

ISO/IEC 24744:2014-11 (E)

Software engineering - Metamodel for development methodologies

| Contents | | Page |
|--|---|-------------|
| Foreword | | v |
| Introduction | | vi |
| 1 | Scope | 1 |
| 2 | Conformance | 1 |
| 3 | Terms and definitions | 1 |
| 4 | Naming, diagramming and definition conventions, and abbreviated terms | 3 |
| 4.1 | Naming, diagramming and definition conventions | 3 |
| 4.2 | Abbreviations | 4 |
| 5 | Basic Concepts | 4 |
| 5.1 | Method Engineering | 5 |
| 5.2 | Dual-Layer Modelling | 5 |
| 5.3 | Powertypes and Clabjects | 5 |
| 5.4 | Uniting Process and Product | 6 |
| 5.5 | Process Assessment | 6 |
| 6 | Introduction to the SEMDM | 7 |
| 6.1 | Highly Abstract View | 7 |
| 6.2 | Abstract View and Core Classes | 7 |
| 6.3 | Process Classes | 8 |
| 6.4 | Producer Classes | 10 |
| 6.5 | Product Classes | 11 |
| 6.6 | Connection between Process and Product | 12 |
| 6.7 | Support Classes | 13 |
| 7 | Metamodel Elements | 14 |
| 7.1 | Classes | 14 |
| 7.2 | Enumerated Types | 61 |
| 8 | Using the Metamodel | 62 |
| 8.1 | Usage Rules | 62 |
| 8.2 | Usage Guidelines | 63 |
| 9 | Extending the Metamodel | 64 |
| 9.1 | Extension Rules | 64 |
| 9.2 | Extension Guidelines | 65 |
| Annex A (informative) Worked Example | | 66 |
| A.1 | SimpleMethod Description | 66 |
| A.2 | Construction of Process Components | 66 |
| A.3 | Construction of Producer Components | 68 |
| A.4 | Construction of Product Components | 68 |
| A.5 | Connection Between Process and Product Components | 70 |
| Annex B (informative) Mappings to Other Metamodelling Approaches | | 72 |

| | | |
|---|---------------------------|----|
| B.1 | OMG SPEM 1.1 | 72 |
| B.2 | OOSPICE | 73 |
| B.3 | OPEN | 73 |
| B.4 | LiveNet | 74 |
| Annex C (informative) Graphical Notation | | 76 |
| C.1 | Introduction | 76 |
| C.2 | Notation Elements | 77 |
| C.3 | Diagram Types | 88 |
| C.4 | Abbreviation Tables | 94 |
| Bibliography | | 96 |
| Table of Figures Figure 1 - The three areas of expertise, or domains, which act as a context for SEMDM. Arrows mean "is represented by" | | 4 |
| Figure 2 - Example of a powertype pattern and clabject. The Document class is partitioned by the DocumentKind powertype. The RequirementsSpecificationDocument class plus the rsd object represent a particular kind of document, making up a clabject. The rsd1 object represents a particular requirements specification document | | 6 |
| Figure 3 - Highly abstract view of the SEMDM | | 7 |
| Figure 4 - Abstract view of the SEMDM, showing the core classes in the metamodel | | 8 |
| Figure 5 - Work units | | 9 |
| Figure 6 - Stages | | 10 |
| Figure 7 - Producers | | 11 |
| Figure 8 - Work product and modelling classes | | 12 |
| Figure 9 - Actions and constraints | | 13 |
| Figure 10 - Support classes | | 13 |
| Figure C.1 - A lifecycle diagram showing the temporal structure of a complete method | | 89 |
| Figure C.2 - A lifecycle diagram showing the content structure as well as the temporal structure of a method | | 90 |
| Figure C.3 - An enactment diagram for the "Construction" phase kind of Figure C.2 | | 91 |
| Figure C.4 - A dependency diagram based on a refinement of Figure C.2 | | 92 |
| Figure C.5 - A process diagram showing the details of the "Requirements Engineering" and "Requirements Quality Assurance" processes | | 93 |
| Figure C.6 - An action diagram showing the interaction between some task kinds pertaining to the "Requirements Engineering" and "Requirements Quality Assurance" processes and some related document kinds | | 94 |