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## Description of References and Data Models for Classification

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## Foreword

The production of this final draft CWA 'Description of References and Data Models for Classification' has been written by the ePDC Project Team.

Two versions of the draft CWA were released to the CEN/ISSS Workshop eCAT, the draft CWA was endorsed in September 2004. The comments received were included in this final draft version.

ePDC 'Global Multilingual Product Description and Classification for eCommerce and eBusiness' is a project within the CEN/ISSS/WS/eCAT 'Multilingual catalogue strategies for eCommerce and eBusiness', which started in November 2002 and produced two CWAs.

The objective of the project ePDC is to harmonize existing standards for product description and classification into a common horizontal, cross-industry product classification and description schema and how to maintain it, promote it and make it available to the public.

Aim of the CWA is to help policy makers, business men, researcher and anybody interested to have an overview of the state of art, activities and possible actions to undertake to promote and facilitate the use of inter-operable product description and classification solutions in the scope of electronic Catalogues, based on recognized standards.

The CWA focuses on the following aspects:

### **Requirements on an Information Model supporting Product Classification and Description for electronic Catalogues**

The following aspects are in particular considered:

- Reference Model of Business Processes in Scope
- organizational and procedural issues: Workflow for Maintenance
- technical issues: Requirements on an Information Model

### **Comparison and Selection of existing standardized Information Models**

The CWA contains an analysis of existing standards/specifications which are in scope.

Moreover the CWA contains recommendations related to further actions to be taken in particular regarding standardization.

### **Requirements on a Toolkit for Maintenance of a Standardized Product Classification and Description Schema**

The CWA defines a minimum set of requirements on a tool supporting collaborative, multilingual, pan-European maintenance of a Standardized Product Classification and Description Schema. Some suggestions of how this should be done are put forward.

The present CWA received the support of various experts representing different organizations, a list of experts who supported the contents of this document may be viewed in the Annex.

This CEN Workshop Agreement is publicly available as a reference document from the National Members of CEN: AENOR, AFNOR, BSI, CSNI, CYS, DIN, DS, ELLOT, EVS, IBN, IPQ, IST, LVS, LST, MSA, MSZT, NEN, NSAI, ON, PKN, SEE, SIS, SIST, SFS, SN, SNV, SUTN and UNI.

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# Introduction

This document introduces the background of why Product Classification is important for doing trade in today's eBusiness environment, what are the basic requirements for a classification and shows a vision of how the ideal model should look (principles and methods).

In the interconnected world of today there is an increasing emphasis on the efficient flow of products through the supply chain. Information flows are designed to plan and track material within and between enterprises. Often these flows need to encompass a product's inception in R & D and continue through final disposal at the end of its lifecycle.

During its lifetime many units of different companies deal with a product. Many humans and many computer systems need information about the product. Procurement forwards the information to (potential) suppliers and to their order processing systems. Suppliers match the information they receive with the data of their products. The appropriate item is selected. It is delivered and used, for example as a raw material in a production process. The information accompanying the material becomes part of the batch record. Concurrently purchasers perform statistical analyses to determine their market position and performance. Therefore they need information of what has been bought.

There is information flow between many people and the computer systems they use. The current situation is that many of these computer systems are not interconnected, and they store the information they have to exchange in different, often proprietary, incompatible formats and data structures. Data is often transcribed, translated and transferred manually between computer systems. Enormous amounts of time and money are wasted.

Electronic marketplaces are gaining importance. They are an interface in the supply chain in which this issue is most obvious. Product descriptions, specifications, catalogue data, orders, etc. are exchanged through electronic marketplaces. A more efficient way for exchange of information is critical to achieving their business goals.

## 1.1 Trends in doing business

For many years, enterprises have done business using internal proprietary identification (coding) schemes for their finished products and raw materials catalogs, which usually resided in Manufacturing Resource Planning (MRP) systems.

Over the past decade, the nature of doing business in the chemical industry has moved from local, single business models to global, enterprise wide models; at the same time, Information Technology has been instrumental in pushing these models to become reality by e.g. ERP systems and global networks.

Globalization of businesses, as well as fast emerging Information Technology is leading to more transparency of business processes and forcing inter-company systems integration.

## 1.2 Trends in Product coding

Coding of Products for internal processes for many years has been locally, as result, businesses and geographic areas had their own Product Identifications. This causes significant duplication and inefficiencies in business processes, not only internally within an enterprise (EH&S, Procurement, Manufacturing, etc.), but also outside the company.

Emerging eBusiness technology is pushing the envelope even faster and accelerates the need for transparent business transactions in a B2B, B2C and eMarketplace environment.

Prerequisite for transparent business transaction processing is consistency in data structures and consistency in coding of Products, Customers, Locations, etc.

### **1.3 Need for data standards across enterprises**

As seen, integration across enterprises is driving the need for standardizing data structures. This may not be valid for all types of data; enterprises will always have proprietary data. But it is true for what could be called “structural data”, i.e. data which creates an ordering for the conduct of daily business, such as categories, types, classifications,...

Classification systems with sets of properties are quite complex data systems. It takes tens of person-years to create such a system which meets the requirements of a larger enterprise. It is quite obvious that creating and maintaining only one and using it everywhere is much more efficient and economical than using multiple proprietary systems.

In addition to their own structure(s), cross-reference tables need to be created and maintained. This is a costly and time consuming effort which, in the absence of a standard, would need to be undertaken within each enterprise. These efforts provide no value to the customer and only add to the difficulty in integrating cross business processes.

### **1.4 Vision**

Without a standard for a global Product Description and Classification, accepted by all, business processes and companies will continue to have proprietary hierarchies and codes for Products, continuing to result in huge costs for human intervention and/or translation of product data between steps in the ERP process.

Eventually there will be an integrating framework of Product Data Management (PDM) across all industries and all enterprise functions. Product data will be created only once, at the source; others in the supply chain will use the data as provided by the manufacturer (or the necessary part of it). Information, formulated in a common language, will accompany a product during its whole life cycle.

This common language will be used in specifications, RFQs, electronic catalogues, data sheets and the like. It will enable highly automated business processes, as all systems can exchange and process specifications and product data without human interpretation. It will make electronic marketplaces work.

## 2 Normative references

IEC 613601-4:1997-05	IEC Standard. <i>Standard data element types with associated classification scheme for electric components</i>
ISO 8879	ISO Standard. <i>ISO 8879:1986(E). Information processing -- Text and Office Systems -- Standard Generalized Markup Language (SGML)</i> . First edition -- 1986-10-15. [Geneva]: International Organization for Standardization, 1986.
ISO 10303-1:1994	ISO Standard. <i>ISO 10303-1:1994. Industrial automation systems and integration – Product data representation and exchange – Part 1: Overview and fundamental principles</i> .
ISO 11179 Parts 1-6	ISO Standard. <i>Specifications and standardisation of data elements</i> .
ISO 13584-1:2001	ISO Standard. <i>ISO 13584-1:2001. Industrial automation systems and integration – Parts library – Part 1: Overview and fundamental principles</i> . Edition of 2001.
ISO 13584-20:1998	ISO Standard. <i>ISO 13584-20:1998. Industrial automation systems and integration – Parts library – Part 20: Logical resource: Logical model of expressions</i> . Edition of 1998.
ISO 13584-42:1998 / Technical Corrigendum 1:2003	ISO Standard. <i>ISO 13584-42:1998. Industrial automation systems and integration – Parts library – Part 42: Description Methodology: Methodology for structuring part families</i> . Edition of 1998, correction 1 in 2003
ISO-15000-3	ISO Standard. <i>ISO 15000-3. Electronic Business eXtensible Markup Language (ebXML):Registry Information Model Specification (ebRIM)</i>
ISO-15000-4	ISO Standard. <i>ISO 15000-4. Electronic Business eXtensible Markup Language (ebXML):Registry Service Specification (ebRS)</i>
ISO 17113	ISO Standard. <i>ISO 17113. Method for Development of Messages</i>
XML	World Wide Web Consortium Recommendations: <a href="http://www.w3.org/TR/REC-xml">http://www.w3.org/TR/REC-xml</a>