

# Transatlantic Traceability Infrastructure (TTI)



A project supported by  
the European Commission

## 1. Background

The Transatlantic Economic Council (TEC) is a transatlantic initiative that was established to oversee the efforts outlined in the EU-US Framework for Advancing Transatlantic Economic Integration setting priority areas of work and agreed during the Spring EU/US Summit in 2007. The initiative is framed within the EU/US commitment to reducing barriers to international trade and investment to increase the standard living of people. One of the elements under those priorities set to advance economic integration and increase the quality of life was the “Lighthouse projects” on Innovation and Technology and cooperation on Radio Frequency Identification (RFID). During the first transatlantic Symposium on Societal benefits of RFID (2008), the European Commission and the US Department of Commerce announced the main lines of transatlantic pilot involving the use of RFID and for an application in the area of isotopes; however, both parties indicated their intention to continue to support the Lighthouse projects in the form of pilots on RFID applications with a transatlantic participation and nature. It is in this context why the TTI project was created.

## 2. Introduction

The aim of this project is to create an infrastructure consisting of several service platforms allowing the EU and US governments/administrations to offer a simple way for companies large and small to register their products in a secure network of traceability. **TTI is not a R&D project and is focusing on the deployment of a traceability infrastructure based on existing concepts, technologies and standards.** This infrastructure will increase the safety of global supply chains and reduce the opportunities for organized criminals to take advantage of supply chain complexity by gaining higher levels of transparency throughout the supply chain.

Recurrent problems such as counterfeiting, diversion, and product recalls have gotten much worse in recent years and the TTI would allow EU and US governments to collaborate to increase transparency and actively reduce these cases.

### **More security: Securing critical infrastructures/resources**

Many believe that the next major terrorist strike will not be the takeover of a physical location but will instead be a distributed attack such as the malicious tampering of the food or water supply. Governments need to act now to proactively put systems in place that reduce the ability of terrorists to tamper with the product that citizens depend on every day. In other words, critical resources and infrastructure need be secured. In this line, all transactions with TTI will use the same security techniques of authentication and authorization that are used in banking transactions worldwide. It is vital that information in the network can be trusted and that all techniques are employed to make it difficult for terrorists and/or organized criminals to circumvent the system. TTI will be highly scalable (extendable to other applications in the future) and it intends to assure high performance and security as well as system availability.



## **More efficiency for Customs: Achieving Interoperability of traceability systems**

For years, companies have been using internal systems of traceability that now need to be made interoperable. Today's one-up, one-down traceability solutions are too slow and no longer sophisticated enough for a connected world where criminals are exploiting the gaps to hide supply chain data from governments. A transatlantic system of traceability will enable governments/customs administrations to have better visibility to dangers in the supply chain such as counterfeiting, black market goods, tax avoidance, co-location of hazardous materials, and malicious tampering of food products. The TTI would provide governments/administration with the means to react and address emerging dangers to the population in a much more effective manner than today.

## **More efficiency for companies**

The initial project should include Customs officials on both sides of the Atlantic (USA = Customs and Border Protection) to ensure that traceable products are expedited through the customs process. Participating companies' interest lies in the optimization of the route of traceable goods through the customs process while making it easier to spot illicit trade.

## **3. Objective**

The project will consist in designing, building, and demonstrating the TTI in an actual transatlantic supply chain. The TTI will be conceived to be usable on any product that can be serialized using barcode, data matrix or RFID. Further, it will allow to track and trace any kind of object/product, from vessels, containers, food, pharmaceuticals to automotive and airplane parts.

The TTI platform will be based on ratified global standards for supply chain events that have been proven effective in multiple supply chain projects in multiple industries on both sides of the Atlantic.

## **4. Outcome**

- Functionality requirements of involved major stakeholders
- Business, organisation and governance models (BOG models)
- Pilots (proof of concept) using barcode or data matrix technology
- Pilots (proof of concept) using RFID and barcode or data matrix technology
- Barcode, data matrix and RFID interface packages to TTI (from low cost, low functionality packages for SME's to high functionality packages)
- A Transatlantic Traceability Infrastructure usable for SME's, multinational companies, government administrations and customs

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## 5. Organisation

In order to achieve the objective and outcome of the TTI project, the following work packages have been defined:

Work package 1: Project management

Work package 2: Business, organisational, governance models (BOG models) and privacy

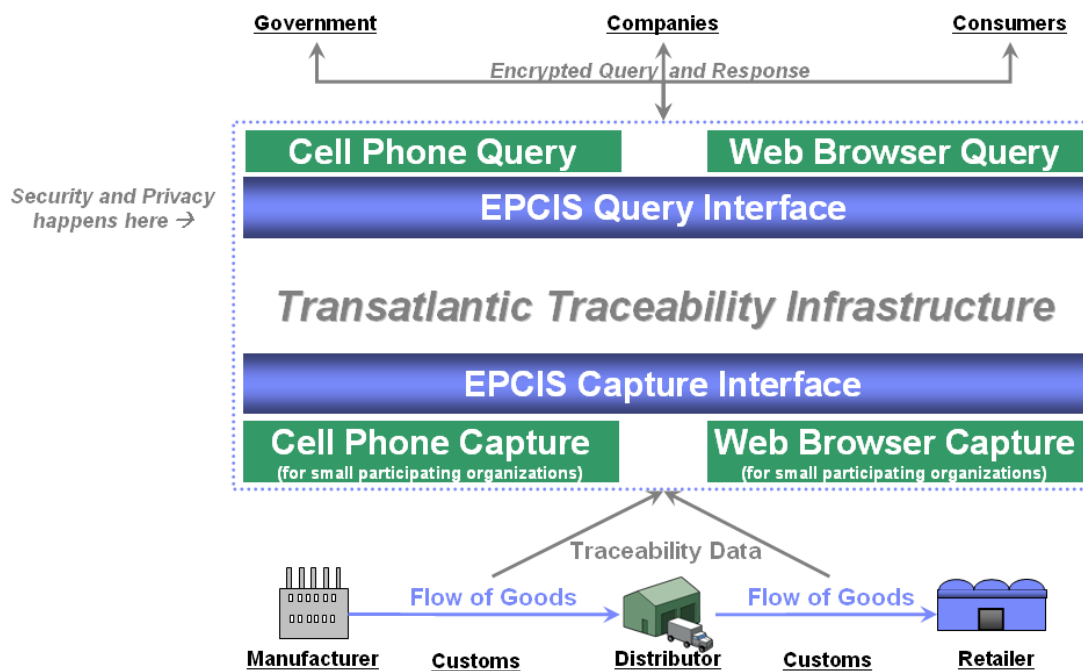
Work package 3: IT infrastructure and security

Work package 4: Pilots (proof of concept)

Work package 5: Dissemination

## 6. Concept

The project will focus on the following basic concept:



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Besides being technology independent by using barcode, data matrix and RFID to track and trace products, it is very important that the concept enables any small, medium and large size companies to use and access to the Transatlantic Traceability Infrastructure in a secured and authenticated way:

## Small companies need low tech traceability on-ramping

**Cell Phone Service**

- Mail me 100 printed labels.
- I have shipped this product to trading partner x.
- Show me the trace history of this product.

**Web Browser Service**

- Print 100 labels to my local printer.
- I have shipped this product to trading partner x.
- Show me the trace history of this product.

## Medium companies need low cost traceability on-ramping

**Open Source Traceability Bundle**

- Mail me 100 printed labels.
- I have shipped this product to trading partner x.
- Show me the trace history of this product.

Traceability data from all companies must be stored in GS1 standard format.

Participating Companies	Small	Medium	Large
Manufacturing batch size	Tiny to small	Medium to large	Medium to mass manufacturing
IT sophistication	Cell Phone or Web Browser access only	Medium	Strong
Internal standards-based traceability repository	No	No – but do have ability to generate EPCIS events	Yes – EPCIS

The GS1 Traceability Conformance Programme will allow verifying that the traceability system of a company interfacing with TTI is correctly implemented among the companies following the Global Traceability Standard (GTS) and using the most adequate GS1 Standards (EPC, GDSN, BarCodes and eCom). It defines, in a measurable way, the essential elements of best practices for the production and distribution of trade items acceptable to every industry worldwide. In addition, an EPCIS validation tool will enable to assure that every company connected to the TTI will be compliant to data and interface standards.

## 7. Investment and funding

All consortium partners will have to work on their own costs within this project. The future business model will define how the hardware, software, service and running costs of the TTI will be covered after the official launch. The involved hardware and software for the realisation of the pilots will be only on loan from the involved partners to proof the concept. The European Commission will support the TTI project by giving the official EU label, help to receive the USA label as well and promote TTI as the preferred European Traceability platform to the government administration and member's states. All consortium partners will be promoted as being part of this project and will gain

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high visibility. We have the plan to apply for the FP7 framework programme (7.3 Support Action activities) of the European Commission in order to receive around 100k Euro to cover basic travel costs and support dissemination activities. Furthermore, it is the plan to apply for additional funding (between 1 and 3 mio Euro) within the CIP (Competiveness and Innovation Programme) of the European Commission in 2010.

## 8. Timeline and milestones

5<sup>th</sup> May 2009, presentation at EU/US Symposium, Brussels

6<sup>th</sup> May 2009, official start of project

7<sup>th</sup> May 2009, press announcement

June-October 2009, finalisation of requirements, concept and BOG models

August-November 2009, pilot (proof of concept) barcode, data matrix and RFID

November-December 2009, finalisation of the TTI

Q1/2010 operational start of the TTI and launch at an official EU event

## 9. Project partners

As of today, the following companies are participants of the projects:

- Project coordinator: GS1 in Europe
- Solution providers: BT, HP, IBM and Microsoft
- Enduser companies: L'Oreal and 4 other companies (not public at the moment)
- Consulting and support: Auto-ID labs

The project is still open for participation and looking specific for companies/entities of the following profile:

- *Government administration and customs*
- *SME\* company located in Europe*
- *Multinational company headquartered in Europe*
- *SME\* company located in the USA*
- *Multinational company headquartered in the USA*
- *RFID hardware vendor*

\* An SME is defined as an independent company with less or equal 250 employees and realising less than € 50 mio turnover.



## 10. Cooperation and relationship with other projects

The project will take into account some of the excellent R&D results from EU or local government funded projects such as:

- ASPIRE (FP7) [www.fp7-aspire.eu](http://www.fp7-aspire.eu)
- BRIDGE (FP6) [www.bridge-project.eu](http://www.bridge-project.eu)
- Fosstrak [www.fosstrak.org](http://www.fosstrak.org)
- GRIFS (FP7) [www.grifs-project.eu](http://www.grifs-project.eu)
- ITAIDE (FP6) [www.itaide.org](http://www.itaide.org)
- IT Food Trace (Germany Ministry of Education and Research) [www.ifoodtrace.de](http://www.ifoodtrace.de)
- PROZEUS (German Ministry of Economics and Technology) [www.prozeus.de](http://www.prozeus.de)
- SToP (FP6) [www.stop-project.eu](http://www.stop-project.eu)

## Contact the project coordinator

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