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SERIES Z: LANGUAGES AND GENERAL SOFTWARE ASPECTS FOR TELECOMMUNICATION SYSTEMS

Formal description techniques (FDT) – Specification and Description Language (SDL)

Specification and Description Language – Object-oriented data in SDL-2010

Recommendation ITU-T Z.107

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ITU-T Z-SERIES RECOMMENDATIONS

LANGUAGES AND GENERAL SOFTWARE ASPECTS FOR TELECOMMUNICATION SYSTEMS

FORMAL DESCRIPTION TECHNIQUES (FDT)	
Specification and Description Language (SDL)	**Z.100–Z.109**
Application of formal description techniques	Z.110–Z.119
Message Sequence Chart (MSC)	Z.120–Z.129
User Requirements Notation (URN)	Z.150–Z.159
Testing and Test Control Notation (TTCN)	Z.160–Z.179
PROGRAMMING LANGUAGES	
CHILL: The ITU-T high level language	Z.200–Z.209
MAN-MACHINE LANGUAGE	
General principles	Z.300–Z.309
Basic syntax and dialogue procedures	Z.310–Z.319
Extended MML for visual display terminals	Z.320–Z.329
Specification of the man-machine interface	Z.330–Z.349
Data-oriented human-machine interfaces	Z.350–Z.359
Human-machine interfaces for the management of telecommunications networks	Z.360–Z.379
QUALITY	
Quality of telecommunication software	Z.400–Z.409
Quality aspects of protocol-related Recommendations	Z.450–Z.459
METHODS	
Methods for validation and testing	Z.500–Z.519
MIDDLEWARE	
Processing environment architectures	Z.600–Z.609

For further details, please refer to the list of ITU-T Recommendations.

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Specification and Description Language – Object-oriented data in SDL-2010

Summary

Recommendation ITU-T Z.107 defines the object-oriented data features of the Specification and Description Language building on the foundation of the data definitions and expressions defined in Recommendation ITU-T Z.104. Together with Recommendations ITU-T Z.100, ITU-T Z.101, ITU-T Z.102, ITU-T Z.103, ITU-T Z.104, ITU-T Z.105 and ITU-T Z.106, this Recommendation is part of a reference manual for the language. The language defined in this Recommendation partially overlaps features of the language included in Basic SDL-2010 in Recommendation ITU-T Z.101 and used in Comprehensive SDL-2010 in Recommendation ITU-T Z.102, and the features of Recommendations ITU-T Z.103 and ITU-T Z.104.

Coverage

The Specification and Description Language has concepts for behaviour, data description and (particularly for larger systems) structuring. The basis of behaviour description is extended finite state machines communicating by messages. Data description is based on data types for values. The basis for structuring is hierarchical decomposition and type hierarchies. Though a distinctive feature of the Specification and Description Language is the graphical representation, the data and expression language is textual. Features to encode and decode data communicated by channels, define data types with values and operations, variables (including parameters) based on data types and expression actions that use the data types have been defined in previous Recommendations. This Recommendation covers the features of the language used to provide object-oriented, hierarchical abstraction to allow the representation of larger and data-intensive systems. This Recommendation does not always provide a canonical syntax, but by applying the *Model* descriptions given, a specification can be transformed to Basic SDL-2010 defined in Recommendation ITU-T Z.101, except in those cases where additional abstract syntax is added in this Recommendation.

Applications

The Specification and Description Language is applicable within standards bodies and industry. The main application areas for which the Specification and Description Language has been designed are stated in Recommendation ITU-T Z.100, but the language is generally suitable for describing reactive systems. The range of applications is from requirement description to implementation. The features of the language defined in Recommendation ITU-T Z.107 are essential for scalable description of data-intensive systems using object-oriented abstractions.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T Z.107	2012-04-29	17	11.1002/1000/11595
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Keywords

Object-oriented data, SDL-2010, Specification and Description Language.

* To access the Recommendation, type the URL http://handle.itu.int/ in the address field of your web browser, followed by the Recommendation's unique ID. For example, http://handle.itu.int/11.1002/1000/11830-en.

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FOREWORD

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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.

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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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Table of Contents

		Page
1	Scope	1
	1.1 Objective	1
	1.2 Application	1
2	References	1
3	Definitions	2
	3.1 Terms defined elsewhere	2
	3.2 Terms defined in this Recommendation	2
4	Abbreviations and acronyms	2
5	Conventions	2
6	General rules	2
7	Organization of specification and Description Language specifications	3
8	Structural concepts	3
9	Agents	3
10	Communication	3
11	Behaviour	3
12	Data	3
	12.1 Data definitions	3
	12.2 Use of data	6
	12.3 Active use of data	9

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Introduction

Status/Stability

This Recommendation is part of the ITU-T Z.100 to ITU-T Z.107 series of Recommendations that give the complete language reference manual for SDL-2010. The text of this Recommendation is stable. For more details see Recommendation ITU-T Z.100.

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