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Conceptual Model and Taxonomy for Information Systems Engineering

S.R. CR 12804:1997

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REPORT
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English version

Conceptual Model and Taxonomy for
Information Systems Engineering

This CEN REPORT has been prepared by Technical Committee CEN/TC 311 "Information Systems Engineering (ISE)" and has been approved by CEN on 1997-01-17.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Secretariat of CEN/TC311
Information Systems Engineering

PREFACE

This report is the work of a CEN Project Team that was tasked with the development of a conceptual **model** and taxonomy for information systems engineering (ISE).

The purpose of this work is to facilitate the development of ISE standards to support the needs of European Union organizations involved in ISE, or whose business operations depend on the quality and availability of information systems.

The work was supervised by CEN Technical Committee TC311 and has been accepted as a satisfactory conclusion to the project bv BTS/7 and SOGITS. BTS/7 is responsible for CEN standardization work in this general area and SOGITS is a committee representing senior government officials from member bodies of CEN.

The report is published and distributed in accordance with the provisions of CEN internal Reoulations, Part II paragraph 2.1.5, as a matter of technical interest to a wider audience than TC311 alone.

The report is published exactly as provided bv the Project Team. Comments received from national body members are included in annex E and should be taken into account when the report is used. Further comments on the report are hereby invited and should be sent to the TC311 Secretariat.

The reader should further note that the report will be maintained as time and resources permit, for example when ISE survey results become available or when ISE standardization work makes this appropriate. In order to ascertain the precise status of the report and the availability of any later versions, the TC311 Secretariat should be contacted.

Foreword

Recognising there was a problem Europe needed to address, the Commission of the European Communities mandated CEN[1] to set up a project team to investigate Europe's requirements for standards in the field of Information Systems Engineering (ISE). In its approved final report (May 1991), the project team identified urgent reasons for ISE standardisation in Europe relating to the process of creating a single market in countries with diverse languages, cultures, business practices and system engineering methods. Although components of ISE standardisation were being addressed by various national and international standards bodies, nobody was looking at ISE as a whole.

This report led to the creation of CEN/BT WG63 to define the way forward. In its final report, WG63 proposed that a CEN Technical Committee be set up to undertake the ISE standardisation programme. As a result, CEN/TC 311 was established in June 1993.

CEN/TC 311's scope is standardisation in the field of ISE. Its role is to support Europe's business, economic, political, cultural and legislative needs by identifying the role of and need for existing or new agreed standards in the field of ISE and encouraging and enabling their preparation and application. The use of good ISE standards in Europe will:

- contribute to the removal of barriers to trade and overcome language and cultural barriers, enabling organisations to compete on equal terms throughout Europe;
- support the establishment of information systems needed to implement the single European market;
- provide long term economic benefits as European companies influence the development of products world-wide;
- reduce the risks associated with ISE products, with benefits to both the acquirers and the providers of Europe's information systems;
- contribute to the efficiency of ISE in Europe in order to increase Europe's competitiveness in the global market.

This document addresses the terms of the CEC mandate SOGITS N695.2 SOGT 93/45.2:

> *"to produce a conceptual model and corresponding taxonomy to ensure the coherence and completeness of standards work in the ISE area, taking into account the user requirements."*

The document was produced by project team CEN/TC 311 PT01 which had the following membership:

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1. Scope and field of application

1.1 Scope

The scope of this document is information systems engineering, approached from the perspective of a description of the concepts of ISE and the classification of those concepts in a taxonomy.

Information systems engineering concerns the provision of information systems to organisations, including both the provision of development services and the provision of operational services.

1.2 Audience

The audience for the document includes:

- IS procurers and users;
- ISE practitioners;
- ISE researchers and educators;
- CEN/TC 311;
- CEN/BT S7;
- SOGITS and its associated committees;
- CEN member bodies;
- Other interested standards makers;
- Euromethod developers and users.

1.3 Rationale and purpose

The wide scope of ISE standardisation and the number of standards organisations working in the field make the job of co-ordinating ISE standards development a challenging one. In these circumstances it is important to have agreed reference documents, including carefully defined terminology. Such reference documents are variously called conceptual models, reference models, frameworks and architectures. They are intended primarily to be used by standards-makers so that they can communicate their ideas, test the overlap and cohesion of their work and establish consensus across the industry.

The purpose of the *'Conceptual Model and Taxonomy for Information Systems Engineering'* is to provide a support tool for activities such as:

- promoting a common understanding of ISE, its concepts and its terminology throughout Europe;
- promoting understanding of the scope and objectives of ISE standardisation throughout Europe;
- facilitating co-operative working in the field of ISE between different organisations in Europe and worldwide;
- promoting the European view of ISE to the rest of the world;
- facilitating the translation of user requirements to areas of ISE standardisation and certification;
- identifying areas of standards and profiles needs, gaps and overlaps;
- assisting CEN/TC 311 in the exercise of its mission and the fulfilment of its objectives.

The document has other potential uses, for example:

- assisting those standards bodies which monitor the work of CEN/TC 311;
- identifying areas of R&D project need, gaps, relationships and overlaps.

The *'Conceptual Model and Taxonomy for Information Systems Engineering'* will benefit Europe's ISE providers and users by helping CEN/TC 311 to encourage and enable the provision of consistent,