What is PREEvision?
PREEvision is the premier tool for model-based development of distributed, embedded systems in the automotive industry and related fields. This engineering environment supports the entire technical development process in a single integrated application. PREEvision offers comprehensive functions for both classic and service-oriented architecture development, requirements management, communication design, safety-related system design, AUTOSAR system and software design as well as wiring harness development.

Benefits at a Glance
- Design, management and documentation of complete E/E systems in one tool
- Integrated traceability
- Graphical modeling in diagrams
- Full support of AUTOSAR methodology
- Design of safety-relevant systems acc. to ISO 26262
- Variant and product line management
- Complete development from architecture to wiring harness based on one source

Highlights of Version 9.0
> AUTOSAR Adaptive Platform
PREEvision 9.0 supports the AUTOSAR Adaptive Platform. Service interfaces, adaptive applications and the instantiation of services can be designed and specified with a dedicated user interface.

> Variant Management According to AUTOSAR
PREEvision supports variant management according to AUTOSAR. With system constants, post-build variant criteria and variation points, predefined variants can be designed, activated and highlighted.

> State Chart and Class Diagrams
PREEvision 9.0 extends the tool box of SysML and UML diagrams. The class diagram helps to model, e.g., service interfaces including properties and methods. The state chart diagram is used to model the behavior, e.g., of adaptive applications.

> Review and Vote
PREEvision 9.0 comes with an extended process support and provides mechanisms to review and to vote on requirements and other model artifacts.

> Server API
The REST API allows web services and applications read access to model artifacts including life cycle states, rich texts, files and diagrams.

PREEvision user interface with diagrams.

PREEvision provides a comprehensive data model with dedicated abstraction layers for the design of complete E/E systems.
Application Areas

Architecture Design
PREEvision supports the design and evaluation of E/E architectures and enables the fast evaluation of design alternatives. Wire length, weight, package requirements, power consumption, and bus-load: the success factors and cost functions of an E/E architecture can be specified by the architects themselves. Through consistent, integrated modeling, a multidimensional decision network can be created for evaluation of multiple alternatives.

Requirements Engineering
The integrated requirements management of PREEvision enables seamless interworking of requirements with all development artifacts in the model. Development artifacts or even individual values may be used as requirements and exported into documents for dissemination or review.

AUTOSAR System Design
PREEvision is a component of the AUTOSAR tool chain from Vector. PREEvision supports development of software and hardware architectures and communication design while incorporating many AUTOSAR concepts. The integrated approach of PREEvision also establishes a direct link to other design activities, such as the management of requirements, variants and tests.

Design of Safety-Relevant Systems
PREEvision reduces the effort required when designing safety-relevant systems according to ISO 26262. The integrated approach ranges from the definition of the vehicle system, the hazard analysis and risk assessment, using FMEA and FTA, to compilation of the safety case. It enables full transparency and traceability for all stakeholders. Editors and templates for the safety case, safety plan, and development interface agreement minimize the effort for document creation.

Wiring Harness Design
PREEvision supports wiring harness engineers to develop cost-effective wire and cable assembly designs. To evaluate different alternatives, to optimize designs and to define the final wiring harnesses in detail, the model-based tool provides powerful functions: diagrams for electric circuit and wiring harness and special features like the wiring harness router, an automated electric current calculation as well as import and export functions.

Test Engineering and Management
PREEvision provides integrated tools for test engineering and test management across the whole development process of E/E systems and offers full traceability from requirements through to test report.

Product Options

PREEvision Architect
PREEvision Architect provides the integrated scope of functions for designing an E/E architecture, ranging from requirements management, logical architecture, and software and hardware architecture, AUTOSAR system design, to wiring harness and vehicle geometry. Model evaluation, optimization and documentation round-out the design process. Also, development to series production readiness is supported in the following areas: consistent description of requirements, specification of functions, components, networks, and definition and maintenance of logical and physical interfaces.

PREEvision Function Designer
PREEvision Function Designer fully supports the AUTOSAR system design process alongside the description of requirements, design of logical functions, software and hardware components, network architecture and communication design.

PREEvision Electric Designer
PREEvision Electric Designer supports requirements management, hardware architecture design, circuit diagrams, wiring harness design, and vehicle geometry.

PREEvision Collaboration Platform
The server-based PREEvision Collaboration Platform enables team operation of PREEvision and includes product and release management as well as change and configuration management.

PREEvision Server API
The PREEvision Server API enables the development of web applications to visualize model contents. The REST API allows read access to artifacts including their life cycle state, rich texts, files, diagrams and even metrics without the need of a PREEvision client.

More Information: www.vector.com/PREEvision