Dear Reader,

we would like to present you the fifth issue of the CASSANDRA newsletter. Now, we are in the last half year of the project and would like to provide you with insights about the progress of our work performed during the last months.

In the last issues of the newsletter we introduced our Living Lab research approach step by step. Now, our three Living Lab coordinators would like to give you an overview about the progress and the results in each Lab. The three Living Labs set-up in CASSANDRA cover different geographical areas, trade lanes, goods and stakeholders and prove different uses cases providing substantial information to demonstrate the project’s concepts. All of them are in the final phase and ready to emit fruitful data that will be evaluated in the following months to improve global supply chain visibility.

Enjoy reading!

Pilar Pérez Berganza,
Atos - Coordinator of the Living Lab Europe-Africa
CASSANDRA addresses the supply chain visibility needs of both business and government in the international flow of containerized cargo. The main strategic goal is to enhance supply chain visibility to improve business operations as well as government’s cross-border security inspections.

The strategic impact for businesses is an improved supply chain performance and cost efficiency by reducing administrative and planning errors along the chain. For government agencies CASSANDRA improves efficiency and effectiveness. The project helps customs to assess business processes and procedures and identify secure supply chains. By minimising the attention given to these secure flows and businesses, government agencies can focus on high-risk flows resulting in a higher hit rate and greater effectiveness of security related government inspections.

In general, CASSANDRA facilitates the European and global trade by enhancing corporate social responsibility and by improving product and societal safety.

**Risk-based Approach**

Businesses and government agencies are struggling to find efficient and effective means to ensure full supply chain control and security, minimising supply chain risk. These challenges have a common solution: supply chain visibility by access to existing supply chain data.

**System-based supervision**

In CASSANDRA government agencies shift to a Risk-based Approach by relying on self-regulation of businesses. In this system-based supervision government agencies use an audit methodology to assess compliance to rules and regulations based on the evaluation of the integrity, reliability and internal consistency of the business and IT systems.

**Risk-based supply chain management**

An important prerequisite for system-based supervision is the introduction of a risk-based supply chain management. This means that supply chain management should be based on a transparent and reliable assessment and treatment of risks. The assessment of risks depends to a large extent on the availability of timely, reliable and complete information.

**Data Pipeline Concept**

To provide supply chain actors and government authorities with these accurate data, the project develops a data sharing concept. CASSANDRA achieves interoperability of heterogeneous systems by combining state of the art IT innovations. Access rights and security mechanisms are implemented in a Data Pipeline to enable secure data sharing. Furthermore, dashboards to support businesses and customs for risk management and supply chain visibility are implemented.

**Piggy-backing principle**

The piggy-backing principle is a significant building block in the CASSANDRA project. Businesses can share supply chain data for risk management, and the same data can be optimally re-used (“piggy-backed” upon) for governmental purposes. Piggy-backing can take place on data generated by businesses and used by them to buy, sell, ship and to also assess risk.

**Living Labs**

The Living Lab research approach demonstrates the CASSANDRA innovations in complex real world settings. There are three global Living Labs: Asia-EU, EU-USA and EU-Africa. Each Lab holds one or more trade lanes. Rotterdam, Bremerhaven, Felixstowe, Barcelona and Setúbal container ports are involved. The freight forwarding companies DHL, Kuehne+Nagel, Seacon and BAP provide the Living Labs with actual container flows.
The Living Lab Asia-Europe is characterised by its diversity; not only diversity in origins and destinations, type of participants and good flows involved, but also diversity in chosen solutions and their advancements towards the end of the CASSANDRA project. Like everything in life, all has its reasons, and we are working hard on documenting our work of the last three years and how everything has led up to our final achievements. This will be a public document and we hope our lessons learned can inspire you to advance further and improve your own businesses.

In the last months of the project, we are finalising the demonstrators and adding the final details of which some are really additional functionality that we could not have thought of a year ago. For example, in the demonstrators between China and both the United Kingdom and the Netherlands we have focused on data integration and complete visibility on the logistics chain from consolidation to deconsolidation. We do not only have various views on the extensive data set but also working to add AIS tracking and CSD Information. AIS tracking and CSD information in itself might not be innovative, but with our functionality, the viewer can track a vessel, look at the containers on board that vessel, understand current container status, look at the shipments inside the container and relate this to original purchase orders and invoices. In addition to this, alerting supports the users in assessing all the available data quickly. Various business opportunities have evolved from these demonstrations that are not only beneficial to the forwards but also to the end customers. The team managed to complete all the necessary analysis and development work in such a short time that we have already tracked over 10,000 containers in the pipeline and have developed more than initially expected!

Additional challenges can be expected when the ambition level goes up! On the trade lane between Malaysia and the Netherlands, we did not only aim to deliver a visibility solution, but also worked on capturing real-time data at the source. Here, we also wanted to add value to the operational process by providing operational staff in Malaysia with a tool that helps them to manage their process more efficient while also providing the Dutch side of the trade lane with digital, earlier, and more complete data. The trade lane starts with capturing the purchase order information from the Netherlands and tracks this to the finalisation of all administrative and operational processes in Malaysia. Thus fixing not only the container’s content and compliance with the purchase order, but also relate this to container handling and trucking in Malaysia, clearance by Malaysian customs and loading...
on the ocean vessel. This data is used to provide both seller and buyer with order visibility but also to support more efficient processes with the forwards at both ends. Development of such a system, with two solution providers, brought additional challenges and we are now working hard to make its implementation complete.

In addition to this, we have worked hard on assessing the opportunities for connecting community platforms in Singapore and Rotterdam and thus create two geographically apart but connected parts of the CASSANDRA pipeline. Unfortunately, this exercise ended in CASSANDRA with the assessment of the feasibility and conceptual plans of how this can be created.

But it has learned us a lot about how community platforms add value to supply chains and logistics operations in Asia and Europe and how they can in the future. We therefore hope that our activities here are only the beginning of what will happen in this area in the next years!

As a coordinator, I am very proud of all the members of the Living Lab Asia-Europe team and thankful for all the support and the contributions we have received from parties outside the consortium. Without their help, we would for sure not have come this far. We will now focus on dotting the i’s and crossing the t’s and report back to you at the end of the project!
Two use cases aim at business operations taking required US information needs and early customer information about status into account. Both use cases have the ability to enhance the binding of freight forwarder’s customer by providing additional information using the Data Pipeline.

**Business benefits:**

- An early data completion check aims to avoid delays or fines when data is due but not sent or not available.
- The early event forwarding enhances visibility by offering information at an earlier stage for information purposes.

The Living Lab Europe-USA supports the idea that authorities should concentrate on high risk consignments and have a fast access to additional data by providing extra cargo visibility through the piggy-backing principle of data and the implementation of risk-based concepts.

**Authorities benefits:**

- The CASSANDRA Risk-based Approach supports Bremen port authorities targeting misdeclared containers.
- All Customs authorities benefit from addi-
is realized where data is rather unstructured.

• Automated analysis is provided if the stakeholder’s information is different to the goods transported.

The data flow in US trades is unidirectional and regulated due to US requirements. This process could be named as a pre-customs declaration heading towards enhanced. The innovations to be demonstrated in the use cases take this situation into account and pinpoint the innovations using the stable base of this Living Lab. This is done by connecting freight forwarder’s systems and the port Community Systems to the backbone hub. The backbone hub provides both visualization systems with information. The authorities and the business partners use these systems on top of their own systems to gain additional information of single consignments and related advanced analyses.

The innovations provide:

• Additional data where the amount of information is improvable and better data quality is requested.

• A more structured way for human readability.

All these advanced ideas are currently demonstrated by two Full-Container-Load trade lanes in this Living Lab. This implies freight forwarders send information of shipments directly from the shipper to the CASSANDRA backbone system. One of these trade lanes starts in South-East Austria and Mid-Germany. Containers on both trade lanes go via the port of Bremerhaven to an East Coast port to be forwarded to the final consignee. One of these trade lanes contains some shipments with Containter Security Devices to record the container voyage and serve online status information for purposes of authorized companies and affected authorities.

All in all, each partner taking part in the CASSANDRA Living Lab Europe-USA is very enthusiastic of using our ideas in individual daily business and want eagerly getting beyond the state of a demonstration project with these improvements.
THE LIVING LAB EUROPE-AFRICA:
TWO TRADE LANES BETWEEN IBERIA AND THE AFRICAN CONTINENT

by Pilar Pérez Berganza, Atos - Coordinator of the Living Lab Europe-Africa

The CASSANDRA Living Lab’s scope is to demonstrate the CASSANDRA concepts in a real environment involving supply chain actors carrying out their activities in a regular way. For this purpose three Living Labs were initially planned.

The Living Lab Europe-Africa or more specifically Iberia-Africa was conceived as two trade lanes: Spain to Egypt and Portugal to Cape Verde with the additional issue of the lack of stakeholders directly involved in the project as partners hindering the whole process triggering the redefinition of some aspects that will be further explained in this article.

The last release of CASSANDRA’s Newsletter described the set-up of the Europe-Africa Living Lab which started last summer. Since the beginning of 2014 we were immersed in the final tuning of the demonstration which is fully working in February. In this issue, we want to bring you the current status of the Living Lab and the following steps for the last months of the project.

The Spain-Egypt trade lane focusses on the following use cases which have been defined taking the risks identified by the stakeholders into account:

- ENS multiple filing, which means to reach the best possible quality information from the multiple parties. The ENS is enriched with more detailed information provided by the consigner or the trade agent also enabling access to the original source of data.

- Digital document-based visibility: This implies to make the data of the documents available in the pipeline solution displaying all the information regarding container at a glance.

The dashboard has been improved with some functionalities emerged from the needs of the
stakeholders. These are the most important ones:

- Improved access control in order to guarantee the security and integrity of the data and to enable the access to the documents to update the information remotely.
- Improved input and edition of data forms in order to enrich the user’s experience.
- Improved purchase order functionality allowing the attachment of complementary files in order to enhance the reliability and quality of data.

The Spanish partners involved (Atos and Portic) are going to organise a workshop with Spanish authorities, Spanish customs, Port Authorities and Logistics actors (shippers, carriers etc.) to validate the CASSANDRA concepts and evaluate the dashboard.

Regarding the second trade lane of the Living Lab Iberia-Africa, there has been important modifications during the last months. The huge efforts from the Setúbal Port Authority to involve real stakeholders in the trade lane have resulted in the involvement of several actors such as an agent, a shipping line, a terminal operator and the Portuguese customs. The work performed in this trade lane is fruitful and useful to demonstrate the concepts of CASSANDRA in many ways:

- To demonstrate the security architecture of the project.
- To evaluate the CASSANDRA concept with key Portuguese stakeholders through evaluation/feedback sessions which evaluate not only the functionalities of GMV dashboard but also, in a broader sense, how the CASSANDRA approach could be beneficial to supply chain actors.
- To assess the real use of CASSANDRA concepts by Portuguese customs by the development and implementation of specific web services.

Now we are in the most exciting part of the project. Research and technical work has been finished and it is time to check in the field that all this work will actually improve the supply chain visibility and the quality of data paving the way for a more efficient future of transport and logistics.