

# A contribution to the improvement of Information Assurance by education at the level of Informatics Apprentices

For WISE4, 2005, Moscow

After May 23th: [www.cosit.ch/wise4/schwyter\\_pres.pdf](http://www.cosit.ch/wise4/schwyter_pres.pdf)  
[www.cosit.ch/wise4/schwyter\\_doc.pdf](http://www.cosit.ch/wise4/schwyter_doc.pdf)

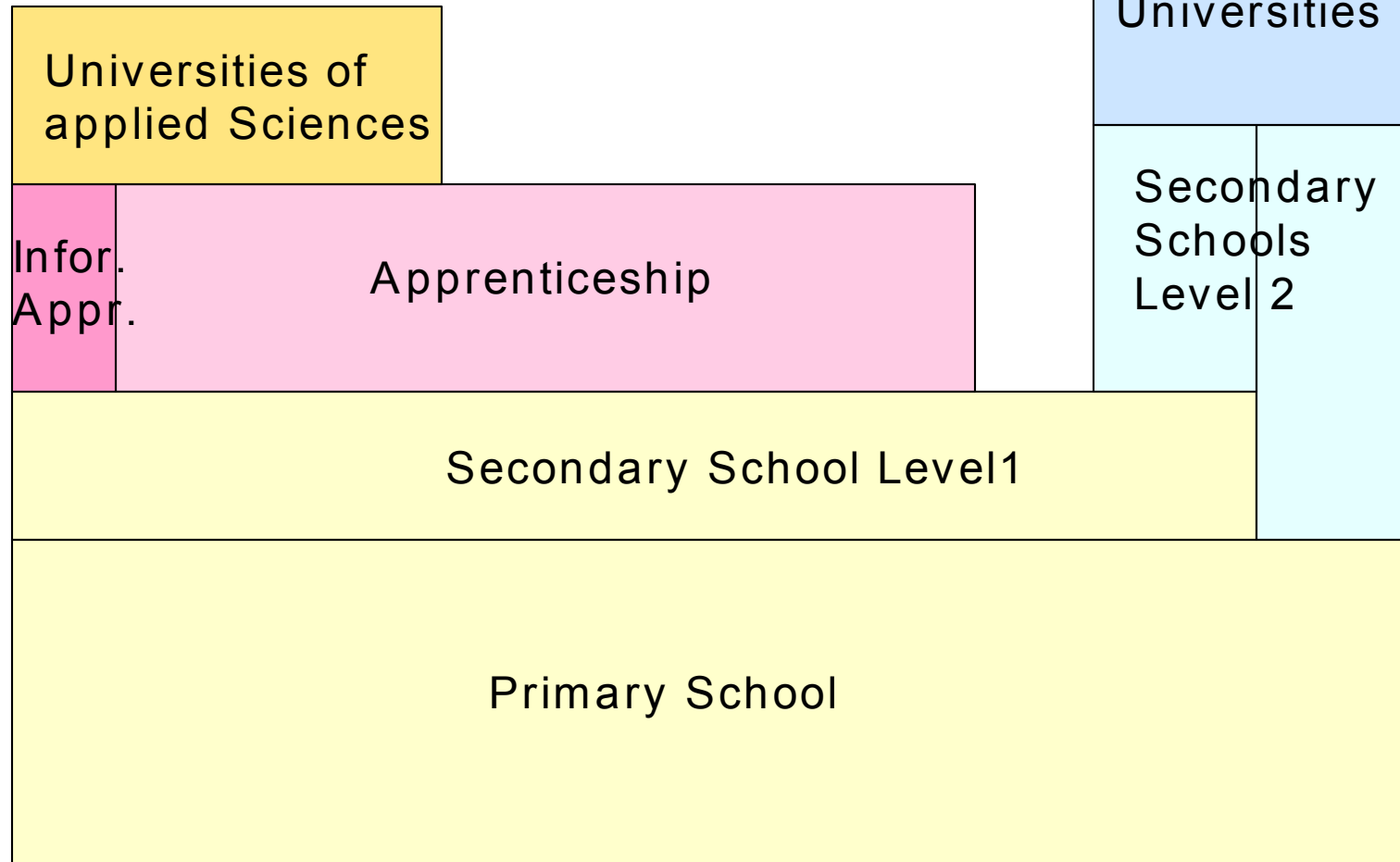
Fredy Schwyter, Lecturer, [schwyter@cosit.ch](mailto:schwyter@cosit.ch)  
Prof. Dr. Bernhard M. Hämmerli, HTA Lucern, [bmhaemmerli@hta.fhz.ch](mailto:bmhaemmerli@hta.fhz.ch)

# Agenda

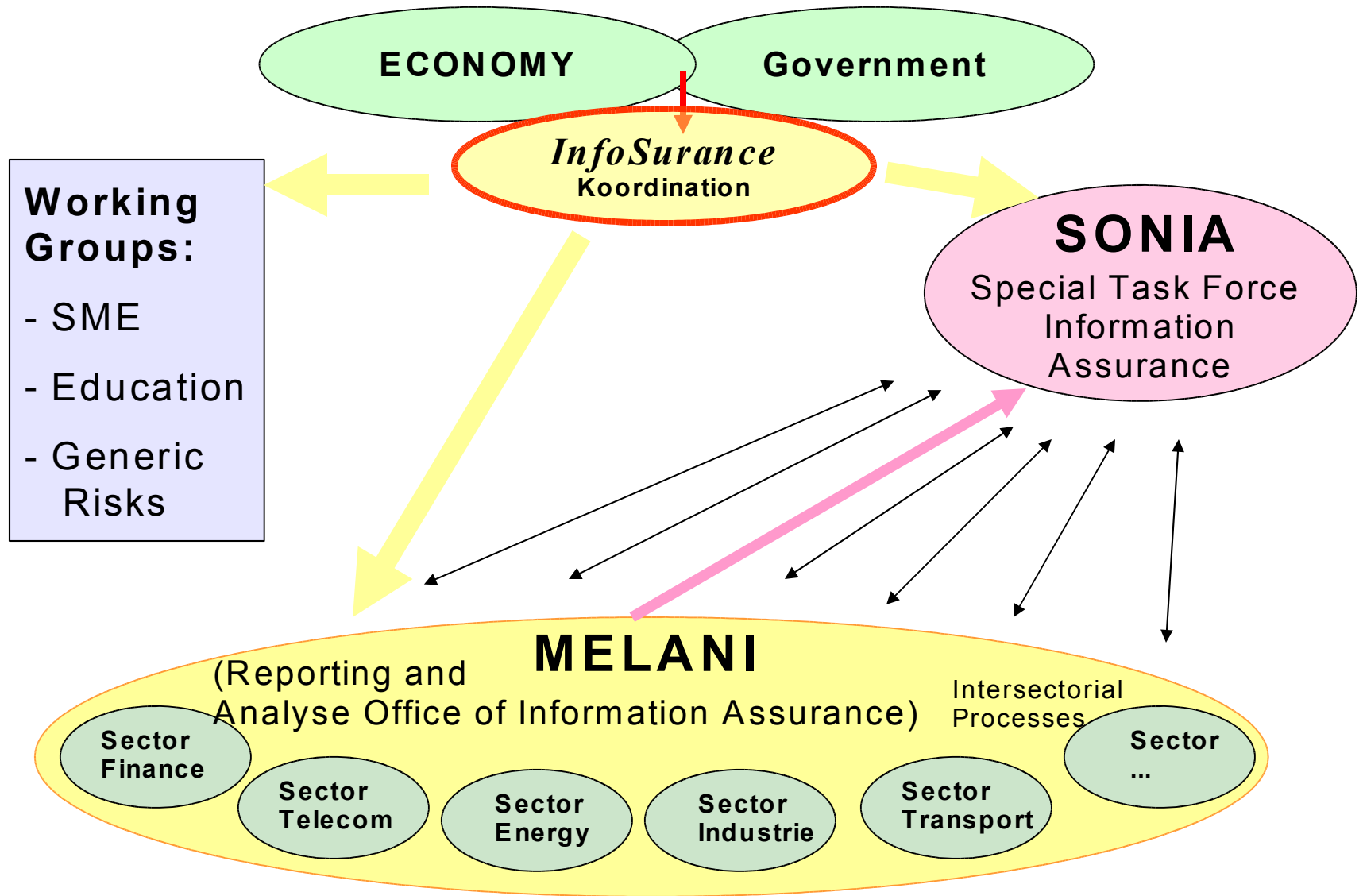
- Introduction
- Objectives of InfoSurance
- Hypothesis
- Implementation
- Discussion of results
- Conclusion and perspective

# Introduction

School System of Switzerland (very much simplified)



# Objectives of InfoSurance



# Hypothesis

- How can we implement Information Assurance directly and efficiently in SMEs?

**The education of informatics apprentices is of fundamental importance!**

- And: Teach their teachers!

# Implementation

- Teachers' retraining courses in technical colleges
  - For teachers teaching informatics apprentices
  - For every teacher using informatic equipment
- Modules of 40 lessons for each apprentice
  - > Basics in information security
- Modules of 40 lessons for informatics apprentices
  - > Basics in information security
  - > System security
  - > Network security

# Example: Terms to choose for short presentations

## Netzwerk-Sicherheit

Begriffe zur Einführung

## Standards (Netzwerkteil)

Common Criteria

Cobit

ISO 17799

BSI-Handbuch

## Policies

Netzwerk

Remote Access

Firewall

Proxy-Server

Upgrades

## Netzwerk-Sicherheit

Sicherheits-Konzept

Zugriffs-Schutz

Redundanz

Phys. Sicherheit

Vergleich: Cu-Glas-Funk

## Analysen

Intrusion Detection System

Logfiles

Verkehrsfluss

Penetration-Tests

Wardriving

Bandbreite

Integrität Bsp. PGP

Identität Bsp. LDAP

## Sicherungs-Protokolle

ISO/OSI-Modell + S.-P.

IPSec

SSL/TLS

WEP

WPA

sftp

ssh

Kerberos

bei VOIP

bei GSM

bei GPRS

bei UMTS

## Sicherheit in Mobil-Devices

Handy

Laptop

PDA

## Attacken

DDoS

Flooding

Man-in-the-middle

Missrouting

Sniffing

Port-Scanning

# Discussion of results

- Approx. 60% of informatics apprentices with the possibility to choose enrolled for either System Security or Network Security
- Feedback was generally very positive
- No teachers' security courses !!!  
Reasons:
  - => Not enough time for special retraining courses
  - => Large preparation effort for their „conventional“ lessons
- Teachers usually choose retraining courses directly associated with the preparation for a specific module

# Conclusion and perspectives

Responses from envolved teachers lead to the following conclusions:

- Training for teachers
  - > Direct association to the teaching modules
  - > Incorporation of IS in the basic education
  - > Teaching material must be prepared for informatics teacher without special IS training
- Conclusions can be transfered to other education systems

Thanks for your attention!

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