

# Facilitating interoperable electronic procurement across Europe

e-PRIOR



*Technical Overview*

# Contents

- What is Open e-PRIOR? 3
- Main Open e-PRIOR features 3
- Main Open e-PRIOR components 5
- Interaction between Open e-PRIOR and PEPPOL 7
- Where to start with Open e-PRIOR? 10
- References 10
- Glossary of Terms 11



# What is Open e-PRIOR?

Open e-PRIOR is an enterprise e-procurement application developed under the ISA (Interoperability Solutions for European Public Administrations) programme by the Directorate-General for Informatics (DIGIT) of the European Commission.

Suppliers and public contracting authorities use the electronic services of Open e-PRIOR to exchange e-procurement documents. It plays the role of intermediary between the back-office applications of the public administration and the Pan-European Public Procurement OnLine (PEPPOL) interoperability initiative. It has been designed to interoperate with a large number of applications of heterogeneous nature.

The platform is connected to PEPPOL via its own Access Point, facilitating the cross-border exchange of e-procurement documents between, for example, a public administration in country A with suppliers in country B.

Open e-PRIOR includes also a web portal allowing SME and individuals to encode their invoices and submit them to their customer.

As its name indicates, Open e-PRIOR is open source and freely available – inclusive of documentation and support – to all Member States.

3

## Main Open e-PRIOR features

Open e-PRIOR is fully in line with the Digital Agenda for Europe, in terms of generalisation of e-government and e-procurement, development of interoperable and open systems, compliance to standards, and deployment of cross-border public online services.

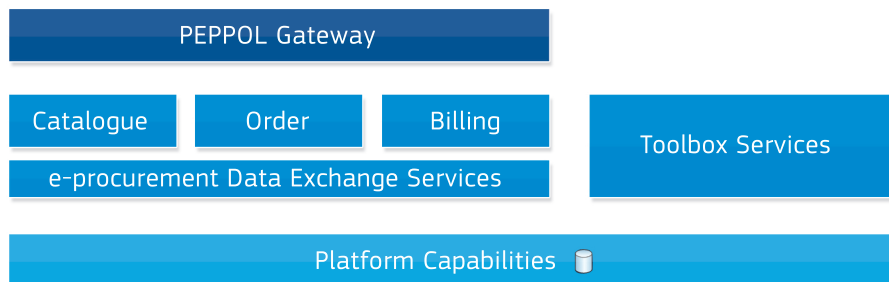
The main features of Open e-PRIOR can be summarised as follows:

1. It is an integrated environment that offers web services to exchange procurement documents. The application guarantees **authenticity of origin** and **integrity of content** for all exchanged documents. It also integrates an **archiving** functionality.
2. It supports the integration of **multiple suppliers** with the **multiple back-offices** of a contracting authority.
3. It is connected to the PEPPOL infrastructure via its own turnkey **PEPPOL gateway**, thereby enabling the secure exchange of electronic documents via the PEPPOL network. Any supplier connected to PEPPOL has, by design, a connection to all contracting authorities which implemented Open e-PRIOR and vice-versa.
4. The application complies with:
  - **CEN/BII profiles** and code lists - standard identifiers
  - the **e-invoicing directive**
  - the **WS-Interoperability** guidelines



# Main Open e-PRIOR components

Open e-PRIOR is composed of a set of building blocks and added-value services which enable the quick set-up of interoperable trusted information exchange.



## *PEPPOL gateway*

The PEPPOL gateway was developed according to the PEPPOL specifications, to enable a connection to the PEPPOL network.

## *Data Exchange Services*

The data exchange services automate the e-procurement business processes. They enable the contracting authority to receive catalogues, invoices, credit notes, etc in standard electronic format from their suppliers and in turn send orders, catalogue responses, etc in electronic format to them.

## *Toolbox Services*

Open e-PRIOR implements a number of services which support the business independently of the specific context. These services are secured and their successful execution depends on a number of controls and business rules.

These services can be logically divided in:

- **Read services** which enable the query of the status of documents, complex queries related to a document exchange, the retrieve of a business document previously exchanged via e-PRIOR (in its XML raw format or in a human readable format) and the preservation of documents in an Inbox which only the receiver system can access.
- **Generic write service** to attach a document to another document exchanged via Open e-PRIOR.

### *Platform Services*

- **Document validation and business rules engine**  
Open e-PRIOR may be configured to control the validity of any exchanged message against a specific message schema, content validation including conditional logic, IDs uniqueness, and workflow logic via parent/child relationship or the state of a business entity. Other types of checks may be added if required.
- **Document status management**  
Open e-PRIOR manages the states of a business entity, manipulated by different services. Workflow states are persisted and transactions can run for a long period of time.
- **Document rendering**  
Open e-PRIOR is able to generate a human readable form of the exchanged documents (HTML or PDF format). Other formats may be added.
- **Document Storage**  
Open e-PRIOR provides storage and archiving services in XML raw format and in a human readable format. These are stored in a secured database, with restricted access.

- **Routing Engine**

Open e-PRIOR implements a routing mechanism, based on standard routing keys, which enables the routing of messages between a number of systems acting as senders and receivers of data.

- **Logging, Monitoring and Privacy & Security**

Open e-PRIOR implements logging, privacy and security mechanisms. These mechanisms are implemented in the several layers of Open e-PRIOR and in particular in all of its interfaces including communication protocols.

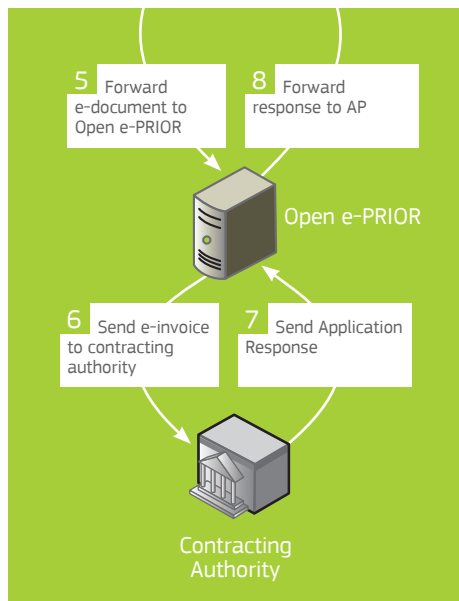
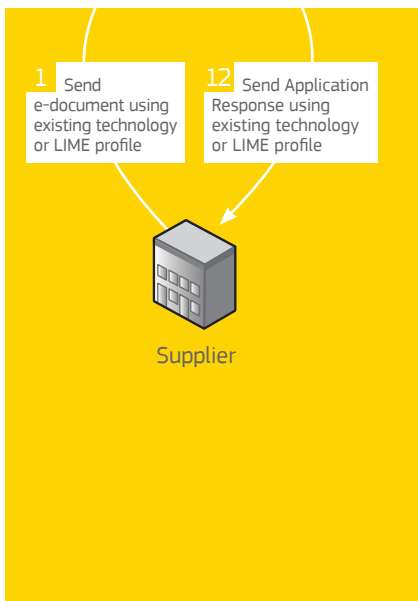
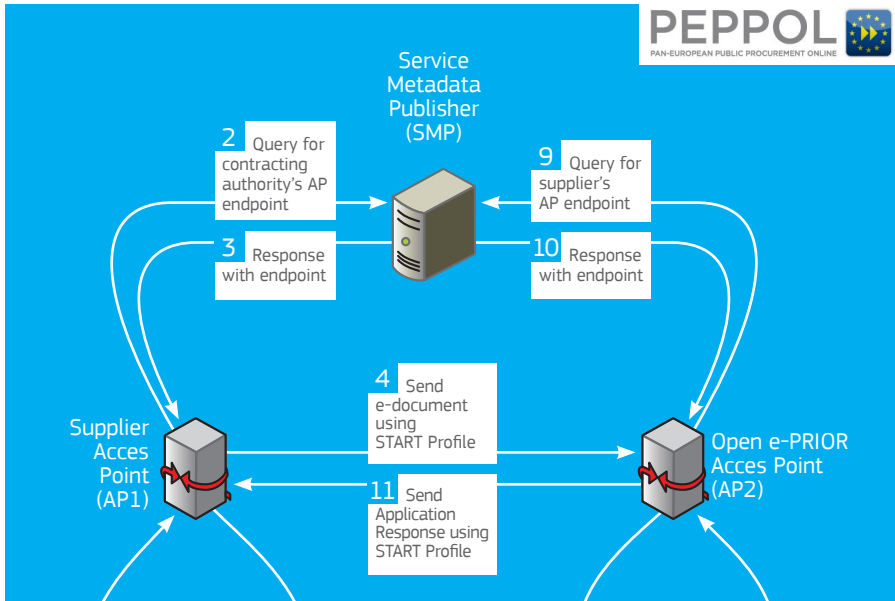
## Interaction between Open e-PRIOR and PEPPOL

One of the goals of the Open e-PRIOR project is to support PEPPOL transport infrastructure, by giving users the means to send and receive documents via the PEPPOL network.

In order to fulfil this objective, a PEPPOL Access Point has been included in the Open e-PRIOR software. The Access Point, compliant with the START profile, addresses the following requirements:

- **Receiving documents** (for ex. e-invoices) from suppliers connected to the PEPPOL network and forwarding them to Open e-PRIOR for processing.
- **Sending electronic documents** (for ex. e-orders, invoice responses) coming from contracting authority's back-offices via Open e-PRIOR to suppliers via the PEPPOL network.

# Typical interaction scenario





- 1 The supplier system connects to a PEPPOL Access Point in its country (AP1) and sends a document to a contracting authority using Open e-PRIOR.
- 2 AP1 queries the Service Metadata Publisher (SMP) for the contracting authority AP address, submitting the business ID of the receiver, the document type and the process type.
- 3 SMP returns the address of the Open e-PRIOR PEPPOL Access Point (AP2).
- 4 AP1 sends the message containing the document to AP2.
- 5 AP2 forwards the message to Open e-PRIOR.
- 6 Open e-PRIOR processes the document and sends it to the contracting authority's back-office.

If required by the process, a response can be generated and the following steps will take place:

- 7 The back-office generates a response and sends it to Open e-PRIOR.
- 8 Open e-PRIOR forwards the response to AP2.
- 9 AP2 queries the Service Metadata Publisher (SMP) for the supplier AP address, submitting the business ID of the supplier, the document type and the process type.
- 10 SMP returns the address of the supplier's PEPPOL Access Point (AP1).
- 11 AP2 sends the message containing the response to AP1.
- 12 AP1 forwards the response to the supplier.

In case that the contracting authority has to send a document to the supplier (for instance an e-order), a similar scenario could be followed, starting from the contracting authority instead of the supplier.

More information is available in the e-Library section:

<http://joinup.ec.europa.eu/software/openeprior/elibrary/all>

# Where to start with Open e-PRIOR?

Open e-PRIOR is provided with a preconfigured environment ready to run.

A detailed description of these tasks can be found in the e-Library section of the Open e-PRIOR project on the Joinup platform:

<http://joinup.ec.europa.eu/software/openeprior/elibrary/all>

## References

[1] CEN/BII:

[http://www.cen.eu/CEN/sectors/sectors/iss/activity/Pages/ws\\_bii.aspx](http://www.cen.eu/CEN/sectors/sectors/iss/activity/Pages/ws_bii.aspx)

<http://spec.cenbii.eu/>

[2] European Interoperability Framework v2.0:

<http://ec.europa.eu/idabc/en/document/7728.html>

[3] e-PRIOR case on [www.epractice.eu](http://www.epractice.eu):

<http://www.epractice.eu/cases/ePRIOR>

[4] ISA (Interoperability Solutions for European Public Administrations):

<http://ec.europa.eu/isa>

# Glossary of Terms

**PEPPOL:** Pan European Public Procurement Online. The PEPPOL project aims at enabling cross-border public procurement in Europe. Learn more on <http://www.peppol.eu>

**Contracting Authority Back-office (or Back-end):** A system that keeps record of the contracting authority's purchase transactions, in this context also referred to as "accounts payable" (AP).

**Supplier Back-office (or Back-end):** A system that keeps record of the company's sales transactions, in this context also referred to as "accounts receivable" (AR).

**UBL:** Universal Business Language (UBL) is a library of standard electronic XML business documents such as purchase orders and invoices. UBL was developed by an OASIS Technical Committee with participation from a variety of industry data standards organizations. UBL is designed to plug directly into existing business, legal, auditing, and records management practices. It is designed to eliminate the re-keying of data in existing fax and paper-based business correspondence and provide an entry point into electronic commerce for small and medium-sized businesses. UBL version 2.0 was approved as an OASIS Committee Specification in October 2006 and has been publicly released.

**WS-I:** The Web Services Interoperability Organization is an industry consortium chartered to promote interoperability amongst the stack of web services specifications.



Follow us on Twitter [@ePRIOR\\_EU](#)



Join our [e-PRIOR group](#) on LinkedIn



Contact us at  
[DIGIT-EPRIOR-SUPPORT@ec.europa.eu](mailto:DIGIT-EPRIOR-SUPPORT@ec.europa.eu)