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Intelligent transport systems — Systems architecture — Use of process-oriented methodology in ITS International Standards and other deliverables

Systèmes intelligents de transport — Architecture de systèmes — Emploi d'une méthodologie orientée processus dans les Normes internationales ITS et autres produits livrables



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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Introduction

The objective of this Technical Report (TR) is to provide guidance on the use of the process-oriented method (POM), also known as data flow modelling, in the development of intelligent transport systems (ITS) International Standards and other deliverables, and in the design and implementation of ITS systems. In particular, it is intended to be used as the basis for the development of high-level system architectures for ITS. These architectures are tools to aid ITS implementations, and a mechanism to identify and promote the creation and use of standards.

The advantages of applying POM to the development of high-level system architectures for ITS include the following:

- POM is easily understood, particularly by non-technical people (e.g. decision-makers) who are often the intended audience for high-level system architectures;
- POM enables a coherent description to be built up from multiple user views;
- training and tool support is available, particularly in Europe and the USA;
- the data descriptions produced by POM are capable of manipulation by a metadata registry for ITS;
- the results of creating a POM system architecture can be easily transferred into requests for quotations (RFQs), expressions of interest (EOIs), tenders and other similar documents;
- the results of POM system architectures can be translated into UML for use by software developers;
- POM is applicable to both hardware and software and does not, therefore, pre-suppose the form in which its functionality will be implemented.

The disadvantages of using POM include the following:

- POM has a bad image, e.g. it is old-fashioned, and is usually not now included in the training of systems analysts and designers;
- parts of a POM system architecture might require conversion to UML before it will be accepted by most software developers.

There are some risks in using POM, but the benefits of its ability to be easily understood by the usual initial audience for high-level system architectures can often help with the initial promotion of ITS implementations. This TR is intended to provide guidance to stakeholders who are considering the use of POM for ITS.