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

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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

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ELLIIT - Content

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ELLIIT - Budget

Ramp up: Distribution:
- 2010 17.3 MSEK
- 2011 21.1 MSEK
- 2012 30.7 MSEK
- 2013 30.7 MSEK
- 2014 30.7 MSEK
- 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
  - Jon Jannesk (UTRC, Xilinx) → CS, Lund

50% to research projects
- Currently 16 projects
- Mostly involving groups from several universities
- Only partially funded by ELLIIT

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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 (LU)
- Per Runeson (LU)
- Berit Svensson (HH)
- Claes Wohlin (BTH)
- Anders Ynnerman (LIU)
- Karl-Erik Årzén (LU)
- Viktor Öwall (LU)

- Meets in corpore 6-8 times / year

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ELLIT Industrial Advisory Board

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

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

ELLIT - 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 ELLIT applications
• Integrated Scheduling and Synthesis of Networked Embedded Event-Based Control Systems

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