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What is ECALS?

● What is ECALS?

ECALS is a collective term referring to a framework for distribution of ECALS content conforming to the ECALS dictionary format in accordance with the ECALGA standards in business-to-business transactions.

This document provides information about the ECALS dictionary, ECALS content, and the distribution framework

“ECALS” is a registered trademark of the Japan Electronics and Information Technology Industries Association (JEITA).

** CALS stands for “Computer-aided Acquisition and Logistics Support”, which refers to a framework of computers, networks, and databases for centralized handling of manufacturing and management processes. Recently, the abbreviation is also frequently interpreted as “Commerce at Light Speed.” The “E” in ECALS refers to the realization of CALS for the electronics industry.

What is the ECALS dictionary?

Manufacturers of electronic components and parts generally need to provide and release information about their products. If the format and content representation of such information are different for each manufacturer, confusion may arise among the intended users.

The EC Center therefore has established standards for parts classification and description of characteristics and specifications, and has compiled these into a dictionary for various parts classes. This so-called ECALS dictionary corpus has been made publicly available free of charge.

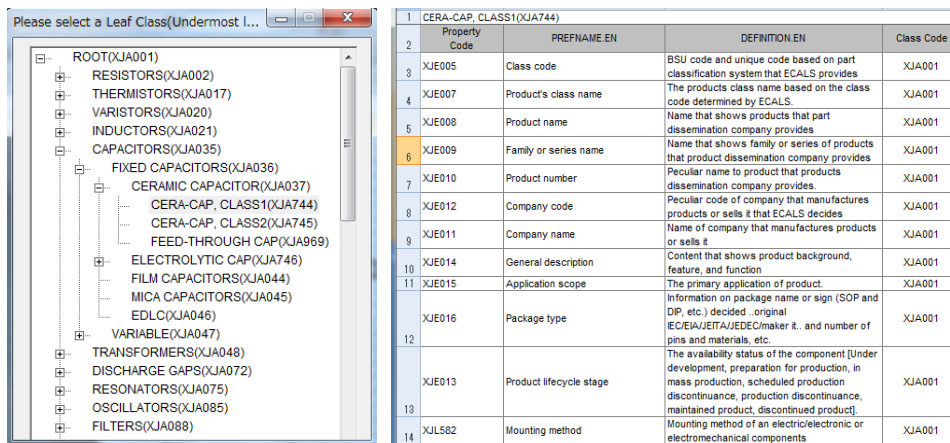
The dictionary comprises unified information about classification of electronic components and representation of their characteristics, following the international standards ISO13584 (Parts Library)*¹ and IEC61360 - Part 4*² as closely as possible. It was developed with the aim of being accepted as an international standard

Dictionaries which define different characteristics information for various parts classes (physical characteristics, electrical characteristics, management information, etc.) as properties are also available free of charge.

Currently, the ECALS dictionary corpus comprises more than 600 parts classes and more than 4,000 properties.

The collective term “ECALS dictionary” is used to refer to the parts class dictionaries, properties dictionaries, and other dictionary related information. The project has been rated highly as an accomplished effort representing Japan.

A contractor who wishes to provide or release parts information first selects the parts class for which distribution or exchange is required, and then creates the parts characteristics data based on the properties as defined by the dictionary.



The image shows two windows from the ECALS Data Creation Assist Tool. The left window is a tree view titled "Please select a Leaf Class(Undermost L...)". It shows a hierarchy of parts classes starting from "ROOT(XJA001)" down to "FILTERS(XJA088)". The right window is a table titled "CERA-CAP_CLASS1(XJA744)" showing properties for this class.

Property Code	PREFNAME.EN	DEFINITION.EN	Class Code
XJE005	Class code	BSU code and unique code based on part classification system that ECALS provides	XJA001
XJE007	Product's class name	The products class name based on the class code determined by ECALS.	XJA001
XJE008	Product name	Name that shows products that part dissemination company provides	XJA001
XJE009	Family or series name	Name that shows family or series of products that product dissemination company provides	XJA001
XJE010	Product number	Peculiar name to product that products dissemination company provides.	XJA001
XJE012	Company code	Peculiar code of company that manufactures products or sells it that ECALS decides	XJA001
XJE011	Company name	Name of company that manufactures products or sells it	XJA001
XJE014	General description	Content that shows product background, feature, and function	XJA001
XJE015	Application scope	The primary application of product.	XJA001
XJE016	Package type	Information on package name or sign (SOP and DIP, etc.) decided, original IEC/EIA/JEITA/JEDEC/maker it., and number of pins and materials, etc.	XJA001
XJE013	Product lifecycle stage	The availability status of the component [Under development, preparation for production, in mass production, scheduled production discontinuance, production discontinuance, maintained product, discontinued product].	XJA001
XJLS82	Mounting method	Mounting method of an electric/electronic or electromechanical components	XJA001

Example for ECALS parts classification and search properties (Example from ECALS Data Creation Assist Tool)

The ECALS dictionary is being regularly reviewed and updated, including changes to content, addition of parts classes, etc. For information on dictionary maintenance, see later sheets.

*¹ Framework for parts dictionary structure based on Parts Library (PLIB)

*² Dictionary structure (parts classification, properties, etc.) for electrical and electronic components based on IEC Common Data Dictionary

What is ECALS content?

● What is ECALS content?

ECALS content refers to values assigned to properties (characteristics data items) for electronic components in accordance with the ECALS dictionary.

Either XML or CSV can be used as a data format for exchanging ECALS content. For electronic components, there are catalogs for standard products which are released publicly and catalogs for non-standard products (customized products) which are only circulated among specific companies. ECALS handles both of these catalog types.

● Creating ECALS content

Based on the ECALS dictionary, the JEITA/EC Center has established a description format (ECALS System Rule No. ECALSUS19) for exchanging technical information about electronic components, semiconductors, and other parts among companies, and also has developed the “ECALS Data Creation Assist Tool” to facilitate the exchange of ECALS parts information according to this standard.

The tool is available free of charge from the JEITA/EC Center, as one of the measures aimed at promoting the exchange of technical information about parts among companies.

The download page for the tool is [here](#).

● ECALGA standards and support tools

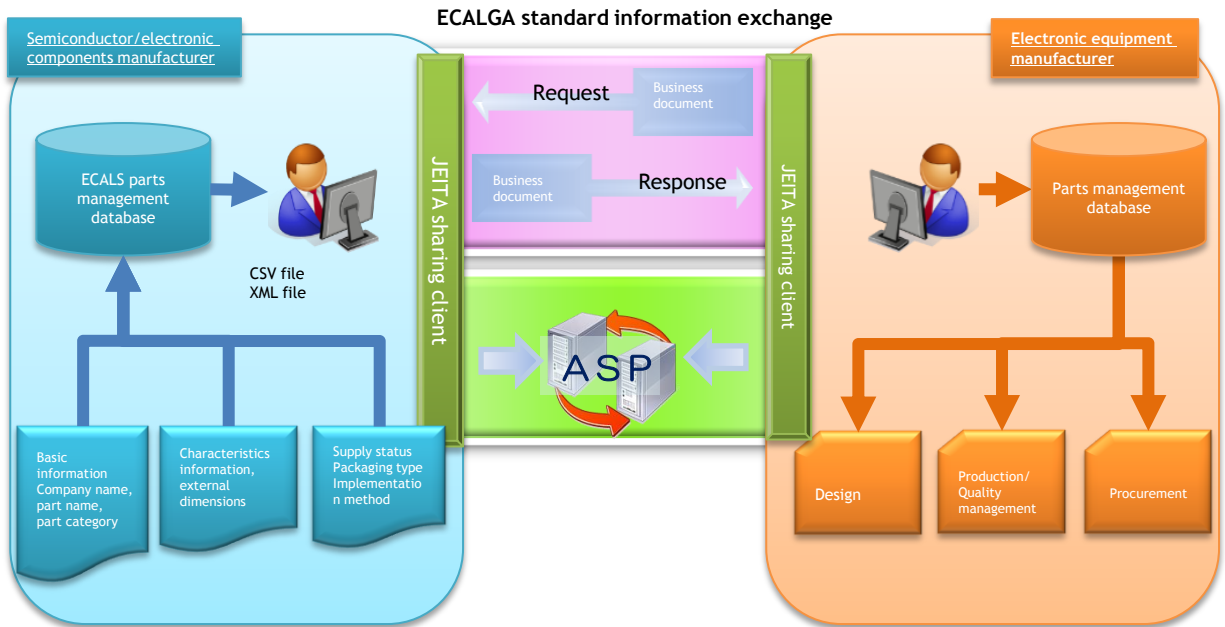
A unified framework (including data description) for the distribution of ECALS content has also been created. This comprises the “ECALGA standards” and “ECALS system rules” which codify the data format, data exchange framework, data exchange protocols, and other aspects designed to enable smooth distribution of ECALS data.

A number of simple tools supporting the use of this unified framework can be downloaded free of charge from the web site of the EC Center

(<http://ec.jeita.or.jp/eng/>).

ECALS framework for content distribution

● How ECALS content distribution works



● Information exchange based on ECALGA standards

● Information exchange in B-to-B transactions

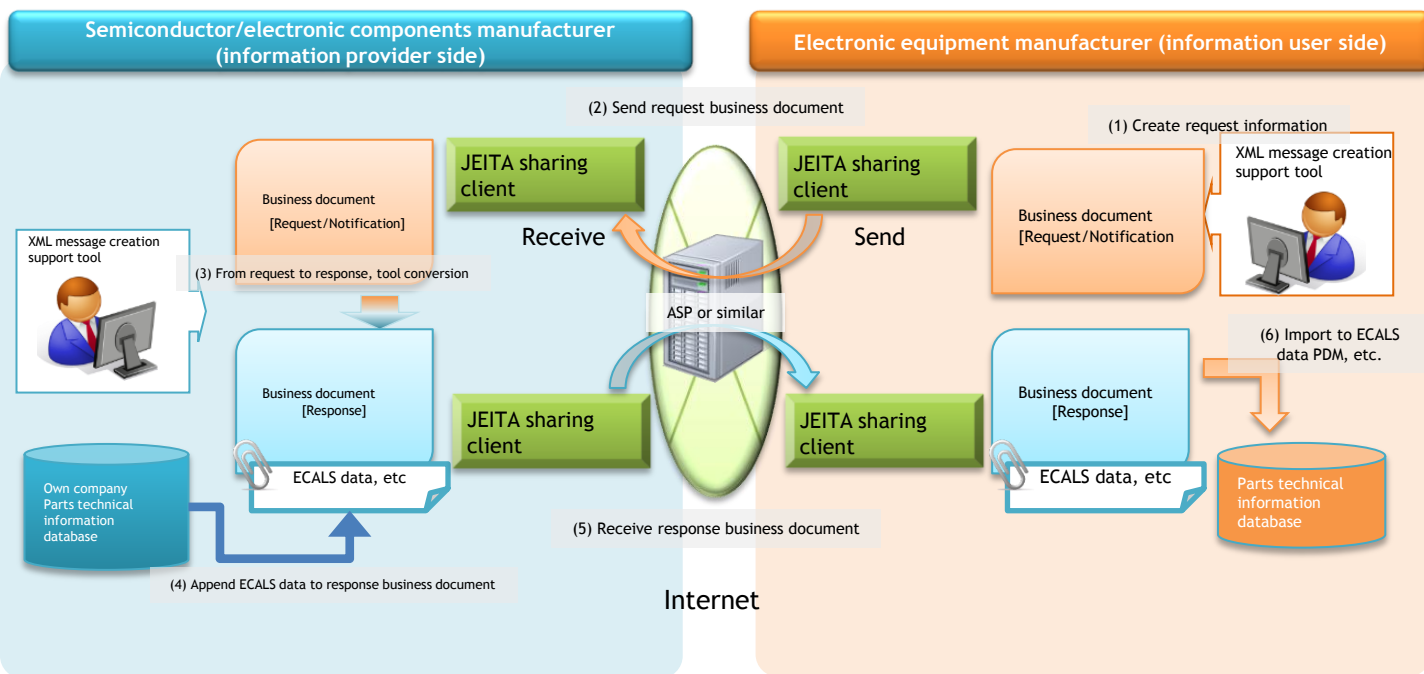
- Sender and recipient need to conclude a TPA (Trading Partner Agreement).
- The information exchange tool "JEITA sharing client" is available free of charge from the EC Center web site.
- If an ASP (Application Service Provider) is to be used for communication, the participating companies must make the necessary arrangements with the ASP.

ECALS framework for content distribution in B-to-B transactions

Exchange of ECALS content in a B-to-B situation can be performed via the ASP link function as specified by the JEITA/EC Center.

Business documents used for the exchange must comply to the provisions specified by the ECALGA standards (business dictionary edition (ECM)).

● Example for parts information request/response flow between electronic equipment manufacturer and semiconductor/electronic components manufacturer



Sender and recipient must conclude a TPA (Trading Partner Agreement).

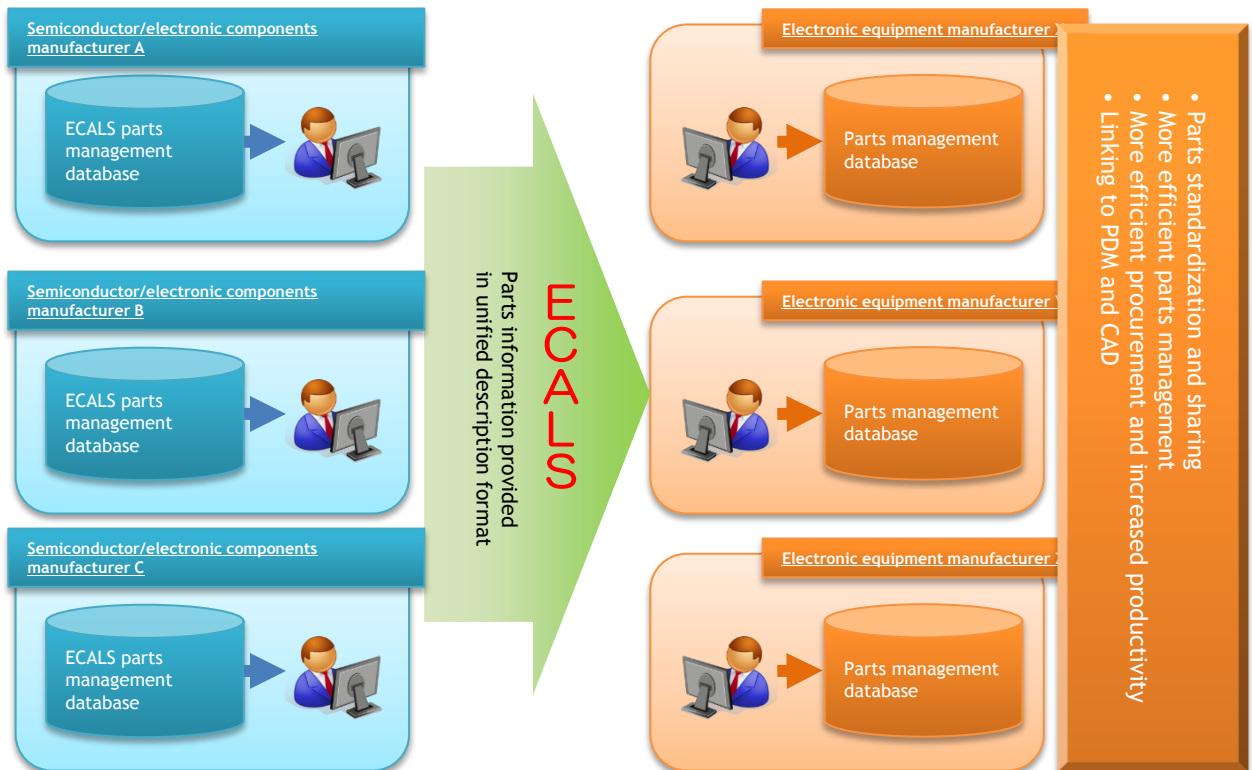
ECALS Data Creation Assist Tool, business document creation tool, data sending support tool (JEITA sharing client) and other tools can be downloaded free of charge from the JEITA/EC Center web site (<http://ec.jeita.or.jp/eng/>).

ECALS utilization concept and support by JEITA

● ECALS utilization concept

Parts technical data (content) created in accordance with the ECALS dictionary can be incorporated into a local PDM system or similar at the electronic equipment manufacturer, to implement search and viewing functions for technical information and parts, etc.

This will result in an increase of content requests to semiconductor/electronic components manufacturers.



** Semiconductor/electronic components manufacturer:

ECALS content distribution based on standardized dictionary format means that information can be provided to each electronic equipment manufacturer in the same format.

● Support by JEITA/EC Center

● Support for end product manufacturers

- Introductory and training sessions for installation and use of various tools
- EDI configuration support

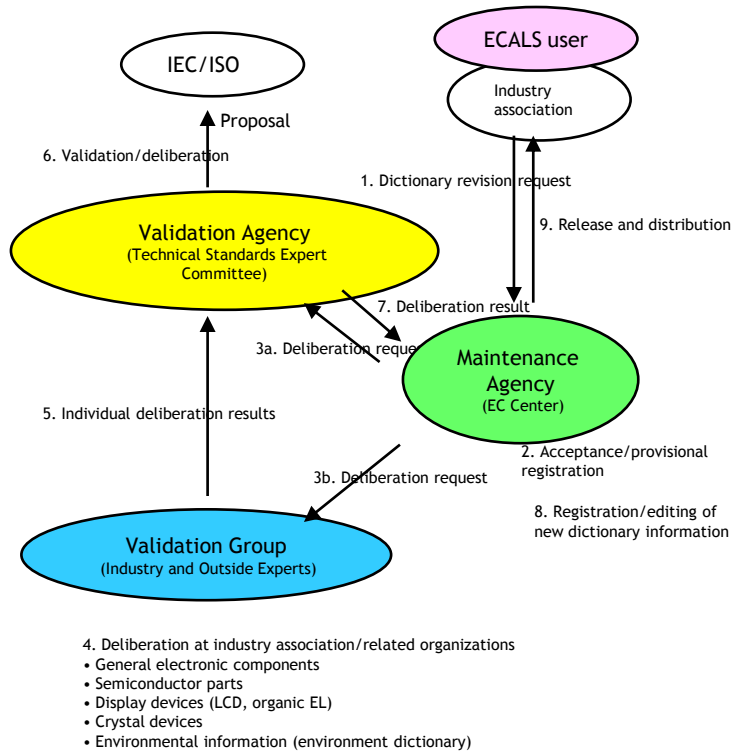
● Support for suppliers

- Introductory and training sessions for installation and use of various tools
- ECALS sample data provided free of charge

ECALS dictionary maintenance and management framework

The framework for maintaining ECALS dictionary data at the JEITA/EC Center is shown below.

Standard dictionary maintenance and management framework



- Latest dictionary issue (ECALS dictionary, environment dictionary)
- Acceptance of revision request from ECALS user
- Industry and global networking and coordination
- Collaboration with/proposals to ISO and IEC

Role of dictionary

- Standardization of technical information in computer readable format
- Clarification of description format, units, character sets, search attributes, etc. for characteristics and other information
- Definition of selected sets of properties for each parts class, to facilitate efficient creation and searching of technical information

Dictionary file

- (1) Item class dictionary
- (2) Properties dictionary
- (3) Class/properties correlation list
- (4) Properties value list
- (5) Segment definition
- (6) Template management data
- (7) Template

Dictionary maintenance and management

- Distribution of dictionary standards from EC Center web site, aimed at reaching a wide audience
- Revision requests evaluated by expert groups and reflected in dictionary

History of ECALS

- Maintenance and management of ECALS standards (dictionary and system)
- Link to environmental information (chemical substances content)
- Cooperation with domestic and international standardization organizations

