Object-Oriented Systems Engineering Method (OOSEM)

Reference Example

Project Overview

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Project Modules

- Project Overview
- Walkthrough as-is system model for the reference example
- Walkthrough to-be system model for the reference example

OOSEM Reference Example

- Objectives
  - Reinforce what was learned in the OOSEM tutorial
  - Use the reference example to help guide the application of OOSEM to a system of your choosing
  - Guidance focuses on the method and **not** on language and tool instruction
- Approach
  - Establish one or more teams of up to 5 people each if this is a team project
  - Select an example system to apply OOSEM
  - Set up the modeling environment
  - Capture as-is system model if not provided
  - Apply OOSEM to identify and implement an improvement to your system
    - Incrementally update the system specification and design artifacts to create the to-be system model
- Deliverables
  - As-is system model if not provided
  - To-be system model

Example System Selection Criteria

- Interesting / engaging
- Relevant to your company/organization
- Familiar to most people on the team
- Ability to share publicly
- Right level of complexity to exercise the method

Note 1: Household items such as a refrigerator, A/C, or TV are often good candidates

Reference Example

- Develop an improved capability for a dishwasher
- Addresses a subset of OOSEM activities and artifacts to reduce the complexity and time required for the project

OOSEM Activities

- Setup Model
- Analyze Stakeholder Needs
- Analyze System Requirements
- Define Logical Architecture
- Synthesize Candidate Physical Architectures
- Optimize and Evaluate Alternatives
- Manage Requirements Traceability
- Integrate and Verify System

Modeling Artifacts (To-Be System)

0	Navigation Diagrams	bdd
1	Model Organization	pkg
2	Causal Analysis	other
3	Mission (Market) Requirements	req
4	Use Cases	uc
5	Context Level BDD	bdd
6	System Requirements	req
7	System Context	ibd
8	Input-Output Definitiions	bdd
9	Activity Diagram 1 for Use Case 1	act
10	Black Box Specification	bdd
11	System State Machine	stm
12	System Logical Breakdown	bdd
13	Activity-Logical for System Function 1	act
14	System Logical Interconnection	ibd
15	Design Options	bdd
16	Logical to Physical Allocation Table	bdd
17	System Physical Breakdown	bdd
18	Activity-Physical for System Function 1	act
19	System Physical Interconnection	ibd
20	Analysis Context BDD	bdd
21	Analysis 1 BDD	bdd
22	Analysis 1 Parametric Diagram	par
23	Specification Tree	req
24	Requirement Traceability	req
25	Verification Context	bdd
26	Test Case 1	act

Project Evaluation Criteria

- Completeness
  - Is there an example for each of the requested modeling artifacts
  - Is each artifact similar in detail to the reference example
  - Is there sufficient detail to demonstrate how the basic language features and method concepts are applied
- Correctness of language and method
  - Are the language concepts being used properly
  - Are the method concepts being applied properly
- Diagram layout quality
  - Is the diagram layout clean and clear
  - Are naming and other conventions being adhered to