D11.12: Report on Dissemination, Exploitation, and List of Technical Outcomes (9)

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1. Executive Summary

This document is a copy of the report on dissemination, exploitation and list of technical outcomes, in the form of a news bulletin.

2. Document Information

Contributors

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History

Version	Date	Author	Changes
V10.9	09/11/2018	LS	Initial Document
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3.   Table of Contents

4. Project Reference

A report on dissemination, exploitation and list of technical outcomes.

These deliverables are a series of bulletins describing relevant current dissemination outcomes and technical updates thus promoting internal communications.

The reports will be circulated as newsletters.

5. LIGHTest Bulletin (9)

Newsletter
Edition 9
November 2018

This Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 700321

Members of the Advisory Board discuss the LIGHTest proposition

At the latest LIGHTest General Assembly in Espoo, Finland, **Mike Garcia** and **Andre Boysen**, representing the LIGHTest Advisory Board shared their views on the value proposition of the project.

Mike Garcia: When you look at what you need to do to try and make digital identity work, there are a couple of really important aspects to it and of course governance is a big piece of that. One of the ways to think about it is that there are organisations, or groups organisations, that are going to want to do things their way. It is really expensive to create those frameworks, it takes a lot of time, expertise and understanding of your own environment, technology, laws etc. If every organisation or group were to create one of their own it would slow down innovation and create all sorts of barriers.

What we spent a lot of time doing at NIST was doing what we needed to do for the US federal government and looking at how much of that we could align with what Canada and the UK were doing and was happening in ISO, so that the least amount of work possible was necessary to make things interoperate. That to me is the value proposition of LIGHTest.

We can take these different frameworks and we can map them and make, if not automated, fundamentally sound and replicable trust decisions. And, that lowers the cost to any organisation that wants to be making these trust decisions. By doing that you can get more organisations basing what they are doing and their trusts from the same or similar frameworks, consistently making decisions, creating a cycle that continues to lower costs and improves digital identity, leaving more room for innovation.

Andre Boysen: One of the things we have learnt from trust frameworks around the world is that they offer two value propositions. One, for making life better for users and the other for making business more efficient.

To give a banking example, when ATMs came out every bank was for rolling them out. But rolling ATMs out on the corner of every street in the country was expensive. What banks discovered was that if they collaborated and shared each other's ATMs, they would both get an efficiency, lower costs and both sets of customers would be happy. Within countries we had the federation of ATMs, so in the US we got the Sirus network, the UK with the Plus network and in Canada the Interact network. So, each of these countries were doing this independently.

What is interesting is what happened later, when people from the UK came to Canada and vice versa, why not inter-federate those networks. It became global because it provided efficiency for business and convenience for consumers, and so that is where we were with universities and LIGHTest right now. Every university is for itself and they all have a need to depend on each other's transactions, so if we can create a trust framework it is going to be better for the people that need to consume data from this network and it is also going to provide efficiency for universities.

How LIGHTest is a beacon for global electronic commerce

I view LIGHTest as providing an essential piece of information governance infrastructure, and I compare it to the navigational aids and shipping infrastructure that have enabled maritime and commerce and governance. Since the middle ages, Europe has helped transform society by leading the movement of people, ideas, goods and technologies.

Now, however, instead of maritime law and infrastructure, we're doing it with cyberspace. For cyberspace to operate effectively it requires individuals, commerce and government to all work together in a trustworthy manner. Navigating cyberspace requires the

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ability to publish and find authoritative sources for trusted information.

When we look closely at maritime law and the governance of the oceans and waterways, the infrastructure includes, for example, the ports and lighthouses, navigational tools and seaworthy vessels. The vessels register under many different flags and operate subject to disparate legal systems.

This is the same with information in cyberspace. The privacy, security and identity requirements fall under the overall subject of information governance and are similar to the governance of the seas. In this case, LIGHTest acts as a form of navigational tool for cyber space. It's a neutral tool that everyone can use for all manner of purposes. These could include identity management and the publishing of trusted information from authoritative sources over time to enable cross-border data sharing by both the public and private sectors.

A significant challenge posed by the cyberspace environment is the ability to verify the accuracy of information at a given time. LIGHTest leverages the DNS and therefore is able to make it easy for individuals, corporations, and public authorities to locate trusted information over time.

Moving forward with LIGHTest, the project is looking at how it will best be deployed in the overall governance of the information society. The EU deserves tremendous credit for funding this effort and realising that such a navigational tool is of essential importance in the whole infrastructure of information governance in cyberspace.

The LIGHTest infrastructure is something that could be used by anybody throughout the world, anyone who needs to exchange information and ideas. My hope is that in the future this will become a globally adopted infrastructure.

Author: **Timothy S. Reiniger,** The Timothy Reiniger LLC Advisory Practice (A member of the LIGHTest Advisory Board)

Guest comment: New global challenge in the digital economy

Living in the age of digital economy, we explore new global challenges. Only joint efforts will make it possible to use successfully the potential of digital technologies, to overcome obstacles and to boost economic development.

Digital economy includes a wide range of activities that suggest:

1.Recognising the key role of digital information and digital knowledge in the field of production.

2.Using modern information webs as professional space.

3.Effectively using information and communication technologies as a trigger for streamlining structure.

New technologies, like the Internet, Cloud computing, Big Data, Internet of Things (IoT) encourage social interaction, facilitate flexibility and effectivity of economy.

Higher rates of economic growth are attributed to new technologies. Moreover, transformation of traditional industrial branches caused by digital development helps to establish links between business, state and citizens.

Creating trust is a key point in the world of digital economy. To make digital trust effective it is important to work out pertinent legislation on the one hand and on the other hand to ensure reliable identification and authentication. Most of the issues related to digital economy in this country are stipulated by the Russian Federation legislation. But there is discrepancy between legislation of different countries impeding digital trust.

To widen trust, solve common problems and advance global digital economy, closer collaboration needs to be established between countries, that will make a constructive dialog. Moscow State Linguistic University could be a vital link between information-telecommunication technologies and international communication.

Since Moscow State Linguistic University has obtained profound experience in international communication, economy, engineering and politics, we are willing to share best international collaboration practices to enhance digital trust between the Russian Federation and European Union countries.

To overcome digital gaps and encourage innovations, we need to work out content and services covered by different languages and forms – that is where Moscow State Linguistic University is a reliable partner. We realise how very important it is to

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implement professional training to raise digital trust internationally. Here we see an important mission of Moscow State Linguistic University as a supporting hub for training and education.

Moreover, obtaining relevant competences and skills in information and telecommunication technologies necessitates competence in several foreign languages, which we are ready to offer in order to fill the gap of digital trust between the Russian Federation and European Union countries.

Author: Irina Krayeva
Rector of Moscow State Linguistic University, Moscow, Russia

Cross-border verification with LIGHTest

LIGHTest leverages on existing infrastructures to verify electronic transactions. This ability is especially useful for transactions that are not created in the same trust scheme or country as the entity validating the transaction. This is mainly because creating new infrastructure takes time, money and possibly other unforeseen costs. This post shows an example of how to use LIGHTest in practice.

Let us assume there are two businesses that are working together for the first time, one from France and one from the United States. The ability to validate necessary documents to form a business relationship protects business partners.

The French business buys goods in the United States but makes the order request available online, which contains a request for goods worth millions of dollars. Once the order is over a certain specified amount, the company fulfilling the order needs to be confident that the other company will pay for the goods. In some cases, they could request a document, issued by a bank, that guarantees payment from the company ordering the goods . However, how does one know the document is from a bank? How does one verify the bank is in France? Has the document been signed by the right person in the bank? These questions need to be answered before the order can/should be fulfilled.

Wouldn't it be great if the process to answer these questions is automated and requires minimal human intervention before providing a valid answer? This automation can replace existing time-consuming and human-intensive processes. The solution? LIGHTest! The infrastructure helps in building trust between business partners by enabling them to verify that the right partner created the electronic transaction and that the transaction is valid. In this article, we call the company in the United States fulfilling the order the validating business. We also refer to all the documents needed for verification in electronic form as electronic transaction.

In the LIGHTest infrastructure, trust lists help to identify identities that are recognised by a given trusted third party. The principle behind trust lists works because any institution issuing a trust list implicitly states that it recognises the identities in the trust list. The validating business uses this trust list to gain identity information about the other business. Once the validating business uploads a transaction to the Automatic Trust Verifier (ATV), the ATV contacts the trust scheme listed on the transaction through DNS (Domain Name System). It indirectly confirms the authenticity of the transaction's claim about its origin by establishing that the certificate included in the transaction and used to sign the transaction is in the trust list, or has been issued by one of the organisations listed in the trust. The ATV is a tool provided in LIGHTest while the DNS is generally the phonebook of the internet. It holds the records describing the location of all websites or services on the internet.

If the validating business has requirements on the kind of identity within its trust scheme, how can this restriction be applied to identities from another trust scheme? LIGHTest introduces the concept of trust translations which enables the mapping of an identity from a trust scheme to an equivalent identity in another trust scheme. The ATV checks this mapping against the trust scheme and confirms that the transaction is signed with the correct identity and authorisation.

How can a validating business verify a restriction on the role of the person that can create the transaction and whether a holder of that position can request that another employee does it on his behalf (delegation)? The ATV can ascertain a delegation if there is a delegation within the transaction. It contacts a delegation provider provided in the transaction and confirms the delegation's origin and the revocation status of the delegation.

A validating business can customise the process above to suit their business process. The validating business uses a set of formalised rules called trust policy. The validating business can use the trust policy to validate other specific requirements such as the acceptance or refusal or a delegation and more.

LIGHTest automates the process described in the preceding paragraphs and provides an explanation for the result it returns. This is a quicker way of verifying electronic transactions. Another superb feature of LIGHTest is that it can easily be adapted to new domains such as the Internet of Things, to different communication modes such as human to machine, machine-to-machine and finally to new business processes.

Author: **Olamide Omolola**, TU Graz, Austria (WP 5 and WP6)

LIGHTest General Assembly in Espoo, Finland

Copenhagen, Denmark

Events & Activities

LIGHTest 6th General Meeting
February 5 – 7 2019
Copenhagen, Denmark

OID2019
March 28 - 29 2019
Kongresszentrum Garmisch-Partenkirchen, Germany

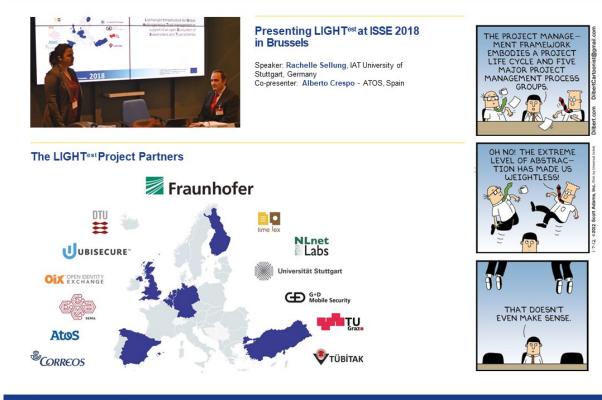@LIGHTest_trust LinkedIn www.lightest.eu

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6. Project Description

LIGHTest project to build a global trust infrastructure that enables electronic transactions in a wide variety of applications

An ever-increasing number of transactions are conducted virtually over the Internet. How can you be sure that the person making the transaction is who they say they are? The EU-funded project LIGHTest addresses this issue by creating a global trust infrastructure. It will provide a solution that allows one to distinguish legitimate identities from frauds. This is key in being able to bring an efficiency of electronic transactions to a wide application field ranging from simple verification of electronic signatures, over eProcurement, eJustice, eHealth, and law enforcement, up to the verification of trust in sensors and devices in the Internet of Things.

Traditionally, we often knew our business partners personally, which meant that impersonation and fraud were uncommon. Whether regarding the single European market place or on a Global scale, there is an increasing amount of electronic transactions that are becoming a part of peoples everyday lives, where decisions on establishing who is on the other end of the transaction is important. Clearly, it is necessary to have assistance from authorities to certify trustworthy electronic identities. This has already been done. For example, the EC and Member States have legally binding electronic signatures. But how can we query such authorities in a secure manner? With the current lack of a worldwide standard for publishing and querying trust information, this would be a prohibitively complex leading to verifiers having to deal with a high number of formats and protocols.

The EU-funded LIGHTest project attempts to solve this problem by building a global trust infrastructure where arbitrary authorities can publish their trust information. Setting up a global infrastructure is an ambitious objective; however, given the already existing infrastructure, organization, governance and security standards of the Internet Domain Name System, it is with confidence that this is possible. The EC and Member States can use this to publish lists of qualified trust services, as business registrars and authorities can in health, law enforcement and justice. In the private sector, this can be used to establish trust in inter-banking, international trade, shipping, business reputation and credit rating. Companies, administrations, and citizens can then use LIGHTest open source software to easily query this trust information to verify trust in simple signed documents or multi-faceted complex transactions.

The three-year LIGHTest project started on September 1st 2016 and has an estimated cost of almost 9 Million Euros. It is partially funded by the European Union's Horizon 2020 research and innovation programme under G.A. No. 700321. The LIGHTest consortium consists of 14 partners from 9 European countries and is coordinated by Fraunhofer-Gesellschaft. To reach out beyond Europe, LIGHTest attempts to build up a global community based on international standards and open source software.

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The partners are ATOS (ES), Time Lex (BE), Technische Universität Graz (AU), EEMA (BE), G+D (DE), Danmarks tekniske Universitet (DK), TUBITAK (TR), Universität Stuttgart (DE), Open Identity Exchange (GB), NLNet Labs (NL), CORREOS (ES), and UbiSecure (FI).

The Fraunhofer IAO provides the vision and architecture for the project and is responsible for both, its management and the technical coordination.