Security and privacy of open network platforms: the SECURED architecture

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FIA-2014, Athens, 19/03/2014

The SECURED FP7 project

- **FP7 call 10 STREP (FP7-ICT-2013-10)**
- **grant agreement no. 611458**
- **duration: 3 years (1/10/2013 – 30/9/2016)**
- **EC contribution: 2.7 M Euro**
- **web: www.secured–fp7.eu**
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SECurity at the network EDge

The Consortium

- **Politecnico di Torino – Italy**
  - coordinator = Prof. Antonio Lioy (antonio.lioy@polito.it)
- **HP Laboratory Bristol – United Kingdom**
- **Primetel PLC – Cyprus**
- **Telefonica Investigacion y Desarrollo – Spain**
- **United Nations Interregional Crime and Justice Research Institute – Italy**
- **Universitat Politecnica de Catalunya – Spain**
- **VTT Technical Research Centre of Finland**

Main idea
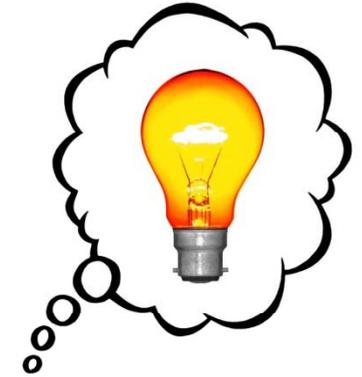
- **users have many "terminals"**

  - laptop, desktop, tablet, smartphone, Internet-connected TV, car infosystem, …

  - with very different security levels (because it's difficult to develop security controls for so many platforms with so different characteristics) …

  - and different network connections (hence we can't consistently rely on network border protection)
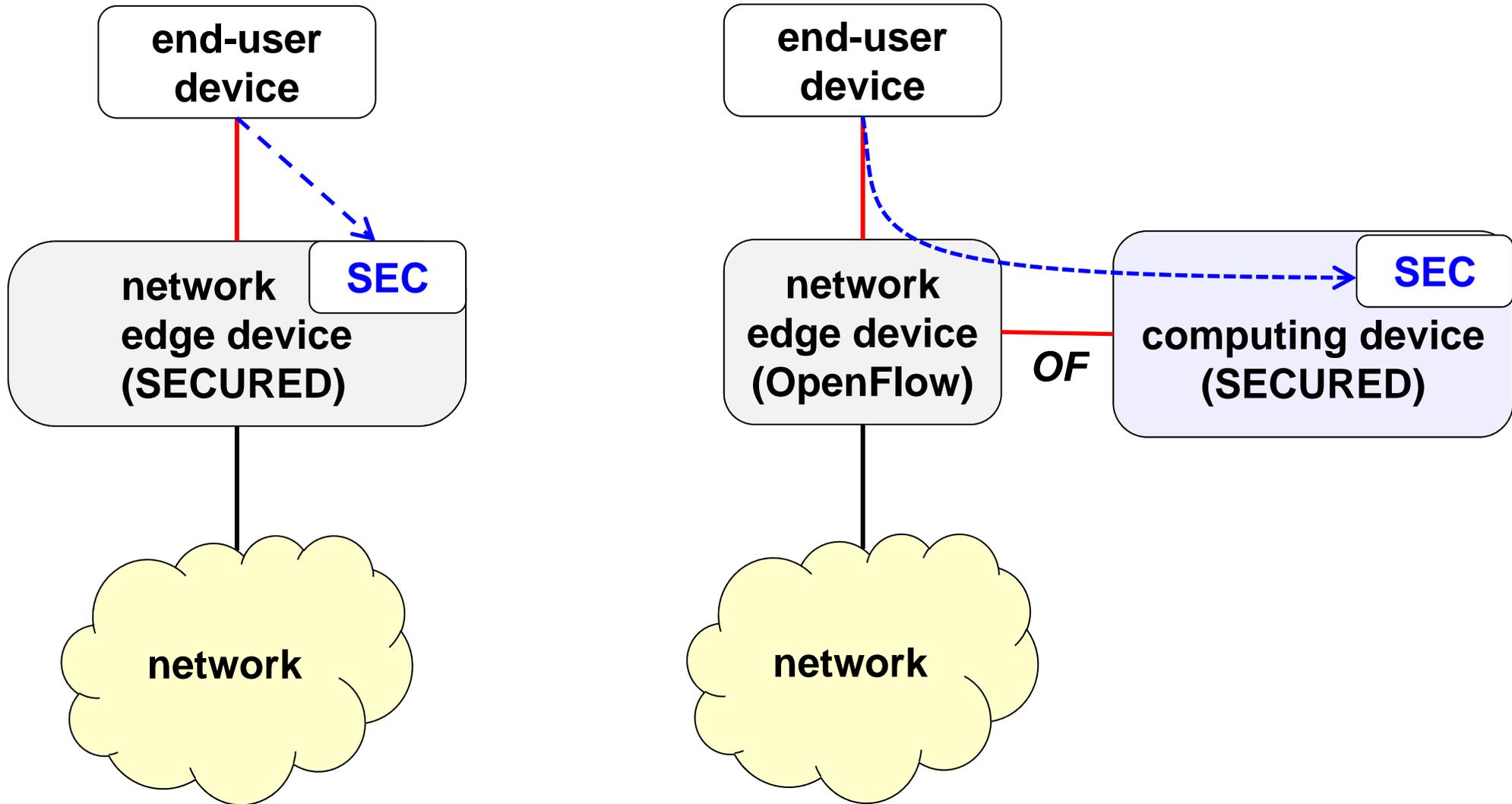
- **IDEA:**

  offload security controls from the user terminals to a (trusted and secure) network node

Main components

- **NED (Network Edge Device)**
  - trusted node (with TC techniques)
  - VMM for multi-tenancy (one VM per user)
  - e.g. home gateway, corporate router, wireless AP, GGSN
- **security applications**
  - specific tasks (packet filter, parental control, anti-phishing, content inspection, …)
  - executed at the NED
- **security policies**
 - simplify configuration of applications
  - share "best practice" policies

Monolithic vs split NED

end-user device

end-user device

SEC

network edge device (SECURED)

network edge device (OpenFlow)

OF

computing device (SECURED)

SEC

network

network

Components and issues in SECURED

- **components**
  - NED
  - PSC = Personal Security Controller
  - PSA = Personal Security Application
- **the "split" model implies**
  - personalized network path (SDN?)
  - access to network-hosted computational capabilities (NFV?)
- **these points have issues with**
  - security
  - trust
  - "personal"

Cloud / SDN / NFV for Secured
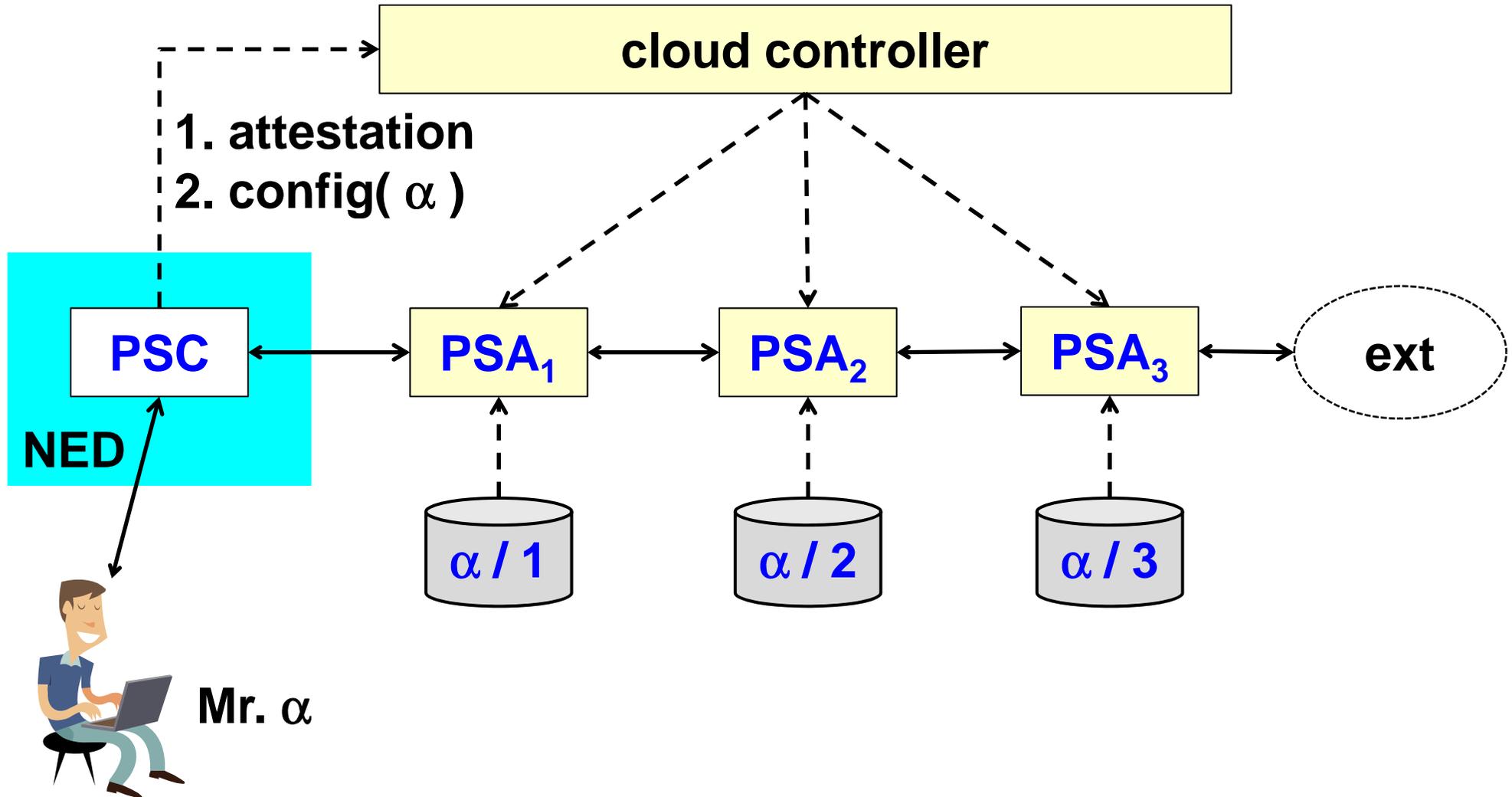
THANK YOU !

Project SECURED (www.secured-fp7.eu)

Disclaimer

EU disclaimer

SECURED (project no. 611458) is co-funded by the European Union (EU) via the European Commission (EC), under the Information and Communication Technologies (ICT) theme of the 7th Framework Programme for R&D (FP7).

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