

The SAVE-IT Industrial Graduate School

Hans Hansson – Director SAVE-IT

Andreas Ermedahl – Coordinator SAVE-IT

Gunnar Widforss – Administrator SAVE-IT

Mälardalen Real-Time Research Center (MRTC)

Västerås, Sweden

SAVE-IT

KK-stiftelsen



SAVE-IT at a Glance

* A research school for industrial PhD students

- ▶ Targeting safety-critical and real-time systems
- ▶ Special focus: component-based (software) development for such systems

* "Industrial PhD student" means that

- ▶ Student is employed by a company
- ▶ Student enrolled for PhD study program at a university

* PhD students accepted to SAVE-IT get

- ▶ Financial support
- ▶ Research education



SAVE-IT at a Glance

* School financed by:

- ▶ KK-Foundation (KKS)
- ▶ Participating companies

* School hosted by:

- ▶ Mälardalen Real-Time Research Center (MRTC)

* 19 PhD students accepted to SAVE-IT

- ▶ 8 PhD students accepted 2005
- ▶ 11 PhD students accepted Spring 2006
- ▶ 2 more students might be accepted

* 2 students associated to SAVE-IT

- ▶ Participates in network activities but gets no funding



SAVE-IT Organization

* SAVE-IT students

- From a variety of companies and universities

* SAVE-IT staff

- Hans Hansson – director
- Andreas Ermedahl – coordinator
- Gunnar Widforss – administrator
- Paul Pettersson – director of study

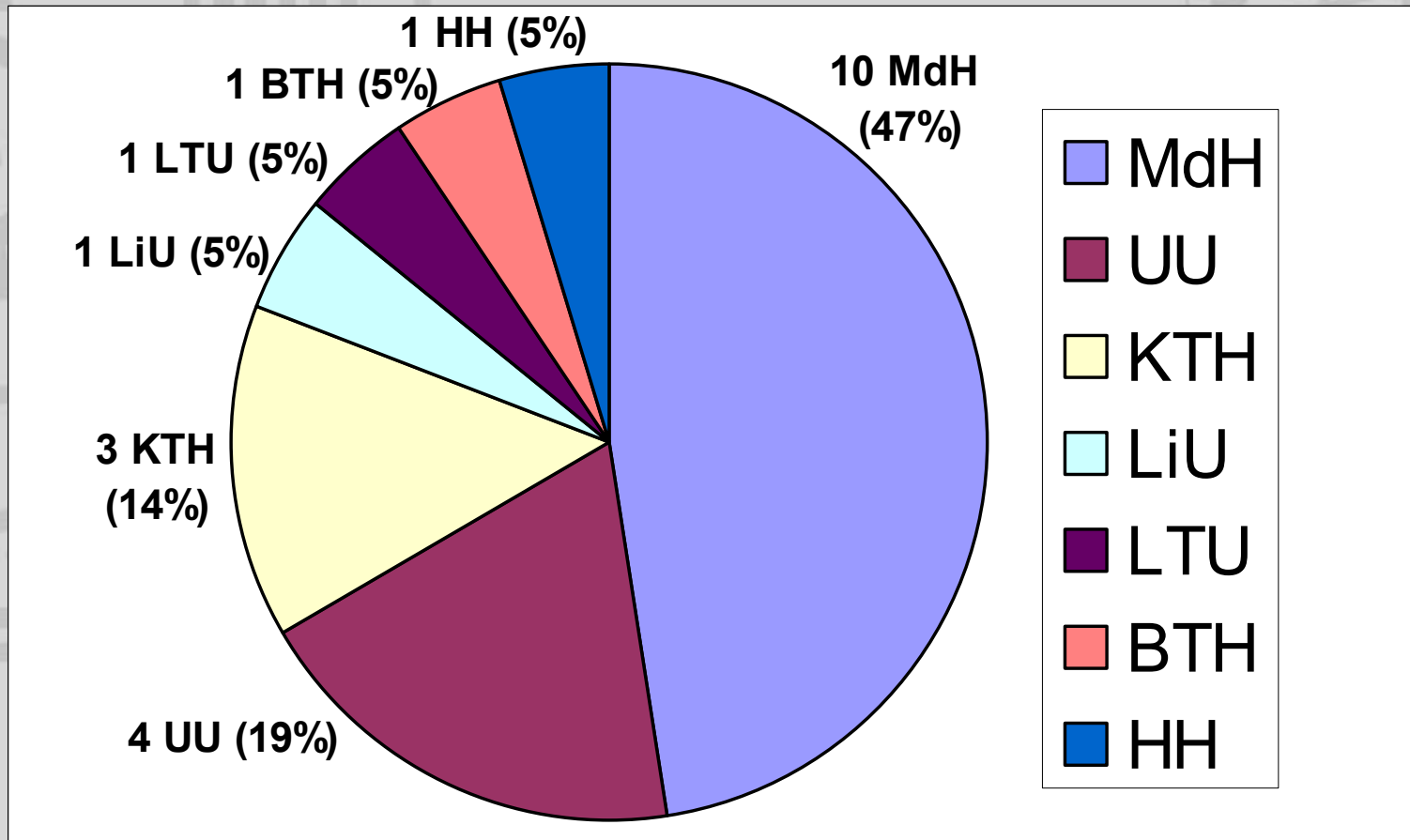


* SAVE-IT board

- Appointed by Mälardalen University
- Selection of academic and industrial representatives
- Includes a student representative (Kaj Hänninen)



Participating Universities



Participating Companies & Research Institutes

- ▶ ABB Corporate Research
- ▶ Arcticus Systems
- ▶ CC Systems
- ▶ Kalix Electropolis
- ▶ Pilotfish Networks AB
- ▶ SAAB Avitronics
- ▶ Skogforsk (Kumatsu)
- ▶ SICS (3 students) (Bombardier, ABB CR)
- ▶ ABB Robotics
- ▶ Bombardier
- ▶ Ericsson (5 students)
- ▶ Mecel AB
- ▶ SAAB Aerosystems
- ▶ Scania
- ▶ Volvo CE



The SAVE-IT Study Model

* SAVE-IT students get:

- Financial support
- Research education

More than just
research funding!!!

* The research education consists of four complementary parts:

1. Research work
2. Network activities
3. Courses
4. Mobility

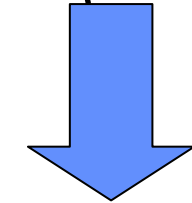
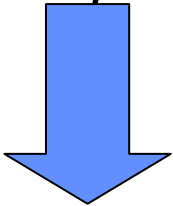
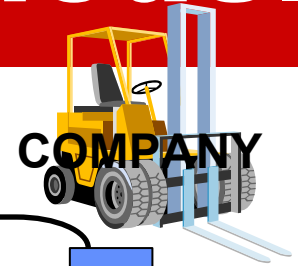


SAVE-IT Financing Model

~~KK FOUNDATION~~

KKS and the company contribute with 400 kkr annually per each **full-time** PhD student

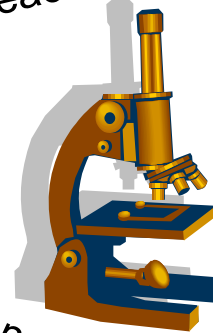
COMPANY



SAVE-IT

SAVE-IT supports the company with an average grant of 100 kkr per each full-time PhD student.

SAVE-IT supports international mobility with grants typically about 50 kkr per each full-time PhD student



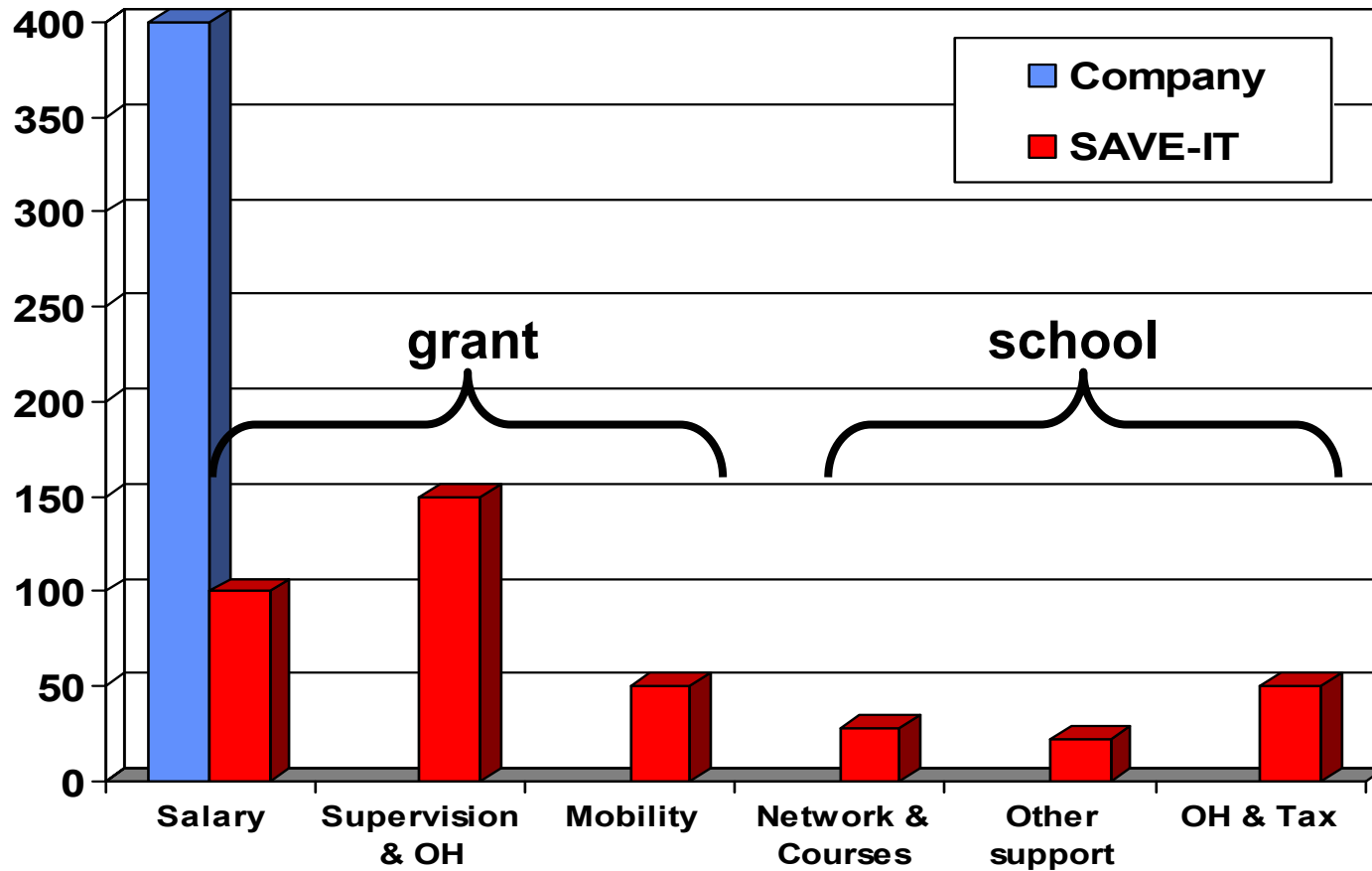
The company hires and pays the PhD student, and also provides industrial network, supervision and mentorship, as well as project participation, material and so forth.

SAVE-IT provides network, workshops, courses, extended supervision committees and supervision through the University.



SAVE-IT Financing Model

Average budget of each PhD-year in SAVE-IT



The Research Work

- * Performed in a research project
 - ▶ In close cooperation with the company
 - ▶ According to local university requirements
- * Each student should have a supervisor group
 - ▶ Meets the student on a regular basis
- * A SAVE-IT supervisor group consists of:
 - ▶ One academic main supervisor
 - ▶ One (or more) academic assistant supervisor(s)
 - ▶ One industrial supervisor



Company Involvement

- * Research performed in close cooperation with the participating company
 - ▶ Company should participate in research planning
 - ▶ Research focus on industrial needs
 - ▶ Close to product development
- * Each student should have an industrial mentor
 - ▶ To support in practical issues at the company
 - ▶ To motivate research project in the company



Company Advantages

- * Focus on research topic relevant for company**
 - ▶ Increased knowledge within the company
 - ▶ Could lead to new product / methodology
- * Good marketing – seen at new places**
 - ▶ Wider network – both academically and industrially
- * Company can show a high-tech profile**
 - ▶ Has an academic expert employed
- * PhD student natural contact between academia and industry**
 - ▶ Company can take part of latest research results



SAVE-IT Network Activities

* Purpose:

- To prepare the students for their future profession
- To form strong personal networks between students
- To enable cooperation between companies and universities

* Includes:

- 1-2 days workshops with specific themes
- Organized visits at participating companies
- International visits at renowned universities and companies

* Special emphasis on:

- Education in non-technical skills, such as leadership, project management and team building



SAVE-IT Courses

- * **Constitutes totally 35p**
 - ▶ Inbetween 50-60p normally required for taking a PhD
- * **Methodological courses:**
 - ▶ Research methodology, Research planning, ...
- * **Technical courses:**
 - ▶ Analysis methods for RT systems, Component based development, Safety critical systems,
- * **SAVE-IT students allowed to freely participate in ARTES++ courses**
- * **Remaining courses taken at the university where graduate student is enrolled**



SAVE-IT Mobility

* Students are encouraged to:

- Spend time abroad at a university / company
- Participate in summer schools and other courses
- Participate in workshops and conferences
- Participate in international research cooperation
- Participate in ARTIST2 network activities

* SAVE-IT provides mobility support up to 50 kkr annually per full time student

- Funding for longer visits abroad decided by the SAVE-IT board



The End!

**For more information, see:
www.mrtc.mdh.se/projects/save-it/**