



Strategic Research Center in IT at Linköping and Lund

Lennart Ljung, LiU, Director
 John B. Anderson, Director for Lund Part
 Karl-Erik Årzén, Vice-Director for Lund Part

Background

Increased support for 20 research areas of strategic value for Sweden during 2010-2014
 Two grants per area to universities or groups of universities
 Support for research environments similar to the Linnaeus Centers
 Example areas:

- Cancer
- Climate change
- Energy
- Diabetes
- Stem cells
- **IT and mobile communication, including future solutions for communication and control systems**
 - KTH: ICT the Next Generation
 - Linköping + Lund: The Linköping - Lund Initiative on IT and Mobile Communication

ELLIIT - Partners

Linköping University

- Electrical Engineering (ISY) (Control, Communication systems, Computer Vision, Electronics, ...)
- Computer Science & IT (IDA) (AI, Software & Systems, ...)
- Norrköping Visualization Center

Lund University

- Computer Science
- Electrical and Information Technology
- Automatic Control
- Mathematical Imaging Group

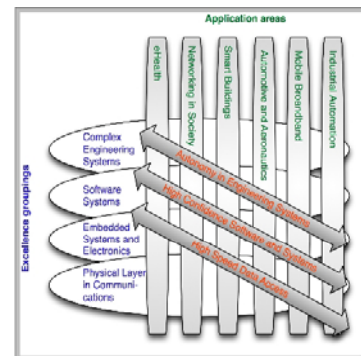
Halmstad University

- Embedded Systems

Blekinge Institute of Technology

- Software Engineering

ELLIIT - Content



ELLIIT - Budget

Ramp up:

- 2010 17.3 MSEK
- 2011 21.1 MSEK
- 2012 30.7 MSEK
- 2013 30.7 MSEK
- 2014 30.7 MSEK

Distribution:

- Lund 45%
- Linköping 45%
- Halmstad 5%
- Blekinge 5%

50% to permanent professor-level positions

- 5 positions each for Lund and Linköping
- So far
 - Bo Bernhardsson (Ericsson) → Control, Lund
 - Jörn Janneck (UTRC, Xilinx) → CS, Lund

50% to research projects

- Currently 16 projects
- Mostly involving groups from several universities
- Only partially funded by ELLIIT

ELLIIT Organization

Formally the center resides directly under the vice-chancellor of Linköping (Mille Millnert)

Contract between the four universities

Steering committee

- Lennart Ljung (LiU, chm)
- John B. Anderson (LU, v chm)
- Patrick Doherty (LiU)
- Erik G. Larsson (LiU)
- Per Runeson (LU)
- Bertil Svensson (HH)
- Claes Wohlin (BTH)
- Anders Ynnerman (LiU)
- Karl-Erik Årzén (LU)
- Viktor Öwall (LU)

- Meets in corpore 6-8 times / year

ELLIIT Industrial Advisory Board

Henrik Nilsson - Schneider-Electric
Olle Viktorsson - Ericsson
Fredrik Hertzberg - Axis
Shiva Sander-Tavallaey - ABB
Karin Ståhl-Gunnarsson - SAAB
Claes Lundström - Sectra
Tony Sandberg - Scania

Meet in corpore first time at ELLIIT kick-off, 11-12 Nov,
Linköping

ELLIIT - Projects

Physical Layer:

- Very Large MIMO Arrays
- RR Mesh
- Cross-layer and cross-system design of automotive traffic safety applications

Electronics:

- Low power low cost radio with asynchronous wakeup functionality
- Wideband power-efficient radio transceivers, using digital-assisted frontend combined with digital linearization/error correction

Embedded Systems:

- Flexible embedded platforms for ELLIIT applications
- Integrated Scheduling and Synthesis of Networked Embedded Event-Based Control Systems

ELLIIT - Projects

Software Systems:

- Feedback-based software project management in lean software testing
- Tools and Languages for Modeling and Optimization
- Trusted embedded systems and network infrastructure

Autonomous Systems:

- Cooperative Cyber-Physical Systems
- Navigation and Perception

Complex Systems:

- Scalable Rendering and Visualization
- Process Learning
- Future Vehicle Models
- Optimization and Identification in Distributed Systems