meaningful object class term followed  
 1066 by a dot, a space character, and the term *Details*. The object class term  
 1067 may consist of more than one word.

1068 [Example] – DEN for ACCs  
 1069 *Contract. Details; Metrics. Details*

#### 1070 6.6.4.2 Aggregate Core Component Definitions

1071 [C33] Each ACC shall have a formal definition.  
 1072 [C34] Each ACC definition shall conform to all CC definition rules.  
 1073 [C35] Each ACC definition shall include the object class term.

1074 [Example] – ACC Definition  
 1075 *Contract. Details*  
 1076  
 1077 A *contract* is an agreement between two or more parties, especially one that is  
 1078 written or spoken and enforceable by law.

#### 1079 6.6.4.3 Aggregate Core Component Business Terms

1080 An ACC may have several business terms or synonyms. ACC business terms are  
 1081 synonym terms under which the ACC is commonly known and used in business.  
 1082 [C36] Each ACC shall have zero or more business terms.

#### 1083 6.6.5 Aggregate Core Component Localized Information

1084 The ACC localized information class contains the relevant information necessary to  
 1085 associate native language expressions of ACC attributes to the ACC.

1086 [C37] Each ACC shall have zero or more localized information classes.  
 1087 [C38] Each occurrence of an ACC localized information class shall contain:  
 1088 • **Language Code (mandatory):** A code which identifies the language  
 1089 being used. *ISO 639-1 Codes for the Representation of Languages*  
 1090 shall be used as the authoritative source for code values.  
 1091 • **Other Language DEN (mandatory):** The official name of the ACC in  
 1092 a language other than English.

- 1093                   • **Other Language Definition (mandatory):** The semantic meaning of  
1094                   the ACC in a language other than English.
- 1095                   • **Other Language Business Term (optional, repetitive):** A synonym  
1096                   term in another language under which the ACC is commonly known  
1097                   and used in a business expression in that language.
- 1098 [C39] Each other language ACC DEN shall adhere to all ACC DEN rules other  
1099                   than the requirement to be in the English language.
- 1100 [C40] Each other language ACC DEN shall only consist of alphabetic characters  
1101                   unless required by language rules.
- 1102 [C41] Each other language ACC definition shall adhere to all ACC definition rules  
1103                   other than the requirement to be in the English language.
- 1104 The DEN and definition in the localized information class must only be expressed in  
1105                   the language identified by the language code property of that class.
- 1106 [C42] Each other language ACC DEN and definition shall only be expressed in the  
1107                   language identified by the language code property of that class.
- 1108 The business terms must only be expressed in the language identified by the  
1109                   language code property of that class, or a recognized dialect of the language.
- 1110 [C43] Each other language ACC business term shall only be expressed in the  
1111                   language identified by the language code of that class, or a recognized  
1112                   dialect of the language.

## 1113 **6.7 Aggregate Core Component Properties**

1114 An ACC consists of ACC properties. The ACC property is a generalization of either  
1115                   an ASCC or a BCC. Every ACC contains at least one ACC property.

1116 [C44] An ACC shall contain at least one ACC property.

1117 [C45] An ACC property shall be either a BCC or an ASCC.

1118 [Note] – ACC Nesting

1119 At the deepest level of nesting an ACC shall only contain BCCs.

1120 Because an ACC is a self contained class, it is important that all listed properties are  
1121                   in fact conceptually related to the concept of the ACC, and not just added for  
1122                   convenience.

1123 [C46] Within an ACC, all embedded BCCs and ASCCs shall be related to the  
1124                   concept of the aggregate.

1125 ACC properties must be unique within the ACC.

1126 [C47] An ASCC and a BCC DEN shall never be identical when used in an ACC.

1127 An ACC Property that is an ASCC must be devoid of mandatory circular references.

1128 [C48] An ACC shall never contain – indirectly or at any nested level – a mandatory  
1129                   ASCC that references itself.

1130 [Note] – Recursion

1131 The objective of the above rule is to avoid endless loops in the content model of an  
1132 ACC. The rule allows an ACC to contain an ASCC that references itself. The fact  
1133 that the ASCC is not mandatory makes it possible to stop the loop after a finite  
1134 number of iterations.

## 1135 **6.8 Association Core Components**

1136 Association Core Components represent complex ACC properties. ASCCs associate  
1137 two ACCs, where one ACC is the property of the other. The ASCC consists of an  
1138 ASCC Property plus the object class of the ACC to which it belongs (associating  
1139 ACC). The property term and the definition of the property are defined in the ASCC  
1140 and represent the nature of the association. Like simple properties, ASCCs  
1141 representing complex properties have a defined minimum and maximum occurrence.  
1142 Because ASCCs represent hierarchical structures, they are equivalent to UML  
1143 aggregation associations.

1144 [Definition] – Association Core Component (ASCC)

1145 An Association Core Component is a Core Component which constitutes a  
1146 complex business characteristic of a specific Aggregate Core Component that  
1147 represents an object class. It has a unique business semantic definition. An  
1148 Association Core Component represents an Association Core Component  
1149 Property and is associated to an Aggregate Core Component, which describes its  
1150 structure. An Association Core Component functions as a property of an  
1151 Aggregate Core Component.

### 1152 **6.8.1 Association Core Component Association Type**

1153 ASCCs represent an association between the associating (parent) ACC and the  
1154 associated (child) ACC. The associated ACC will exist regardless of the state of the  
1155 associating ACC, therefore the nature of the association of all ASCCs is as a UML  
1156 aggregation association. An association type indicator is required to reflect this  
1157 association as a mechanism for transformation between alternative syntax storage  
1158 expressions and UML representation.

1159 [C49] An ASCC shall have an UML aggregation association value of *aggregation*.

### 1160 **6.8.2 Association Core Component Usage Rule**

1161 ASCCs may have usage rules. Each usage rule defines a constraint that describes  
1162 specific conditions that are applicable to the ASCC. ASCC usage rules represent the  
1163 specific application of an ASCC as an ACC property.

1164 [C50] An ASCC shall have zero or more usage rules.

1165 Usage rules will only be defined at the level of the hierarchical structure to which  
1166 they apply – ACC, ASCC, BCC, or Core Data Type (CDT).

1167 [C51] ASCC usage rules shall not replicate ACC, BCC, or CDT usage rules.

### 1168 **6.8.3 Association Core Component Cardinality**

1169 Each ASCC, in its role as an ACC property, will have its cardinality explicitly  
1170 expressed.

- 1171 [C52] Each ASCC shall have a cardinality expressed.
- 1172 [C53] ASCC cardinalities shall consist of a matched pair of values consisting of a  
1173 minimum occurrence and a maximum occurrence.
- 1174 [C54] ASCC cardinality values shall be non-negative integers of zero or greater, or  
1175 the token `unbounded` if no limit applies.

#### 1176 6.8.4 Association Core Component Sequencing Key

1177 Business requirements may exist for ASCCs to occur in a specific order within an  
1178 ACC. Software and storage applications may have unique sequencing algorithms  
1179 that change the normatively defined order of the ASCC within an ACC. To ensure  
1180 the desired order is preserved, each ASCC within an ACC will be assigned a unique  
1181 sequencing key.

- 1182 [C55] Each ASCC shall be assigned a unique sequencing key within the ACC of  
1183 which it is a part.

1184 [Note] – Sequence Key Structure

1185 There are no specific rules for the structure of the sequencing keys. Implementers  
1186 are free to choose any structure providing it guarantees uniqueness within the ACC  
1187 to which it belongs and the structuring scheme is readily available for anyone  
1188 accessing or using the ACC.

#### 1189 6.8.5 Association Core Component Common Information

1190 In its role as an ACC property, each ASCC has a common information class. The  
1191 ASCC common information class provides necessary ASCC metadata information.

- 1192 [C56] Each ASCC shall have a common information class.
- 1193 [C57] The ASCC common information class shall conform to all CC common  
1194 information rules.
- 1195 [C58] The ASCC common information class shall consist of:
- 1196 • **DEN (mandatory):** The official name of the ASCC.
  - 1197 • **Definition (mandatory):** The semantic meaning of the ASCC.
  - 1198 • **Business Term (optional, repetitive):** A synonym term under which  
1199 the ASCC is commonly known and used in business.

1200 [Example] – ASCC Common Information

1201 DEN – `Contract. Effective. Period`

1202 **Definition** – A period within which the provisions of this contract are, or will be, in  
1203 force or effective.

1204 Business Term – `Contract Duration`

##### 1205 6.8.5.1 Association Core Component Dictionary Entry Names

- 1206 [C59] Each ASCC shall have a formally defined DEN.
- 1207 [C60] Each ASCC DEN shall conform to all CC DEN rules.

- 1208 [C61] The DEN of an ASCC shall consist of the following components in the  
1209 specified order:
- 1210 • The object class term of the associating ACC, followed by a dot and  
1211 space character.
  - 1212 • The DEN of the included ASCC Property.

1213 [Example] - ASCCs

1214 `Contract. Effective. Period` where the associated ACC `Period. Details` NOW  
1215 becomes a property of the associating ACC of `Contract. Details` and the nature  
1216 of that association is `Effective`.

1217 **6.8.5.2 Association Core Component Definitions**

- 1218 [C62] Each ASCC shall have a formal definition.
- 1219 [C63] Each ASCC definition shall conform to all CC definition rules.
- 1220 [C64] The definition of an ASCC shall include the object class term of the  
1221 associating CC, and the definition of the ASCC Property the ASCC includes.

1222 [Example] – ASCC Definition

1223 `Contract. Effective. Period`

1224  
1225 A period within which the provisions of this contract are, or will be, in force or  
1226 effective. It constitutes a specific period of time such as the length of time  
1227 between two known date/time points, from a start date onwards, or up to an end  
1228 date that constitutes an effective period.

1229 Where the ASCC Property

1230 `Effective. Period` definition is:

1231 A specific period of time such as the length of time between two known date/time  
1232 points, from a start date onwards, or up to an end date that constitutes an  
1233 effective period.

1234 **6.8.5.3 Association Core Component Business Terms**

- 1235 An ASCC may have several business terms or synonyms. ASCC business terms are  
1236 synonym terms under which the ASCC is commonly known and used in business.
- 1237 [C65] – Each ASCC shall have zero or more business terms.

1238 **6.8.6 Association Core Component Localized Information**

- 1239 The ASCC localized information class contains the relevant information necessary to  
1240 associate native language expressions of ASCC attributes to the ASCC.
- 1241 [C66] An ASCC shall have zero or more localized information classes.
- 1242 [C67] Each occurrence of an ASCC localized information class shall contain:
- 1243 • **Language Code (mandatory):** A code which identifies the language.  
1244 *ISO 639-1 Codes for the Representation of Languages* shall be used  
1245 as the authoritative source for code values.

- 1246           • **Other Language DEN (mandatory):** The official name of the ASCC in  
1247           a language other than English.
- 1248           • **Other Language Definition (mandatory):** The semantic meaning of  
1249           the ASCC in a language other than English.
- 1250           • **Other Language Business Term (optional, repetitive):** A synonym  
1251           term in another language under which the ASCC is commonly known  
1252           and used in a business expression in that language.
- 1253 [C68]       Each other language ASCC DEN shall adhere to all ASCC DEN rules other  
1254           than the requirement to be in the English language.
- 1255 [C69]       Each other language ASCC DEN shall only consist of alphabetic characters  
1256           unless required by language rules.
- 1257 [C70]       Each other language ASCC definition shall adhere to all ASCC definition  
1258           rules other than the requirement to be in the English language.
- 1259       The DEN and definition in the localized information class must only be expressed in  
1260       the language identified by the language code property of that class.
- 1261 [C71]       Each other language ASCC DEN and definition shall only be expressed in  
1262           the language identified by the language code property of that class.
- 1263       The business terms must only be expressed in the language identified by the  
1264       language code property of that class, or a recognized dialect of the language.
- 1265 [C72]       Each other language ASCC business term shall only be expressed in the  
1266           language identified by the language code of that class, or a recognized  
1267           dialect of the language.

## 1268       **6.9 Association Core Component Properties**

1269       An ASCC Property consists of a property term plus the object class term of the  
1270       associated ACC.

1271 [C73]       An ASCC Property shall be defined for each ASCC.

1272       ASCC properties are reusable across object classes.

1273       [Example] – Reuse of ASCC Properties in Multiple Object Classes

1274       For the ASCC Property of **Effective. Period, Contract. Effective. Period**  
1275       and **Price. Effective. Period** may both exist.

### 1276       **6.9.1 Association Core Component Property – Property Term**

1277       Each ASCC Property contains a property term. The property term of an ASCC  
1278       Property is a semantically meaningful name for the characteristic that represents the  
1279       nature of the association to the associated ACC.

1280 [C74]       Each ASCC Property shall have a formally defined property term.

1281 [C75]       The property term of an ASCC Property may consist of more than one word.

1282 [C76]       A multi-worded property term of an ASCC Property shall have a unique  
1283       semantic meaning compared to the words separately and compared to any  
1284       other combination of these words.

1285	[Example] – Single versus Multiple Word Property Terms
1286	
1287	Trade Line Item. Additional Information. Note is not the same as Trade
1288	Line Item. Additional. Note
1289	Trade Line Item. Additional Information. Note is not the same as Trade
1290	Line Item. Information. Note
1291	Trade Line Item. Additional Information. Note is not the same as Trade
1292	Line Item, Information Additional. Note

## 1293 6.9.2 Association Core Component Property Identifiers

1294 In order to ensure uniqueness, every ASCC Property will have assigned a:

- 1295 • **Unique Identifier:** The identifier that references an ASCC Property
- 1296 instance in a unique and unambiguous way.
- 1297 • **Version Identifier:** An indication of the evolution over time of an
- 1298 ASCC Property instance.

1299 [C77] Each ASCC Property shall have a unique identifier within the library of which

1300 it is a part.

1301 [C78] Each ASCC Property shall have a unique version identifier within the library

1302 of which it is a part.

## 1303 6.9.3 Association Core Component Property Common Information

1304 The ASCC Property common information class provides necessary ASCC Property

1305 metadata information.

1306 [C79] Each ASCC Property shall have a common information class.

1307 [C80] The ASCC Property common information class shall conform to all CC

1308 common information rules.

1309 [C81] The ASCC Property common information class shall consist of:

- 1310 • **DEN (mandatory):** The official name of the ASCC Property.
- 1311 • **Definition (mandatory):** The semantic meaning of the ASCC
- 1312 Property.
- 1313 • **Business Term (optional, repetitive):** A synonym term under which
- 1314 the ASCC Property is commonly known and used in business.

1315	[Example] – ASCC Property Common Information
1316	DEN – Effective. Period
1317	<b>Definition</b> – A specific period of time such as the length of time between two
1318	known date/time points, from a start date onwards, or up to an end date that
1319	constitutes an effective period.
1320	Business Term – Effective Duration, In Force Period.

### 1321 6.9.3.1 Association Core Component Property Dictionary Entry Names

1322 [C82] Each ASCC Property shall have a formally defined DEN.

1323 [C83] Each ASCC Property DEN shall conform to all CC DEN rules.

1324 [C84] The DEN of an ASCC Property shall consist of a property term that represents  
 1325 the nature of the association to the associated ACC, followed by a dot, a space  
 1326 character, and the object class term of the associated ACC.

1327 [C85] The DEN of an ASCC Property shall be unique within the context of an  
 1328 object class but may be reused across different object classes.

[Example] – DEN for ASCC Properties

`Performance. Metrics, Effective. Period`

### 1331 6.9.3.2 Association Core Component Property Definitions

1332 [C86] Each ASCC Property shall have a formal definition.

1333 [C87] Each ASCC Property definition shall conform to all CC definition rules.

1334 [C88] The definition of an ASCC Property shall include the object class term of the  
 1335 associated ACC and the property term that expresses the nature of the  
 1336 association.

[Example] – ASCC Property Definition

ASCC Property: `Performance. Metrics`

Performance metrics are a system of quantitative parameters for performance assessment purposes.

### 1342 6.9.3.3 Association Core Component Property Business Terms

1343 An ASCC Property may have several business terms or synonyms. ASCC Property  
 1344 business terms are synonym terms under which the ASCC Property is commonly  
 1345 known and used in business.

1346 [C89] Each ASCC Property shall have zero or more business terms.

### 1347 6.9.4 Association Core Component Property Localized Information

1348 The ASCC Property localized information class contains the relevant information  
 1349 necessary to associate native language expressions of ASCC Property attributes to  
 1350 the ASCC Property.

1351 [C90] An ASCC Property shall have zero or more localized information classes.

1352 [C91] Each occurrence of an ASCC Property localized information class shall  
 1353 contain:

- 1354 • **Language Code (mandatory):** A code which identifies the language.  
 1355 *ISO 639-1 Codes for the Representation of Languages* shall be used  
 1356 as the authoritative source for code values.
- 1357 • **Other Language DEN (mandatory):** The official name of the ASCC  
 1358 Property in a language other than English
- 1359 • **Other Language Definition (mandatory):** The semantic meaning of  
 1360 the ASCC Property in a language other than English.
- 1361 • **Other Language Business Term (optional, repetitive):** A synonym  
 1362 term in another language under which the ASCC Property is  
 1363 commonly known and used in a business expression in that language.

- 1364 [C92] Each other language ASCC Property DEN shall adhere to all ASCC  
 1365 Property DEN rules other than the requirement to be in the English  
 1366 language.
- 1367 [C93] Each other language ASCC Property DEN shall only consist of alphabetic  
 1368 characters unless required by language rules.
- 1369 [C94] Each other language ASCC Property definition shall adhere to all ASCC  
 1370 Property definition rules other than the requirement to be in the English  
 1371 language.
- 1372 The DEN and definition in the localized information class must only be expressed in  
 1373 the language identified by the language code property of that class.
- 1374 [C95] Each other language ASCC Property DEN and definition shall only be  
 1375 expressed in the language identified by the language code property of that  
 1376 class.
- 1377 The business terms must only be expressed in the language identified by the  
 1378 language code property of that class, or a recognized dialect of the language.
- 1379 [C96] Each other language ASCC Property business term shall only be expressed  
 1380 in the language identified by the language code of that class, or a  
 1381 recognized dialect of the language.

## 1382 **6.10 Basic Core Components**

- 1383 BCCs represent simple ACC properties. The BCC consists of a BCC Property and  
 1384 the object class of the ACC to which it belongs.

1385 [Definition] – Basic Core Component (BCC)  
 1386 A Basic Core Component is a Core Component which constitutes a singular  
 1387 business characteristic of a specific Aggregate Core Component. It has a unique  
 1388 business semantic definition. A Basic Core Component represents a Basic Core  
 1389 Component Property and is therefore of a Core Data Type which defines its value  
 1390 domain. Basic Core Components function as properties of Aggregate Core  
 1391 Components.

### 1392 **6.10.1 Basic Core Component Usage Rules**

- 1393 A BCC may have usage rules. Each usage rule defines a constraint that describes  
 1394 specific conditions that are applicable to the BCC. The BCC usage rules represent  
 1395 the specific application of a BCC as an ACC property.
- 1396 [C97] A BCC shall have zero or more usage rules.
- 1397 Usage rules will only be defined at the level of the hierarchical structure to which  
 1398 they apply.
- 1399 [C98] BCC usage rules shall not replicate ACC, ASCC, or CDT usage rules.

### 1400 **6.10.2 Basic Core Component Cardinality**

- 1401 Each BCC, in its role as an ACC property, will have its cardinality explicitly  
 1402 expressed.
- 1403 [C99] Each BCC shall have a cardinality expressed.

1404 [C100] BCC cardinalities shall consist of a matched pair of values consisting of a  
1405 minimum occurrence and a maximum occurrence.

1406 [C101] BCC cardinality values shall be non-negative integers of zero or greater, or  
1407 the token `unbounded` if no limit applies.

### 1408 **6.10.3 Basic Core Component Sequencing Key**

1409 Business requirements may exist for BCCs to occur in a specific order within an  
1410 ACC. Software and storage applications may have unique sequencing algorithms  
1411 that change the normatively defined order of the BCC within an ACC. To ensure the  
1412 desired order is preserved, each BCC within an ACC will be assigned a unique  
1413 sequencing key.

1414 [C102] Each BCC shall be assigned a unique sequencing key within the ACC of  
1415 which it is a part.

1416 Note – Sequencing Key Structure

1417 There are no specific rules for the structure of the sequencing keys. Implementers  
1418 are free to choose any structure providing it guarantees uniqueness within the ACC  
1419 to which it belongs and the structuring scheme is readily available for anyone  
1420 accessing or using the ACC.

### 1421 **6.10.4 Basic Core Component Common Information**

1422 In its role as an ACC property, each BCC has a common information class. The BCC  
1423 common information class provides necessary BCC metadata information.

1424 [C103] Each BCC shall have a common information class.

1425 [C104] The BCC common information class shall conform to all component  
1426 common information rules.

1427 [C105] The BCC common information class shall consist of:

- 1428 • **DEN (mandatory):** The official name of the BCC.
- 1429 • **Definition (mandatory):** The semantic meaning of the BCC.
- 1430 • **Business Term (optional, repetitive):** A synonym term under which  
1431 the BCC is commonly known and used in business.

1432 [Example] – Common Information

1433 DEN – `Period. Start. Date Time`

1434 **Definition** – The date, time, date time or other date time value for the start of this  
1435 period of time.

1436 Business Term – `Duration start`

#### 1437 **6.10.4.1 Basic Core Component Dictionary Entry Names**

1438 [C106] Each BCC shall have a formally defined DEN.

1439 [C107] Each BCC DEN shall conform to all CC DEN rules.

1440 [C108] The DEN of a BCC shall consist of the following parts in the order specified:

- 1441                   • the object class term of the ACC owning the corresponding BCC,  
1442 followed by a dot and space character.
- 1443                   • the DEN of the included BCC Property.

1444                   Example – BCCs

1445                   Period. Start. Date Time; Contract. Price. Amount

1446                   6.10.4.2 Basic Core Component Definitions

1447 [C109] Each BCC shall have a formal definition.

1448 [C110] Each BCC definition shall conform to all CC definition rules.

1449 [C111] The definition of a BCC shall include the object class term of the ACC to  
1450 which it belongs, and the definition of the included BCC Property.

1451                   [Example] – BCC Definition

1452                   Period. Start. Date Time

1453                   The date, time, *date time* or other date time value for the *start* of this period of  
1454 time.

1455                   6.10.4.3 Basic Core Component Business Terms

1456 A BCC may have several business terms or synonyms. BCC business terms are  
1457 synonym terms under which the BCC is commonly known and used in business.

1458 [C112] – Each BCC shall have zero or more business terms.

1459                   6.10.5 Basic Core Component Localized Information

1460 The BCC localized information class contains the relevant information necessary to  
1461 associate native language expressions of BCC attributes to the BCC.

1462 [C113] A BCC shall have zero or more localized information classes.

1463 [C114] Each occurrence of a BCC localized information class shall contain:

- 1464                   • **Language Code (mandatory):** A code which identifies the language.  
1465                   *ISO 639-1 Codes for the Representation of Languages* shall be used  
1466                   as the authoritative source for code values.
- 1467                   • **Other Language DEN (mandatory):** The official name of the BCC in  
1468                   a language other than English.
- 1469                   • **Other Language Definition (mandatory):** The semantic meaning of  
1470                   the BCC in a language other than English.
- 1471                   • **Other Language Business Term (optional, repetitive):** A synonym  
1472                   term in another language under which the BCC is commonly known  
1473                   and used in a business expression in that language.

1474 [C115] Each other language BCC DEN shall adhere to all BCC DEN rules other  
1475 than the requirement to be in the English language.

1476 [C116] Each other language BCC DEN shall only consist of alphabetic characters  
1477 unless required by language rules.

1478 [C117] Each other language BCC definition shall adhere to all BCC definition rules  
1479 other than the requirement to be in the English language.

1480 The DEN and definition in the localized information class must only be expressed in  
1481 the language identified by the language code property of that class.

1482 [C118] Each other language DEN and definition shall only be expressed in the  
1483 language identified by the language code property of that class.

1484 The business terms must only be expressed in the language identified by the  
1485 language code property of that class, or a recognized dialect of the language.

1486 [C119] Each other language business term shall only be expressed in the language  
1487 identified by the language code of that class, or a recognized dialect of the  
1488 language.

## 1489 **6.11 Basic Core Component Properties**

1490 The BCC Property represents a generic reusable data element independent of an  
1491 object class. A BCC Property consists of a property term plus a representation term.

1492 [C120] A BCC Property shall be defined for each BCC.

1493 BCC properties are reusable across ACCs.

1494 [Example] – Reuse of BCC Properties in Multiple BCCs

1495 `Contact. Type. Code` and `Event. Type. Code` may both exist.

1496 To ensure consistency in use, BCC properties are always based on an approved  
1497 CDT in the UN/CEFACT CDT specification.

1498 [C121] A BCC Property shall only use an approved CDT in the CDT specification.

### 1499 **6.11.1 Basic Core Component Property – Property Term**

1500 Each BCC Property contains a property term. The property term of a BCC Property  
1501 is a semantically meaningful name for a unique characteristic that can be used in an  
1502 ACC object class.

1503 [C122] Each BCC Property shall have a formally defined property term.

1504 [C123] The property term of a BCC Property may consist of more than one word.

1505 [C124] A multi-worded property term of a BCC Property shall have a unique  
1506 semantic meaning compared to the words separately and compared to any  
1507 other combination of these words.

1508 [Example] – Single versus Multiple Word Property Terms

1509 `Longitude Direction. Indicator` is not the same as `Longitude. Indicator`

1510 `Longitude Direction. Indicator` is not the same as `Direction. Indicator`

1511 `Longitude Direction. Indicator` is not the same as `Direction Longitude. Indicator`  
1512

### 1513 **6.11.2 Basic Core Component Property Representation Term**

1514 Each BCC Property contains a representation term. The representation term is a  
1515 semantically meaningful name that represents the value domain of the BCC Property

1516 as defined by a CDT. UN/CEFACT defines the approved representation terms as  
1517 part of the CDT specification.

1518 [C125] A representation term shall be defined for each BCC Property.

1519 [C126] The name of the BCC Property representation term may consist of more  
1520 than one word.

1521 [C127] A multi-worded BCC Property representation term shall have a unique  
1522 semantic meaning compared to the words separately and compared to any  
1523 other combination of these words.

1524 [C128] The name of the BCC Property representation term shall be one of the  
1525 approved representation terms in the CDT specification.

### 1526 6.11.3 Basic Core Component Property Identifiers

1527 In order to ensure uniqueness, every BCC Property will have assigned a:

- 1528 • **Unique Identifier (mandatory):** The identifier that references the  
1529 BCC Property instance in a unique and unambiguous way.
- 1530 • **Version Identifier (mandatory):** An indication of the evolution over  
1531 time of the BCC Property instance.

1532 [C129] Each BCC Property shall have a unique identifier within the library of which  
1533 it is a part.

1534 [C130] Each BCC Property shall have a unique version identifier within the library of  
1535 which it is a part.

### 1536 6.11.4 Basic Core Component Property Common Information

1537 The BCC Property common information class provides necessary BCC Property  
1538 metadata information.

1539 [C131] Each BCC Property shall have a common information class.

1540 [C132] The BCC Property common information class shall conform to all CC  
1541 common information rules.

1542 [C133] The BCC Property common information class shall consist of:

- 1543 • **DEN (mandatory):** The official name of the BCC Property.
- 1544 • **Definition (mandatory):** The semantic meaning of the BCC Property.
- 1545 • **Business Term (optional, repetitive):** A synonym term under which  
1546 the BCC Property is commonly known and used in business.

1547 [Example] – BCC Property Common Information

1548 DEN – *start. Date Time*

1549 **Definition** – A date, time, *date time* or other date time value that marks the  
1550 *start* or initiation of an event.

1551 Business Term – Beginning Date Time

#### 1552 6.11.4.1 Basic Core Component Property Dictionary Entry Names

1553 [C134] Each BCC Property shall have a formally defined DEN.

- 1554 [C135] Each BCC Property DEN shall conform to all CC DEN rules.
- 1555 [C136] The DEN of a BCC Property shall consist of a property term, followed by a  
1556 dot, a space character, and a representation term.
- 1557 [C137] The DEN of a BCC Property shall be unique within the context of an object  
1558 class but may be reused across different object classes.

[Example] – Reuse of CC Properties in Multiple Object Classes  
Contract. Type. Code and Metrics. Type. Code may both exist.

- 1562 [Example] – DEN for BCC Property  
1563 Start. Date Time; Type. Code

#### 1564 6.11.4.2 Basic Core Component Property Definitions

- 1565 [C138] Each BCC Property shall have a formal definition.
- 1566 [C139] BCC Property definitions shall conform to all CC definition rules.
- 1567 [C140] The definition of a BCC Property shall include the property and  
1568 representation term of the BCC Property.

[Example] – BCC Property Definition

Start. Date Time

A date, time, *date time* or other date time value that marks the *start* or initiation  
of an event.

#### 1573 6.11.4.3 Basic Core Component Property Business Terms

- 1574 A BCC Property may have several business terms or synonyms. BCC Property  
1575 business terms are synonym terms under which the BCC Property is commonly  
1576 known and used in business.
- 1577 [C141] Each BCC Property shall have zero or more business terms.

#### 1578 6.11.5 Basic Core Component Property Localized Information

1579 The BCC Property localized information class contains the relevant information  
1580 necessary to associate native language expressions of BCC Property attributes to  
1581 the BCC Property.

1582 [C142] A BCC Property shall have zero or more localized information classes.

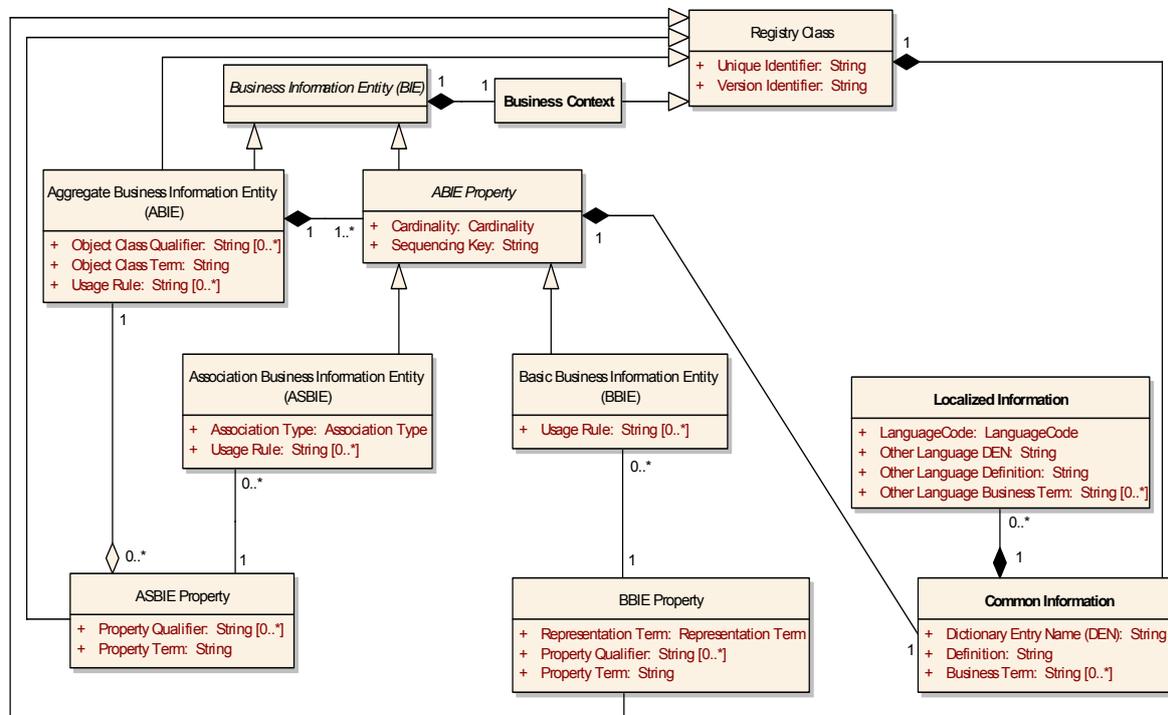
1583 [C143] Each occurrence of a BCC Property localized information class shall  
1584 contain:

- 1585 • **Language Code (mandatory):** A code which identifies the language.  
1586 *ISO 639-1 Codes for the Representation of Languages* shall be used  
1587 as the authoritative source for code values.
- 1588 • **Other Language DEN (mandatory):** The official name of the BCC  
1589 Property in a language other than English.
- 1590 • **Other Language Definition (mandatory):** The semantic meaning of  
1591 the BCC Property in a language other than English.

- 1592                   • **Other Language Business Term (optional, repetitive):** A synonym  
1593                   term in another language under which the BCC Property is commonly  
1594                   known and used in a business expression in that language.
- 1595 [C144] Each other language BCC Property DEN shall adhere to all BCC DEN rules  
1596                   other than the requirement to be in the English language.
- 1597 [C145] Each other language BCC Property DEN shall only consist of alphabetic  
1598                   characters unless required by language rules.
- 1599 [C146] Each other language BCC Property definition shall adhere to all BCC  
1600                   definition rules other than the requirement to be in the English language.
- 1601 The DEN and definition in the localized information class must only be expressed in  
1602 the language identified by the language code property of that class.
- 1603 [C147] Each other language BCC Property DEN and definition shall only be  
1604                   expressed in the language identified by the language code property of that  
1605                   class.
- 1606 The business terms must only be expressed in the language identified by the  
1607 language code property of that class, or a recognized dialect of the language.
- 1608 [C148] Each other language BCC Property business term shall only be expressed  
1609                   in the language identified by the language code of that class, or a  
1610                   recognized dialect of the language.

1611 **7 Business Information Entity Model**

1612 This section provides a detailed technical explanation of the Business Information  
 1613 Entity (BIE) metamodel as seen in the UML diagram figure 7-1.



1614  
 1615 **Figure 7-1. UML Diagram of Business Information Entity Basic Definition Model**

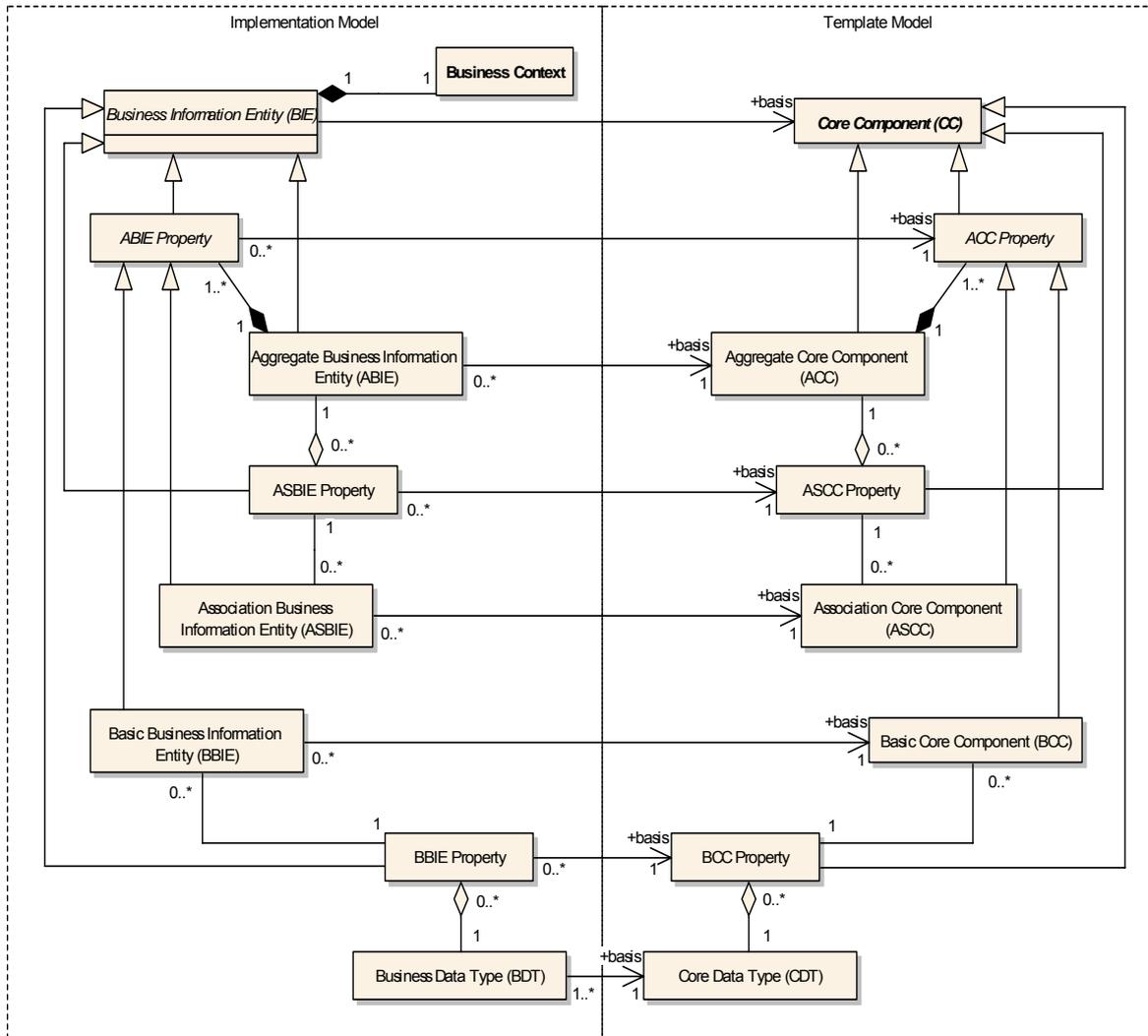
1616 **7.1 Overview**

1617 Business information entities represent real world instantiations of conceptual core  
 1618 components. BIEs are used to create logical data models, physical data models, and  
 1619 business information exchanges. They are always based on an equivalent source  
 1620 CC through the application of context. A BIE is a context specific instantiation of a  
 1621 conceptual core component.

1622 [Definition] – Business Information Entity (BIE)  
 1623 A Business Information Entity is a context specific instantiation of a Core  
 1624 Component that constitutes a piece of business data or a group of pieces of  
 1625 business data with a unique business semantic definition in a specific business  
 1626 context.

1627 Figure 7-2 shows the relationships between BIEs and their CC counterparts.

1628



1629

1630 **Figure 7-2. UML Diagram of Relationship Between Business Information Entities And**  
 1631 **Core Components**

1632 [Note] – Figure 7-2  
 1633 For completeness, figure 7-2 includes CDTs and BDTs (See Section 8).

1634 Just as with ACCs, there are five categories of BIEs:

- 1635 • Aggregate Business Information Entity (ABIE). An ABIE is based on  
 1636 an (has one and only one source) ACC.
- 1637 • Association Business Information Entity (ASBIE). An ASBIE is based  
 1638 on an (has one and only one source) ASCC.
- 1639 • Basic Business Information Entity (BBIE). A BBIE is based on a (has  
 1640 one and only one source) BCC.
- 1641 • Association Business Information Entity Property. An ASBIE Property  
 1642 is based on an (has one and only one source) ASCC Property.
- 1643 • Basic Business Information Entity Property. A BBIE Property is based  
 1644 on a (has only one source) BCC Property.

1645 [B1] A BIE shall be an ABIE, ASBIE, BBIE, ASBIE Property or a BBIE Property.

1646 The BIE is the result of using a CC within a specific business context.

1647 The key differentiator between BIEs and CCs is the concept of business context.

1648 [B2] A BIE shall be defined by one or more business contexts.

1649 [Definition] – Business Context

1650 Business Context is the formal description of a specific business circumstance as  
1651 identified by the values of a set of context categories, allowing different business  
1652 circumstances to be uniquely distinguished.

1653 ABIEs, ASBIEs, BBIEs, ASBIE Properties, and BBIE Properties are collectively  
1654 called BIEs and are typically stored in a registry, database, or other mechanism to  
1655 maximize reuse.

## 1656 **7.2 Business Information Entity Naming and Definition** 1657 **Conventions**

1658 BIE naming and definition conventions are based on CC naming and definition  
1659 conventions to ensure consistency in the naming and defining of BIEs with their  
1660 source CCs. The BIE naming and definition conventions are derived from the  
1661 guidelines and principles described in *ISO 11179 Part 4 – Definitions and ISO 11179*  
1662 *Part 5 – Naming and Identification Principles*.

1663 The official language for UN/CEFACT BIEs is English. All official dictionary entries  
1664 will be in English. BIE discovery work may very well occur in other languages;  
1665 however official submissions for inclusion in the UN/CEFACT library must be in  
1666 English. In order to ensure absolute clarity and understanding of the names and  
1667 definitions it is essential to use words from the *Oxford English Dictionary*.

1668 As with CCs, a controlled vocabulary will be developed to identify the definition to be  
1669 used for any words that are potentially ambiguous.

1670 [Note] – UN/CEFACT Controlled Vocabulary

1671 Implementers are encouraged to use the UN/CEFACT controlled vocabulary as the  
1672 authoritative source for BIE terms.

## 1673 **7.3 Registry Class**

1674 A registry class represents a cohesive set of information associated with a single  
1675 business component. Each registry class contains the following information:

- 1676 • Unique Identifier
- 1677 • Unique Version Identifier

1678 [Note] – BIE Identifier Structure

1679 There are no specific rules for the structure of the BIE identifiers. Implementers are  
1680 free to choose any structure providing it guarantees uniqueness within the library to  
1681 which it belongs.

1682 [B3] A registry class shall be created for each ABIE, ASBIE Property, and BBIE  
1683 Property.

## 1684 7.4 Business Information Entity Common Information

1685 The BIE common information class provides necessary component information that  
 1686 is applicable to business components either directly or through inheritance. The BIE  
 1687 common information class contains the following information:

- 1688 • **DEN.** This is the unique official name of the BIE in the dictionary.
- 1689 • **Definition.** This is the unique business semantic meaning of the BIE.
- 1690 • **Business Term.** This is a synonym term under which the BIE is  
 1691 commonly known and used in business for a specific context. A BIE  
 1692 may have several business terms or synonyms.

1693 [B4] BIE common information content shall be in the English language following  
 1694 the complete Oxford English Dictionary. Where conflicting spellings exist,  
 1695 the spelling listed as the primary British spelling shall be used.

### 1696 7.4.1 Business Information Entity Dictionary Entry Name

1697 BIE naming rules are based on the following concepts as defined in ISO 11179:

- 1698 • **Object Class** – represents the logical data grouping or aggregation (in  
 1699 a logical data model) to which a property belongs. The object class is  
 1700 expressed as an object class term. Thus, the object class is the part of  
 1701 a BIE's DEN that represents an activity or object in a specific context.  
 1702 Object classes have explicit boundaries and meaning and their  
 1703 properties and behaviour follow the same rules.
- 1704 • **Property Term** – represents the distinguishing characteristic of the  
 1705 object class and shall occur naturally in the definition.
- 1706 • **Representation Term** – an element of the BIE name which describes  
 1707 the form in which the BIE is represented.
- 1708 • **Qualifier Term** – a word or words which help define and differentiate  
 1709 a BIE from its associated CC and other BIEs. Qualifier terms are used  
 1710 to refine the semantic meaning of the DEN to reflect restriction to the  
 1711 BIE object class term and/or property terms as necessary to  
 1712 distinguish one BIE concept, conceptual domain, content model or  
 1713 data value domain from another.

1714 [B5] BIE DENs shall be in the English language following the latest version of the  
 1715 complete *Oxford English Dictionary*. Where conflicting spellings exist, the  
 1716 spelling listed as the primary British spelling shall be used.

1717 [Note] – Oxford English Dictionary

1718 Users may choose to utilize any version of the Oxford English Dictionary to create  
 1719 the spelling and definitions of BIEs, however the complete Oxford English Dictionary  
 1720 will be the authoritative source for conflict resolution between competing spellings of  
 1721 component names or definitions.

1722 [B6] A BIE DEN shall be unique amongst all BIE DENs within the library of which  
 1723 it is a part.

1724 [B7] A BIE DEN shall be extracted from the BIE definition.

1725 [B8] A BIE DEN shall not include consecutive identical words.

- 1726 [B9] A BIE DEN and all its components shall be in singular form unless the  
1727 concept itself is plural.
- 1728 [B10] A BIE DEN shall only use alphabetic characters plus the period, underscore  
1729 and space characters.
- 1730 [B11] A BIE DEN shall only contain verbs, nouns, adverbs and adjectives unless a  
1731 different part of speech is part of an official title, part of a term listed in the  
1732 *Oxford English Dictionary*, or part of a Controlled Vocabulary.
- 1733 [Note] – Parts of Speech  
1734 Articles, prepositions and related parts of speech that are not verbs, nouns, adverbs  
1735 and adjectives normally add no semantic clarity and should never be used unless as  
1736 part of an official title or in a controlled vocabulary as part of a common business  
1737 term that can not otherwise be expressed.  
1738
- 1739 [Example] – Exception Use of Parts of Speech  
1740 `Office Of Surface Mining_ Goods Item. Free On Board Value. Amount`  
1741 Where the `office of surface mining` is a formal title that contains the  
1742 preposition `of`, and removal of the preposition would identify a different  
1743 organization; and `Free On Board Value` where `Free On Board` is a recognized  
1744 expression, and removal of the preposition `on` would change the semantic  
1745 meaning of the property term.
- 1746 [B12] Abbreviations and acronyms that are part of the BIE DEN shall be expanded  
1747 or explained in the definition.
- 1748 [B13] BIE DEN object class terms, property terms, and representation terms shall  
1749 be separated by dots.
- 1750 [B14] The space character shall separate words in multi-worded BIE object class,  
1751 property, and representation terms.
- 1752 [B15] Each word in a BIE DEN shall start with a capital letter.
- 1753 [B16] The dots after BIE object class, property and representation terms shall be  
1754 followed by a space character.
- 1755 [B17] Multi-worded object classes and property terms shall be used in lieu of  
1756 qualifier terms when the concept the multi worded object class or property  
1757 term exists in three or more dissimilar business domains.
- 1758 [Example] – Qualifier Hierarchy  
1759 `Trade_ Contract. Details` and `Electronic_ Trade_ Contract. Details` where  
1760 `Electronic_ Trade_ Contract. Details` is a reuse and restriction of `Trade_`  
1761 `Contract. Details` and the hierarchy of `Trade_ Contract` is preserved in the  
1762 reuse.
- 1763 [B18] The order of qualifier terms shall have semantic meaning.

- 1764 [Example] – Qualifier Order  
 1765 The BBIE `Electronic_Trade_Contract.Issue.Date Time` has a different  
 1766 semantic meaning than `Trade_Electronic_Contract.Issue.Date Time`.
- 1767 [B19] Qualifier terms shall reflect the semantic restriction of the object class or  
 1768 property term that they are used with.
- 1769 [Example] – Semantic Restrictions  
 1770 `Trade.Contract.Details` semantically restricts `Contract.Details`. The  
 1771 qualifier term of `Trade` is allowed even though it also may exist as a separate  
 1772 object class, property term, or representation term.  
 1773
- 1774 [Example] – BIE Common Information  
 1775 DEN – `Trade_Contract.Business_Type.Code`  
 1776 **Definition** – A code specifying a business type of the trade contract, such as a  
 1777 fixed price contract, or a time and materials based contract.  
 1778 Business Term – `Service Agreement Type`
- 1779 **7.4.2 Business Information Entity Definitions**
- 1780 BIE definitions are based on the requirements for data element definitions defined in  
 1781 ISO 11179-4.
- 1782 [B20] Each BIE shall have its own unique semantic definition within the library of  
 1783 which it is a part.
- 1784 [Note] – Order of Development of Definition and DEN  
 1785 In the interest of quality, it is recommended that the BIE definition be developed first  
 1786 and the DEN extracted from it.
- 1787 [B21] The BIE definition shall be derived from the source CC definition.
- 1788 [B22] The BIE definition shall be in the English language following the latest  
 1789 version of the complete *Oxford English Dictionary*. Where conflicting  
 1790 spellings exist, the spelling listed as the primary British spelling shall be  
 1791 used.
- 1792 [B23] The BIE definition shall be consistent with the requirements of *ISO 11179-4*  
 1793 *Section 4* and shall provide an understandable meaning, which should also  
 1794 be translatable to other languages.
- 1795 [B24] The BIE definition shall take into account the fact that the users of the BIE  
 1796 library are not necessarily native English speakers. It shall therefore contain  
 1797 short sentences, using normal words. Wherever synonym terms are  
 1798 possible, the definition shall use the preferred term as identified in the  
 1799 controlled vocabulary.
- 1800 [B25] Whenever both the definite (i.e. `the`) and indefinite article (i.e. `a`) are  
 1801 possible in a BIE definition, preference shall be given to an indefinite article  
 1802 (i.e. `a`).

1803 [Note] – Definition Quality

1804 To verify the quality of the definition, place the DEN followed by the word *is* before  
1805 the definition to ensure that it is not simply a repetition of the DEN.

#### 1806 **7.4.3 Business Information Entity Business Terms**

1807 BIE business terms are those terms commonly used for day-to-day information  
1808 exchanges within a given domain. As such, no specific naming rules apply to  
1809 business term structures. Interoperability of business terms will be given by linking  
1810 them within the BIE common information class.

#### 1811 **7.5 Business Information Entity Localized Information Class**

1812 As with CCs, the normative expressions of BIEs are in the English language.  
1813 However, non-native English speakers may choose to create native language  
1814 variations of the DEN, definition, and business term. The BIE localized information  
1815 class contains the relevant information necessary to associate the native language  
1816 expressions to their normative English language counterparts. Other language BIE  
1817 DENs will only consist of alphabetic characters unless required by language rules. In  
1818 addition to other language DEN, definition, and business term(s), a mandatory  
1819 language code identifies the language in which the components are being expressed  
1820 for storage in the registry. The localized information class contains:

- 1821 • **Language Code** – A code which identifies the language being used.  
1822 *ISO 639-1 Codes for the Representation of Languages* will be used as  
1823 the authoritative source for code values.
- 1824 • **Other Language DEN** – The official name of the component in a  
1825 language other than English.
- 1826 • **Other Language Definition** – the semantic meaning of the  
1827 component in a language other than English.
- 1828 • **Other Language Business Term** – A synonym term in another  
1829 language under which the component is commonly known and used in  
1830 a business expression in that language.

1831 The DEN and definition in the localized information class must only be expressed in  
1832 the language identified by the language code property of that class. The business  
1833 terms must only be expressed in the language identified by the language code  
1834 property of that class, or a recognized dialect of the language. Aggregate Business  
1835 Information Entities.

1836 Each ABIE represents the logical data grouping or aggregation (in a logical data  
1837 model) of the concept of the ABIE.

1838 [Definition] – Aggregate Business Information Entity (ABIE)

1839 An Aggregate Business Information Entity is a collection of related pieces of  
1840 business information that together convey a distinct business meaning in a specific  
1841 business context. Expressed in modelling terms, it is the representation of an  
1842 object class, in a specific business context.

1843 An ABIE represents an ACC with business context applied.

1844 [B26] An ABIE shall be based on an ACC.

### 1845 **7.5.1 Aggregate Business Information Entity Object Class Term**

1846 The ABIE object class is expressed by an object class term. The ABIE object class  
1847 term is the same as the ACC on which it is based. The object class term is a  
1848 semantically meaningful name for the object class that is represented by the ABIE. It  
1849 serves as the basis for the DEN of the ABIE and for the DEN of all BBIEs and  
1850 ASBIEs that are properties of the ABIE.

1851 [B27] An ABIE object class term shall be identical to its basis ACC object class  
1852 term.

### 1853 **7.5.2 Aggregate Business Information Entity Object Class Term Qualifier**

1854 The ABIE object class term qualifier is a word or words which help define and  
1855 differentiate an ABIE from its associated CC and other BIEs. The ABIE object class  
1856 term qualifier enhances the semantic meaning of the ABIE DEN to reflect a  
1857 restriction to the BIE concept, conceptual domain, content model or data value. ABIE  
1858 object class terms can have one or more qualifier terms.

1859 [B28] A qualified ABIE shall be a restriction, and never an extension, of its source  
1860 ACC or its higher level ABIE in an ABIE hierarchy.

1861 [Example] – Multi-qualified ABIEs

1862 The Multi-qualified ABIE

1863 `Electronic_Trade_Contract.Details`

1864 qualifies the qualified ABIE

1865 `Trade_Contract.Details`

1866 which qualifies the ACC

1867 `Contract.Details`

1868 Whereas the multi-word qualified

1869 `Electronic Trade_Contract.Details`

1870 Qualifies the ACC

1871 `Contract.Details`

1872 and not the qualified ABIE

1873 `Trade_Contract.Details.`

1874 [B29] ABIE object class qualifier terms shall precede the object class term.

1875 [B30] Each ABIE object class qualifier term shall be followed by an underscore  
1876 and a space character ( \_ ).

1877 [B31] A multi-worded object class qualifier term shall have a unique semantic  
1878 meaning compared to the words separately.

1879 [B32] A qualifying ABIE hierarchy shall be established when multiple qualifiers are  
1880 used.

1881 [B33] A qualified object class name shall be unique amongst the set of qualified  
1882 object class names in the library of which it is a part.

1883 [B34] A qualified object class name may be applied in its entirety as a qualifier for  
1884 another object class to convey a semantic relationship between the objects  
1885 providing the qualifier hierarchy is preserved.

### 1886 **7.5.3 Aggregate Business Information Entity Usage Rule**

1887 ABIEs may have usage rules. Each usage rule defines a constraint that describes  
1888 specific conditions that are applicable to the ABIE. ABIE usage rules represent the  
1889 specific application of an ABIE in its role as an object class. Usage rules are  
1890 expressed as free form text.

1891 [B35] An ABIE shall have zero or more usage rules.

1892 Usage rules will only be defined at the level of the hierarchical structure to which  
1893 they apply.

1894 [B36] ABIE usage rules shall not replicate BBIE, ASBIE, or CDT usage rules.

### 1895 **7.5.4 Aggregate Business Information Entity Identifiers**

1896 In order to ensure uniqueness, every ABIE will have assigned a:

- 1897 • **Unique Identifier:** The identifier that references an ABIE instance in a  
1898 unique and unambiguous way.
- 1899 • **Version Identifier:** An indication of the evolution over time of an ABIE  
1900 instance.

1901 [B37] Each ABIE shall have a unique identifier within the library of which it is a  
1902 part.

1903 [B38] Each ABIE shall have a unique version identifier within the library of which it  
1904 is a part.

### 1905 **7.5.5 Aggregate Business Information Entity Common Information**

1906 The ABIE common information class provides necessary ABIE metadata information.

1907 [B39] Each ABIE shall have a common information class.

1908 [B40] The ABIE common information class shall conform to all BIE common  
1909 information rules.

1910 [B41] The ABIE common information class shall consist of:

- 1911 • **DEN (mandatory):** The official name of the ABIE.
- 1912 • **Definition (mandatory):** The semantic meaning of the ABIE.
- 1913 • **Business Term (optional, repetitive):** A synonym term under which  
1914 the ABIE is commonly known and used in business.

1915 [Example] – ABIE Common Information

1916 DEN – Trade\_Contract\_Details

1917 **Definition** – A trade contract is a contractual agreement between two or more  
1918 parties for trade purposes.

1919 Business Term – service Agreement

#### 1920 **7.5.5.1 Aggregate Business Information Entity Dictionary Entry Names**

1921 [B42] Each ABIE shall have a formally defined DEN.

1922 [B43] Each ABIE DEN shall conform to all BIE DEN rules.

1923 [B44] The DEN of an ABIE shall consist of the object class term of the ACC it is  
 1924 based on, and possibly additional qualifier term(s) to represent its specific  
 1925 business context, followed by a dot, a space character, and the term  
 1926 `Details`.

1927 [Example] – DEN for ABIEs

1928 `Trade_Contract.Details; Currency_Exchange.Details`

### 1929 7.5.5.2 Aggregate Business Information Entity Definitions

1930 [B45] Each ABIE shall have a formal definition.

1931 [B46] Each ABIE definition shall conform to all BIE definition rules.

1932 [B47] The definition of an ABIE shall include the object class term and any  
 1933 qualifier terms.

1934 [Example] – ABIE Definition

1935 `Trade_Contract.Details`

1936  
 1937 A trade contract is a contractual agreement between two or more parties for  
 1938 trade purposes.

1939 [B48] An ABIE with an unqualified object class shall have the same definition as  
 1940 the ACC the ABIE is based on.

1941 [B49] An ABIE with a qualified object class term shall have a definition that  
 1942 semantically restricts the definition of the less qualified ABIE or ACC that the  
 1943 ABIE is based on.

### 1944 7.5.5.3 Aggregate Business Information Entity Business Terms

1945 An ABIE may have several business terms or synonyms. ABIE business terms are  
 1946 synonym terms under which the ABIE is commonly known and used in business.

1947 [B50] Each ABIE shall have zero or more business terms.

### 1948 7.5.6 Aggregate Business Information Entity Localized Information

1949 The ABIE localized information class contains the relevant information necessary to  
 1950 associate native language expressions of ABIE attributes to the ABIE.

1951 [B51] Each ABIE shall have zero or more localized information classes.

1952 [B52] Each occurrence of an ABIE localized information class shall contain:

- 1953 • **Language Code (mandatory):** A code which identifies the language.  
 1954 *ISO 639-1 Codes for the Representation of Languages* shall be used  
 1955 as the authoritative source for code values.
- 1956 • **Other Language DEN (mandatory):** The official name of the ABIE in  
 1957 a language other than English.
- 1958 • **Other Language Definition (mandatory):** The semantic meaning of  
 1959 the ABIE in a language other than English.
- 1960 • **Other Language Business Term (optional, repetitive):** A synonym  
 1961 term in another language under which the ABIE is commonly known  
 1962 and used in a business expression in that language.

- 1963 [B53] Each other language ABIE DEN shall adhere to all ABIE DEN rules other  
1964 than the requirement to be in the English language.
- 1965 [B54] Each other language ABIE DEN shall only consist of alphabetic characters  
1966 unless required by language rules.
- 1967 [B55] Each other language ABIE definition shall adhere to all ABIE and definition  
1968 rules other than the requirement to be in the English language.
- 1969 The DEN and definition in the localized information class must only be expressed in  
1970 the language identified by the language code property of that class.
- 1971 [B56] Each other language ABIE DEN and definition shall only be expressed in  
1972 the language identified by the language code property of that class.
- 1973 The business terms must only be expressed in the language identified by the  
1974 language code property of that class, or a recognized dialect of the language.
- 1975 [B57] Each other language ABIE business term shall only be expressed in the  
1976 language identified by the language code of that class, or a recognized  
1977 dialect of the language.

## 1978 **7.6 Aggregate Business Information Entity Properties**

- 1979 An ABIE consists of ABIE properties. The ABIE property is a generalization of either  
1980 an ASBIE or a BBIE. Every ABIE contains at least one ABIE property.
- 1981 [B58] An ABIE shall contain at least one ABIE property.
- 1982 [B59] An ABIE property shall be based on a CC property of the corresponding  
1983 ACC.
- 1984 [B60] An ABIE property shall either be a BBIE or an ASBIE.

1985 [Note] – ABIE Nesting

1986 At the deepest level of nesting an ABIE will only contain BBIEs.

- 1987 Because an ABIE is a self contained class, it is important that all listed properties are  
1988 in fact conceptually related to the concept of the BIE, and not just added for  
1989 convenience.
- 1990 [B61] Within an ABIE, all embedded BBIEs and ASBIEs shall be related to the  
1991 concept of the aggregate.
- 1992 ABIE properties must be unique within the ABIE.
- 1993 [B62] An ASBIE and a BBIE DEN shall never be identical when used in an ABIE.
- 1994 An ABIE Property that is an ASBIE must be devoid of mandatory circular references.
- 1995 [B63] An ABIE shall never contain – directly or at any nested level – a mandatory  
1996 ASBIE that references itself.

1997 [Note] – Recursion  
 1998 The objective of the above rule is to avoid endless loops in the content model of an  
 1999 ABIE. The rule allows an ABIE to contain an ASBIE Property that references itself.  
 2000 The fact that the ASBIE Property is not mandatory makes it possible to stop the loop  
 2001 after a finite number of iterations.

## 2002 **7.7 Association Business Information Entities**

2003 An ASBIE is a ASCC with context. ASBIEs associate two ABIEs, where one ABIE is  
 2004 a complex property of the other. The ASBIE consists of an ASBIE Property plus the  
 2005 object class of the ABIE to which it belongs (associating ABIE). The property term  
 2006 and the definition of the property are defined in the ASBIE and represent the nature  
 2007 of the association. Like simple properties, ASBIEs representing complex properties  
 2008 have a defined minimum and maximum occurrence. Because ASBIEs represent  
 2009 hierarchical structures, they are equivalent to UML aggregation or composition  
 2010 associations.

2011 [Definition] – Association Business Information Entity (ASBIE)  
 2012 An Association Business Information Entity is a Business Information Entity that  
 2013 represents a complex business characteristic of a specific object class in a specific  
 2014 business context. It has a unique business semantic definition. An Association  
 2015 Business Information Entity represents an Association Business Information Entity  
 2016 property and is associated to an Aggregate Business Information Entity, which  
 2017 describes its structure. An Association Business Information Entity is derived from  
 2018 an Association Core Component. An Association Business Information Entity  
 2019 functions as a property of an Aggregate Business Information Entity.

2020 [B64] An ASBIE shall be based on an ASCC.

### 2021 **7.7.1 Association Business Information Entity Association Type**

2022 ASBIEs represent an association between the associating (parent) ABIE and the  
 2023 associated (child) ABIE. The nature of the association of all ASBIEs may be either a  
 2024 UML aggregation or composition association. An association type indicator is  
 2025 required to reflect this association as a mechanism for transformation between  
 2026 alternative syntax storage expressions and UML representation.

2027 [B65] An ASBIE shall have an UML aggregation association value of `aggregation`  
 2028 or `composition`.

### 2029 **7.7.2 Association Business Information Entity Usage Rule**

2030 ASBIEs may have usage rules. Each usage rule defines a constraint that describes  
 2031 specific conditions that are applicable to the ASBIE. ASBIE usage rules represent  
 2032 the specific application of an ASBIE as an ABIE property.

2033 [B66] An ASBIE shall have zero or more usage rules.

2034 Usage rules will only be defined at the level of the hierarchical structure to which  
 2035 they apply.

2036 [B67] ASBIE usage rules shall not replicate ABIE, BBIE, or BDT usage rules.

### 2037 **7.7.3 Association Business Information Entity Cardinality**

2038 Each ASBIE, in its role as an ABIE property, will have its cardinality explicitly  
2039 expressed.

2040 [B68] Each ASBIE shall have a cardinality expressed.

2041 [B69] ASBIE cardinalities shall consist of a matched pair of values consisting of a  
2042 minimum occurrence and a maximum occurrence.

2043 [B70] ASBIE cardinality values shall be non-negative integers of zero or greater,  
2044 or the token `unbounded` if no limit applies.

2045 [B71] ASBIE cardinality values shall never be an extension of its basis ASCC  
2046 cardinality.

### 2047 **7.7.4 Association Business Information Entity Sequencing Key**

2048 Business requirements may exist for ASBIEs to occur in a specific order within an  
2049 ABIE. Software and storage applications may have unique sequencing algorithms  
2050 that change the normatively defined order of the ASBIE within an ABIE. To ensure  
2051 the desired order is preserved, each ASBIE within an ABIE will be assigned a unique  
2052 sequencing key.

2053 [B72] Each ASBIE shall be assigned a unique sequencing key within the ABIE of  
2054 which it is a part.

2055 [Note] – Sequencing Key Structure

2056 There are no specific rules for the structure of the sequencing keys. Implementers  
2057 are free to choose any structure providing it guarantees uniqueness within the ABIE  
2058 to which it belongs and the structuring scheme is readily available for anyone  
2059 accessing or using the ABIE.

2060 Since ASBIEs represent contextualized expressions of their source ASCCs, the  
2061 sequencing requirements of an ASBIE in an ABIE might be different than the  
2062 sequencing key of the corresponding ASCC in an ACC.

2063 [B73] An ASBIE sequencing key may be different than its corresponding ASCC  
2064 sequencing key.

### 2065 **7.7.5 Association Business Information Entity Common Information**

2066 In its role as an ABIE property, each ASBIE has a common information class. The  
2067 ASBIE common information class provides necessary ASBIE metadata information.

2068 [B74] Each ASBIE shall have a common information class.

2069 [B75] The ASBIE common information class shall conform to all BIE common  
2070 information rules.

2071 [B76] The ASBIE common information class shall consist of:

- 2072 • **DEN (mandatory):** The official name of the ASBIE.
- 2073 • **Definition (mandatory):** The semantic meaning of the ASBIE.
- 2074 • **Business Term (optional, repetitive):** A synonym term under which  
2075 the ASBIE is commonly known and used in business.

2076	[Example] – ASBIE Common Information
2077	DEN – Trade_Contract. Effective. Measurement_Period
2078	<b>Definition</b> – A period within which the measurement of provisions of this trade
2079	contract are, or will be effective.
2080	Business Term – Service Agreement Duration

#### 2081 7.7.5.1 Association Business Information Entity Dictionary Entry Names

- 2082 [B77] Each ASBIE shall have a formally defined DEN.
- 2083 [B78] Each ASBIE DEN shall conform to all BIE DEN rules.
- 2084 [B79] The DEN of an ASBIE shall consist of the following components in the
- 2085 specified order:
- 2086 • the object class term and qualifiers, if any, of the associating BIE,
  - 2087 • the DEN of the included ASBIE Property.

2088	[Example] – Association Business Information Entity DEN
2089	Trade_Contract. Effective. Measurement_Period
2090	where the associated ABIE Measurement_Period.Details now becomes part of
2091	a property in the associating ABIE of Trade_Contract.Details and the property
2092	term (nature of that association) is Effective.

#### 2093 7.7.5.2 Association Business Information Entity Definitions

- 2094 [B80] Each ASBIE shall have a formal definition.
- 2095 [B81] Each ASBIE definition shall conform to all BIE definition rules.
- 2096 [B82] The definition of an ASBIE shall include the object class term and object
- 2097 class qualifier terms, if any, of the associating ABIE, and the definition of the
- 2098 ASBIE Property the ASBIE includes.

#### 2099 7.7.5.3 Association Business Information Entity Business Terms

2100 An ASBIE may have several business terms or synonyms. ASBIE business terms

2101 are synonym terms under which the ASBIE is commonly known and used in

2102 business.

- 2103 [B83] Each ASBIE shall have zero or more business terms.

#### 2104 7.7.6 Association Business Information Entity Localized Information

2105 The ASBIE localized information class contains the relevant information necessary to

2106 associate native language expressions of ASBIE attributes to the ASBIE.

- 2107 [B84] An ASBIE shall have zero or more localized information classes.

- 2108 [B85] Each occurrence of an ASBIE localized information class shall contain:

- 2109 • **Language Code (mandatory):** A code which identifies the language.
- 2110 *ISO 639-1 Codes for the Representation of Languages* shall be used
- 2111 as the authoritative source for code values.

- 2112 • **Other Language DEN (mandatory):** The official name of the ASBIE  
2113 in a language other than English.
- 2114 • **Other Language Definition (mandatory):** The semantic meaning of  
2115 the ASBIE in a language other than English.
- 2116 • **Other Language Business Term (optional, repetitive):** A synonym  
2117 term in another language under which the ASBIE is commonly known  
2118 and used in a business expression in that language.
- 2119 [B86] Each other language ASBIE DEN shall adhere to all ASBIE DEN rules other  
2120 than the requirement to be in the English language.
- 2121 [B87] Each other language ASBIE definition shall adhere to all ASBIE definition  
2122 rules other than the requirement to be in the English language.
- 2123 The DEN and definition in the localized information class must only be expressed in  
2124 the language identified by the language code property of that class.
- 2125 [B88] Each other language ASBIE DEN and definition shall only be expressed in  
2126 the language identified by the language code property of that class.
- 2127 The business terms must only be expressed in the language identified by the  
2128 language code property of that class, or a recognized dialect of the language.
- 2129 [B89] Each other language ASBIE business term shall only be expressed in the  
2130 language identified by the language code of that class, or a recognized  
2131 dialect of the language.

## 2132 7.8 Association Business Information Entity Properties

2133 An ASBIE Property consists of a property term and qualifiers if any, plus the object  
2134 class term and qualifiers if any, of the associated ABIE.

2135 [B90] An ASBIE Property shall be defined for each ASBIE.

2136 ASBIE properties are reusable across object classes.

2137 [Example] – Reuse of ASBIE Properties in Multiple Object Classes

2138 `Trade_Contract.Effective.Measurement_Period` AND `Lodging House.`  
2139 `Effective.Measurement_Period` may both exist.

2140 [B91] An ASBIE Property shall be based on an ASCC Property.

2141 [B92] The associated ABIE of an ASBIE property shall be based on the  
2142 associated ACC of the corresponding ASCC property.

### 2143 7.8.1 Association Business Information Entity Property – Property Term

2144 Each ASBIE Property contains a property term. The property term of an ASBIE  
2145 Property is a semantically meaningful name for the characteristic that represents the  
2146 nature of the association to the associated ABIE.

2147 [B93] Each ASBIE Property shall have a formally defined property term.

2148 [B94] The property term of an ASBIE Property may consist of more than one  
2149 word.

2150 [B95] A multi-worded property term of an ASBIE Property shall have a unique  
 2151 semantic meaning compared to the words separately and compared to any  
 2152 other combination of these words.

2153 [Example] – Single versus Multiple Word Property Terms

2154  
 2155 for the ASBIE Bid Bond\_ Guarantee. Credit Charge. Guarantee Creditor\_  
 2156 Organization:

2157 Credit Charge. Guarantee Creditor\_ Organization is different than Credit.  
 2158 Guarantee Creditor\_ Organization

2159 Credit Charge. Guarantee Creditor\_ Organization is different than Charge.  
 2160 Guarantee Creditor\_ Organization

2161 Credit Charge. Guarantee Creditor\_ Organization is different than Charge  
 2162 Credit. Guarantee Creditor\_ Organization

2163 **7.8.2 Association Business Information Entity Property Qualifier Term**

2164 The ASBIE Property qualifier term is a word or words which help define and  
 2165 differentiate an ASBIE Property from its associated ASCC Property and other ASBIE  
 2166 Properties. The ASBIE Property qualifier enhances the semantic meaning of the  
 2167 ASBIE Property DEN to reflect a restriction to the ASBIE Property concept,  
 2168 conceptual domain, content model or data value. ASBIE Properties can have one or  
 2169 more qualifier terms.

2170 [B96] A qualified ASBIE Property shall be a restriction, and never an extension, of  
 2171 its source ASCC Property or its higher level ASBIE Properties in an ASBIE  
 2172 Property hierarchy.

2173 [Example] – Multi-qualified ASBIE Properties

2174 The Multi-qualified ASBIE Property

2175 Total\_ Actual\_ Quantity. Work Item\_ Dimension

2176 qualifies the qualified ASBIE Property

2177 Actual\_ Quantity. Work Item\_ Dimension

2178 which qualifies the ASCC Property

2179 Quantity. Dimension

2180 Whereas the multi-word qualified

2181 Initial Credit\_ Charge. Creditor\_ Organization

2182 Qualifies the ASCC Property

2183 Charge. Organization

2184 and not the qualified ASBIE Property

2185 Credit\_ Charge. Creditor\_ Organization

2186 [B97] ASBIE Property qualifier terms shall precede the property term.

2187 [B98] Each ASBIE Property qualifier term shall be followed by an underscore and  
 2188 a space character ( ).

2189 [B99] A multi-worded ASBIE Property qualifier term shall have a unique semantic  
2190 meaning compared to the words separately.

2191 [B100] A qualifying ASBIE Property hierarchy shall be established when multiple  
2192 qualifiers are used.

2193 [B101] A qualified property term of an ASBIE Property DEN may be applied in its  
2194 entirety as a qualifier for another property term to convey a semantic  
2195 relationship between the objects providing the qualifier hierarchy is  
2196 preserved.

### 2197 **7.8.3 Association Business Information Entity Property Identifiers**

2198 In order to ensure uniqueness, every ASBIE Property will have assigned a:

- 2199 • **Unique Identifier:** The identifier that references an ASBIE Property  
2200 instance in a unique and unambiguous way.
- 2201 • **Version Identifier:** An indication of the evolution over time of an  
2202 ASBIE Property instance.

2203 [B102] Each ASBIE Property shall have a unique identifier within the library of  
2204 which it is a part.

2205 [B103] Each ASBIE Property shall have a unique version identifier within the library  
2206 of which it is a part.

### 2207 **7.8.4 Association Business Information Entity Property Common Information**

2208 The ASBIE Property common information class provides necessary ASBIE Property  
2209 metadata information.

2210 [B104] Each ASBIE Property shall have a common information class.

2211 [B105] The ASBIE Property common information class shall conform to all BIE  
2212 common information rules.

2213 [B106] The ASBIE Property common information class shall consist of:

- 2214 • **DEN (mandatory):** The official name of the ASBIE Property.
- 2215 • **Definition (mandatory):** The semantic meaning of the ASBIE  
2216 Property.
- 2217 • **Business Term (optional, repetitive):** A synonym term under which  
2218 the ASBIE Property is commonly known and used in business.

2219 [Example] – ASBIE Property Common Information

2220 DEN – **Effective. Measurement\_ Period**

2221 **Definition** – A **period** within which the **measurement** of provisions are, or will be  
2222 **effective**.

2223 **Business Term** – **Valid Measurement Period**

#### 2224 **7.8.4.1 Association Business Information Entity Property Dictionary Entry Names**

2225 [B107] Each ASBIE Property shall have a formally defined DEN.

2226 [B108] Each ASBIE Property DEN shall conform to all BIE DEN rules.

2227 [B109] The DEN of an ASBIE Property shall consist of a property term and property  
 2228 term qualifiers, if any, plus the object class term and qualifiers, if any, of the  
 2229 associated ABIE.

#### 2230 7.8.4.2 Association Business Information Entity Property Definitions

2231 [B110] Each ASBIE Property shall have a formal definition.

2232 [B111] Each ASBIE Property definition shall conform to all BIE definition rules.

2233 [B112] The definition of an ASBIE Property shall include the object class term and  
 2234 qualifiers, if any, of the associated ABIE and the property term and  
 2235 qualifiers, if any, that express the nature of the association.

2236 [Example] – ASBIE Property Definition

2237 `Effective. Measurement_ Period`

2238 **Definition** – A `period` within which the `measurement` of provisions are, or will be  
 2239 `effective`.

2240 Where the associated object class term `period`, and its qualifier `Measurement`, and  
 2241 property term `Effective` are included in the definition.

2242 [B113] An ASBIE Property with a qualified property term shall have a definition that  
 2243 semantically restricts the definition of the less qualified ASBIE Property or  
 2244 the ASCC Property that the ASBIE Property is based on.

#### 2245 7.8.4.3 Association Business Information Entity Property Business Terms

2246 An ASBIE Property may have several business terms or synonyms. ASBIE Property  
 2247 business terms are synonym terms under which the ASBIE Property is commonly  
 2248 known and used in business.

2249 [B114] Each ASBIE Property shall have zero or more business terms.

#### 2250 7.8.5 Association Business Information Entity Property Localized Information

2251 The ASBIE Property localized information class contains the relevant information  
 2252 necessary to associate native language expressions of ASBIE Property attributes to  
 2253 the ASBIE Property.

2254 [B115] An ASBIE Property shall have zero or more localized information classes.

2255 [B116] Each occurrence of an ASBIE Property localized information class shall  
 2256 contain:

- 2257 • **Language Code (mandatory):** A code which identifies the language.  
 2258 *ISO 639-1 Codes for the Representation of Languages* shall be used  
 2259 as the authoritative source for code values.
- 2260 • **Other Language DEN (mandatory):** The official name of the ASBIE  
 2261 Property in a language other than English.
- 2262 • **Other Language Definition (mandatory):** The semantic meaning of  
 2263 the ASBIE Property in a language other than English.
- 2264 • **Other Language Business Term (optional, repetitive):** A synonym  
 2265 term in another language under which the ASBIE Property is  
 2266 commonly known and used in a business expression in that language.

- 2267 [B117] Each other language ASBIE Property DEN shall adhere to all ASBIE  
2268 Property DEN rules other than the requirement to be in the English  
2269 language.
- 2270 [B118] Each other language ASBIE Property DEN shall only consist of alphabetic  
2271 characters unless required by language rules.
- 2272 [B119] Each other language ASBIE Property definition shall adhere to all ASBIE  
2273 Property definition rules other than the requirement to be in the English  
2274 language.
- 2275 The DEN and definition in the localized information class must only be expressed in  
2276 the language identified by the language code property of that class.
- 2277 [B120] Each other language ASBIE Property DEN and definition shall only be  
2278 expressed in the language identified by the language code property of that  
2279 class.
- 2280 The business terms must only be expressed in the language identified by the  
2281 language code property of that class, or a recognized dialect of the language.
- 2282 [B121] Each other language ASBIE Property business term shall only be expressed  
2283 in the language identified by the language code of that class, or a  
2284 recognized dialect of the language.

## 2285 **7.9 Basic Business Information Entities**

- 2286 BBIEs represent simple ABIE properties. The BBIE consists of a BBIE Property and  
2287 the object class of the ABIE to which it belongs.

2288 [Definition] – Basic Business Information Entity (BBIE)  
2289 A Basic Business Information Entity is a Business Information Entity that  
2290 represents a singular business characteristic of a specific Aggregate Business  
2291 Information Entity in a specific business context. It has a unique business semantic  
2292 definition. A Basic Business Information Entity represents a Basic Business  
2293 Information Entity Property and is therefore linked of a Business Data Type, which  
2294 defines its value domain. A Basic Business Information Entity is based on a Basic  
2295 Core Component.

- 2296 [B122] A BBIE shall be based on a BCC.

### 2297 **7.9.1 Basic Business Information Entity Usage Rules**

- 2298 BBIEs may have usage rules. Each usage rule defines a constraint that describes  
2299 specific conditions that are applicable to the BBIE. The BBIE usage rules represent  
2300 the specific application of a BBIE as an ABIE property.

- 2301 [B123] A BBIE shall have zero or more usage rules.

- 2302 Usage rules will only be defined at the level of the hierarchical structure to which  
2303 they apply.

- 2304 [B124] BBIE usage rules shall not replicate ABIE, ASBIE, or BDT usage rules.

### 2305 **7.9.2 Basic Business Information Entity Cardinality**

- 2306 Each BBIE, in its role as an ABIE property, will have its cardinality explicitly  
2307 expressed.

- 2308 [B125] Each BBIE shall have a cardinality expressed.
- 2309 [B126] BBIE cardinalities shall consist of a matched pair of values consisting of a  
2310 minimum occurrence and a maximum occurrence.
- 2311 [B127] BBIE cardinality values shall be non-negative integers of zero or greater, or  
2312 the token `unbounded` if no limit applies.
- 2313 [B128] BBIE cardinality values shall be a restriction and never an extension of its  
2314 basis BCC.

### 2315 **7.9.3 Basic Business Information Entity Sequencing Key**

2316 Business requirements may exist for BBIEs to occur in a specific order within an  
2317 ABIE. Software and storage applications may have unique sequencing algorithms  
2318 that change the normatively defined order of the BBIE within an ABIE. To ensure the  
2319 desired order is preserved, each BBIE within an ABIE will be assigned a unique  
2320 sequencing key.

- 2321 [B129] Each BBIE shall be assigned a unique sequencing key within the ABIE of  
2322 which it is a part.

#### 2323 [Note] – Sequencing Key Structure

2324 There are no specific rules for the structure of the sequencing keys. Implementers  
2325 are free to choose any structure providing it guarantees uniqueness within the ACC  
2326 to which it belongs and the structuring scheme is readily available for anyone  
2327 accessing or using the ACC.

2328 Since BBIEs represent contextualized expressions of their source BCCs, the  
2329 sequencing requirements of a BBIE in an ABIE might be different than the  
2330 sequencing key of the corresponding BCC in an ACC.

- 2331 [B130] A BBIE sequencing key may be different than its corresponding BCC  
2332 sequencing key.

### 2333 **7.9.4 Basic Business Information Entity Common Information**

2334 In its role as an ABIE property, each BBIE has a common information class. The  
2335 BBIE common information class provides necessary BBIE metadata information.

- 2336 [B131] Each BBIE shall have a common information class.

- 2337 [B132] The BBIE common information class shall conform to all BIE common  
2338 information rules.

#### 2339 [Example] – Common Information

2340 `DEN – Trade_Contract. Total_Price. Amount`

2341 Definition – The monetary amount of the total price of this trade contract.

2342 Business Term – `Service Agreement Total Price; Amount Owed`

- 2343 [B133] The BBIE common information class shall consist of:

- 2344 • **DEN (mandatory):** The official name of the BBIE.
- 2345 • **Definition (mandatory):** The semantic meaning of the BBIE.

- 2346                   • **Business Term (optional, repetitive):** A synonym term under which  
2347                   the BBIE is commonly known and used in business.

#### 2348 7.9.4.1 Basic Business Information Entity Dictionary Entry Names

2349 [B134] Each BBIE shall have a formally defined DEN.

2350 [B135] Each BBIE DEN shall conform to all BIE DEN rules.

2351 [B136] The DEN of a BBIE shall consist of the following components in the  
2352           specified order:

- 2353                   • the object class term and qualifiers, if any, of the ABIE owning the  
2354                   corresponding BBIE, followed by a dot and space character.
- 2355                   • The DEN of the included BBIE Property.

2356 [Example] – BBIE DENs

2357 `Trade_ Contract. Total_ Price. Amount; Calculated_ Metrics. Description.`  
2358 `Text`

#### 2359 7.9.4.2 Basic Business Information Entity Definitions

2360 [B137] Each BBIE shall have a formal definition.

2361 [B138] Each BBIE definition shall conform to all BIE definition rules.

2362 [B139] The definition of a BBIE shall include the object class term and qualifiers, if  
2363           any of the ABIE to which it belongs, and the definition of the included BBIE  
2364           Property.

2365 [B140] A BBIE with an unqualified property term shall have the same definition as  
2366           the BCC the BBIE is based on.

2367 [B141] A BBIE with a qualified property term shall have a definition that  
2368           semantically restricts the definition of the less qualified BBIE or BCC that the  
2369           BBIE is based on.

2370 [Example] – BBIE Definition

2371 `Trade_ Contract. Total_ Price. Amount`

2372 Definition – The monetary amount of the total price of this trade contract.

2373 Where the object class term and qualifier `Trade_ Contract`, property term and  
2374           qualifier `Total_ Price`, and representation term `Amount` are in the definition.

#### 2375 7.9.4.3 Basic Business Information Entity Business Terms

2376 A BBIE may have several business terms or synonyms. BBIE business terms are  
2377           synonym terms under which the BBIE is commonly known and used in business.

2378 [B142] Each BBIE shall have zero or more business terms.

#### 2379 7.9.5 Basic Business Information Entity Localized Information

2380 The Basic Business Information Entity localized information class contains the  
2381           relevant information necessary to associate native language expressions of BBIE  
2382           attributes to the BBIE.

2383 [B143] A BBIE shall have zero or more localized information classes.

- 2384 [B144] Each occurrence of a BBIE localized information class shall contain:
- 2385           • **Language Code (mandatory):** A code which identifies the language.  
 2386           *ISO 639-1 Codes for the Representation of Languages* shall be used  
 2387           as the authoritative source for code values.
- 2388           • **Other Language DEN (mandatory):** The official name of the BBIE in  
 2389           a language other than English.
- 2390           • **Other Language Definition (mandatory):** The semantic meaning of  
 2391           the BBIE in a language other than English.
- 2392           • **Other Language Business Term (optional, repetitive):** A synonym  
 2393           term in another language under which the BBIE is commonly known  
 2394           and used in a business expression in that language.
- 2395 [B145] Each other language BBIE DEN shall adhere to all BBIE DEN rules other  
 2396           than the requirement to be in the English language.
- 2397 [B146] Each other language BIE DEN shall only consist of alphabetic characters  
 2398           unless required by language rules.
- 2399 [B147] Each other language BBIE definition shall adhere to all BBIE definition rules  
 2400           other than the requirement to be in the English language.
- 2401 The DEN and definition in the localized information class must only be expressed in  
 2402           the language identified by the language code property of that class.
- 2403 [B148] Each other language BBIE DEN and definition shall only be expressed in  
 2404           the language identified by the language code property of that class.
- 2405 The business terms must only be expressed in the language identified by the  
 2406           language code property of that class, or a recognized dialect of the language.
- 2407 [B149] Each other language BBIE business term shall only be expressed in the  
 2408           language identified by the language code of that class, or a recognized  
 2409           dialect of the language.

## 2410 **7.10 Basic Business Information Entity Properties**

2411 A BBIE Property represents a generic reusable data element independent of an  
 2412           object class. BBIE Property consists of a property term plus a representation term.

2413 [B150] A BBIE Property shall be defined for each BBIE.

2414 BBIE properties are reusable across ABIEs.

2415 [Example] – Reuse of BBIE Properties in Multiple BBIEs

2416 `Trade_Contact.Type.Code` and `Delivery_Event.Type.Code` may both exist.

2417 To ensure consistency in use, BBIE properties are always based on an approved  
 2418           BDT in the UN/CEFACT CDT specification.

2419 [B151] A BBIE Property shall only use a BDT based on an approved CDT in the  
 2420           CDT specification.

2421 [7.10.1.1 Basic Business Information Entity Property – Property Term](#)

2422 Each BBIE Property contains a property term. The property term of a BBIE Property  
 2423 is a semantically meaningful name for a unique characteristic that can be used in an  
 2424 ABIE object class.

2425 [B152] Each BBIE Property shall have a formally defined property term.

2426 [B153] The property term of a BBIE Property may consist of more than one word.

2427 [B154] A multi-worded property term of a BBIE Property shall have a unique  
 2428 semantic meaning compared to the words separately and compared to any  
 2429 other combination of these words.

2430 [Example] – Single versus Multiple Word Property Terms

2431 `Legal Classification. Code` is not the same as `Legal. Code`

2432 `Legal Classification. Code` is not the same as `Classification. Code`

2433 `Classification Legal. Code` is not the same as `Legal Classification. Code`

2434 [7.10.1.2 Basic Business Information Entity Property – Property Term Qualifiers](#)

2435 The BBIE Property qualifier term is a word or words which help define and  
 2436 differentiate a BBIE Property from its associated BCC Property and other BBIE  
 2437 Properties. The BBIE Property qualifier enhances the semantic meaning of the BBIE  
 2438 Property DEN to reflect a restriction to the BBIE Property concept, conceptual  
 2439 domain, content model or data value. BBIE Properties can have one or more  
 2440 qualifier terms.

2441 [B155] BBIE Property terms may be qualified to reflect semantic meaning.

2442 [B156] A qualified BBIE Property shall be a restriction, and never an extension, of  
 2443 its source BCC Property or its higher level BBIE Properties in a BBIE  
 2444 Property hierarchy.

2445 [B157] BBIE Property qualifier terms shall precede the property term.

2446 [Example] – Multi-qualified BBIE Properties

2447 The Multi-qualified BBIE Property

2448 `Applied_ Actual_ Conversion Rate. Date Time`

2449 qualifies the qualified BBIE Property

2450 `Actual_ Conversion Rate. Date Time`

2451 which qualifies the BCC Property

2452 `Conversion Rate. Date Time`

2453 Whereas the multi-word qualified

2454 `Transport Tax Basis_ Information. Amount`

2455 Qualifies the BCC Property

2456 `Information. Amount`

2457 and not the qualified BBIE Property

2458 `Basis_ Information. Amount`

2459

- 2460 [B158] Each BBIE Property qualifier term shall be followed by an underscore and a  
2461 space character ( ).
- 2462 [B159] A multi-worded BBIE Property qualifier term shall have a unique semantic  
2463 meaning compared to the words separately.
- 2464 [B160] A qualifying BBIE Property hierarchy shall be established when multiple  
2465 qualifiers are used.
- 2466 [B161] A qualified property term of a BBIE Property DEN may be applied in its  
2467 entirety as a qualifier for another property term to convey a semantic  
2468 relationship between the objects providing the qualifier hierarchy is  
2469 preserved.

#### 2470 7.10.1.3 Basic Business Information Entity Property Representation Term

- 2471 Each BBIE Property contains a representation term. The representation term is a  
2472 semantically meaningful name that represents the value domain of the BBIE  
2473 Property and its associated BDT. UN/CEFACT defines the approved representation  
2474 terms as part of the CDT specification. The BBIE Property representation term is  
2475 never qualified. If a BDT is qualified, this suggests that the data type qualifier should  
2476 be used as part of the BBIE object class, object class qualifier term(s), property term,  
2477 and/or property term qualifier term(s) resulting in a separate BBIE Property.
- 2478 [B162] A representation term shall be defined for each BBIE Property.
- 2479 [B163] The name of the BBIE Property representation term may consist of more  
2480 than one word.
- 2481 [B164] A multi-worded BBIE Property representation term shall have a unique  
2482 semantic meaning compared to the words separately and compared to any  
2483 other combination of these words.
- 2484 [B165] The name of the BBIE Property representation term shall be one of the  
2485 approved representation terms in the CDT specification.
- 2486 The BDT or qualified BDT will be of the same CDT as the basis BCC Property.
- 2487 [B166] A BBIE Property shall have a BDT that is based on the CDT of the  
2488 corresponding BCC Property.

#### 2489 7.10.2 Basic Business Information Entity Property Identifiers

- 2490 In order to ensure uniqueness, every BBIE Property will have assigned a:
- 2491 • **Unique Identifier (mandatory):** The identifier that references the  
2492 BBIE Property instance in a unique and unambiguous way.
  - 2493 • **Version Identifier (mandatory):** An indication of the evolution over  
2494 time of the BBIE Property instance.
- 2495 [B167] Each BBIE Property shall have a unique identifier within the library of which  
2496 it is a part.
- 2497 [B168] Each BBIE Property shall have a unique version identifier within the library  
2498 of which it is a part.

2499 **7.10.3 Basic Business Information Entity Property Common Information**

2500 The BBIE Property common information class provides necessary BBIE Property  
2501 metadata information.

2502 [B169] Each BBIE Property shall have a common information class.

2503 [B170] The BBIE Property common information class shall conform to all BIE  
2504 common information rules.

2505 [B171] The BBIE Property common information class shall consist of:

- 2506 • **DEN (mandatory):** The official name of the BBIE Property.
- 2507 • **Definition (mandatory):** The semantic meaning of the BBIE Property.
- 2508 • **Business Term (optional, repetitive):** A synonym term under which  
2509 the BBIE Property is commonly known and used in business.

2510 [Example] – BBIE Property Common Information

2511 DEN – Total\_ Price. Amount

2512 Definition – A monetary amount Of a total price

2513 Business Term – Price, Amount Owed

2514 **7.10.3.1 Basic Business Information Entity Property Dictionary Entry Names**

2515 [B172] Each BBIE Property shall have a formally defined DEN.

2516 [B173] Each BBIE Property DEN shall conform to all BIE DEN rules.

2517 [B174] The name of a BBIE Property shall consist of a property term and property  
2518 term qualifiers, if any, followed by a dot, a space character, and a  
2519 representation term.

2520 [B175] The name of a BBIE Property shall be unique within the context of an object  
2521 class but may be reused across different object classes.

2522 [Example] – Reuse of BBIE Properties in Multiple Object Classes

2523 Trade\_ Contact. Type. Code and Delivery\_ Event. Type. Code may both exist.

2524 **7.10.3.2 Basic Business Information Entity Property Definitions**

2525 [B176] Each BBIE Property shall have a formal definition.

2526 [B177] BBIE Property definitions shall conform to all BIE definition rules.

2527 [B178] The definition of a BBIE Property shall include the property and  
2528 representation term of the BBIE Property.

2529 [Example] – DEN for BBIE Properties

2530 Total\_ Price. Amount

2531 Definition – A monetary amount Of a total price

2532 Where the property term Price and optional qualifier term Total and the  
2533 representation term Amount appear in the definition.  
2534

2535 **7.10.3.3 Basic Business Information Entity Property Business Terms**

2536 A BBIE Property may have several business terms or synonyms. BBIE Property  
2537 business terms are synonym terms under which the BBIE Property is commonly  
2538 known and used in business.

2539 [B179] Each BBIE Property shall have zero or more business terms.

2540 **7.10.4 Basic Business Information Entity Property Localized Information**

2541 The BBIE Property localized information class contains the relevant information  
2542 necessary to associate native language expressions of BBIE Property attributes to  
2543 the BBIE Property.

2544 [B180] A BBIE Property shall have zero or more localized information classes.

2545 [B181] Each occurrence of a BBIE Property localized information class shall  
2546 contain:

2547 • **Language Code (mandatory):** A code which identifies the language.  
2548 *ISO 639-1 Codes for the Representation of Languages* shall be used  
2549 as the authoritative source for code values.

2550 • **Other Language DEN (mandatory):** The official name of the BBIE  
2551 Property in a language other than English.

2552 • **Other Language Definition (mandatory):** The semantic meaning of  
2553 the BBIE Property in a language other than English.

2554 • **Other Language Business Term (optional, repetitive):** A synonym  
2555 term in another language under which the BBIE Property is commonly  
2556 known and used in a business expression in that language.

2557 [B182] Each other language BBIE Property DEN shall adhere to all BBIE DEN rules  
2558 other than the requirement to be in the English language.

2559 [B183] Each other language BBIE Property DEN shall only consist of alphabetic  
2560 characters unless required by language rules.

2561 [B184] Each other language BBIE Property definition shall adhere to all BBIE  
2562 definition rules other than the requirement to be in the English language.

2563 The DEN and definition in the localized information class must only be expressed in  
2564 the language identified by the language code property of that class.

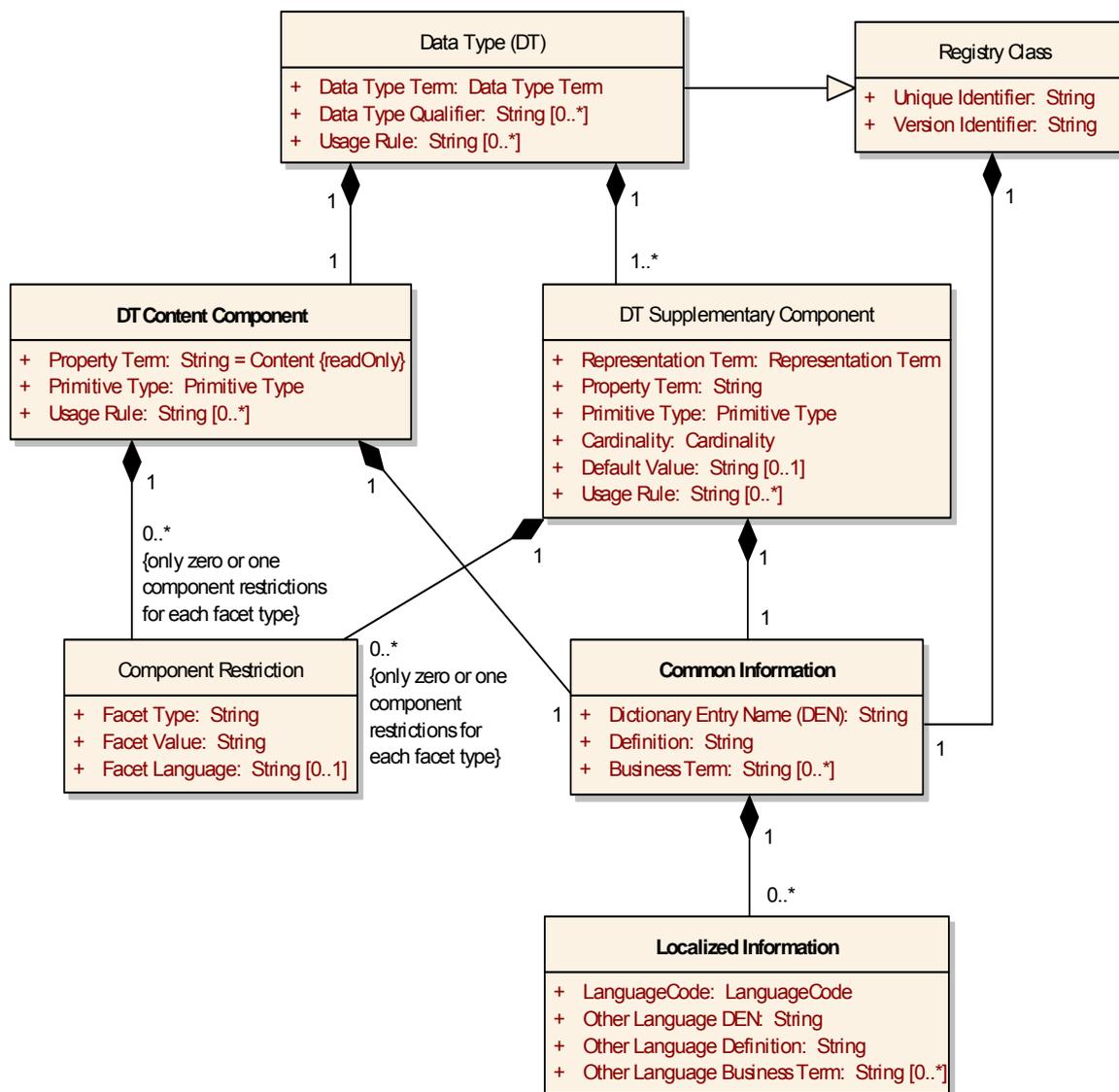
2565 [B185] Each other language BBIE Property DEN and definition shall only be  
2566 expressed in the language identified by the language code property of that  
2567 class.

2568 The business terms must only be expressed in the language identified by the  
2569 language code property of that class, or a recognized dialect of the language.

2570 [B186] Each other language BBIE Property business term shall only be expressed  
2571 in the language identified by the language code of that class, or a  
2572 recognized dialect of the language.

## 2573 8 Data Types

2574 This section provides a detailed technical explanation of the Data Type metamodel  
 2575 as seen in the UML diagram figure 8-1.



2576

2577 **Figure 8-1. Data Type Metamodel**

2578 Data types form the basis for defining the value domains of BCC and BBIE  
 2579 properties.

### 2580 8.1 Overview

2581 A Data Type defines the value domain – set of valid values – that can be used for a  
 2582 particular BCC Property or BBIE Property.

2583 There are two categories of Data Types (DTs)

- 2584 • Core Data Type (CDT)

- 2585                   • Business Data Type (BDT)
- 2586 [D1]     A data type shall be a CDT or BDT.

## 2587     **8.2 Data Type Naming and Definition Conventions**

2588     The data type naming convention is based on CC and BIE naming and definition  
2589     conventions to ensure consistency in the naming and defining of DT in their use with  
2590     BCCs and BBIEs. The DT naming and definition conventions are derived from the  
2591     guidelines and principles described in *ISO 11179 Part 4 – Definitions and ISO 11179*  
2592     *Part 5 – Naming and Identification Principles*.

2593     The official language for UN/CEFACT DTs is English. All official dictionary entries  
2594     will be in English. DT discovery work may very well occur in other languages;  
2595     however official submissions for inclusion in the UN/CEFACT library must be in  
2596     English. In order to ensure absolute clarity and understanding of the names and  
2597     definitions it is essential to use words from the *Oxford English Dictionary*.

2598     As with CCs and BIEs, a controlled vocabulary will be developed to identify the  
2599     definition to be used for any DT terms that are potentially ambiguous.

2600     [Note] – UN/CEFACT Controlled Vocabulary

2601     Implementers are encouraged to use the UN/CEFACT controlled vocabulary as the  
2602     authoritative source for DT terms.

## 2603     **8.3 Registry Class**

2604     Data types are registry classes. Each DT registry class contains the following  
2605     information:

- 2606                   • Unique Identifier
- 2607                   • Unique Version Identifier

2608     [Note] – Structure of DT Identifiers

2609     As with CCs and BIEs, there are no specific rules for the structures of the DT  
2610     identifiers. Implementers are free to choose any structure providing it guarantees  
2611     uniqueness within the library to which it belongs.

2612     [D2] A registry class shall be created for each DT.

## 2613     **8.4 Common Component Information**

2614     The DT common information class provides necessary component information that is  
2615     applicable to DTs either directly or through inheritance. The DT common information  
2616     class contains the following information:

- 2617                   • **DEN** – this is the unique official name of the DT in the dictionary.
- 2618                   • **Definition** – this is the unique business semantic meaning of the DT.
- 2619                   • **Business Term(s)** – this is a synonym term under which the DT is  
2620                   commonly known and used in business. A DT may have several  
2621                   business terms or synonyms.

2622 [D3] Data type common information content shall be in the English language  
 2623 following the complete *Oxford English Dictionary*. Where conflicting  
 2624 spellings exist, the spelling listed as the primary British spelling shall be  
 2625 used.

#### 2626 8.4.1 Data Type Dictionary Entry Name

2627 Data type naming rules are based on the following concepts as defined in ISO  
 2628 11179:

- 2629 • **Data Type Term** – defines the form of the set of valid values for a  
 2630 data element or value domain. It is the equivalent of the representation  
 2631 term of the BCC and BBIE, and their subordinate BCC and BBIE  
 2632 properties.

2633 [D4] DT DENs shall be in the English language following the latest version of the  
 2634 complete *Oxford English Dictionary*. Where conflicting spellings exist, the  
 2635 spelling listed as the primary British spelling shall be used.

2636 [Note] – Oxford English Dictionary

2637 Users may choose to utilize any version of the Oxford English Dictionary to create  
 2638 the spelling and definitions of Data Types, however the complete Oxford English  
 2639 Dictionary will be the authoritative source for conflict resolution between competing  
 2640 spellings of component names or definitions.

2641 [D5] A DT DEN shall be unique amongst all DENs within the library of which it is  
 2642 a part.

2643 [D6] A DT DEN shall be extracted from the DT definition.

2644 [D7] A DT DEN shall not include consecutive identical words.

2645 [D8] A DT DEN and all its components shall be in singular form unless the  
 2646 concept itself is plural.

2647 [D9] A DT DEN shall only use alphabetic characters plus the period, underscore  
 2648 and space characters.

2649 [D10] A DT DEN shall only contain verbs, nouns, adverbs and adjectives unless a  
 2650 different part of speech is part of an official title, part of a term listed in the  
 2651 Oxford English Dictionary, or part of a Controlled Vocabulary.

2652 [Note] – Parts of Speech

2653 Articles, prepositions and related parts of speech that are not verbs, nouns, adverbs  
 2654 and adjectives normally add no semantic clarity and should never be used unless as  
 2655 part of an official title or in a controlled vocabulary as part of a common business  
 2656 term that can not otherwise be expressed.

2657 [D11] Abbreviations and acronyms that are part of the DEN shall be expanded or  
 2658 explained in the definition.

2659 [D12] The space character shall separate words in multi-worded DT object class,  
 2660 property, and representation terms.

2661 [D13] Each word in a DT DEN shall start with a capital letter.

2662 [D14] The dots after DT terms shall be followed by a space character.

2663 [Note] – CamelCase

2664 The use of CamelCase for DT DENs has been considered, but has been rejected for  
2665 following reasons:

- 2666 • Use of CamelCase will not allow the use of spell checkers.
- 2667 • Strict use of CamelCase makes it impossible to use separators (“.”)  
2668 and therefore doesn’t allow an unambiguous identification of the  
2669 composing parts of the DEN.

#### 2670 **8.4.2 Data Type Definitions**

2671 Data Type definitions are based on the requirements for data element definitions  
2672 defined in ISO 11179-4.

2673 [D15] Each DT shall have its own unique semantic definition within the library of  
2674 which it is a part.

2675 [Note] – Order of Development of Definition and DEN

2676 In the interest of quality, it is recommended that the definition be developed first and  
2677 the DEN extracted from it.

2678 [D16] The definition shall be in the English language following the latest version of  
2679 the complete *Oxford English Dictionary*. Where conflicting spellings exist,  
2680 the spelling listed as the primary British spelling shall be used.

2681 [D17] The definition shall be consistent with the requirements of ISO 11179-4 and  
2682 will provide an understandable meaning, which should also be translatable  
2683 to other languages.

2684 [D18] The definition shall take into account the fact that the users of the DT library  
2685 are not necessarily native English speakers. It shall therefore contain short  
2686 sentences, using normal words. Wherever synonym terms are possible, the  
2687 definition shall use the preferred term as identified in the Controlled  
2688 Vocabulary.

2689 [D19] Whenever both the definite (i.e. **the**) and indefinite article (i.e. **a**) are  
2690 possible in a definition, preference shall be given to an indefinite article (i.e.  
2691 **a**).

2692 [Note] – Definition Quality

2693 To verify the quality of the definition, place the DEN followed by is before the  
2694 definition to ensure that it is not simply a repetition of the DEN.

#### 2695 **8.4.3 Business Terms**

2696 DT business terms are those terms commonly used for day-to-day information  
2697 exchanges within a given domain. As such, no specific rules apply to business term  
2698 structures. Interoperability of business terms will be given by linking them within the  
2699 component common information class.

#### 2700 **8.5 Localized Information Class**

2701 While the normative expressions of DTs are in the English language, non-native  
2702 English speakers may choose to create native language variations of the DEN,

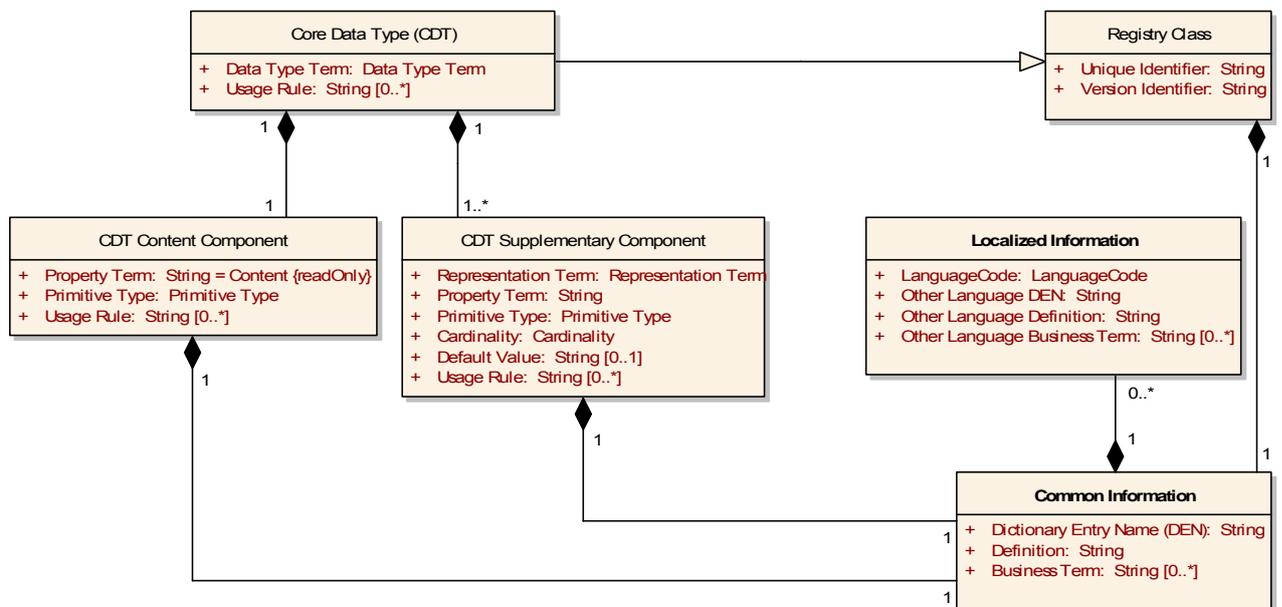
2703 definition, and business term. The DT localized information class contains the  
 2704 relevant information necessary to associate the native language expressions to their  
 2705 normative English language counterparts. Other language DT DENs will only consist  
 2706 of alphabetic characters unless required by language rules. In addition to other  
 2707 language DEN, definition, and business term(s), a mandatory language code  
 2708 identifies the language in which the components are being expressed for storage in  
 2709 the registry. The localized information class contains:

- 2710 • **Language Code** – A code which identifies the language being used.  
 2711 *ISO 639-1 Codes for the Representation of Languages* will be used as  
 2712 the authoritative source for code values.
- 2713 • **Other Language DEN** – The official name of the DT in a language  
 2714 other than English.
- 2715 • **Other Language Definition** – the semantic meaning of the DT in a  
 2716 language other than English.
- 2717 • **Other Language Business Term** – A synonym term in another  
 2718 language under which the DT is commonly known and used in a  
 2719 business expression in that language.

2720 The DEN and definition in the localized information class must only be expressed in  
 2721 the language identified by the language code property of that class. The business  
 2722 terms must only be expressed in the language identified by the language code  
 2723 property of that class, or a recognized dialect of the language.

## 2724 8.6 Core Data Types

2725 A CDT defines the value domain for a BCC property. Figure 8-2 describes the CDT  
 2726 and relationships between the CDT and its subordinate parts.



2727

2728 **Figure 8-2. UML Diagram of Core Data Type Metamodel**

2729 [Definition] – Core Data Type (CDT)  
 2730 A Core Data Type is a data type consisting of one and only one Core Data Type  
 2731 Content Component that carries the actual content, plus one or more Core Data  
 2732 Type Supplementary Components giving essential extra definition to the Core Data  
 2733 Type Content Component. Core Data Types do not have business semantics.

2734 UN/CEFACT publishes the approved CDTs in the CDT specification.

2735 [D20] A CDT shall be one of the approved CDTs published in the CDT  
 2736 specification.

### 2737 **8.6.1 Core Data Type – Data Type Term**

2738 The CDT is expressed by a data type term. The CDT data type term is a  
 2739 semantically meaningful name that serves as the basis for the DEN of the CDT and  
 2740 all BDTs derived from it. The CDT data type term defines the form of the set of valid  
 2741 values for a BCC data element or value domain.

2742 [D21] Each CDT shall have a unique data type term within the library of which it is  
 2743 a part.

2744 [D22] Each CDT data type term shall semantically represent a value domain.

2745 [D23] A data type term may have more than one word.

2746 [D24] A multi-worded data type term must have a unique semantic meaning  
 2747 compared to the words separately and compared to any other combination  
 2748 of these words.

2749 [D25] The CDT data type term shall be one of the terms specified in the list of  
 2750 permissible representation terms published in the CDT specification.

### 2751 **8.6.2 Core Data Type Usage Rules**

2752 CDTs may have usage rules. Each usage rule defines a constraint that describes  
 2753 specific conditions that are applicable to the CDT. CDT usage rules represent the  
 2754 specific application of a CDT in its role of expressing the value domain of BCCs and  
 2755 BCC properties.

2756 [D26] A CDT shall have zero or more usage rules.

2757 CDT usage rules will only be defined at the level of the hierarchical structure to  
 2758 which they apply

2759 [D27] CDT usage rules shall not replicate CDT Content or CDT Supplementary  
 2760 Component usage rules.

### 2761 **8.6.3 Core Data Type Identifiers**

2762 In order to ensure uniqueness, every CDT will have assigned a:

- 2763 • **Unique Identifier (mandatory):** The identifier that references the CDT  
 2764 instance in a unique and unambiguous way.
- 2765 • **Version Identifier (mandatory):** An indication of the evolution over  
 2766 time of the CDT instance.

2767 [D28] Each CDT shall have a unique identifier within the library of which it is a  
 2768 part.

2769 [D29] Each CDT shall have a unique version identifier within the library of which it  
2770 is a part.

#### 2771 **8.6.4 Core Data Type Common Information**

2772 The CDT common information class provides necessary CDT metadata information.

2773 [D30] Each CDT shall have a common information class.

2774 [D31] The CDT common information class shall consist of:

- 2775 • **DEN (mandatory):** The official name of the CDT.
- 2776 • **Definition (mandatory):** The semantic meaning of the CDT.
- 2777 • **Business Term (optional, repetitive):** A synonym term under which  
2778 the CDT is commonly known and used in business.

2779 [Example] – CDT Common Information

2780 DEN – *Amount. Type*

2781 **Definition** – An *amount* is a number of monetary units specified in a currency

2782 **Business Term** – *Total Money, Sum of Money, Price, Monetary Value*

##### 2783 **8.6.4.1 Core Data Type Dictionary Entry Names**

2784 The CDT DEN is based on the ISO 11179 data type term.

2785 [D32] Each CDT shall have a formally defined DEN.

2786 [D33] Each CDT DEN shall conform to all DT DEN rules.

2787 [D34] The CDT DEN shall consist of the data type term, plus a dot, a space  
2788 character, and the term *type*.

2789 [Example] – Core Data Type DENS

2790 *Amount. Type; Date Time. Type; Identifier. Type*

##### 2791 **8.6.4.2 Core Data Type Definitions**

2792 [D35] Each CDT shall have a formal definition.

2793 [D36] CDT definitions shall conform to all rules for DT definitions.

2794 [D37] The CDT definition shall include the CDT data type term.

##### 2795 **8.6.4.3 Core Data Type Business Terms**

2796 A CDT may have several business terms or synonyms. CDT business terms are  
2797 those terms commonly used for day-to-day information exchanges within a given  
2798 domain.

2799 [D38] A CDT shall have zero or more business terms.

#### 2800 **8.6.5 Core Data Type Localized Information**

2801 The CDT localized information class contains the relevant information necessary to  
2802 associate native language expressions of CDT attributes to the CDT.

2803 [D39] A CDT shall have zero or more localized information classes.

- 2804 [D40] Each occurrence of a CDT localized information class shall contain:
- 2805 • **Language Code (mandatory):** A code which identifies the language.
  - 2806 *ISO 639-1 Codes for the Representation of Languages* shall be used
  - 2807 as the authoritative source for code values.
  - 2808 • **Other Language DEN (mandatory):** The official name of a CDT in a
  - 2809 language other than English.
  - 2810 • **Other Language Definition (mandatory):** The semantic meaning of
  - 2811 the CDT in a language other than English.
  - 2812 • **Other Language Business Term (optional, repetitive):** A synonym
  - 2813 term in another language under which the CDT is commonly known
  - 2814 and used in a business expression in that language. Business terms in
  - 2815 the localized information class shall only be expressed in the language
  - 2816 identified by the language code property of that class.
- 2817 [D41] Each other language CDT DEN shall adhere to all CDT DEN rules other
- 2818 than the requirement to be in the English language.
- 2819 [D42] Each other language CDT DEN shall only consist of alphabetic characters
- 2820 unless required by language rules.
- 2821 [D43] Each other language CDT definition shall adhere to all CDT definition rules
- 2822 other than the requirement to be in the English language.
- 2823 The DEN and definition in the localized information class must only be expressed in
- 2824 the language identified by the language code property of that class.
- 2825 [D44] Each other language CDT DEN and definition shall only be expressed in the
- 2826 language identified by the language code property of that class.
- 2827 The business terms must only be expressed in the language identified by the
- 2828 language code property of that class, or a recognized dialect of the language.
- 2829 [D45] Each other CDT language business term shall only be expressed in the
- 2830 language identified by the language code of that class, or a recognized
- 2831 dialect of the language.

### 2832 **8.6.6 Core Data Type Content Component**

- 2833 CDT Content Components are defined in the CDT specification. CDT Content
- 2834 Components and are unique to the CDT to which they are assigned.
- 2835 [D46] A CDT shall have one and only one CDT Content Component.
- 2836 [D47] A CDT Content Component shall be the specified CDT Content Component
- 2837 as defined in the CDT specification.

#### 2838 **8.6.6.1 Core Data Type Content Component Property Term**

- 2839 The CDT Content Component property term represents the actual content of a data
- 2840 element. The CDT Content Component property term has a fixed value of `content`.
- 2841 [D48] Each CDT Content Component shall have a property term.
- 2842 [D49] The CDT Content Component property term shall have a fixed value of
- 2843 `Content`.

### 2844 8.6.6.2 Core Data Type Content Component Primitive Type

2845 CDT Content Component primitive types represent the basic building blocks of  
2846 CDTs. They define in general terms the value domain of the CDT Content  
2847 Component. Each CDT can only have one primitive type defined for it, and once  
2848 defined it will never be changed. If a new primitive type is required, then a new CDT  
2849 must be defined. Primitive types include, but are not limited to – binary, date,  
2850 decimal, integer, string.

2851 [D50] A CDT Content Component shall have one and only one primitive type.

2852 [D51] A CDT Content Component primitive type shall be the defined primitive type  
2853 in the CDT specification.

2854 [D52] A CDT Content Component primitive type shall never be changed.

### 2855 8.6.6.3 Core Data Type Content Component Usage Rules

2856 CDT Content Components may have usage rules. Each usage rule defines a  
2857 constraint that describes specific conditions that are applicable to the CDT Content  
2858 Component. The CDT Content Component usage rules represent the specific  
2859 application of a CDT Content Component in its role of expressing the value domain  
2860 of its CDT.

2861 [D53] A CDT Content Component shall have zero or more usage rules.

2862 Usage rules will only be defined at the level of the hierarchical structure to which  
2863 they apply – CDT, CDT Content Component, or CDT Supplementary Component.

2864 [D54] CDT Content Component usage rules shall not replicate CDT or CDT  
2865 Supplementary Component usage rules.

### 2866 8.6.6.4 Core Data Type Content Component Common Information

2867 Each CDT Content Component has a common information class. The CDT Content  
2868 Component common information class provides necessary CDT Content Component  
2869 metadata information.

2870 [D55] Each CDT Content Component shall have a common information class.

2871 [D56] The CDT Content Component common information class shall consist of:

- 2872 • **DEN (mandatory):** The official name of a CDT Content Component.
- 2873 • **Definition (mandatory):** The semantic meaning of a CDT Content  
2874 Component.
- 2875 • **Business Term (optional, repetitive):** A synonym term under which  
2876 the CDT Content Component is commonly known and used in  
2877 business.

2878 [Example] – CDT Content Component Common Information

2879 DEN – Amount. Content

2880 **Definition** – An amount is a number of monetary units

2881 Business Term – Money

#### 2882 8.6.6.4.1 Core Data Type Content Component Dictionary Entry Names

2883 The Core Data Type Content Component DENs are based on ISO 11179 defined  
2884 data type and property terms.

2885 [D57] Each CDT Content Component shall have a formally defined DEN.

2886 [D58] Each CDT Content Component DEN shall conform to all DT DEN rules.

2887 [D59] The DEN of a CDT Content Component shall consist of the data type term  
2888 of the CDT to which it is assigned, plus a dot, space character, and the  
2889 property term content.

2890 [Example] – Core Data Type Content Components

2891 Amount. Content; Date Time. Content

#### 2892 8.6.6.4.2 Core Data Type Content Component Definition

2893 [D60] Each CDT Content Component shall have a formal definition.

2894 [D61] Each CDT Content Component definition shall conform to all DT definition  
2895 rules.

2896 [D62] The CDT Content Component definition shall include the primitive type term  
2897 and the definition of the source representation term.

#### 2898 8.6.6.4.3 Core Data Type Content Component Business Terms

2899 A CDT Content Component may have several business terms or synonyms. CDT  
2900 Content Component business terms are synonym terms under which the CDT  
2901 Content Component is commonly known and used in business.

2902 [D63] A CDT Content Component shall have zero or more business terms.

#### 2903 8.6.6.5 Core Data Type Content Component Localized Information

2904 The CDT Content Component localized information class contains the relevant  
2905 information necessary to associate native language expressions of CDT Content  
2906 Components to the CDT Content Component.

2907 [D64] Each CDT Content Component shall have zero or more localized  
2908 information classes.

2909 [D65] Each occurrence of a CDT Content Component localized information class  
2910 shall contain:

2911 • **Language Code (mandatory):** A code which identifies the language.  
2912 *ISO 639-1 Codes for the Representation of Languages* shall be used  
2913 as the authoritative source for code values.

2914 • **Other Language DEN (mandatory):** The official name of the CDT  
2915 Content Component in a language other than English

- 2916 • **Other Language Definition (mandatory):** The semantic meaning of  
2917 the CDT content component in a language other than English.
- 2918 • **Other Language Business Term (optional, repetitive):** A synonym  
2919 term in another language under which the CDT content component is  
2920 commonly known and used in a business expression in that language.
- 2921 [D66] Each other language CDT Content Component DEN must adhere to all CDT  
2922 DEN rules other than the requirement to be in the English language.
- 2923 [D67] Each other language CDT Content Component DEN shall only consist of  
2924 alphabetic characters unless required by language rules.
- 2925 [D68] Each other language CDT Content Component definition shall adhere to all  
2926 CDT content component definition rules other than the requirement to be in  
2927 the English language.
- 2928 The DEN and definition in the localized information class must only be expressed in  
2929 the language identified by the language code property of that class.
- 2930 [D69] Each other language CDT Content Component DEN and definition shall  
2931 only be expressed in the language identified by the language code property  
2932 of that class.
- 2933 The business terms must only be expressed in the language identified by the  
2934 language code property of that class, or a recognized dialect of the language.
- 2935 [D70] Each other language CDT Content Component business term shall only be  
2936 expressed in the language identified by the language code of that class, or a  
2937 recognized dialect of the language.

### 2938 **8.6.7 Core Data Type Supplementary Components**

2939 CDT Supplementary Components are defined and published in the CDT  
2940 specification, and are unique to the CDT to which they are assigned. A CDT will  
2941 have at least one CDT Supplementary Component, but may have multiple CDT  
2942 Supplementary Components.

2943 [D71] A CDT shall have one or more CDT Supplementary Components.

2944 [D72] A CDT Supplementary Component shall be one of the specified CDT  
2945 Supplementary Components as defined in the CDT specification.

#### 2946 **8.6.7.1 Core Data Type Supplementary Component Property Term**

2947 Each CDT Supplementary Component contains a property term. The CDT  
2948 Supplementary Component property term is a semantically meaningful name for a  
2949 unique characteristic that can be used in a CDT.

2950 [D73] Each CDT Supplementary Component shall have a formally defined  
2951 property term.

2952 [D74] The CDT Supplementary Component property term may consist of more  
2953 than one word.

2954 [D75] A multi-worded CDT Supplementary Component property term must have a  
2955 unique semantic meaning compared to the words separately and compared  
2956 to any other combination of these words.

### 2957 [8.6.7.2 Core Data Type Supplementary Component Representation Term](#)

2958 Each CDT Supplementary Component contains a representation term. The  
2959 representation term is a semantically meaningful name that represents the value  
2960 domain of the supplementary component. UN/CEFACT defines the approved  
2961 representation terms as part of the CDT specification.

2962 [D76] A representation term shall be defined for each CDT Supplementary  
2963 Component.

2964 [D77] The name of the CDT Supplementary Component representation term may  
2965 consist of more than one word.

2966 [D78] A multi-worded CDT Supplementary Component representation term shall  
2967 have a unique semantic meaning compared to the words separately and  
2968 compared to any other combination of these words.

2969 [D79] The name of the CDT Supplementary Component representation term shall  
2970 be one of the approved representation terms in the CDT specification.

### 2971 [8.6.7.3 Core Data Type Supplementary Component Primitive Type](#)

2972 CDT supplementary components have a defined primitive type to be used for the  
2973 representation of the value of a CDT supplementary component.

2974 [D80] A CDT Supplementary Component shall have one and only one primitive  
2975 type.

2976 [D81] A CDT Supplementary Component primitive type shall be the defined  
2977 primitive type in the CDT specification.

2978 [D82] A CDT Supplementary Component primitive type shall never be changed.

### 2979 [8.6.7.4 Core Data Type Supplementary Component Cardinality](#)

2980 Each CDT Supplementary Component will have its cardinality explicitly expressed.  
2981 The Supplementary Component cardinality defines the occurrence requirements of  
2982 the Supplementary Component within its data type.

2983 [D83] Each CDT Supplementary Component shall have a cardinality expressed.

2984 CDT Supplementary Component cardinality will always be optional or mandatory.

2985 [D84] CDT Supplementary Component cardinalities shall consist of a matched pair  
2986 of values consisting of a minimum occurrence and a maximum occurrence.

2987 [D85] CDT Supplementary Component cardinality values shall be non-negative  
2988 integers of zero or greater.

2989 [D86] CDT Supplementary Component cardinality shall be equal to [0..1] if the  
2990 CDT Supplementary Component is optional, or [1..1] if mandatory.

### 2991 [8.6.7.5 Core Data Type Supplementary Component Default Value](#)

2992 A CDT Supplementary Component may have a default value. This default value  
2993 represents a CDT Supplementary Component value that is to be automatically  
2994 applied to the CDT Supplementary Component in the absence of a choice made by  
2995 the user.

2996 [D87] A CDT Supplementary Component shall have zero or one default value.

2997 [D88] A CDT Supplementary Component default value shall be expressed as a  
2998 string and shall include both the value and the source of the value.

2999 **Example – CDT Supplementary Component Default Value**  
3000 **Supplementary Component – Amount. Currency Code List. Identifier**  
3001 **Default Value – ISO 4217**

### 3002 8.6.7.6 Core Data Type Supplementary Component Usage Rules

3003 A CDT Supplementary Component may have usage rules. Each usage rule defines  
3004 a constraint that describes specific conditions that are applicable to the CDT  
3005 Supplementary Component. The CDT Supplementary Component usage rules  
3006 represent the specific application of a CDT Supplementary Component in its role of  
3007 expressing the value domain of its CDT.

3008 [D89] A CDT Supplementary Component shall have zero or more usage rules.  
3009 Usage rules will only be defined at the level of the hierarchical structure to which  
3010 they apply.

3011 [D90] CDT Supplementary Component usage rules shall not replicate CDT or  
3012 CDT Content Component usage rules.

### 3013 8.6.7.7 Core Data Type Supplementary Component Common Information

3014 Each CDT Supplementary Component has a common information class. The CDT  
3015 Supplementary Component common information class provides necessary CDT  
3016 Supplementary Component metadata information.

3017 [D91] Each CDT Supplementary Component shall have a common information  
3018 class.

3019 [D92] The CDT Supplementary Component common information class shall  
3020 consist of:

- 3021 • **DEN (mandatory):** The official name of the CDT Supplementary  
3022 Component.
- 3023 • **Definition (mandatory):** The semantic meaning of the CDT  
3024 Supplementary Component.
- 3025 • **Business Term (optional, repetitive):** A synonym term under which  
3026 the CDT Supplementary Component is commonly known and used in  
3027 business.

3028 **[Example] – CDT Supplementary Component Common Information**  
3029 **DEN – Amount. Currency Code List Agency. Identifier**  
3030 **Definition – The identifier of the agency that maintains the currency code**  
3031 **list used for the amount.**  
3032 **Business Term – Currency Code Owner**

### 3033 8.6.7.7.1 Core Data Type Supplementary Component Dictionary Entry Names

3034 The Core Data Type Supplementary Component naming rules are based on ISO  
3035 11179 concepts of data type term, property term, and representation term.

- 3036 [D93] Each CDT Supplementary Component shall have a formally defined DEN.
- 3037 [D94] Each CDT Supplementary Component DEN shall conform to all DT DEN  
3038 rules.
- 3039 [D95] The DEN of a CDT Supplementary Component shall consist of the following  
3040 parts in the order specified:
- 3041 • Data Type term of the CDT to which it belongs, followed by a dot and  
3042 space character.
  - 3043 • Property term which expresses the unique characteristic of the CDT  
3044 Supplementary Component, followed by a dot and space character.
  - 3045 • Representation term which represents the value domain of the content  
3046 of the CDT Supplementary Component.

3047 [Example] – Core Data Type Supplementary Components

3048 Amount. Currency Code List Version. Identifier; Code. List Agency.  
3049 Identifier; Quantity. Unit. Code

- 3050 [D96] The CDT Supplementary Component DEN shall be unique amongst all CDT  
3051 Supplementary Component names within the library of which it is a part.

3052 [8.6.7.7.2 Core Data Type Supplementary Component Definitions](#)

3053 A CDT Supplementary Component definition provides a clear, unambiguous and  
3054 complete explanation of the meaning of a CDT Supplementary Component and its  
3055 relevance for the related CDT.

- 3056 [D97] Each CDT Supplementary Component shall have a formal definition.
- 3057 [D98] Each CDT supplementary component definitions shall conform to all DT  
3058 definition rules.
- 3059 [D99] The definition of a CDT Supplementary Component shall include the data  
3060 type term of the CDT to which it belongs, the property term and the  
3061 representation term.

3062 [8.6.7.7.3 Core Data Type Supplementary Component Business Terms](#)

3063 CDT Supplementary Components may have business terms. CDT Supplementary  
3064 Component business terms are synonyms commonly used for day-to-day  
3065 information exchanges within a given domain.

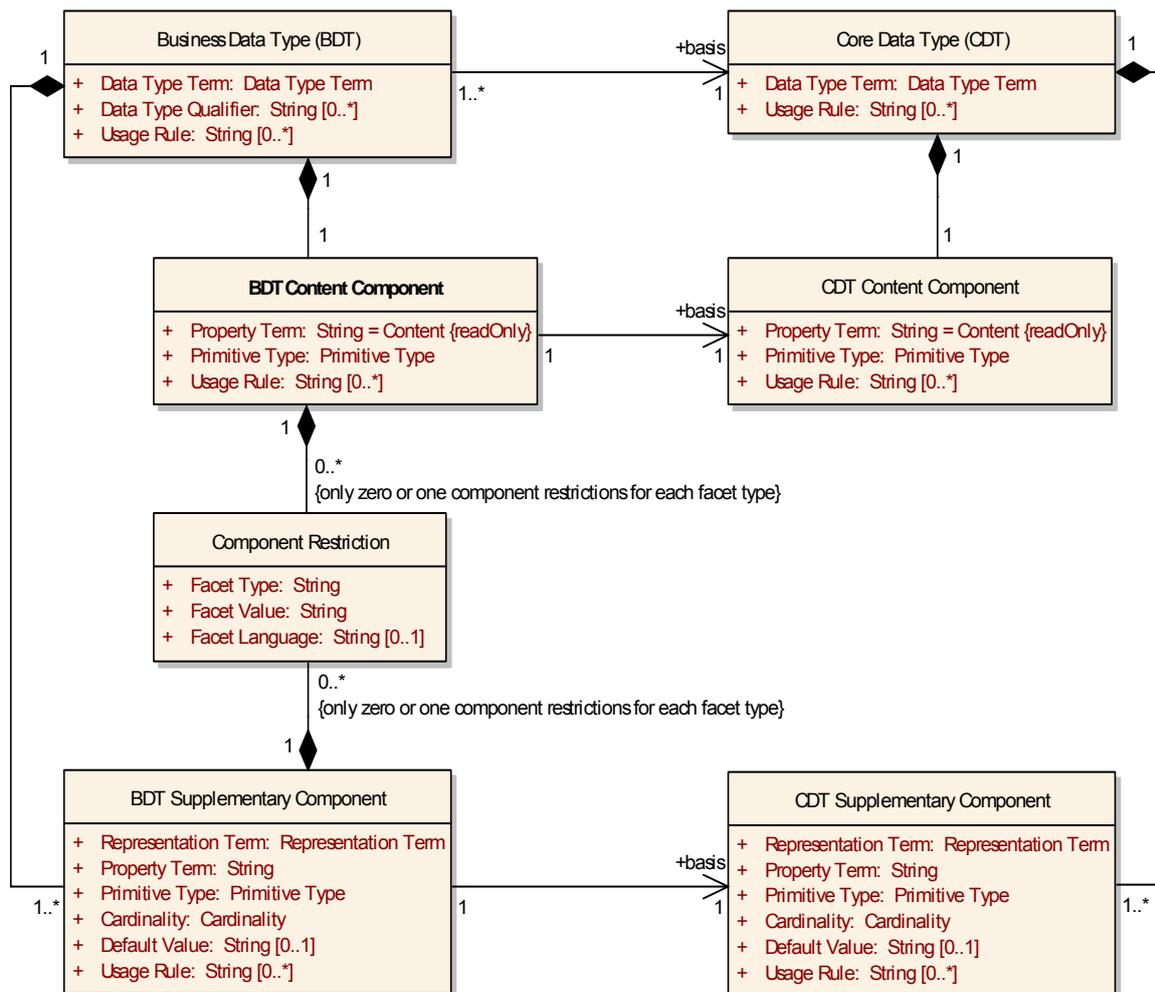
- 3066 [D100] Each CDT Supplementary Component shall have zero or more business  
3067 terms.

3068 [8.6.7.8 Core Data Type Supplementary Component Localized Information](#)

3069 The CDT Supplementary Component localized information class contains the  
3070 relevant information necessary to associate native language expressions of CDT  
3071 Supplementary Components to the CDT Supplementary Component.

- 3072 [D101] A CDT Supplementary Component shall have zero or more localized  
3073 information classes.
- 3074 [D102] Each occurrence of a CDT Supplementary Component localized information  
3075 class shall contain:

- 3076           • **Language Code (mandatory):** A code which identifies the language.  
 3077            *ISO 639-1 Codes for the Representation of Languages* shall be used  
 3078            as the authoritative source for code values.
- 3079           • **Other Language DEN (mandatory):** The official name of the CDT  
 3080            Supplementary Component in a language other than English.
- 3081           • **Other Language Definition (mandatory):** The semantic meaning of  
 3082            the CDT Supplementary Component in a language other than English.
- 3083           • **Other Language Business Term (optional, repetitive):** A synonym  
 3084            term in another language under which the CDT Supplementary  
 3085            Component is commonly known and used in a business expression in  
 3086            that language. Business terms in the localized information class shall  
 3087            only be expressed in the language identified by the language code  
 3088            property of that class.
- 3089 [D103] Each other language CDT Supplementary Component DEN must adhere to  
 3090           all CDT DEN rules other than the requirement to be in the English language.
- 3091 [D104] Each other language CDT Supplementary Component DEN shall only  
 3092           consist of alphabetic characters unless required by language rules.
- 3093 [D105] Each other language CDT Supplementary Component definition shall  
 3094           adhere to all CDT supplementary component definition rules other than the  
 3095           requirement to be in the English language.
- 3096           The DEN and definition in the localized information class must only be expressed in  
 3097           the language identified by the language code property of that class.
- 3098 [D106] Each other language CDT Supplementary Component DEN and definition  
 3099           shall only be expressed in the language identified by the language code  
 3100           property of that class.
- 3101           The business terms must only be expressed in the language identified by the  
 3102           language code property of that class, or a recognized dialect of the language.
- 3103 [D107] Each other language CDT Supplementary Component business term shall  
 3104           only be expressed in the language identified by the language code of that  
 3105           class, or a recognized dialect of the language.
- 3106 **8.7 Business Data Types**
- 3107           A BDT defines the value domain for a particular BBIE Property. Figure 7-3 describes  
 3108           the BDT and relationships between the BDT and its subordinate parts.



3109

3110 **Figure 8-3. UML Diagram of Business Data Type Metamodel**

3111 [Definition] – Business Data Type (BDT)  
 3112 A Business Data Type is a data type consisting of one and only one Business Data  
 3113 Type Content Component that carries the actual content, plus one or more  
 3114 Business Data Type Supplementary Components giving essential extra definition  
 3115 to the CDT Content Component. Business Data Types have business semantics.

3116 BDTs can be qualified or unqualified. Unqualified BDTs are of type CDT without  
 3117 restrictions. Qualified BDTs are defined by specifying restrictions on the BDT from  
 3118 which it is derived. BDTs can only contain the CDT content and supplementary  
 3119 components contained in its underlying CDT. Qualified BDTs can only contain the  
 3120 supplementary components contained in its less qualified BDT.

3121 [D108] An unqualified BDT shall be created for, and identical to, each approved  
 3122 CDT in the CDT specification.

3123 **8.7.1 Business Data Type – Data Type Term**

3124 The BDT is expressed by a data type term. The BDT data type term is a semantically  
 3125 meaningful name that serves as the basis for the DEN of the BDT and all qualified  
 3126 BDTs derived from it. The BDT data type term defines the form of the set of valid

3127 values for a BBIE data element or value domain. BDT data type terms semantically  
3128 identify their source CDT by replicating the CDT data type term.

3129 [D109] A BDT DEN data type term shall be the same as the source CDT data type  
3130 term.

### 3131 **8.7.2 Business Data Type Qualifier Term**

3132 A BDT qualifier term is a word or words which help define and differentiate a  
3133 qualified BDT from its higher level BDT. Qualifier terms are used to refine the  
3134 semantic meaning of the DEN to reflect the nature of the restriction to the properties  
3135 and representation of the data type as necessary to distinguish one BDT concept,  
3136 conceptual domain, content model or data value domain from another.

3137 [D110] Where necessary, a BDT shall be qualified by restricting the set of valid  
3138 values allowed by imposing restrictions on the BDT content component  
3139 and/or the BDT supplementary component(s).

3140 [D111] A qualified BDT shall be a restriction, and never an extension, of its higher  
3141 level BDT in a BDT hierarchy.

3142 [D112] A qualified BDT shall be unique amongst the set of qualified BDTs in the  
3143 library of which it is a part.

3144 [D113] BDT qualifier terms shall precede the data type term.

3145 [D114] Each BDT data type qualifier term shall be followed by an underscore and a  
3146 space character ( \_ ).

3147 [D115] Each word in a multi-worded BDT data type qualifier term shall be separated  
3148 by a space character ( ).

3149 BDT data type qualifier terms are derived from the semantic use of the restricted  
3150 data type and not the restriction values themselves.

3151 [D116] BDT qualifier terms shall be taken from the semantics of the supported  
3152 BBIE(s).

3153 [D117] BDT qualifier terms shall not contain the actual content or supplementary  
3154 component restriction values.

3155 [Example] – Allowed BDT Qualifiers

3156 Allowed:

3157 Price\_ Amount. Type

3158 Not Allowed:

3159 1 to 50 Euros\_ Amount. Type or One To Fifty Euros\_ Amount. Type

3160 [D118] A multi-worded BDT qualifier term shall have a unique semantic meaning  
3161 compared to the words separately.

3162 [D119] A qualifying BDT hierarchy shall be established when multiple qualifiers are  
3163 used.

3164 [Example] – BDT Qualifier Hierarchy  
 3165 BBIE - Trade\_ Contract. Issue. Date Time  
 3166 May have any of the following data types:  
 3167 Date Time. Type  
 3168 Issue\_ Date Time. Type  
 3169 Contract\_ Issue\_ Date Time. Type  
 3170 Trade\_ Contract\_\_ Issue\_ Date Time. Type

### 3171 8.7.3 Business Data Type Usage Rule

3172 BDTs may have usage rules. Each BDT usage rule defines a constraint that  
 3173 describes specific conditions that are applicable to the BDT. BDT usage rules  
 3174 represent the specific application of a BDT in its role of expressing the value domain  
 3175 of BBIEs and BBIE Properties.

3176 [D120] A BDT shall have zero or more usage rules.

3177 Usage rules will only be defined at the level of the hierarchical structure to which  
 3178 they apply.

3179 [D121] BDT usage rules shall not replicate CDT, BDT Content, or BDT  
 3180 Supplementary Component usage rules.

### 3181 8.7.4 Business Data Type Identifiers

3182 In order to ensure uniqueness, every BDT will have assigned a:

- 3183 • **Unique Identifier (mandatory):** The identifier that references the BDT  
 3184 instance in a unique and unambiguous way.
- 3185 • **Version Identifier (mandatory):** An indication of the evolution over  
 3186 time of the BDT instance.

3187 [D122] Each BDT shall have a unique identifier within the library of which it is a  
 3188 part.

3189 [D123] Each BDT shall have a unique version identifier within the library of which it  
 3190 is a part.

### 3191 8.7.5 Business Data Type Common Information

3192 The BDT common information class provides necessary BDT metadata information.

3193 [D124] Each BDT shall have a common information class.

3194 [D125] The BDT common information class shall consist of:

- 3195 • **DEN (mandatory):** The official name of the BDT.
- 3196 • **Definition (mandatory):** The semantic meaning of the BDT.
- 3197 • **Business Term (optional, repetitive):** A synonym term under which  
 3198 the BDT is commonly known and used in business.

3199	[Example] – BDT Common Information
3200	DEN – <i>start_ Date Time. Type</i>
3201	<b>Definition</b> – A <i>start</i> date, start time, start date time, or other <i>start date time</i>
3202	value used as a particular point in the progression of time.
3203	Business Term – <i>Begin</i>

### 3204 8.7.5.1 Business Data Type Dictionary Entry Names

3205 The BDT DEN is based on the ISO 11179 data type term.

3206 [D126] Each BDT shall have a formally defined DEN.

3207 [D127] Each BDT DEN shall conform to all DT DEN rules.

3208 [D128] The BDT DEN shall consist of the data type term and data type term  
3209 qualifiers, if any, followed by a dot, a space character, and the term *type*.

3210	[Example] – Business Data Type DEN
3211	<i>Country_ Identifier. Type</i>

### 3212 8.7.5.2 Business Data Type Definitions

3213 [D129] Each BDT shall have a formal definition.

3214 [D130] BDT definitions shall conform to all rules for DT definitions.

3215 [D131] The BDT definition shall include the BDT data type term and data type  
3216 qualifier terms, if any.

### 3217 8.7.5.3 Business Data Type Business Terms

3218 A BDT may have several business terms or synonyms. BDT business terms are  
3219 those terms commonly used for day-to-day information exchanges within a given  
3220 domain.

3221 [D132] A BDT shall have zero or more business terms.

### 3222 8.7.6 Business Data Type Localized Information

3223 The BDT localized information class contains the relevant information necessary to  
3224 associate native language expressions of BDT attributes to the BDT.

3225 [D133] A BDT shall have zero or more localized information classes.

3226 [D134] Each occurrence of a BDT localized information class shall contain:

- 3227 • **Language Code (mandatory):** A code which identifies the language.  
3228 *ISO 639-1 Codes for the Representation of Languages* shall be used  
3229 as the authoritative source for code values.
- 3230 • **Other Language DEN (mandatory):** The official name of a BDT in a  
3231 language other than English.
- 3232 • **Other Language Definition (mandatory):** The semantic meaning of  
3233 the BDT in a language other than English.
- 3234 • **Other Language Business Term (optional, repetitive):** A synonym  
3235 term in another language under which the BDT is commonly known

3236 and used in a business expression in that language. Business terms in  
 3237 the localized information class shall only be expressed in the language  
 3238 identified by the language code property of that class.

3239 [D135] Each other language BDT DEN shall adhere to all BDT DEN rules other  
 3240 than the requirement to be in the English language.

3241 [C136] Each other language BDT DEN shall only consist of alphabetic characters  
 3242 unless required by language rules.

3243 [D137] Each other language BDT definition shall adhere to all BDT definition rules  
 3244 other than the requirement to be in the English language.

3245 The DEN and definition in the localized information class must only be expressed in  
 3246 the language identified by the language code property of that class.

3247 [D138] Each other language BDT DEN and definition shall only be expressed in the  
 3248 language identified by the language code property of that class.

3249 The business terms must only be expressed in the language identified by the  
 3250 language code property of that class, or a recognized dialect of the language.

3251 [D139] Each other BDT language business term shall only be expressed in the  
 3252 language identified by the language code of that class, or a recognized  
 3253 dialect of the language.

### 3254 **8.7.7 Business Data Type Content Component**

3255 Each BDT will have a single BDT Content Component. BDT Content Components  
 3256 and are unique to the BDT to which they are assigned.

3257 [D140] A BDT shall have one and only one BDT Content Component.

3258 A BDT Content Component is the CDT Content Component of the source CDT.

3259 [D141] A BDT Content Component shall be the same as the specified CDT Content  
 3260 Component of the source CDT.

#### 3261 **8.7.7.1 Business Data Type Content Component Property Term**

3262 Each BDT Content Component has a property term. The BDT Content Component  
 3263 property term represents the actual content of a data element. The BDT Content  
 3264 Component property term is the same as the CDT Content Component of the source  
 3265 CDT and has a fixed value of `content`.

3266 [D142] Each CDT Content Component shall have a property term.

3267 [D143] The BDT Content Component property term shall have a fixed value of  
 3268 `Content`.

#### 3269 **8.7.7.2 Business Data Type Content Component Primitive Type**

3270 BDT Content Component primitive types represent the basic building blocks of  
 3271 BDTs. They define in general terms the value domain of the BDT Content  
 3272 Component and are used for the expression of the value of an instance of a BBIE  
 3273 based on the associated BDT. Each BDT Content Component can only have one  
 3274 primitive type defined for it, and once defined it will never be changed. If a new  
 3275 primitive type is required, then a new BDT and underlying CDT must be defined.  
 3276 Primitive types include, but are not limited to – binary, date, decimal, integer, string.

- 3277 [D144] A BDT Content Component shall have one and only one primitive type.
- 3278 [D145] A BDT Content Component primitive type shall be the defined primitive type  
3279 of the source CDT Content Component.
- 3280 [D146] A BDT Content Component primitive type shall never be changed.
- 3281 **8.7.7.3 Business Data Type Content Component Usage Rule**
- 3282 BDT Content Components may have usage rules. Each usage rule defines a  
3283 constraint that describes specific conditions that are applicable to the BDT Content  
3284 Component. The BDT Content Component usage rules represent the specific  
3285 application of a CDT Content Component in its role of expressing the value domain  
3286 of its CDT.
- 3287 [D147] A BDT content component shall have zero or more usage rules.
- 3288 Usage rules will only be defined at the level of the hierarchical structure to which  
3289 they apply – CDT, CDT Content Component, or CDT Supplementary Component.
- 3290 [D148] BDT Content Component usage rules shall not replicate BDT or BDT  
3291 Supplementary Component usage rules.
- 3292 [D149] BDT Content Component usage rules shall not replicate BDT Content  
3293 Component or BDT Supplementary Component restrictions.
- 3294 **8.7.7.4 Business Data Type Content Component – Component Restrictions**
- 3295 Component Restrictions of a BDT Content Component identify restrictions to a  
3296 particular subset of the value space of the source CDT or less qualified BDT by  
3297 restricting the format or possible values of the BDT Content Component primitive  
3298 type.
- 3299 [D150] Component restrictions of a BDT Content Component shall only be used to  
3300 define restrictions on its primitive type.
- 3301 Each BDT Content Component can have zero or more component restrictions.
- 3302 [D151] A BDT Content Component shall have zero or more component restrictions.
- 3303 Component restrictions take the form of facets of the BDT Content Component. The  
3304 allowed set of facets for a specific BDT Content Component is determined by its  
3305 primitive type. The allowed restrictions for each primitive type are defined in the DT  
3306 specification.
- 3307 [D152] BDT Content Component restrictions shall be limited to those allowed for  
3308 the primitive of the BDT Content Component in the DT specification.

3309 [Example] – Allowed Facet Restrictions for Primitive Type of Date  
 3310 BDT Content Component – Date. Content  
 3311 Primitive Type – Date  
 3312 Allowed Restriction Facets for Date:  
 3313 Facet Type: Minimum Inclusive – 2005-06-25  
 3314 Facet Type: Maximum Inclusive – 2005-06-30  
 3315 or  
 3316 Facet Type: Minimum Exclusive – 2007-01-01  
 3317 Facet Type: Maximum Exclusive – 2007-03-31

3318 [D153] Each BDT Content Component shall have zero or one component  
 3319 restrictions for each facet type.

3320 [Example] – Multiple facet restrictions  
 3321 The BDT of `Amount.Type` has a Content Component of `Amount.Content` whose  
 3322 primitive is `string`. The allowed facet types for the string primitive type include  
 3323 `Expression`, `Length`, `Minimum Length`, `Maximum Length`, and `Enumeration`. For a  
 3324 qualified data type of `European.Amount.Type`, each of the allowed facet  
 3325 restrictions may or may not be present. If an allowed facet restriction is present,  
 3326 there can only be one occurrence of that facet type.

3327 Primitive type facet restrictions for BDT Content Components are a triple consisting  
 3328 of the facet type, facet value, and optional facet language.

3329 [D154] Each BDT Content Component facet restriction shall contain the following  
 3330 attributes:

- 3331 • **Facet Type (mandatory)**: Identifies the facet being defined.
- 3332 • **Facet Value (mandatory)**: The actual facet restriction value.
- 3333 • **Facet Language (optional)**: For a facet type of expression, defines  
 3334 the language of the regular expression of the facet value such as Perl,  
 3335 W3C XML Schema Definition Language, JAVA, or Microsoft .Net.

3336 [Example] – Component Restriction  
 3337 For a BDT Content Component whose primitive type is `binary`, an allowed facet  
 3338 would be `length`. The values for the `length` facet would be:  
 3339 Facet Type (mandatory) - `length`  
 3340 Facet Value (mandatory): `10`  
 3341 Facet Language (optional): not used since the facet type is not `expression`.

### 3342 8.7.7.5 Business Data Type Content Component Common Information

3343 Each BDT Content Component has a common information class. The BDT Content  
 3344 Component common information class provides necessary BDT Content Component  
 3345 metadata information.

3346 [D155] Each BDT Content Component shall have a common information class.

- 3347 [D156] The BDT Content Component common information class shall consist of:
- 3348           • **DEN (mandatory):** The official name of a BDT Content Component.
- 3349           • **Definition (mandatory):** The semantic meaning of a BDT Content
- 3350           Component.
- 3351           • **Business Term (optional, repetitive):** A synonym term under which
- 3352           the BDT Content Component is commonly known and used in
- 3353           business.

3354 [Example] – BDT Content Component Common Information

3355 DEN – ~~Amount~~. Content

3356 **Definition** – An ~~amount~~ is a number of monetary units.

3357 Business Term – ~~Money~~

#### 3358 8.7.7.5.1 Business Data Type Content Component Dictionary Entry Names

3359 The Business Data Type Content Component DENs are based on ISO 11179

3360 defined data type and property terms.

- 3361 [D157] Each BDT Content Component shall have a formally defined DEN.
- 3362 [D158] Each BDT Content Component DEN shall conform to all DT DEN rules.
- 3363 [D159] The DEN of a BDT Content Component shall be the DEN of the CDT
- 3364 Content Component of the source CDT.

3365 [Example] – Business Data Type Content Components

3366 ~~Amount~~. Content; ~~Date Time~~. Content

#### 3367 8.7.7.5.2 Business Data Type Content Component Definition

- 3368 [D160] Each BDT Content Component shall have a formal definition.
- 3369 [D161] Each BDT Content Component definition shall conform to all DT definition
- 3370 rules.
- 3371 [D162] The BDT Content Component definition shall include the primitive type term
- 3372 and the definition of the source representation term.

#### 3373 8.7.7.5.3 Business Data Type Content Component Business Terms

- 3374 A BDT Content Component may have several business terms or synonyms. BDT
- 3375 Content Component business terms are synonym terms under which the BDT
- 3376 Content Component is commonly known and used in business.
- 3377 [D163] A BDT Content Component shall have zero or more business terms.

#### 3378 8.7.7.6 Business Data Type Content Component Localized Information

3379 The BDT Content Component localized information class contains the relevant

3380 information necessary to associate native language expressions of BDT Content

3381 Components to the BDT Content Component.

- 3382 [D164] Each BDT Content Component shall have zero or more localized
- 3383 information classes.

- 3384 [D165] Each occurrence of a BDT Content Component localized information class  
3385 shall contain:
- 3386 • **Language Code (mandatory):** A code which identifies the language.  
3387 *ISO 639-1 Codes for the Representation of Languages* shall be used  
3388 as the authoritative source for code values.
  - 3389 • **Other Language DEN (mandatory):** The official name of the BDT  
3390 Content Component in a language other than English.
  - 3391 • **Other Language Definition (mandatory):** The semantic meaning of  
3392 the BDT content component in a language other than English.
  - 3393 • **Other Language Business Term (optional, repetitive):** A synonym  
3394 term in another language under which the BDT content component is  
3395 commonly known and used in a business expression in that language.
- 3396 [D166] Each other language BDT Content Component DEN must adhere to all BDT  
3397 DEN rules other than the requirement to be in the English language.
- 3398 [D167] Each other language BDT Content Component DEN shall only consist of  
3399 alphabetic characters unless required by language rules.
- 3400 [D168] Each other language BDT Content Component definition shall adhere to all  
3401 BDT content component definition rules other than the requirement to be in  
3402 the English language.
- 3403 The DEN and definition in the localized information class must only be expressed in  
3404 the language identified by the language code property of that class.
- 3405 [D169] Each other language BDT Content Component DEN and definition shall only  
3406 be expressed in the language identified by the language code property of  
3407 that class.
- 3408 The business terms must only be expressed in the language identified by the  
3409 language code property of that class, or a recognized dialect of the language.
- 3410 [D170] Each other language BDT Content Component business term shall only be  
3411 expressed in the language identified by the language code of that class, or a  
3412 recognized dialect of the language.
- 3413 **8.7.8 Business Data Type Supplementary Components**
- 3414 A BDT will have at least one BDT Supplementary Component, but may have multiple  
3415 BDT Supplementary Components.
- 3416 [D171] A BDT shall have one or more BDT supplementary components.
- 3417 BDT Supplementary Components are based on the CDT Supplementary Component  
3418 of the source CDT.
- 3419 [D172] A BDT Supplementary Component of a BDT shall be one of the specified  
3420 CDT Supplementary Components of the source CDT.
- 3421 **8.7.8.1 Business Data Type Supplementary Component Property Term**
- 3422 Each BDT Supplementary Component contains a property term. The BDT  
3423 Supplementary Component property term is a semantically meaningful name for a  
3424 unique characteristic that can be used in a BDT. The BDT Supplementary

3425 Component property term is the same as the CDT Supplementary Component of the  
3426 source CDT.

3427 [D173] Each BDT Supplementary Component shall have a formally defined  
3428 property term.

3429 [D174] Each BDT Supplementary Component property term shall be the same as  
3430 the source CDT Supplementary Component of the source CDT.

#### 3431 [8.7.8.2 Business Data Type Supplementary Component Representation Term](#)

3432 Each BDT Supplementary Component contains a representation term. The  
3433 representation term is a semantically meaningful name that represents the value  
3434 domain of the supplementary component. UN/CEFACT defines the approved  
3435 representation terms as part of the CDT specification.

3436 [D175] A representation term shall be defined for each BDT Supplementary  
3437 Component.

3438 [D176] Each BDT Supplementary Component representation term shall be the  
3439 same as the CDT Supplementary Component of the source CDT.

#### 3440 [8.7.8.3 Business Data Type Supplementary Component Primitive Type](#)

3441 Each BDT Supplementary Component has a defined primitive type to be used for the  
3442 representation of the value domain of the BDT supplementary component.

3443 [D177] A BDT Supplementary Component shall have one and only one primitive  
3444 type.

3445 [D178] A BDT Supplementary Component primitive type shall be the same as the  
3446 CDT Supplementary Component primitive type of the source CDT.

3447 [D179] A BDT Supplementary Component primitive type shall never be changed.

#### 3448 [8.7.8.4 Business Data Type Supplementary Component Cardinality](#)

3449 The restriction on the presence of the supplementary components will be  
3450 accomplished through the use of the BDT Supplementary Component cardinality  
3451 value. Each BDT Supplementary Component will have its cardinality explicitly  
3452 expressed. The BDT Supplementary Component cardinality defines the occurrence  
3453 requirements of the Supplementary Component within its data type,

3454 [D180] Each BDT Supplementary Component shall have a cardinality expressed.  
3455 CDT Supplementary Component cardinality will always be optional or mandatory.

3456 [D181] CDT Supplementary Component cardinalities shall consist of a matched pair  
3457 of values consisting of a minimum occurrence and a maximum occurrence.

3458 [D182] CDT Supplementary Component cardinality values shall be non-negative  
3459 integers of zero or greater.

3460 [D183] CDT Supplementary Component cardinality shall be equal to [0..1] if the  
3461 CDT Supplementary Component is optional, or [1..1] if mandatory.

3462 An unqualified BDT will always include the same Supplementary Components as its  
3463 source CDT.

- 3464 [D184] An unqualified BDT shall include the same Supplementary Components as  
3465 its source CDT.
- 3466 An unqualified BDT will never change the cardinality of the included Supplementary  
3467 Components of its source CDT.
- 3468 [D185] The cardinality of a Supplementary Component of an unqualified BDT shall  
3469 be the same as its source CDT.
- 3470 Whereas an unqualified BDT contains the same Supplementary Components as its  
3471 source CDT, a qualified BDT can restrict the presence of an optional BDT  
3472 Supplementary Component of its less qualified BDT to mandatory. A qualified BDT  
3473 will always include a mandatory BDT Supplementary Component of its less qualified  
3474 source BDT and will retain its cardinality of mandatory. A qualified BDT may  
3475 eliminate the occurrence of an optional BDT Supplementary Component of its less  
3476 qualified or unqualified BDT.
- 3477 Once the occurrence of an optional BDT Supplementary Component is eliminated  
3478 from a qualified BDT, it will never be added to a more qualified BDT of which  
3479 it is the source.
- 3480 [D186] A BDT Supplementary Component occurrence shall only be restricted and  
3481 never extended.

#### 3482 8.7.8.5 Business Data Type Supplementary Component Default Value

- 3483 A BDT Supplementary Component may have a default value. This default value  
3484 represents a BDT Supplementary Component value that is to be automatically  
3485 applied to the BDT Supplementary Component in the absence of a choice made by  
3486 the user.
- 3487 [D187] A BDT Supplementary Component shall have zero or one default value.
- 3488 [D188] A BDT Supplementary Component default value shall be expressed as a  
3489 string and shall include both the value and the source of the value.

3490 Example – BDT Supplementary Component Default Value

3491 Supplementary Component – Amount. Currency Code List. Identifier

3492 Default Value - ISO 4217

#### 3493 8.7.8.6 Business Data Type Supplementary Component Usage Rules

- 3494 A BDT Supplementary Component may have usage rules. Each usage rule defines a  
3495 constraint that describes specific conditions that are applicable to the BDT  
3496 Supplementary Component. The BDT Supplementary Component usage rules  
3497 represent the specific application of a BDT Supplementary Component in its role of  
3498 expressing the value domain of its BDT.
- 3499 [D189] A BDT Supplementary Component shall have zero or more usage rules.
- 3500 Usage rules will only be defined at the level of the hierarchical structure to which  
3501 they apply.
- 3502 [D190] BDT Supplementary Component usage rules shall not replicate BDT or BDT  
3503 Content Component usage rules.

3504 **8.7.8.7 Business Data Type Supplementary Component – Component Restrictions**

3505 Component Restrictions of a BDT Supplementary Component identify restrictions to  
 3506 a particular subset of the value space of the source CDT or less qualified BDT by  
 3507 restricting the format or possible values of the BDT Supplementary Component  
 3508 primitive type.

3509 [D191] Component restrictions of a BDT Supplementary Component shall only be  
 3510 used to define restrictions on its primitive type.

3511 Each BDT Supplementary Component can have zero or more component  
 3512 restrictions.

3513 [D192] A BDT Supplementary Component shall have zero or more component  
 3514 restrictions.

3515 Component restrictions take the form of facets of the BDT Supplementary  
 3516 Component. The allowed set of facets for a specific BDT Supplementary Component  
 3517 is determined by its primitive type. The allowed restrictions for each primitive type  
 3518 are defined in the DT specification.

3519 [D193] BDT Supplementary Component restrictions shall be limited to those facets  
 3520 allowed for the primitive of the BDT Supplementary Component in the DT  
 3521 specification.

3522 [Example] – Allowed Facet Restrictions for Primitive Type of String

3523 BDT Supplementary Component – `Measure. Unit. Code`

3524 Primitive Type – String

3525 Allowed Restriction Facets for String:

3526 Facet Type: Expression – `[A-Z]{1,2}`

3527 Facet Type: Length – **not used**

3528 Facet Type: Minimum Length – `1`

3529 Facet Type: Maximum Length – `2`

3530 Facet Type: Enumeration – `FT, YD, MI, CM, M, CM`

3531 [D194] Each BDT Supplementary Component shall have zero or one component  
 3532 restrictions for each facet type.

3533 [Example] – Multiple facet restrictions

3534 The BDT of `Code. Type` has a Supplementary Component of `Code List. Name.`  
 3535 `Text` whose primitive type is `string`. The allowed facet types for the string  
 3536 primitive type include `Expression`, `Length`, `Minimum Length`, `Maximum Length`, and  
 3537 `Enumeration`. For a qualified data type of `Business Type_ Code. Type`, each of  
 3538 the allowed facet restrictions may or may not be present for the `Code List.`  
 3539 `Name. Text`. If present, there can only be one instance of each facet type.

3540 Primitive type facet restrictions for BDT Supplementary Components are a triple  
 3541 consisting of the facet type, facet value, and optional facet language.

3542 [D195] Each BDT Supplementary Component facet restriction shall contain the  
 3543 following attributes:

- 3544 • **Facet Type (mandatory):** Identifies the facet being defined.
- 3545 • **Facet Value (mandatory):** The actual facet restriction value.
- 3546 • **Facet Language (optional):** For a facet type of expression, defines
- 3547 the language of the regular expression of the facet value such as Perl,
- 3548 W3C XML Schema Definition Language, JAVA, or Microsoft .Net.

3549 [Example] – Component Restriction

3550 For a BDT Supplementary Component whose primitive type is `string`, an allowed

3551 facet would be `expression`. The values for the `Expression` facet would be:

3552 Facet Type (mandatory): `Expression`

3553 Facet Value (mandatory): `[A-Z]*`

3554 Facet Language (optional): `Perl`

### 3555 8.7.9 Business Data Type Supplementary Component Common Information

3556 Each BDT Supplementary Component has a common information class. The BDT

3557 Supplementary Component common information class provides necessary BDT

3558 Supplementary Component metadata information.

3559 [D196] Each BDT Supplementary Component shall have a common information

3560 class.

3561 [D197] The BDT Supplementary Component common information class shall

3562 consist of:

- 3563 • **DEN (mandatory):** The official name of the BDT Supplementary
- 3564 Component.
- 3565 • **Definition (mandatory):** The semantic meaning of the BDT
- 3566 Supplementary Component.
- 3567 • **Business Term (optional, repetitive):** A synonym term under which
- 3568 the BDT Supplementary Component is commonly known and used in
- 3569 business.

3570 [Example] – CDT Supplementary Component Common Information

3571 DEN – `Amount. Currency Code List Agency. Identifier`

3572 **Definition** – The `identifier` of the `agency` that maintains the `currency code`

3573 `list` used for the `amount`.

3574 Business Term – None

#### 3575 8.7.9.1.1 Business Data Type Supplementary Component Dictionary Entry Names

3576 The Business Data Type Supplementary Component naming rules are based on ISO

3577 11179 concepts of data type term, property term, and representation term.

3578 [D198] Each BDT Supplementary Component shall have a formally defined DEN.

3579 [D199] Each BDT Supplementary Component DEN shall conform to all DT DEN

3580 rules.

3581 [D200] The DEN of a BDT Supplementary Component shall be the DEN of the CDT  
3582 Supplementary Component of the source CDT.

3583 [Example] – Business Data Type Supplementary Components

3584 Amount. Currency Code List Version. Identifier, Code. List Agency.  
3585 Identifier, Quantity. Unit. Code

3586 [D201] The BDT Supplementary Component DEN shall be unique amongst all BDT  
3587 Supplementary Component names within the library of which it is a part.

### 3588 8.7.9.1.2 Business Data Type Supplementary Component Definitions

3589 A BDT Supplementary Component definition provides a clear, unambiguous and  
3590 complete explanation of the meaning of a BDT Supplementary Component and its  
3591 relevance for the related BDT.

3592 [D202] Each BDT Supplementary Component shall have a formal definition.

3593 [D203] Each BDT Supplementary Component definition shall conform to all DT  
3594 definition rules.

3595 [D204] The definition of a BDT Supplementary Component shall include the data  
3596 type term of the BDT to which it belongs, the property term and the  
3597 representation term.

### 3598 8.7.9.1.3 Business Data Type Supplementary Component Business Terms

3599 BDT Supplementary Components may have business terms. BDT Supplementary  
3600 Component business terms are synonyms commonly used for day-to-day  
3601 information exchanges within a given domain.

3602 [D205] Each BDT Supplementary Component shall have zero or more business  
3603 terms.

### 3604 8.7.9.2 Business Data Type Supplementary Component Localized Information

3605 The BDT Supplementary Component localized information class contains the  
3606 relevant information necessary to associate native language expressions of BDT  
3607 Supplementary Components to the BDT Supplementary Component.

3608 [D206] A BDT Supplementary Component shall have zero or more localized  
3609 information classes.

3610 [D207] Each occurrence of a BDT Supplementary Component localized information  
3611 class shall contain:

- 3612 • **Language Code (mandatory):** A code which identifies the language.  
3613 *ISO 639-1 Codes for the Representation of Languages* shall be used  
3614 as the authoritative source for code values.
- 3615 • **Other Language DEN (mandatory):** The official name of the BDT  
3616 Supplementary Component in a language other than English.
- 3617 • **Other Language Definition (mandatory):** The semantic meaning of  
3618 the BDT Supplementary Component in a language other than English.
- 3619 • **Other Language Business Term (optional, repetitive):** A synonym  
3620 term in another language under which the BDT Supplementary

- 3621                   Component is commonly known and used in a business expression in  
3622                   that language. Business terms in the localized information class shall  
3623                   only be expressed in the language identified by the language code  
3624                   property of that class.
- 3625 [D208] Each other language BDT Supplementary Component DEN must adhere to  
3626                   all BDT DEN rules other than the requirement to be in the English language.
- 3627 [D209] Each other language BDT Content Component DEN shall only consist of  
3628                   alphabetic characters unless required by language rules.
- 3629 [D210] Each other language BDT Supplementary Component definition shall  
3630                   adhere to all BDT supplementary component definition rules other than the  
3631                   requirement to be in the English language.
- 3632 The DEN and definition in the localized information class must only be expressed in  
3633                   the language identified by the language code property of that class.
- 3634 [D211] Each other language BDT Supplementary Component DEN and definition  
3635                   shall only be expressed in the language identified by the language code  
3636                   property of that class.
- 3637 The business terms must only be expressed in the language identified by the  
3638                   language code property of that class, or a recognized dialect of the language.
- 3639 [D212] Each other language BDT Supplementary Component business term shall  
3640                   only be expressed in the language identified by the language code of that  
3641                   class, or a recognized dialect of the language.

3642 **9 Context**

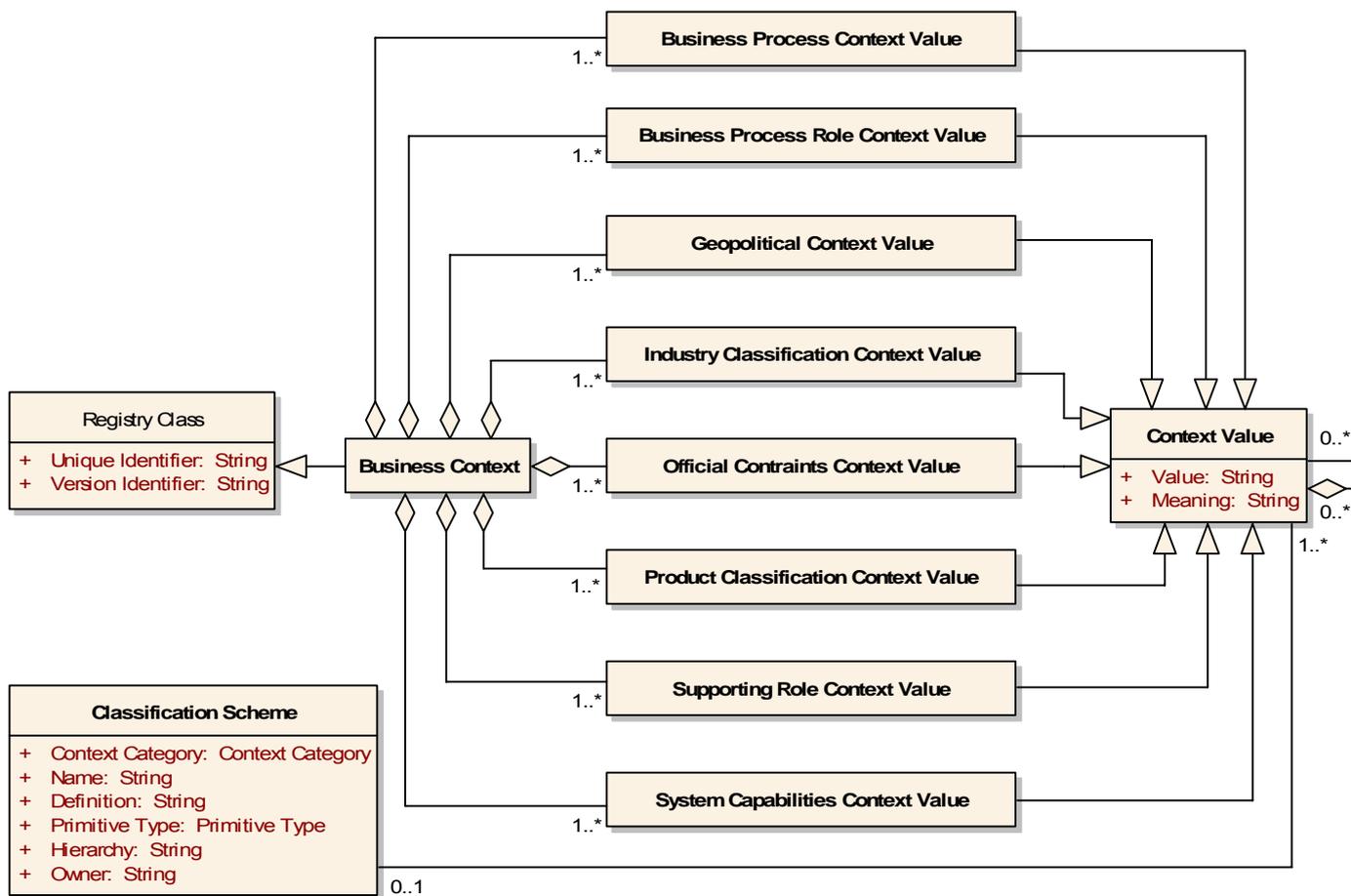
3643 This section fully describes applicable rules and applications for the use of context in  
 3644 core component discovery, analysis, and use to include context categories and their  
 3645 values.

3646 **[Note] – Context Mechanism**

3647 The context mechanism is being more robustly defined in a separate UN/CEFACT  
 3648 Context Methodology specification. Once the final version of that specification is  
 3649 published, This section will be deprecated.

3650 **9.1 Overview**

3651 Whenever business collaboration takes place between specific trading partners, data  
 3652 is exchanged in the form of business messages. When used as such, that data  
 3653 exists in a particular business context. In its simplest form, this is the idea of context  
 3654 as used in this specification. The context in which the business collaboration takes  
 3655 place can be specified by a set of categories and their associated values.



3656 **Figure 9-1. Core Components Context Definition Model**  
 3657

3658 The CCs have no context independent of their use.

## 3659 9.2 Business Context

3660 [X1] Business context shall contain the combination of values for all approved  
3661 context categories so as to define a unique and meaningful business  
3662 context.

3663 In order to ensure uniqueness, every business context will have assigned a:

- 3664 • **Unique Identifier (mandatory):** The identifier that references the  
3665 business context in a unique and unambiguous way.
- 3666 • **Version Identifier (mandatory):** An indication of the evolution over  
3667 time of the business context instance.

3668 [X2] Each business context shall have a unique identifier within the library of  
3669 which it is a part.

3670 [X3] Each business context shall have a unique version identifier within the  
3671 library of which it is a part.

## 3672 9.3 Context Values

3673 Each business context will contain the combination of values for all approved context  
3674 categories so as to define a meaningful business context. Each business context will  
3675 contain a value for each defined context category in order to describe the business  
3676 context in an unambiguous and formal way.

3677 [X4] When describing a specific business context, a value or set of values shall  
3678 be assigned to each of the approved context categories.

3679 [X5] Context values shall be defined as one of the eight recognized  
3680 types—business process context value, product context value, industry  
3681 context value, geopolitical context value, official constraints context value,  
3682 business process role context value, supporting role context value or system  
3683 capabilities context value.

3684 [X6] Each context value shall include the following attributes:

- 3685 • **Value (mandatory):** Value describing a particular context.
- 3686 • **Meaning (mandatory):** Description of the meaning of the  
3687 corresponding value.

3688 [Note] – Context Value

3689 The context value is derived from a business process model which presumably uses  
3690 values that have their meaning defined somewhere. For example, if the value is  
3691 taken from a code list (specified in the classification scheme), then the meaning of  
3692 the code should be provided by the code list specification. As an alternative solution,  
3693 the meaning could optionally be a uniform resource identifier that points to the  
3694 definition.

## 3695 9.4 Context Classification Scheme

3696 Context values may belong to a particular classification scheme. The classification  
3697 scheme defines all relevant information about the context value to allow it to be  
3698 unambiguously understood and used. Context values that belong to a particular

3699 classification scheme that allows a hierarchy, may have a hierarchical contains  
3700 relation with another context value belonging to the same classification scheme.

3701 [X7] Context classification schemes shall include the following attributes:

- 3702 • **Context category (mandatory):** Name used to identify the approved  
3703 context category for which the classification scheme can be used.
- 3704 • **Name (mandatory):** Name under which the classification scheme is  
3705 known.
- 3706 • **Definition (mandatory):** Definition of the classification scheme.
- 3707 • **Primitive Type (mandatory):** Primitive type that is used for the  
3708 representation of a context value in the classification scheme.
- 3709 • **Hierarchy (mandatory):** Indicator describing whether the  
3710 classification scheme supports a hierarchical description of the  
3711 context.
- 3712 • **Owner (mandatory):** Organization that is responsible for the  
3713 classification scheme.

## 3714 9.5 Categories

3715 Context categories exist to allow users to uniquely identify and distinguish between  
3716 different business contexts. Eight context categories have been identified (Table 9-  
3717 1). Each of the identified categories, unless otherwise stated, uses a standard  
3718 classification to provide values for the category. Constraint rules, and therefore BIEs,  
3719 are tied to a particular set of standard classifications for identifying and distinguishing  
3720 contexts.

3721 **Table 9-1. Approved Context Categories**

Context Category	Description
Business Process	The business process name(s) as described using the <i>UN/CEFACT Catalogue of Common business processes</i> as extended by the user.
Product Classification	Factors influencing semantics that are the result of the goods or services being exchanged, handled, or paid for, etc. (e.g. the buying of consulting services as opposed to materials).
Industry Classification	Semantic influences related to the industry or industries of the trading partners (e.g., product identification schemes used in different industries).
Geopolitical	Geographical factors that influence business semantics (e.g., the structure of an address).
Official Constraints	Legal and governmental influences on semantics (e.g. hazardous materials information required by law when shipping goods).

Context Category	Description
Business Process Role	The actors conducting a particular business process, as identified in the <i>UN/CEFACT Catalogue of Common business processes</i> .
Supporting Role	Semantic influences related to non-partner roles (e.g., data required by a third-party shipper in an order response going from seller to buyer.).
System Capabilities	This context category exists to capture the limitations of systems (e.g. an existing back office can only support an address in a certain form).

### 3722 **9.5.1 Business Process Context**

3723 In describing a business situation, generally the most important aspect of that  
 3724 situation is the business activity being conducted. Business process context provides  
 3725 a way to unambiguously identify the business activity. To ensure consistency with  
 3726 business process activities, it is important to use a common point of reference. The  
 3727 definitive point of reference for international standards is the *UN/CEFACT Catalogue*  
 3728 *of Common business processes*.

3729 [X8] Assigned business process contexts shall be from the standard hierarchical  
 3730 classification: provided as part of the UN/CEFACT catalogue of common  
 3731 business processes.

3732 [X9] Business process context values may be expressed as a single business  
 3733 process, or as a hierarchical set of business processes.

3734 [X10] Business process context values may be taken from extensions to the  
 3735 business processes described in the *UN/CEFACT Catalogue of Common*  
 3736 *business processes* as provided for in that document.

3737 [X11] When business process extensions are used, they shall include full  
 3738 information for each value sufficient to unambiguously identify which  
 3739 extension is providing the value used.

### 3740 **9.5.2 Product Classification Context**

3741 The product classification context describes those aspects of a business situation  
 3742 related to the goods or services being exchanged by, or otherwise manipulated, or  
 3743 concerned, in the business process. Recognized code lists exist that provide  
 3744 authoritative sources of product classification contexts.

3745 [X12] A single value or set of values may be used in a product classification  
 3746 context.

3747 [X13] If a hierarchical system of values is used for product classification context,  
 3748 then these values may be at any level of the hierarchy.

3749 [X14] If more than one classification system is being employed, an additional  
 3750 value specifying which classification scheme has supplied the values used  
 3751 shall be conveyed.

3752 [X15] Product classification context code values shall be taken from recognized  
3753 code lists to include:

- 3754 • Universal Standard Product and Service Specification (UNSPSC)
- 3755 - Custodian: GS1
- 3756 • Standard International Trade Classification (SITC Rev .3)
- 3757 - Custodian: United Nations Statistics Division (UNSD)
- 3758 • Harmonized Commodity Description and Coding System (HS)
- 3759 - Custodian: World Customs Organization (WCO)
- 3760 • Classification Of the purposes of non Profit Institutions serving
- 3761 households (COPI)
- 3762 - Custodian: UNSD (This provides a mapping between the first
- 3763 three.)

### 3764 **9.5.3 Industry Classification Context**

3765 The industry classification context provides a description of the industry or sub-  
3766 industry in which the business process takes place.

3767 [X16] An industry classification context may contain a single value or set of values  
3768 at any appropriate level of the value hierarchy.

3769 [X17] The industry classification context value hierarchy must be identified.

3770 [X18] Industry classification context code values shall be taken from recognized  
3771 code lists to include:

- 3772 • International Standard Industrial Classification (ISIC)
- 3773 - Custodian: UNSD
- 3774 • Universal Standard Product and Service Specification (UNSPSC) Top-
- 3775 level Segment [digits 1 and 2] used to define industry.
- 3776 - Custodian: ECCMA

#### 3777 [Note] – Industry Classification Schemes

3778 There are many other industry classification schemes that may be used for industry  
3779 classification context.

### 3780 **9.5.4 Geopolitical Context**

3781 Geopolitical contexts allow description of those aspects of the business context that  
3782 are related to region, nationality, or geographically based cultural factors.

3783 [X19] Geopolitical context shall consist of appropriate continent, economic region,  
3784 country, and region identifiers.

3785 [X20] Geopolitical context may associate one or more values with any component.

3786 [X21] Geopolitical context shall employ the following values:

- 3787 • Continent
- 3788 • Country – ISO 3166.1

- 3789           • Country Sub-entity - ISO 3166.2
- 3790           • Economic Region
- 3791           • Global
- 3792           • Multi lateral Organizations
- 3793 [X22] At any level of geopolitical context, a value may be a single value, a named  
3794 aggregate or cross-border value.
- 3795 [X23] Geopolitical context values shall be structured as follows:
- 3796           • **single value:** A single value indicating a single continent,  
3797           economic region, country, or region, depending on position within the  
3798           hierarchy.
- 3799           • **Named Aggregate:** A related group of values (which may  
3800           themselves be single values, named aggregates, or cross-border pairs  
3801           of values), which have been related and assigned a name. A named  
3802           aggregate contains at least two values.
- 3803           • **Cross-Border:** One or more pairs of values, designated **To**, **From**,  
3804           or **Bi-directional**, indicating the direction of cross-border Context.  
3805           Values may be named aggregates or single values.
- 3806 [X24] Points in geopolitical context values shall be specified by either a single  
3807 value, or combination of values.
- 3808 [X25] The full path of the geopolitical context value must be used to understand  
3809 the hierarchy when complex constructs are employed.
- 3810 [X26] A specific level in the geopolitical context value is understood to inherit all of  
3811 the properties within its specific path except where otherwise specified.
- 3812 [X27] Geopolitical context values shall be taken from ISO 3166.1 and 3166.2
- 3813 **9.5.5 Official Constraints Context**
- 3814 The official constraints context category describes those aspects of the business  
3815 situation that result from legal or regulatory requirements and similar official  
3816 categories. This category contains two distinct parts:
- 3817           • Regulatory and Legislative. These are normally unilateral in nature  
3818           and include such things as customs authority regulations.
- 3819           • Conventions and Treaties. These are normally bi- or multilateral  
3820           agreements and as such are different from regulatory and legislative  
3821           constraints.
- 3822 [X28] The official constraints context shall consist of at least two values:
- 3823           • Identification of the legal or other classification used to identify the  
3824           context values.
- 3825           • Identification of the official constraint itself. These values may  
3826           represent a hierarchical structure depending on the official constraints  
3827           system being referenced.

3828 Because there is no known global classification of all official constraints contexts as  
3829 used here, any implementation must provide a set of recognized official constraints  
3830 classifications for use within the appropriate core components registry  
3831 implementation.

3832 [X29] Individual core component implementations shall register used official  
3833 constraint classification schemes with the appropriate supporting core  
3834 components registry implementation.

### 3835 **9.5.6 Business Process Role Context**

3836 The business process role context describes those aspects of a business situation  
3837 that are specific to an actor or actors within the business process. Its values are  
3838 taken from the set of role values provided by the *UN/CEFACT Catalogue of*  
3839 *Common Business Processes*. A business process role context is specified by using  
3840 a value or set of values from this source.

3841 [X30] Business process role context values shall be taken from an approved list  
3842 provided by the business process model library being employed.

3843 [X31] The *UN/CEFACT Catalogue of Common Business Processes* shall be the  
3844 definitive source of business process role context values for all UN/CEFACT  
3845 BIEs.

### 3846 **9.5.7 Supporting Role Context**

3847 The supporting role context identifies those parties that are not active participants in  
3848 the business process being conducted but who are interested in it. A supporting role  
3849 context is specified with a value or set of values from a standard classification.

3850 [X32] Supporting role context values shall be taken from the UN/EDIFACT code  
3851 list for DE 3035 party roles.

3852 [Note] – Code List Duplication

3853 Users are cautioned that duplication exists in the current version of the required code  
3854 list. UN/CEFACT will review this code list to clarify duplicates and identify non-  
3855 Supporting Role Context values.

### 3856 **9.5.8 System Capabilities Context**

3857 This category identifies a system, a class of systems or standard in the business  
3858 situation. The System capabilities context requires a least one pair of values: an  
3859 identification of the classification scheme being used and a value from that scheme.  
3860 A valid system capabilities context may include more than one such pair of values.

3861 [X33] Systems capabilities context values shall consist of pairs of values. Each  
3862 pair shall be comprised of an identification of the referenced classification  
3863 scheme and the value(s) being employed.

3864 [Note] – Information Systems Classification

3865 There is no known classification of all types of information systems and standards. It  
3866 is recommended that a mechanism for the registration of system and standard  
3867 names be provided by the ebXML registry, as valid values for the system capabilities  
3868 context.

## 3869 **9.6 Context Values**

3870 A specific business context is formally described using a set of context values. Every  
3871 context category must have a valid value, even if this value is `In All Contexts` or  
3872 `None`. The value `None` is appropriate for official constraints context because there will  
3873 be instances where there are no official constraints.

3874 [X34] The `In All Contexts` value shall be a valid value for every context category  
3875 except for official constraints context.

3876 [X35] The value `None` shall be a valid value for official constraints context.

## 3877 **10 Definition of Terms**

3878 **Aggregate Business Information Entity (ABIE)** – A collection of related pieces of  
3879 business information that together convey a distinct business meaning in a specific  
3880 business context. Expressed in modelling terms, it is the representation of an object  
3881 class, in a specific business context.

3882 **Aggregate Core Component (ACC)** – A collection of related pieces of business  
3883 information that together convey a distinct business meaning, independent of any  
3884 specific business context. Expressed in modelling terms, it is the representation of  
3885 an object class, independent of any specific business context.

3886 **Aggregation** – An Aggregation is a special form of Association that specifies a  
3887 whole-part relationship between the aggregate (whole) and a component part.

3888 **Artefact** – A piece of information that is produced, modified, or used by a process.  
3889 An artefact can be a model, a model element, or a document. A document can  
3890 include other documents. CCTS artefacts include all registry classes as specified in  
3891 Section 9 and all subordinate named constructs of a registry class.

3892 **Association Business Information Entity (ASBIE)** – A business information entity  
3893 that represents a complex business characteristic of a specific object class in a  
3894 specific business context. It has a unique business semantic definition. An  
3895 Association Business Information Entity represents an Association Business  
3896 Information Entity property and is therefore associated to an Aggregate Business  
3897 Information Entity, which describes its structure. An Association Business  
3898 Information Entity is derived from an Association Core Component.

3899 **Association Business Information Entity Property** – A business information entity  
3900 property for which the permissible values are expressed as a complex structure,  
3901 represented by an Aggregate Business Information Entity.

3902 **Association Core Component (ASCC)** – A core component which constitutes a  
3903 complex business characteristic of a specific Aggregate Core component that  
3904 represents an object class. It has a unique business semantic definition. An  
3905 Association Core Component represents an Association Core Component Property  
3906 and is associated to an Aggregate Core Component, which describes its structure.

3907 **Association Core Component Property** – A core component property for which the  
3908 permissible values are expressed as a complex structure, represented by an  
3909 Aggregate Core Component.

3910 **Attribute** – A named value or relationship that exists for some or all instances of  
3911 some entity and is directly associated with that instance.

3912 **Based On** – Use of an artifact that has been restricted according to the requirements  
3913 of a specific business context.

3914 **Basic Business Information Entity (BBIE)** – A Business information entity that  
3915 represents a singular business characteristic of a specific object class in a specific  
3916 business context. It has a unique business semantic definition. A Basic Business  
3917 Information Entity represents a Basic Business Information Entity property and is  
3918 therefore linked to a data type, which describes its values. A Basic Business  
3919 Information Entity is derived from a Basic Core Component.

- 3920 **Basic Business Information Entity Property** – A business information entity  
3921 property for which the permissible values are expressed by simple values,  
3922 represented by a data type.
- 3923 **Basic Core Component (BCC)** – A core component which constitutes a singular  
3924 business characteristic of a specific Aggregate Core component that represents a  
3925 object class. It has a unique business semantic definition. a Basic Core Component  
3926 represents a Basic Core Component property and is therefore of a data type, which  
3927 defines its set of values. Basic core components function as the properties of  
3928 Aggregate Core components.
- 3929 **Basic Core Component (BCC) Property** – A core component property for which  
3930 the permissible values are expressed by simple values, represented by a data type.
- 3931 **Business Context** – The formal description of a specific business circumstance as  
3932 identified by the values of a set of context categories, allowing different business  
3933 circumstances to be uniquely distinguished.
- 3934 **Business Data Type** – A business data type is a data type, which consists of one  
3935 and only one BDT content component, that carries the actual content plus one or  
3936 more BDT supplementary component giving an essential extra definition to the CDT  
3937 content component. BDTs do not have business semantics.
- 3938 **Business Data Type Content Component** – Defines the primitive type used to  
3939 express the content of a core data type.
- 3940 **Business Data Type Content Component Restriction** – The formal definition of a  
3941 format restriction that applies to the possible values of a core data type content  
3942 component.
- 3943 **Business Data Type Supplementary Component** – Gives additional meaning to  
3944 the business data type content component.
- 3945 **Business Data Type Supplementary Component Restrictions** – The formal  
3946 definition of a format restriction that applies to the possible values of a business data  
3947 type Supplementary Component.
- 3948 **Business Information Entity (BIE)** – A piece of business data or a group of pieces  
3949 of business data with a unique business semantic definition. A business information  
3950 entity can be a Basic Business Information Entity (BBIE), an Association Business  
3951 Information Entity (ASBIE), or an Aggregate Business Information Entity (ABIE).
- 3952 **Business Information Entity (BIE) Property** – A business characteristic belonging  
3953 to the Object Class in its specific business context that is represented by an  
3954 Aggregate Business Information Entity.
- 3955 **Business Libraries** – A collection of approved process models specific to a line of  
3956 business (e.g., shipping, insurance).
- 3957 **Business Process** – The business process as described using the UN/CEFACT  
3958 Catalogue of Common business processes.
- 3959 **Business Process Context** – The business process name(s) as described using  
3960 the *UN/CEFACT Catalogue of Common Business Processes* as extended by the  
3961 user.

- 3962 **Business Process Role Context** – The actors conducting a particular business  
3963 process, as identified in the *UN/CEFACT Catalogue of Common Business*  
3964 *Processes*.
- 3965 **Business Semantic(s)** – A precise meaning of words from a business perspective.
- 3966 **Business Term** – This is a synonym of the dictionary entry name under which the  
3967 artefact is commonly known and used in business. A CCTS artefact may have  
3968 several business terms or synonyms.
- 3969 **Cardinality** – An indication of the minimum and maximum occurrences for a  
3970 characteristic: not applicable (0..0), optional (0..1), optional repetitive (0..\*)  
3971 mandatory (1..1), mandatory repetitive (1..\*), fixed (n..n) where n is a non-zero  
3972 positive integer.
- 3973 **Catalogue of Business Information Entities** – This represents the approved set of  
3974 Business Information Entities from which to choose when applying the Core  
3975 Component discovery process
- 3976 **CCL** – see Core Component Library.
- 3977 **Classification Scheme** – This is an officially supported scheme to describe a given  
3978 context category.
- 3979 **Composition** – A form of aggregation which requires that a part instance be  
3980 included in at most one composite at a time, and that the composite object is  
3981 responsible for the creation and destruction of the parts. Composition may be  
3982 recursive.
- 3983 **Context** – Defines the circumstances in which a business process may be used.  
3984 This is specified by a set of context categories known as business context.
- 3985 **Context Category** – A group of one or more related values used to express a  
3986 characteristic of a business circumstance.
- 3987 **Controlled Vocabulary** – A supplemental vocabulary used to uniquely define  
3988 potentially ambiguous words or business terms. This ensures that every word within  
3989 any of the core component names and definitions is used consistently,  
3990 unambiguously and accurately.
- 3991 **Core Component (CC)** – A building block for the creation of a semantically correct  
3992 and meaningful information exchange package. It contains only the information  
3993 pieces necessary to describe a specific concept.
- 3994 **Core Component Library** – The Core Component Library is the part of the  
3995 registry/repository in which Core Components shall be stored as Registry classes.  
3996 The Core Component Library will contain all the registry classes.
- 3997 **Core Component Property** – A business characteristic belonging to the object class  
3998 represented by an Basic Core Component property or an Association Core  
3999 Component property.
- 4000 **Core Data Type (CDT)** – Defines the set of valid values that can be used for a  
4001 particular Basic Core Component property or Basic Business Information Entity  
4002 property. A core data type consists of one and only one CDT content component,  
4003 that carries the actual content plus one or more CDT supplementary components  
4004 giving an essential extra definition to the CDT content component. Core data types  
4005 do not have business semantics.

- 4006 **Core Data Type Content Component** – Defines the primitive type used to express  
4007 the content of a core data type.
- 4008 **Core Data Type Supplementary Component** – Gives additional meaning to the  
4009 business data type content component
- 4010 **Data Type Term** – A component of the name of the data type dictionary entry name  
4011 which represents the value domain. A data type term is taken from a common list  
4012 that is also used to determine allowed representation terms. Whereas representation  
4013 terms are never qualified, as they represent the data type, data type terms can be  
4014 qualified to reflect restrictions on the value domain.
- 4015 **Definition** – This is the unique semantic meaning of a core component, business  
4016 information entity, business context or data type.
- 4017 **Dictionary** – A collection of Dictionary Entry Names for CCTS conformant artefacts  
4018 for a specific library.
- 4019 **Dictionary Entry Name** – This is the official name of a CCTS-conformant artefact .
- 4020 **Facet** – A facet is a constraining value that represents a component restriction of a  
4021 Business Data Type content or supplementary component so as to define its allowed  
4022 value space.
- 4023 **Geopolitical Context** – Geographic factors that influence business semantics (e.g.,  
4024 the structure of an address).
- 4025 **Industry Classification Context** – Semantic influences related to the industry or  
4026 industries of the trading partners (e.g., product identification schemes used in  
4027 different industries).
- 4028 **Library** – a collection of CCTS conformant artefacts for a specific purpose,  
4029 organization or group of organizations.
- 4030 **Message Assembly** – The process whereby Business Information Entities are  
4031 assembled into a usable message for exchanging business information.
- 4032 **Naming Convention** – The set of rules that together comprise how the dictionary  
4033 entry name for CCTS artefacts are constructed.
- 4034 **Object Class** – The logical data grouping (in a logical data model) to which a data  
4035 element belongs (ISO11179). The object class is the part of a core component or  
4036 business information entity dictionary entry name that represents an activity or  
4037 object.
- 4038 **Object Class Term** – A component of the name of a core component or business  
4039 information entity which represents the object class to which it belongs.
- 4040 **Official Constraints Context** – Legal and governmental influences on semantics  
4041 (e.g. hazardous materials information required by law when shipping goods).
- 4042 **Primitive Type** – A primitive type, also known as a base type or built-in type, is the  
4043 basic building block for the representation of a value as expressed by more complex  
4044 data types.
- 4045 **Product Classification Context** – Factors influencing semantics that are the result  
4046 of the goods or services being exchanged, handled, or paid for, etc. (e.g. the buying  
4047 of consulting services as opposed to materials).

4048 **Property Term** – A semantically meaningful name for the characteristic of the Object  
4049 Class that is represented by the core component property. It shall serve as basis for  
4050 the DEN of the basic and Association Core Components that represents this core  
4051 component property.

4052 **Qualified Business Data Type** – A qualified business data type contains restrictions  
4053 on a business data type content or business data type supplementary component(s).

4054 **Qualifier Term** – A word or group of words that help define and differentiate an item  
4055 (e.g. a business information entity or a business data type) from its associated items  
4056 (e.g. from a core component, a core data type, another business information entity or  
4057 another business data type).

4058 **Registry** – An information system that manages and references artifacts that are  
4059 stored in a repository. The term registry implies a combination of registry/repository.

4060 **Registry class** – The formal definition of all the common information necessary to  
4061 be recorded in the registry by a registry artefact – core component, a business  
4062 information entity, a data type or a business context.

4063 **Repository** – an information system that stores artifacts.

4064 **Representation Term** – The type of valid values for a Basic Core Component or  
4065 Basic Business Information Entity.

4066 **Restriction** – restriction is the process of deriving a new data structure from an  
4067 existing data structure under the following rules:

- 4068 • you can reduce the cardinality range of any field from the existing data  
4069 structure;
- 4070 • you can restrict the range of allowed values for any field with a simple  
4071 data type (e.g. string, number);
- 4072 • you can add a semantic restriction which narrows the business scope  
4073 of any field.

4074 All valid instances of a new restricted data structure must also be valid instances of  
4075 the existing data structure from which the new data structure was derived.

4076 **Supporting Role Context** – Semantic influences related to non-partner roles (e.g.,  
4077 data required by a third-party shipper in an order response going from seller to  
4078 buyer.).

4079 **System Capabilities Context** – This context category exists to capture the  
4080 limitations of systems (e.g. an existing back office can only support an address in a  
4081 certain form).

4082 **UMM Information Entity** – A UMM information entity realizes structured business  
4083 information that is exchanged by partner roles performing activities in a business  
4084 transaction. Information entities include or reference other information entities  
4085 through associations.”

4086 **Unique Identifier** – The identifier that references a registry class instance in a  
4087 universally unique and unambiguous way.

4088 **Usage Rules** – Usage rules describe a constraint that describes specific conditions  
4089 that are applicable to a component in the model.

- 4090 **User Community** – A user community is a group of practitioners, with a publicized  
4091 contact address, who may define Context profiles relevant to their area of business.  
4092 Users within the community do not create, define or manage their individual context  
4093 needs but conform to the community’s standard. Such a community should liaise  
4094 closely with other communities and with general standards-making bodies to avoid  
4095 overlapping work. A community may be as small as two consenting organizations.
- 4096 **Version** – An indication of the evolution over time of an instance of a core  
4097 component, data type, business context, or business information entity.
- 4098 **XML schema** – A generic term used to identify the family of grammar based XML  
4099 document structure validation languages to include the more formal W3C XML  
4100 Schema Definition Language, ISO 8601 Document Type Definition, or Schematron.

## 4101 **11 References**

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4103 [International Standardization Organization, ISO 11179-1:Second Edition 2004-](#)  
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4106 [ISO 11179-2:Second Edition 2005-11-15](#)
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