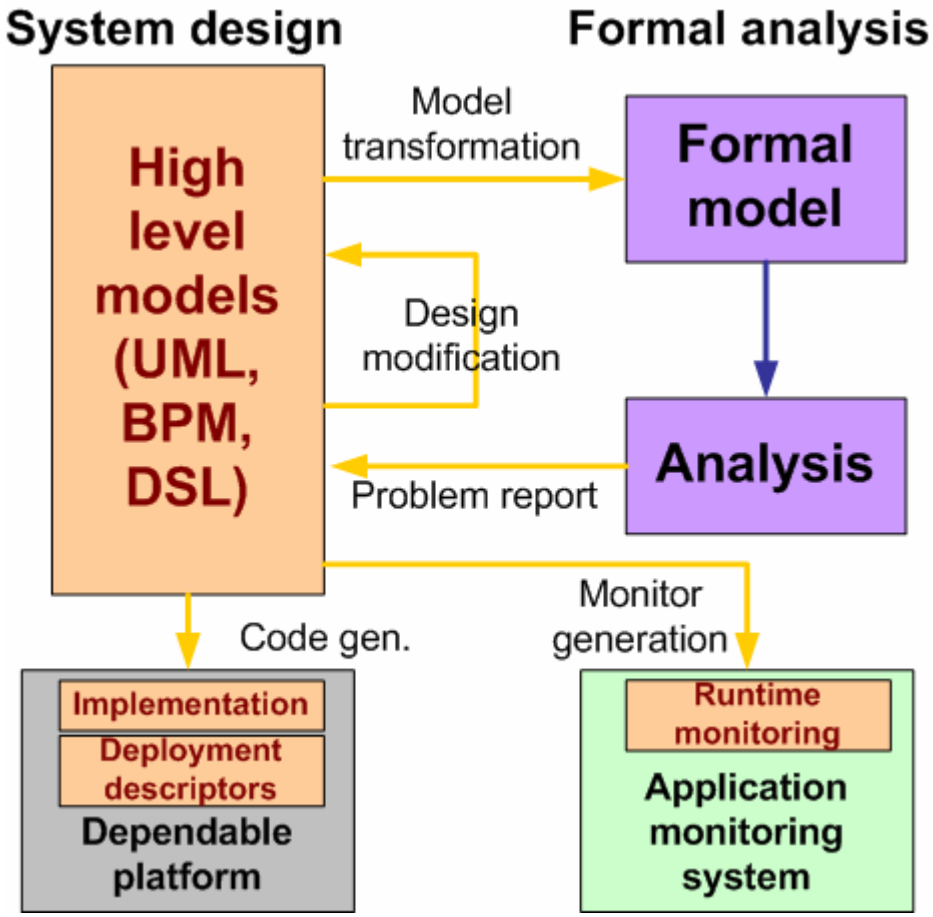
The Fault Tolerant System at BUTE DMIS has been founded in 1994. It consist of 30 members, including 5 PhDs.
The main research field of the research group is the *model-driven* development and analysis of dependable computer systems:

- Systems modeling and mathematical analysis,
- dependability assessments,
- verification and validation of IT systems,
- analysis and synthesis of IT infrastructure,
- systems optimization, dependability consolidation,
- service oriented computing and integration,
- model transformation.



Model driven design and analysis

EU Research Projects:

Embedded, safety critical systems:

DECOS: Dependable Embedded Computer Systems (2004-2007). The aim of the project is to develop a methodology and platform for safety critical embedded systems in the automotive, aerospace, and process control domains. We contribute to the model-driven development tool chain and to the V&V workbench design and implementation.

DIANA: Distributed, Equipment Independent Environment for Advanced avioNic Applications (2006-2008). The aim of DIANA is to create a platform for distribution and management of virtual computers in the aerospace domain. We contribute to the model-driven system development and the support of design for verification.

SAFEDMI: A Safe Driver Machine Interface (DMI) for ERTMS Automatic Train Control (2006-2008). The goal of this project is the development of a safe driver interface for locomotive engines for the unified European network. We contribute to the develop-

ment of a quantitative evaluation and automatic testing tool.

Dependable distributed systems:

HIDENETS: A Highly Dependable IP-based Networks and Services (2006-2009) aims at development of the end-to-end dependable solutions for distributed and mobile applications, like in case of car2car environments. We are working on the development and testing methodologies.

DESEREC: Dependability and Security by Enhanced Reconfigurability (2006-2009) aims at the development for the development of model-based reconfiguration techniques for large IT systems in case of faults or intrusion.

Service-oriented architecture:

SENSORIA: Software Engineering for Service-Oriented Overlay Computers (2005-2009). This integrated projects aims at the development and evaluation of post-grid structurally and functionally adaptive services. We are working on the model-driven dependability evaluation and dependable service synthesis.

EU Network of Excellence:

RESIST: A Resilience for Survivability in IST (2006-2009) is an international knowledge network in the field of dependable systems.

Research-development application:

A **VIATRA2** (VIsual Automated model TRAnsformations) framework is designed to support the development of high level model transformations including the specification, development, testing, and validation phases. Further information can be found on: http://www.eclipse.org/gmt/

Industrial research and development coordination:

CAS: In 2006 (as 17th in the world, 6th in Europe and first in Central Europe) founded IBM Hungary and BUTE the *IBM Center of Advanced Studies Budapest*, in which the FTSRG group plays a key role. The goal is the support of joint research programs of IBM and the Hungarian academic sector.

We are the first academic members of the ***Service Availability Forum*** that is a consortium of the leading telecommunications and IT companies that aims at the service quality assurance and standardization in the field of IT services.

National patners:

Groupama Biztosító, IBM Hungary, National Instruments Hungary, Nokia Research Center Budapest, Prolan Irányítástechnikai Rt.

Distinguished international partners:

Audi, Airbus, EADS, Fujitsu-Siemens, IBM Research Zürich, Infineon, Nokia Research Center (FIN), Thales.

Important academic partners:

CNR-ISTI (Pisa), IRISA (Rennes), LAAS (Toulouse), Technische Universität Berlin, Technische Universität Darmstadt, University of Coimbra, University of Leicester, University of Newcastle.

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