

ISO/IEC 26553:2018 (E)

Information technology — Software and systems engineering — Tools and methods for product line realization

Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Reference model for product line realization
4.1	Overview
4.2	Organization realization management
4.3	Domain realization
4.4	Domain implementation
4.5	Asset management in realization
4.6	Detailed application application design
4.7	Application implementation
4.8	Variability management in realization
5	Organizational realization management
5.1	General
5.2	Organizational planning for realization
5.2.1	Principal constituents
5.2.1.1	Purpose
5.2.1.2	Inputs
5.2.1.3	Outcomes
5.2.1.4	Tasks
5.2.2	Confirm the readiness of realization
5.2.3	Define realization plans
5.3	Organizational enabling environment for realization
5.3.1	Principal constituents
5.3.1.1	Purpose
5.3.1.2	Inputs
5.3.1.3	Outcomes
5.3.1.4	Tasks
5.3.2	Analyse requirements for enabling environments
5.3.3	Establish and maintain enabling environments
5.3.4	Enable interoperability among related infrastructure elements
5.4	Organizational operational managing for realization
5.4.1	Principal constituents
5.4.1.1	Purpose
5.4.1.2	Inputs
5.4.1.3	Outcomes
5.4.1.4	Tasks
5.4.2	Monitor and control progress in realization
5.4.3	Make corrective action and improvement in realization
6	Detailed domain design
6.1	General
6.2	Detailed domain design initiation
6.2.1	Principal constituents
6.2.1.1	Purpose

- 6.2.1.2 Inputs
- 6.2.1.3 Outcomes
- 6.2.1.4 Tasks
- 6.2.2 Review COTS from detailed design perspective
- 6.2.3 Confirm inputs for detailed domain design
- 6.2.4 Confirm detailed domain design capability
- 6.3 Detailed domain interface design
 - 6.3.1 Principal constituents
 - 6.3.1.1 Purpose
 - 6.3.1.2 Inputs
 - 6.3.1.3 Outcomes
 - 6.3.1.4 Tasks
 - 6.3.2 Examine interactions among domain components
 - 6.3.3 Define the detailed internal structures of domain interfaces
 - 6.3.4 Verify and validate detailed domain interface design
 - 6.3.5 Document detailed domain interface design
- 6.4 Detailed domain component design
 - 6.4.1 Principal constituents
 - 6.4.1.1 Purpose
 - 6.4.1.2 Inputs
 - 6.4.1.3 Outcomes
 - 6.4.1.4 Tasks
 - 6.4.2 Define the detailed internal structures of domain components
 - 6.4.3 Verify and validate detailed domain component design
 - 6.4.4 Prepare test inputs for unit testing
 - 6.4.5 Document detailed domain component design
- 6.5 Detailed software domain artefact design
 - 6.5.1 Principal constituents
 - 6.5.1.1 Purpose
 - 6.5.1.2 Inputs
 - 6.5.1.3 Outcomes
 - 6.5.1.4 Tasks
 - 6.5.2 Define Detailed software domain artefact design
 - 6.5.3 Verify and validate detailed software domain artefact design
 - 6.5.4 Prepare test inputs for unit testing
 - 6.5.5 Document detailed software domain artefact design

7 Domain implementation

- 7.1 General
- 7.2 Detailed domain implementation initiation
 - 7.2.1 Principal constituents
 - 7.2.1.1 Purpose
 - 7.2.1.2 Inputs
 - 7.2.1.3 Outcomes
 - 7.2.1.4 Tasks
 - 7.2.2 Confirm inputs for domain implementation
 - 7.2.3 Confirm domain implementation capability
- 7.3 Domain interface implementation
 - 7.3.1 Principal constituents
 - 7.3.1.1 Purpose
 - 7.3.1.2 Inputs
 - 7.3.1.3 Outcomes
 - 7.3.1.4 Tasks
 - 7.3.2 Implement domain interface
 - 7.3.3 Build domain interfaces
 - 7.3.4 Verify and validate domain interface implementation
- 7.4 Domain component implementation
 - 7.4.1 Principal constituents
 - 7.4.1.1 Purpose
 - 7.4.1.2 Inputs
 - 7.4.1.3 Outcomes
 - 7.4.1.4 Tasks
 - 7.4.2 Implement domain components
 - 7.4.3 Build domain components

- 7.4.4 Verify and validate domain component implementation
- 7.4.5 Integrate domain components
- 7.5 Software domain artefact implementation
 - 7.5.1 Principal constituents
 - 7.5.1.1 Purpose
 - 7.5.1.2 Inputs
 - 7.5.1.3 Outcomes
 - 7.5.1.4 Tasks
 - 7.5.2 Implement software domain artefacts
 - 7.5.3 Build software domain artefacts
 - 7.5.4 Verify and validate software domain artefacts
- 8 Variability management in realization
 - 8.1 General
 - 8.2 Variability mechanism category in realization
 - 8.2.1 Principal constituents
 - 8.2.1.1 Purpose
 - 8.2.1.2 Inputs
 - 8.2.1.3 Outcomes
 - 8.2.1.4 Tasks
 - 8.2.2 Identify variability mechanisms in realization by category
 - 8.2.3 Guide the use of variability mechanism category in realization
 - 8.2.4 Trace the usage status of variability mechanism category in realization
 - 8.2.5 Update variability mechanism category in realization
 - 8.3 Variability in realization
 - 8.3.1 Principal constituents
 - 8.3.1.1 Purpose
 - 8.3.1.2 Inputs
 - 8.3.1.3 Outcomes
 - 8.3.1.4 Tasks
 - 8.3.2 Model variability in realization
 - 8.3.3 Maintain variability mechanisms in realization
 - 8.3.4 Document variability in realization
 - 8.4 Traceability of variability in realization
 - 8.4.1 Principal constituents
 - 8.4.1.1 Purpose
 - 8.4.1.2 Inputs
 - 8.4.1.3 Outcomes
 - 8.4.1.4 Tasks
 - 8.4.2 Define trace links among variability in different realization artefacts
 - 8.4.3 Define trace links between realization artefacts and variability model
- 9 Asset management in realization
 - 9.1 General
 - 9.2 Detailed domain design artefacts as domain assets
 - 9.2.1 Principal constituents
 - 9.2.1.1 Purpose
 - 9.2.1.2 Inputs
 - 9.2.1.3 Outcomes
 - 9.2.1.4 Tasks
 - 9.2.2 Identify detailed design artefacts managed as domain assets
 - 9.2.3 Define configuration and annotation in detailed domain design
 - 9.3 Domain implementation artefacts as domain assets
 - 9.3.1 Principal constituents
 - 9.3.1.1 Purpose
 - 9.3.1.2 Inputs
 - 9.3.1.3 Outcomes
 - 9.3.1.4 Tasks
 - 9.3.2 Identify domain implementation artefacts managed as domain assets
 - 9.3.3 Define configuration and annotation in domain implementation
 - 9.4 Attached process for reusing domain realization assets
 - 9.4.1 Principal constituents
 - 9.4.1.1 Purpose
 - 9.4.1.2 Inputs

- 9.4.1.3 Outcomes
 - 9.4.1.4 Tasks
 - 9.4.2 Identify processes adhered for realization asset reuse
 - 9.4.3 Make attached process as a part of domain realization assets
 - 9.5 Detailed application design artefacts as application assets
 - 9.5.1 Principal constituents
 - 9.5.1.1 Purpose
 - 9.5.1.2 Inputs
 - 9.5.1.3 Outcomes
 - 9.5.1.4 Tasks
 - 9.5.2 Identify detailed application design artefacts managed as application assets
 - 9.5.3 Define configuration and annotation in detailed application design
 - 9.6 Application implementation artefacts as application assets
 - 9.6.1 Principal constituents
 - 9.6.1.1 Purpose
 - 9.6.1.2 Inputs
 - 9.6.1.3 Outcomes
 - 9.6.1.4 Tasks
 - 9.6.2 Identify application implementation artefacts as application assets
 - 9.6.3 Define configuration and annotation of application implementation
- 10 Detailed application design
- 10.1 General
 - 10.2 Detailed application design initiation
 - 10.2.1 Principal constituents
 - 10.2.1.1 Purpose
 - 10.2.1.2 Inputs
 - 10.2.1.3 Outcomes
 - 10.2.1.4 Tasks
 - 10.2.2 Derive detailed application design from detailed domain design
 - 10.2.3 Validate derived detailed application design
 - 10.2.4 Confirm detailed application design capability
 - 10.3 Detailed application interface design
 - 10.3.1 Principal constituents
 - 10.3.1.1 Purpose
 - 10.3.1.2 Inputs
 - 10.3.1.3 Outcomes
 - 10.3.1.4 Tasks
 - 10.3.2 Examine interactions among application components
 - 10.3.3 Define the detailed internal structures of application interfaces
 - 10.3.4 Verify and validate detailed application interface design
 - 10.3.5 Document detailed application interface design
 - 10.4 Detailed application component design
 - 10.4.1 Principal constituents
 - 10.4.1.1 Purpose
 - 10.4.1.2 Inputs
 - 10.4.1.3 Outcomes
 - 10.4.1.4 Tasks
 - 10.4.2 Identify, evaluate and select COTS
 - 10.4.3 Define the detailed internal structures of application components
 - 10.4.4 Verify and validate detailed application component design
 - 10.4.5 Document detailed application component design
 - 10.5 Detailed software application artefact design
 - 10.5.1 Principal constituents
 - 10.5.1.1 Purpose
 - 10.5.1.2 Inputs
 - 10.5.1.3 Outcomes
 - 10.5.1.4 Tasks
 - 10.5.2 Define the detailed internal structures of software application artefacts
 - 10.5.3 Verify and validate detailed software application artefact design
 - 10.5.4 Document the detailed design of software application artefacts
- 11 Application implementation
- 11.1 General

- 11.2 Application implementation initiation
 - 11.2.1 Principal constituents
 - 11.2.1.1 Purpose
 - 11.2.1.2 Inputs
 - 11.2.1.3 Outcomes
 - 11.2.1.4 Tasks
 - 11.2.2 Derive application implementation from domain implementation
 - 11.2.3 Validate derived application implementation
 - 11.2.4 Confirm application implementation capability
- 11.3 Application interface implementation
 - 11.3.1 Principal constituents
 - 11.3.1.1 Purpose
 - 11.3.1.2 Inputs
 - 11.3.1.3 Outcomes
 - 11.3.1.4 Tasks
 - 11.3.2 Implement the application interfaces
 - 11.3.3 Build application interfaces
 - 11.3.4 Verify and validate application interface implementation
- 11.4 Application component implementation
 - 11.4.1 Principal constituents
 - 11.4.1.1 Purpose
 - 11.4.1.2 Inputs
 - 11.4.1.3 Outcomes
 - 11.4.1.4 Tasks
 - 11.4.2 Implement application components
 - 11.4.3 Build application components
 - 11.4.4 Verify and validate application component implementation
 - 11.4.5 Integrate application components
- 11.5 Software application artefact implementation
 - 11.5.1 Principal constituents
 - 11.5.1.1 Purpose
 - 11.5.1.2 Inputs
 - 11.5.1.3 Outcomes
 - 11.5.1.4 Tasks
 - 11.5.2 Implement software application artefacts
 - 11.5.3 Build software application artefacts
 - 11.5.4 Verify and validate software application artefact implementation
 - 11.5.5 Integrate software application artefacts

Annex A (informative) Scope of realization activities

Page count: 61