

The Bermuda Triangle of Identity Technologies

- Symposium -

January 15, 2015, Radboud University

Brand new technical functions are arising that make users' lives easier and more fun, but also more exploitable. The user's privacy and autonomy are often under pressure due to such new technologies. For instance, a mobile application, assisting people in their schedule and navigation, can store all location details of its users. But the same application can also be turned into location-supported recommendation software or into a tracking tool. Researchers therefore try to think ahead and keep up by proposing alternative technologies and a regulatory framework that aim to safeguard people, their autonomy and privacy. The same application could for instance also be developed using privacy-enhancing technologies and/or the privacy and autonomy of the individuals could be safeguarded by the legal framework.



In the daily use of digital identities in society, the technologies, law and human behaviour play a crucial role. The interplay of these three elements shape the manner in which the technologies affect the users' lives. However, it is often unclear how these three elements interact, and where the risks and benefits for the users are. A clear view on the effects for the users seems to be lost in the Bermuda triangle of the interplay between law, theoretical possibility and practical realisation.

This symposium takes a closer look at this Bermuda Triangle of the implementation of identity technologies in the society. Theoretical, practical and legal aspects are considered to elaborate on the tension among (a) functions that are provided by the current as well as future technologies and (b) the attempt to safeguard the autonomy and privacy of people. Our discussion focusses on questions, like: How can we stay in control of our lives and remain autonomous entities? Are there proper technical and usable solutions? Is it sufficient if theoretical solutions and a preferred legal framework are provided? How much can we trust companies that provide all the technologies and related businesses? And even if we trust the companies, how much can we trust the security of these systems?

Location: **HG 00.304**

Chair: **Jaap-Henk Hoepman**

PROGRAM

Opening: **15:00**

15:10-15:50

The ABC of ABC – an analysis of attribute-based credentials in the light of data protection, privacy and identity

by **Merel Koning and Paulan Korenhof**

Ph.D. students at the PI.lab,
The Netherlands

15:50-16:30

User transparency and user control

by **Simone Fischer-Hubner**
Professor in Computer Science,
Karlstad University, Sweden

16:30-17:10

Privacy-preserving loyalty programs and co-utility

by **Josep Domingo-Ferrer**
UNESCO Chair in Data Privacy,
Universitat Rovira i Virgili, Spain

Reception: **17:10-18:30**

See abstracts and further details on the other side.

The ABC of ABC – an analysis of attribute-based credentials in the light of data protection, privacy and identity

SPEAKERS: **Merel Koning, Paulan Korenhof** PI.lab (Radboud University, Tilburg University)

<http://pilab.nl>, <https://merelkoning.nl>, <https://www.tilburguniversity.edu/webwijs/show/p.e.i.korenhof.htm>

ABSTRACT Our networked society increasingly needs secure identity systems. The Attribute-based credentials (ABC) technology is designed to be privacy-friendlier than contemporary authentication methods, which often suffer from information overspill. So far, however, some of the wider implications of ABC have not been appropriately discussed, mainly because they lie outside of the research scope of most cryptographers and computer engineers. This talk explores a range of such implications, shows that there are potential risks associated with the wider introduction of ABC in society, and makes the case that legal and societal aspects of ABC be subjected to extended interdisciplinary research.

User transparency and user control

SPEAKER: **Simone Fischer-Hubner**, Professor in Computer Science, Karlstad University, Sweden

<http://www.cs.kau.se/~simone/>

ABSTRACT Transparency is a basic privacy principle and factor for establishing social trust. However, in the cloud context the processing of personal data along a cloud chain is often rather intransparent to the cloud customers. Transparency Enhancing Tools (TETs) can help users in deciding on, tracking and controlling their data in the cloud. However, TETs for enhancing privacy also have to be designed to be both privacy-preserving and usable.

In this presentation, we provide requirements for usable TETs for the cloud that we elicited within the scope of the EU FP7 project A4Cloud. Besides, we discuss design principles for usable privacy policies and privacy policy icons. Finally, we present the Data Track that is a TET developed in the A4Cloud project enabling end users to track and control their personal data in the Cloud. The Data Track was developed using both privacy and usability as design criteria.

Privacy-preserving loyalty programs and co-utility

SPEAKER: **Josep Domingo-Ferrer**, UNESCO Chair in Data Privacy, Universitat Rovira i Virgili, Spain

<http://crises-deim.urv.cat/jdomingo>

ABSTRACT Loyalty programs are promoted by vendors to incentivize loyalty in buyers. Although such programs have become widespread, they have been criticized by business experts and consumer associations: loyalty results in profiling and hence in loss of privacy of consumers. We propose a protocol for privacy-preserving loyalty programs that allows vendors and consumers to enjoy the benefits of loyalty (returning customers and discounts, respectively), while allowing consumers to stay anonymous and empowering them to decide how much of their profile they reveal to the vendor. The vendor must offer additional reward if he wants to learn more details on the consumer's profile. Our protocol is based on partially blind signatures and generalization techniques, and provides anonymity to consumers and their purchases, while still allowing negotiated consumer profiling.

Lacking privacy-friendly solutions like the one above, individuals are likely to seek to protect each other against the "system". Co-utility is a paradigm allowing rational individuals to help each other while helping themselves.