A Lightweight Infrastructure for Global Heterogeneous Trust Management
Agenda

- The Problem
- What LIGHTest does
- Invitation to Collaborate
Trust in a changing world

In the old days
- our world was smaller
- we knew our business partners
- Deals were sealed in personal contact

Increasingly
- we operate Europe- or World-wide
- we don’t know our business partners
- Deals are sealed remotely through Cyberspace
Transactions are increasingly conducted virtually

We have virtual transactions with..

People          Organizations          Devices/Things
But who is really behind the electronic identity?

As expected from the appearance:

Trustworthy -- legitimate
But who is really behind the electronic identity?

Not what we expect!!!
Untrustworthy -- fraud
How can we know whether a remote someone/something is trustworthy?

We need Help:

- Trusted Authorities
- Trusted Third Parties that publish **Reputation** Ratings
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The LIGHT\textsuperscript{est} Architecture
The LIGHTest Architecture  DNS: The Internet Phone Book

- **Root Servers**
  2016: 558 DNS root server instances

- **Top-Level-Domain Name Servers**
  genericTDLs: com, org, edu, info… de, it, at, us, ca, …

- **Most Organizations have existing Name Servers**
  ec.eu, gov.it, daimler.com, fraunhofer.de

- **Organization can define lower-level names**
  - Existing or dedicated name servers
  - trust.ec.eu, eIDAS.trust.ec.eu, signature.eIDAS.trust.ec.eu
What does LIGHT\textsuperscript{est} do? (WP3) 
Infrastructure for Publication and Querying of Trust Schemes

- Create a global Standard Way for publishing Trust Lists..
- ..on a global Trust Infrastructure

- Across domains
- Accommodate diverse perceptions of trust
  - No global agreement needed

Authorities:
- EC and MS for qualified signature and trust services
- Business registers
- Professional registers (health, justice, law-enforcement, ..)
- Corporate internal registers
- ...

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What does LIGHTest do? (WP6) Trust Policy and Automatic Trust Decisions

- Make it automatic for Verifiers to **query Trust Lists**
- Combine multiple queries to **validate**
  - an **Electronic Transaction**
  - against an easy to author **Trust Policy**

![Diagram showing the process of verifying an Electronic Transaction against a Trust Policy]

Trust policy:
List of Authorities that I trust, …
What does LIGHTest do? (WP5)

Infrastructure for the Publication and Querying of Delegations

Delegation:

- Organization publishes Trust List on..
- ..who can sign/act in its name for which purposes

Authorizes employees to act/sign in its name
What does LIGHT\textsuperscript{est} do? (WP4)

Infrastructure for the Translation across Trust Domains

Authority publishes Trust List on..

-..which authorities from other trust domains are trustworthy
-..how to translate foreign into native trust schemes

- NIST: Level “3” == EC eIDAS: Level “substantial”

Bilateral agreements, etc.
What does LIGHTest do? (WP7) Trust Propagation of Derived Mobile IDs

- Trustworthy through secure enrollment
  - Birth and population registers
  - In person issuance
  - Often unfit for mobile use

- Derive mobile identities from eIDs

- How does trust propagate???

- Currently lacks highly trusted electronic identities
What does LIGHT$est$ do? (WP9) Pilot Demonstrations

- **e-Correos (by Correos)**
  - Spanish Postal Service, one of largest world-wide
  - electronic registered delivery service
  - Identities of users
  - Citizens and businesses receive official notifications from various administrations

- **PEPPOL e-Invoicing (by IBM)**
  - e-Invoicing in OpenPEPPOL environment
  - Approach applicable to other PEPPOL applications
  - Demonstrates easy of integration of LIGHT$est$ in existing product
  - Demonstrates “delegation-enabling” an application with LIGHT$est$. 
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Going Global
Community Building

- We need to go beyond the limits of the Consortium
- Build up a global community around the vision of LIGHT\textsuperscript{est}
- Go “Viral”
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