Serving the whole transportation sector in Spain
### *An interview with Javier Garcia Fortea & Jaime Luezas Alvarado about LL#21 SIMPLE* [1]

Javier Garcia Fortea and Jaime Luezas Alvarado represent ADIF and Puertos del Estado, two Spanish governmental agencies that play a crucial role in developing platform SIMPLE. Javier and Jaime are busy guys with great responsibilities. When one answers my questions, it regularly happens that the other answers incoming messages or calls. Building a reference platform for multimodal data exchange within Spanish freight transport and logistics is their goal, and this makes their Living Lab #21 stand out in terms of scope and size, compared to a lot of other Living Labs. The final lead of the SIMPLE project lies with the Spanish ministry of Public Transport.

Javier Garcia Fortea is commercial director in the Directorate of Logistics Services at ADIF, the Spanish state-owned company in charge of expanding and operating the Spanish railway system. Javier: "This directorate is responsible for the design, development, and operations of freight terminals in the Spanish railway sector. As commercial director I have to find a way to participate in the market and get the best use out of our terminals. Besides that, I am responsible for the digitalization within our directorate." To which he adds: "Within ADIF, SIMPLE and FEDeRATED Living Lab #21 are the main projects concerning digitalization of freight transportation at the moment."

Jaime Luezas Alvarado is Head of Port Community Services at Puertos del Estado, the organization that implements the government's port policy and coordinates and controls the efficiency of the Spanish port system, which consists of 28 maritime port authorities. Jaime: "Within my agency I am in charge of the Maritime Single Window and the project SIMPLE. Besides that, I have a lot of other responsibilities, but these are not connected to SIMPLE."
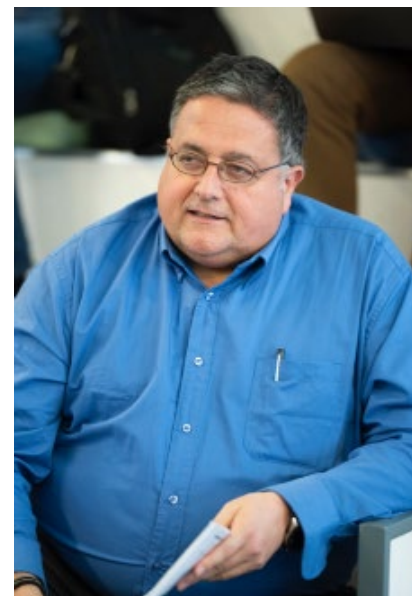
A national platform
The name SIMPLE is deceptive, for it is not simple at all. It is highly complicated, for it is the prototype of the Spanish national digital platform for freight transport and logistics. Jaime: "SIMPLE is an acronym for *Simplification of Processes for Logistic Enhancement*." Javier: "It is about how to integrate

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[1] Interview by Minne Buwalda

the whole digital system, the way of exchanging data between private parties, and between public and private sector, in order to add value to the transport chains."

In terms of political coverage Living Lab #21 enjoys lots of commitment. Javier: "In Spain the ministry of Ministry for Transport, Mobility & Urban Agenda (MITMA, also FEDeRATED partner) is the main responsible for deciding on the policy related to transportation. Puertos de Estado and ADIF depend on this organizational structure." Jaime: "But we are independent agencies."

The concept for SIMPLE started in 2015, so before FEDeRATED took off. Actually, it started with the Puertos del Estado platform called Dueport. Jaime: "In Spain, Puertos del Estado functions as the executor of the Maritime Single Window. It does that by way of platform Dueport. So, through Dueport we have all the information on the ship calls in our ports, including their cargo. Our ministry of Public Transport wants to extend this to the land part of logistic chains." And: "Ports are nodes in which goods change from one transport mode to the other. So, we want to develop the infrastructure, the port terminals and also the digital part of the logistic sector in the ports. This is the reason why Puertos del Estado is interested in SIMPLE and FEDeRATED."

The Spanish Maritime Single Window

He continues: "Besides connecting the land part of the logistic chains with the sea part, SIMPLE also needs to contribute to a better coordination of the port community systems, because private operators complained about the differences between the various PCSs." And: "Puertos del Estado coordinates the different Port Authorities in Spain, but we do not control every decision made by them. It is comparable to the situation in the Netherlands."

Implementation of the Maritime Single Window was a success in Spain. Jaime: "We have integrated Customs and the rest of authorities with the port systems. In this respect we are a reference in Europe. And by way of SIMPLE and FEDeRATED we try to extend this success to the land part." Therefore, SIMPLE could be described as an extended Maritime Single Window accommodating pull data sharing to enhance multimodal supply chain visibility. On SIMPLE's participation in FEDeRATED, Javier says: "We decided to participate in this project because of the importance of promoting not just the physical transportation flows between rail and other modalities, but also the digital concepts and infrastructures that streamline multimodal transport chains. In order to do that, we as ADIF not only need to work

together with other Spanish public administrations like Puertos de Estado and the ministry of Transport, but also with the private sector. For if we want to develop a digital reference platform like SIMPLE, we need to identify the requirements of the private sector."

The need for stakeholder involvement
So, it all started with the platform called Dueport, which was primarily built because supply chain transparency for the sake of the Single Window was needed. Yet in the meantime, the goal of SIMPLE reaches much further. It covers multiple transport modalities, with Puertos del Estado representing the maritime, ADIF representing rail transport, and the ministry representing road transport. In the coming years, air freight should be added to that list, and maybe a start with this can be made during the IATA Hackathon that FEDeRATED co-organizes in May 2023. Jaime: "But first we will study if participation in the IATA Hackathon is useful for SIMPLE." All in all, Jaime and Javier want insight into the complete multimodal B2A perspective on Spanish supply chains for government purposes.

Promotion therefore plays an important part in the SIMPLE project. Promotion in order to create stakeholder involvement from within the private sector. Javier: "For us as government agencies it is our mission to promote this solution for the future. Therefore, the first step we did was to team up with logistics and transport associations and communicate to the sector what SIMPLE is. There were a lot of meetings organized with them, for it is in the blood of SIMPLE to collaborate and to share. But at the same time this collaboration is quite difficult to realize, because of all the commercial interests involved." And: "It is important for us to develop a government system for the whole sector. If some actors do not share their data, a part of the change we envision is not going to be realized."

Javier carries on: "We are ambitious and think big. SIMPLE is not just a digital platform; it is about serving the whole transportation sector in Spain by way of digitization." To which he adds: "In order to do that, we need to involve private companies and transport and logistics associations, for we need to do different pilots -that's the way to adjust the platform. We also need to convince these parties to use the platform. To change the way this sector is digitalizing we must think from a sector-wide perspective, for transport and logistics is about coordination and collaboration." And: "The coming year (2023) we need to show the sector that the SIMPLE prototype runs correctly. This not only has to do with technical or functional issues, but also with governance." Concluding, Jaime says: "The logistics community in Spain has big expectations of SIMPLE. We are developing the software and solving some issues, and now we must put in operation the platform. Our message has landed, and operators are waiting for the platform to be active."

Collaboration	Prediction	Management	Optimization	Security	Multimodal	Connectivity
Greater collaboration and communication between participants in the logistics network. Allows data sharing, coordinating and planning activities, ensuring stakeholders have the same information available	Early conflict detection reduces inefficiencies and waiting times due to the possibility of advance planning	Improvement of the management of freight transport: Time estimation and exchange of documentation based on reliable and trustworthy data	Facilitates communication, traceability and transparency of information, optimizing sequencing workflows in multimodal transport	Increased information security when using distributed ledger networks	Common language and semantics for the multimodal logistics chain: Taxonomy and common messaging ontologies for information exchange	Improved connectivity and information flow due to connection through a sharing platform

SIMPLE Platform

As representatives of government agencies, Jaime and Javier aim for a level playing field in transport and logistics. Jaime admits that there are quite some bottlenecks to be solved in this respect. He says: "Digitalization is a difficult issue in the sector. The maritime part is digitalized but their instruments are a bit obsolete now because of the technology used. And in road transport a lot of SME companies are not yet digitalized at all. They have to do an effort and this is difficult for them. Maybe they have to start with using the SIMPLE platform via a graphical user interface (GUI)." To which he adds: "Of course, this is not the way we digitalize, but the present situation is difficult to change, so we may need that intermediate solution."

Jaime, wrapping up the topic of stakeholder involvement: "At the beginning of the project we consulted the stakeholders from the three modalities maritime, rail and road, and listed the events and functionalities that SIMPLE should have. So, they have given their opinion. Now we are developing and defining the functionalities of the platform." And: "When we finish the development of the software and so on, we will send the complete solution to them and give them the possibility to comment. In the coming months we will meet up with them again, in order to receive additional input."

Carlos Ruiz de Alegria Garcia -MITMA policy associate- partnering in FEDeRATED LL workshop at ADIF, Malága June 2022

Creating trust

The willingness of private parties to adopt SIMPLE as their common Spanish platform for freight transport and logistics depends largely on the confidence they have in the system. They have to trust it before they are going to use it. Jaime: "We need to convince them to put the data in the platform, as we know it is useful to everyone. Thinking in terms of trust and security, if we from the administrative agencies can verify that we can do this safe, it allows them to trust their data are secure with us." And: "As public entities we can contribute in creating trust by private parties. We develop the architecture and technical functionalities that should result in trust."

Explaining himself a bit further, Jaime says: "Part of the SIMPLE architecture is based on blockchain-technology. This is because we do not want to store all the data shared through the API in the central database. Yet, we do want to store the cache that is generated, in order to be able to recover data if any operator needs them. And this cache is going to be in Blockchain. This creates trust within the sector. With blockchain we can be sure the data remains at the origin, with the owner of the data, so it ensures data sovereignty." Wrapping it up, he says: "For us, blockchain is a good contribution."

FEDeRATED semantics

The FEDeRATED initiative revolves around semantics, so SIMPLE has to develop a semantic model aligned with the FEDeRATED semantic model. Javier: "In the beginning we did not have a semantic model to start with. We had to decide how it was going to be. First,

SIMPLE had to adapt to the standards in Spain in different transport modes. Then we had to convert these data to the FEDeRATED principles."

Asking about the Semantic Adapter that is being discussed in FEDeRATED circles at present, Javier says: "Talking about a Semantic Adapter is talking about the future in ten years, while our work is in the now. But it is good to be prepared for that future, and when we use the FEDeRATED semantic model, we prepare for such future steps. Instead of using an old semantic model in SIMPLE, which turns it into another silo, we use the FEDeRATED reference model for semantics, because we want to get along with the next steps of FEDeRATED." And: "As an idea this Semantic Adapter may be brilliant, but it is 'way up there'. We talk with customers from the private sector, and we agree with them that SIMPLE must be a solution for SMEs. If you talk to them about an API, it is already very difficult for most them to comprehend what you are saying; and when you start talking about a Semantic Adapter, you are finished."

SIMPLE is meant to move the data from one silo to the other by way of FEDeRATED semantics, for example from the maritime silo to the rail silo. Or from a company in Spain to a company in Sweden. Talking from his ADIF rail perspective, Javier says: "Our system can show where a train with specific cargo is located, but these data from the railway system cannot be transferred to the customers' systems, because the data is in a specific format and standard. SIMPLE knows the different environments of systems and tries, without breaking existing standards, to send the info to the customer, via API or web interface, and in a FEDeRATED way."

SIMPLE Semantic and Ontology Model
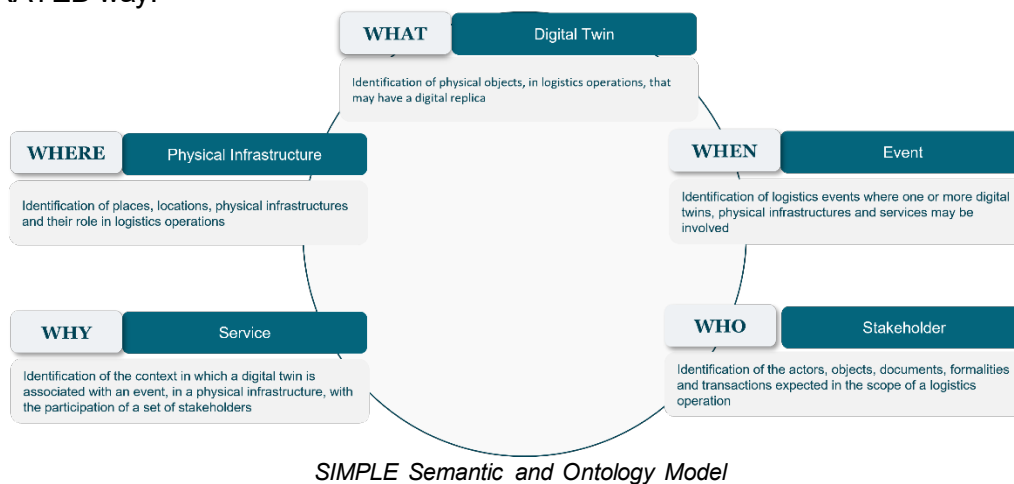
Javier continues: "Besides connecting the land part of the logistic chains with the sea part, SIMPLE also needs to contribute to a better coordination of the port community systems, because private operators complained about the differences between the various PCSs." And: "Puertos del Estado coordinates the different Port Authorities in Spain, but we do not control every decision made by them. It is comparable to the situation in the Netherlands."

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At the moment there is a pilot going between Swedish Living Lab #5, called RFID in Rail (Trafikverket), and SIMPLE. Javier: "In this pilot we use the data in two ways: first between the SIMPLE platform and the Swedish Deplide platform, because in Sweden they need to know where their train wagon is. When it passes the frontier between France and Spain, we detect it, and through SIMPLE the data are exchanged with Deplide; but the data can also be

used by the SIMPLE platform, so the Spanish train terminal or the warehouse where the goods need to be stored know in what order the wagons and their cargo are put behind the train, so they can inform their customers about the arrival of their cargo."

A universe of data

Asking about the scaling of SIMPLE, and the eventual provision of new and enhanced services, Javier says: "It will be a universe of data in SIMPLE, and for the technical providers it will be useful to identify new services for the marketplace, for example data services related to carbon footprint. SIMPLE is designed to have an API REST for marketplaces, which will be developed in the SIMPLE project." And: "Now we want to launch and run SIMPLE with basic services for multimodal transport flows. But in the future the technical providers can create new services, using this API REST."

Asking the gentlemen what the added value of FEDeRATED is for SIMPLE, Javier starts off: "We cannot just think in a Spanish way. We need to think in a collaborative European way. Spain is in the periphery of Europe. We want to attract cargo flow from other parts of the world and simply need to be interoperable with the rest of Europe." To which Jaime adds his point of view: "We need a solution that is connected to the rest of Europe, a solution that is aligned with the DTLF initiatives, including the implementation of the eFTI Regulation –so, DTLF Subgroup 1–, but mainly with DTLF Subgroup 2. We aim at being a federative platform. For us, there is no better way to develop SIMPLE than by way of connecting to DTLF, and we can achieve this through FEDeRATED."

Javier and ADIF colleague Avelino Rodriquez Lozano connecting in the physical world
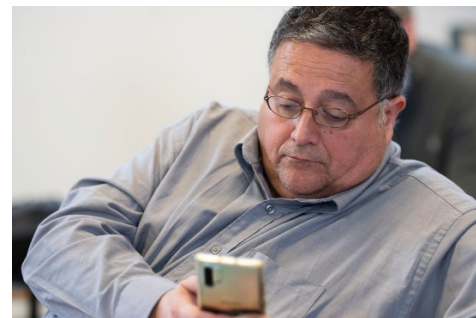
Jaime connected in the digital world