



S1000D Issue 4.2 vs. Issue 4.1

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Part 1

The Changes Made

- 1) The principal changes made in Issue 4.2 are identified below:
 - a) A substantial number of clarifications and rewording to eliminate ambiguities have been made.
 - b) The requirements for the display of the ICN in the final output is now optional.
 - c) Colored lines may be used in line art.
 - d) The generic ICN title given in the ICN metadata file can be used to populate figures and multimedia titles in data modules.
 - e) The element <derivativeClassification> is introduced.
 - f) Each project has to set up a style guide for presenting captions and caption groups.
 - g) The project can use OEM renamed part numbers instead of part numbers allocated by the part design authority in the attribute partNumberValue.
 - h) The illustration annotations requirements have been relaxed.
 - i) The element <learning> has been revised to include optional occurrences of element <title> in several locations. This provides a readable and unambiguous presentation.
 - j) The top-level preliminary requirements may be used for maintenance inspections.
 - k) The attribute timeLimitCategoryValue in the element <timeLimit> is used to identify safety items.
 - l) Business rules documents are introduced and include:
 - i) Both single or multiple business rules document data modules may be used.
 - ii) New data in business rules document data modules may exceed five levels of depth.
 - iii) The attribute brDecisionIdentNumber and the attribute id are identified in the business rules document
 - iv) Standardized responses to describe business rules decision values are allowed.

- m) The presentation of controlled content is decided by the project.
 - n) The number of levels to be presented in the Table of contents is decided by the project.
 - o) Whether and when to present the DME in references and tables is a project decision.
 - p) Whether and when to present the issue number of the data module or the technical publication in references and tables is a project decision.
 - q) The presentation of production management data is a project decision.
 - r) Whether to present only Name or both Name and Alternate name in the list of support equipment is a project decision.
- 2) There were a large number of changes to Business Rule Decision Points. These include:
 - a) 23 new Business Rule Decision Points (BRDP) were introduced.
 - b) 136 BRDPs were deleted.
 - c) 128 BRDPs were reworded to some extent.
 - 3) The most substantial changes in Issue 4.2 are those related to Business rules and the BREX:
 - a) A new schema has been introduced for the Business rules document. The Business rules document has been assigned to ICN 024. A template has been created that includes the business rules decision points in Issue 4.2.
 - b) This schema provides a way to document business rules in a standardized way. The use of the template ensures that no business rule is omitted or overlooked.
 - c) Both single or multiple business rules document data modules may be used.
 - d) New data in business rules document data modules may exceed five levels of depth.
 - e) Standardized responses to describe business rules decision values are allowed.
 - 4) There is nothing compelling about issue 4.2 that requires projects to adopt this issue of S1000D over Issue 4.1. This is particularly true if the organization already has business rules and BREX developed for issue 4.1
 - 5) The inclusion of the Business rules document does offer some potential advantages. The business rules documents are discussed in greater detail in Part 2 of this document.
 - 6) If the organization does not have business rules and BREX developed for issue 4.1, consideration should be given to adopting Issue 4.2. Consideration must be given to customer preference. If the customer (who is always right) has expressed their preference for issue 4.1 of S1000D then the movement to issue 4.2 cannot be made. This is currently the case with US military implementations. The Joint Service rules are based on issue 4.1.
 - 7) Publications for the Airbus A350 and the Boeing 777X series aircraft are being prepared using S1000D issue 4.2.

Part 2

The Business Rules Documents – Concept

- 1) The business rule documents are used as a method of governing the business rule in the life cycle of the project.
- 2) The business rules document data module provides unambiguous descriptions of business rules decisions for a project. The use of the business rule document is optional, a project can decide to exclusively use the business rules document data module or use another means to capture the business rules.
 - a) The business rules document data modules provide:
 - i) a place to record decisions
 - ii) a means of exchanging business rules between concerned parties while rules are being developed
 - iii) a reference to business rules in various documents
 - iv) a reduced risk of any misinterpretations and misunderstandings through formal descriptions of the business rules
 - v) governance and capturing of business rule decisions including explanations and guidance through the life of the project and/or organization
 - vi) a means to record the priority and severity information for each business rule decision
 - vii) a means of identifying the business rules decisions to capture in a BREX data module
 - viii) a means of indicating relationships between various BRDP and various constructs defined by S1000D
 - ix) a method of tracking the required dates for business rules development and recording the progress of business rules development
- 3) There are two approaches to using the Business rule document information included in S1000D Issue 4.2.

- a) For those of us not so capable with XML and those working in groups where XML may not be convenient. A pdf format of the template is also included in the specification. The pdf format includes each business rule decision point.
 - i) Paragraphs numbered 1.N (where N is any number) is entitled Business rule decision point – (followed by the business rule decision point number) – (followed by the short title)
 - ii) Paragraph 1.N.1 is entitled Business rule decision point and identifies:
 - (1) Places in specification
 - (2) Business rules categories
 - (3) Related S1000D XML Schemas
 - iii) Paragraph 1.N.2 is entitled Business rule decision point content (with a short title) and identifies:
 - (1) A more detailed definition of the business rule decision point
 - (2) Values allowed
 - b) To effectively use this pdf format of the template, create a new paragraph 1.N.3 with the following content:
 - i) 1.N.3 Business rule decision:
 - ii) Date business rule must be completed or was completed
 - iii) Business rule priority (if the BR priority is used)
 - iv) Business rule severity level (if the BR severity level is used)
 - v) Current date
 - vi) Business rule: (When the decision is made, include the text of the business rule decision made including the value or values)
 - vii) Explanation: Why was this decision made? / Why has the decision not been made?
 - viii) Next Action and who is the owner of the next action
 - ix) Next action date
 - x) Should this item be encoded in the BREX?
 - c) As the business rules are completed the information could be provided to someone with the XML skills to encode the business rules in the newly introduced business rule document data module.
 - d) Where organizational or project business rule decision points exist, paragraphs 1.N, 1.N.1, and 1.N.2 must be created where N is the unique identifier of the organizational or project business rule decision point. Then paragraph 1.N.3 must be created
- 4) For those skilled in XML, the specification includes an XML template for a business rule document. The template has collected for each business rule decision point identity, title, explanation of the decisions to be made, and related information including the business rule category and related schema.
- 5) Each business rule decision has been assigned the value of <brDecisionPending>. To use the template, replace the element <brDecisionPending> with the element <brDecision> and add the appropriate <brAudit> information.

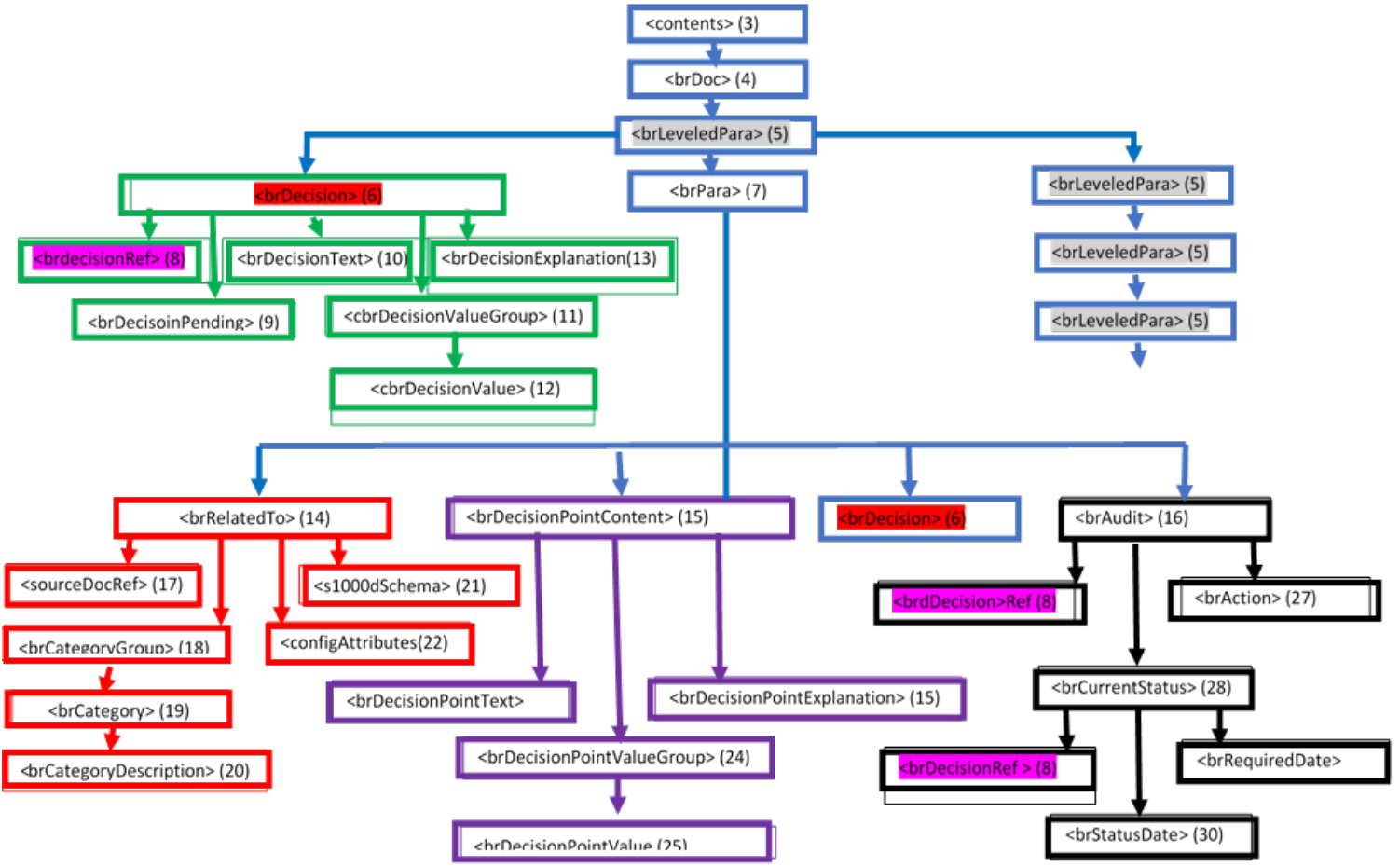
- a) After completing this task 427 times the business rules are essentially complete. Furthermore, they are rigidly defined in an S1000D compliant data module. This information is easily exchanged and maintained. The use of the template helps ensure completeness because every business rule decision point has been included in the template which was prepared as part of S1000D Issue 4.2.
- b) The next part of this document will identify the XML elements, their attributes, and children which were introduced in Issue 4.2 to create the business rule data module.

Part 3

The Elements and Attributes of the Business Rules Documents

- 1) The following is a brief analysis of the elements and attributes introduced in Issue 4.2 to provide a schema to cover the business rule document. The principal markup elements their attributes and children used to describe the business rule documents will be discussed.
 - a) Elements are identified in **Red bold text**.
 - b) The attributes are highlighted in **Yellow**.
 - c) Elements or attributes added in S1000D Issue 4.2 but not specifically related to the Business rule documents are highlighted in **Bright Blue**.
 - d) Definitions are provided for the highlighted items.
 - e) Definitions are not provided for common attributes and elements found in descriptive data modules and reused in the Business rules document data module.
- 2) Each element will be presented with its definition, followed by its attributes and children elements.
 - a) Attribute definitions will be provided when the attribute is first identified.
 - b) Subsequent occurrences of the elements and attributes will have a reference to the location of the element or attribute definition.
 - c) Reference to the location of children element definitions is provided.

The following elements are children of several elements. They have been highlighted **<brLeveledPara> (5)** **<brDecision> (6)** **<brdecisionRef> (8)**



3) **Markup element: <content>** captures all types of information related to business rules documentation

a) **Attributes:**

i) id (O)

b) **Child elements:**

i) <refs>

ii) <referencedApplicGroup>.

iii) <referencedApplicGroupRef>

iv) **<brDoc>** See para 4

4) **Markup element: <brDoc>** has a similar structure to the main content of the descriptive data modules

(<warningAndCautionElemGroup>, is not included in the Business rules document data module)

a) **Attributes:**

i) **defaultBrSeverityLevel** (O), the default business rules severity level which indicates the severity level of any rules for which no explicit severity level is specified.

Allowable values	S1000D interpretation
"brsl01"	Most severe
"brsl02"	Medium severity
"brsl03"	Least severe
"brsl51" - "brsl99"	Available for projects

b) **Child elements:**

i) <para>

ii) <note>

iii) **<brLeveledPara>** See para 5

iv) <figure>

v) <multimedia>

vi) <foldout>

vii) <table>

5) **Markup element: <brLevelledPara>** is much like <leveledPara> in the descriptive Data module. There are additional elements and attributes provided in the element **<brLevelledPara>** for recording business rules information.

a) **Attributes:**

- i) applicRefId (O)
- ii) id (O)
- iii) changeType (O)
- iv) changeMark (O)
- v) reasonForUpdateRefIds (O)
- vi) authorityName (O)
- vii) authorityDocument (O)
- viii) securityClassification (O)
- ix) commercialClassification (O)
- x) caveat (O)
- xi) **derivativeClassificationRefId (O)**: The element <derivativeClassification> was introduced in Issue 4.2, it contains all derivative classification actions taken (eg, source material, date of action, action type) to the information in the complete publication.

b) **Child elements:**

- i) <title>
- ii) <note>
- iii) **<brDecision>** see para 6
- iv) **<brPara>** see para 7
- v) <para>
- vi) <figure>
- vii) <multimedia>
- viii) <foldout>
- ix) <table>
- x) **<brLeveledPara>** see para 5

6) **Markup element:** **<brDecision>** contains a single decision applicable to the project or organization. A decision is not limited to authoring or publishing but can contain anything related to the organization or project. These decisions can be included in whole or in part and addressed throughout the lifecycle of the product.

a) The **<brDecision>**

- i) is a child of **<brLeveledPara>**
- ii) as well as a child of **<brPara>**

b) **Attributes:**

- i) applicRefId (O)
- ii) id (O)
- iii) changeMark (O)

- iv) changeType (O)
- v) reasonForUpdateRefIds (O)
- vi) **brDecisionIdentNumber** (M), the unique identifier of the element **<brDecision>**:
 - iii) It must be used when at least one element **<brDecisionText>** and/or element **<brDecisionValueGroup>** is populated.
 - iv) The only allowed case for not including the attribute **brDecisionIdentNumber** is when the mandatory choice element **<brDecisionPending>** is used.
 - v) The coding scheme of the attribute **brDecisionIdentNumber** is a project/organizational decision. It must be defined in such a way that inter-project, inter-program or inter-organizational referencing is possible by using solely the identifier coded by this attribute. For example, the model identifier, as well as the originator’s CAGE code can be included as a part of the **brDecisionIdentNumber**. The project and/or organization must ensure the uniqueness of the identifiers captured by the attribute **brDecisionIdentNumber**.
- vii) **brexRuleFlag** (O), indicates whether the business rule decision must or must not be captured in a BREX data module.
- viii) When used, the textual information captured in the element **<brDecisionText>** (see para 10) must go into the textual response definitions of the element **<objectUse>** inside a BREX data module.
- ix) These can be identified and automatically imported if needed.
- x) **brSeverityLevel** (O), the indicator of the severity of not implementing the business rule decision with its definition. the attribute can have one of the following values”

Allowable values	S1000D interpretation
"brsl01"	Most severe
"brsl02"	Medium severity
"brsl03"	Least severe
"brsl51" - "brsl99"	Available for projects

- xi) authorityName (O)
- xii) authorityDocument (O)
- xiii) securityClassification (O)
- xiv) commercialClassification (O)
- xv) caveat (O)

xvi) **derivativeClassificationRefId** (O) see Attributes in para 5

c) **Child elements:**

- i) <title>
- ii) **<brDecisionRef>** see para 8
- iii) **<brDecisionPending>** see para 9
- iv) **<brDecisionText>** see para 10
- v) **<brDecisionValueGroup>** see para 11
- vi) **<brDecisionExplanation>** see para 13

7) **Markup element:** **<brPara>** is a child of element of **<brLeveledPara>** (see para 5) in the descriptive structure of a business rules data module. It contains information about:

- a) A business rule that includes the definition of a BRDP
- b) A business rule decision that has been made
- c) An indication of the relationship of the business rule to various concepts and constructs defined by the specification
- d) The audit information on the BRDP and/or business rules decisions taken upon it

e) **Attributes:**

- i) applicRefId (O)
- ii) id (O)
- iii) changeType (O)
- iv) changeMark (O)
- v) reasonForUpdateRefIds (O)
- vi) **brDecisionPointUniqueIdent** (M), the unique identifier of a BRDP
- vii) **brDecisionPointPriority** (O), indicates the priority of the BRDP for a project or organization:
 - iii) The setting of the BRDP priority can assist the project and/or organization by identifying which business rules should be defined first.
 - iv) This attribute has five predefined values.

Allowable values	S1000D interpretation
"brpr01"	Highest BR priority
"brpr02"	Next lower level of BR priority
"brpr03"	Next lower level of BR priority
"brpr04"	Next lower level of BR priority
"brpr05"	Lowest level of BR priority

- viii) authorityName (O)
- ix) authorityDocument (O)
- x) securityClassification (O)
- xi) commercialClassification (O)
- xii) caveat (O)
- xiii) derivativeClassificationRefId (O) see Attributes in para 5

f) **Child elements:**

- i) **<brRelatedTo>** see para 14
- ii) **<brDecisionPointContent>** see para 15
- iii) **<brDecision>** see para 6
- iv) **<brAudit>** see para 16

8) **Markup element: <brDecisionRef>** defines a reference of a business rule decision or another element to a business rule decision. The direct reference from a business rule decision to itself is not allowed.

a) The **<brDecisionRef>**

- i) is a child of **<brDecision>** see para 6
- ii) as well as a child of **<brAudit>** see para 16
- iii) and a child of **<brAction>** see para 27

b) **Attributes:**

- i) id (O)
- ii) changeType (O)
- iii) changeMark (O)
- iv) reasonForUpdateRefIds (O)

- v) **brDecisionIdentNumber** (O), the unique identifier of the element **<brDecision>** being referred to. It is used for the purpose of implicit referencing. See Attributes in para 6
- vi) authorityName (O)
- vii) authorityDocument (O)
- viii) securityClassification (O)
- ix) commercialClassification (O)
- x) caveat (O)
- xi) **derivativeClassificationRefId** (O) see **Attributes** in para 5

c) **Child elements:**

- i) **<refs>**. Used together with the attribute referredFragment and attribute id on the element **<brDecision>** (see para 6) for explicit referencing.

9) **Markup element: <brDecisionPending>** indicates that a business rule decision has not been determined and is "to be defined".

a) **Attributes:**

- i) None

b) **Child elements:**

- i) None

10) **Markup element: <brDecisionText>** defines the exact wording of a business rule decision taken for a BRDP.

a) **Attributes:**

- i) changeType (O)
- ii) changeMark (O)
- iii) reasonForUpdateRefIds (O)

b) **Child elements:**

- i) **<para>**

11) **Markup element: <brDecisionValueGroup>** contains the allowed value, if any. The allowed values can be defined by the project (eg, CAGE code), or the values can be selected from the defined values in the business rule decision point value group (element **<brDecisionPointValueGroup>**) (eg, language).

a) **Attributes:**

- i) None

b) **Child elements:**

- i) **<brDecisionValue>** see para 12

12) **Markup element: <brDecisionValue>** defines the type and, where required, the content of a business rules decision within the range and definitions of BRDP values as a recorded decision taken for a BRDP.

a) **Attributes:**

- i) **brDecisionValueRegistered** (M), the recorded value of a business rules decision.
 - iii) If a business rules decision is made for a certain BRDP and is not a stand-alone business rules decision, then this value must be within the range and of the type of the corresponding BRDP value.
 - iv) In case of a stand-alone business rules decision, the business rules decision values are already available in the legacy business rules documentation and (correspondingly) need to be captured in the business rules data module using the attribute brDecisionValueRegistered.

b) **Child elements:**

- i) <para>

13) **Markup element: <brDecisionExplanation>** provides additional information for a business rules definition which was not defined by the element **<brDecisionText>**.

- a) This can be information taken from the specification or any other information formulated by the project or organization.
- b) These could be markup examples, extracts from the specification or data/documents from other projects or organizations.
- c) The purpose of this added explanation is to enhance the reader's understanding of the decision made for a BRDP.

d) **Attributes:**

- i) changeMark (O)
- ii) changeType (O)
- iii) reasonForUpdateRefIds (O)

e) **Child elements:**

- i) <title>
- ii) <para>
- iii) <example>
- iv) <figure>
- v) <multimedia>
- vi) <foldout>
- vii) <table>

viii) <caption>

14) **Markup element: <brRelatedTo>** indicates where in the source document the definition of the BRDP can be found and how the BRDP relates to decisions by the project or organization with respect to:

- a) business rules categories
- b) Schemas
- c) configurable attributes
- d) remarks
- e) **Attributes:**
 - i) id (O),
 - ii) changeMark (O)
 - iii) changeType (O)
 - iv) reasonForUpdateRefIds (O)
- f) **Child elements:**
 - i) **<sourceDocRef>** see para 17
 - ii) **<brCategoryGroup>** see para 18
 - iii) **<s1000dSchemas>** see para 21
 - iv) **<configAttributes>** see para 22
 - v) <remarks>

15) **Markup element: <brDecisionPointContent>** provides information for a BRDP. It includes the:

- a) BRDP title and definition
- b) BRDP values and their meaning, plus
- c) explanation of the BRDP
- d) **Attributes:**
 - i) changeType (O),
 - ii) changeMark (O)
 - iii) reasonForUpdateRefIds (O)
- e) **Child elements:**
 - i) <title>
 - ii) **<brDecisionPointText>** see para 23
 - iii) **<brDecisionPointValueGroup>** see para 24
 - iv) **<brDecisionPointExplanation>** see para 26

- 16) **Markup element: <brAudit>** captures the audit status on the BRDP and/or business rules decisions defined for it, including possible actions to be accomplished in order to come to a satisfying decision and the status with the required date of completion.
- a) If one or more child elements **<brDecisionRef>** (see para 8) are defined, then the element **<brAudit>** (see para 16) refers both to the BRDP it applies to and to one or more of its business rules decisions.
 - b) If the **<brDecisionRef>** (see para 8) is missing, then **<brAudit>** (see para 16) is attributed only to the BRDP defined under the **<brPara>** (see para 7).
 - c) Multiple elements **<brAudit>** (see para 16) within a **<brPara>** (see para 7) make it possible to capture status not only per BRDP but also per business rules decision.
 - d) Recording of one **<brAudit>** (see para 16) for a group of business rules decisions defined within the same **<brPara>** (see para 7) is allowed.
 - e) **Attributes:**
 - i) `changeType` (O)
 - ii) `changeMark` (O)
 - iii) `reasonForUpdateRefIds` (O)
 - iv) `authorityName` (O)
 - v) `authorityDocument` (O)
 - vi) `securityClassification` (O)
 - vii) `commercialClassification` (O)
 - viii) `caveat` (O)
 - ix) `derivativeClassificationRefId` (O)
 - f) **Child elements:**
 - i) **<brDecisionRef>** see para 8
 - ii) **<brAction>** see para 27
 - iii) **<brCurrentStatus>** see para 28

17) **Markup element: <sourceDocRef>** indicates where the information for the BRDP is defined.

- a) This reference can point to a place inside the same business rules data module
- b) A data module with related business rule information or
- c) External documents in a non-S1000D or
- d) Non-XML format
- e) **Attributes:**
 - i) `changeType` (O),
 - ii) `changeMark` (O)

iii) reasonForUpdateRefIds (O)

f) **Child elements:**

i) <internalRef>.

ii) <dmRef>

iii) <pmRef>

iv) <externalPubRef>

18) **Markup element: <brCategoryGroup>** allows the business rules category (from 1 to 10) to which the BRDP is related to be indicated in the child <<brCategory> see para 19.

a) **Attributes:**

i) changeType (O)

ii) changeMark (O)

iii) reasonForUpdateRefIds (O)

b) **Child elements:**

i) **<brCategory>** see para 19

19) **Markup element: <brCategory>** allows the business rules category (from 1 to 10) to which the BRDP is related to be recorded in the attribute **brCategoryNumber**

a) **Attributes:**

i) id (O)

ii) changeMark (O)

iii) changeType (O)

iv) reasonForUpdateRefIds (O)

v) **brCategoryNumber** (O) is the number (1 to 10) which represents the Business rule category to which the business rule is related.

1 - General business rules	6 - Data creation
2 - Product definition	7 - Data exchange
3 - Maintenance philosophy and concepts of operation	8 - Data integrity and management
4 - Security	9 - Legacy data conversion, management, and handling
5 - Business process	10 - Data output

b) **Child elements:**

- i) <title>
- ii) **<brCategoryDescription>** see para 20

20) **Markup element:** **<brCategoryDescription>** provides a description of the related business rules category. A project or organization can add any information to assist with understanding and relating to the business rules category or categories.

a) **Attributes:**

- i) changeType (O)
- ii) changeMark (O)
- iii) reasonForUpdateRefIds (O)

b) **Child elements:**

- i) <para>

21) **Markup element:** **<s1000dSchemas>** defines the relationship between a BRDP to one or a number of the S1000D Schemas.

a) **Attributes:**

- i) changeType (O)
- ii) changeMark (O)
- iii) reasonForUpdateRefIds (O)

Note

For the following attributes representing a schema:

1. If the attribute is set to "1" then the BRDP relates or is associated with the Schema. (<s1000dSchemas brexXsd="1">)
2. If the attribute is set to "0" then the BDDP is not related to or associated with the Schema (<s1000dSchemas brexXsd="0">)

- iv) appliccrossreftableXsd (O)
- v) brDocXsd (O)
- vi) brexXsd (O)
- vii) checklistXsd (O)
- viii) commentXsd (O)
- ix) comrepXsd (O)
- x) condcrossreftableXsd (O)
- xi) containerXsd (O)
- xii) crewXsd (O)
- xiii) ddnXsd (O)
- xiv) descriptXsd (O)
- xv) dmlXsd (O)
- xvi) faultXsd (O)
- xvii) frontmatterXsd (O)
- xviii) icnMetadataXsd (O)
- xix) ipdXsd (O)
- xx) learningXsd (O)
- xxi) pmXsd (O)
- xxii) prdcrossreftableXsd (O)
- xxiii) procedXsd (O)
- xxiv) processXsd (O)
- xxv) sbXsd (O)
- xxvi) schedulXsd (O)
- xxvii) scocontentXsd (O)
- xxviii) scormcontentpackageXsd (O)
- xxix) pdateXsd (O)
- xxx) wrngdataXsd (O)

xxxi) wrngfldsXsd (O)

b) **Child elements:**

i) None

22) **Markup element:** **<configAttributes>** defines the relationship between a BRDP to one or a number of the S1000D configurable attributes.

a) **Attributes:**

i) changeType (O)

ii) changeMark (O)

iii) reasonForUpdateReflds (O)

Note

1. The configurable attributes indicating a BRDP has a relationship include the text "AttRelation" at the end of each attribute name. This is done to avoid redefinition of the types for configurable attributes defined in various S1000D Schemas.
2. For the following attributes representing the configurable attributes of S1000D

a. If the attribute is set to "1" then the BRDP relates to or is associated with the configurable attribute.

`<configAttributes caveatAttRelation="1">`

b. If the attribute is set to "0" then the BDDP is not related to or associated with the configurable attribute

`<configAttributes caveatAttRelation="0">`

1. accessPointTypeValueAttRelation (O)
2. acronymTypeAttRelation (O)
3. actionIdentTypeAttRelation (O)
4. barCodeSymbologyAttRelation (O)
5. brDecisionPointPriorityAttRelation (O)
6. brSeverityLevelAttRelation (O)
7. brStatusAttRelation (O)
8. cancelCaptionAttRelation (O)
9. caveatAttRelation (O)
10. checkListCategoryAttRelation (O)
11. circuitBreakerRefTypeAttRelation (O)
12. circuitBreakerTypeAttRelation (O)
13. colorAttRelation (O)

14. commentPriorityCodeAttRelation (O)
15. commercialClassificationAttRelation (O)
16. crewMemberTypeAttRelation (O)
17. crewStepConditionAttRelation (O)
18. defaultBrSeverityLevelAttRelation (O)
19. drillTypeAttRelation (O)
20. emphasisTypeAttRelation (O)
21. frontMatterInfoTypeAttRelation (O)
22. frontMatterTypeAttRelation (O)
23. functionAttRelation (O)
24. functionalItemRefTypeAttRelation (O)
25. functionalItemTypeAttRelation (O)
26. genericPropertyTypeAttRelation (O)
27. hazardousClassValueAttRelation (O)
28. icnInfoItemAttRelation (O)
29. icnResourceFileTypeAttRelation (O)
30. icnSourceFileTypeAttRelation (O)
31. installationLocationTypeAttRelation (O)
32. internalRefTargetTypeAttRelation (O)
33. itemCharacteristicAttRelation (O)
34. itemOriginatorAttRelation (O)
35. limitUnitTypeAttRelation (O)
36. listItemPrefixAttRelation (O)
37. lowestLevelAttRelation (O)
38. maintLevelCodeAttRelation (O)
39. materialUsageAttRelation (O)
40. operationTypeAttRelation (O)
41. partCharacteristicAttRelation (O)
42. partStatusAttRelation (O)
43. partUsageCodeAttRelation (O)
44. pmEntryTypeAttRelation (O)
45. pmTypeAttRelation (O)
46. productCategoryAttRelation (O)
47. productItemTypeAttRelation (O)

48. quantityTypeAttRelation (O)
49. refTypeAttRelation (O)
50. reqCondCategoryAttRelation (O)
51. reqTechInfoCategoryAttRelation (O)
52. resetCaptionAttRelation (O)
53. responseTypeAttRelation (O)
54. sbComplianceCategoryAttRelation (O)
55. sbImpactTypeAttRelation (O)
56. sbMaterialTypeAttRelation (O)
57. sbTaskCategoryAttRelation (O)
58. sbTimeComplianceTypeAttRelation (O)
59. sbTopicTypeAttRelation (O)
60. scoEntryTypeAttRelation (O)
61. securityClassificationAttRelation (O)
62. significantParaDataTypeAttRelation (O)
63. skillLevelCodeAttRelation (O)
64. skillTypeAttRelation (O)
65. softwareClassificationValueAttRelation (O)
66. softwareCustomizationStatusValueAttRelation (O)
67. sourceCriticalityAttRelation (O)
68. sourceTypeCodeAttRelation (O)
69. sourcingTypeValueTypeAttRelation (O)
70. submitCaptionAttRelation (O)
71. supervisorLevelCodeAttRelation (O)
72. supplyNumberTypeAttRelation (O)
73. taskCodeAttRelation (O)
74. thresholdUnitOfMeasureAttRelation (O)
75. updateReasonTypeAttRelation (O)
76. verbatimStyleAttRelation (O)
77. quantityUnitOfMeasureAttRelation (O)

b) **Child elements:**

- i) None

23) **Markup element:** **<brDecisionPointText>** defines a BRDP for the business rule.

- a) For all business rule decision points that have unique identifiers starting with "BRDP-S1-", the text captured in **<brDecisionPointText>** must be the text defined by this specification.
- b) The only extension allowed for these BRDP is the reference to the place in the specification where the BRDP is defined.
- c) Any explanatory information is to be captured in **<brDecisionPointExplanation>** (see para 26)
- d) The text of a project/organizational specific BRDP must be defined specifically for the needs of the project and/or organization.
- e) **Attributes:**
 - i) changeType (O)
 - ii) changeMark (O)
 - iii) reasonForUpdateRefIds (O)
- f) **Child elements:**
 - i) textElemGroup and
 - ii) listElemGroup as used in the element <para> in descriptive data modules

24) **Markup element:** **<brDecisionPointValueGroup>** specifies what the BRDP is about.

- a) For example, business rules decision points can be about the choice of available values, or about allowing the use of a concept, an element, or an attribute in a certain context.
- b) It can also be used to define new values, etc. S1000D provides BRDP values for BRDP defined in the specification and captured inside the business rules template data module
- c) The information mapped in the business rules template data module is based on S1000D text, Schemas and the default BREX
- d) **Attributes:**
 - i) **brDecisionValueSelection** (M), this attribute identifies whether a single or multiple values can be chosen. The allowed values are:
 - iii) "single"
 - iv) "multiple"

e) **Child elements:**

- i) **<brDecisionPointValue>** see para 25

25) **Markup element: <brDecisionPointValue>** provides information on separate values for the BRDP.

a) **Attributes:**

- i) **brDecisionValueAllowed** (M), the allowed value for the BRDP. Multiple values can be defined, and this attribute is used to define each value.

b) **Child elements:**

- i) **<para>**, defines textual information about the value. For BRDP, the unique business rule prefix "BRDP-S1-", is provided by the specification inside the business rules template data module.

26) **Markup element: <brDecisionPointExplanation>** provides additional information on a BRDP, to that provided in the element **<brDecisionPointText>** (see para 23).

- a) This can be information taken from the specification or any other information required by the project or organization.

- b) For example, this could be questions arising when making a decision for a BRDP in a specific context of the project and/or organization.

c) **Attributes:**

- i) **changeType** (O)
- ii) **changeMark** (O)
- iii) **reasonForUpdateRefIds** (O)

d) **Child elements:**

- i) **<title>**
- ii) **<para>**
- iii) **<note>**
- iv) **<figure>**
- v) **<multimedia>**
- vi) **<foldout>**
- vii) **<table>**
- viii) **<caption>**

- 27) **Markup element: <brAction>** defines an action that is to be fulfilled to define a complete set of business rules decisions for the BRDP.
- a) The information provided under the element **<brAction>** identifies the owner of the action and if it is complete or not.
 - b) If one or more child elements **<brDecisionRef>** (see para 8) are defined, then the element **<brAudit>** (see para 16) refers both to the BRDP it applies to and to one or more of its business rules decisions.
 - c) If the **<brDecisionRef>** (see para 8) is missing, then **<brAction>** is attributed only to the BRDP defined under the **<brPara>** (see para 7).
 - d) Multiple elements **<brAction>** within **<brPara>** (see para 7) make it possible to capture actions not only per BRDP but also per business rules decision.
 - e) Recording of one **<brAction>** for a group of business rules decisions defined within the same **<brPara>** (see para 7) is allowed.
 - f) **Attributes:**
 - i) `changeType` (O)
 - ii) `changeMark` (O)
 - iii) `reasonForUpdateRefIds` (O)
 - iv) **brActionOwner** (M), the action owner. The text marked up with this attribute can be a person's name, an organization name, CAGE code or combination of various. This can be decided case by case.
 - v) **brActionCompleted** (O), of "yes" or "no" type, shows whether the action has been completed or not at the required date defined inside **<brCurrentStatus>** (see para 28). The absence of this attribute indicates the required date for the business rules is not reached yet, or the action has not been reviewed and evaluated since the last review.
 - vi) `authorityName` (O)
 - vii) `authorityDocument` (O)
 - viii) `securityClassification` (O)
 - ix) `commercialClassification` (O)
 - x) `caveat` (O)
 - xi) **derivativeClassificationRefId** (O)
 - g) **Child elements:**
 - i) **<brDecisionRef>** see para 8
 - ii) `<title>`
 - iii) `<para>`
 - iv) `<note>`

- v) <figure>
- vi) <multimedia>
- vii) <foldout>
- viii) <table>
- ix) <caption>

28) **Markup element:** <brCurrentStatus> gives the status of the BRDP and/or related business rules decisions.

- a) The business rules data module Schema defines only one <brCurrentStatus> (see para 28) for each element <brAudit> (see para 16).
- b) Therefore, if the <brAudit> (see para 16) does not contain a reference to business rules decisions, then the business rules status also refers to the BRDP as a whole.
- c) If there is an element <brAudit> (see para 16) for each business rules decision (or separate group of business rules decisions), then the status also describes a separate business rules decision (or a separate group of business rules decisions).
- d) **Attributes:**
 - i) changeType (O)
 - ii) changeMark (O)
 - iii) reasonForUpdateRefIds (O)
 - iv) brStatus (M), indicates the quality assurance status of the BRDP and/or business rules decisions to which the audit status applies.

Allowable values	S1000D interpretation
"brst01"	Unverified
"brst02"	First verified
"brst03"	Second verified
"brst51" - "brst99"	Available for projects

- e) **Child elements:**
 - i) <brDecisionRef> see para 8
 - ii) <responsiblePartnerCompany>.
 - iii) <originator>
 - iv) <brRequiredDate> see para 29

v) **<brStatusDate>** see para 30

29) **Markup element: <brRequiredDate>** indicates the date when the business rules decision must be taken and/or the date that the BRDP must be addressed.

- a) The business rules data module Schema defines only one **<brCurrentStatus>** (see para 28) for each element **<brAudit>** (see para 16).
- b) Therefore, if the element **<brAudit>** (see para 16) does not contain any reference to business rules decisions, then the required date also refers to the BRDP as a whole. I
- c) f there is an element **<brAudit>** (see para 16) for each business rules decision (or separate group of business rules decisions), then the required date also applies to a separate business rules decision (or a separate group of business rules decisions).
- d) **Attributes:**
 - i) year (M)
 - ii) month (M)
 - iii) day (M)
- e) **Child elements:**
 - i) None

30) **Markup element: <brStatusDate>** indicates the date when the business rules status was recorded.

- a) The business rules data module Schema defines only one **<brCurrentStatus>** (see para 28) for each element **<brAudit>** (see para 16).
- b) Therefore, if the element **<brAudit>** (see para 16) does not contain any reference to business rules decisions, then the status date also refers to the BRDP as a whole.
- c) If there is an element **<brAudit>** (see para 16) for each business rules decision (or separate group of business rules decisions), then the status date also applies to a separate business rules decision (or a separate group of business rules decisions).
- d) **Attributes:**
 - i) year (M)
 - ii) month (M)
 - iii) day (M)
- e) **Child elements:**
 - i) None



Contact

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