Product Line Engineering with Cameo Systems Modeler and pure::variants

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About Presenter

- **Focus areas:** Software Engineering (UML), Enterprise Architecture (UPDM, UAF), Business Process Modeling (BPMN), Systems Modeling (SysML)

- **Responsibilities:** consultations, online and onsite training, customer support, guest speaker at Kaunas University of Technology

- **Before:** Engineer and Project Manager in ultrasonic hardware and firmware development, R&D in Ultrasonics at the same university

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Q&A: Type your questions here

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Agenda

1. What is PLE and why should you care?
2. CSM & pure::variants Integration Overview
3. Integration Demo
4. Q&A
What’s this Webinar about?

- To demonstrate a Top-Down PLE case:
  - Creating feature and product models in pure::variants
  - Linking the product models to the system model in CSM
  - Defining variation points in the system model
  - Realizing a specific variant (product) of the system model

- To provide a good starting point for using PLE
Tool for Systems Modeling

• MBSE environment for system architects, system analysts, developers, quality engineers, etc.
• One of the most popular UML / SysML tools in the market
• Widely regarded as the most standard-compliant tool
• Designed for customization to meet customer needs

Tool for Variant Management

- Variant Management for Complex Systems and Software Engineering
- Tool to create and maintain reusable SysML models together with Cameo Systems Modeler
- It allows product variants to be automatically created from a ‘150% System Model’ by feature selection in pure::variants
- Integrates with other Tools in the PLE context

What is PLE?

- **Product Line Engineering (PLE)** is the engineering of a family of related products using a shared set of (digital) engineering assets.
- In case of physical systems, before the actual production of a product line begins, a whole set of digital artifacts must be maintained to describe the entire family (variants) of products.
- Manages the commonalities and variabilities in the product line.
- Various product variants can be derived from the common product family.
Why PLE and Variant Management?

- Managing individual assets *separately* for each product variation is difficult if not impossible
- Update and maintenance problem?
- Automated generation of Product models
- Can cover:
  - Requirements management systems
  - Object-oriented modeling tools
  - Configuration management systems
  - Bug tracking systems, code generators, compilers, source code documentation
  - etc…
CSM and pure::variants Integration

Diagram showing the integration between CSM and pure::variants, highlighting the relationships between Feature Model, Family Model, Variant Description (Product) Model, Cameo Systems Modeler, 150% System Model, and Product System Model.
The domain for this demo is a Coffee Machine Product Family with the following Variations:

- **Coffee Machine for:**
  - European, US, Indian and Australian markets

- **Coffee Grinder:**
  - Low or High humidity

- **Edition types:**
  - Standard and Deluxe
  - with different coffee brewing options

- **Power adapter:**
  - 120 V, 220 V, Universal
Let’s Begin!
Thank You!

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