



UPPSALA
UNIVERSITET



**35th CERN School of
Computing**
August 13—24, 2012

Ingela.Nystrom@it.uu.se



Europe

Sweden

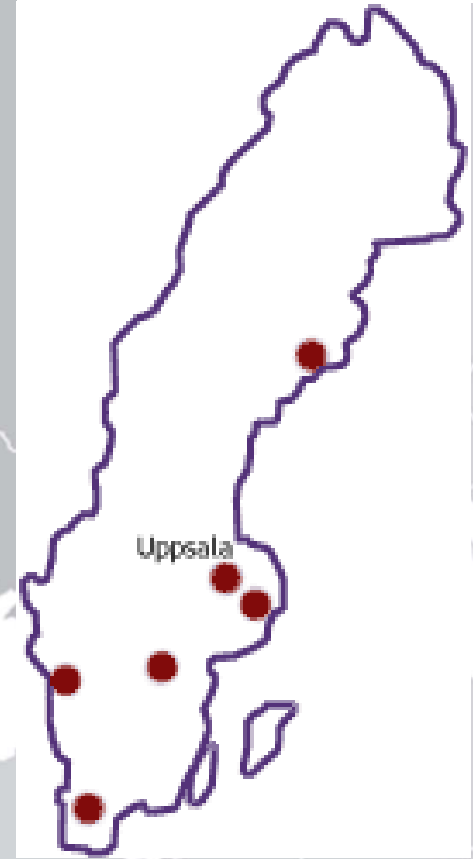
Area: 500,000 km²

Population: 9 million

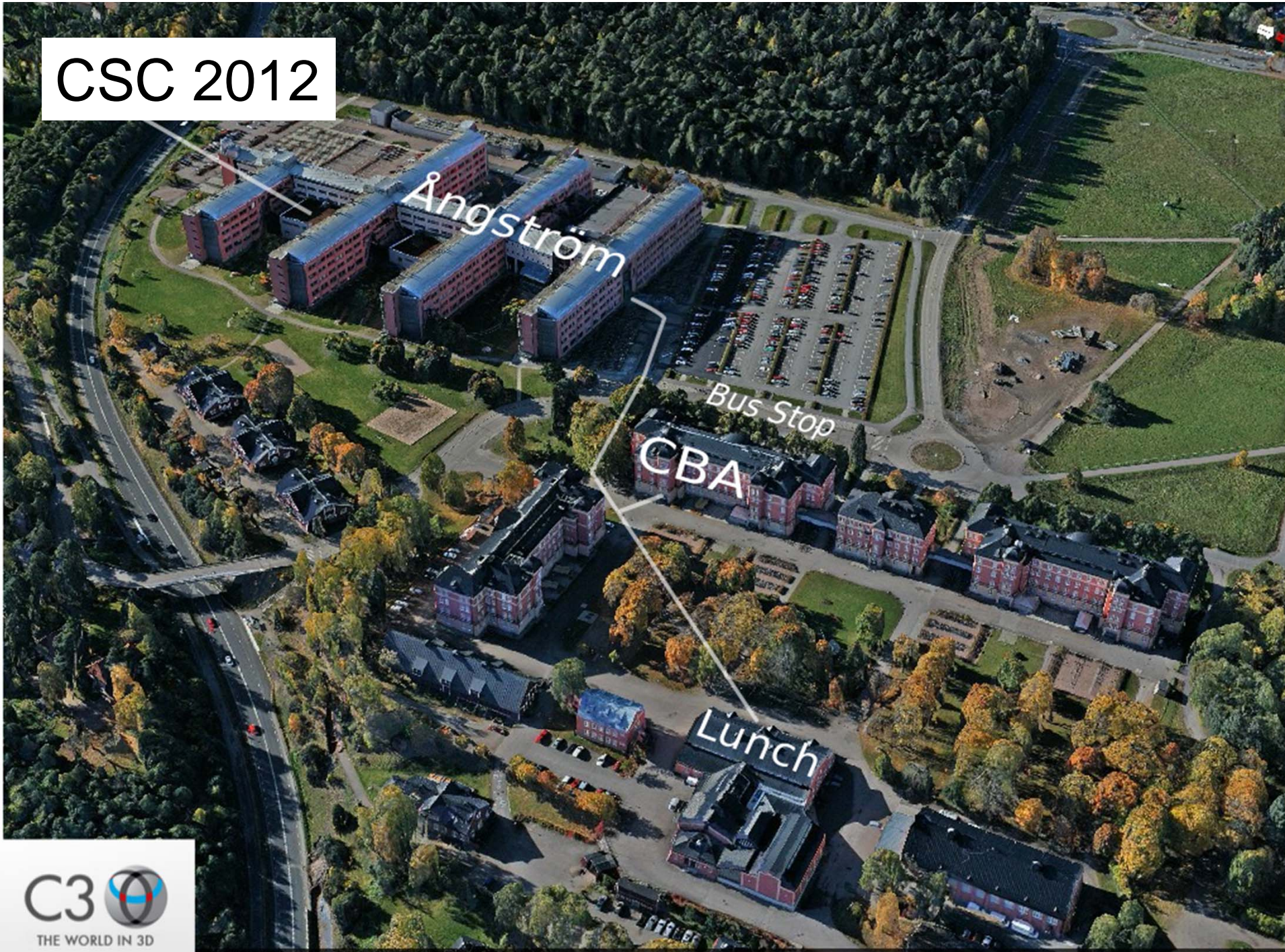
Switzerland

Area: 41,000 km²

Population: 8 million



CSC 2012





UPPSALA
UNIVERSITET

Local Organisation Committee

- **Chair:**
Ingela Nyström,
Director of eSSENCE, Head of Centre for Image Analysis
- **Co-chair:**
Hans Karlsson,
Director of UPPMAX
- **Technical Chair:**
Jukka Komminaho,
System Expert Manager of UPPMAX
- **Local Administrator:**
Lena Nordström,
Administrator of Centre for Image Analysis
- **Team**



UPPSALA
UNIVERSITET

SNIC-UPPMAX

Uppsala University's Resource of
High-Performance Computers,
Data Storage, and Know-how

Uppsala Multidisciplinary Center
Advanced Computational Science
UPPMAX





the Strategic e-Science Collaboration



UPPSALA
UNIVERSITET



LUNDS
UNIVERSITET



Vision

- Providing excellence and scientific solutions at all stages of the e-Science process
 - e-Science for disciplinary progress in distributed research collaborations
 - Interdisciplinary collaboration for progress in methods and tools for e-Science applications

***Advancing science through
leading computation, information
and communication technologies***

Research Areas & Programs

Materials Science

- Materials physics
- Chemistry of complex materials
- Nano materials

Human Function and Environment

- Linguistics and visual information
- Pattern recognition in the living brain
- Economic demography
- Ecosystems and climate change

Life Science

- Computational biology
- Bioinformatics

Generic e-Science Methods and Tools

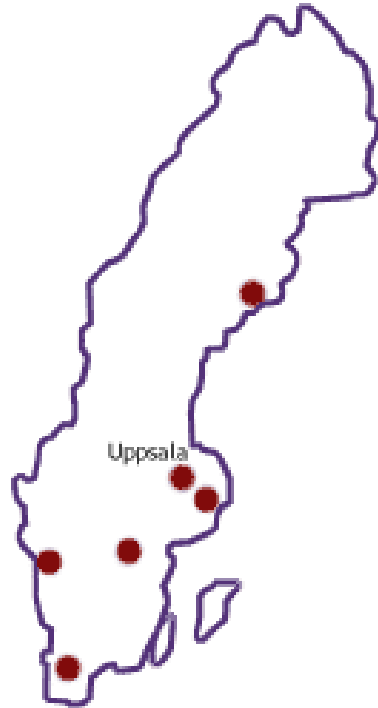
- Distributed computing services and grid
- Computational algorithms and optimization also for GPU:s
- High-performance parallel computing
- Virtualization technology

In total some 25 projects



UPPSALA
UNIVERSITET

www.uppmax.uu.se



- The Swedish National Infrastructure for Computing (SNIC) is a meta-centre hosted by Uppsala University
- SNIC and UPPMAX formed in 2003
- UPPMAX is one of six centra within SNIC
- UPPMAX is one node in the SweGrid national grid
- UPPMAX is hosting the National Graduate School of Scientific Computing (NGSSC, www.ngssc.vr.se)

SNIC www.snic.vr.se

 www.swegrid.se
SweGrid



UPPMAX systems

- **Tintin**, AMD Interlagos, 2.8 GHz
164 nodes, 2624 cores,
64 GB per node (11 TB RAM) **Delivered in 2011**
- **Kalkyl**, Intel Nehalem, 2.26 GHz
348 nodes, 2784 cores, 24-72 GB per node
(6.5 TB RAM) **Delivered in 2009**
- **SweGrid: Grad**, Intel E5430, 2.66 GHz
64 nodes, 512 cores, 16 GB per node
Delivered in 2008
- **Other systems**
 - **Halvan**, a "fat" 64-core node (2.0 TB)
 - **Data storage**: fast parallel file system (appr. 1.5 PB)
 - **Tape-robot** for backup



UPPSALA
UNIVERSITET



**35th CERN School of
Computing**
August 13—24, 2012

Ingela.Nystrom@it.uu.se