

# SQuaRE

Une introduction



# SQuaRE

Software Engineering - Software product  
Quality Requirements and Evaluation  
(SQuaRE)

- ❖ ISO/CEI 9126 -x « Caractéristiques de qualité du logiciel et métriques »
- ❖ ISO/IEC 14598-x « Évaluation du produit logiciel »

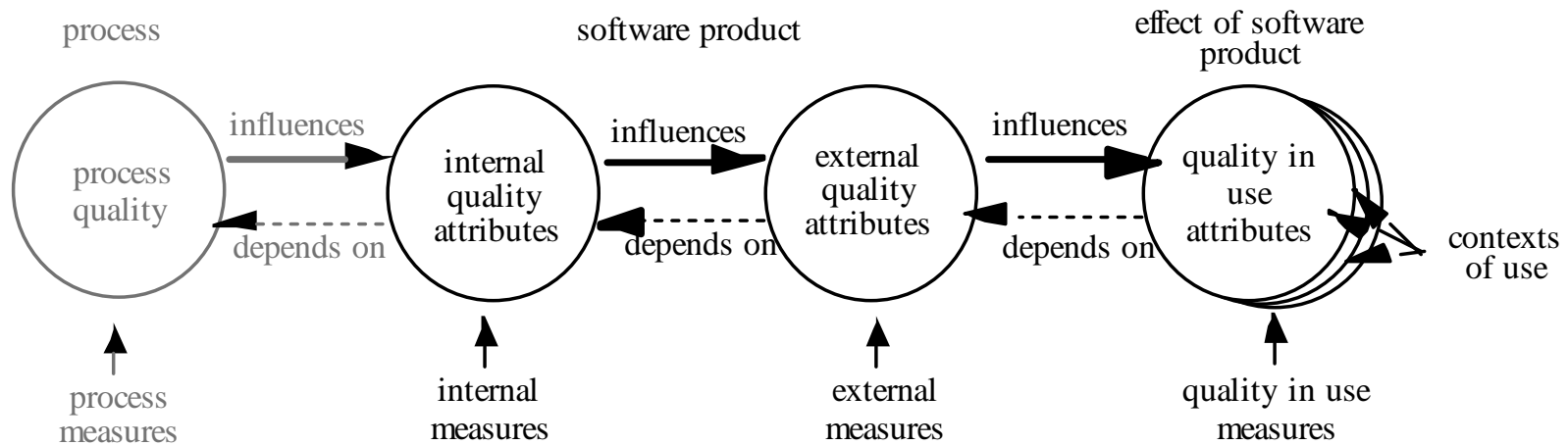
# ISO/IEC 9126: Software Product Quality

- ❖ **Part 1: Quality Model (2001)**
- ❖ **Part 2: External Metrics (2003)**
- ❖ **Part 3: Internal Metrics (2003)**
- ❖ **Part 4: Quality In Use Metrics (2004)**

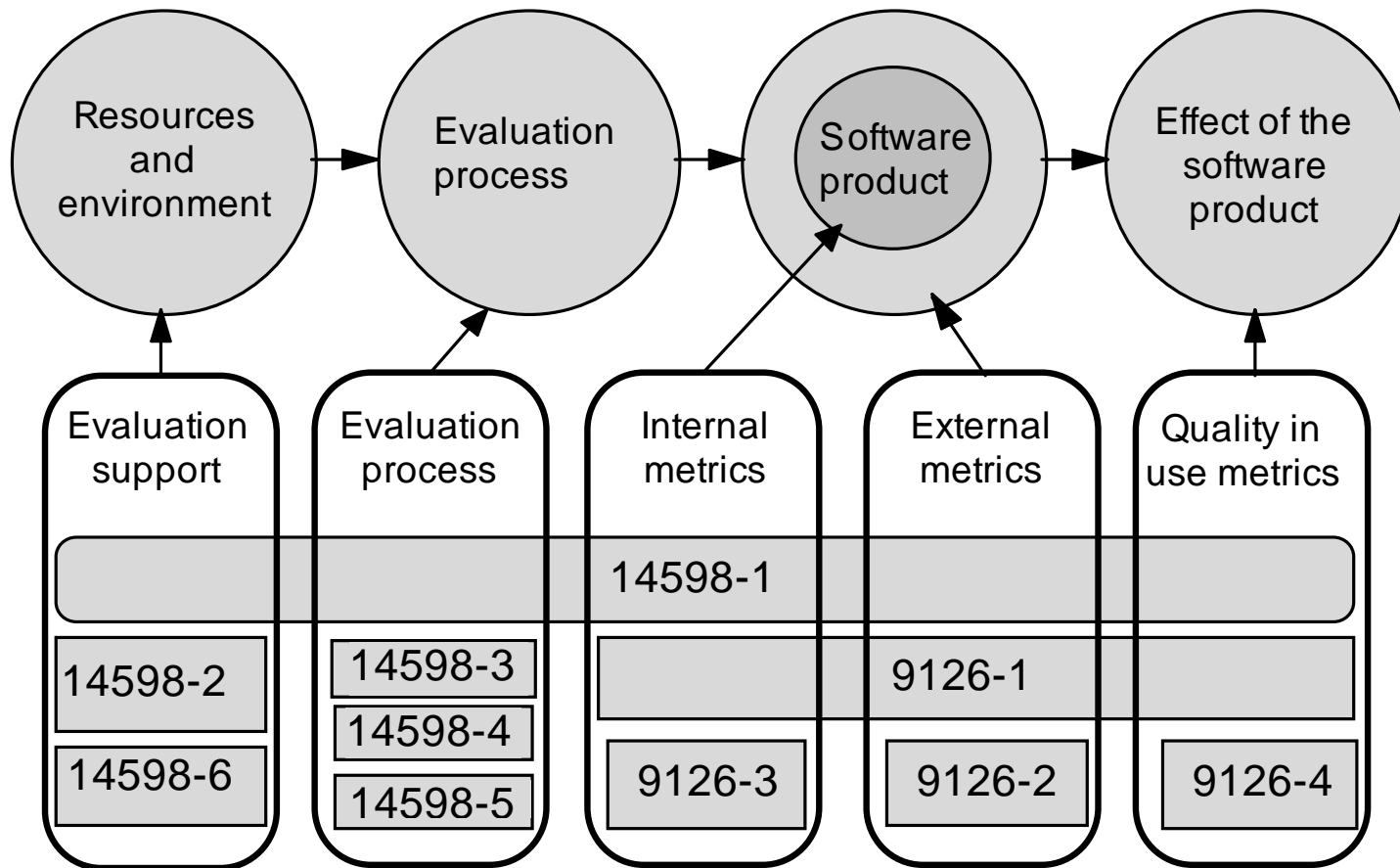
# ISO/IEC 14598: Software Product Evaluation

- ❖ **Part 1: General Overview (1999)**
- ❖ **Part 2: Planning and Management (2000)**
- ❖ **Part 3: Process for Developers (2000)**
- ❖ **Part 4: Process for Acquirers (1999)**
- ❖ **Part 5: Process for Evaluators (1998)**
- ❖ **Part 6: Documentation of Evaluation Module (2001)**

# Quality in the life cycle

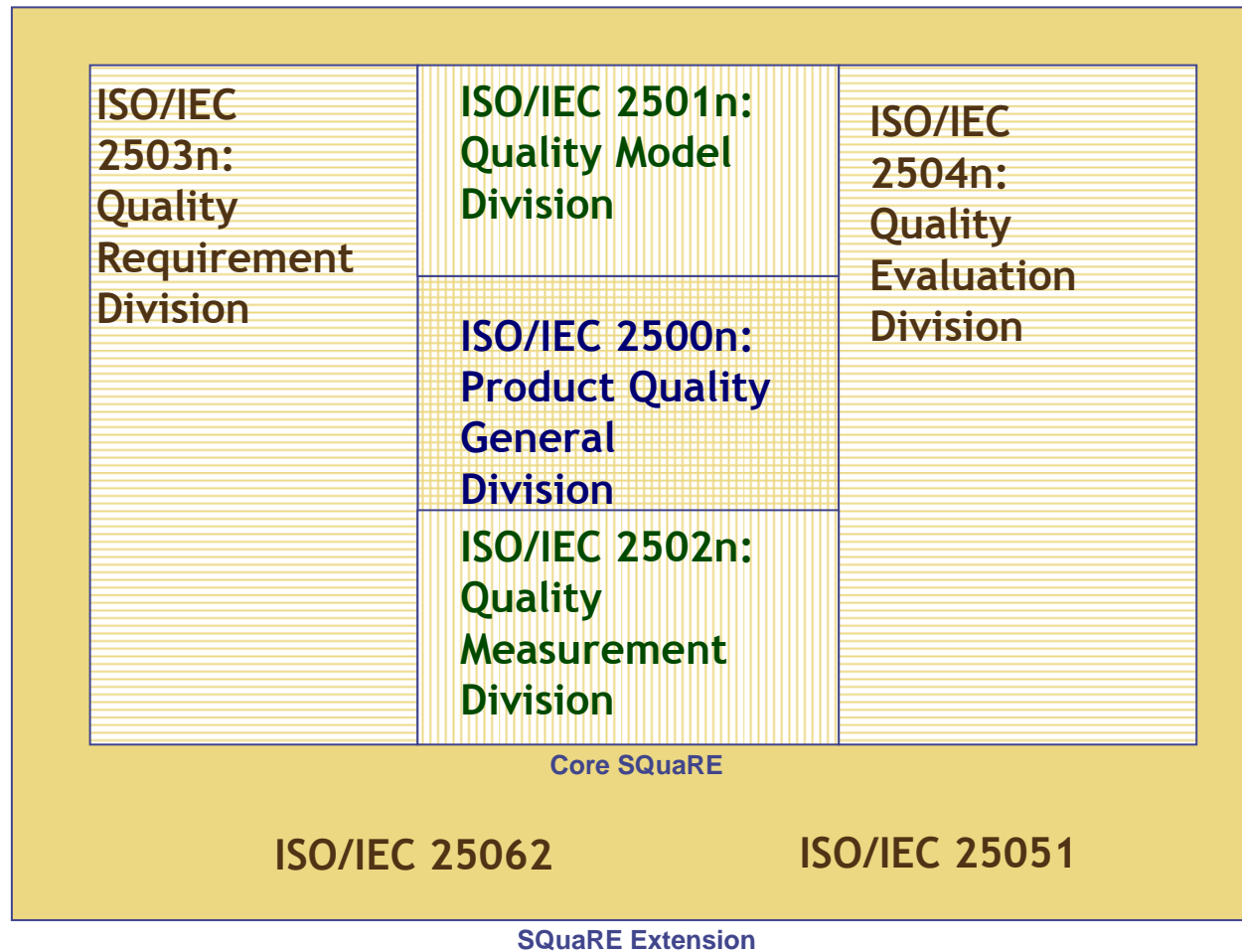


# Relationship between ISO/IEC 9126 and ISO/IEC 14598 International Standards



❖ ISO/CEI 250xx Software engineering -  
Software product Quality  
Requirements and Evaluation (SQuaRE)





# SQuaRE - 2500n:

## Software Product Quality Division

2500n: Software Product Quality

25000: Guide to the SQuaRE

**Umbrella document**  
**SQuaRE architecture model**  
**Terminology from 14598-1**  
**Overview from 9126-1.**

25001: Planning and Management

**Replace 14598-2**

# ISO/IEC 25000: Guide to the **SQuaRE**

## ❖ Purpose and Justification:

- Provide a general overview of SQuaRE as the umbrella document of the SQuaRE series.
- Guide users to use the SQuaRE series.

## ❖ Major Contents and Scope:

- Common reference models and definitions, as well as the relationship among the documents.
- SQuaRE architecture model, terminology and overview
- Explanation of the transition process between the old ISO/IEC 9126 and the 14598 series and SQuaRE
- Information on how to use the ISO/IEC 9126 and 14598 series in their previous form

## ❖ Input:

- ISO/IEC 9126-1, ISO/IEC 14598-1

# SQuaRE - 25010:Quality Model Division

## 2501n: Quality Model

### 25010: Quality Model

Current 9126-1 minus generic explanations and quality metrics. Guide to Use of a quality model.

### 25012: Data Quality Model

New

# 25010: Quality Model and Guide

## ❖ Purpose and Justification:

- Describe a model for software product quality
- Guide users to apply the model to the specific product

## ❖ Major Contents and Scope:

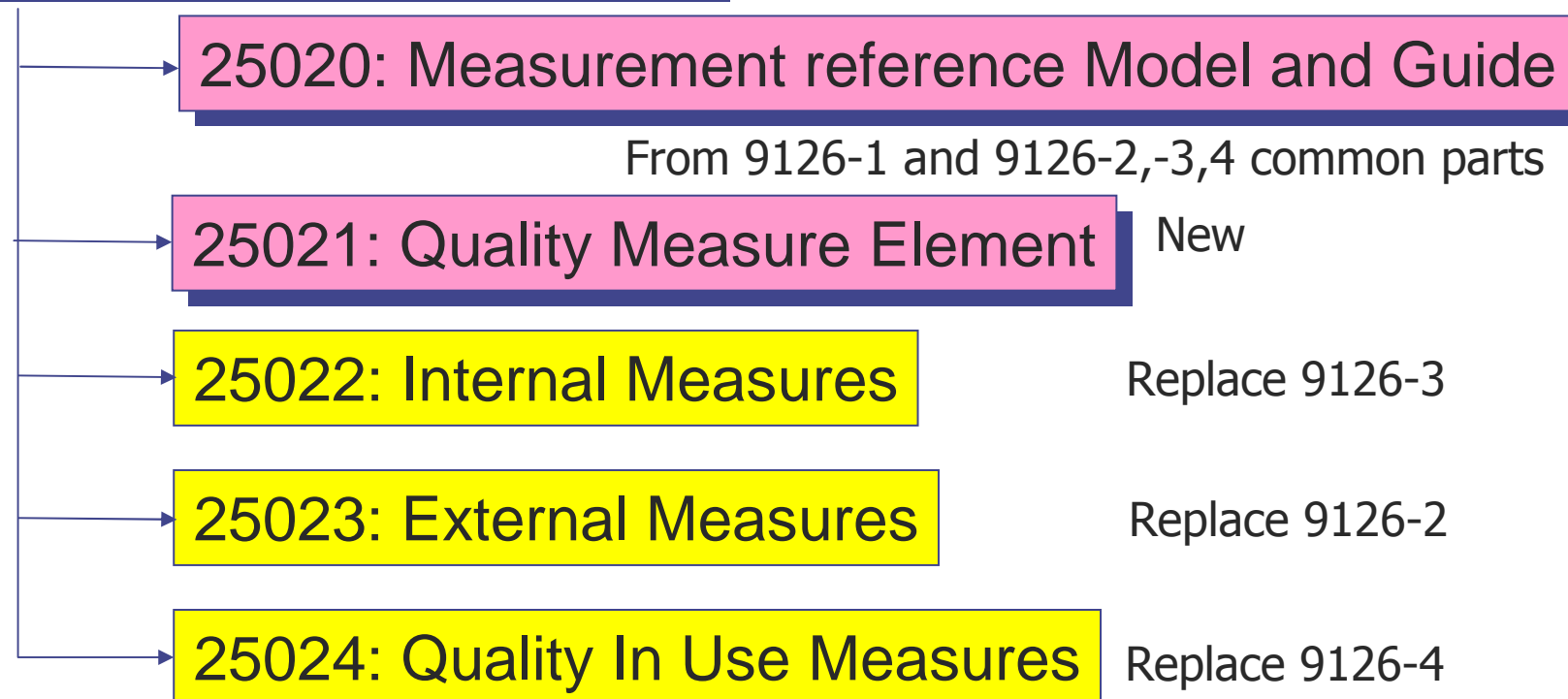
- Internal quality, external quality and quality in use
- Characteristics and sub-characteristics for internal and external quality
- Characteristics for quality in use
- Guide to use the quality model

## ❖ Input:

- ISO/IEC 9126-1, 14598-1

# SQuaRE - 2502n: Quality Measures Division

## 2502n: Quality Measures



# 25020: Measurement Reference Model and Guide

## ❖ Purpose and Justification:

- Give general information on the quality measurement as an umbrella document of the division.
- Give guides for selection and construction of software product quality measures.

## ❖ Major Contents:

- Overview, reference model and definitions. -- General requirements (shall) for use of measures.
- Guidance to users for selecting or developing, and applying metrics.
- Criteria for selecting software quality measures and quality measure elements. (Annex)
- Demonstrating predictive validity and assessing measurement reliability. (Annex)
- Example format for documenting software quality measures. (Annex)

## ❖ Input:

- ISO/IEC 9126-1, 14598-1

# 25021: Quality Measure Elements (QME)

## ❖ Purpose and Justification:

- Recommend a set of QME that are used frequently.
- This set of QME can be used for quality requirements definition, quality evaluation, and for the prediction of other software engineering characteristics.

## ❖ Major Contents:

- a) Description of the concept of Quality measure elements.
- b) Considerations for using Quality measure elements.
- c) A recommended set of Quality measure elements.

## ❖ Input:

- ISO/IEC 9126-1, -2, -3, -4, ISO/IEC 14598-1



# SQuaRE - 2503n: Quality Requirement Division

## 2503n: Quality Requirement

Single volume standard and guides

### 25030: Quality Requirements

General guide to Quality Requirements  
 Requirements for Quality Requirements  
 Quality in Use Requirement  
 External Quality Requirement  
 Internal Quality Requirement

# 25030: Quality Requirements

## ❖ Purpose and Justification:

Provide requirements and guides;

- To identify software quality requirements,
- To validate the completeness of a requirements specification, and
- To identify quality assurance criteria and acceptance criteria for a software product.

## ❖ Major Contents and Scope:

- Concept of Quality Requirements.
- Requirements and recommendations for the specification of software product quality requirements.

## ❖ Input:

- ISO/IEC 9126-1,14598-1

# SQuaRE - 2504n: Quality Evaluation Division

## 2504n: Quality Evaluation

25040: Evaluation Process Overview

Major revision of 14598-1

25041: Developers Process

Minor revision

25042: Acquirers Process

Minor revision

25043: Evaluators process

Minor revision

25044: Evaluation module

Minor revision

# 25040: Evaluation Process Overview

## ❖ Purpose and justification:

- Describe the generic evaluation process.
- Guide users to apply the quality model and measures.

## ❖ Major Contents and Scope:

- Introduction of the other parts of 2504n division.
- General requirements for specification, design and execution of software product evaluation process.
- Framework for evaluating software product.
- Requirements for methods of software product measurement and evaluation.

## ❖ Input:

- ISO/IEC 9126-1, ISO/IEC 14598-1

- ❖ ISO/IEC WD 25045, Software Engineering - Software product Quality Requirements and Evaluation (SQuaRE) - Evaluation Module for Recoverability

# Relationship and transition process between ISO/IEC 9126, ISO/IEC 14598 and SQuaRE series of standards



CURRENT		SQuaRE
<b>9126: Product quality</b>		<b>25000: Quality Management Division</b>
-1: Quality model		25000: Guide to SQuaRE (NP)
-2: External metrics		25001: Planning and management
-3: Internal metrics		<b>25010: Quality Model Division</b>
-4: Quality in use metrics		25010: Quality model (Rev)
		<b>25020: Quality Measurement Division</b>
<b>New Proposal</b>		25020: Measurement reference model and guide (NP)
Guides to use 9126 & 14598		25021: Measurement primitives (NP)
Base metrics		25022: Measurement of internal quality
Quality requirements		25023: Measurement of external quality
		25024: Measurement of quality in use
<b>14598: Product evaluation</b>		<b>25030: Quality Requirements Division</b>
-1: General overview		25030: Quality requirements (NP)
-2: Planning and management		<b>25040: Quality Evaluation Division</b>
-3: Proc for developers		25040: Quality evaluation reference model and guide
-4: Proc for acquirers		25041: Evaluation modules
-5: Proc for evaluators		25042: Process for developers
-6: Doc of evaluation modules		25043: Process for acquirers
		25044: Process for evaluators

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