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

**2nd 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 2nd 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**

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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.

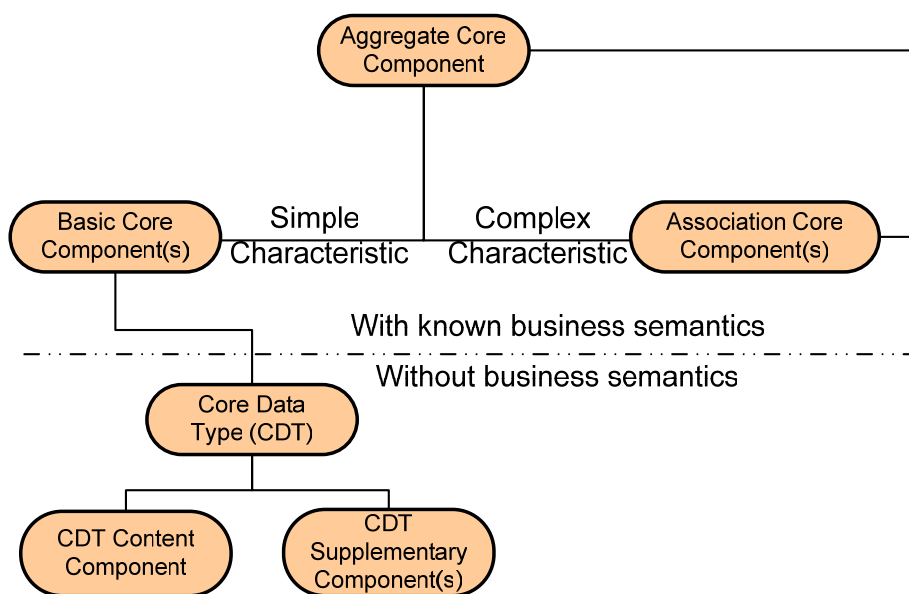
471 The CCTS approach is more flexible than current data and information exchange
 472 standards because the semantic standardization is done in a syntax-neutral
 473 fashion. This syntax-neutral semantic based methodology allows for the richness
 474 inherent in natural language to be used to create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

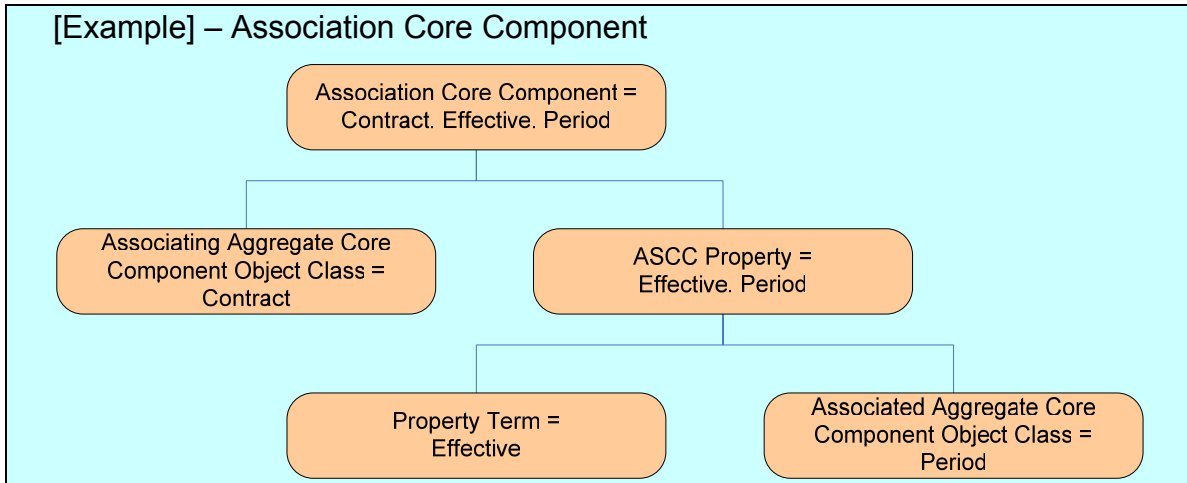
500 [Example] – Aggregate Core Component with Basic Core Component
 501 and Association Core Component properties

	Contract. Details Contract. Identification. Identifier Contract. Type. Code Contract. Issue. Date Time Contract. Price. Amount Contract. Effective. Period Contract. Performance. Metrics	
502	Contract. Details	ACC
503		
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.

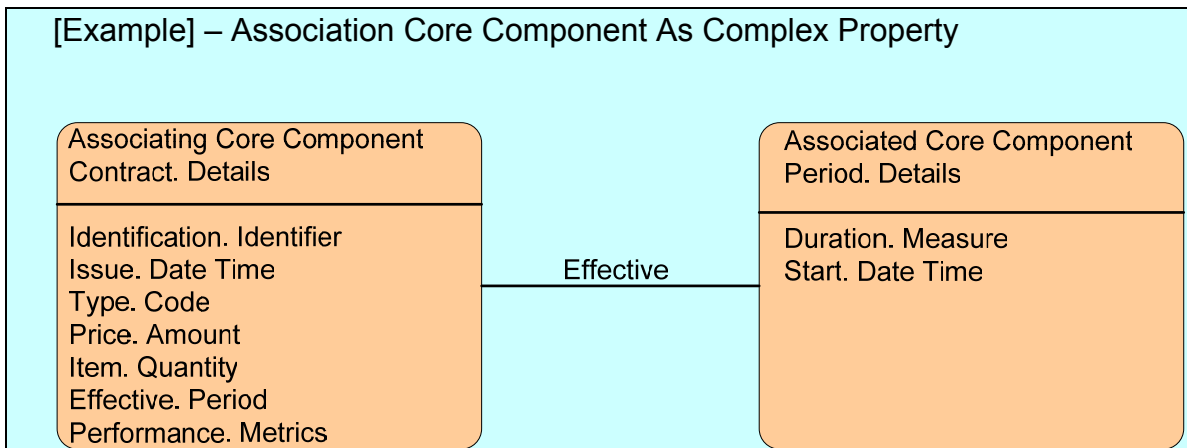
527



528

529 Because ASCCs represent hierarchical structures, in CCTS constructs they are
530 equivalent to UML aggregation associations.^{2,3}

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

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

³ 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.

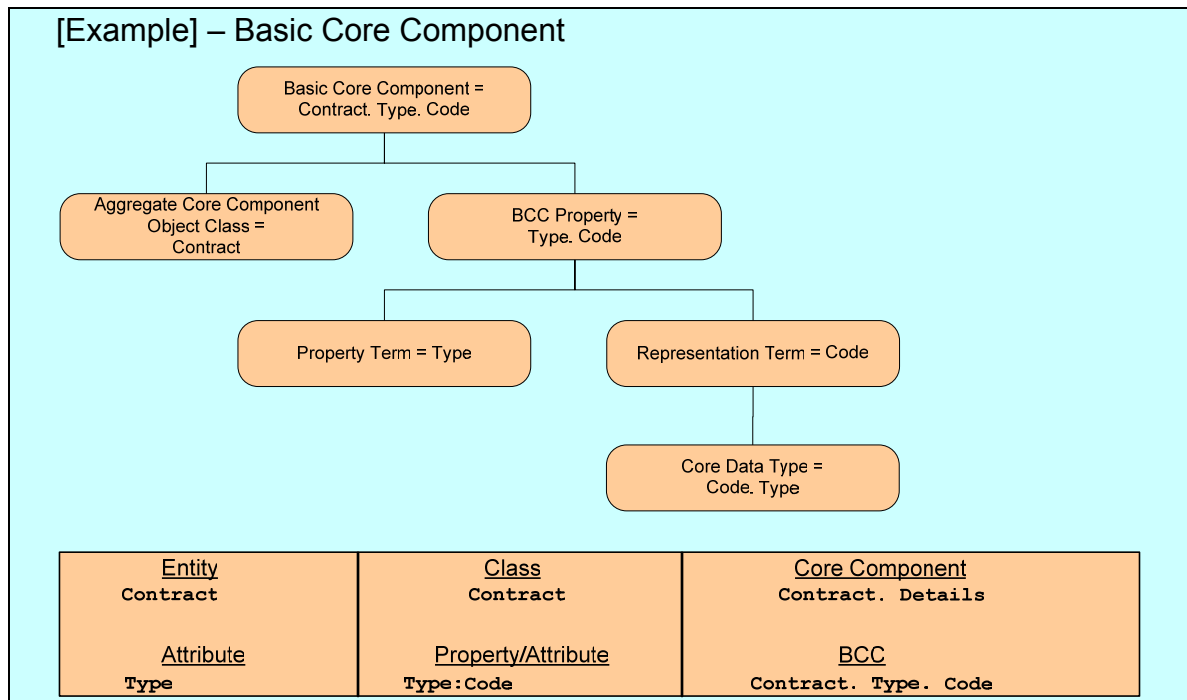
559 The complex properties are ASCC properties. They represent complex
560 characteristics and their structure is defined by another ACC. For example, the
561 structure of `Contract.Effective.Period` is described by `Period.Details`.

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

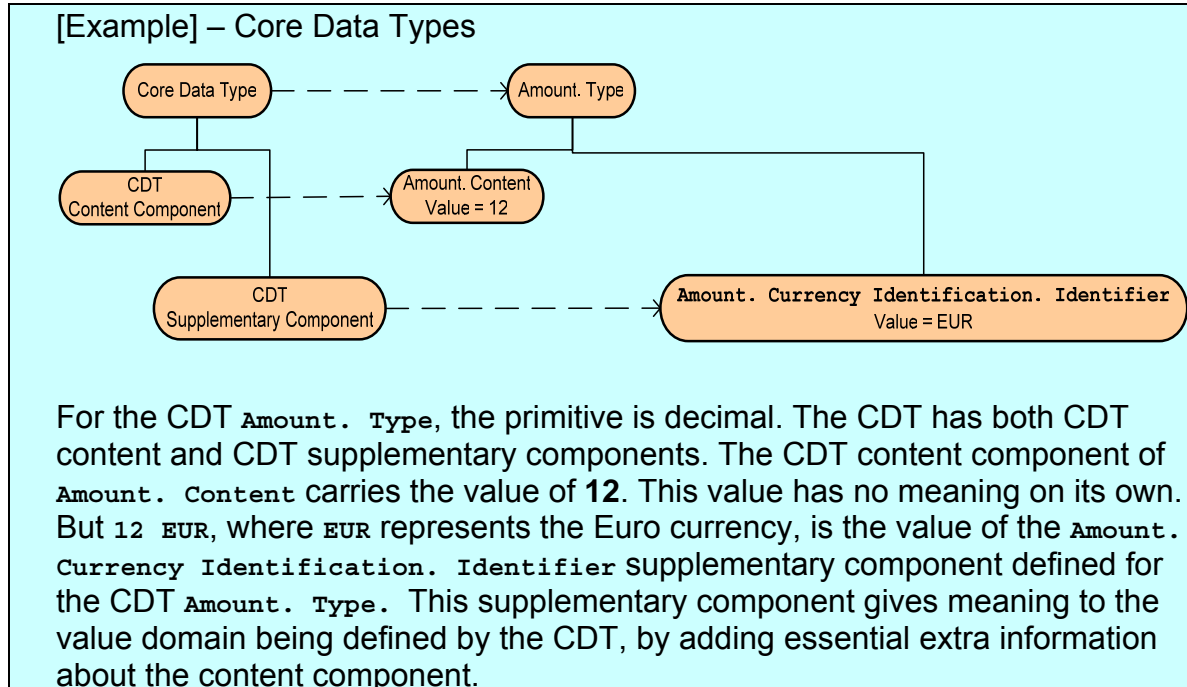


576
577

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



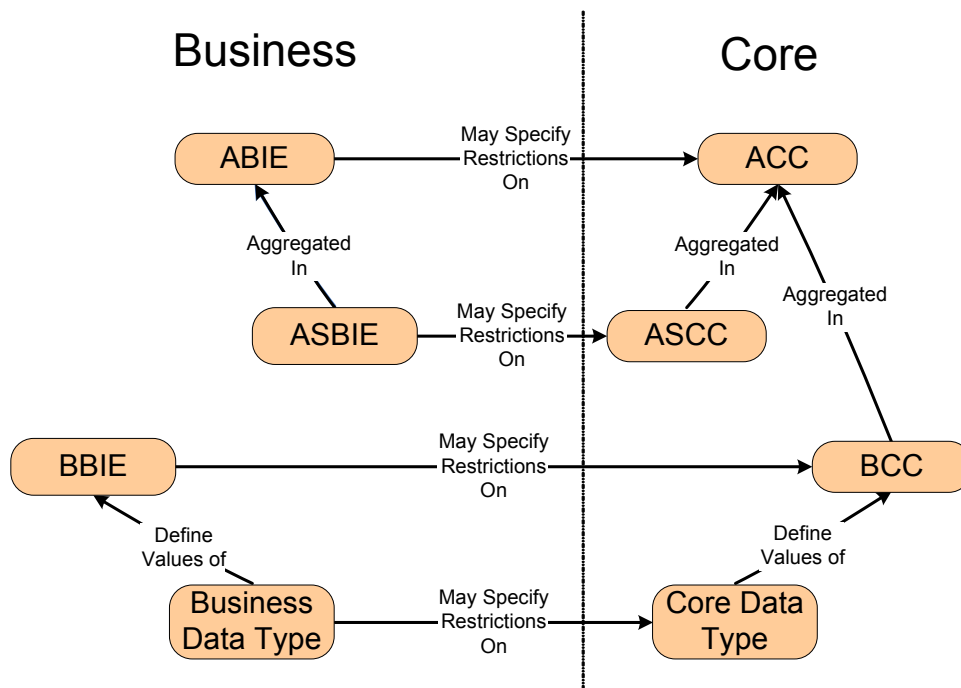
593 A CDT represents the full range of values that shall be used for the representation
594 of a particular CC property. Every CDT has a primitive type, a content component,
595 and one or more supplementary components. As shown in Figure 5-1, the value
596 domain of the CDT is defined by the union of 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.⁴

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

⁴ 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.⁵

625 [Note] – Generic Terms

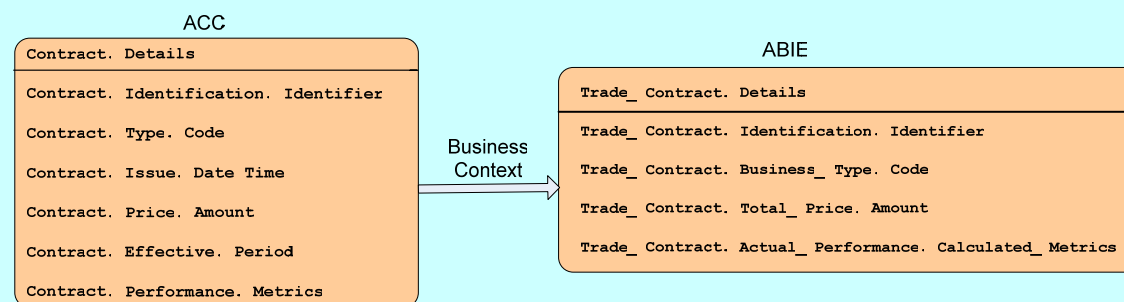
626 The term core component is used as a generic term that encompasses ACCs,
 627 BCCs, and ASCCs and their properties. Equally, the term business information
 628 entity is used as a generic term encompassing ABIEs, BBIEs, and ASBIEs and
 629 their properties.

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.

⁵ 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.

661 [Example] – Use of Qualifiers

662 The Multi-qualified ABIE

663 Electronic_Trade_Contract.Details

664 qualifies the qualified ABIE

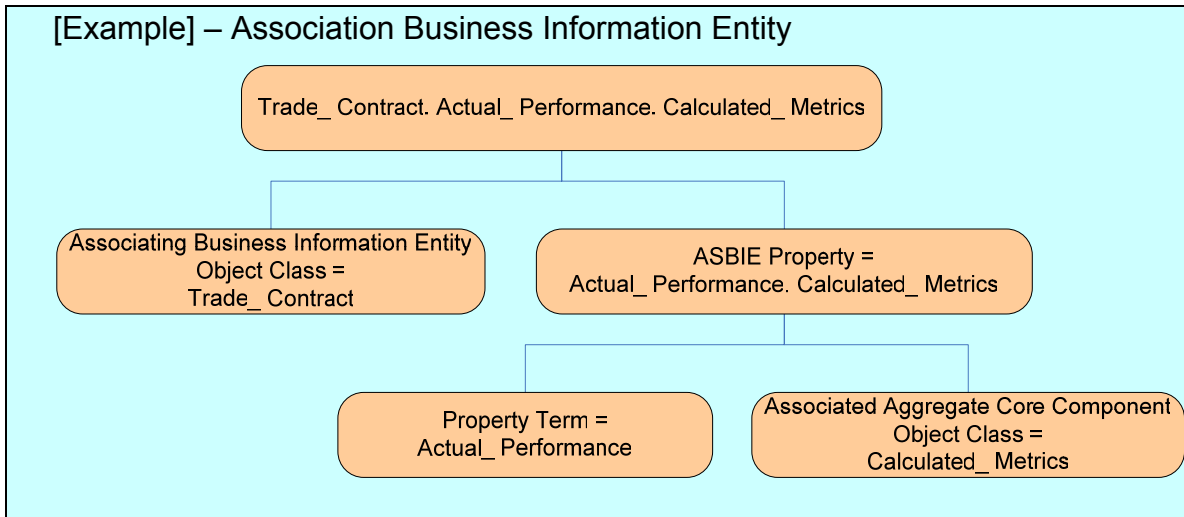
665 Trade_Contract.Details

666 which qualifies the ACC

667 Contract.Details

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.



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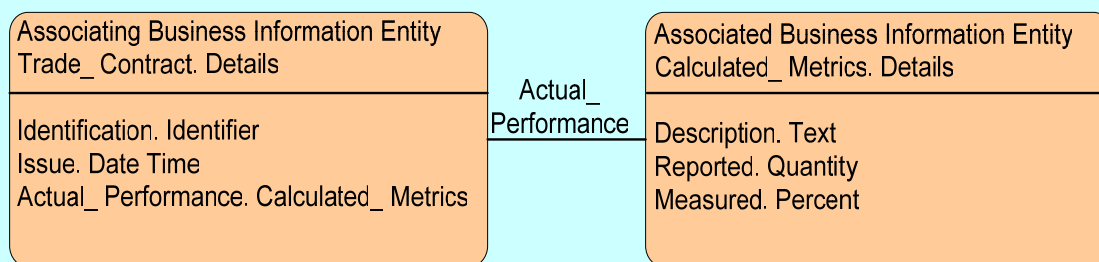
678

679 ASBIEs are equivalent to UML aggregation and composition associations.⁶

⁶ 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

The example shows two ABIEs:

683

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

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5.3.3 Basic Business Information Entity

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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

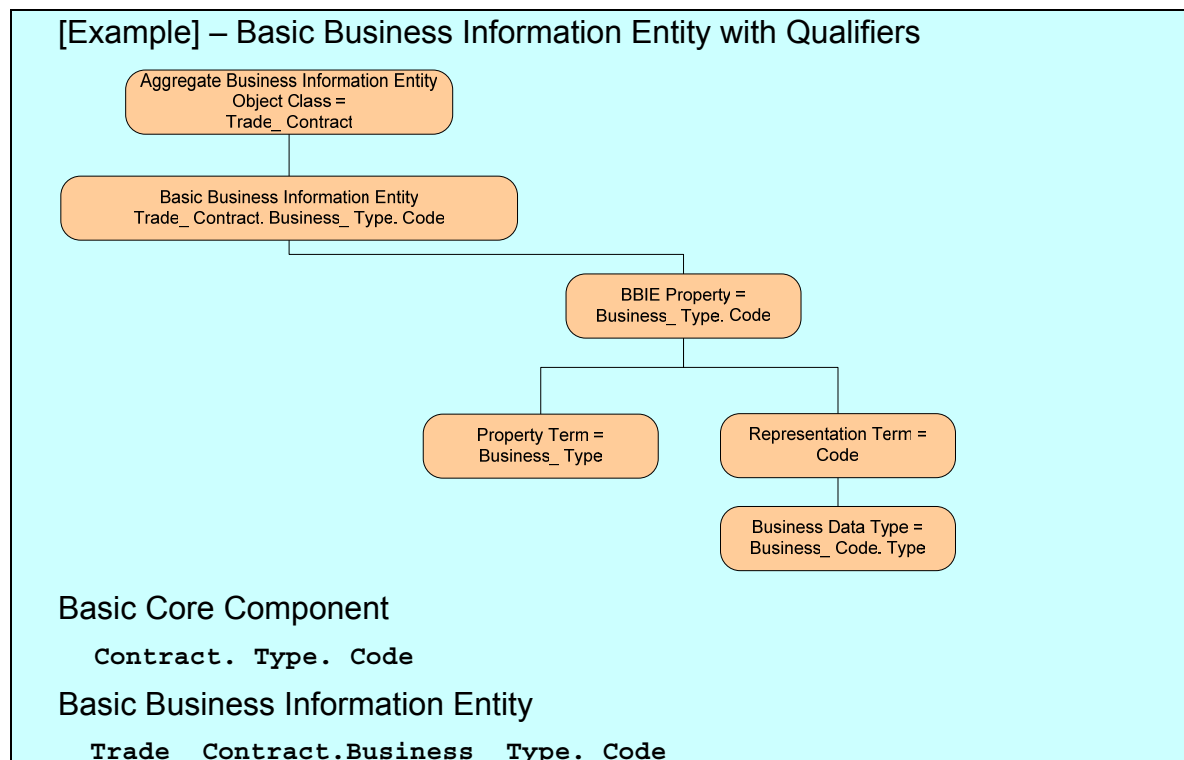
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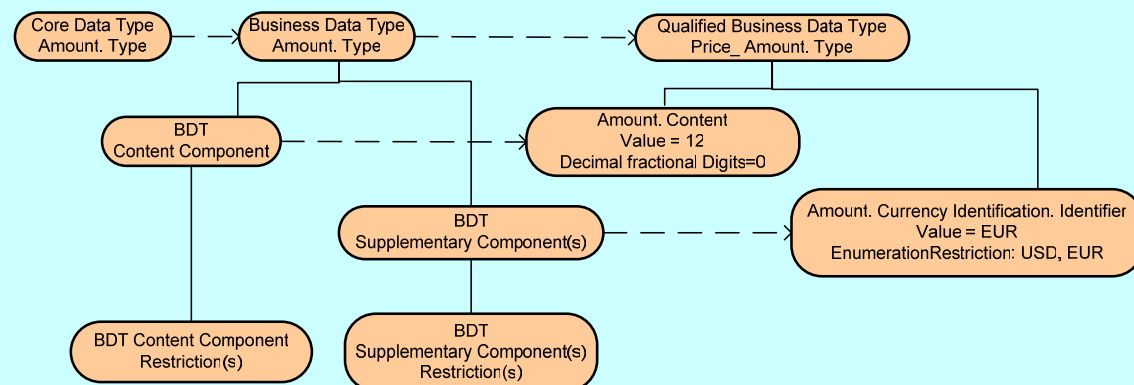
718 Every BBIE Property is derived from a BCC Property. Like their BCC Property
 719 counterparts, BBIE properties are reusable across object classes, but once it has
 720 been given the object class of a parent ABIE, it becomes a BBIE that is unique to
 721 the object class to which it is assigned. 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`.

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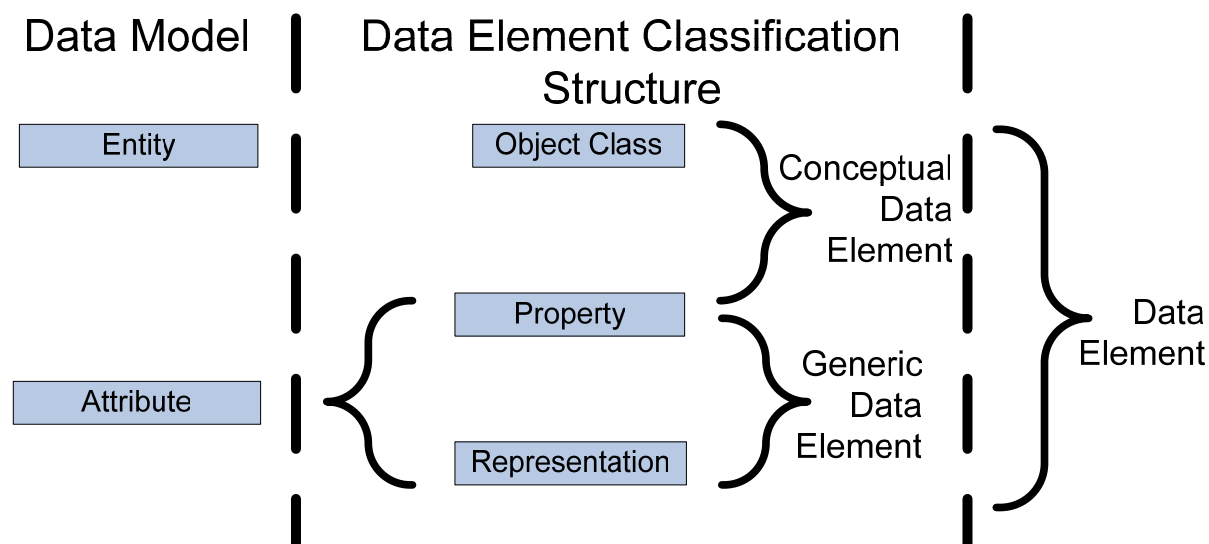
In the example, the BDT `Amount.Currency Identification.Identifier` supplementary component carries the value of `EUR`, where `EUR` represents the Euro currency. The BDT `Amount.Currency Identification.Identifier` supplementary component has been restricted using the enumeration component restriction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

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

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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.⁷ 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*.

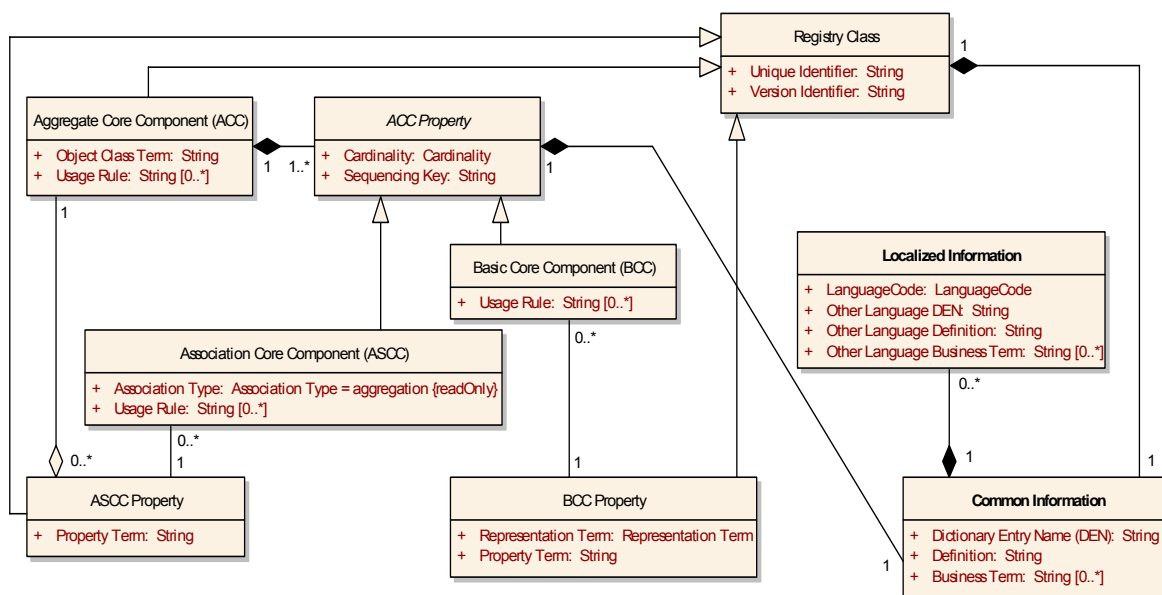
⁷ The UN/CEFACT Modelling Methodology (UMM) is a methodology for *Business Process* and information modelling that is based on the Object Management Group's Unified Modelling Language.

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	Definition – 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.

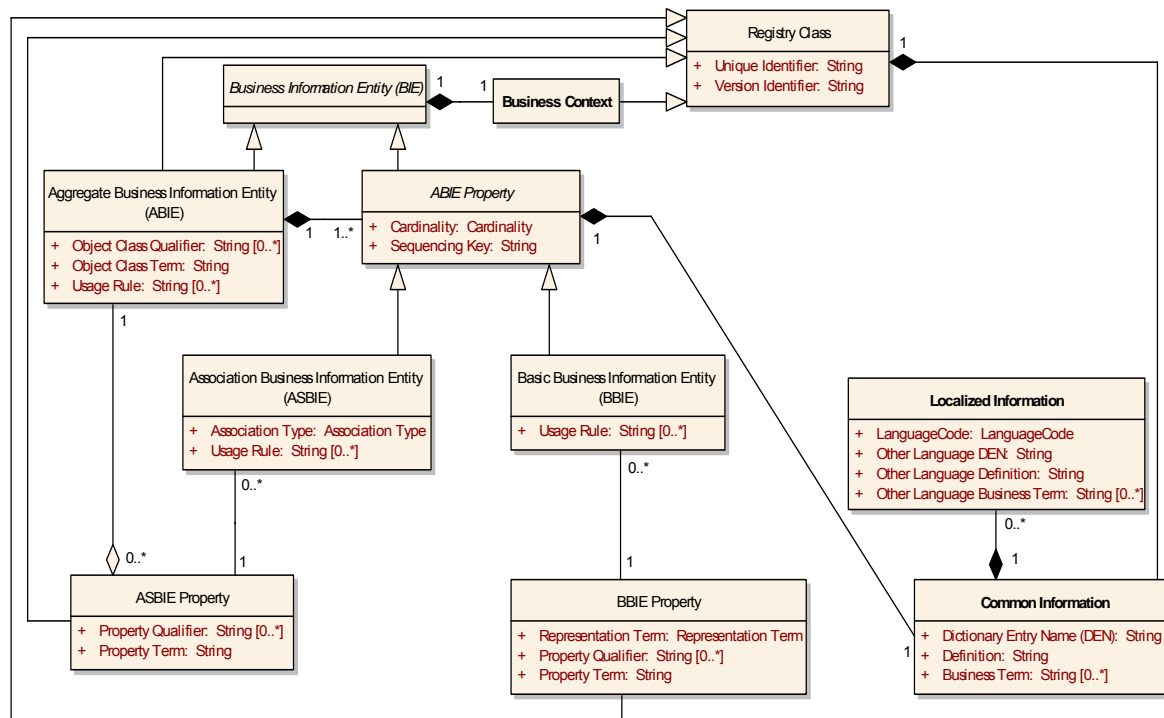
1583 [C143] Each occurrence of a BCC Property localized information class shall
1584 contain:

- 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**

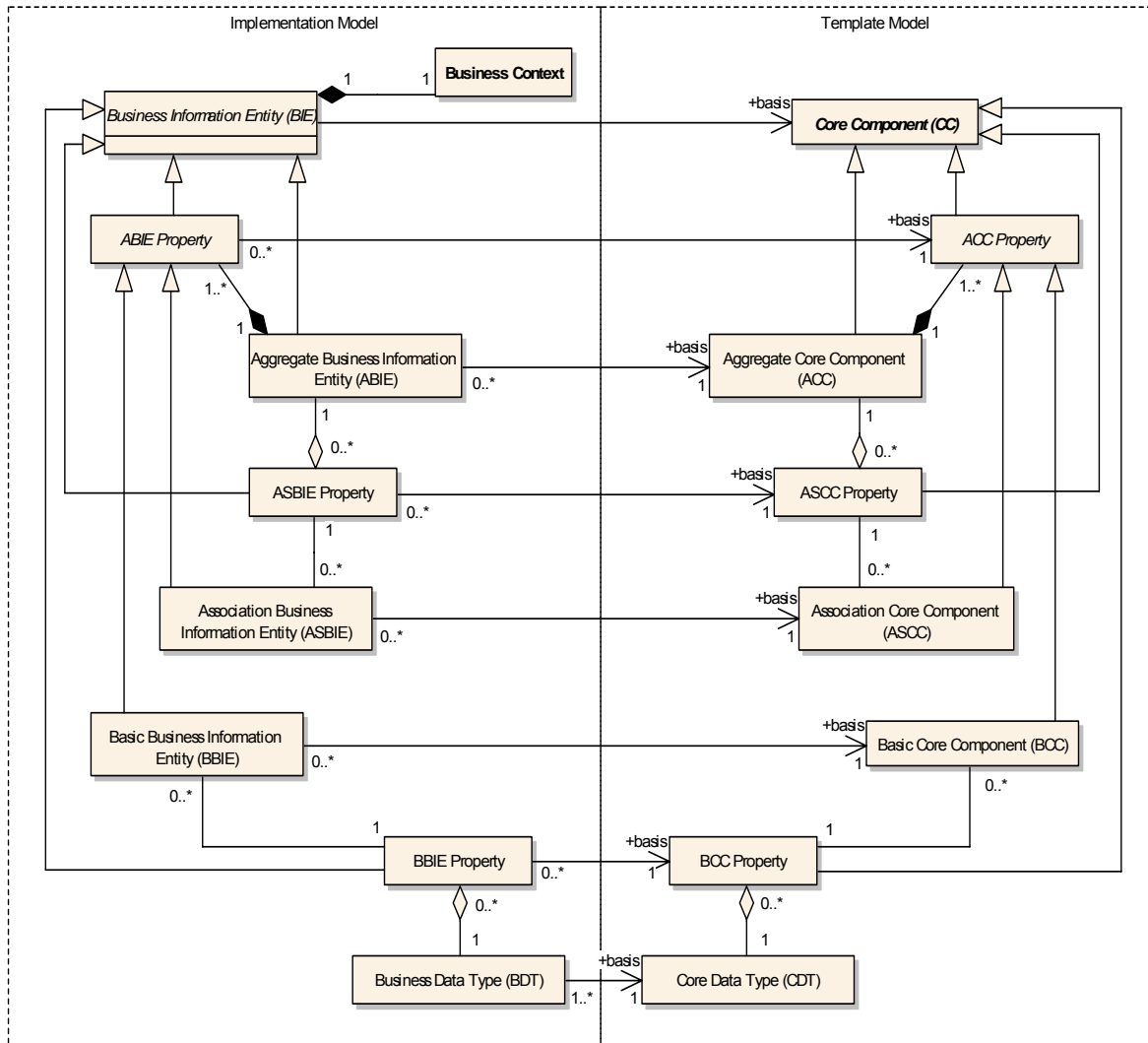
1616 **7.1 Overview**

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	Definition – 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.

[Example] – Single versus Multiple Word Property Terms

for the ASBIE Bid Bond_ Guarantee. Credit Charge. Guarantee Creditor_
 Organization:

Credit Charge. Guarantee Creditor_ Organization is different than Credit.
 Guarantee Creditor_ Organization

Credit Charge. Guarantee Creditor_ Organization is different than Charge.
 Guarantee Creditor_ Organization

Credit Charge. Guarantee Creditor_ Organization is different than Charge
 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.

[Example] – Multi-qualified ASBIE Properties

The Multi-qualified ASBIE Property

Total_ Actual_ Quantity. Work Item_ Dimension

qualifies the qualified ASBIE Property

Actual_ Quantity. Work Item_ Dimension

which qualifies the ASCC Property

Quantity. Dimension

Whereas the multi-word qualified

Initial Credit_ Charge. Creditor_ Organization

Qualifies the ASCC Property

Charge. Organization

and not the qualified ASBIE Property

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.

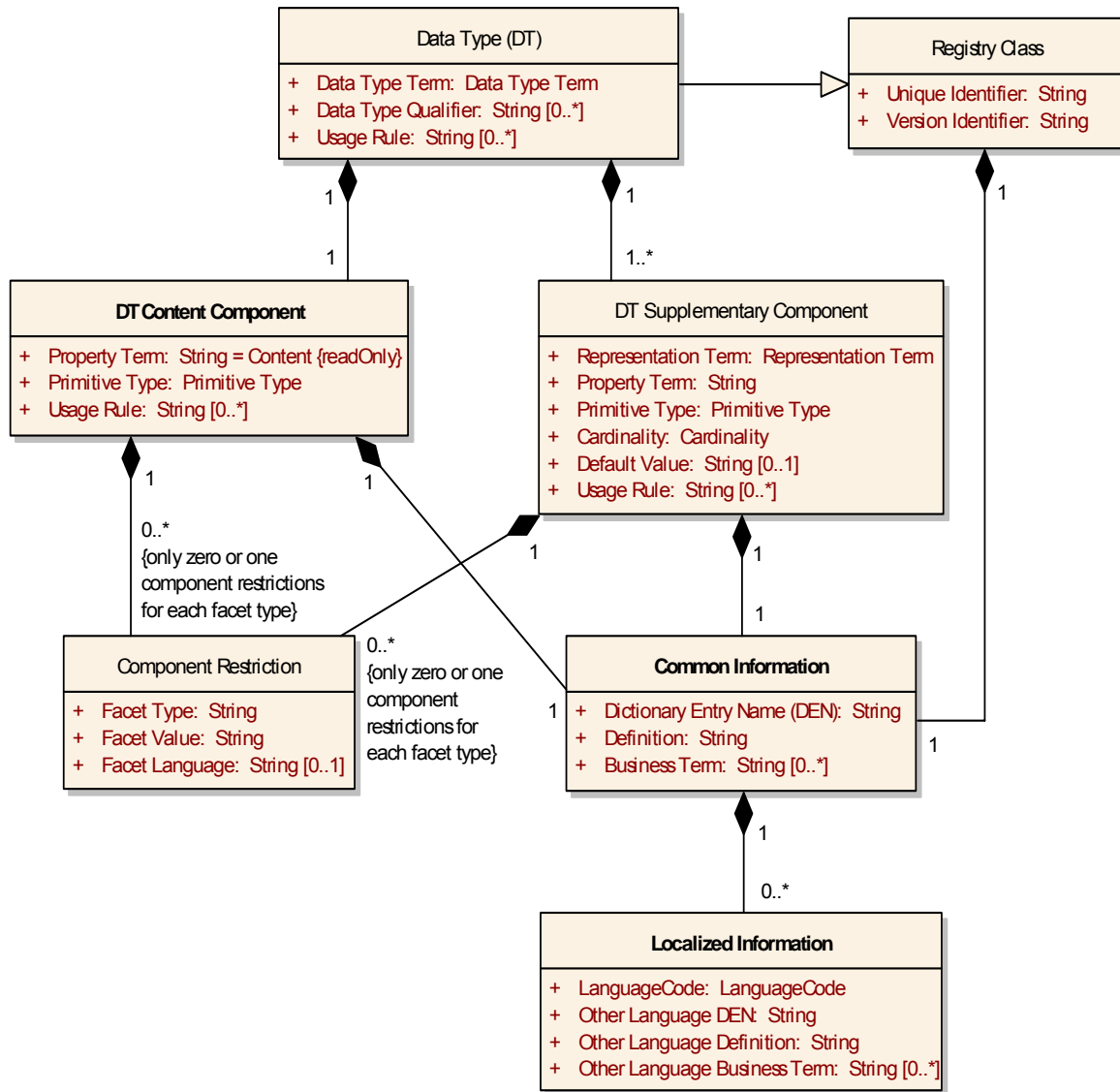
2565 [B185] Each other language BBIE Property DEN and definition shall only be
2566 expressed in the language identified by the language code property of that
2567 class.

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,

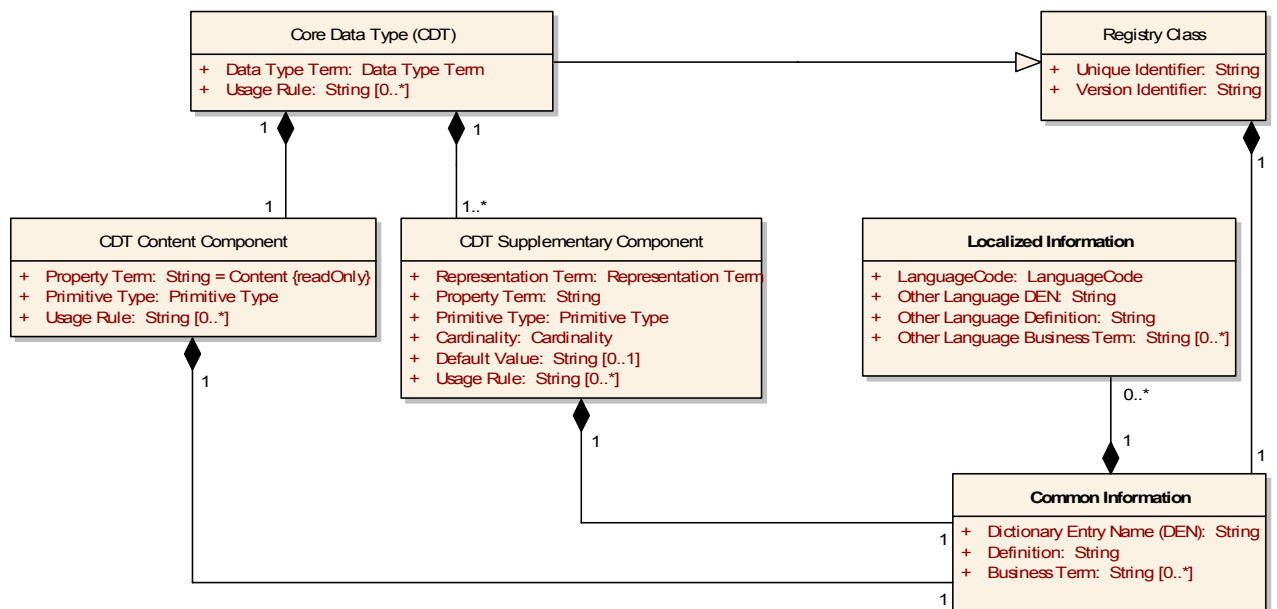
2703 definition, and business term. The DT localized information class contains the
 2704 relevant information necessary to associate the native language expressions to their
 2705 normative English language counterparts. Other language DT DENs will only consist
 2706 of alphabetic characters unless 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.

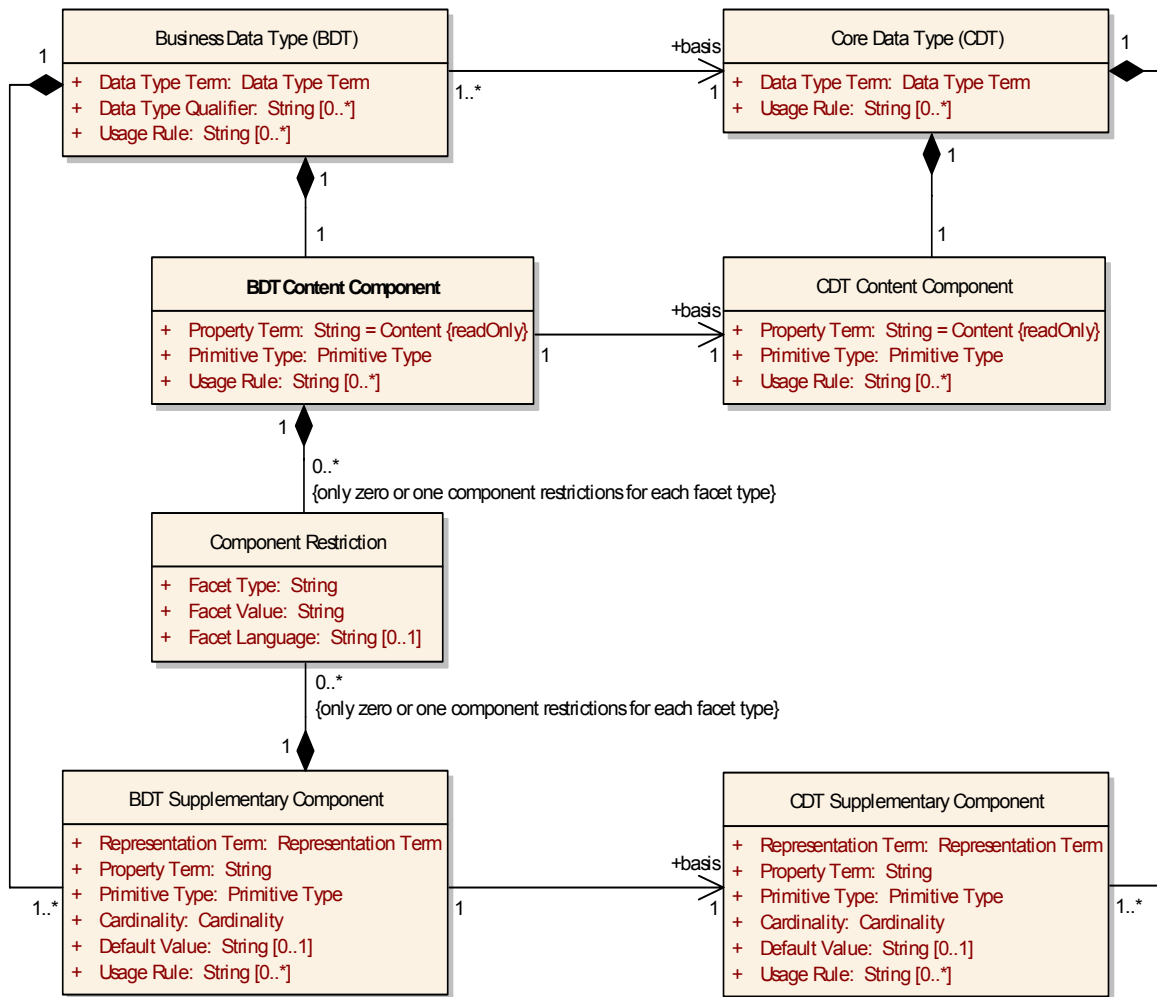
- 3066 [D100] Each CDT Supplementary Component shall have zero or more business
3067 terms.

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	Definition – 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**

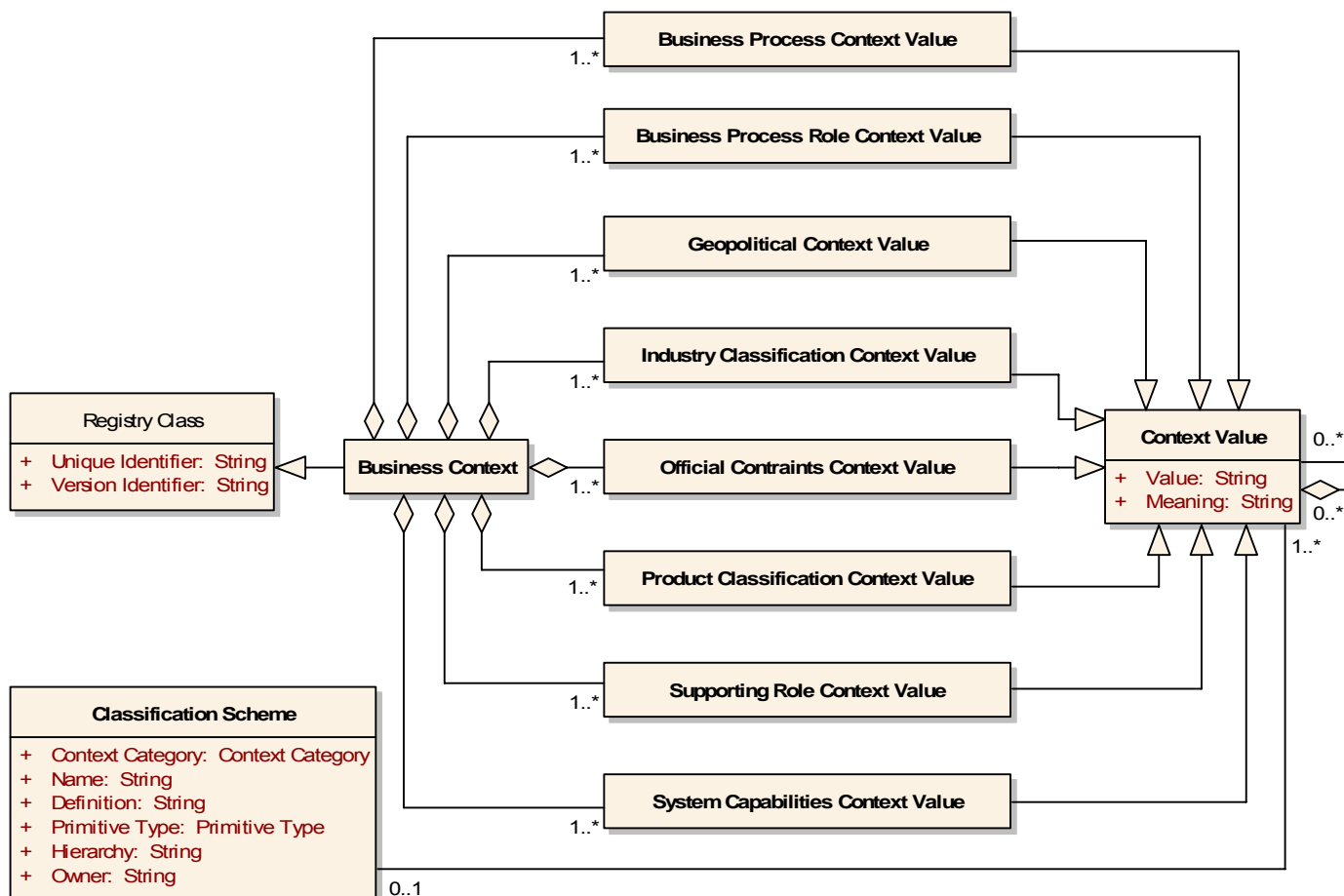
3643 This section fully describes applicable rules and applications for the use of context in
 3644 core component discovery, analysis, and use to include context categories and their
 3645 values.

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.

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