

# Information Security Metrics

Vilhelm Verendel  
Department of Computer Science and Engineering  
Chalmers University of Technology

SWITS 2008

Security may be seen as ensuring certain goals in the presence of malicious threats to a system. While it may sometimes be fairly straightforward to deploy a security solution, it is considerably more difficult for decision-making to assess how well a solution works and where improvements should be made, typically using limited resources. A solution to this problem has so far been elusive for many applications of information technology, with the consequence that the evaluation of security may depend heavily on subjective judgement. The field of *security metrics* aims to measure the efficiency of security with respect to various goals. This would allow for informed decisions regarding e.g. investment, selection and placement of security solutions.

In this talk I will discuss basic motivations and some challenges for developing security metrics: besides proposing security metrics, we need to ensure they are usable. When faced with uncertainty about security issues, we need to model goals, threats and systems and understand their interdependence. This has already partially been done in several fields such as risk analysis, dependability, economics and game theory. It is an open problem which model(s) should be used to model security for the requirements of good security metrics in different situations. I will give a brief overview of the problem.