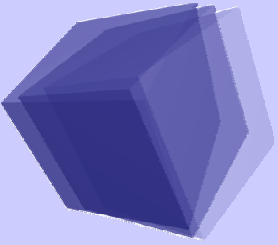
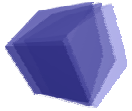




***Critical Information Infrastructure,
Prospects on Vulnerabilities, Protection and
Resilience***

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Goals

Information infrastructures such as the sensor and communication networks are converging. This trend creates highly efficient and ubiquitous services for governmental, commercial and private users, also resulting in an increasing dependency on these infrastructures. Security of these infrastructures is becoming a crucial issue for state and society. The following questions will be addressed:

- **What is the role of information infrastructure and its security in a knowledge-based society?**
- **What are today's and future vulnerabilities of information infrastructures?**
- **Which effort is necessary to detect/percept imminent dangers to information infrastructures?**
- **How can critical information infrastructures be protected and/or made more resilient?**

The session will give a holistic overview on current issues and prospects for critical information infrastructures.



Structure of this Session

Presentations:

- ❖ “A new thinking of information security in the 21th century”, *Adolf J. Dörig*
- ❖ “Emerging Risks in Information Infrastructures”, *Lorenz Hilty*
- ❖ “Risk Management in globally-integrated Ecosystems”, *Maragarete Dovonang-Kuhlisch*“
- ❖ Prospects to Safeguard Critical Infrastructure Components in Space”, *Guido Bartsch*
- ❖ “Critical information Infrastructure Protection CIIP and Privacy: Mutual Conflicts and Support”, *Bernhard Hämmerli*

Panel Discussion



Critical information Infrastructure Protection CIIP and Privacy: Mutual Conflicts and Support

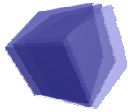
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Bernhard M. Hämmerli
Professor University of Applied Sciences Lucerne

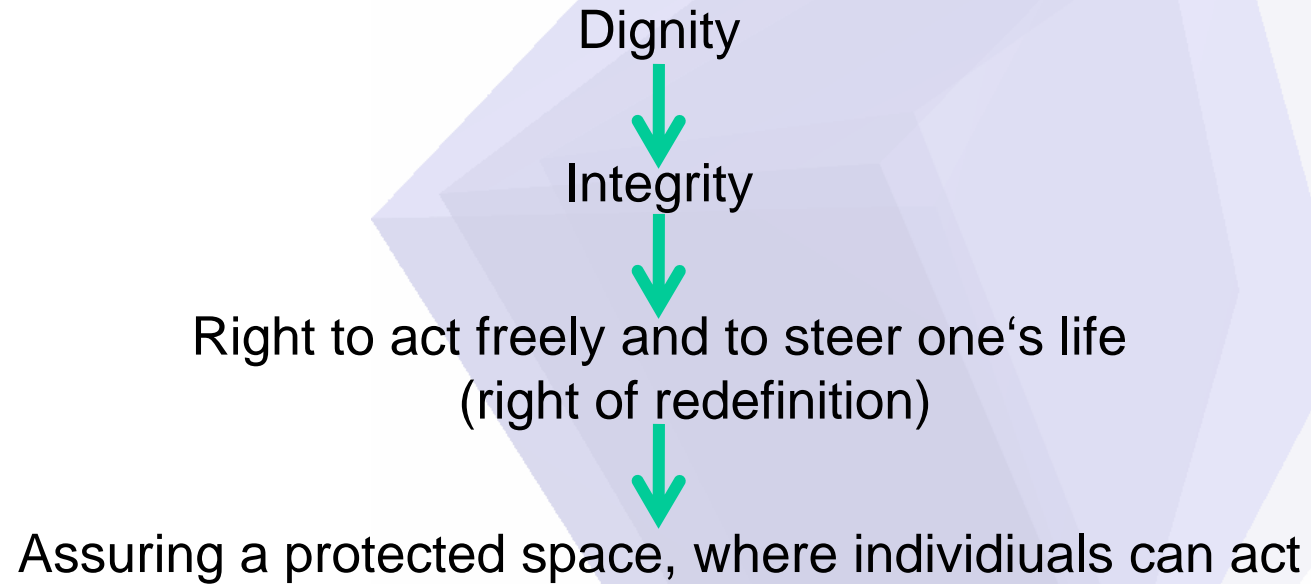


Surveillance, what is possible today?

- ❖ Storage prizes → very low, not an issue anymore
 - ❖ Camera (@infrastructures & @ public places)
 - ❖ Road: tag recognition
 - ❖ Position information by cell phone
 - ❖ Internet traffic (traffic itself and logs)
 - ❖ Voice recording & recognition
 - ❖ Credit card and other payments
 - ❖ All tickets (flights, train, theatres etc.)
- ➔ Available technology, low costs and the will to minimize the incidents to the lowest possible measure increase the appetite of surveillance, especially in the context of CIIP



Dignity of Human being





Description of the Challenge

“They that can give up essential liberty to obtain a little temporary safety deserve neither liberty nor safety.”

Benjamin Franklins

Applied to C(I)IP we have to distinguish between:

- ▣ Technical data of infrastructure systems with no relation to personal data
- ▣ Technical data, which allows conclusions about persons
- ▣ **Data which relates to one or several persons**



DIVERSITY OF NATIONAL PERCEPTIONS AND AWARENESS

Large groups:

- China
- India
- Arab community
- Europe / USA

Poor and emerging countries

- CIIP necessary??
- Security: is this a luxury?
- Privacy: what is the issue?

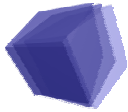
Within large groups

- USA \leftrightarrow Europe:

Data principally are owned by the entity, which collects data (US approach)

Data principally are owned by the person to whom the data relate to (EU approach)

Within Europe: National States



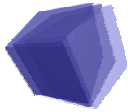
Solutions Part I

- ❖ *Data ownership by the person to whom the data relate to*
- ❖ PRIVATE ENHANCING TECHNOLOGIES PET

As definitions of PET the EU funded research project PISA [5] and the first COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on Promoting Data Protection by Privacy Enhancing Technologies (PETs) [6] are cited:

PISA: "Privacy-Enhancing Technologies is a system of ICT measures protecting informational privacy by eliminating or minimizing personal data thereby preventing unnecessary or unwanted processing of personal data, without the loss of functionality of the information system"

EU: "...the use of appropriate technological measures is an essential complement to legal means and should be an integral part in any efforts to achieve a sufficient level of privacy protection..."

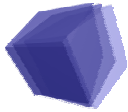


Solutions Part II

Prospective analysis of new security measures on:

- its impacts on privacy
- its impact on society
- possible misuse of these technologies

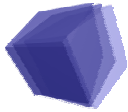
and to take actions accordingly!



My Dream is developing CIIP with

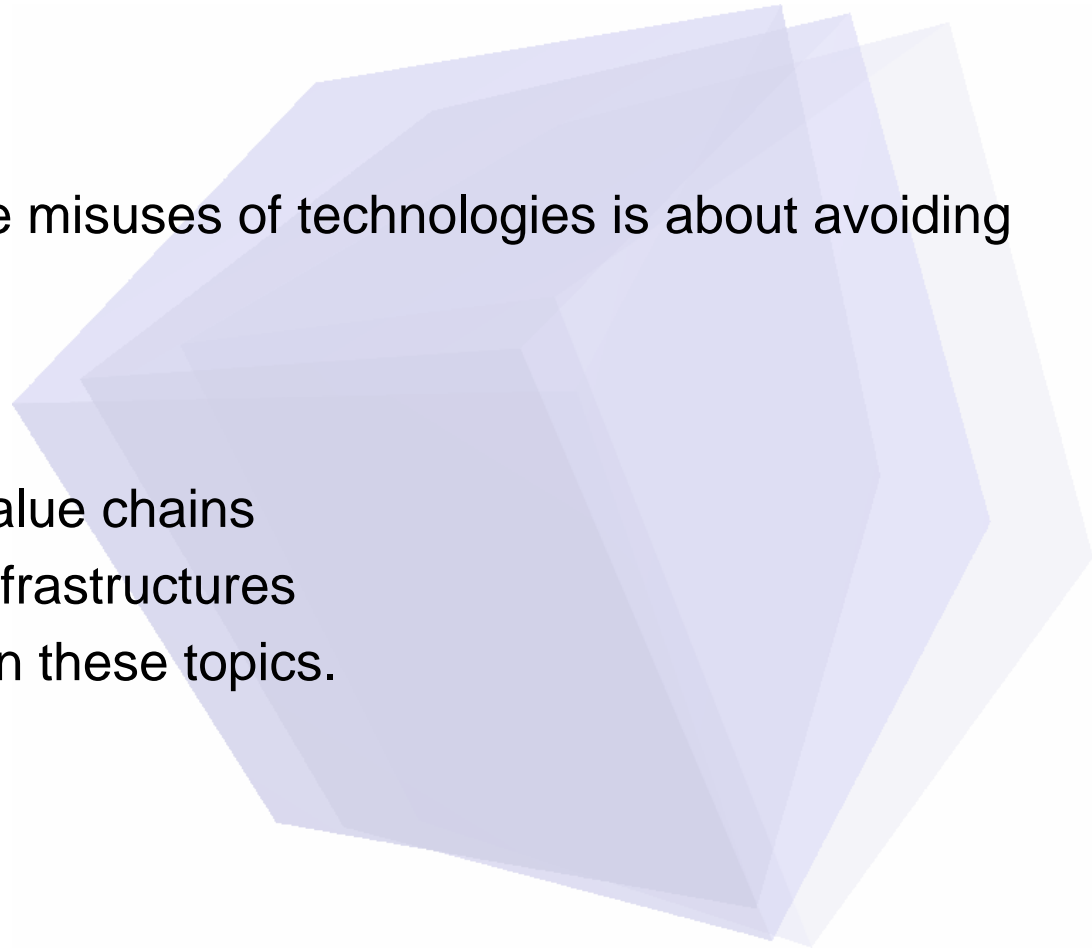
- ... prospective evaluation of new security technologies
- ... acting as US-EU before other cultures dictates rules
- ... investing more in research of
PET Privacy Enhanced Security Technologies.
- ... finding a cultural balance between security demand and incidents.

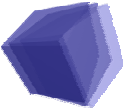
Remember: **“They that can give up essential liberty to obtain a little temporary safety deserve neither liberty nor safety.”**



And don't forget

- ❖ Warning on possible misuses of technologies is about avoiding misuse.
- ➔ Invest in security
- ➔ Invest in securing value chains
- ➔ Invest in securing infrastructures
- ➔ Invest in research on these topics.





Thank you for your Attention
Questions?

