Variant Management

Solution Brief

pure-systems

Enabling PLE and Strategic Reuse for Complex Systems & Software

Targeting the domain of Product Line Engineering (PLE) and Strategic Reuse, the pure-systems solution for Variant Management complements and integrates with the IBM systems and software engineering solution. It extends and supports continuous engineering capabilities by helping to manage complexity of large systems with many and diverse variants and by providing an integrated and standardized set of variant management capabilities working with IBM tools across the engineering cycle.

Complexity and Variability Challenges

Engineering teams are challenged by the growing complexity of many and diverging product variants. This growing complexity manifests itself in systems of systems, interdependencies between requirements and architecture, many diversified legacy assets with "hidden" variability, and no or inadequate variant mechanisms in the existing tools. Past development practice like "Project by Project" or "Clone and Own" are no longer cost-effective and are slowing down the development organization.

Product Line Engineering and Strategic Reuse

Organizations wanting to implement Product Line Engineering and Strategic Reuse are looking to achieve:

- Reduction of development and maintenance cost
- Time to market and ability to serve new varied markets
- Better management of quality and functional safety compliance

Variant management is considered an essential systems and software engineering activity for PLE and Strategic Reuse. pure::variants Enterprise is a purpose-built variant management tool which is well integrated with IBM DOORS NG®, Rhapsody® and RQM™ in support of this activity.

Integrated Solution supporting continuous engineering

pure::variants provides a model-based infrastructure for variability modelling and variant definition in all phases of system development. This allows existing tools to be augmented to handle variability and variants more efficiently. With its open interfaces, variant information can be used consistently in requirements engineering, during system design, implementation, and also in testing. In combination with pure::variants the integration with IBM DOORS®, Rhapsody® and RQM™ enables users to:

- Manage features, dependencies and relations within a product line
- Reuse requirements, models, code and components across variants
- Configure and instantiate variants by rule-based feature selection
- Integrate test management and build processes for automated and controlled generation of test plans and variants
- Generate documentation and BOMS of reused assets and features
- Trace features, functions and variation points to reusable assets across variants and versions
- Analyze, manage and optimize variability for systems and platforms

Highlights

Business Challenge

- Reduced time to market and budget while at same time needing to meet more stringent requirements with growing system complexity
- Innovation and diversification to new markets drives need for more product variants tailored to markets, regulations and individual customer needs

Engineering Challenge

- Managing growing variant complexity efficiently
- Enabling strategic reuse
- Implementing PLE and Platforms

Solution

pure::variants integrated with IBM DOORS NG® , Rhapsody® , RQM™

Achievable Benefits

- Containment, control and reduction of variant complexity
- User acceptance and adoption of PLE by easy-to-use integrations
- Lowered development & maintenance cost per product variant

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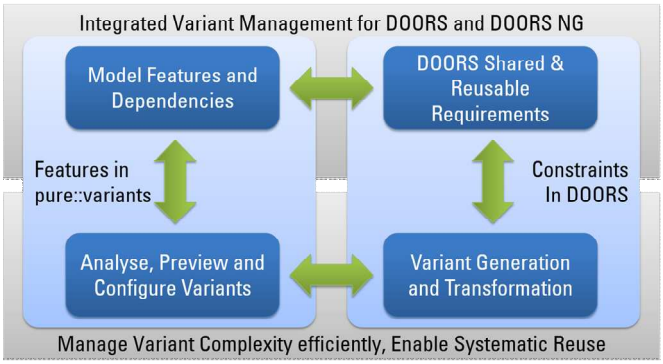

pure::variants for DOORS® and Rhapsody®

pure::variants Enterprise integrations and support for IBM products include:

- DOORS NG and DOORS 9 Connector to map features to requirements and allow configuration, instantiation and generation of variant-specific requirements documents
- Rhapsody Connector to map features to architecture, designs, models and functions and allow configuration, instantiation and generation of variant-specific Rhapsody models
- Rhapsody Gateway support
- "In-tool Editor" for both DOORS and Rhapsody allowing users to view feature models, map features to variation points, edit constraints and perform variant previews
- Rational Quality Manager (RQM)™ connector to generate variant-specific test plans and test suites

Tangible benefits of an integrated solution

- Containment and reduction of variant complexity
- Shorter time to market and better addressability of new markets & customers by managing and facilitating strategic reuse
- User acceptance and adoption of PLE by tight and easy-to-use integrations within familiar tools
- Supports quality, functional safety and traceability compliance initiatives
- Drives innovation of new product ideas and increases responsiveness to customer requests by better understanding variation capabilities of the product line

Supported Platforms

- pure::variants release 3.2 (or newer)
- Eclipse Version 3.6 (or newer, see release notes)
- IBM DOORS Next Generation (NG)® 4.05 (or newer)
- IBM DOORS® 8.0 - 9.6 (or newer, see release notes)
- IBM Rhapsody® 7.5 / 7.6 / 8.0 / 8.1 (or newer, see release notes)
- IBM Rational Quality Manager (RQM)™ - please ask about supported versions and current release status
- IBM RTC support available through RTC Eclipse client

About pure-systems

Founded in 2001, pure-systems is a leading provider of tools and solutions for Variant Management and Product Line Engineering (PLE) for Complex Systems and Software. pure::variants enables integrated and automated PLE and Systematic Reuse in existing tools like DOORS, Rhapsody and Simulink, while managing complexity of features, dependencies, systems and variants.
pure::variants provides deep analytic insights into variants, and can deal with both structural and parametric variability across the V-Model, supporting diverse engineering assets like requirements and test cases, architecture & model-based-development, source code and documentation, Excel feature lists and calibration data, among others.
As a platform solution, pure::variants provides enterprise scalability and public open APIs, while supporting standards like OSLC, VEL (Variability Exchange Language), Eclipse, EMF and AUTOSAR among others.
Today, the solution is deployed with customers in the segments of Automotive, Avionics & Aerospace, Defense & Security, Industry Automation & Production, Rail & Transportation and Semiconductor.

For more information

To learn more about pure::variants, to arrange for a Webinar or an Evaluation license please contact us:

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