

## Webinar Q & A : PRODUCT LINE ENGINEERING MEETS MBSE — THE BEST OF BOTH WORLDS – 1.28.16

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Q. Hello, return to Slide 22. I am sorry, but Requirements are not separated from Design models, sources code, test cases ....these disciplines are made basing on requirements formulated for each of discipline.

A. Yes, you are exactly right. The Multi-discipline dimension on slide 22 illustrates different disciplines in the Systems and Software Engineering Lifecycle. These disciplines — such as requirements, design models, source code and test cases — are interrelated explicitly or implicitly by traceability relationships. The intent of slide 22 is to illustrate that PLE Features (differentiating characteristics) are orthogonal concepts in a separate engineering dimension that will uniformly impact all of the areas in the multi-discipline dimension.

Q. Is the Gears PLE framework aligned with the upcoming AP-233 standard? AP-233 is a System Engineering data exchange standard (is part of STEP, and it's adoption is expected in the ... upcoming future ;-)

A. We do monitor data exchange standards — for example, OSLC — for applicability for PLE and variant management capabilities. Integrations into the Gears PLE Ecosystem require behavioral APIs as well, which are often lacking in standards related to data exchange. We'll put AP-233 our radar to see how we might contribute and align.

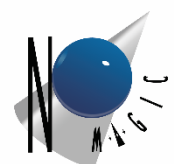
Q. Do you have bridges to other discipline tools e.g. CATIA, Fault Tree plus, MATLAB (This question and the following question were similar and both addressed by the following answer.)

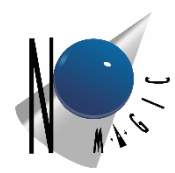
Q. Do you support modeling tools like Rhapsody and Enterprise Architect?

A. Yes, we have a wide variety of integrations in the BigLever Gears PLE Ecosystem. This PLE Ecosystem grows based on customer and partner interest in adopting PLE with their favorite tools, so we are always interested in requests for new integrations. See <http://www.biglever.com/ecosystem/ecosystem.html> for more details.

Q. Hello, will the presentation be available as pdf? Thanks!

A. Yes, the webinar presentation will be available as recording on YouTube and on [www.nomagic.com/mbse/webinars.html](http://www.nomagic.com/mbse/webinars.html), and we will also share presentation slides online.





Q. Can you give me an example of domain concept and a characteristic of a product from the domain?

A. In the automotive safety domain, “side blind zone alert” might be an optional “feature”. It is a differentiating characteristic that is present on some vehicles and not others. If we model side blind zone alert as a PLE Feature, then selecting or deselecting this feature for a vehicle will cause any asset content related to side blind zone alert — requirements, model elements, BOM parts, software, user documentation, test cases, and more — will be automatically included or excluded for that vehicle.

Q. How is the feature tree linked to user and system requirements?

A. This is the role of the PLE Variation Point in your requirements. Optional and variant requirements are encapsulated in a variation point that includes a feature logic expression that describes the feature conditions that cause that particular requirement or requirements collection to be included or excluded for a particular product instance.

Q. It's fair to assume that Gears PLE is a configuration management platform?

A. File-based source code Configuration Management (CM) systems manage variation over time. PLE manages variation within a domain space at a fixed point in time. In combination, CM and PLE manage variation in time and space. Slide 22 illustrates how these two dimensions are distinct, but connected as part of a holistic engineering solution.

Q. How is the consistency of feature selections ensured?

A. Constraints are provided in the Gears Feature Modeling language to express relationships that assure consistency.

Q. How does your tool scale up with thousands of features and variant points?

A. The Feature ontology in Gears has a rich set of constructs for system-of-systems hierarchy, modularity, attraction and encapsulation. It was design to scale to the largest and most complex Product Line systems — for example Automotive. We have customers with tens of thousands of feature where Gears scales cleanly and efficiently for both human comprehension and tooling performance.

