HyVar NEWSLETTER N°1, May 2016

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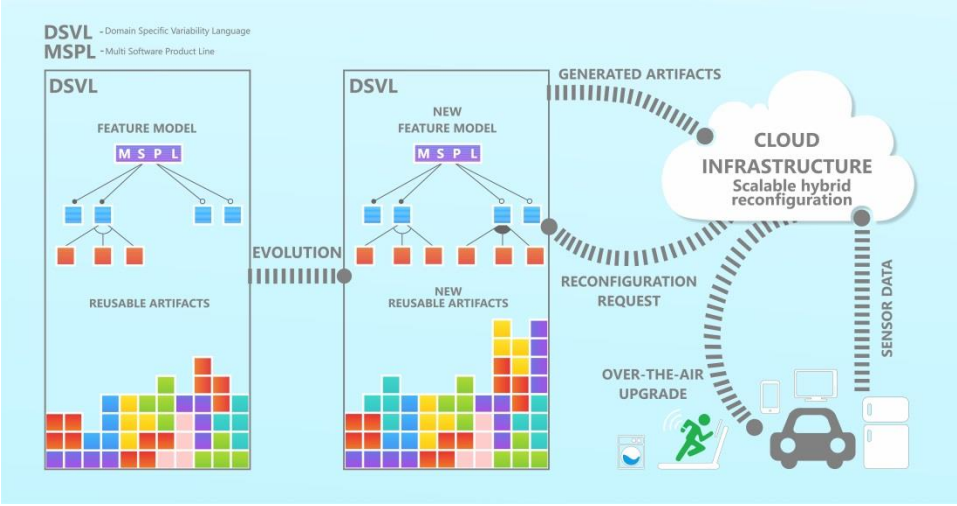
HyVar Scope and View

Scalable Hybrid Variability for Distributed Evolving Software Systems

The goal of HyVar is a development framework for continuous and highly individualized evolution of distributed software applications.
The aim is to support the enterprises that manufacture, operate or maintain those systems to efficiently manage frequent and sudden varying events and situations, such as frequently changing designs and software patches to a configuration, where agility is required. Our vision is that state-of-the-art structuring concepts for variability from research on software product lines can be combined with cutting edge industrial technology for software evolution and incremental analysis techniques from research on formal methods. **HyVar goes beyond the state-of-the-art by proposing hybrid variability**; i.e., the automatic generation and deployment of software updates combines the variability model describing possible software configurations with sensor data collected from the device.
HyVar's scalable cloud infrastructure will elastically support monitoring and customization for numerous application instances.
Software analysis will exploit the structure of the variability models.
By mastering distributed software variability in connection with virtualization and evolution in the engineering of applications, HyVar has the potential to significantly improve the growth and competitiveness of the European industry and to encourage faster product innovation cycles.



Reply santer

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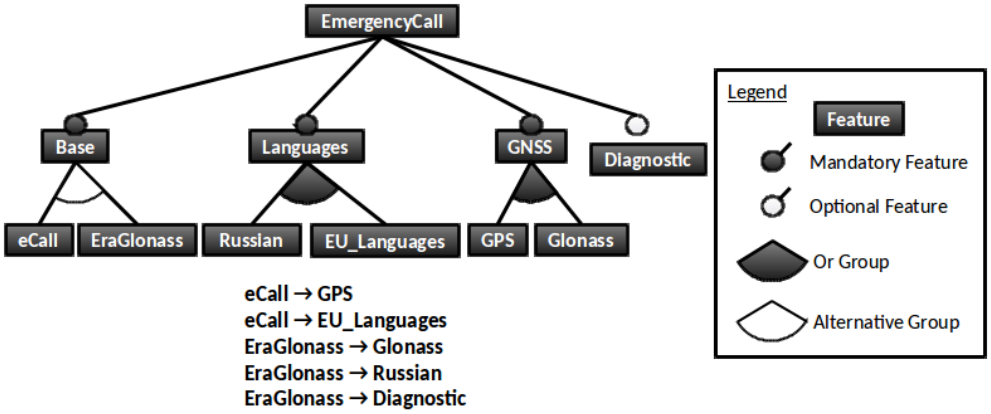
MAGNETI MARELLI

"HyVar project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 644298"

Feature model and constraints for the emergency response system



eCall → GPS
eCall → EU_Languages
EraGlonass → Glonass
EraGlonass → Russian
EraGlonass → Diagnostic

The Emergency Call Use Case

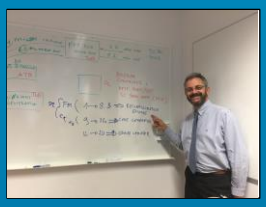
HyVar is going to be demonstrated in real scenario of the automotive domain: Emergency Response Systems. An emergency response system aims to automatically dial emergency numbers in the event of a serious road accident and wirelessly send impact sensor information as well as location coordinates to local emergency agencies. Multiple systems exist in different countries, such as the eCall/E112 program of the European Union and the Russian ERA GLONASS, then software for the emergency response system must behave differently depending on the current location of the car.
The feature model of the emergency response system for the particular use case of supporting both the (European) "eCall" and the "EraGlonass" features is presented in the figure above. Depending on which system is used, a different satellite system (i.e., "GPS" or "GLONASS") and a different language ("Russian" or "EU_Languages") is used. Moreover, the feature "ERA_GLONASS" requires the "Diagnostic" feature to be selected, whereas it is optional for the case of "eCall".
To implement emergency response systems in vehicles, an Electronic Control Unit (ECU), which can connect to cellular communication networks and integrates a localization module, must be deployed inside. The Autonomous Telematics Box (ATB2) provided by Partner Magneti Marelli is such an ECU. It integrates a telephone module for connection to cellular communication networks and a multi-constellation satellite localization module (e.g., GPS and GLONASS). The ATB2 is particularly suitable in eCall/E112 use case because it foresees remote updates of the running firmware.

HyVar Events

- ✓ Code Workshop
  Torino, March 23-24 2016

- ✓ NetFutures 2016
  Brussels,
  April 19-21 2016

- ✓ HyVar General Meeting
  Oslo, May 10-12 2016



Next Events

- ✓ Integration meeting
  Braunschweig, July 4-5 2016
- ✓ Review meeting
  Brussels, September 2016
- ✓ ISOLA 2016
  Corfu, October 2016
  http://www.isola-conference.org/isola2016/