



# INVITATION TO JOIN THE NEXT BIG **MDH** INITIATIVE

## A research profile focusing on the combination of safety critical electronics and safety critical software

**We are launching** an effort to build a research profile in the combination of safety critical electronics and safety critical software for future autonomous and intelligent systems. The profile includes the following three main topics:

### 1) SAFETY CRITICAL ELECTRONICS

- a) Radiation resilient electronics
- b) Self-monitoring and gracefully degrading hardware
- c) Multicore architectures
- d) Heterogeneous architectures

### 2) SAFETY CRITICAL MIDDLEWARE

- a) Safe and secure communication
- b) Infrastructure for swarms of autonomous vehicles
- c) Virtualization, partitioning, and mixed-criticality
- d) Diagnostics and self-healing
- e) Human-robot/machine interaction systems
- f) Cognitive machine architectures.

### 3) METHODS FOR DEVELOPMENT OF SAFETY CRITICAL SYSTEMS

- a) Design-error mitigation
- b) Model based development
- c) Requirements management
- d) Verification technologies
- e) Hardware/software co-design

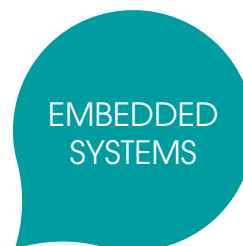
**We are seeking** industrial partners to join the profile for shorter or longer cooperative projects. The profile has a planned duration of 8 years, starting fall 2015. A partner company can for instance join a project as a problem owner and validator of research results. Contribution from partners can, e.g., be in the form of engineering efforts, access to complex test-rigs, or direct monetary support.

As a partner you have large influence on the research performed by senior researchers in the Embedded Systems environment at MDH, and get access to project results in form of, e.g., prototype implementations, design documents, tools, evaluations, seminars and publications. You will also be part of a strong, and growing, national and international network of scholars and industrial experts, all strongly dedicated to advance the state-of-the-art in safety critical systems.

We plan to submit an application for funding of the research profile to the Swedish knowledge foundation (KKS) in January 2015. In order to plan the application process we need feedback from interested partners already at this stage. The application process is coordinated by the Mälardalen Aerospace and Robotics Center (MARC), led by Prof. Kristina Lundqvist (kristina.lundqvist@mdh.se, 021-101428).

## CONTACT

Prof. Kristina Lundqvist  
kristina.lundqvist@mdh.se  
021-101428



**MÄLARDALEN UNIVERSITY**  
**SWEDEN**