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BSI Standards Publication

Mapping rules and exchange methods for heterogeneous electronic parts libraries

Part 1: Building an integrated search system

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National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MAPPING RULES AND EXCHANGE METHODS FOR HETEROGENEOUS ELECTRONIC PARTS LIBRARIES –

Part 1: Building an integrated search system

FOREWORD

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IEC TR 62699-1, which is a technical report, has been prepared by IEC technical committee 91: Electronics assembly technology.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
91/1187/DTR	91/1200/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

A list of all parts in the IEC 62699 series, published under the general title *Mapping rules and exchange methods for heterogeneous parts libraries,* can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This technical report describes the methodology for integrated use of heterogeneous libraries of electric and electronic product parts to provide integrated services utilizing existing heterogeneous libraries. Integrated search of electronic parts information, for example, requires to integrate the electronic parts classification systems and the property classification systems that are possibly maintained by different nations in incompatible ways, in that not all the electronic parts information has one-to-one correspondence between parts libraries. Recently, Korea, China, and Japan jointly built an integrated search system to enable search of parts information across parts libraries that are independently operated by each country. The biggest challenge in this project was bridging the gap between these heterogeneous parts libraries by providing rules to integrate related parts information. The integration of information that has one-to-one (1:1) relation between different parts libraries is straightforward. However, integration of information that has one-to-many (1:N), or many-to-one (N:1) relation demands a standard rule of integration to provide a determinant search result, or service in general.

The integration rules specified in this technical report provide a foundation for utilization of the electronic parts libraries, possibly heterogeneously constructed by different organizations. The information systems constructed by the application of these integration rules can be the basis for constructing an integrated electronic parts e-sourcing system enabling real-time search of multinational electronic part databases with minimized loss of information.

MAPPING RULES AND EXCHANGE METHODS FOR HETEROGENEOUS ELECTRONIC PARTS LIBRARIES –

Part 1: Building an integrated search system

1 Scope

This part of IEC 62699 describes mapping rules and exchange methods for the development of general and extendable integrated services utilizing heterogeneous multi-national or multi-enterprise electronic parts library data. The scope of this technical report is as follows:

a) identification and classification of mapping types for mapping heterogeneous electronic parts libraries;

b) definition of general mapping rules and specific mapping rules commonly applying to various mapping types.

The following aspects are out of the scope of this technical report:

- schematic definition and management of the electronic parts libraries to be mapped;
- maintenance process for the parts libraries during changes.

2 Application architecture

2.1 General

This clause illustrates the application architecture on which the mapping rules and methods are based. The information exchange methodology and interoperability are required for performing an integrated search by linkage of heterogeneous electronic parts libraries on the basis of the mapping dictionary.

2.2 Interoperability system

Figure 1 shows an interoperability system (IOS). It is constructed with common exchange rules and a mapping dictionary that apply between parties A, B and C. Each system, connected with the Internet, provides the communications environment that enables data exchange.