Description Rule of Part Class Dictionary

〔Rule Number : ECALSDS02〕

Version 2.5

Abstract: This rule prescribes a computer sensible expression form for the part classification of electronic components in ECALS Dictionary.

Issued by

Technical Committee for Standardization

EC Center

Japan Electronics and Information Technology Industries Association

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1. **Purpose and Scope**

(1) Purpose

This rule prescribes computer sensible expression forms and description rules concerning Class of electronic components. The purpose of this rule is to provide a neutral mechanism of describing part information, independent of a independent of specific information system in either providers or users.

For this background, it is needed to enhance the rule in a more practical manner for implementing a specific system or a specific DB system.

This description rule keeps interoperability, referring ISO 13584and IEC 61360, being able to exchange part information among companies world-widely.

(2) Scope

This description rule is applied to all part classifications of electric components. A reasonable system using the definition shown in the section 3, 'Rules for defining new version and/or revision of classes' should be established to facilitate continuous maintenance of the dictionary.

(3) Nomative reference

The followings are principal standards and to which this rule refers.

*ISO/IEC: 1993, International Classification of Standard (ICS)

*ISO 843: 1997, Information and documentation – Conversion of Greek characters into Latin characters

*ISO 8601: 1988, Date elements and interchange formats – Information interchange – Representations of dates and times

*ISO 13584-42: 1998 Industrial automation systems and integration – Parts Library – Part 42: Methodology for structuring part families

*IEC 61360-1: 1995, Standard data element types with associated classification scheme for electric components- Part 1: Definitions, principles and methods

*IEC 61360-2: Standard data element types with associated classification scheme for electric components Part 2: EXPRESS Dictionary Schema

*IEC 61360-3: Standard data element types with associated classification scheme for electric components Part 3: Maintenance and validation procedures

*IEC 61360-4: Standard data element types with associated classification scheme for electric components – Part 4: IEC reference collection of standard data element types, component classes and terms

(4) Definition of terms

・Standardization organizations

The standardization organizations described in this rule are composed of Technical Committee for Standardization(TCS) of 'Japan Electronics and Information Technology Industries Association' as well as a group commissioned by TCS.

・BSU :

BSU (Basic Semantic Unit) is a code to ensure identifying a part class and a property (attributes), defined in IEC 61360.

The standard organization uses the following rule to manage BSU.
・Part class :　XJA001 - XJD999
・Part property :　XJE001 - XJZ999
・Note: Not to use I and O at the third letter

The standardization organization shall perform assigning the codes.

2.　Description Rule of Part Class Dictionary.

The following set of items is used to identify each attribute for Part Class.

・Objective　　　　　: Describe a purpose of the attribute..

・Description　　　　: Specify how to write the attribute..

・Obligation　　　　 : An attribute is mandatory, if this attribute has a value, "Obligation".

・Formulation　　　 : Define a type formulation to express a value of the attribute. Maximum data length must be included in case of String Type.

・Example　　　　　: This is used to show An example of Part Class.

・Exchangeable　　 : Showing exchangeability of the for the Part international standards such as IEC 61360.

・Guide　　　　　　: Showing the guideline and a reference information when for defining attributes.

All attributes hereunder shall be described with the set of items above.

(1) Class Code

　　The following is the description rule for Class Code.

O b j e c t i v e	To identify a Part Class uniquely and distinguish it from other Part Classes.
D e s c r i p t i o n	To describe based on the BSU code
O b l i g a t i o n	Obligation (TCS assigns the code)
F o r m u l a t i o n	XXXnnn :(3 uppercase alphabets followed by 3-digit numerals.)
E x a m p l e	XJA001
Exchangeability	The Code notation method is based on IEC61360.
G u i d e	During a Class selection phase, no code shall be specified The final code shall be assigned after validation of the Class definition by TCS. To modify an existing code, the same procedure shall be applied.

(2) Parent Class Code

The following is the description rule for Parent Class Code.

O b j e c t i v e	To identify the parent class among classes.
D e s c r i p t i o n	Description based on BSU code is used for this item.
O b l i g a t i o n	Obligation. (TCS assigns the code) * There is no defined parent of the Root Class. "$ROOT$" is used temporality.
F o r m u l a t i o n	XXXnnn: (3 upper case capital alphabets followed by 3 digits.)
E x a m p l e	XJA001
Exchangeability	The class code notation method is based on the IEC61360.
G u i d e	During a Class selection phase, no code shall be specified. The final code shall be assigned after validation of the Class definition by TCS. To modify an existing code, the same procedure shall be applied.

(3) Version Number

The following is the description rule for Version Number.

O b j e c t i v e	This is used to identify a specific version from other versions in the class. A new version number should be assigned when one or more attribute is modified in the Part Class. 　　　Note: Modification of an attribute in Part Class which affects the version number is defined in 'The basic rule for Version and revision for ECALS Dictionary'**;** ECALSDS11.
D e s c r i p t i o n	A string of alphanumeric characters to identify each version number. A sequence of version numbers shall be assigned in the ascending order.
O b l i g a t i o n	Obligation
F o r m u l a t i o n	String : three-digit numerals
E x a m p l e	001 (it is followed by 002)
Exchangeable	Version Number notation method is based on IEC61360 .
G u i d e	During a Class selection phase, no Version Number shall be specified.　The final Version Number shall be assigned after validation of the Class definition by TCS. To modify an existing Version Number, the same procedure shall be applied.

(4) Revision Number

The following is the description rule for Revision Number.

O b j e c t i v e	To identify each 'revision' of the same Class version. The revision number shall be incremented when values of some attributes are modified. Note: Modification of an attribute in Part Class which affects the revision number is defined in 'The basic rule for Version and revision for ECALS Dictionary'; ECALSDS11.
D e s c r i p t i o n	A string of alphanumeric characters to identify each different revision number of the same Class version. A sequence of revision numbers shall be assigned in the ascending order. The revision number is reset to '01' when a version number is changed.
O b l i g a t i o n	Obligation
F o r m u l a t i o n	String: two- digit numerals.
E x a m p l e	01 (it is followed by 02)
Exchangeability	Revision Number notation method is based on IEC61360 .
G u i d e	During a Class selection phase, no Revision Number shall be specified. The final Revision Number shall be assigned after validation of the Class definition by TCS. To modify an existing Revision Number, the same procedure shall be applied.

(5) Preferred Name.EN

The following is the description rule for Preferred Name.EN (English).

O b j e c t i v e	To distinguish a Class from other Classes definitely. This is used to make it human-readable and help users understand it easily.
D e s c r i p t i o n	Names defined in International Standard, National Standard or Industrial Standard shall take priority over ECALS individual names. It is recommended to use a full-spelling-out name to express a value.
O b l i g a t i o n	Obligation
F o r m u l a t i o n	Alphanumeric uppercase characters of 70 letters or less.
E x a m p l e	CAPACITORS
Exchangeability	The notation method is based on IEC61360.
G u i d e	As for Preferred Name.EN, a names used in any rule shall be used. In case of using names used individual companies, they shall be used as 'Synonymous NameEN'

Preferred Name.EN is based on the rule of priority below;

1. If there is a name in the international standards (IEC, ISO), the name is used in ECALS Dictionary.

2. If there is no defintion in international standards, related standards should be referred.

3. If there is no definition in dejure standards, a popular name in electronics industries should be used.

(6) Preferred Name.JA

The following is the description rule for Preferred Name.JA (Japanese).

Note: The relation between Preferred Name.EN and Preferred Name.JA is as same as a translation between English and Japan.

Objective	This attribute is used to distinguish a class from other classes definitely. This is used to make it visible and make a user understand easily.
Description	Names defined in International Standard, National Standard or Industrial Standard shall take priority over ECALS individual names. It is recommended to use a full-length names if possible.
Obligation	Obligation
Formulation	A string of less than 70 letters with a combination of a single-byte alphanumeric code and a double-byte Kana-Kanji character. A character string, which allowed to use, should be based on ECALSDS14, 'Detailed Rule concerned with characters in ECALS Dictionary'
Example	コンデンサ
Exchangeability	The notation method is based on IEC61360.(IEC61360 permits translation of original names into the language of each country.)
Guide	As for Preferred Name.JA, names defined in standards shall be used. In case of using names used in individual companies, they shall be used as 'Synonymous Name.JA'.

Preferred Name.JA is based on the rule of priority below;

1. If there is a name in Japanese standard (JIS), the name is used in ECALS Dictionary.
2. If there is no definition in JIS, related standards should be referred.
3. If there is no definition in dejure standards, a popular name in electronics industries should be used.

(7) Short Name.EN

The following is the description rule for Short Name.EN (English)

Objective	To define a short notification of a class to save space (for instance, to display on screen, to print on paper that has narrow space)
Description	Names used in International Standard, National Standard or Industrial Standard shall take priority over ECALS individual names.
Obligation	Obligation
Formulation	Alphanumeric characters of 17 letters or less. It is allowed to use a Preferred Name.EN as a Short Name.EN as far as it has 17 letters or less.
Example	CAPACITORS
Exchangeability	The notation method is based on IEC61360.
Guide	If a name is composed by more than one word, it is recommended to shorten the word into three characters or so. Ex. limitation: lim , rated: rat,

(8) Short Name.JA

The following is the description rule for Short Name.JA (Japanese)

Note: The relation between Short Name.EN and Short Name.JA is as same as a translation between English and Japan.

Objective	To define a short notification of a class to save a space (for instance, to display on screen, to print on paper that has narrow space.)
Description	Names used in International Standard, National Standard or Industrial Standard shall take priority over using ECALS individual names.
Obligation	Obligation
Formulation	A string of 17 letters or less with a combination of single-byte alphanumeric characters and double-byte Kana-Kanji characters.It is allowed to use a Preferred Name.JA as a Short Name.JA as far as it has 17 letters or less. Character strings to be used shall be based on 'Detailed Rule concerned with characters in ECALS Dictionary'; ECALSDS14.
Example	コンデンサ
Exchangeability	The notation method is based on IEC61360. (IEC61360 permits translation of original names into each national language.)
Guide	Names that are commonly used in the industry shall take priority over ECALS individual names. Sometimes a Short Name.JA may be the same as its Synonymous Name.JA.

Note of describing Short Name.

As Short Name is used in a computer system to display, to print and to send a massage, it is recommended to use a character set defined in IEC61360.

(9) Synonymous Name.EN

The following is the description rule for Synonymous Name.EN (English)

Objective	Alternative names showing the same concept of Preferred Name.EN.
Description	Names used in International Standard, National Standard or Industrial Standard shall take priority over ECALS individual names.
Obligation	Option
Formulation	This attribute can have several synonymous terms. Each synonymous name contains alphanumeric characters of 70 letters or less.
Example	INDUCTORS,COILS
Exchangeability	The notation method is based on IEC61360.
Guide	Multiple comma-separated terms can be described in an unlimited space (1) to understand each property easily and (2) to inherit historical names. Synonymous searching will be possible by using these Synonymous Name definitions in the future.

(10) Synonymous Name.JA

The following is the describing rule for Synonymous Name.JA (Japanese)

Note : The relation between Synonymous Name.EN and Synonymous Name.JA is the translation between English and Japanese.

Objective	Alternative name showing the same concept of Preferred Name.JA.
Description	Names used in International Standard, National Standard or Industrial Standard shall take priority over ECALS individual names.
Obligation	Option
Formulation	This attribute can have several synonymous terms. Each synonymous name contains alphanumeric characters of 70 letters or less with a combination of single-byte alphanumeric characters and double-byte Kana-Kanji characters. Character strings to be used shall be based on ' Detailed Rule concerned with characters in ECALS Dictionary'; ECALSDS14.
Example	インダクタ，コイル
Exchangeability	The notation method is based on IEC61360. (IEC61360 permits translation of original names into each national language.)
Guide	Multiple comma-separated synonym words can be described in an unlimited space (1) to understand each property easily and (2) to inherit historical names. Synonymous searching will be possible by using these Synonymous Name definitions in the future.

(11) Definition.EN

The following is the describing rule for Definition.JA (Japanese).

O b j e c t i v e	This attribute is used to make a meaning of the preferred name clearer and to identify it among other classes. This notation must have an ability to show what kind of class it is.
D e s c r i p t i o n	The statement must show the meaning of the Classes and distinguish it from other Classes.
O b l i g a t i o n	Obligation
F o r m u l a t i o n	Unlimited alphanumeric characters
E x a m p l e	A coil mainly used in high frequency circuit of such electronic apparatus as radio and television receivers.
Exchangeability	The notation method is based on IEC61360.
G u i d e	Minimum contents required must be described in order to make it easier to understand the Property. It is desirable to adopt a definition if it is easier to understand than those defined in other standards. (That is, it is possible to give an ECALS's unique definition.)

(12) Definiton.JA

The following is the describing rule for Definition.JA (Japanese).

Note: The relation between Definition.EN and Definition.JA is the translation between English and Japanese.

Ｏｂｊｅｃｔｉｖｅ	This attribute is used to make a meaning of the preferred name clearer and to identify it among other classes. This notation must have an ability to show what kind of class it is.
Ｄｅｓｃｒｉｐｔｉｏｎ	The statement must show the meaning of the Property and distinguish it from other classes.
Ｏｂｌｉｇａｔｉｏｎ	Obligation
Ｆｏｒｍｕｌａｔｉｏｎ	Unlimited string length with a combination of single-byte alphanumeric characters and double-byte Kana-Kanji characters. Character strings to be used shall be based on 'Detailed Rule concerned with characters in ECALS Dictionary'; ECALSDS14.
Ｅｘａｍｐｌｅ	高周波領域で使用される固定型インダクタ
Exchangeability	The notation method is based on IEC61360. (IEC61360 permits translation of original names into each national language.)
Ｇｕｉｄｅ	Minimum contents required must be described in order to make it easier to understand the class. It is desirable to adopt a definition if it is easier to understand than those defined in other standards. (That is, it is possible to give an ECALS's unique definition.)

(13) Source Document of Definition

The following is the description rule for Source Document of Definition.

Objective	To list the original rules and standard documents which were referred to in defining a preferred name, a definition and a unit It will help understanding and a review in the committee after defining the class.
Description	To list the document title, the document number and the issued date of the source document
Obligation	Option
Formulation	Alphanumeric characters of 80 letters or less
Example	IEC 60115-2(1982-01)
Exchangeability	The notation method is based on IEC61360.
Guide	To list the source International standards and/or domestic standards.

(14) Notes.EN

The following is the describing rule for Notes.EN (English).

Objective	To add more information to a class to make it clear.
Description	To describe detail information to support understanding of class definition.
Obligation	Option
Formulation	Unlimited string length of alphanumeric characters
Example	The classification of magnetic materials is based upon the following characteristics: the main alloying element and metallurgical state and physical properties of the material.
Exchangeability	The notation method is based on IEC61360.
Guide	To help a user to understand a meaning of the class, it can be specified a description of the class. In case of how to use and describe a class is used the 'Remark'.

(15) Notes.JA

The following is the describing rule for Notes.JA (Japanese).

Note: The relation between Notes.EN and Notes.JA is the translation between English and Japanese.

O b j e c t i v e	To add more information to a class to make it clear.
D e s c r i p t i o n	To describe detail information to support understanding of class definition.
O b l i g a t i o n	Option
F o r m u l a t i o n	Unlimited string length with a combination of single-byte alphanumeric characters and double-byte Kana-Kanji characters. Character strings to be used shall be based on 'Detailed Rule concerned with characters in ECALS Dictionary'; ECALSDS14.
E x a m p l e	磁性材料の分類は構成元素，冶金学的状態，物理的性質などに基づいている。
Exchangeability	The notation method is based on IEC61360.
G u i d e	To help a user to understand a meaning of the class, it can be specified a description of the class. In case of how to use and describe a class is used the 'Remark'.

(16) Remark.EN

The following is the description rule for Remark.EN (English).

O b j e c t i v e	This attribute is used to add more information on the class to make it clearer how to use it.
D e s c r i p t i o n	Not to mention about a meaning of the class, but to describe how to use it. With the description, part information providers can identify the class.
O b l i g a t i o n	Option
F o r m u l a t i o n	Unlimited string length of alphanumeric characters
E x a m p l e	Identical to AAA137 (IEC 61360-4 1997-01-01)
Exchangeability	The notation method is based on IEC61360.
G u i d e	Describe how to apply a class. The Note.EN shall be made on detail information to support understanding of class definition.

(17) Remark.JA

The following is the describing rule for Remark.JA (Japanese).

Note: The relation between Reamrk.EN and Remark.JA is the translation between English and Japanese.

O b j e c t i v e	To add more information to a class to make it easier to understand how to apply it.
D e s c r i p t i o n	To describe how to apply a class.
O b l i g a t i o n	Option
F o r m u l a t i o n	Unlimited string length with a combination of single-byte alphanumeric characters and double-byte Kana-Kanji characters. Character strings to be used shall be based on 'Detailed Rule concerned with characters in ECALS Dictionary'; ECALSDS14.
E x a m p l e	Identical to AAA137 (IEC 61360-4 1997-01-01)
Exchangeability	The notation method is based on IEC61360.
G u i d e	Describe how to apply a class. The Note.JA shall be made on detail information to support understanding of class definition.

3.   Rule for defining new versions and/or new revisions of classes

This rule follows the rule of ECALSDS11, 'The basic rule of updating the dictionary'

Note)

1. Technical Committee for Standardization (TCS) is the only authority who is able to modify and defeat this specification.

2. This specification was opened to the public.

3. Revision history

Date	Status	Version/ Revision	Major changes
2000/9/28	Published	001-01	
2000/12/05	Revised	001-02	
2002/4/1	Versioned	002-01	・The number of characters of Synonymous Name is restricted to as same as that of Preferred Name. ・The number of strings for Source Document of Definition is limited to 80. ・Contents which are defined in the other rules are written only the rule name referred.
2002/10/18	Revised	002-02	・The number of characters of Preferred Name, Short Name and Synonymous Name is modified to meet the revise of IEC61360-1（2002-02）. ・'Alphanumeric upper case characters of less than 70' is added in the formulation of the Preferred Name.EN ・To inhibit in using double-byte characters in the Source Document of Definition, 'single-byte alphanumeric characters of less than 80' is added.
2003/ 5/8	Revised	002-03	・Short Name.JA--added 'less than 17 letters'
2004/12/01	Revised	002-04	・Editorial modification
2005/ 4/28	Revised	002-05	・Change of disclosure scope.

Appendix 1. List of attributes of Part Class Dictionary

The following is List of attributes of Part Class Dictionary.

Attribute Name (EN)	Attribute Name (JA)	Objective	Description	Obligation	Formulation	Example
Class Code	クラスコード	To identify a Part Class uniquely and distinguish it from other Part Classes.	To describe based on the BSU code	Obligation (TCS assigns the code)	XXXnnn :(3 uppercase alphabets followed by 3-digit numerals.)	XJA001
Parent Class Code	親クラスコード	To identify the parent class among classes.	Description based on BSU code is used for this item.	Obligation. (TCS assigns the code) * There is no defined parent of the Root Class. "$ROOT$" is used temporality.	XXXnnn: (3 upper case capital alphabets followed by 3 digits.)	XJA001
Version Number	バージョン番号	This is used to identify a specific version from other versions in the class. A new version number should be assigned when one or more attribute is modified in the Part Class.	A string of alphanumeric characters to identify each version number. A sequence of version numbers shall be assigned in the ascending order.	Obligation	String : three-digit numerals	001 (it is followed by 002)
Revision Number	リビジョン番号	To identify each 'revision' of the same Class version. The revision number shall be incremented when values of some attributes are modified.	A string of alphanumeric characters to identify each different revision number of the same Class version. A sequence of revision numbers shall be assigned in the ascending order. The revision number is reset to '01' when a version number is changed.	Obligation	String: two- digit numerals.	01 (it is followed by 02)
Preferred Name.EN	好適名称(英語)	To distinguish a Class from other Classes definitely. This is used to make it human-readable and help users understand it easily.	Names defined in International Standard, National Standard or Industrial Standard shall take priority over ECALS individual names. It is recommended to use a full-spelling-out name to express	Obligation	Alphanumeric uppercase characters of 70 letters or less.	Capacitor

			a value.			
Preferred Name.JA	好適名称(日本語)	This attribute is used to distinguish a class from other classes definitely. This is used to make it visible and make a user understand easily.	Names defined in International Standard, National Standard or Industrial Standard shall take priority over ECALS individual names. It is recommended to use a full-length names if possible.	Obligation	A string of less than 70 letters with a combination of a single-byte alphanumeric code and a double-byte Kana-Kanji character.	コンデンサ
Short Name.EN	短縮名称(英語)	To define a short notification of a class to save space (for instance, to display on screen, to print on paper that has narrow space)	Names used in International Standard, National Standard or Industrial Standard shall take priority over ECALS individual names.	Obligation	Alphanumeric characters of 17 letters or less. It is allowed to use a Preferred Name.EN as a Short Name.EN as far as it has 17 letters or less.	CAPACITORS
Short Name.JA	短縮名称(日本語)	To define a short notification of a class to save a space (for instance, to display on screen, to print on paper that has narrow space.)	Names used in International Standard, National Standard or Industrial Standard shall take priority over using ECALS individual names.	Obligation	A string of 17 letters or less with a combination of single-byte alphanumeric characters and double-byte Kana-Kanji characters.It is allowed to use a Preferred Name.JA as a Short Name.JA as far as it has 17 letters or less.	コンデンサ
Synonymous Name.EN	同義語名称(英語)	Alternative names showing the same concept of Preferred Name.EN.	Names used in International Standard, National Standard or Industrial Standard shall take priority over ECALS individual names.	Option	This attribute can have several synonymous terms. Each synonymous name contains alphanumeric characters of 70 letters or less.	INDUCTORS,COILS
Synonymous Name.JA	同義語名称(日本語)	Alternative name showing the same concept of Preferred Name.JA.	Names used in International Standard, National Standard or Industrial Standard shall take priority over ECALS individual names.	Option	This attribute can have several synonymous terms. Each synonymous name contains alphanumeric characters of 70 letters or less with a combination of single-byte alphanumeric characters and double-byte Kana-Kanji characters.	インダクタ,コイル
Definition.EN	定義(英語)	This attribute is used to make a meaning of the preferred name clearer and to identify it among other classes. This notation must have an ability to show what kind of class it is.	The statement must show the meaning of the Classes and distinguish it from other Classes.	Obligation	Unlimited alphanumeric characters	A coil mainly used in high frequency circuit of such electronic apparatus as

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						radio and television receivers.
Definition.JA	定義(日本語)	This attribute is used to make a meaning of the preferred name clearer and to identify it among other classes. This notation must have an ability to show what kind of class it is.	The statement must show the meaning of the Property and distinguish it from other classes.	Obligation	Unlimited string length with a combination of single-byte alphanumeric characters and double-byte Kana-Kanji characters.	高周波領域で使用される固定型インダクタ
Source Document of Definition	定義の元文書	To list the original rules and standard documents which were referred to in defining a preferred name, a definition and a unit It will help understanding and a review in the committee after defining the class.	To list the document title, the document number and the issued date of the source document	Option	Alphanumeric characters of 80 letters or less	IEC 60115-2(1982-01)
Note.EN	注意(英語)	To add more information to a class to make it clear.	To describe detail information to support understanding of class definition.	Option	Unlimited string length of alphanumeric characters	The classification of magnetic materials is based upon the following characteristics: the main alloying element and metallurgical state and physical properties of the material.
Note.JA	注意(日本語)	To add more information to a class to make it clear	To describe detail information to support understanding of class definition.	Option	Unlimited string length with a combination of single-byte alphanumeric characters and double-byte Kana-Kanji characters.	磁性材料の分類は構成元素,冶金学的状態,物理的性質などに基づいている。
Remark.EN	注釈(英語)	This attribute is used to add more information on the class to make it clearer how to use it.	Not to mention about a meaning of the class, but to describe how to use it. With the description,	Option	Unlimited string length of alphanumeric characters	Identical to AAA137 (IEC 61360-4

			part information providers can identify the class.			1997-01-01)
Remark.JA	注釈（日本語）	To add more information to a class to make it easier to understand how to apply it.	To describe how to apply a class.	Option	Unlimited string length with a combination of single-byte alphanumeric characters and double-byte Kana-Kanji characters.	Identical to AAA137 (IEC 61360-4 1997-01-01)

Note) Details of 'a combination of single-byte alphanumeric characters and double-byte Kana-Kanji characters ' in the formulation field are shown in 'Detailed Rule concerned with characters in ECALS Dictionary'; ECALSDS14 , which defines a set of characters to be used.