

Magnus Almgren

DAT285B: LECTURE 1

ADMINISTRATIVE DETAILS

Support Team

- Examiners
 - Marina Papatriantafilou
 - Magnus Almgren
- Course Support Team
 - Olaf Landsiedel (assistant professor)
 - Daniel Cederman (PhD)
 - Zhang Fu (PhD)
 - Georgios Georgiadis(PhD)
 - Vincenzo Gulisano (PhD)

Details in course memo on web page:

<http://www.cse.chalmers.se/edu/course/DAT285B/>

Course Slots

- Tuesdays = presentations
- Wednesdays = project updates, discussions
- *sw1: tue / wed (8103)*
- *sw2: tue/wed*
- *sw3: tue/wed*
- *sw4: tue/wed*
- *sw5: tue/thu: 05-02: 08-10 3364*
 - Glen Nivert: Cactus UniView
- *sw6: tue (8103); wed*
 - Rikard Bodforss: OmegaPoint
- *sw7: tue; wed*
 - Gunnar Björkman: ABB and EU Coordinator VIKING
- *sw8: tue (8103); wed*



Vital infrastructure is close to our heart.

We create systems that help infrastructure owners to secure and optimize operations. Such as access to safe water, a modern railway and a sustainable energy supply.

Our clients have something else in common: business activities that favour a long-term sustainable society. The cactus was our inspiration when we named our company. It lives and thrives in environments that are harsh and demanding – just like our systems.

The art of running projects.

Our project management ability has become something of an institution. It encompasses everything from punctual implementation of the highest quality, to keeping to agreed budgets. We are certified to ISO 9001:2008.

Thinking beyond.

As a company, we have been working on the Swedish automation market for longer than many others. Work with us and you will therefore be working with some of Sweden's most highly experienced project managers, process engineers, system developers and automation engineers.

We delivered our first system back in 1974. You can rely on us, we know your business. Thinking beyond.

For a sustainable environment

Cactus UniView is an environmental diploma businesses dealing with environmental management and is environmentally friendly according to established requirements.

[Read more](#)



News

MAR 5 2013

[We welcome Dennis Wanninger](#)

We welcome Dennis Wanninger, our new Sales manager, Business area Process. Dennis will be coached into our business by Sven-Olof Olsson. Dennis comes from Indico Systems, Copenhagen.

JAN 28 2013

[New ARS installed at Roslagsbanan](#)

Cactus UniView has installed an improved Automatic Route Setting (ARS) functionality at Roslagsbanan. New features means further simplifications and improvements controlling trains on the line.

[Read more about Cactus TMS at SL.](#)

DEC 13 2012

[Order from OKG](#)

Cactus UniView wins an order from OKG Nuclear power plant in Oskarshamn, containing expansion of their test- and measurement systems for BWR 2. OKG produces more than 10% of the Swedish electrical consumption.

NOV 5 2012

[We welcome Björn Nilsson](#)

Björn Nilsson starts today as a Project Manager Process in Helsingborg.

OCT 10, 2012


[Big thanks!](#)

A really big thank you to all of you who visited us during the Water fair, 18-20th of September in Gothenburg. It was by far the best show of this century. The future is created every day.

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Our advisors and expert consultants provide more business value to your development budget.



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News

LESS! Essays on Business Transformations	6 december 2012
Versatile Security and Omegapoint Announce Joint...	3 maj 2012
Omegapoint Group announces a new subsidiary in USA	9 januari 2012
Omegapoint initiates cooperation with BRIO	22 juni 2010
Omegapoint speaks at Dataföreningen	13 maj 2010

Blog

Begreppet "moin" - är det så smart?	18 Days Ago
Dreyfus - vad datorer inte kan	21 Days Ago
Pratar på NFI Testforum	38 Days Ago
Java and the Machine	39 Days Ago
Presentation: The web performance testing toolbox	40 Days Ago

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Security Architect
Security Expert
Security Architect

Security solutions

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Access Control
Centralised Logging
Integrated Entry Systems
Single Sign-On
Smart Cards
Secure Remote Access
Identification Solutions

Education

Secure Application Development
Security Conscious
Domain Driven Design
Secure Testing
Test Driven Development

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SCADA system security poses major challenges for electric power distribution companies today.

About viking



Written by Administrator

Sunday, 14 March 2010 18:46

The VIKING project is an EU financed Framework 7 Collaborative STREP Project and is part of themes 4, ICT, and 10, Security. VIKING stands for *Vital Infrastructure, Networks, Information and Control Systems Management* and will be executed between November 1, 2008 and October 31, 2011 by a consortium of industrial and academic partners.

The main objectives of VIKING are:

- To investigate the vulnerability of SCADA systems and the cost of cyber attacks on society
- To propose and test strategies and technologies to mitigate these weaknesses
- To increase the awareness for the importance of critical infrastructures and the need to protect them

Society is increasingly dependent on the proper functioning of the electric power system, which in turn supports most other critical infrastructures: water and sewage systems; telecommunications, internet and computing services; air traffic, railroads and other transportation. Many of these other infrastructures are able to operate without power for shorter periods of time, but larger power outages may be difficult and time consuming to restore. Such outages might thus lead to situations of non-functioning societies with devastating economical and humanitarian consequences. For this reason, this consortium has decided to concentrate its research to the systems for transmission and distribution of electric power. We anticipate that most of the results will be applicable to the protection of other critical infrastructures.

The operation and management of the electric power system depend on computerized industrial control systems. Keeping these systems secure and resilient to external attacks as well as to internal operational errors is thus vital for uninterrupted service. However, this is challenging since the control systems are extremely complex. Yet, the systems are operating under stringent requirements on availability and performance: If control and supervision are not done in real-time, the power network may come to a collapse.

These computerized control system, normally called SCADA standing for System for Control And Data Acquisition, includes functions for remote acquisition of vast amounts of data from measurements placed in strategic points, e.g. power stations, in the geographically widely spread electrical and for the remote control of process devices. Many SCADA systems include computerized models of the process which enables simulation of alternatives process states and of optimization. Due to legal and environmental constraints, e.g. for building of new high voltage power lines or power stations, the primary process itself is difficult to expand which in its turn leads to higher and higher utilization of the existing transmission and generation resources. The process is, in other words, operated closer to its physical limits. Those the SCADA systems are becoming increasingly critical for the operation of the process and therefore are becoming a critical component for the availability and security of the supervised infrastructure.

The objective of the VIKING project is to develop, test and evaluate methodologies for the analysis, design and operation of resilient and secure industrial control systems for critical infrastructures. Methodologies will be developed with a particular focus on increased robustness of the control system. As mentioned, the focus is on power transmission and distribution networks. The project combines a holistic management perspective—in order to counteract sub-optimization in the design—with in-depth analysis and development of security solutions adapted to the specific requirements of networked control systems.

The traditional approach to verify the security of SCADA systems has been ad-hoc testing of

Others

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VINN STARTPLATSER TILL LILLA OCH MELLAN GÖTEBORGSVARVET!

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Mina energisidor

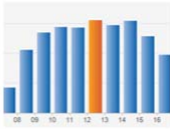
Vad kan vi hjälpa dig med?

- > Har du frågor om fakturan?
- > Vill du ha e-faktura?
- > Vill du göra felanmälan?
- > Dags att flytta?
- > Lediga jobb
- > Vill du köpa el?


Som Västsveriges ledande energiföretag erbjuder vi el, elnät, fjärrvärme och gas.

Bra Miljöval


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Genom den kostnadsfria tjänsten "Din elanvändning" kan du nu följa din elförbrukning per månad, dygn eller timma



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Här ska vi producera biogas genom förgasning av skogsråvara. Se filmerna och läs mer om projektet här.



> **Dags att tekna nytt elavtal?**
Hos DinEl kan du sätta ihop ditt eget avtal, efter dina egna preferenser och boendesituation.

Nyheter & pressreleaser > Fler nyheter

- 2013-02-27 > Information om rivning och ombyggnation av Rosenlundswerket
- 2013-02-26 > Vinnare av EM-biljetter i februari
- 2013-02-26 > Göteborg Energi deltar i nationellt forskningsprogram inom elkraftteknik

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- > Fjärrvärme
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Life Science

We are increasing in numbers and the average age is also increasing in many countries. This is raising the demand for everything from sustainable food production to the development of medicines and medical-technological aids.



News and Press Releases


[2013-03-11]
New issue of technology:research
A new research institute is born. Bio-oil from pulp residues. Martin works with ultracold atoms. Some of the content in No. 1/2013.
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[2013-03-07]
Swedish glass-based technology exhibited at giant Spanish trade fair
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[2013-01-21]
New research institute for Sweden
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[2012-12-18]
Swedish-Norwegian collaboration on fire technology
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Monitoring of the earth's atmosphere for safer satellite measurements

A new web service which predicts atmospheric changes based on solar activity is the result of a project collaboration between SP, Chalmers and Lantmäteriet. The web service is extremely helpful for identifying problems with satellite measurements.
[Read more...](#)



New tool promotes solar energy

It will now be easier for consumers and importers to compare the exchange of energy of different solar collectors with each other.
[Read more...](#)

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Passing the course

- Projects
 - Successfully completed project
 - Written report
- Seminars & Reading papers
 - Reading list
 - Each person chooses one paper (approved by us)
Easy paper → take two
 - All people in the course read all these papers
 - Presentation
 - Each team present their 2 papers
 - Another team actively prepares questions to "oppose"
- Participation for industry lectures and course activities.

Projects

- Building a testbed for AMI
- Security testing for AMI
- Online monitoring of energy consumption
- Simulation and in-network aggregation of smart meters data
- A simple demand response service
- Power storage and distribution scheduling in smart grid
- Real-time sensor network topology visualization

<http://www.doodle.com/siyha3fgcmz4bwcf>