

## A Tool to Provide Advanced Secure Exchange of Electronic Documents through Europe

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**Abstract :** Supporting cross-border secure and reliable exchange of data and documents and to promote data interoperability is critical for Europe to enhance sector (like eFinance, eJustice and eHealth). This work presents the status and results of the European Project MADE, a Research Project funded by Connecting Europe facility Programme, to provide secure e-invoicing and e-document exchange systems among Europe countries in compliance with the eIDAS Regulation (Regulation EU 910/2014 on electronic identification and trust services). The main goal of MADE is to develop six new AS4 Access Points and SMP in Europe to provide secure document exchanges using the eDelivery DSI (Digital Service Infrastructure) amongst both private and public entities. Moreover, the project demonstrates the feasibility and interest of the solution provided by providing several months of interoperability among the providers of the six partners in different EU countries. To achieve those goals, we have followed a methodology setting first a common background for requirements in the partner countries and the European regulations. Then, the partners have implemented access points in each country, including their service metadata publisher (SMP), to allow the access to their clients to the pan-European network. Finally, we have setup interoperability tests with the other access points of the consortium. The tests will include the use of each entity production-ready Information Systems that process the data to confirm all steps of the data exchange. For the access points, we have chosen AS4 instead of other existing alternatives because it supports multiple payloads, native web services, pulling facilities, lightweight client implementations, modern crypto algorithms, and more authentication types, like username-password and X.509 authentication and SAML authentication. The main contribution of MADE project is to open the path for European companies to use eDelivery services with cross-border exchange of electronic documents following PEPPOL (Pan-European Public Procurement Online) based on the e-SENS AS4 Profile. It also includes the development/integration of new components, integration of new and existing logging and traceability solutions and maintenance tool support for PKI. Moreover, we have found that most companies are still not ready to support those profiles. Thus further efforts will be needed to promote this technology into the companies. The consortium includes the following 9 partners. From them, 2 are research institutions: University Carlos III of Madrid (Coordinator), and Universidad Politecnica de Valencia. The other 7 (EDICOM, BIZbrains, Officient, Aksesspunkt Norge, eConnect, LMT group, Unimaze) are private entities specialized in secure delivery of electronic documents and information integration brokerage in their respective countries. To achieve cross-border operativity, they will include AS4 and SMP services in their platforms according to the EU Core Service Platform. Made project is instrumental to test the feasibility of cross-border documents eDelivery in Europe. If successful, not only einvoices, but many other types of documents will be securely exchanged through Europe. It will be the base to extend the network to the whole Europe. This project has been funded under the Connecting Europe Facility Agreement number: INEA/CEF/ICT/A2016/1278042. Action No: 2016-EU-IA-0063.

**Keywords :** security, e-delivery, e-invoicing, e-delivery, e-document exchange, trust

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