



# Model-driven testing of dynamically variable systems

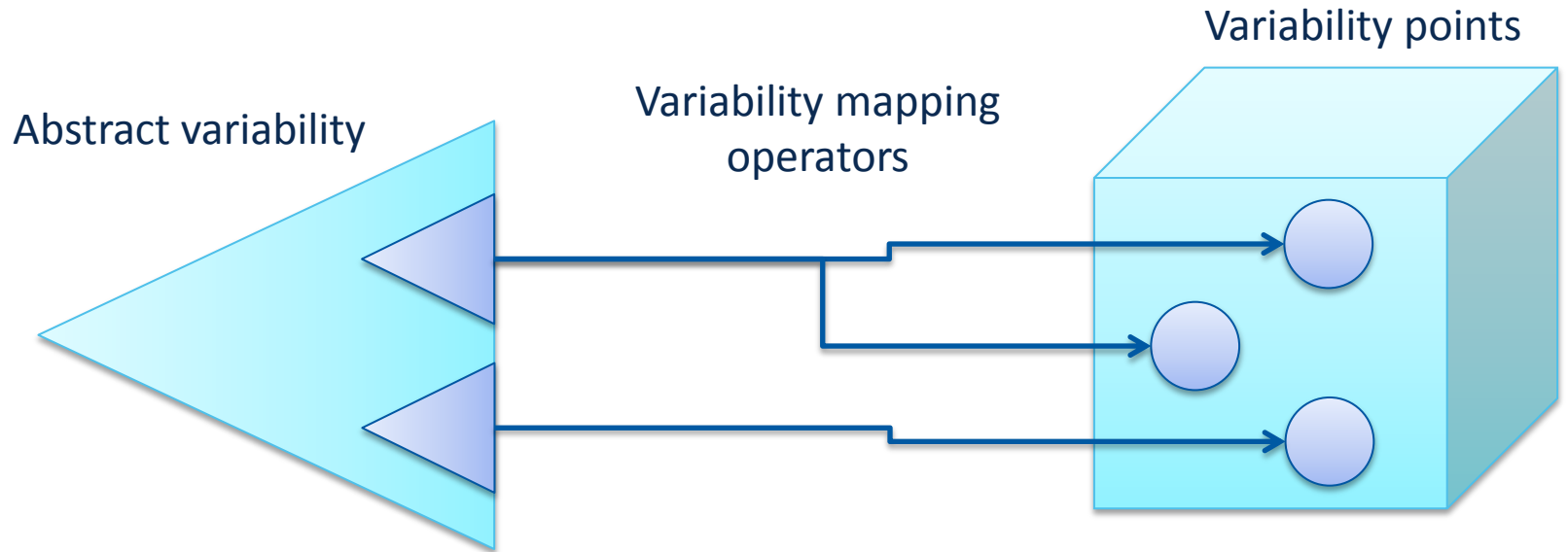
(georg.pueschel@goolgemail.com)



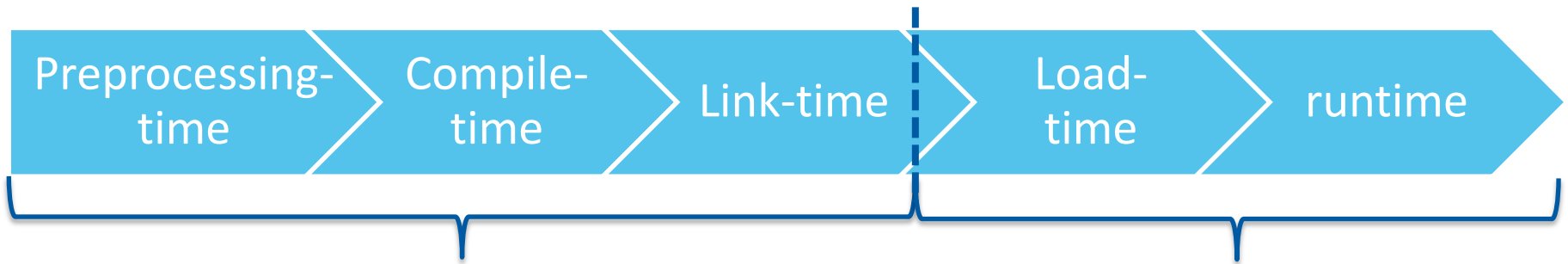
Dresden, 23.09.2011



# From static to dynamic variability

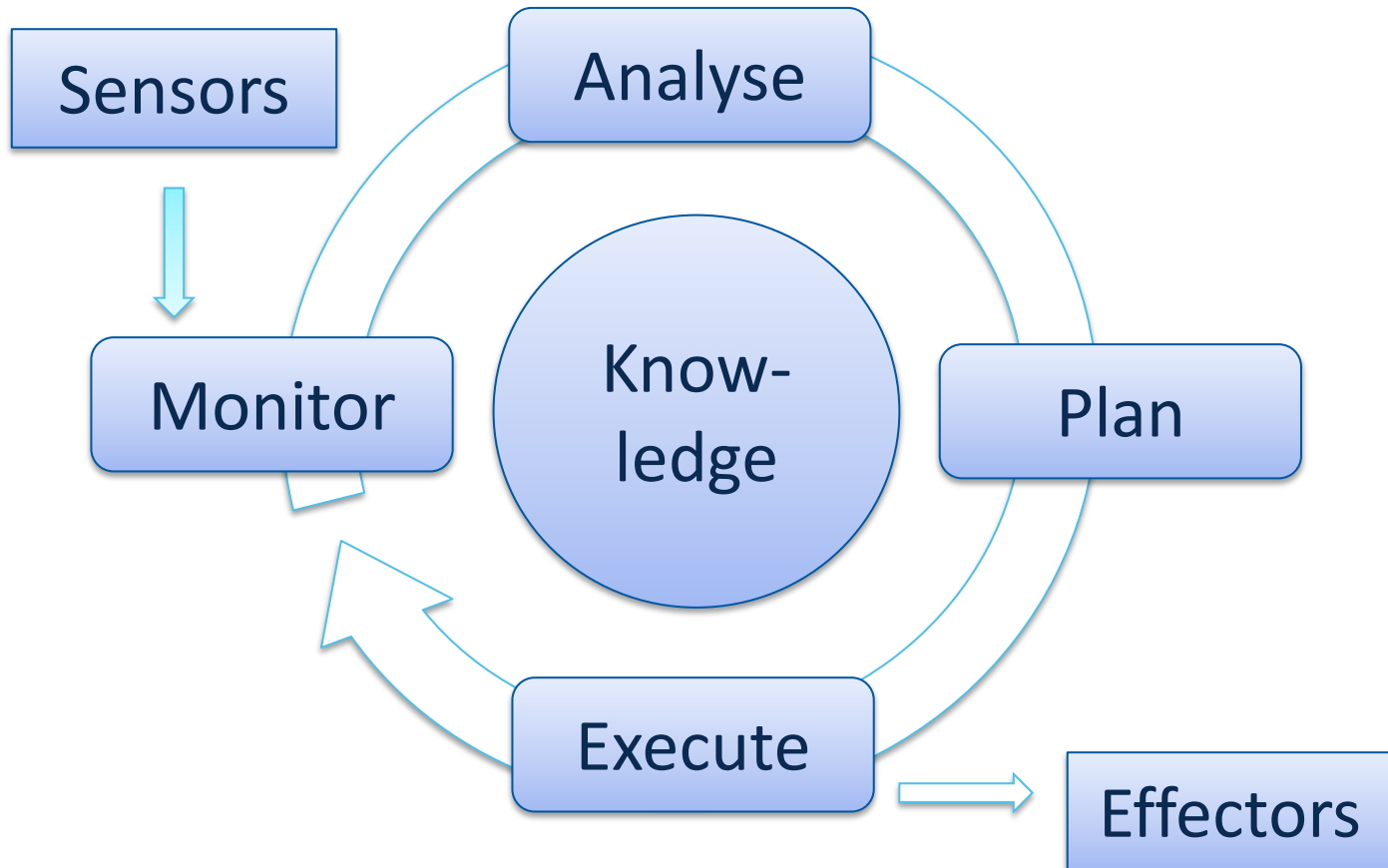


Program start

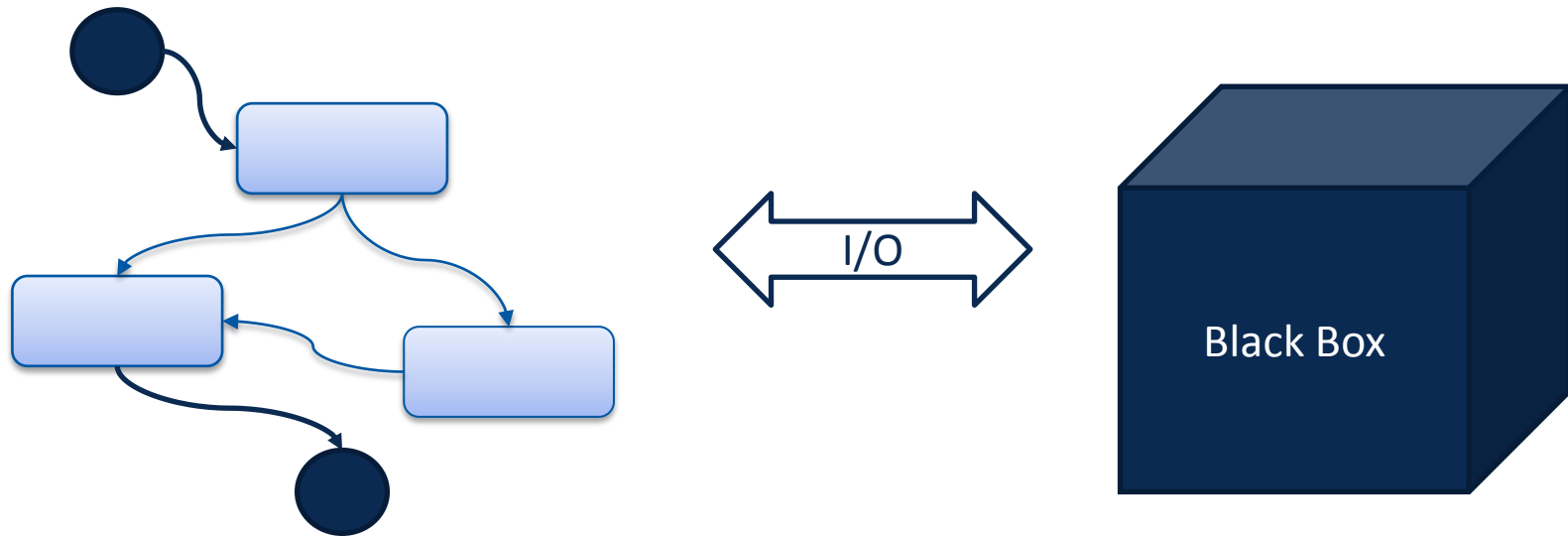


Static binding

Dynamic binding

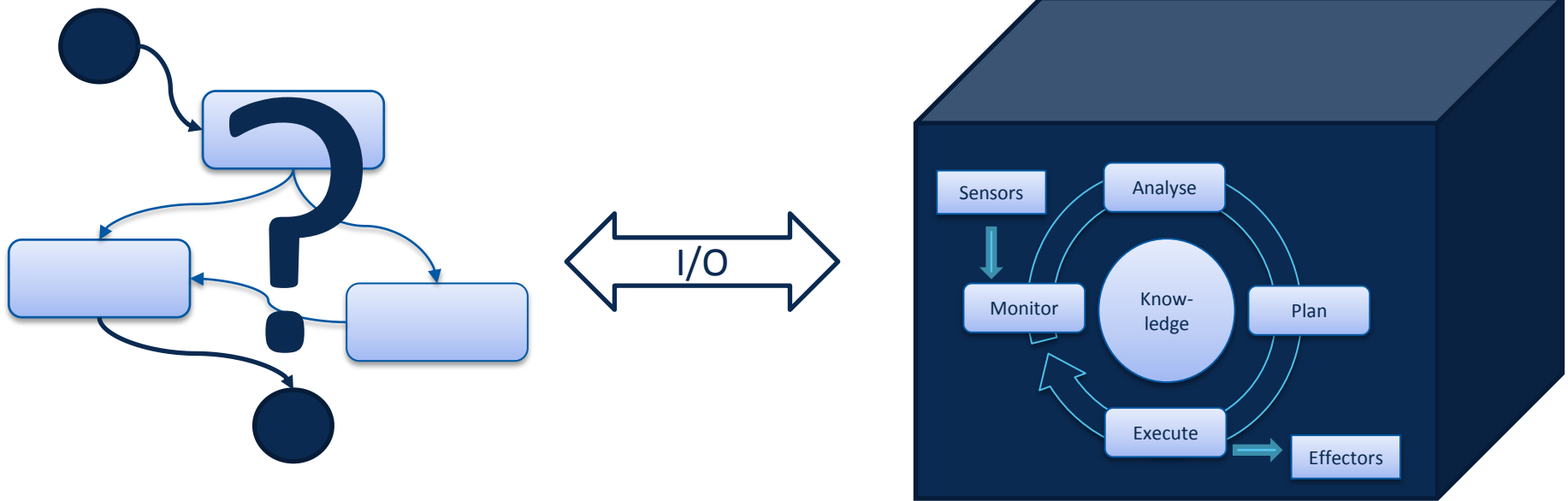


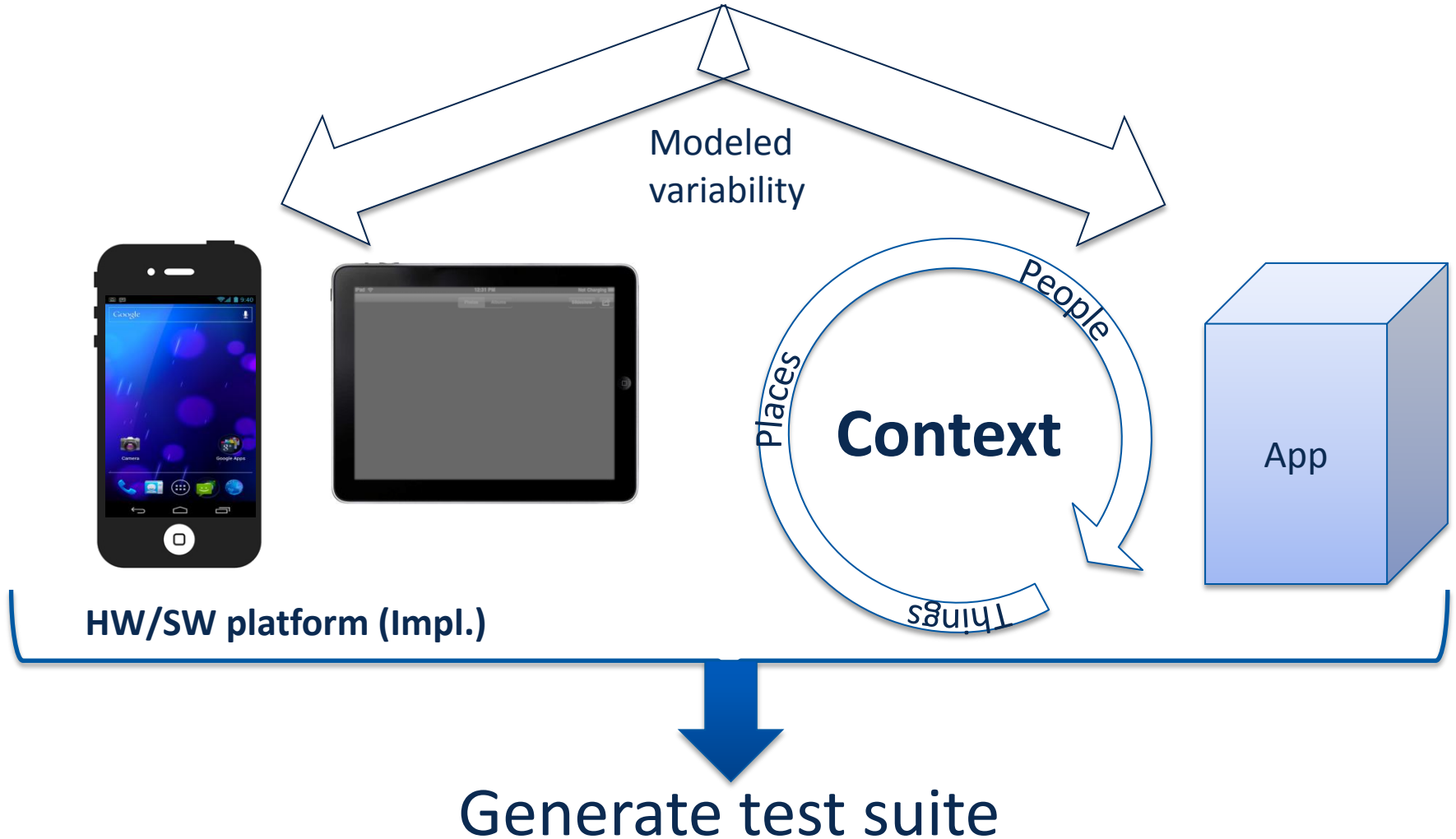
“Model-based Testing is the automation of the design of black box tests.” (Utting, 2007)

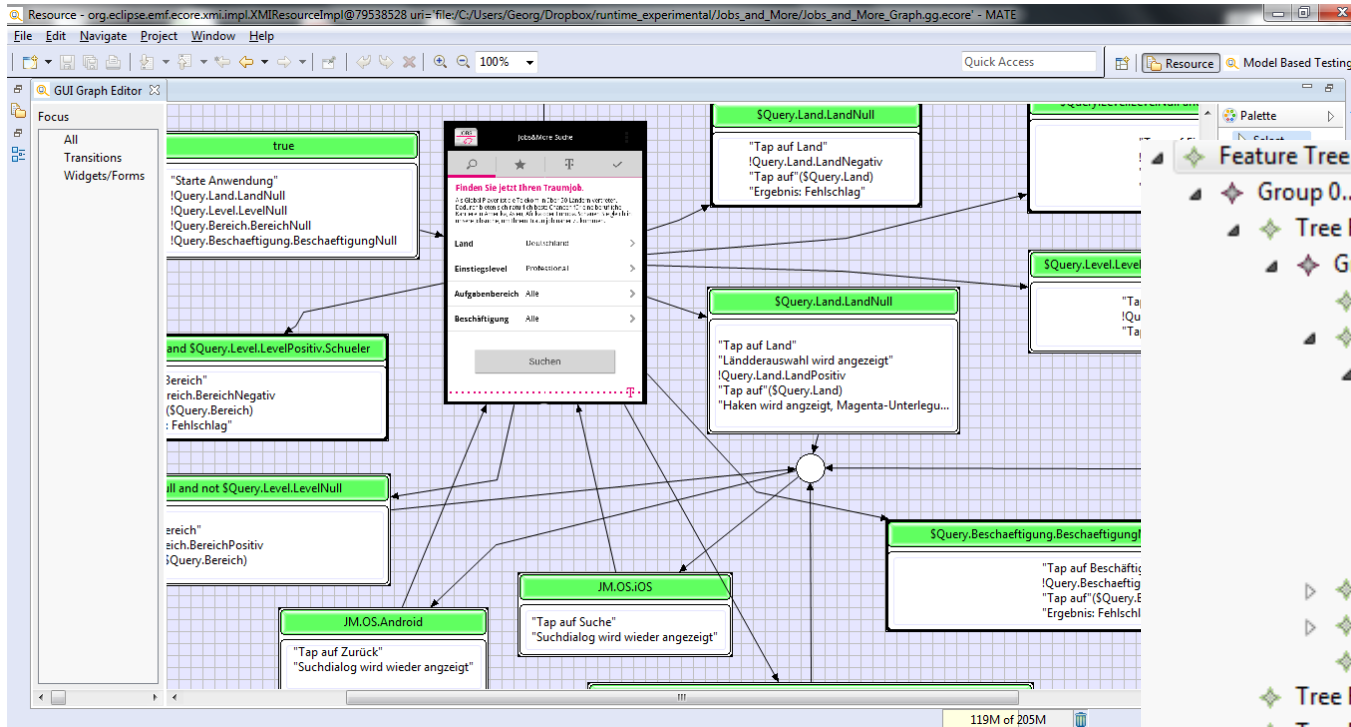


In „offline testing“ a test case *generator* is required, in „online testing“ the model ist *simulated*.

# General view: Testing self-adaptive systems







- ◆ Feature Tree devices
  - ◆ Group 0..-1
    - ◆ Tree Feature Connectivity
      - ◆ Group 0..-1
        - ◆ Tree Feature GPS
        - ◆ Tree Feature Bluetooth
          - ◆ Group 0..-1
            - ◆ Tree Feature Bluetooth\_2\_0
            - ◆ Tree Feature Bluetooth\_2\_1
            - ◆ Tree Feature Bluetooth\_3\_0
            - ◆ Tree Feature Bluetooth\_4\_0
          - ◆ Tree Feature No
        - ◆ Tree Feature WiFi
        - ◆ Tree Feature Networks
        - ◆ Tree Feature Infrared
      - ◆ Tree Feature Battery
      - ◆ Tree Feature StorageAndMemory
        - ◆ Group 0..-1
          - ◆ Tree Feature RAM
          - ◆ Tree Feature Internal
          - ◆ Tree Feature Removable
      - ◆ Tree Feature Display
      - ◆ Tree Feature OS
      - ◆ Tree Feature Camera
      - ◆ Tree Feature Hardware

## Technology experience:

- Eclipse, Java, SWT
- EMF Modeling & Programming

## Research extent:

- Quality assurance/Model-based Software testing
- Adaptive systems
- Software Product Lines/Variability

Cooperation with *T-Systems Multimedia Solutions*