TECHNICAL

ISO/TR

First edition
2008-02-15

Intelligent transport systems — System architecture — "Use Case" pro-forma template

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

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Foreword

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

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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)[4]. 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.