

International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Z.450

(11/2008)

SERIES Z: LANGUAGES AND GENERAL SOFTWARE
ASPECTS FOR TELECOMMUNICATION SYSTEMS

Quality – Quality aspects of protocol-related
Recommendations

Quality aspects of protocol-related Recommendations

Recommendation ITU-T Z.450

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Recommendation ITU-T Z.450

Quality aspects of protocol-related Recommendations

Summary

Recommendation ITU-T Z.450 provides guidelines on the quality aspects of protocol-related ITU-T Recommendations with the objective of:

- 1) improving the quality of protocol-related Recommendations; and
- 2) helping to improve the interoperability of products based on these Recommendations.

In order to encourage the widest possible use of ITU-T protocol-related Recommendations, it is important that these Recommendations are of the highest possible quality. Several aspects of quality that play an important role for the users of these ITU-T Recommendations have been selected for this purpose. These are: readability, completeness, correctness, consistency, unambiguity, implementability and testability.

Annex A contains a quality checklist to identify the level of compliance of a Recommendation with the quality aspects.

Source

Recommendation ITU-T Z.450 was approved on 13 November 2008 by ITU-T Study Group 17 (2009-2012) under Recommendation ITU-T A.8 procedure.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g. interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

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Introduction

Following WTSC-96 endorsement of the importance of quality in ITU-T Recommendations, TSAG formed a Correspondence Group to develop a guideline document entitled *Guidelines on quality aspects of protocol-related Recommendations*. At the TSAG meeting in September 1998, the work of the Correspondence Group was approved as Supplement 1 to the A-series of ITU-T Recommendations. In the 2001-2004 study period, Study Group (SG) 10 contributed to the work of the TSAG Correspondence Group and subsequently approved a new Question and developed Recommendation ITU-T Z.450 based on Supplement 1. This Recommendation is the result of that work revised to reflect changes up to the end of the 2005-2008 Study Period. All study groups should use this Recommendation when developing new protocol standards or evaluating existing ones.

Recommendation ITU-T Z.450

Quality aspects of protocol-related Recommendations

1 Scope

This Recommendation covers the readability, correctness, consistency, unambiguity, implementability and testability aspects of quality of protocol-related Recommendations and specifies a process that can assist in the development of higher-quality Recommendations.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T Z.110] Recommendation ITU-T Z.110 (2008), *Criteria for use of formal description techniques by ITU-T*.

3 Definitions

This Recommendation defines the following terms:

3.1 specification and description language (SDL): Internationally standardized formal language for specifying and describing real-time systems.

3.2 message sequence charts (MSC): Internationally standardized language for describing sequences of messages interchanged between system components and their environment.

3.3 abstract test suite (ATS): A test suite composed of abstract test cases.

3.4 abstract test case: A complete and independent specification of the actions required to achieve a specific test purpose, defined at the level of abstraction of a particular abstract test method, starting in a stable testing state and ending in a stable testing state. This specification may involve one or more consecutive or concurrent connections.

3.5 abstract test method: The description of how an implementation under test is to be tested, given an appropriate level of abstraction to make the description independent of any particular realization of a means of testing, but with enough detail to enable abstract test cases to be specified for this test method.

3.6 executable test suite (ETS): A test suite composed of executable test cases.

3.7 executable test case: A realization of an abstract test case.

3.8 tree and tabular combined notation (TTCN-2): A standardized notation for specifying conformance test suites in a manner that is independent of test methods, layered software architectures or protocols and which reflects the abstract testing methodology defined in [b-ITU-T X.290] and [b-ITU-T X.291].

NOTE – TTCN-2 replaced the version of tree and tabular combined notation previously known as TTCN-1.

3.9 testing and test control notation (TTCN-3): A new version of the test notation has a programming language-like appearance and was designed for many kinds of testing such as interoperability testing, robustness testing, regression testing, system testing and integration testing