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First edition  
2008-02-15

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## Intelligent transport systems — System architecture — “Use Case” pro-forma template

*Systèmes intelligents de transport — Architecture des systèmes — Gabarit pro forma de «cas d'usage»*



Reference number  
ISO/TR 25102:2008(E)

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Published in Switzerland

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TR 25102 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

## Introduction

The objective of this Technical Report is to propose a pro-forma template for "Use Cases" for intelligent transport systems (ITS), and provide guidance on how the template should be used.

While this Technical Report provides a pro forma template, the elements may be augmented or omitted as applicable. The Technical Report provides guidance to develop use cases and is a guide rather than a prescription to be followed without variation.

A "Use Case Model" is simply a term to describe, and in many cases define, a user's view of interactions with (and within) the system. Use cases show how entities interact, and are usually presented as structured text or diagrammatically.

"Use Cases" are a means to define requirements for a system in terms of the primary users (known as actors) that interact with the system and the scenarios or activities that are performed by the system in response to stimuli from the actors or from other system entities. Each "Use Case" has a starting state and conditions, a series of activity steps that together comprise a scenario, and a finishing state and conditions. There may be more than one scenario in a "Use Case". The "Use Case" should also include exceptional cases with alternate outcomes.

In many situations, including some International Standards, there has been more attention paid to the definition of "Actors", "Use Cases" and the relationships between them, rather than the detail of each "Use Case", especially the explanatory text that goes with the "Use Case".

The identification of "Use Cases" is most frequently associated with use case model diagrams using the "Unified Modelling Language" (UML)<sup>[4]</sup>. In this Technical Report, for consistency, this methodology is used throughout. However, "Use Cases" can be elaborated and developed for any system methodology and are as appropriate for process oriented methodology as object oriented methodology, and indeed there is no requirement to use any technical architecture methodology at all. A "Use Case" can often be elaborated simply with pen and paper.

The benefits of applying use cases to the development of ITS include the following:

- Common, standardized approach available for the first segment of software system development, namely requirements elicitation and definition;
- Requirements are related to each other informally, thus providing some assurance of compatibility and consistency.