The Digital Building Blocks

Give your digital project a boost

The Digital Age

The internet and digital technologies are transforming our world.

Public administrations
are increasingly offering digital services, as they gain the same legal validity as traditional paper processes

Businesses and supply chains
are growing beyond borders, as the internet facilitates international trade

Lara Puscas | Unsplash

These trends have led us in an interesting direction…

The Digital Single Market

What is the Digital Single Market?

A vibrant cross-border, cross-sector digital ecosystem throughout Europe that will help public administrations, private enterprises and citizens make the most of the single market.

Tax declarations
Declare your taxes online, saving time and reducing administrative burden

Online banking
Open a bank account remotely and securely

Studying abroad
Enrol in a foreign university online

Business across borders
Set up a business in another Member State, establishing cross-border supply chains

Public procurement
Businesses bid in online calls for tender and PAs can process invoices electronically

Online payments
Authenticate online payments securely, for businesses and citizens

What can be done to help public administrations and businesses make the most of the digital world?

Regulate
European regulations should be interoperable and take into consideration the impact and use of digital technologies worldwide

Enable
Public administrations and businesses should have access to secure and standardized tools they can use to function in the digital world

For the Digital Single Market to come to fruition, we need **common standards and specifications** for digital technologies so businesses, public administrations and citizens can enjoy the benefits of interconnectedness across borders, industries and sectors.

The Digital Building Blocks

The Digital Building Blocks help create this vibrant cross-border and cross-sector ecosystem for the Digital Age

Meet the Digital Building Blocks

Find the one you need.
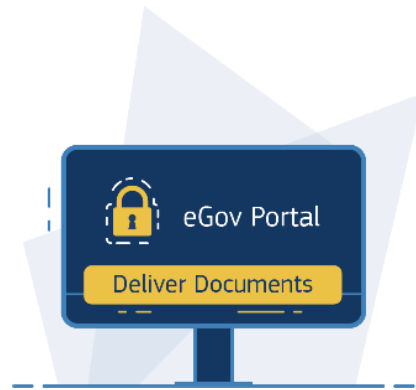
eDelivery

Exchange online data and documents reliably and securely.
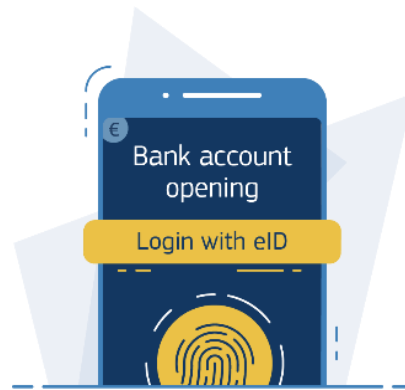
eID

Allow citizens to prove who they are across borders, making it easier to access online services in another EU Member State.

eInvoicing

Promote the implementation of the European standard for electronic invoicing across borders.

eSignature

Create and verify electronic signatures between businesses and EU citizens.

The Digital Building Blocks

A Building Block is an open and reusable digital solution

What?

A Building Block can take the shape of **frameworks, standards, software products or software as a service (SaaS)**, or any combination thereof.

The Digital Building Blocks

A Building Block is an open and reusable digital solution

How?

It promotes the adoption of the same **open standards** and **technical specifications** by **the different sectors** of the European Union.
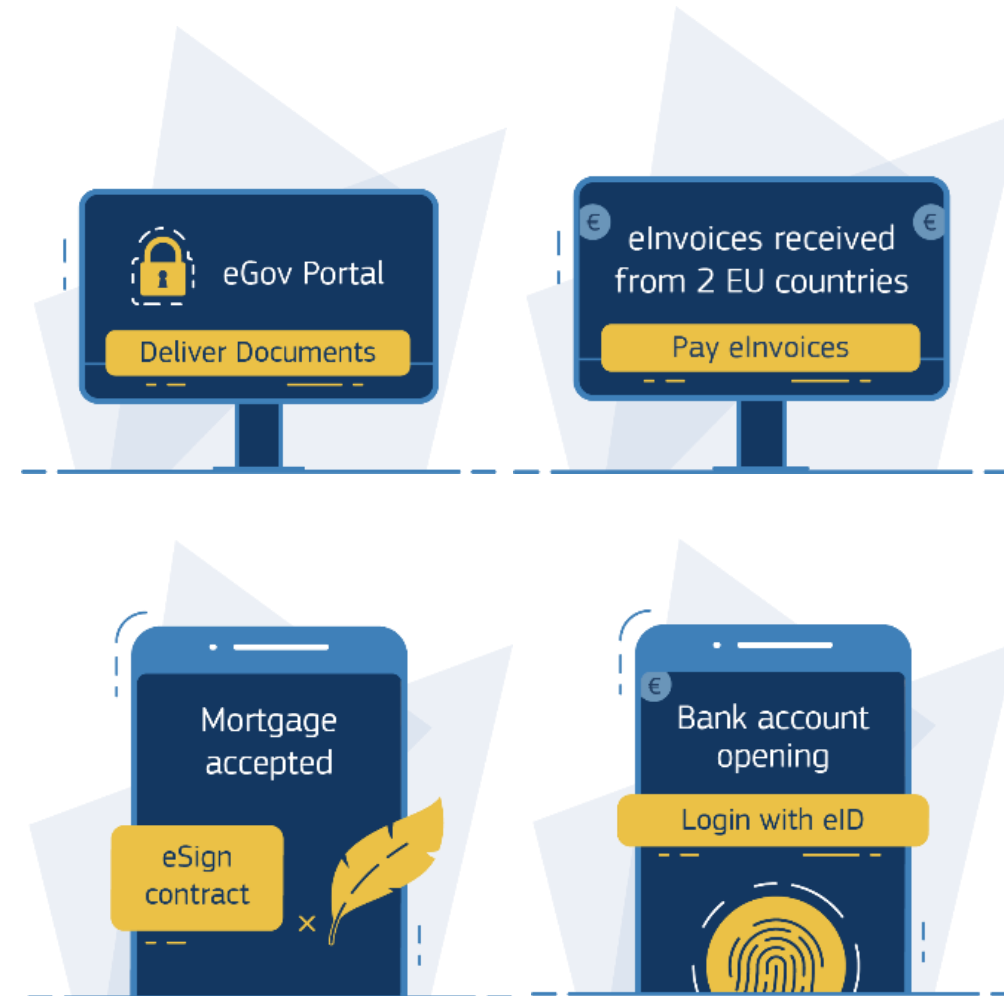
The Digital Building Blocks

A Building Block is an open and reusable digital solution

Why?

Building Blocks enable **interoperability** across **borders** and **sectors**.

eID.AS

eGov Portal

Deliver Documents

eInvoices received from 2 EU countries

Pay eInvoices

Mortgage accepted

eSign contract

Bank account opening

Login with eID

eDelivery

Trans-European ecosystems using eDelivery

Peppol
The future is open

Once-Only Technical
System (OOTS)

European Health
Data Space
(HealthData@EU)

ICS2

EUROPEAN
E-JUSTICE
Interconnection of
Insolvency
Registers (IRI)

EUROPEAN
E-JUSTICE
Business Registers
Interconnection
System (BRIS)

ENERG
European Product
Registry for Energy
Labelling (EPREL)

DECIDE
Decision

European Maritime Single
Window environment
(EMSWe)

European Database on
Medical Devices (EUDAMED)

EUROPEAN
E-JUSTICE
Beneficial Ownership
Registers
Interconnection
System (BORIS)

Council Information
Exchange Platform
(CIxP)

entsog

EUROPEAN
E-JUSTICE

eEvidence
Digital Exchange
System

EUCARIS

European Hull
Database (EHDB)

ECHA
EUROPEAN CHEMICALS AGENCY
Poison Centres
Notification
System (PCN)

e≡CODEX / making justice faster.eu

EU Common Entry
Gate for Tobacco
Reporting (EU-CEG)

European Crew
Database (ECDB)

What is eDelivery?

eGov Portal

Deliver Documents

eDelivery
Exchange data and documents online reliably and securely
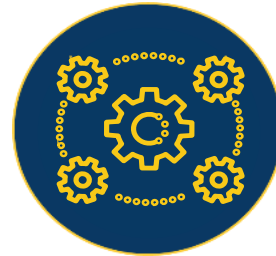
Interoperability
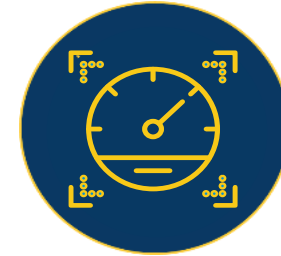
Scalability and performance

Security and accountability

Vendor and platform agnostic

European Commission

Benefits of eDelivery

Interoperability

eDelivery enables the exchange of documents and data among heterogeneous information systems using a standardized protocol, thereby laying the foundation for cross-domain and cross-project interoperability.

eGov Portal

Deliver Documents

eDelivery

Exchange data and documents online reliably and securely

Benefits of eDelivery

Scalability and performance

eDelivery
Exchange data and documents online reliably and securely

eDelivery solutions ensure sustainable levels of performance and maintainability even as the number of participants and/or messages in a network grows.

eGov Portal

Deliver Documents

Benefits of eDelivery

Security & accountability

eDelivery
Exchange data and documents online reliably and securely

eDelivery ensures data integrity in every transmission using digital signatures and encryption. eDelivery ensures legal assurance by mandating that the recipient of a message must send a digitally signed acknowledgement of receipt for every message received.

Benefits of eDelivery

Vendor & platform agnostic

Because this is a vendor and platform neutral solution, its specifications are not proprietary or controlled by one vendor alone. Also, eDelivery is available in multiple products and solutions from different vendors you can choose from.

eGov Portal

Deliver Documents

eDelivery

Exchange data and documents online reliably and securely

Who benefits from eDelivery?

Government

Businesses

Solution Providers

European Commission

eDelivery Message Exchange

1 **Submit**

2 **Send**
a) Validation and compression of the user message;
b) Signing of the compressed message;
c) Encryption of the signed compressed message.
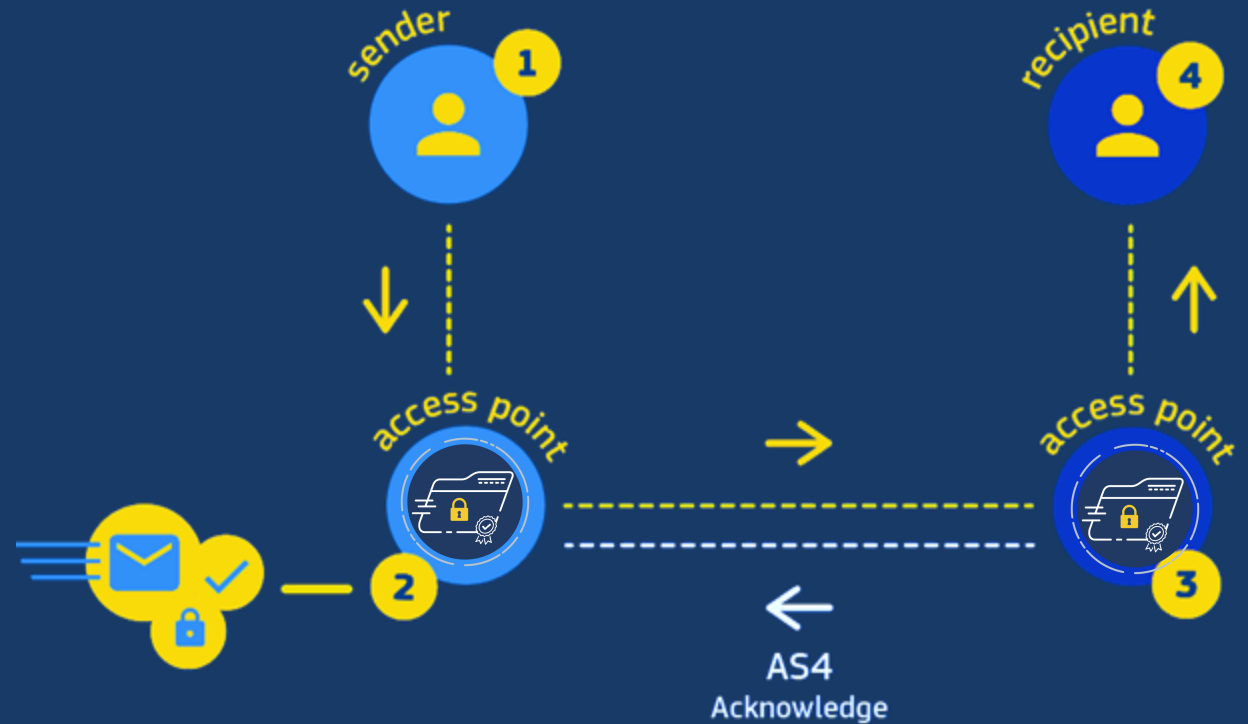
3 **Receive**
a) Receives and decrypts the encrypted message;
b) Verifies the sender's signature;
c) Decompresses the decrypted message;
d) Validates the original user message;
e) Sends the acknowledgement to the sending AP;
f) Stores the user message for download.

4 **Deliver**

sender **1**

recipient **4**

access point **2**

access point **3**

AS4
Acknowledge

eDelivery Four-Corner Model

Static discovery

ORIGINAL SENDER

FINAL RECIPIENT

CORNER **C1**

Applications Layer

C4 CORNER

Sender Backend

Recipient Backend

CORNER **C2**

C3 CORNER

Messaging & Transport Layer

Access Point

Access Point

SENDER

AS4

ADDRESSEE

Internet

Networking Layer
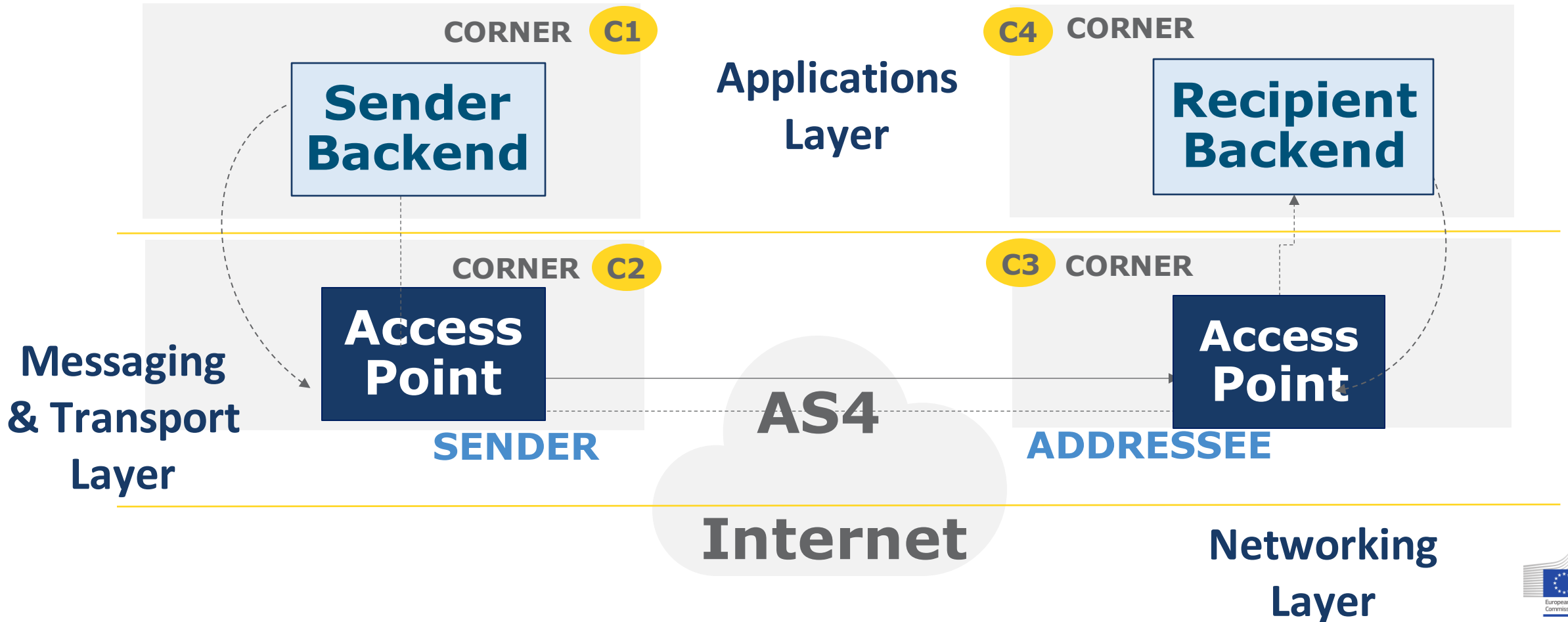
eDelivery software

Access Point Software: Domibus

eDelivery software
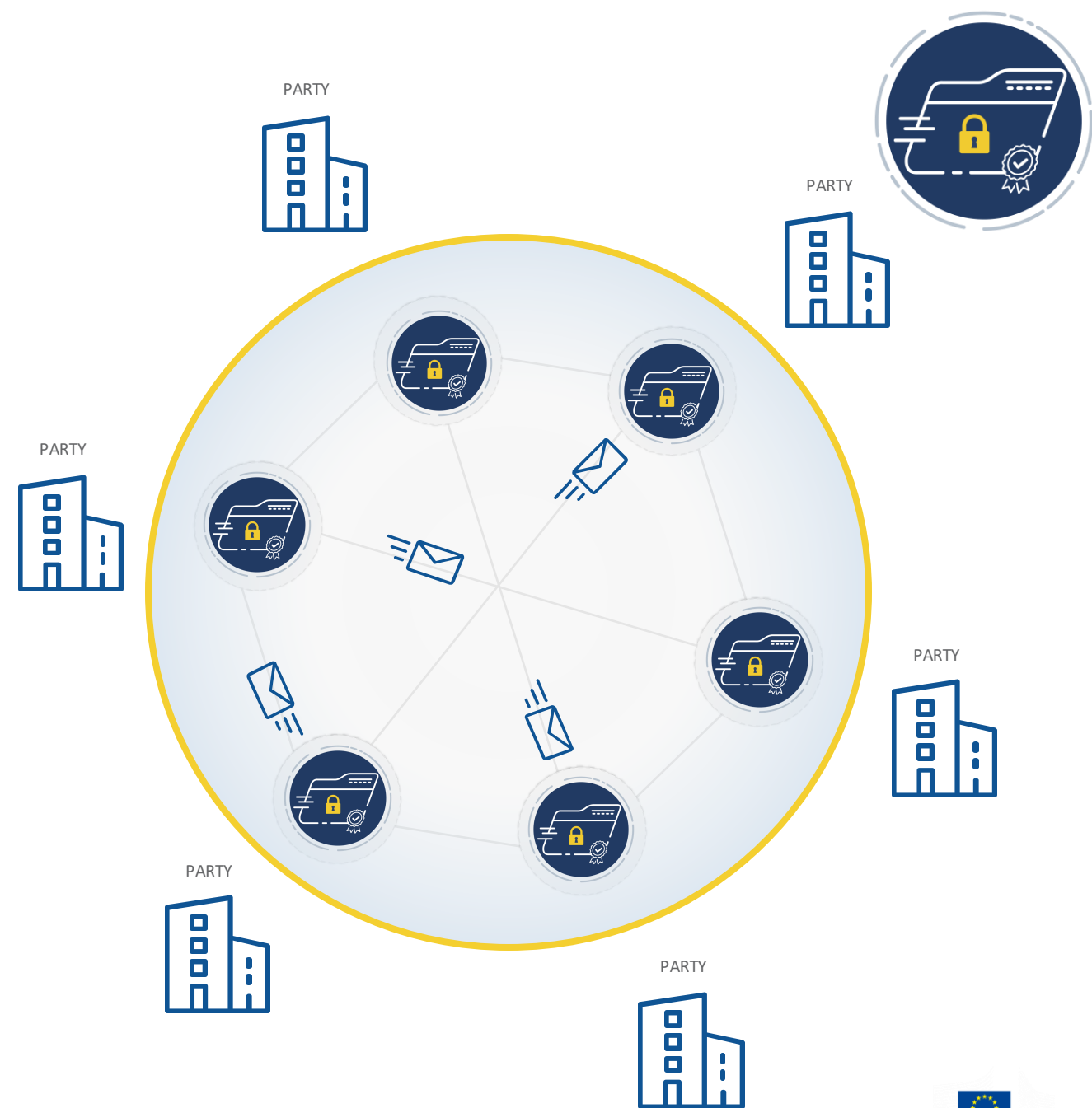
SMP Software: DomiSMP

eDelivery software

SML Software: DomiSML

Provided by eDelivery

- **Data Exchange Agreements**
- **Payload** (structured/unstructured)
- **Message Exchange model** (Topology/Messaging protocol/Integration approach)
- **(Participant) Discovery model** (Static vs. Dynamic)
- **Security Model** (Trust Model/Security Controls
- **Network** (public/private)

Message exchange model

- An eDelivery network can have a **distributed star or mesh topology**

- eDelivery message exchange uses **ebMS3/AS4 OASIS/ISO standard**

- **Integration** of backend IT system with eDelivery Access Point **is product-specific**

(Participant) Discovery Model

- eDelivery Access Points can be **encoded in local configuration files**

- ... or can be published in **external shared eDelivery components**

- ... and obtained based on the **identifier of the organisation using the Access Point**

Security Model

- Access Point authentication and authorisation is **based on certificates**

- ... configured in a **local trust store**

- ... or obtained and validated based on a **common issuer + validation rules**

eDelivery User Community

The eDelivery User Community space enables stakeholders to share experiences and best practices on the exchange of electronic data and documents between public administrations, businesses and citizens. Pan-European projects (re)using eDelivery have their own sub-communities within this space.

Newsletter

Events

Interoperability Forum

Webinars

And more...

Read more about eDelivery events in 2024

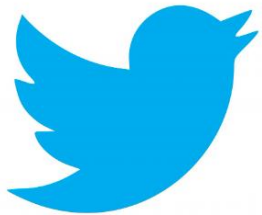# eDelivery videos on PeerTube

EU Video

eDelivery videos on YouTube

eDelivery CEF webinars archive

YouTube

PeerTube

eDelivery DigitALL

May 2021

eDelivery CEF archive

Digital eDelivery Newsletter
Inside: news, events, success stories and technical updates

Digital eDelivery Newsletter

Get the latest news about eDelivery, part of the eIDAS enablers family of Building Blocks

Hello everyone,

We are excited to share with you this first edition of the Digital eDelivery Newsletter. This newsletter will inform you on important news and technical updates for eDelivery, provide an outlook of what we have planned for the coming months, and share information on our upcoming events. Highlights include an invitation to our hands-on webinar on the 13th of July, and news that eDelivery has been proposed as best reusable solution for the Once-Only Technical System (OOTS).

We hope you enjoy this first edition of the Newsletter. If you have a story to tell us about how eDelivery is helping you creating a Digital Europe, just reply to this email and you may be featured in our next newsletter.

Please scroll to the end for information about this newsletter.

4 issues per year

European Commission

Have a question?

In case you did not manage to ask your question/s or you feel it was not sufficiently responded, do not hesitate to contact us via email

Bogdan Dumitriu

Project officer for eDelivery implementation
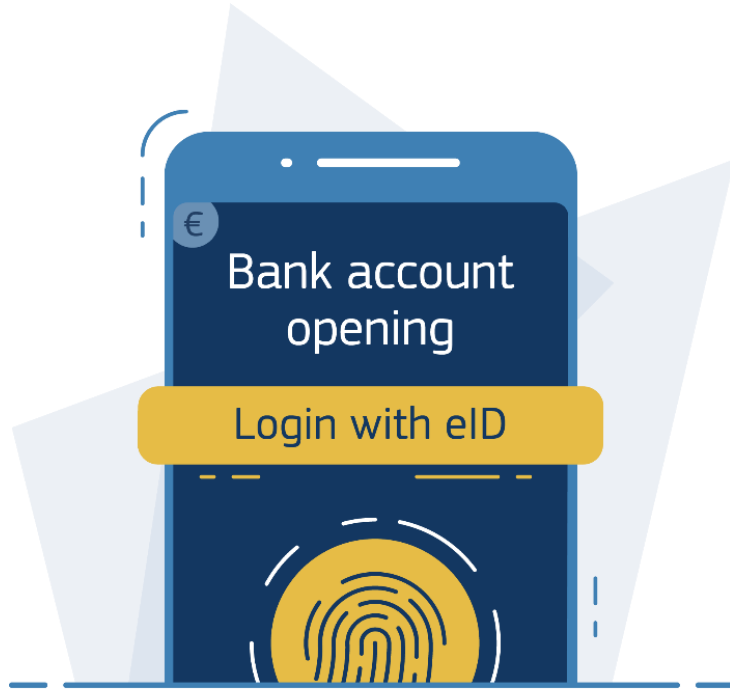
Write to us

For Policy/Business questions

For Technical questions
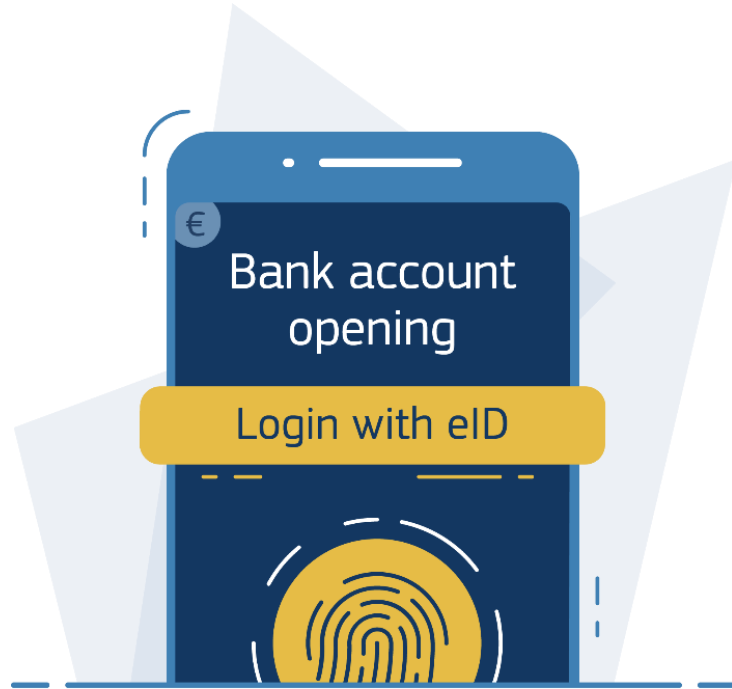
eID

Benefits of eID

eID

Offers digital services capable of electronically identifying users from all across Europe.

Interoperability

eID ensures interoperability on 4 fronts: legal, organisational, semantic and technical interoperability, providing a powerful enabler of digital operations that require cross-border identity recognition.

Benefits of eID

eID

Offers digital services capable of electronically identifying users from all across Europe.

Security and trust

The high levels of assurance, possible with eIDAS eIDs, result in a reduced risk of identity theft and misuse of personal information. eID ensures the legal validity of cross-borders transactions, providing the same legal status as traditional paper based processes.

Benefits of eID
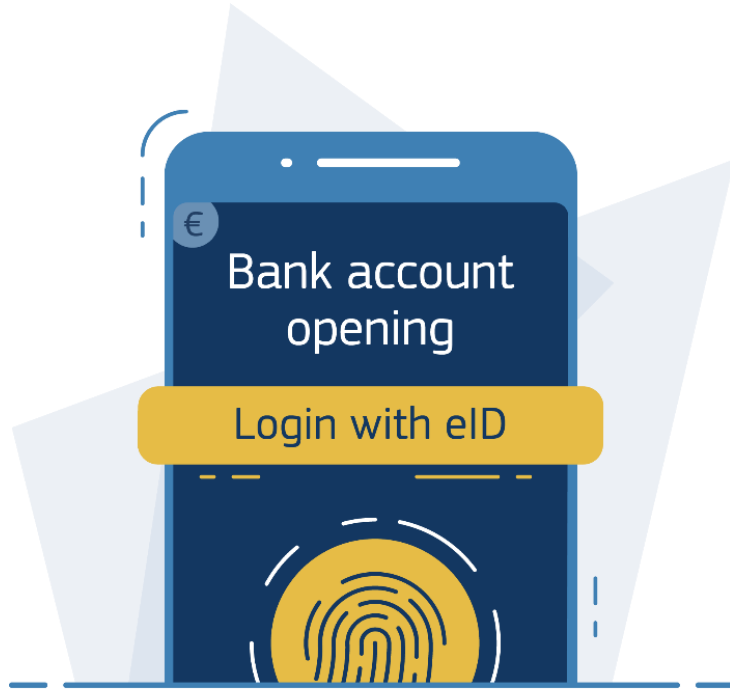
eID

Bank account opening

Login with eID

Offers digital services capable of electronically identifying users from all across Europe.

Streamline cross-border operations

The solution drastically reduces the administrative burden, in terms of time, expenses and effort, associated with the use of foreign public services — a necessity for many in an increasingly globalised world.

Benefits of eID
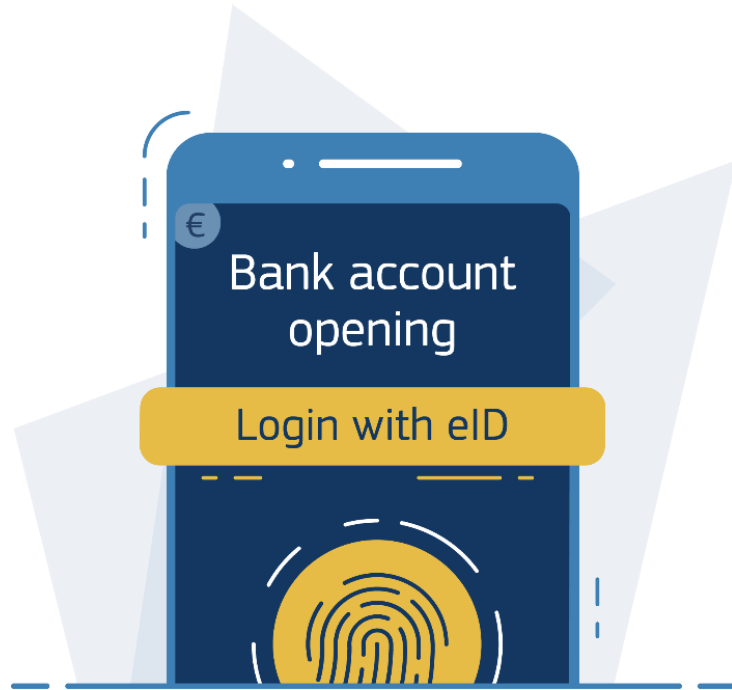
eID

Offers digital services capable of electronically identifying users from all across Europe.

Component in the Once-Only Technical System

The Once-Only Technical System uses the eID Building Block to identify and authenticate the user. Thereby, eID is a key component of the Once-Only Technical System architecture.

Who can benefit from eID?

Node Providers

eIDAS-Node implementers

To be able to recognize eIDs from different countries, each Member State has to implement an eIDAS-Node. We can help you connect to the eIDAS network.

Identity Providers

Companies or public authorities

Ensure that your identity scheme can be used to access public services in other EU countries, by connecting to the eIDAS network.

Service Providers

Public and Private service providers

Expand the reach of your public or private organisation — offer online services to citizens and consumers from other Member States.
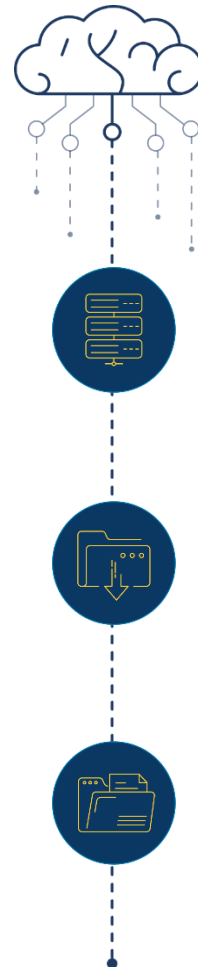
Benefits of eID

How do we help?

Benefits

Interoperability to ensure that other countries' national eID schemes can be used to access your public services

Trust in the legal validity and status of online transactions across borders

Security and low risk of identity theft by choosing a higher Level of Assurance (LoA)

How eID helps

Discover our specifications, testing services, sample implementations and support desk that help you to start working on your eID services.

Find your country's Single Point of Contact

Offering extensive documentation detailing how eID works and its benefits for Europeans

Key highlights of eID

23
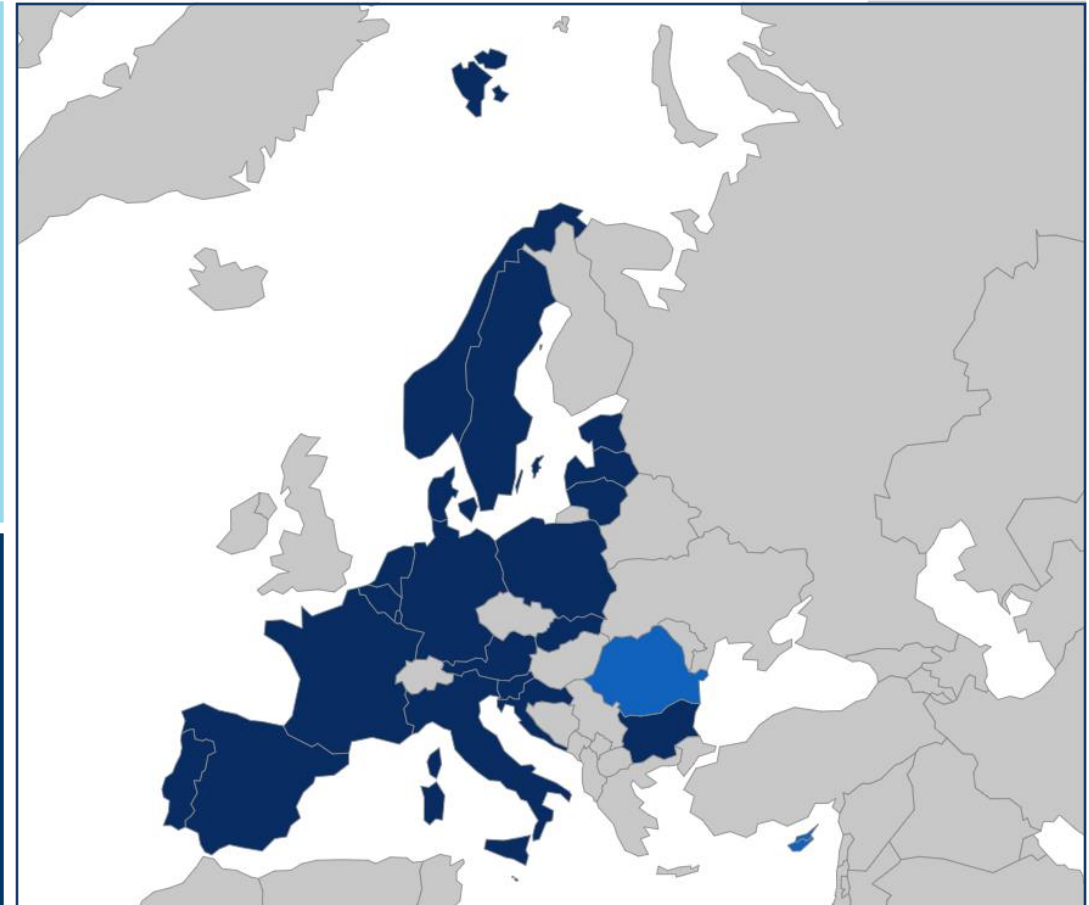countries notified the EC of their eID scheme

4,594
public services connected to eID are offered to EU citizens

742,676
cross-border identification requests through eIDAS eID

65
projects reusing eID

● Notified the European Commission of their eID scheme to date

● Have their eID scheme peer reviewed by other EU and EEA countries

Data up to Q4 2023

eInvoicing

Benefits of eInvoicing

eInvoicing

Send and receive electronic invoices across borders in line with the European Standard

Cost reduction

As an automated invoicing tool, eInvoicing reduces processing costs and operational services

Benefits of eInvoicing

eInvoicing

Send and receive electronic invoices across borders in line with the European Standard

Faster payment

By removing the need of manually reading and entering information, eInvoicing lessens administrative burdens and time-to-payment for individual invoices

Benefits of eInvoicing

eInvoicing

Send and receive electronic invoices across borders in line with the European Standard

Boosting B2G eProcurement

eInvoicing helps companies manage their contracts in any EU country, making public procurement business more appealing for everyone.

Benefits of eInvoicing

eInvoicing
Send and receive electronic invoices across borders in line with the European Standard

Facilitating cross-border trade
The timely and automatic processing of companies' invoices in the EU facilitates cross-border trade operations between countries.

Who can benefit from eInvoicing?

Public Entities

Public sector contracting authorities

Our services can help you start receiving electronic invoices from all across Europe.

Suppliers

Doing business using the European standard on eInvoicing

We can help you prepare and send electronic invoices compliant with European standards.

Service and Solution Providers

Services and software providers

We can help you develop and deliver eInvoicing services and software that are compliant with EU standards.
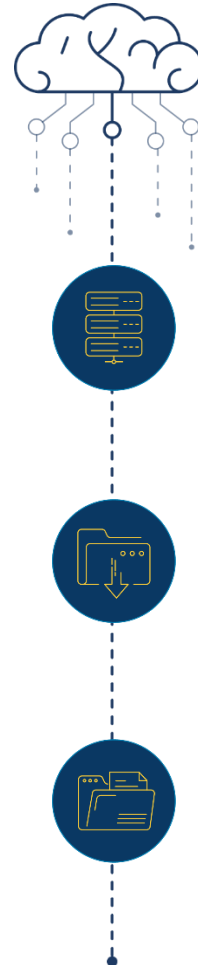
Benefits of eInvoicing

How do we help?

Benefits

Support in the implementation of the eInvoicing Directive (2014/55/EU)

Reduced learning curve to implement B2G eInvoicing

Improved integration with other eProcurement processes

How eInvoicing helps

Providing tools and services to support you in the implementation of eInvoicing

Including effective and ongoing support, from the eInvoicing team

Offering a knowledge base, community and webinars to stay informed, engage with other stakeholders and discuss eInvoicing topics.
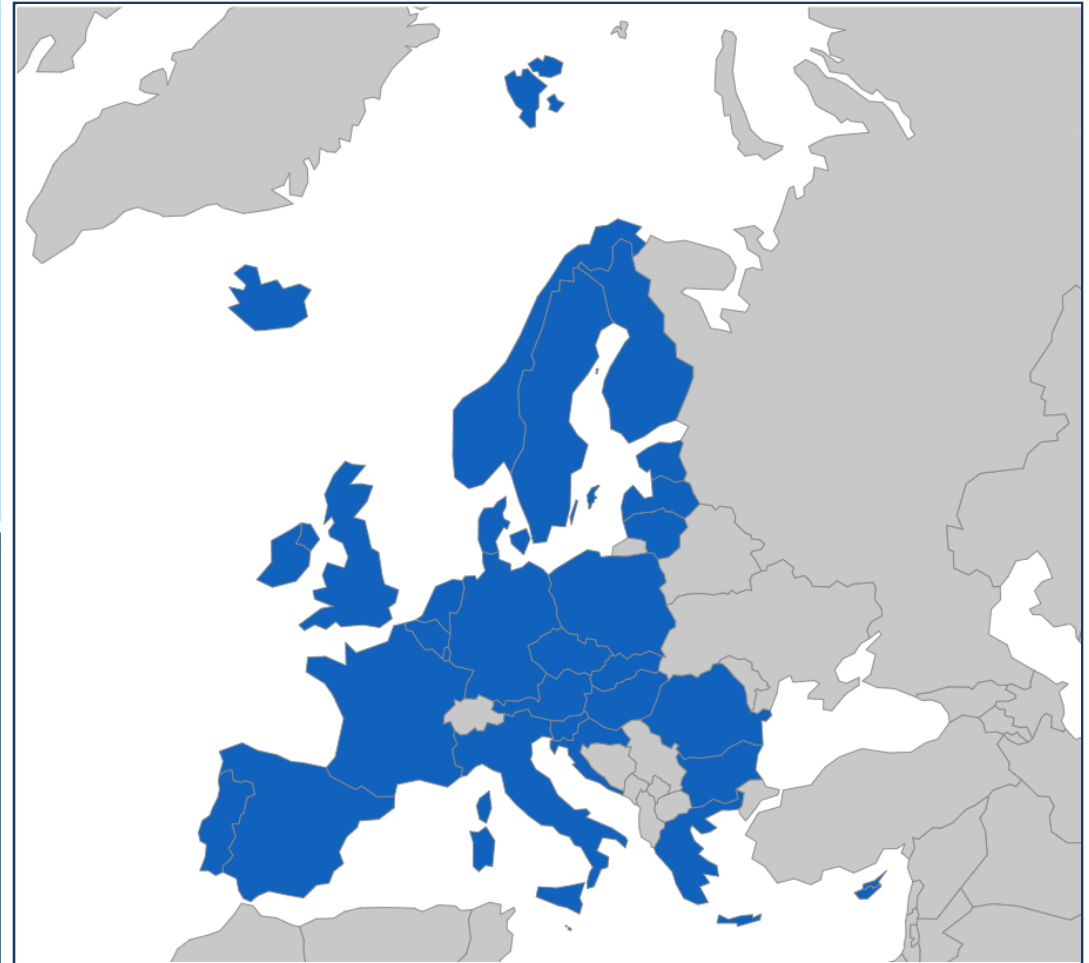
Key highlights of eInvoicing

All **EU/EEA countries** comply with the standard on eInvoicing

13 countries introduced obligations for issuing B2G eInvoices

Pilot between the **Netherlands and Singapore** using the European Standard on eInvoicing

23 projects reusing eInvoicing

Country factsheets updated in 2023.

Data up to Q4 2023

eSignature

Benefits of eSignature

Boost digital transactions

By removing the need for paper to obtain a signature or seal, the solution facilitates the digitalisation of business processes, eliminating the time, costs and risks of dealing with paper formats.

eSignature

Create and verify electronic signatures for interactions between businesses and EU citizens.

Mortgage accepted

eSign contract

Benefits of eSignature

Cross-border legal assurance

eSignature is compliant with the eIDAS Regulation, meaning that it ensures the legal recognition and cross-border interoperability of the electronic signatures and seals produced by solutions based on this Building Block

eSignature

Create and verify electronic signatures for interactions between businesses and EU citizens.

Mortgage accepted

eSign it contract

Benefits of eSignature

Mortgage accepted

eSign contract

eSignature

Create and verify electronic signatures for interactions between businesses and EU citizens.

Guaranteed documents' integrity

With eSignature, you reduce risk of document duplication or alteration. The signer's identity is bound to each specific document, ensuring that signatures and seals are verified, authentic and legitimate for that document alone.

European Commission

Improved user experience

Mortgage accepted

eSign contract

eSignature

Create and verify electronic signatures for interactions between businesses and EU citizens.

Guaranteed documents' integrity

Shorter approval times, thanks to faster document signing processes, which leads to higher satisfaction rates.

Who can benefit from eSignature?

Citizens

Citizens of EU countries, Iceland, Norway and Liechtenstein
Discover how we are making the signing of digital documents possible for everyone.

Governments and Businesses

Public and Private entities
Let us show you how to adopt electronic signatures and seals, ensuring EU-wide validity.

Service Providers

Service and Solution providers
We can help you develop eSigning solutions that are compliant with the eIDAS Regulation.
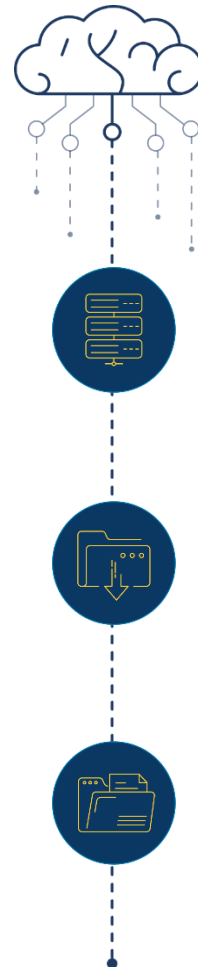
Benefits of eSignature

How do we help?

Benefits

Reduces time, costs and environmental impact by not having to print and send paper documents

Protects documents from duplication or alterations

Improved user experience thanks to fast response times and document processing

How eSignature helps

Offering a free service package with the open-source DSS library, or support in the use of EU Sign (for Commission agents and agencies)

A solution based on sustainable and secure European standards

Support through our service desk

EU Regulations signed with eSignature

How an EU Regulation was signed using eSignature for the first time.

Challenge

1 How to streamline the signing of legislation, saving time and paper and avoiding unnecessary travel.

Solution

2 The European Parliament and the Council set an example for Member States by e-signing the 'Security of Gas Supply Regulation'.

Building Block

3 The document was e-signed with an application based on the eSignature Building Block's open specifications. eSignature solutions comply with eIDAS Regulation, meaning they are interoperable and are recognised and valid in any Member State.

Key highlights of eSignature

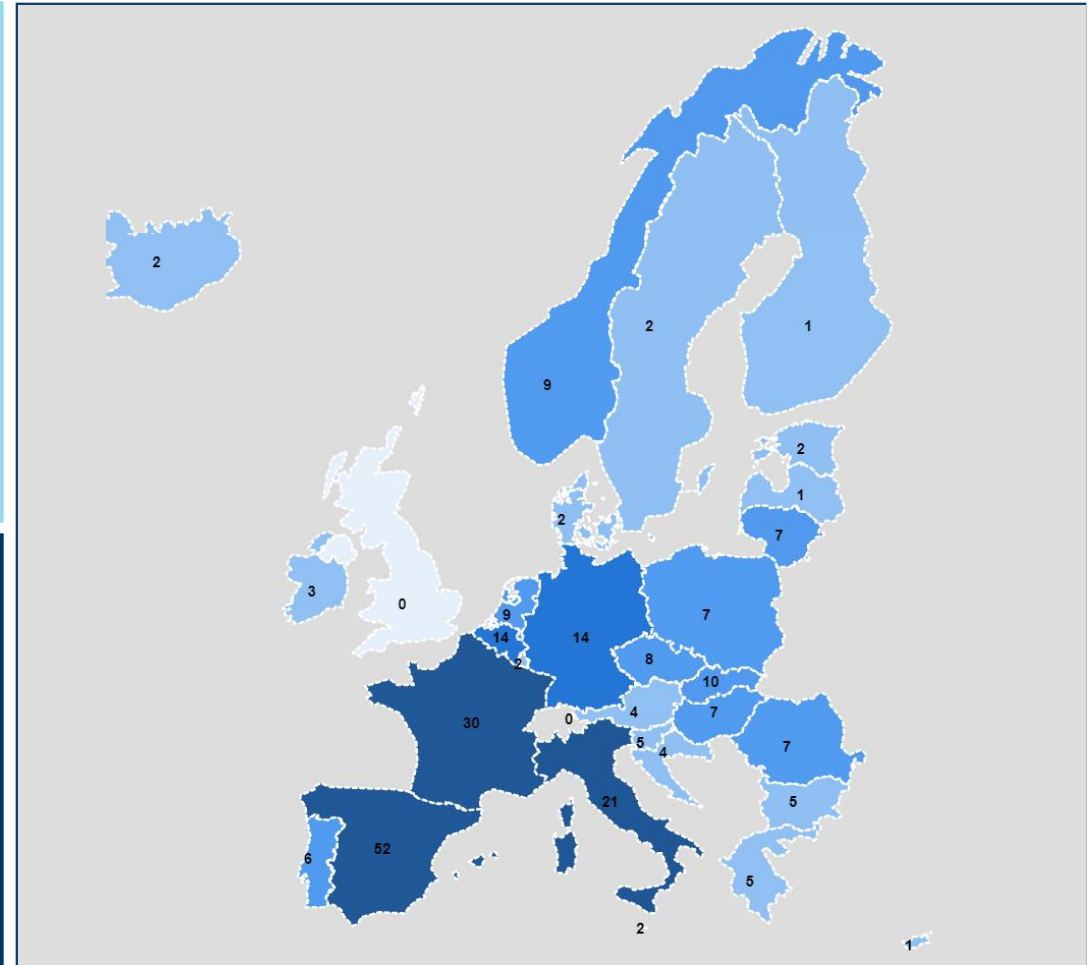**239** active Qualified Trust Service Providers

2,720 active Qualified Trust Services

Trusted Lists in **all EU/EEA countries & Ukraine**

97 projects reusing eSignature

Active Qualified Trust Service Providers

Data up to Q4 2023

So, you've met the Digital Building Blocks.

It's time to learn how to use them

How to use a Building Block?

There are 3 options: **buy**, **build** or **reuse** and you can always **co-develop** your solution with other parties.
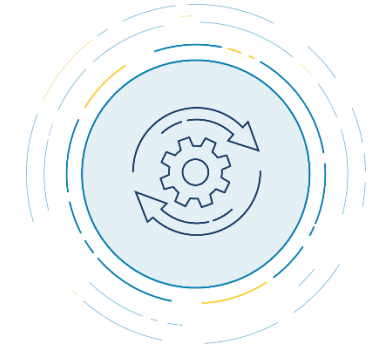
Buy

Buy a compliant, Interoperable solution from the market.

Build

Build an EU-compliant solution from scratch based on Building Block standards. We'll help you test it for compliance and interoperability.

Reuse

Reuse sample software available through the Digital website.

Whatever you choose, **the relevant Digital Building Blocks team will support you** in implementing the Building Block into your project.

Choosing the Digital Building Blocks

Why choose the Digital Building Blocks

Here are some of the benefits of using a Building Block in your digital project.

Faster

- The Building Blocks are mature, **ready-to-deploy** digital solutions;
- **Using them saves you time and money**;
- The Digital website has details on a **range of services available** to help your Building Block implementation.

Safer

- The Building Blocks are based on open European standards, so you **avoid vendor lock-in**;
- Our Building Block team ensures your project is **EU-compliant and interoperable**.

Future-proof

- Access a **larger market** thanks to interconnectivity
- Building Blocks **can be used in any digital European project;**
- Building Blocks are based on standards and ensure you comply with EU regulation.

And here are some of our success stories

Helping create a reliable, secure and scalable data exchange networks

eDelivery
has contributed to Once-Only Technical System (OOTS), which simplified online administrative procedures for EU citizens, business and public administrations. Today, besides OOTS eDelivery contributes to other 31 digital ecosystems.

Helping create a secure, fast and reliable data exchange platform

eID

has improved the collection of traffic penalties across France and The Netherlands using eCodex (the eJustice Communication via Online Data Exchange).

Soroush Karimi | Unsplash

Enhancing health sector's invoicing system to save time and money

eInvoicing

helps public health care providers to implement the standards to be compliant with the EU Directive. Today, some EU institutions already use the service provider's platform to generate and send electronic invoices across Europe.

Help us write the next chapter of this story by using our Building Blocks

Ready to get started?

Reach out to us to learn more!

Visit us at **www.ec.europa.eu/digital-building-blocks**

Or contact us via **EC-DIGITAL-BUILDING-BLOCKS@ec.europa.eu**