Trusted Cells: A Sea Change for Personal Data Services  
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1 Summary
This paper is a short and vision paper, which presents an idea of trusted cells. A trusted cell is a piece of secure hardware attached to a personal IT device. Such a device would be at the edges of the Internet, i.e., should be able to utilize insecure communication in order to use sensitive and personal data with security and privacy. A trusted cell could be a personal data server running on a secure smartphone, a set-top box, a secure portable token, or a smartcard.

Authors described the trusted cells architecture, which contains trusted (trusted memory, computation unit) and untrusted components (additional memory, a device to communicate with external devices). A trusted cell should be secure against an attacker that has a physical access to it. It should not disclose stored and processed data to malicious users. The paper describes other requirements and challenges for trusted cells. Among them, one can find interactions, cooperations with other trusted cells, and user authentication.

This paper is a vision paper, therefore all ideas are roughly described and/or mentioned. However, authors should mention if and when their solution could be implemented as a physical system.

2 Strong Points
- Identify key requirements and challenges for trusted cells.
- Define trusted key architecture with an example usage scenario.
- The running scenario is comprehensive and presents many cases of usage for trusted cells.

3 Weak Points
- No study of possible implementation of a trusted cells system is presented. We do not know if it is technically doable nowadays.
- Authors mentioned about difficulties of designing human-computer interface (HCI) for trusted cells. Unfortunately, they do not describe any scenario of an interaction between a user and its cells.
- Managing cells, credentials, and authentications is barely mentioned.

4 Questions and Discussion Points
This is a vision paper that presents only an idea without too many details. Authors left plenty of open questions, among which the most interesting are questions related to management of identity, and credentials in a system with trusted nodes. Another topic, which should be studied is management of limited resources consumption by a trusted cell. With some requirements defined we still do not know what would be physical and electrical requirements for the cells system.

Paper Presentations – Preferences.