Secure Systems Group, Aalto University

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Securing Society with Platform Security

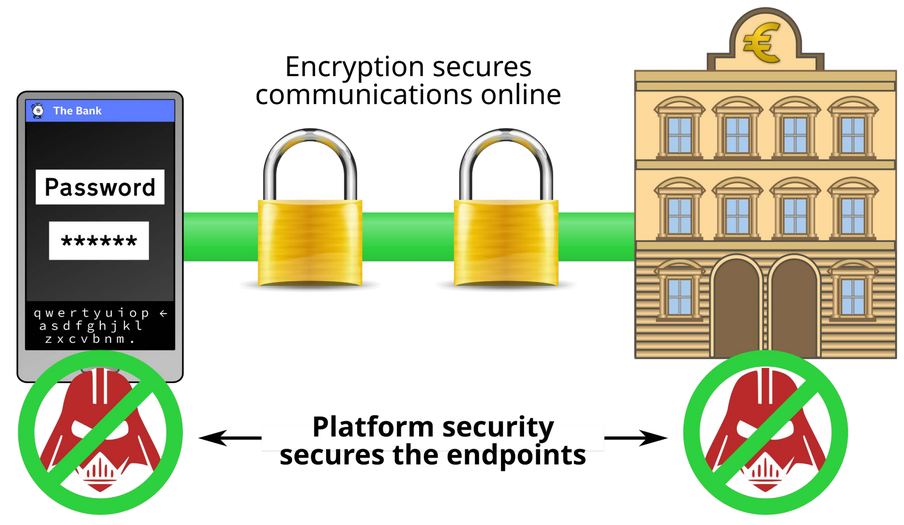
"… encryption on the Internet is like arranging an armored car to deliver credit card information from someone living in a cardboard box to someone living on a park bench" - attributed to Gene Spafford

What?

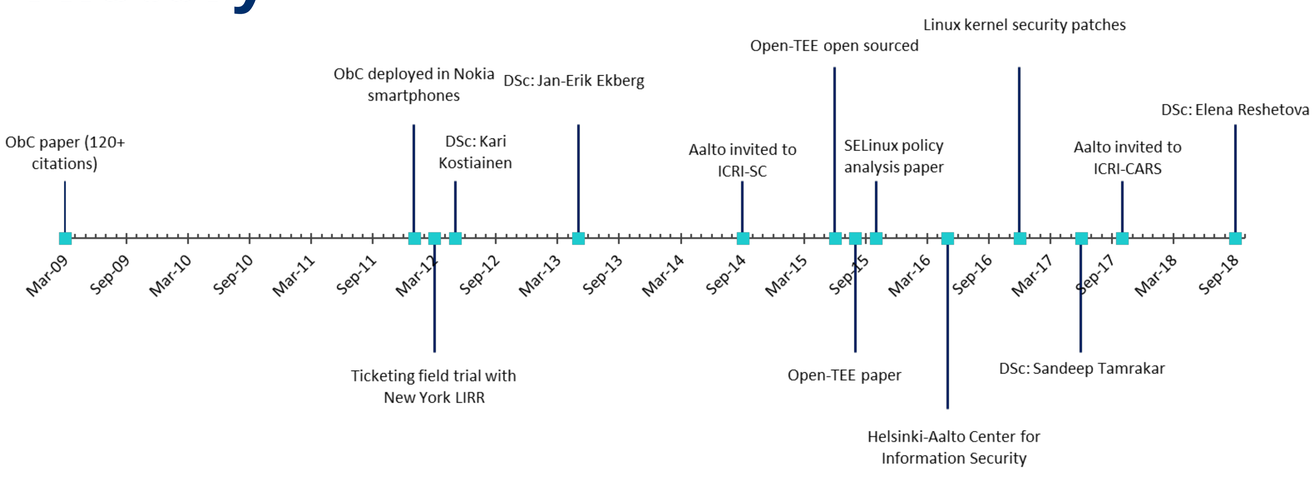
- Hardware and systems software technologies to secure applications and services

Why?

- Needed for true end-to-end protection



History



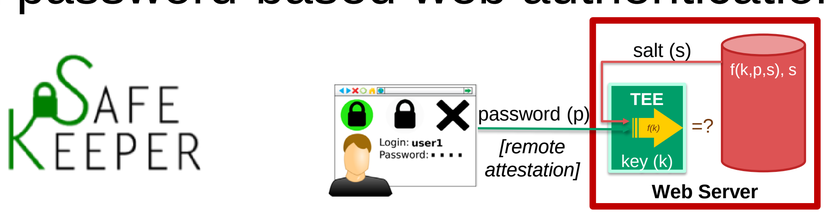
Achievements

Novel platform security technologies:

- **On-board Credentials**: first open platform for hardware-secured "trusted" applications (TA)
- **Open-TEE**: a TA development tool for standardized trusted execution environments

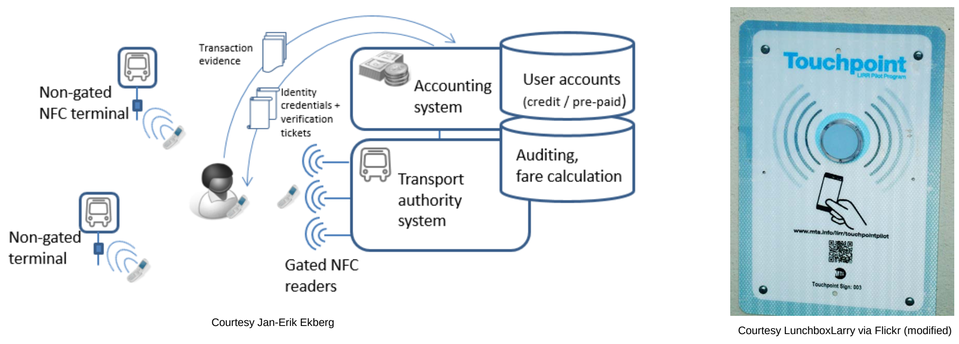
Examples of novel applications:

- Mobile ticketing (with Nokia)
- Securing password-based web authentication



Impact

- Ticketing trial on the NYC Long Island Rail Road



Courtesy Jan-Erik Ekberg

Courtesy LunchboxLarry via Flickr (modified)

- Open-TEE used by several companies
- 3 doctoral dissertations (+1 forthcoming)
- Over 10 MSc theses
  - 3 national thesis awards

Industry collaboration

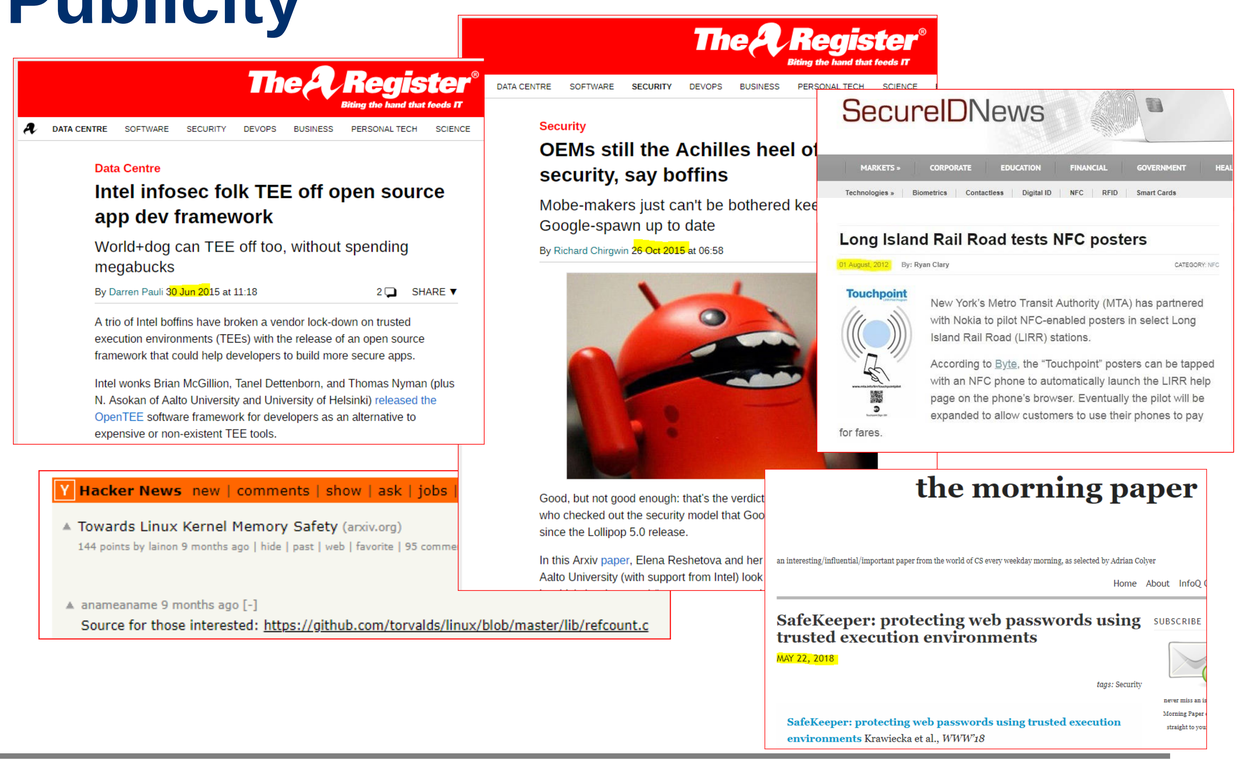
Nokia On-board Credentials:
2 industrial doctorates

Intel ICRI-SC & ICRI-CARS institutes
~1 M€ for systems security research at Aalto (2014-2020)
1 industrial doctorate

Trustonic Novel use cases for TAs

Huawei Hardware-assisted runtime protection

Publicity



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