

LIGHT^{est}

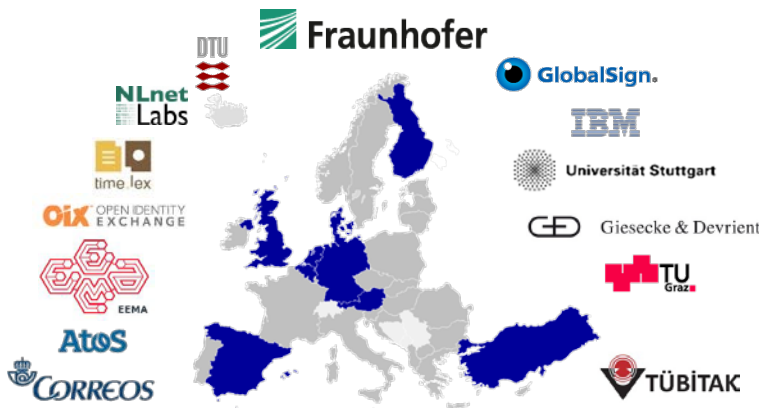


A Lightweight Infrastructure for Global Heterogeneous Trust Management



October 13, 2016
Rome, Italy

Lightweight Infrastructure for **G**lobal
Heterogeneous **T**rust management
in support of an open **E**cosystem of
Stakeholders and **T**rust schemes



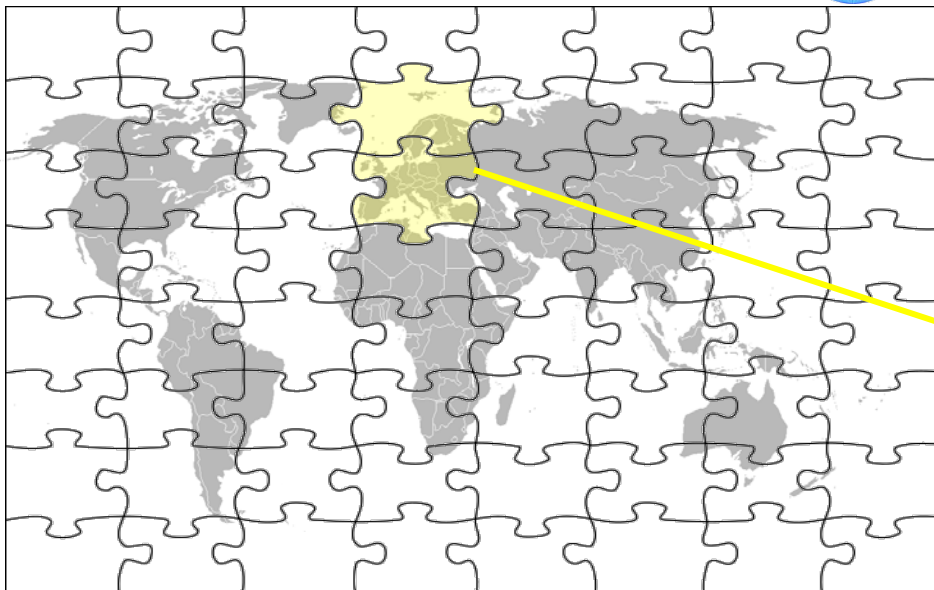
Agenda

- **European Project and Global Initiative (organizational)**
- The Problem
- What LIGHT^{est} does
- Vision and Major Selling Point
- Going Global
- Invitation to Collaborate



LIGHT^{est} is a Global Initiative set up by an EU-Funded Project

Objective: **Creation of a Global Trust Infrastructure**



Global Initiative

- LIGHTest-trust.{org, net, com}
- LIGHTest.info

Global community open to all stakeholders

- builds a global community
- creates open standards
- provides open source software

EU Project

- LIGHTest-trust.eu
- LIGHTest.eu

LIGHT^{est} Consortium

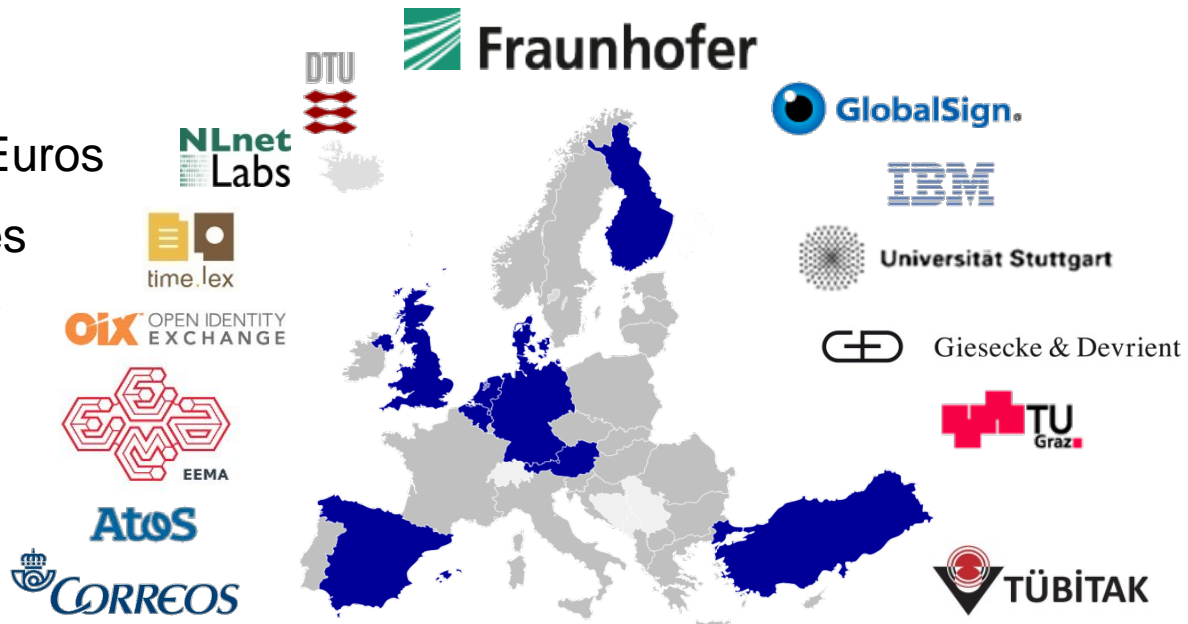
Open invitation for collaboration to all interested stakeholders

- Any geographic region
- Any application field



The European LIGHT^{est} Project

- Horizon 2020
- Innovation Action
- Call: H2020-DS-2015-1 *Trust eServices*
- Starts September 1, 2016
- 36 months
- Estimated cost of 8.7 Mio Euros
- 14 partners from 9 countries
- Coordinated by Fraunhofer



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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

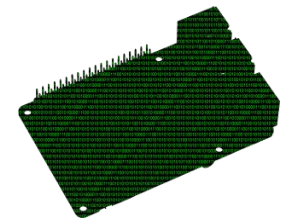
We have virtual transactions with..



People



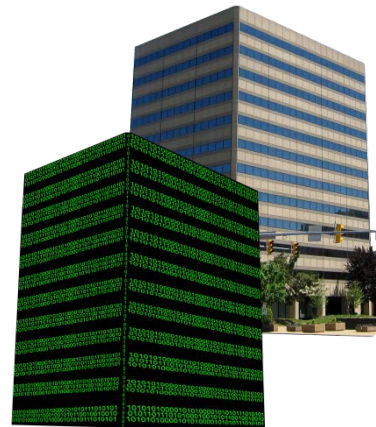
Organizations



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?

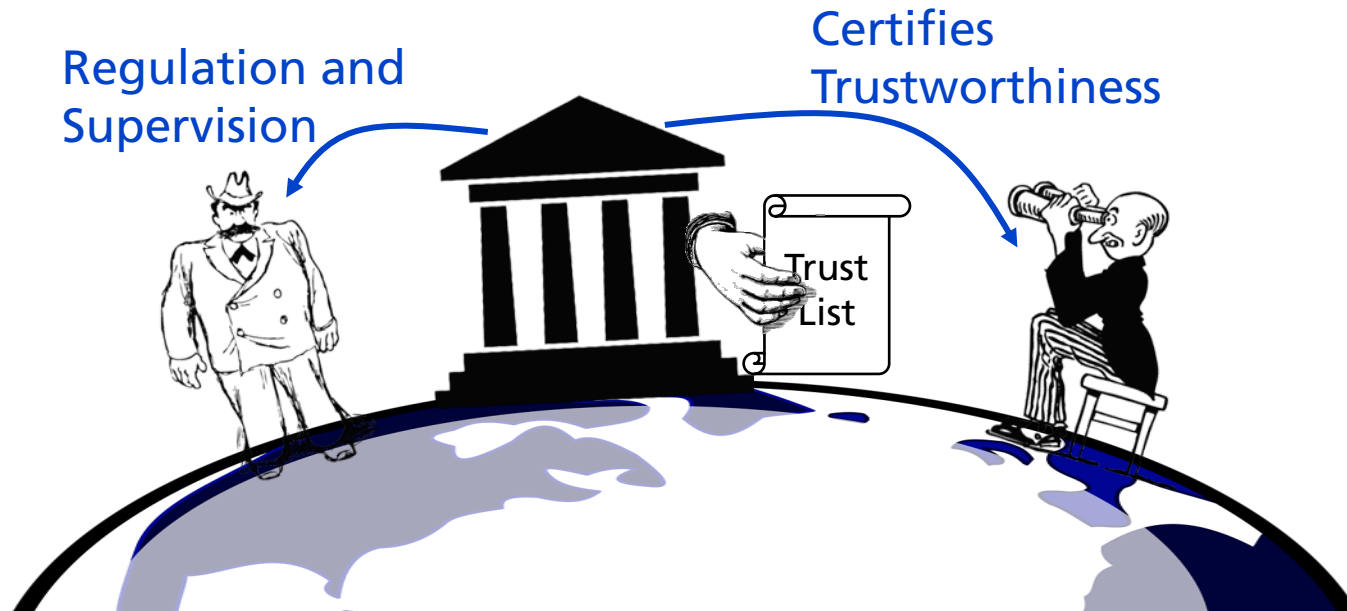
Not what we expect!!!
Untrustworthy -- fraud



How can we know whether a remote someone/s.thing is trustworthy?

We need Help:

- Trusted **Authorities**
- Trusted Third Parties that publish **Reputation Ratings**

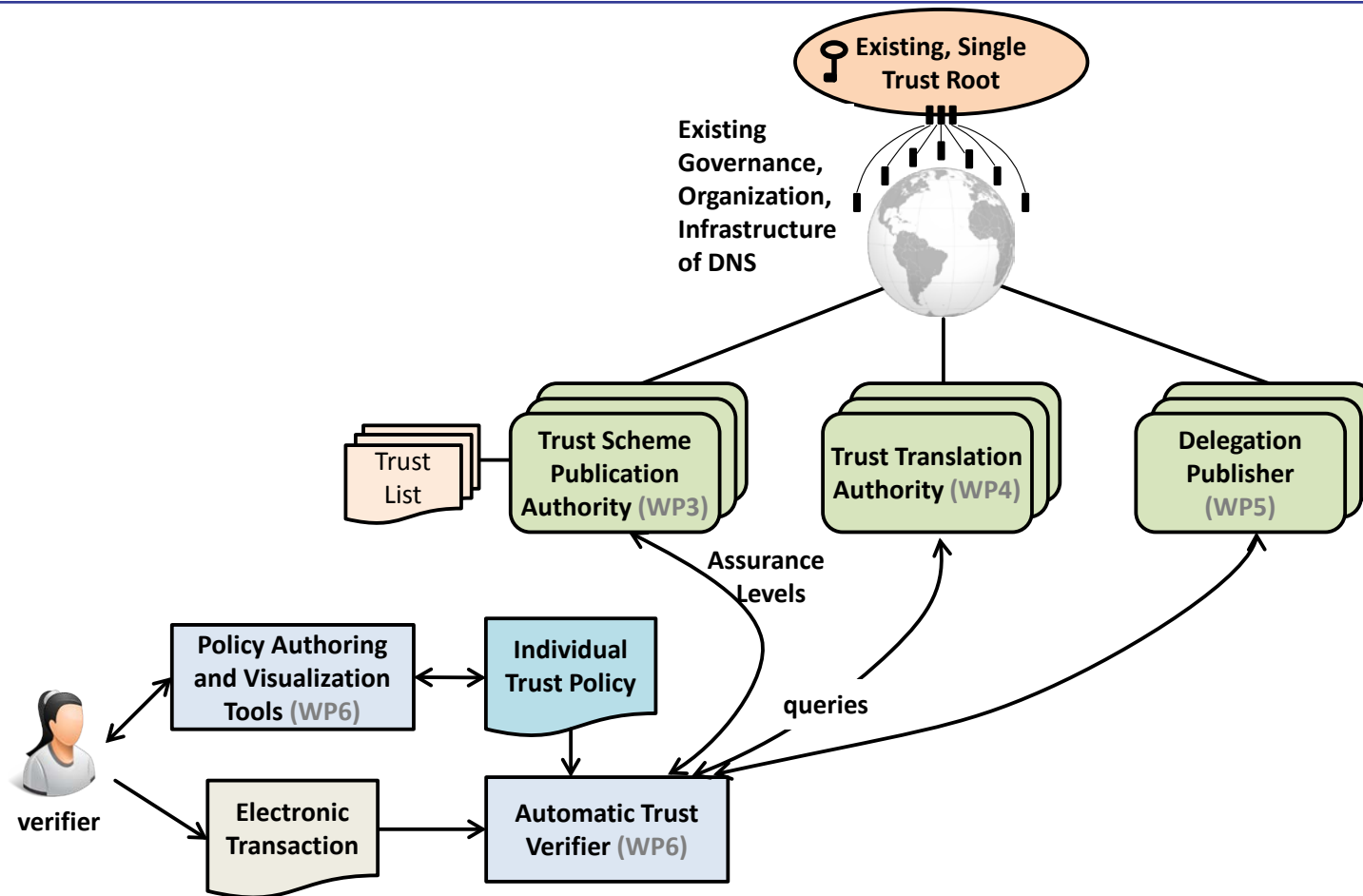


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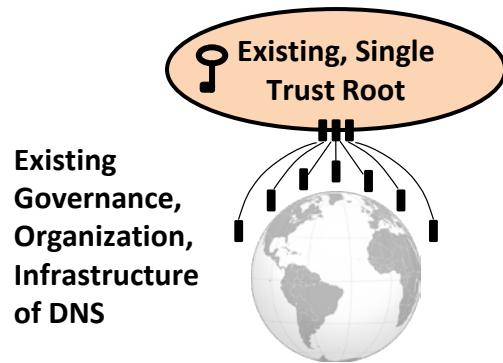


The LIGHTest Architecture



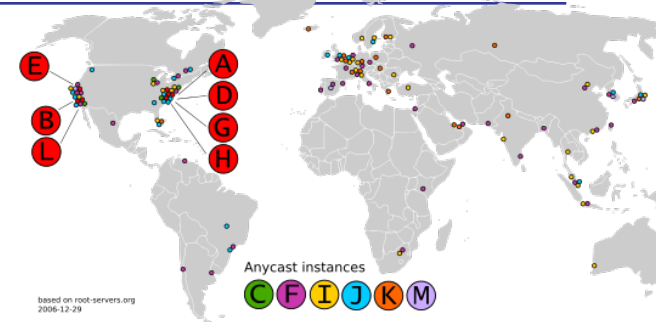
The LIGHT^{est} Architecture

DNS: The Internet Phone Book



■ Root Servers

2016: 558 DNS root server instances

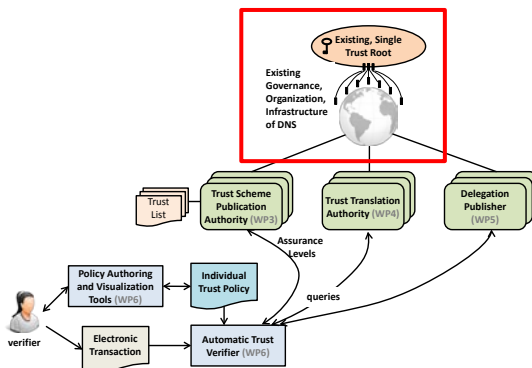


■ Top-Level-Domain Name Servers

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^{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
- ...



What does LIGHT^{est} 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**

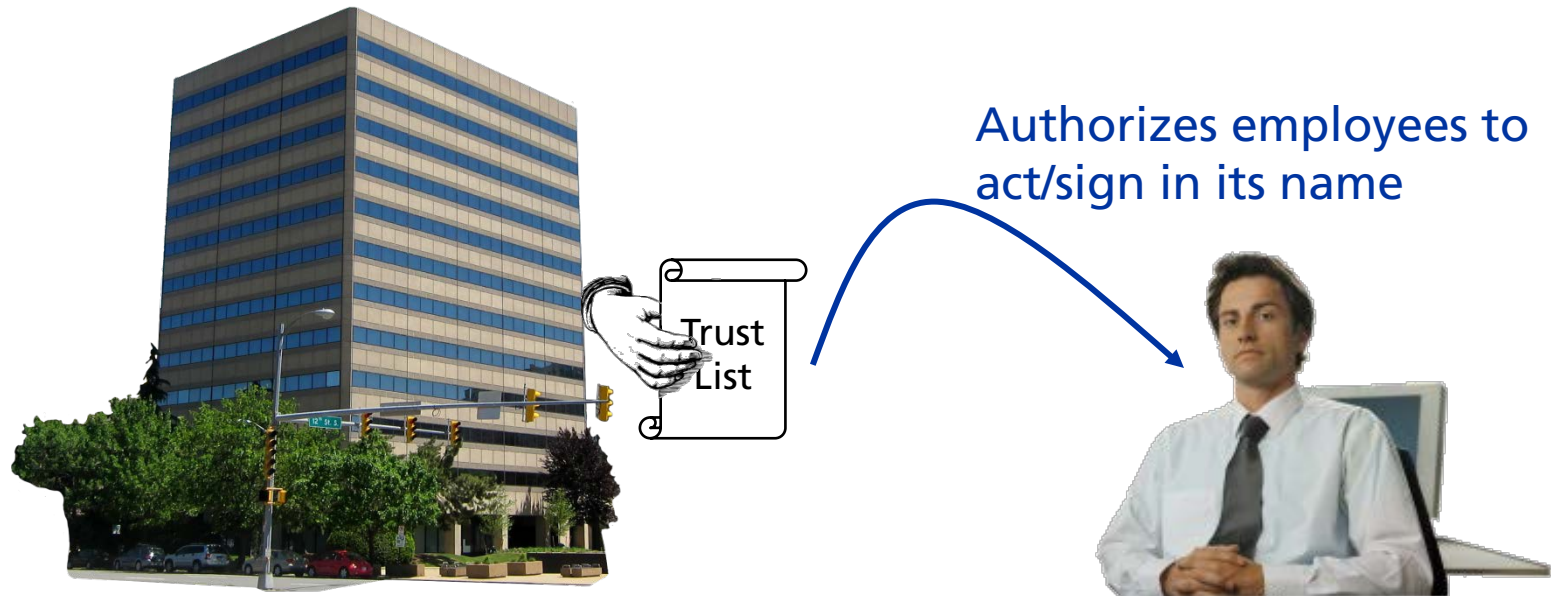


What does LIGHT^{est} do? (WP5)

Infrastructure for the Publication and Querying of Delegations

Delegation:

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

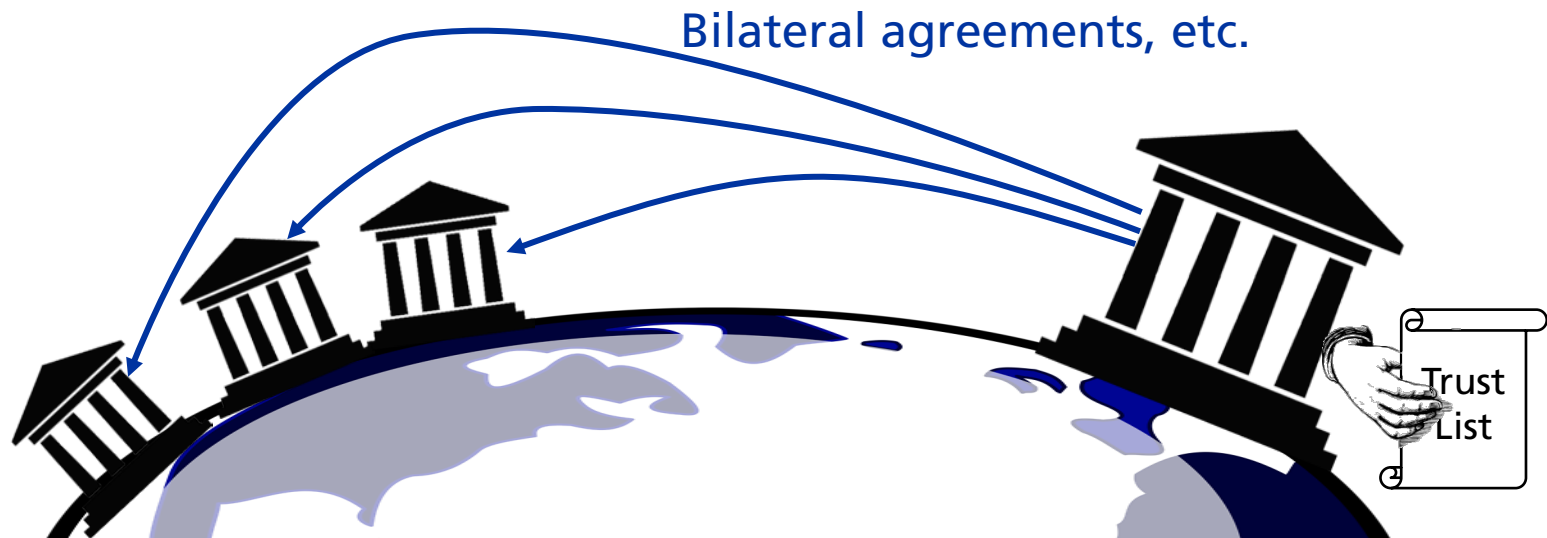


What does LIGHT^{est} do? (WP4)

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”



What does LIGHT^{est} do? (WP7)

Trust Propagation of Derived Mobile IDs

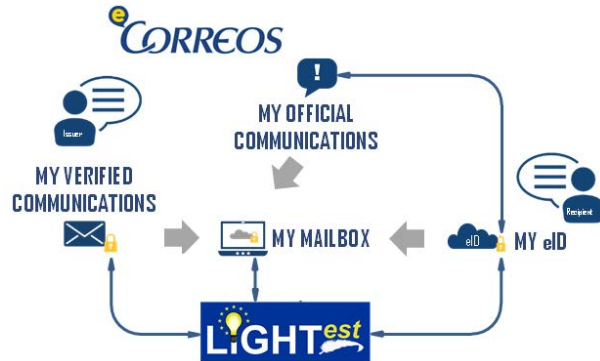


- Derive mobile identities from eIDs
 - How does trust propagate???
 - Currently lacks highly trusted electronic identities
- Trustworthy through secure enrollment
 - Birth and population registers
 - in person issuance
 - Often unfit for mobile use



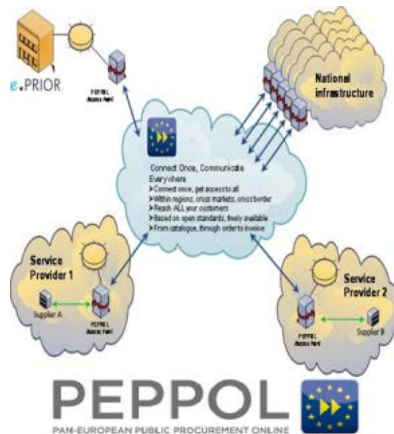
What does LIGHT^{est} do? (WP9)

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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The Vision of LIGHT^{est}

- Out of Reach:
 - Setting up and funding a global server infrastructure
 - Setting up a global organization (Registries)
 - Consensus on the Governance of a global Single Trust Root

- By using the existing Domain Name System:

LIGHT^{est} is the ONLY possible way to create a global, cross-domain trust infrastructure

THE Unique Selling Point

- A multitude of Trust Anchors is very difficult to provision
- LIGHT^{est} uses the Single Trust Root of the DNS

The single trust root of LIGHT^{est} brings multi-faceted trust decisions in the realm of the feasible

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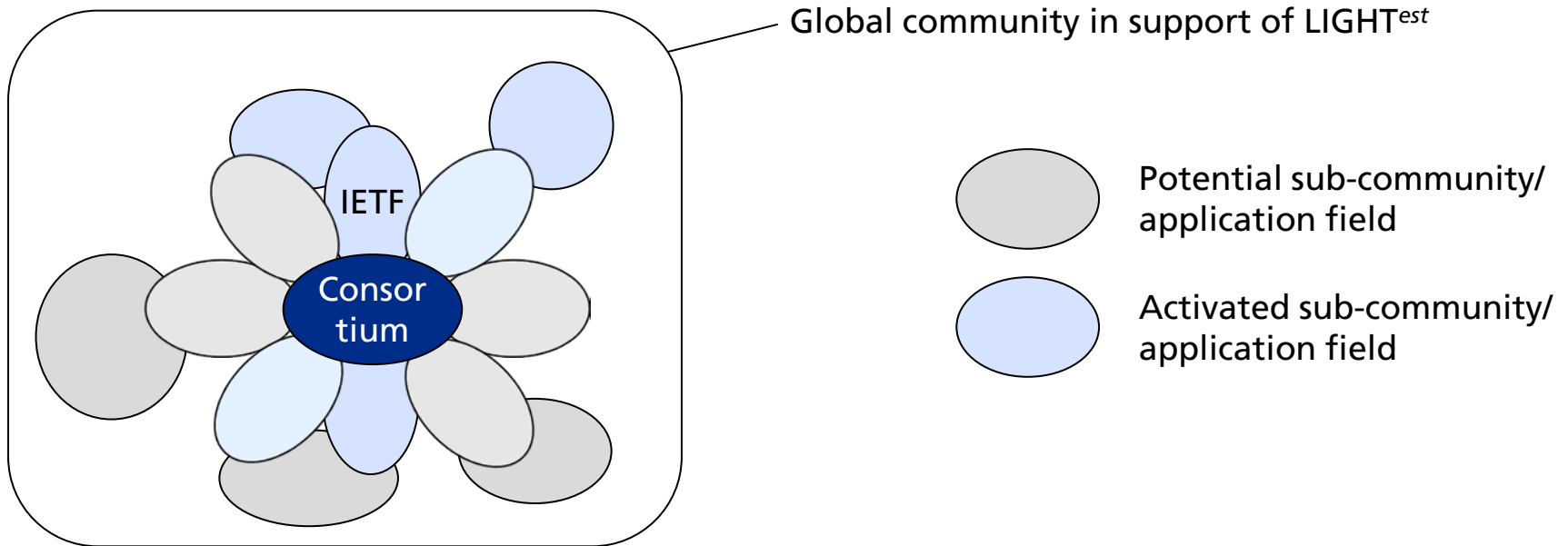
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Going Global

Community Building

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



Going Global

Approach

- **Global Players in the Consortium**
 - OIX, GlobalSign, IBM
- **Members of Existing Communities in Consortium**
 - IETF Dane
- **Advisory Board**
- **Associate Partners**
- **Loosely linked Web-based Community**



Going Global

Community Based Dissemination

Empower the Community to Disseminate the LIGHT^{est} Vision/Technology

- **Open Source and (International) Open Standards**
- **Open Document Licenses for Dissemination Material**
 - **Empower Others to Disseminate the Vision**
 - **Adapt to new application fields**
 - **Translate**
 - ...



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Invitation to Collaborate

■ First Focus: **Inventories**

- trust schemes and trust (status) lists
- trust list formats
- device attestation schemes
- delegation (mandate) schemes
- trust policies and policy languages
- trust translation schemes
- derivation schemes for mobile identities

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■ Later: An open, global LIGHTest Community.. (stay tuned)

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