

# The European eID

## Schemes Landscape





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# eID in a nutshell

Electronic Identification (eID) is a digital solution for the identity proofing of citizens or organizations and is regulated by eIDAS.

eIDAS stands for **e**lectronic **I**dentification, **A**uthentication and trust **S**ervices and is established by Regulation (EU) No 910/2014 on electronic identification (eID) and trust services for electronic transactions in the internal market. The eIDAS regulation is about trust, seamless user experience and convenience in online cross-border transactions.

## Applicable Sectors

Financial Services

Transportation

Online Retail

Professional Services



## Benefits

The eIDAS regulation brings benefits to European businesses, citizens and government services:



For citizens

- filing taxes
- student mobility
- bank accounts opening
- once-only principle (TOOP\*)

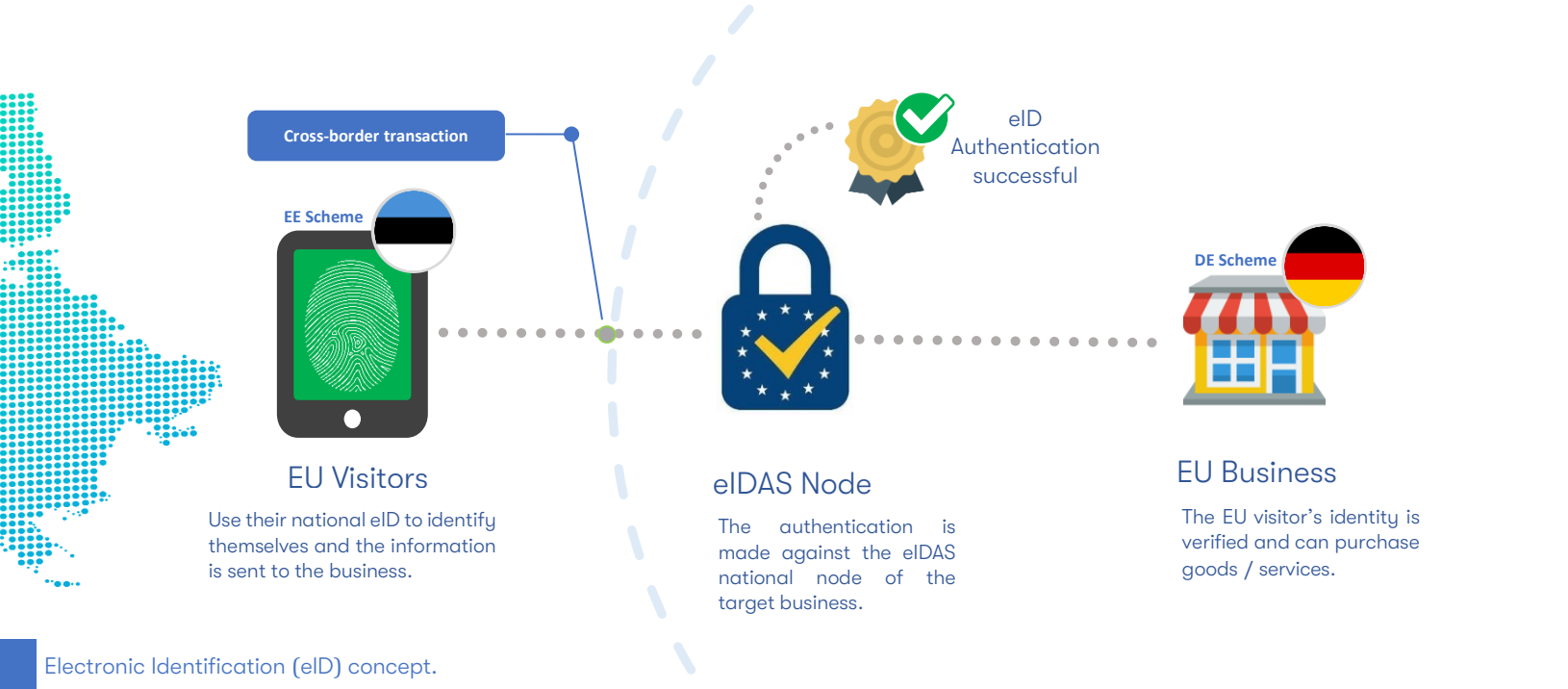
*\*citizens and businesses supply diverse data only once to a public administration.*

- professional services
- transportations sector
- online retail
- financial services



For SMEs





## Electronic Identification (eID)

An electronic method that can guarantee the unambiguous identification of a person.

A way for businesses and consumers to prove electronically that they are those who claim and gain access to services or carry out business transactions online.

## eID Means

A material and/or immaterial unit containing person identification data and which is used for authentication for an online service.

A specific method for identifying oneself in a digital environment which conforms to an eID scheme and is issued to users by an eID provider.

## eID Scheme

A system for electronic identification under which electronic identification means are issued to natural or legal persons, or natural persons representing legal person.

Schemes have been developed by public organizations, private companies and public-private joint ventures.

## Levels of Assurance (LoA)

Technical & managerial standards are defined in order to legally guarantee interoperability among Member States.

Levels of Assurance (LoA) provide the required confidence around a person during identity proofing, enrolment, issuance, authentication, as well as in technical & security specifications of the eID means.

# eID Means Overview

The accepted information units which contain a person's identification data appear in two main forms.

Regarding material units, there are the widely used **digital identity cards / electronic identity cards** which are plastic smart cards with a specially designed chip, containing the person's identification data.

Regarding immaterial units, there are two variations:

- **SIM** based means, where a secure SSCD / QSCD chip is integrated within the mobile operator's SIM card.
- **APP** based means, where a mobile application simulates the functionality of a smart card.



Dependency on only one type of eID means should be avoided, in order to reduce the risk of eID service availability, due to possible problems related to the particular nature of the eID means.



eID Card

Physical PKI based solution. An SSCD / QSCD chip module contains the identification data.

Identification data format: public key certificate (X.509) & private key.

Identification dataset: a minimum set of information adequate to identify a natural person.

The smart card is inserted to a smart card reader prior to authentication through eIDAS nodes.



public key certificate contains personal identification dataset

private key protected from unauthorized access (SSCD/QSCD)

public certificate repository

## Smart / Mobile eID

Digital PKI based solutions.

secure chip embedded within the SIM card

**SIM based**

virtual smart card implementation through mobile application

**APP based**

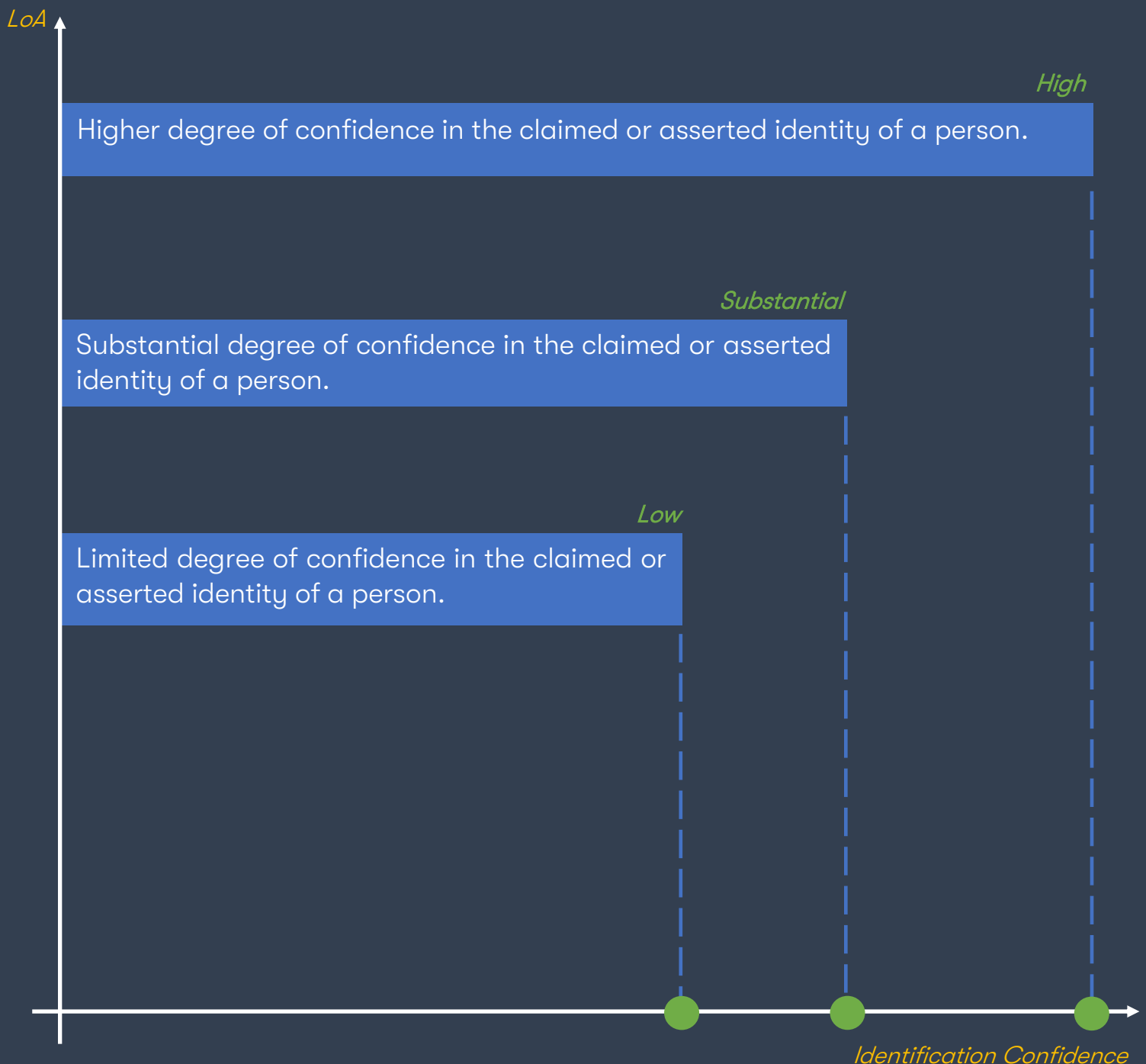


# Levels of Assurance

Levels of Assurance (LoA) provide the required **confidence** in a person and the authentication. Each level has different requirements regarding the scheme implementation processes, such as:

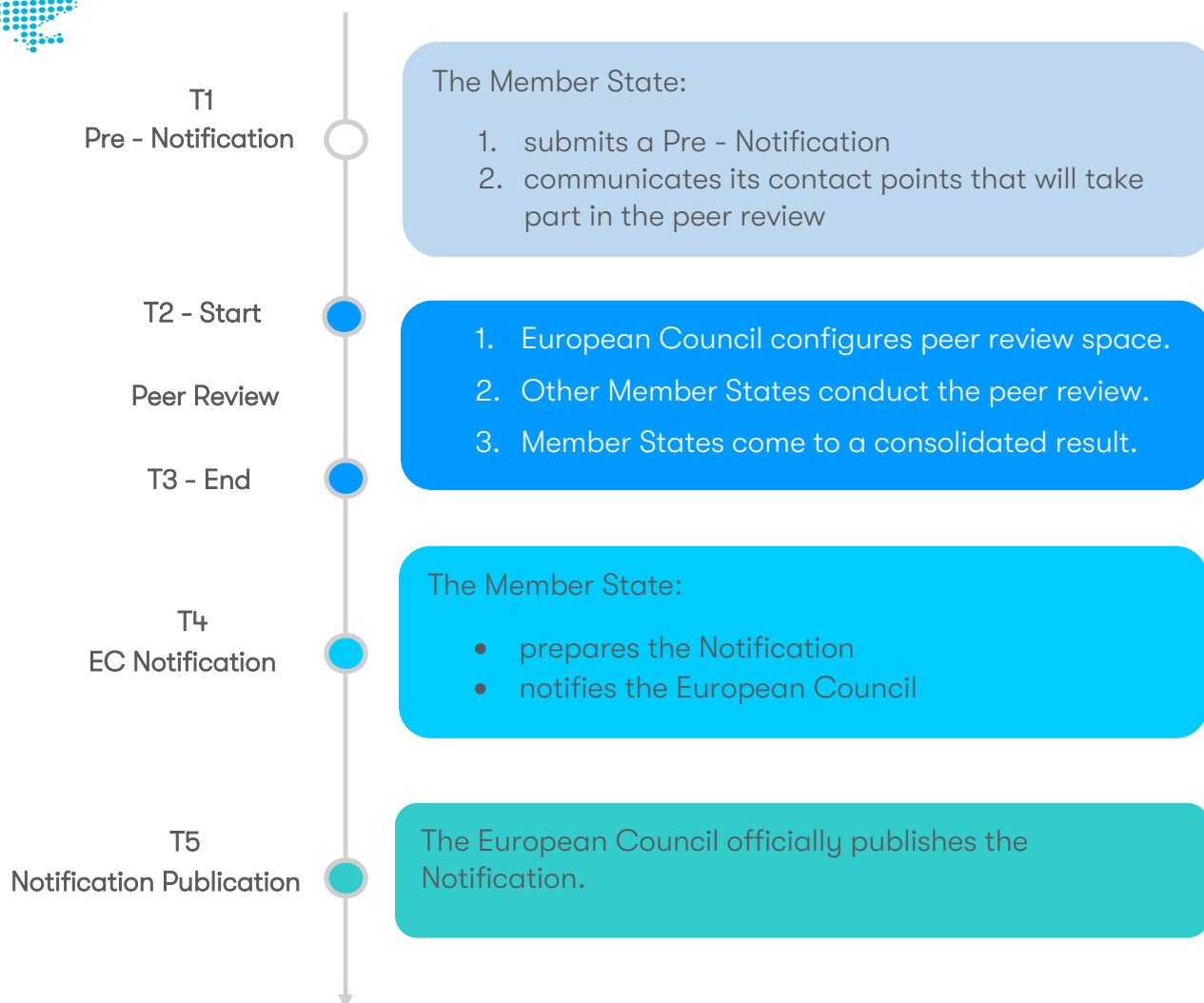
- Enrolment
- Credential management
- Authentication
- Management and organization

When aiming for an upper LoA, the requirements shall be met **cumulatively**, including requirements of the lower level(s) plus the requirements of the target level.



# Notification Timeline

A Member State should design & implement an eID scheme in order to support cross-border identification among EU Member States. eID schemes are examined and approved during a Peer Review process. When a scheme is ready to be submitted for reviewing, it is Pre-Notified. The scheme passes through reviews and ends up to the final notification publication.



Peer reviewing may include, but is not limited to:

examination of processes

the assessment of relevant documentation

technical seminars

consideration of independent third-party assessments



# Evaluation Criteria

The peer-reviewing process of a notified scheme is performed according to the **Regulation (EU) 2015/1502** which sets out minimum technical specifications and procedures for assurance levels for electronic identification means under eIDAS regulation.

## Enrollment

Application and registration

Identify proofing and verification of natural persons

## eID Means Management

eID means management

Issuance, delivery and activation

Suspension, revocation, and reactivation

Renewal and replacement

## Authentication

Authentication mechanism

## Management and organization







## Peer Reviewing activities:

initial opinion by the  
Cooperation Network

documentation  
examination

teleconference  
calls

on-site visits

collaboration with  
all involved parties

*Participation of the peer Member States is voluntary. The Member State whose electronic identification scheme is to be peer reviewed may not refuse the participation of any peer Member State in the peer reviewing process.*

Article 7, par.2 (EU) 2015/296



AVG. duration of the entire process:

# 8 months

**i** Min duration observed: **i** Max duration observed:  
7 months 10 months

### Scheme Status Legend

#### PRE - NOTIFIED

The Member State has officially communicated its intention to notify its eID scheme to the European Commission.

#### PEER REVIEWED

The eID scheme has been peer reviewed by other Member States' representatives.

#### NOTIFIED

The country has notified its eID scheme to the European Commission and the information has been published to the Official Journal of the European Union.



## Working Group topics:

Enrolment, eID Means Management,  
Authentication & Interoperability,  
Management & Organization

# The EU TSL Landscape

Article 22 of the eIDAS Regulation provides the obligation for Member States to establish, maintain and publish trusted lists, including information related to the qualified trust service providers for which they are responsible, together with information related to the qualified trust services provided by them.

Trusted Lists are essential in ensuring certainty and building trust among market operators as they indicate the status of the service provider and of the service at the moment of supervision, while aiming at fostering interoperability of qualified trust services by facilitating the validation of eID products.

<https://webgate.ec.europa.eu/tl-browser>



**28 MS and 3 EFTA members  
currently participate in the  
EU TSL (Apr 2020)**

**17**  
schemes


Status: NOTIFIED  
LoA: HIGH

**3**  
schemes


Status: PRE-NOTIFIED

(13 MS & 4 EFTA members)

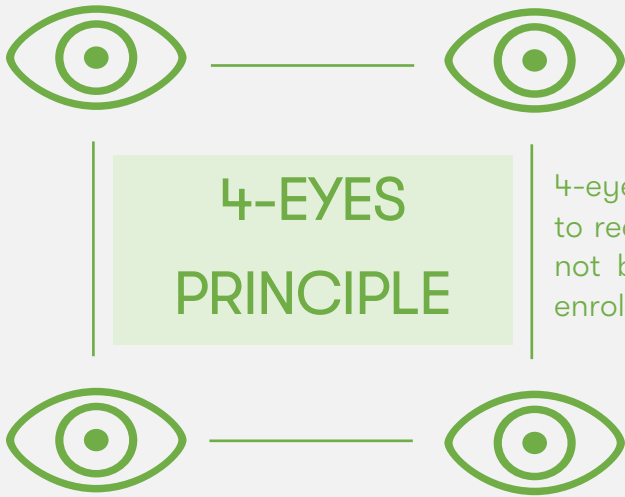
More than **50%** of the countries have not reached the point of applying for pre-notification yet.



Portugal	Cartão de Cidadão, Chave Móvel Digital Sistema de Certificação de Atributos Profissionais
Czech Republic	National identification scheme
Germany	German eID based on Extended Access Control
Estonia	Digi-ID, Mobiil-ID, ID card, RDP card, e-Residency Digi-ID, diplomatic identity card
The Netherlands	Trust Framework for Electronic Identification, DigiD
Italy	eID based on National ID card, SPID
Spain	Documento Nacional de Identidad electrónico
Croatia	National Identification and Authentication System
Belgium	Belgian eID Scheme FAS / eCards, itsme®
Luxembourg	Luxembourg national identity card
Latvia	Latvian eID scheme
Slovakia	National identity scheme of the Slovak Republic
UK	GOV.UK Verify
Denmark	NemID
Lithuania	National Identity Card



Source: [Overview of pre-notified and notified eID schemes](#) [Cooperation Network, eID User Community]



## 4-EYES PRINCIPLE

4-eyes principle or separation of duties are commonly applied to reduce the risk of fraud; e.g. a single issuing officer should not be able to carry out the whole process of registration, enrolment and issuing of an eID card.

Technical controls are crucial in ensuring sole control of authentication means by the owner. These may include encryption protocols, use of secure channels and secure components.

ISO/IEC 27001 is the reference standard for all involved parties to demonstrate solid ISMS performance.

ETSI standards are also used for compliance reasons of QTSPs.

Regular **assessments** by CABs and/or Supervisory Bodies. **conformity**

Product safety certifications such as CC can assist to demonstrate security of components.

When aiming for LoA HIGH, an eID scheme must be able to demonstrate effective mitigation controls against:

Password Guessing

Eavesdropping

Replay Attacks

Communication  
Manipulation

SpearIT, being actively involved in eID and PKI consulting under eIDAS regulation, offers advisory services from the early stages of an eID national scheme design to the final submission of scheme notification.

- ★ **Scoping of the eID scheme LoA requirements**  
Definition & initial design of the national scheme(s), based on LoA requirements and national strategy.
- ★ **Gap Analysis of national legislature**  
Identification of gaps between national legislature, eIDAS regulation and ETSI standards.
- ★ **Consulting on LoA levels compliance**  
Technical-wise and policy-wise compliance on various aspects of the proposed eID scheme, according to the targeted LoA levels.
- ★ **Notification submission of eID scheme(s)**  
Preparation of scheme notification documentation and management of the submission procedure.

Talk to an eID specialist at [www.spearit.net](http://www.spearit.net)





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