

**Specification for the representation of Quality
rules and metrics for Hardware and Software
Design Languages**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-ES 59011:2003 sisaldab Euroopa standardi ES 59011:2001 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 05.02.2003 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-ES 59011:2003 consists of the English text of the European standard ES 59011:2001.

This standard is ratified with the order of Estonian Centre for Standardisation dated 05.02.2003 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

ICS 35.060

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute Estonian Standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: +372 605 5050; E-mail: info@evs.ee

English version

**Specification for the representation of Quality rules and metrics for
Hardware and Software Design Languages**

This European Specification was approved by CENELEC on 2000-10-16.

CENELEC members are required to announce the existence of this ES in the same way as for an EN and to make the ES available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This European Specification was prepared by the Technical Committee CENELEC TC 217, Electronic Design Automation (EDA).

The text of the draft was submitted to the National Committees members of CENELEC for comments. It was voted upon during the meeting of CLC/TC 217 and approved by CENELEC as ES 59011 on 2000-10-16.

The following date was fixed:

- latest date by which the existence of the ES
has to be announced at national level (doa) 2001-05-15

This document is a preview generated by EVS

Contents

1	Scope	4
2	Definitions.....	4
2.1	Classification	4
2.2	Rules definition	5
2.3	Metrics definition.....	5
2.4	Rules and metrics representation template definition	5
3	Acronyms and references.....	6
3.1	Acronyms	6
3.2	References	6
4	Rules and metrics representation templates.....	6
4.1	Rule or metrics Id	7
4.2	Version	7
4.3	Language	7
4.4	Rule or metric name	7
4.5	Specification	7
4.6	Description	7
4.7	Level of description.....	7
4.8	Report.....	8
4.9	Justification	8
4.10	Impact on quality characteristics	8
4.11	Related rules and metrics	8
4.12	Conflicting rules and metrics.....	8
4.13	Reference.....	8
4.14	Origin of the rule or metric	8
4.15	Rule automatic check capability.....	8
4.16	Metric measurability	8
4.17	Example of use of the template	9
Annex A	Quality characteristics and sub-characteristics impacted by the rules.....	10
Annex B	Rules and metrics categories	13

1 Scope

The quality or methodology departments of all major European automotive, electronic, telecom and aerospace companies try to ensure that code developed within the company adheres to certain coding guidelines. These rules cover aspects of programming style that relate to, for example, the reusability, maintainability, portability and documentation of the code. The coding guidelines are either industry standards or rules that have been specified within the company, and typically exist in the form of written documents accessible by all programmers or designers.

The purpose of this document is to define a specification for the presentation of quality rules and metrics.

2 Definitions

The following terms that are used in this document are defined below in subclauses 2.1 to 2.4:

- classifications;
- quality characteristics (and sub-characteristics);
- rulesets;
- policy;
- level of severity;
- rules;
- metrics;
- rules and metrics representation template.

2.1 Classification

2.1.1 QA point of view

For the Quality Assurance department, an outstanding report must indicate which impact on quality have been evaluated (how much the code is portable, maintainable, usable...), so that they can qualify the code during design reviews according to the projects they are reviewing (re-usable macros, specific designs,...). Thus

- coding rules should be classified according to **impact on quality characteristics**, e.g. portability, maintainability, usability or else.
- the level of severity of the rule should depend on the project e.g. when the rule impacting portability fails for re-usable macro it has to output a fatal error.

To achieve this, they need

- to be able to bundle rules into “**rulesets**” according to their impacts on quality,
- and to bundle “rulesets” into “**policies**” according to the type of designs (re-usable macro, specific designs,...), to the tools used (for simulation and synthesis efficiency), to the technology (Actel, Altera, Xilinx,...) and to assign each ruleset with a **level of severity** (fatal, error, warning, note) in the ruleset/policy link.

2.1.2 Designer point of view

For the designer an outstanding report must indicate which rules fail, why and eventually which chapter he has to read in the **Language Reference Manual**, to fix it.