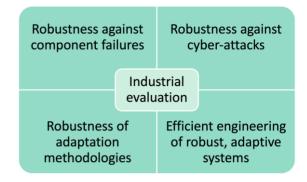


How can we efficiently and effectively develop and deploy embedded computer systems that utilize adaptivity to achieve fault and intrusion tolerance in mission- and safety-critical Cyber Physical Systems (of Systems) - CPS(oS)?

To realize such robust, adaptively morphing systems, we address:

- formal specifications of adaptive systems;
- adaptivity methods like strategies for maintaining safe and secure control of CPS(oS);
- analysis techniques for adaptive systems to, e.g., perform timing verification of adaptive systems;
- run-time systems for adaptive systems that realize the actual run-time system reconfigurations to achieve fault and intrusion tolerance.



ADMORPH Project



ФАБМОЯРН1



TOPIONORPH Project

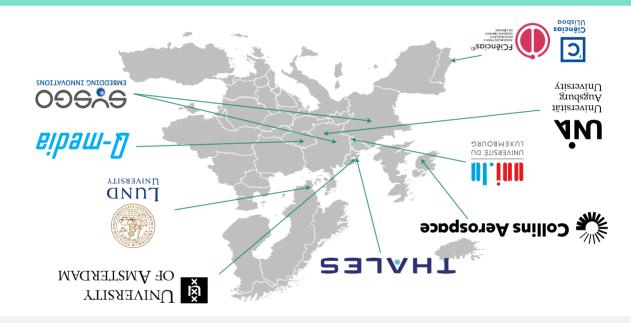


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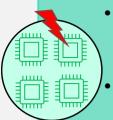


ADMORPH: Towards Adaptively Morphing Embedded Systems

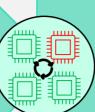








- Temporary or permanent faults may hit the system
- Faults can be deliberate or accidental

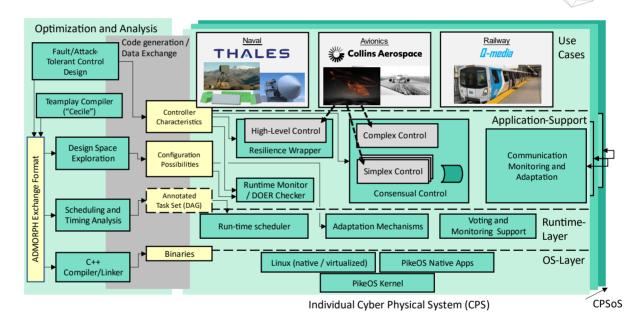


- Reconfigure system to cope with fault(s)
- Re-execute / migrate tasks, etc.



- System remains operational
- Timing requirements guaranteed







Use Cases



Autonomous Aerospace Systems

Will demonstrate adaptability as a key enabler for autonomy in the context of a System of Systems involving autonomous aircrafts and Air Traffic Control (ATC)



Radar Surveillance Systems

Will demonstrate the ability to achieve fault tolerance as needed for reliable and robust real-time data processing in radar surveillance systems



Subway Transportation Systems

Will demonstrate the suitability of ADMORPH methods for supporting real-time and transparent reconfiguration of a Train Supervision Surveillance System