

# Privacy in E-Learning

Hauptseminar "E-Learning" – Sommersemester 2008

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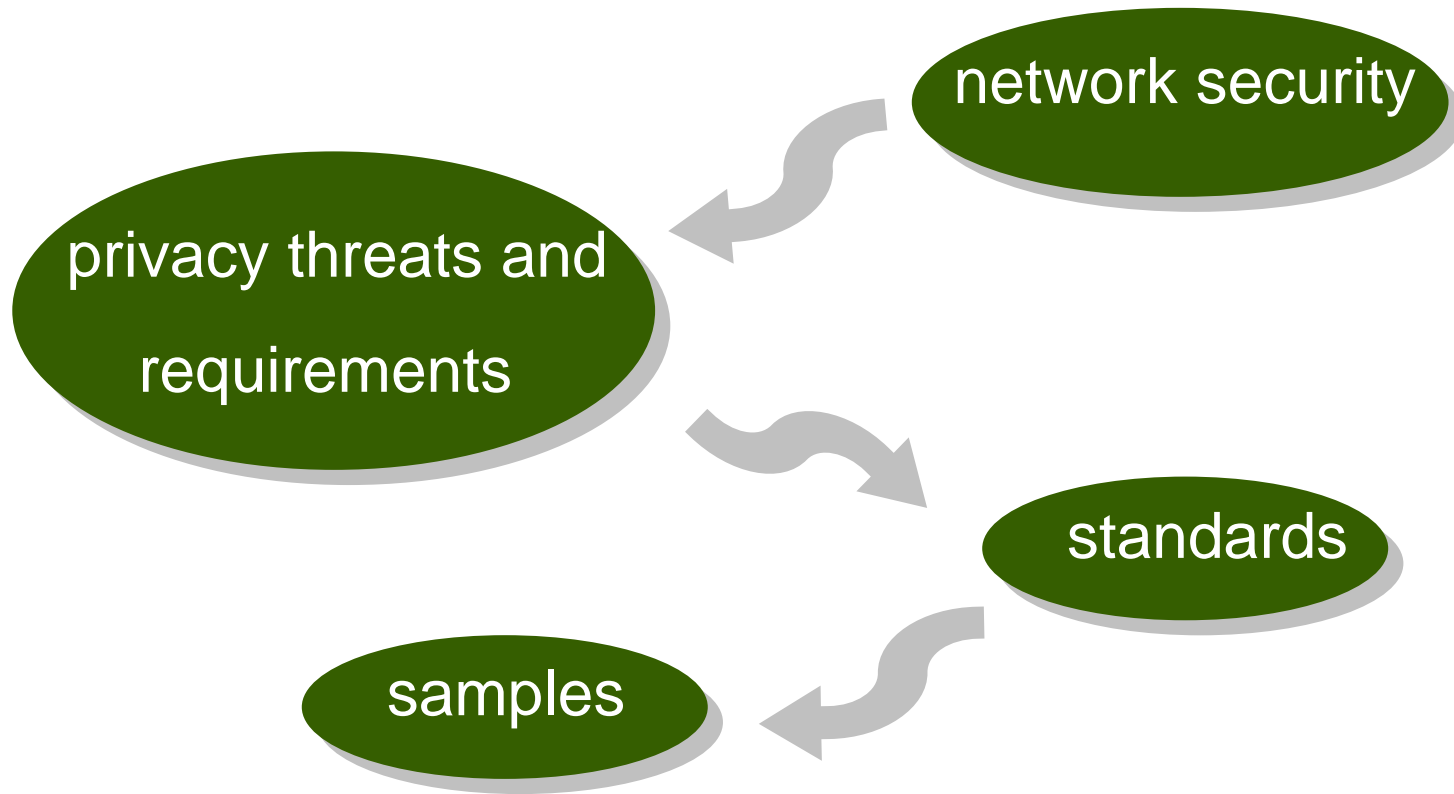
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Florian Schulz

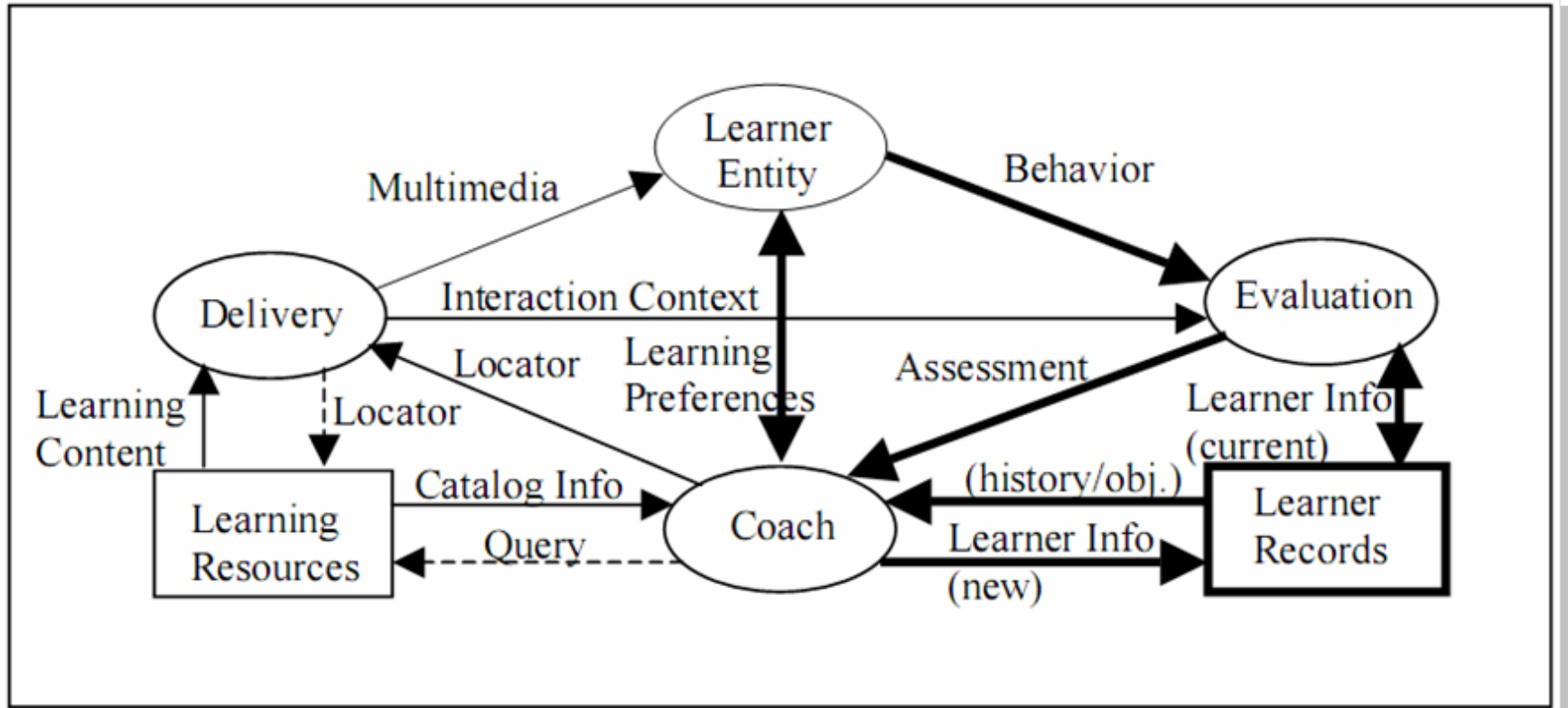
LFE Medieninformatik

7/22/08

# overview



# why network security?



El-Khatib, K., Korba, L., Xu, Y., Yee, G., 2003. Privacy and security in elearning. In: International Journal of Distance Education. Volume 1, Number 4. Idea Group Publishing.

network security is a fundamental  
privacy requirement

# network security...



authentication



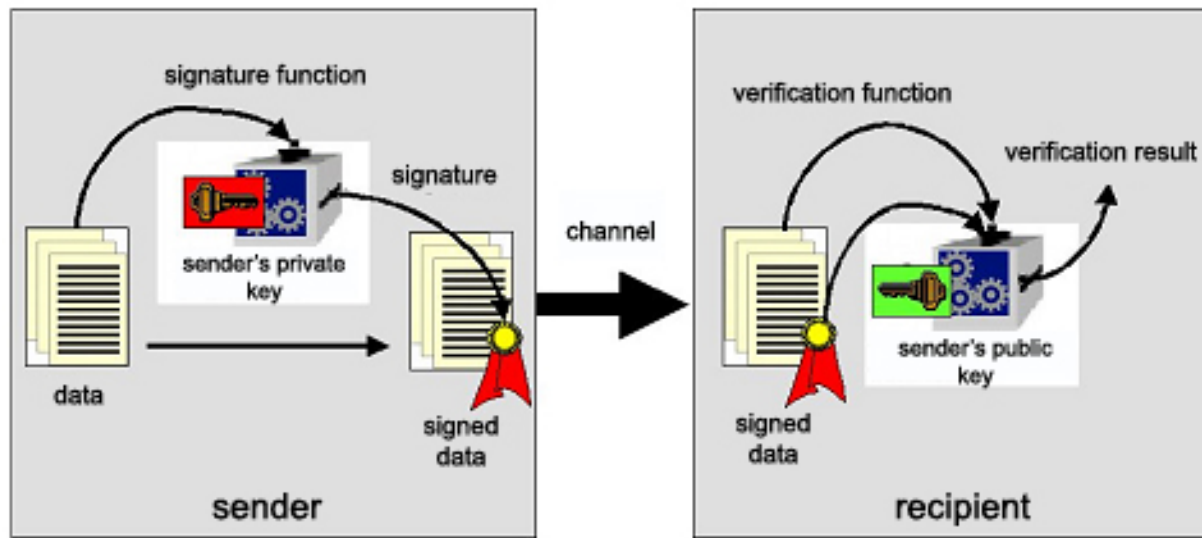
data integrity



network privacy

# authentication

- ≡ “verification” of the users' identity
- ≡ several possible methods, like:
  - ≡ user name and password
  - ≡ digital signatures



Fischlin, Giessler, Nitschke, Ritter, 2005. Verschlüsselung und Signatur – Grundlagen und Anwendungsaspekte. In: E-Government Handbuch. Projektgruppe E-Government im Bundesamt für Sicherheit in der Informationstechnik (BSI).

# data integrity

- ≡ proof of the senders' identity (cp. authentication)
- ≡ no data loss, damage or manual changes
- ≡ possible method: digital signatures
- ≡ but: Are there really the denoted persons sitting on their PCs?
- ≡ necessity to use conventional education concepts:
  - ≡ monitor students by camera?
  - ≡ monitor students by physically present human supervisor?

# network privacy

- ≡ risk of private data being wiretapped
- ≡ use of ciphering algorithms
  - ≡ symmetric method:
    - one key for both encryption and decryption (Kerckhoffs' principle)
  - ≡ asymmetric method:
    - private and public key
    - need of certification authorities (CAs)



# privacy threats and further requirements

# privacy threats and requirements

## ≡ copyright protection

→ privacy not only for students but also for educators

## ≡ stored data

→ user tracking needed to enhance an applications usability?

## ≡ credentials

→ prove not only users' identity but also educational credentials

## ≡ customizable privacy levels

→ what is stored?      what is tracked?      what is visible?

# standardized privacy and security concepts



# Platform for Privacy Preferences



# sample e-learning platforms



## IfKW Moodle

You are currently using guest access ([Login](#))

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- BA Qualifikationsphase
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- Magister
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 **Moodle-Login mit Extranet-Kennung**  
by Moodle Admin - Monday, 9 June 2008, 01:20 PM

Der Moodle-Login ist nur mit den Kennungen des IfKW-Extranet möglich. Passwort-Änderungen müssen ebenfalls über das Extranet <http://extranet.ifkw.lmu.de> vorgenommen werden.

 **Falsch dargestellte Namen**  
by Moodle Admin - Thursday, 19 October 2006, 12:06 PM

Leider wurden Namen mit Umlauten fehlerhaft aus der Extranet-Datenbank übernommen. Sie können die Fehler selbst korrigieren: Nach dem Login auf den Namen oben rechts auf der Seite klicken, und "Profil bearbeiten" auswählen.

### Calendar

July 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

### Course categories

BA Orientierungsphase	18
BA Qualifikationsphase	34
Master	5
Magister	3
Medieninformatik	
Verschiedenes	10
Archiv	47

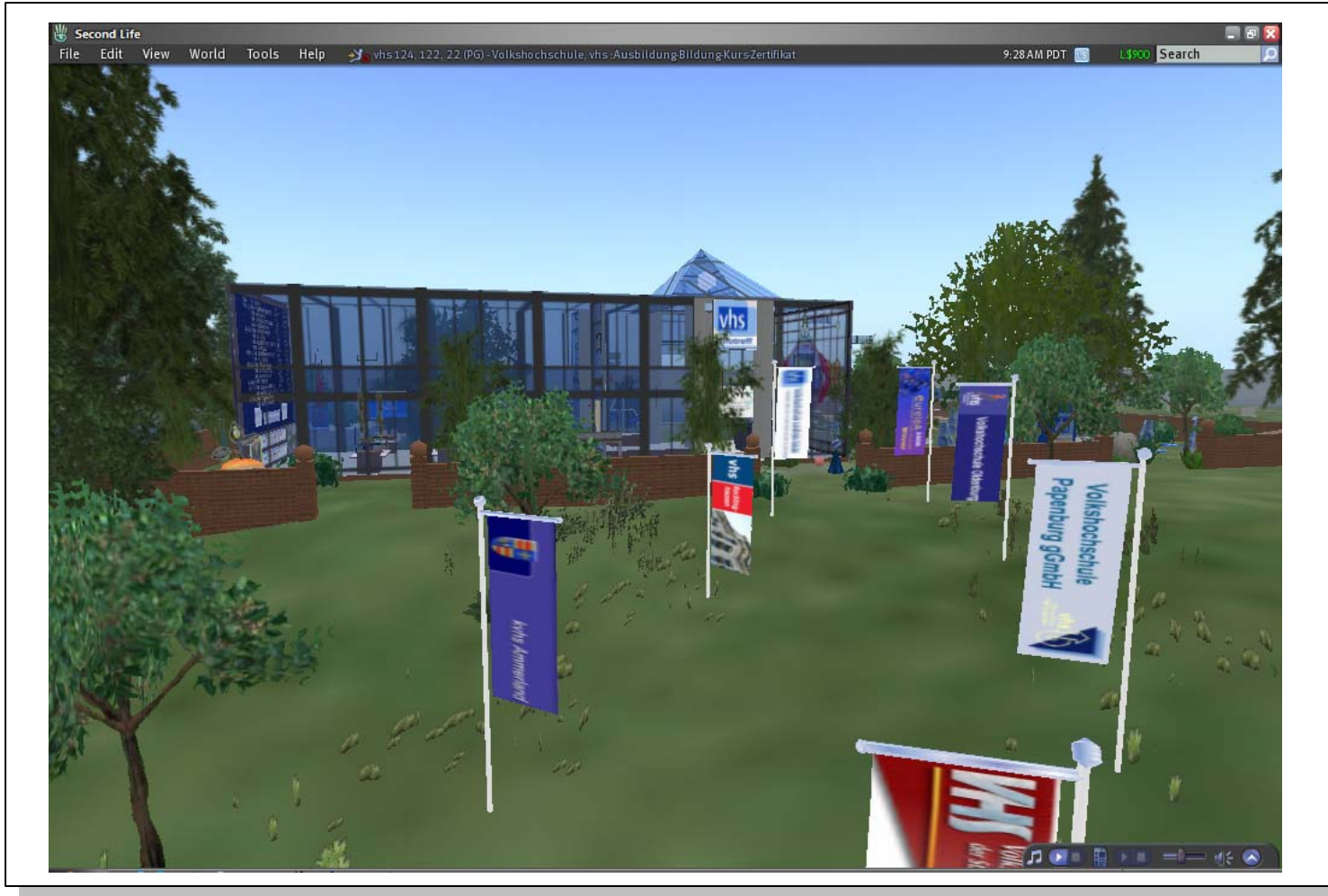
Search courses:

<http://moodle.ifkw.lmu.de/index.php>

# Moodle

- ≡ adjustable security level (only adjustable by educators)
  - ≡ access for anybody
  - ≡ access with course enrollment key
  - ≡ access after manual enrollment
- ≡ tracking of registered users
- ≡ no possibility to change privacy level for students
- ≡ but: modular and extensible design
  - possibility to implement privacy preserving plug-ins

# Second Life



<http://slurl.com/secondlife/vhs/128/149/24/>



# Second Life

- ≡ hidden user identity
- ≡ in-world rights management
- ≡ copyright protection (?)
- ≡ proprietary platform
- ≡ not (yet?) ready to allocate complete e-learning functionality

# conclusion

