

Media release

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TA-SWISS study on localization technologies

Round-the-clock surveillance – how to counter it?

My Smartphone knows where I am and my credit card company does too. My cellphone provider records the time and place of each telephone conversation I have, and my employer registers, when I am opening the door of my office with my electronic access-badge! Where is all this leading us to? A study performed by TA-SWISS, the Centre for Technology Assessment, is delivering the answers with help from Empa.

More and more everyday transactions leave behind a data trace containing information about where we have been and with whom we have been in contact. Whether it is using a mobile telephone, accessing the Internet, being photographed by a CCTV camera, uploading a picture onto an internet platform, opening a door using a chip card or paying for goods with credit card – these transactions can almost always be used to create a movement profile and to reveal information about the user's lifestyle. In addition to the GPS system, which uses satellites to provide location data, there are today more than a dozen other technologies which indirectly allow the location of individuals to be tracked. As they become more widespread these new technologies bring in their wake both opportunities for and risks to our society.

Who is able to and who is allowed to collect, store, process, transmit, or delete data about an individual's current location? And under what conditions? What steps can ordinary citizens, companies and lawmakers take to ensure that this personal localization data is not misused? TA-SWISS has conducted an interdisciplinary study entitled "Localized and Identified: How Localization Technologies are Changing Our Lives" with the intention of raising awareness of this problematic area in the general public and among decision-makers in politics and the administration.

Who can see me – and how clearly?

Lorenz Hilty of Empa's «Technology and Society» group has been involved as Project leader in the study. At the presentation of the results on June 19th in Bern, Hilty provided the audience with information about the

capabilities of the various monitoring technologies which touch our lives. The GPS receiver in a Smartphone, for example, calculates the position of the user to an accuracy of about 10 meters. The GSM mobile telephone network achieves an accuracy of up to 100 meters in cities, but as few as 35 km in the countryside. Whoever connects to a computer using a wireless LAN system gives away their location occasionally to the nearest meter; internet access via a landline may reveal data about the street and house number of the user. Electronic access-badges for office buildings make it possible to know location and time of any of your employees within the campus of your company.

We are becoming more and more dependent

In his presentation, Hilty warned of our increasing dependency on localization methods. Ever more «smart» devices are appearing on the market with features which rely on a knowledge of geographic position. But it is becoming less and less possible to turn off these functions, and even when they can be disabled the user must then do without many of the "comfort features" offered. The data gathered by these devices is often transmitted abroad for processing and therefore removed from the range of control of the person being monitored.

TA-SWISS urges politicians to act

The TA-SWISS study therefore suggests a range of measures to protect the private sphere of individuals:

- political effort to implement better data protection standards at the international level
- certified and transparently functioning software products with data protection as a quality feature
- limiting by law the period for which localization data on individuals may be retained
- the organization of info-events, particularly for young persons, to explain to them the advantages as well as the risks presented by detailed profiles on their movements and locations.

Literature references

Lorenz Hilty, Britta Oertel, Michaela Wölk, Kurt Pärli, «Localized and Identified: How Localization Technologies are Changing Our Lives», TA-SWISS, Centre for Technology Assessment (Ed.). ISBN 978-3-7281-3460-8. (in German)

The study can be downloaded as an Open Access e-book in free of charge at www.vdf.ethz.ch.

A short version of the study is available in English at

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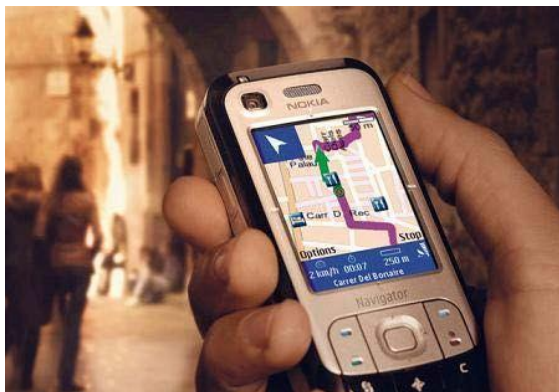
<http://www.ta-swiss.ch/projekte/informationsgesellschaft/ortungstechnologien/>

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Mobile telephones with GPS receivers collect positional data.



Title page of the study.

Text and images in electronic form are available at: redaktion@empa.ch