



Common Variability Language Request for Proposal – CVL RFP

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Background

- Earlier presentations for ADTF on variability modeling
 - ad/05-02-10: Product families – another area for OMG technology?
 - ad/08-03-05: Should the OMG standardize variability modeling?
 - ad/09-03-10: CVL -Common Variability Language
 - ad/09-08-07: Common Variability Language DRAFT RFP
- Current resources
 - ad/2009-11-02: CVL RFP (before 4 week deadline)
 - ad/2009-12-02: CVL RFP (iteration after review by AB members)
 - ad/2009-12-03: CVL RFP (iteration after AB meeting)
 - Wiki: <http://variabilitymodeling.org>
 - E-mail list: cvl@omg.org
 - Series of WebEx meetings



What do we mean by “variability”?



- Product Line variance
 - often variants of the same software base
- Cross-cutting variability
 - often variability is orthogonal to the software design
 - variability needs are discovered after the first software design
- The variability designer is not always the software designer
 - division of labor and of competences

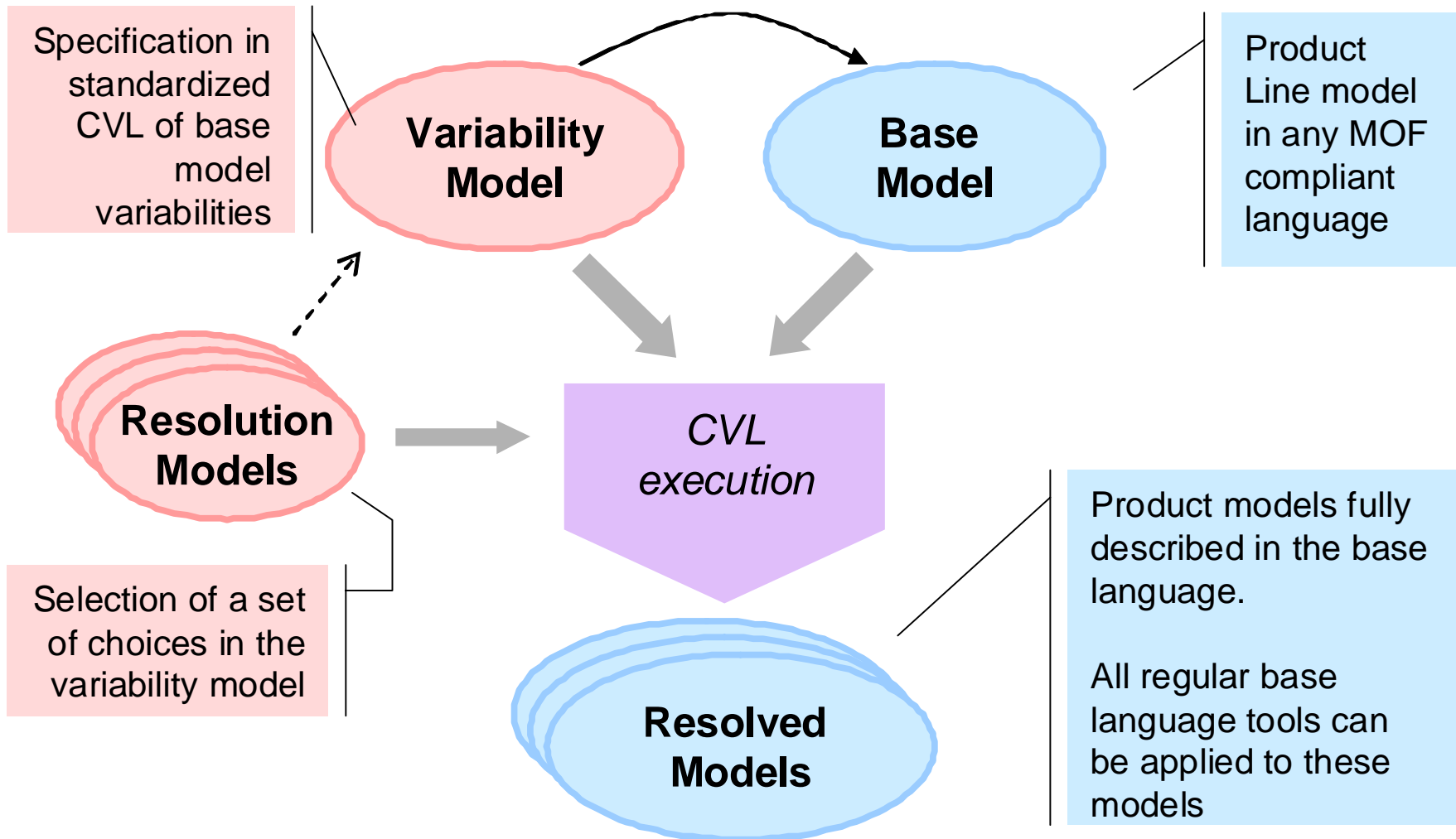


Objective

- The objective of this RFP is to enable the specification of the **variability in product line models** in order to support seamless product line modeling across the whole product line engineering process.
- This CVL RFP requests a specification language including a **metamodel, semantics** and **concrete syntax** for variability specification.
- Variability specifications shall relate to a base product line model that describes the whole product line and shall comprise:
 - a variability model with the following elements: a model of possible choices and relationships between those choices and the base model
 - resolution models which resolve variability (by a set of choices) and thus define specific product models.
- CVL shall support base models in languages that are defined by means of **MOF-compliant metamodels**, including UML and Domain Specific Languages.



CVL overview and terms





CVL RFP 6.5.1 Coverage

- 6.5.1.1 Proposals shall define a language that can express variabilities on models in **any** language that is defined by means of a **MOF-compliant metamodel**.
- The language shall support:
 - The most common **variability mechanisms**, like optionality, alternatives, etc. that have been acknowledged as mature within the fields of product line modeling and feature modeling.
 - **Constraints** on the variabilities;
 - **Abstraction mechanisms** that support the definition and application of compound variability specifications.
 - **Resolutions** of the variabilities, defining the set of actual choices.



CVL RFP 6.5.1 Coverage (cont.)

- 6.5.1.2 The proposed language shall specify variability as a model **separate** from the base model on which the variabilities apply.
- 6.5.1.3 The proposed language shall have mechanisms for relating variability specifications to those base model elements that are subject to variation. These **relationship mechanisms** may assume that base models are made in languages that are defined by MOF-compliant metamodels.
- 6.5.1.4 The proposed language shall be defined by means of a **MOF-compliant metamodel**.
- 6.5.1.5 Proposals shall provide a non-normative demonstration of a CVL description **applied to a base model in UML including profiles**.



CVL RFP 6.5.2 Semantics

- 6.5.2.1 The proposal shall **define the semantics** of the variability language **e.g. by using QVT** or other transformation languages. The execution of a variability model with specific resolutions should result in either alterations (at runtime) of an executing product (system), or materialize (by filtering or by generation) as a specific product model in the base language.



CVL RFP 6.5.3 Notation

- 6.5.3.1 Proposals shall specify the complete **concrete syntax** for CVL,
- 6.5.3.2 Proposals shall demonstrate how the notation of **Feature Diagrams** can be integrated within the concrete syntax of the proposed language.
- 6.5.3.3 Proposals shall define the **notation for relationships** either in separate descriptions or as annotations to the base model notation.



6.6 Optional Requirements

■ 6.6.1 Interface between CVL tool and base language tool

Proposals may define a **standardized interface** (e.g. by using IDL [IDL]) to be realized by the base model tools to support seamless integration with tools that support the variability language



6.7 and 6.8

■ 6.7 Issues to be discussed

- Proposals shall discuss to which degree the proposed language can be defined by other meta-metamodeling facilities than MOF.

■ 6.8 Evaluation Criteria

- To which degree the proposed language covers exactly the domain of variability mechanisms.
- The size and complexity of the language, favoring the small and simple.



CVL RFP Timetable

Event or Activity	Actual Date
<i>Preparation of RFP by TF</i>	<i>September 2009</i>
<i>RFP placed on OMG document server</i>	<i>September 2009</i>
<i>Approval of RFP by Architecture Board Review by TC</i>	<i>December 2009</i>
<i>TC votes to issue RFP</i>	<i>December 2009</i>
<i>LOI to submit to RFP due</i>	<i>May 2010</i>
<i>Initial Submissions due and placed on OMG document server (“Three week rule”)</i>	<i>August 2010</i>
<i>Voter registration closes</i>	
<i>Initial Submission presentations</i>	<i>September 2010</i>
<i>Preliminary evaluation by TF</i>	<i>October 2010</i>
<i>Revised Submissions due and placed on OMG document server (“Three week rule”)</i>	<i>February 2011</i>
<i>Revised Submission presentations</i>	<i>March 2011</i>
<i>Final evaluation and selection by TF Recommendation to AB and TC</i>	<i>June 2011</i>
<i>Approval by Architecture Board Review by TC</i>	<i>June 2011</i>
<i>TC votes to recommend specification</i>	<i>June 2011</i>
<i>BoD votes to adopt specification</i>	<i>June 2011</i>





Consequently: CVL RFP issuance

- ADTF votes to issue CVL RFP on 9. December 2009
- Initial submission in August 2010

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