Osvaldo Gervasi • Marina L. Gavrilova
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The Denotational Semantics of Signal Statement in ATLAS

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Abstract.

ATLAS is designed to describe tests in terms that are independent of any specific test system, and has been constrained to ensure that it can be implemented on ATE. In semantics, ATLAS language can be classified as non-signal, signal and bus parts. The non-signal part is similar to an entire procedural language and it has the function of any traditional programming language, which incarnates the commonness between ATLAS language and others. The signal and bus parts are responsible to describe the specific test, which incarnates the speciality of ATLAS as one of the test languages.

The statements of non-signal part in ATLAS are basically similar to traditional procedural language, and their denotational semantics are almost the same.

In this language, the semantics of signal statements is far different from that of the traditional programming languages. The static environment of the signal part includes SEnv and AEnv. SEnv denotes the attributes of all the test devices in ATE. In a practical test process, the device that is content with the condition in SEnv is allocated according to the test requirements. All the devices in using are stored in AEnv during the test process. The allocated devices should be added to AEnv and the released devices should be deleted from AEnv.

First, the performance of signal statements is to transmit the signals between the test devices and UUTs, according to which the ways of semantic description in the course of devices allocation are given; second, the transmission of the signals is realized by changing the state of test devices, then following the semantic description of device state which includes the state of device operation, the state of the device attributes and the connection state; last, the denotational semantics of the single-action signal statements are given based on the semantics of the device allocation and the state of test devices.

Compared with the present working of the related semantics, the significance of the work for this paper are: the denotational semantics of signal statements that faces the test is given, and the describing ways of the semantics about the device allocation and the change of device state are different from the procedural language.

Key words: ATLAS; test language; denotational semantics; device allocation

Using WQM for Classifying Usability Metrics[1]

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Abstract. Today, many people know how to develop a Web, but not all of them know how to do it considering quality. For having quality designs it is essential to use metrics. Usability can help to make a system nearer to final user and it would be easy to learn how to use it and to use it productively [4]. Usability has become a critical quality factor in the development of software systems and it is getting more and more importance. In this paper we present a classification of usability metrics using WQM, a three-dimensional quality model proposed by [1] which is composed by three dimensions, a quality dimension, a life cycle processes dimension and a web features dimension. In [4] a suite of usability metrics is defined, and is composed by: essential efficiency, task concordance, task visibility, layout uniformity and visual coherence. Other metrics taken into account for being classified into WQM are: Layout Complexity [2, 3], Layout Appropriateness [5], Data cohesion [6], Coupling [6]. As a result of our classification we have found that it seems that a *usability* metric is usually related with *efficiency* and *functionality* in the quality characteristics, to *architectural design*, *system analysis*, and *maintenance* in the lifecycle process dimension and, in with *content* and *presentation* in the Web feature dimension. Nevertheless, this is a first approach that needs to be reviewed and completed including more usability metrics in order to obtain definite conclusions.

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