Lightweight Infrastructure for Global Heterogeneous Trust management in support of an open Ecosystem of Stakeholders and Trust schemes


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AGENDA

- LIGHTTEST Project Scope
- Lets Dig a Little Deeper
  - Legal and Policy
  - Technical Concepts
  - Economic
- Discussion
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 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

Regulation and Supervision

Certifies Trustworthiness
WHAT DOES LIGHTTEST DO?

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 providers and other trust services

Also,

Business registers

Professional registers (health, justice, law-enforcement, ..)

Corporate internal registers

...
WHAT DOES LIGHTEST DO?

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

Trust policy:
List of Authorities that I trust, …

Electronic Transaction
e.g. signed document

Trustworthy? (yes/no)
WHAT DOES LIGHTTEST DO?
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?

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 LIGHTEST DO?

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 LIGHTest in existing product
- Demonstrates “delegation-enabling” an application with LIGHTest.
LETS DIG A LITTLE DEEPER…

Legal and Policy

Technical Concept

Economic
EXPECTATIONS AND GOALS
LEGAL & POLICY CHALLENGES IN LIGHTEST

**Legislative requirements**
- eIDAS Regulation on eID and trust services
- BRIS Directive on business registers
- GDPR for data protection
- And a myriad of national laws (e.g. representation of companies, contracts, liability, ...), depending on use case

  Works nationally or sometimes at EU level

**Domain name system**
- Built on a multistakeholder model (not legislative)
- Based on expert consensus
- Focus on enabling technically trustworthy communication, not on legal value, validity, truth, accuracy, liability, etc.

  Works globally
LEGAL & POLICY APPROACH IN LIGHTEST

LIGHTest is a toolbox
- LIGHTest uses DNS as a technical trust anchor
- But legal value and compliance doesn’t originate from DNS

LIGHTest includes legal tools as well
- Security will be built into LIGHTest infrastructure: privacy by design
- We will provide templates for T&Cs, privacy policies, and contracts between LIGHTest users

LIGHTest needs to be tailored
- Our pilots will show how LIGHTest can be deployed on a contractual basis
- We will provide guidelines on how LIGHTest can be used in other settings

LIGHTest is not a legislative initiative
- We don’t aim to change laws, but to show how DNS can be leveraged as a trust communication/validation tool
- Compliance needs to be assessed in each individual use case

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LIGHTTEST REFERENCE ARCHITECTURE

Existing, Single Trust Root

Existing Governance, Organization, Infrastructure of DNS

Trust Scheme Publication Authority (WP3)

Trust Translation Authority (WP4)

Delegation Publisher (WP5)

Trust List

Policy Authoring and Visualization Tools (WP6)

Individual Trust Policy

Automatic Trust Verifier (WP6)

Electronic Transaction

verifier

Assurance Levels

queries
LETS DIG A LITTLE DEEPER...

Legal and Policy

Technical Concept

Economic

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EARLY-STAGE STAKEHOLDER ANALYSIS

Participants of the ecosystem

Active Stakeholder

End Consumer
- Individual consumers
- Companies
- Public organizations

Trust (Infrastructure) Provider
- Trusted Entities
- Developers of Software using Lightest
- Running Technical Infrastructure of Lightest or Parts

Enabling Stakeholder

Enabler
- Public institutions
- Research facilities
- Disseminators

Internal Stakeholder

LIGHTest Project
- Project sponsor (EC)
- Lightest Project partners
- Lightest Advisory Board
SCOPE OF LIGHTTEST INFRASTRUCTURE

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SCOPE OF LIGHTTEST INFRASTRUCTURE

Private Sector
- Shipping...
- Banking...
- Credit Card...
- Internet of Things...
- Etc.

Both
- Notarizations...
- Cross-Border Certifications...
- Access Control Management..
- Etc.

Public Sector
- Health Information Services..
- E-Voting...
- Business Registrar...
- Etc.
THANK YOU FOR YOUR ATTENTION!
QUESTIONS OR COMMENTS?

Want to join our News Letter?

http://www.lightest-community.org/