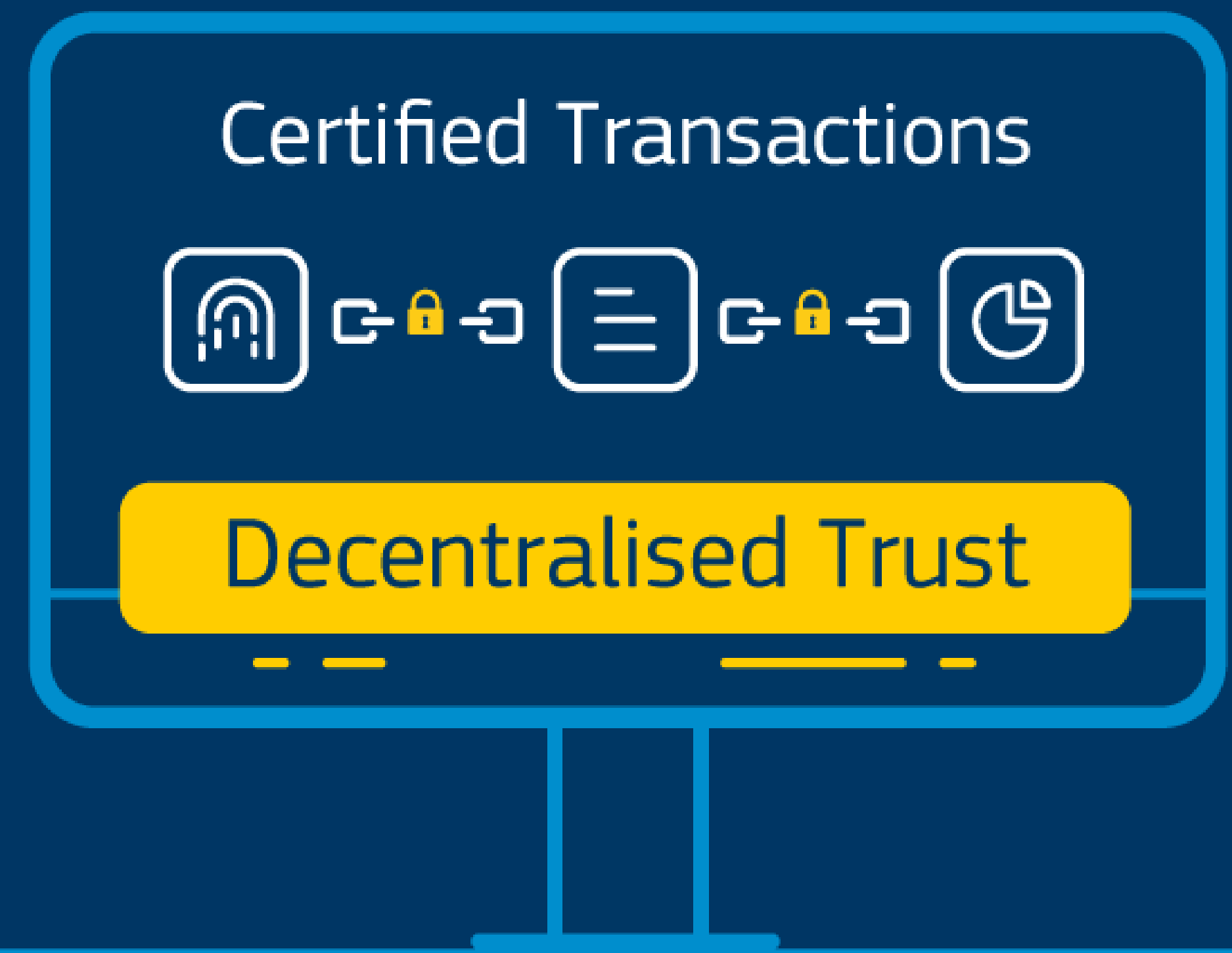


European Blockchain Services Infrastructure

HARNESS THE POWER OF BLOCKCHAIN
SERVICES, INCREASING TRUST THROUGH
DATA SECURITY, PRIVACY AND
TRANSPARENCY

Emilio Dávila – EC – DG CONNECT

#Blockchain4Europe



BACKGROUND

2017

-
Tallinn declaration on eGovernment

In 2017, Member States and EFTA countries signed the Tallinn declaration on eGovernment outlining the importance of having efficient and secure digital public services in order to achieve the full potential of the Digital Single Market.

2018

-
European Blockchain Partnership declaration

In 2018, 27 EU Member States, Norway and Liechtenstein signed a declaration creating the European Blockchain Partnership (EBP) with the ambition to provide digital public services matching the required level of digital security and maturity of today's society.

2019

-
European Blockchain Services Infrastructure

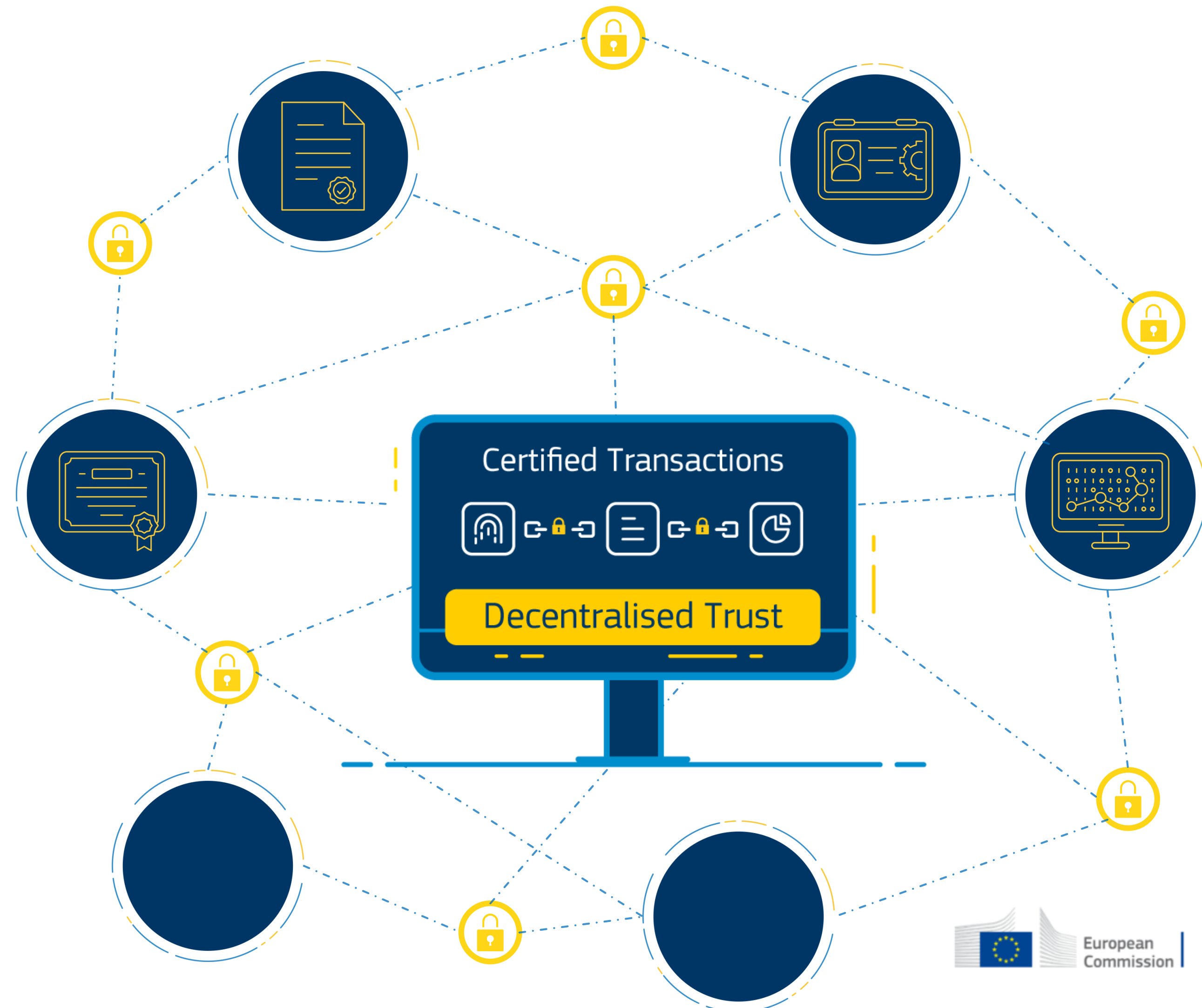
On 14 February 2019, the European Commission published the 2019 Telecommunications Work Programme of the Connecting Europe Facility (CEF) creating initial funding conditions for EBSI.

WHAT IS EBSI?

The European Blockchain Services Infrastructure (EBSI) aims to become a “*gold standard*” digital infrastructure to support the launch and operation of EU-wide cross-border public services leveraged by blockchain technology.

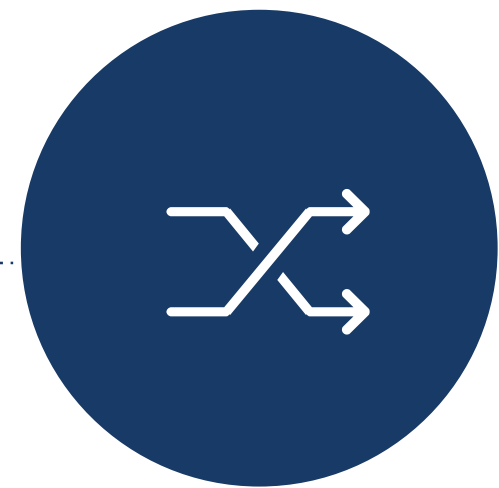
EBSI aims to establish itself in ‘virtually’ every public sector domain that can benefit from blockchain technology. It will be materialized as a network of distributed nodes across Europe, leveraging an increasing number of applications focused on specific use cases.

These use cases are identified and selected each year by the Member States (European Blockchain Partnership) and the European Commission.



What is EBSI trying to achieve?

EBSI's aim is to enhance **cross border** services provided by government to the citizen, enhance citizen and enterprise **mobility**, reduce **environmental impact** of paper and transportation, ensure **compliance** with EU regulation while **enabling** the development of European technology hubs and projects.



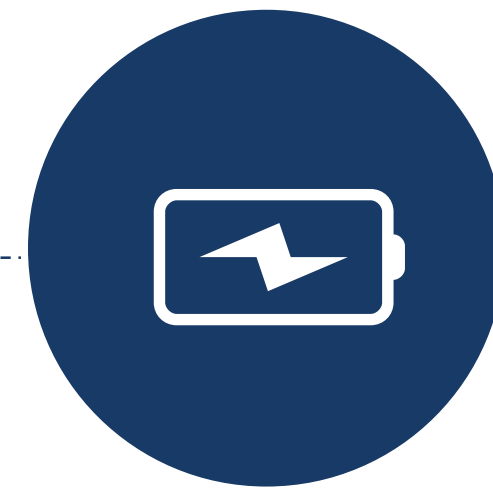
Cross border

enhance cross border services provided by government to the citizen



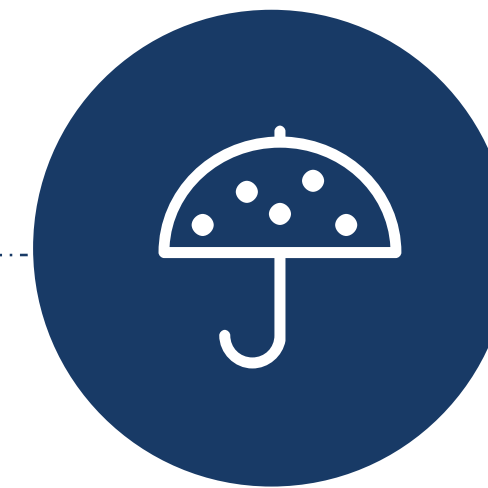
Mobility

enhance cross border citizen and enterprise mobility



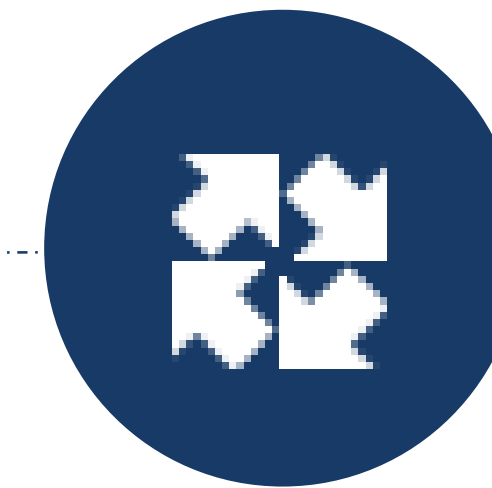
Sustainable

reduce environmental impact of paper and transportation



Compliance

compliance with GDPR, eIDAS, SDGR...



Enabler

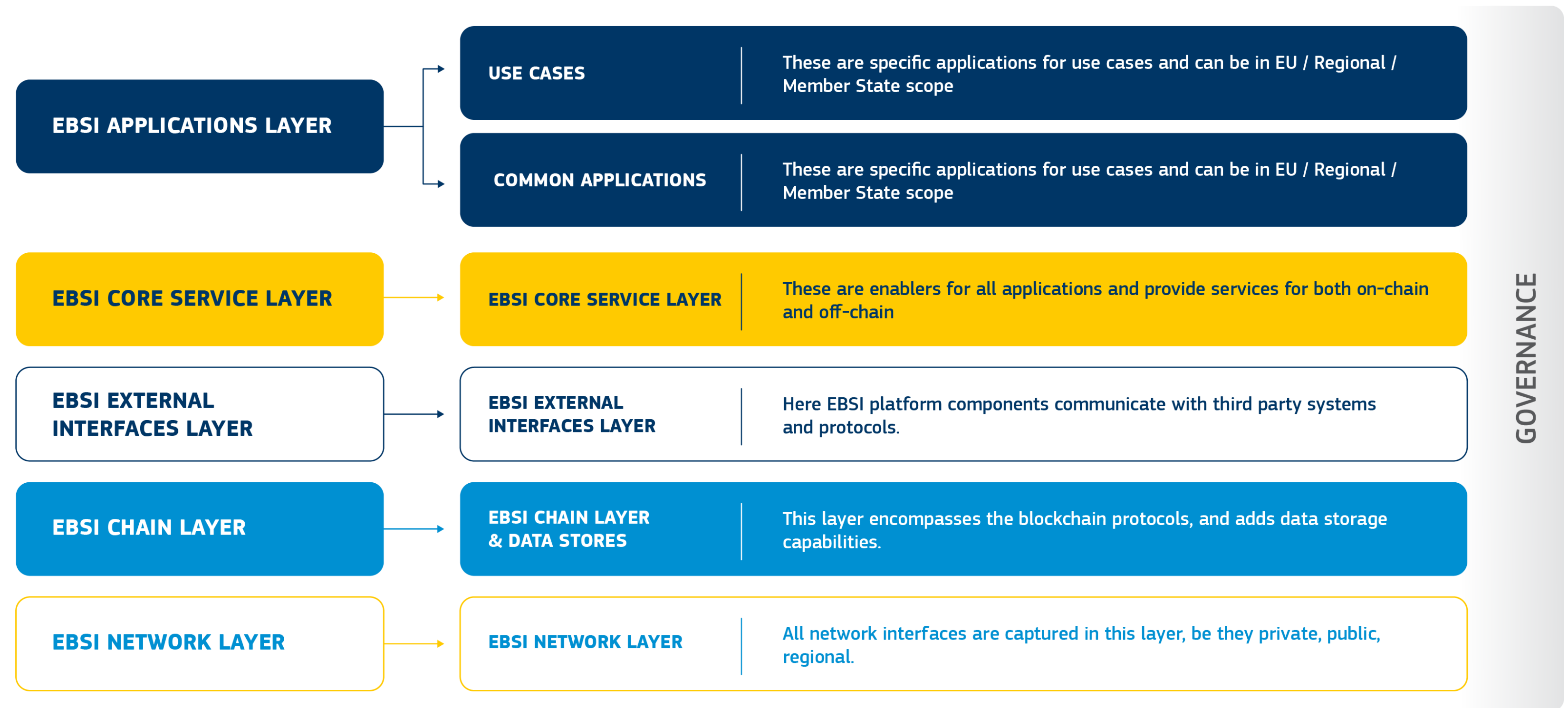
enable development of European technology hubs & projects

EBSI AT A GLANCE

The Member States will operate EBSI nodes at national level. These nodes will be able to create and broadcast transactions that will update the ledger. The architecture of each node will be composed of two main layers.

A **use case-specific APIs layer** developed to enable business applications to interface with the node.

An **infrastructure layer** with capabilities common to all use cases. A thorough analysis will determine the EBSI native network based on specific use case requirements.



EBSI GUIDING PRINCIPLES

The EBSI architecture will be built around strong guiding principles (in full respect of EU regulation) to ensure enough flexibility for many future Use Cases' implementations

1

Public Permissioned

The identity of all participating nodes is known.

2

Decentralized

Each Member State should run its own code or set of nodes.

3

Scalable

Needs to support high-throughput and high number of nodes.

4

Open

EU Public License and free from Intellectual Property Rights

5

Sustainable

Energy efficient without Proof of Work (PoW)

6

Interoperable

The EBSI should, as much as possible, be based on well-known standards and technical specifications

SELECTED USE CASES FOR 2019

A Member State led and composed user group has been established per selected use case. These user groups aim to deliver a working prototype connected to the infrastructure layer of EBSI by the beginning of 2020. A new set of use cases will be selected by the European Blockchain Partnership Policy Group for 2020 (and onwards).



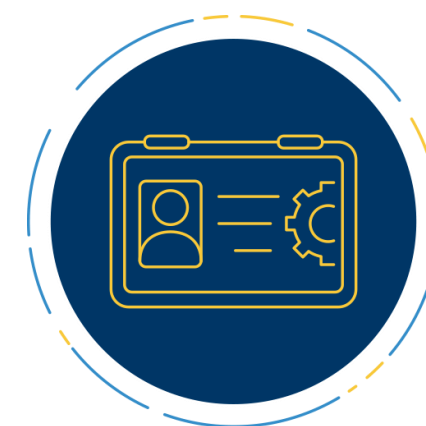
Notarisation of Documents for Auditing Purposes

Leveraging the power of blockchain to create trusted digital audit trails, automate compliance checks in time-sensitive processes and prove data integrity.



Certification of Diplomas

Giving control back to citizens to validate their education credentials, significantly reducing verification costs and improving authenticity trust.



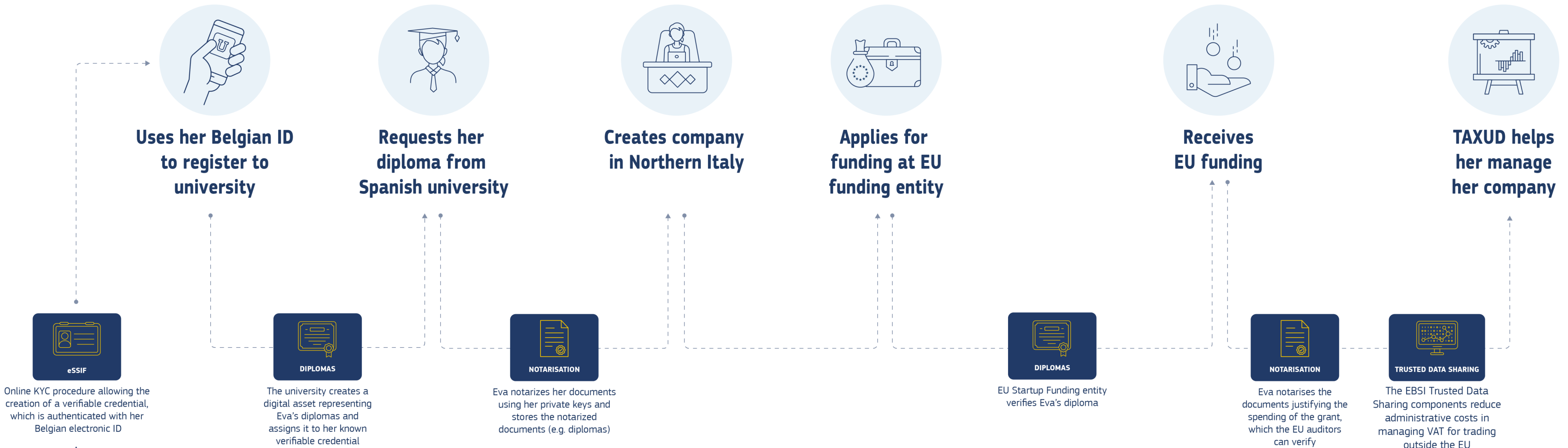
EU Self-Sovereign Identity Framework

Implementing a generic Self-Sovereign Identity capability, allowing users to create and control their own identity without relying on centralized authorities.



Trusted Data Sharing

Leveraging blockchain technology to securely share data (e.g. IOSS VAT identification numbers and import one-stop-shop) amongst customs and tax authorities in the EU.



PERSONA

Eva is a 23 years old Belgian Bachelor's degree graduate in computing security and AI.

She has a passion for learning languages, travelling, computing services and AI

CONTEXT

Eva wants to further deepen her knowledge in computing security and AI and applies for a master degree at the Barcelona University.

Eva hears about EU incentives to start companies in Northern Italy. She decides to pursue her dream and to start a business there to sell specialized security chipsets with AI enhanced capabilities.

GOALS

- Provide seamless cross border services for citizens;
- Help make institutions more efficient;
- Make economic activity flow cross border.

Certified Documents

Decentralised Trust

WHO WILL BENEFIT FROM EBSI?



EU citizens

Transact across borders with public services more securely than ever before



National Administrations

Simplify administrative processes, increase efficiency and instill trust in citizens



European Union Institutions

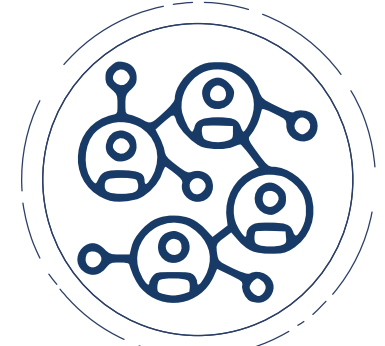
Simplify administrative processes and enable regulatory compliance, increase efficiency in cross-border public services

Benefits from the adoption of blockchain (with EBSI)



Simplifying Administrative Processes

- **Reduce significant effort** in any kind of information **checks and audits** with other entities
- **Reduce the burden for cross-border information sharing** and synchronization with other EU organisations / agencies / citizens
- **Deployment of decentralised trust** services that eliminate the need for manual checks or data processing pipelines



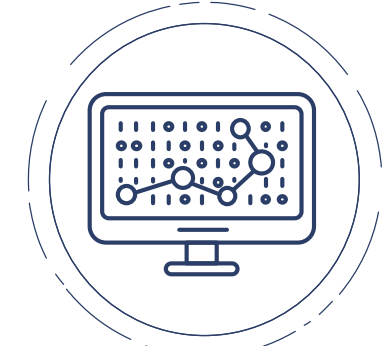
Enhancing Trust with external stakeholders

- **Enhance trust in members and external stakeholders of DGs** through the use of the EBSI Wallet with Self Sovereign Identity (EBSI SSIF) and Verifiable Credentials and EBSI
- blockchain distributed ledger technology and Smart Contracts' Transparency **increases trust** of the users towards the **procedures and data handling of EC DGs**



Increasing Efficiency

- **Enhanced performance** through the use of local copies of apps and data and **interoperability** with existing systems
- **Enhanced security and resilience**



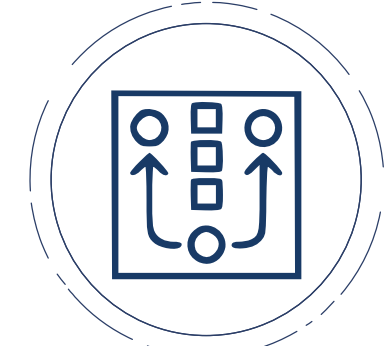
Increasing Transparency

- Increase **transparency and traceability of transactions and data** managed by the EC DGs and in cross-border services



Enabling Regulatory Compliance

- **Compliance with General Data Protection Regulation (GDPR)**
- EBSI Core Services enable **compliance with eIDAS**



Data harmonisation

- Ensures data harmonisation due to **distributed ledger** technologies, **increased reliability** of records and **easy detection of anomalies**

EBSI Roadmap

2019

2020

2021

Q1

Q2

Q3

Q4

Q1

Q2

Q3

Q4

Q1

Q2

Q3

Q4



Selection of first use cases for EBSI V1.0



Start selection process for new use cases



Selection of new use cases for EBSI V2.0



Deployment of EBSI V1.0 with first use cases



Deployment of EBSI V2.0 with new use cases

This is the status of the EBSI network

Updated on 14 May 2020 – [Latest information available here](#)

24 Member State Nodes

24 nodes have been requested by Member State institutions from **14 Member States**, of which:

- **16 nodes** have been connected with all available services
- **3 nodes** are currently in the process of connection
- **5 nodes** are in the preparatory stages to connect **during Q2/Q3 2020**
- **8 nodes** are in the process of being on-boarded

+

6 Commission Nodes

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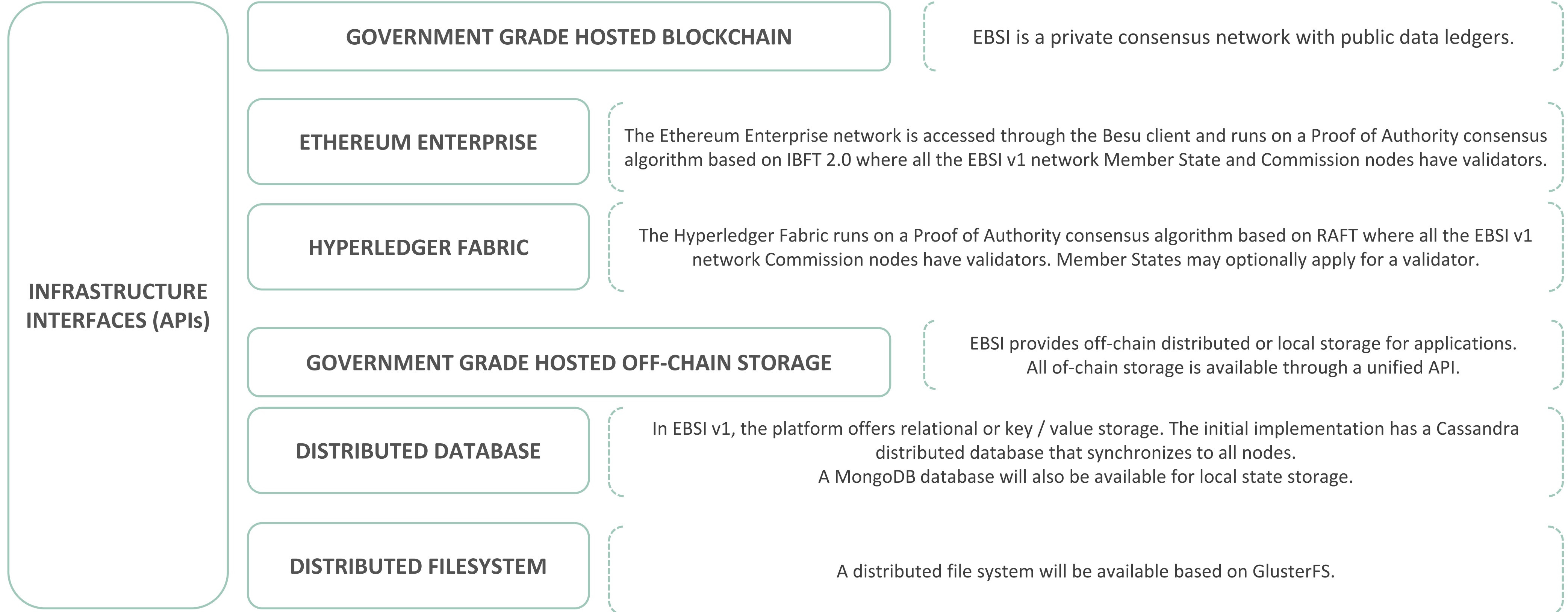
At least 30 Node TestNet Planned for 2020



EBSI native blockchain and storage APIs

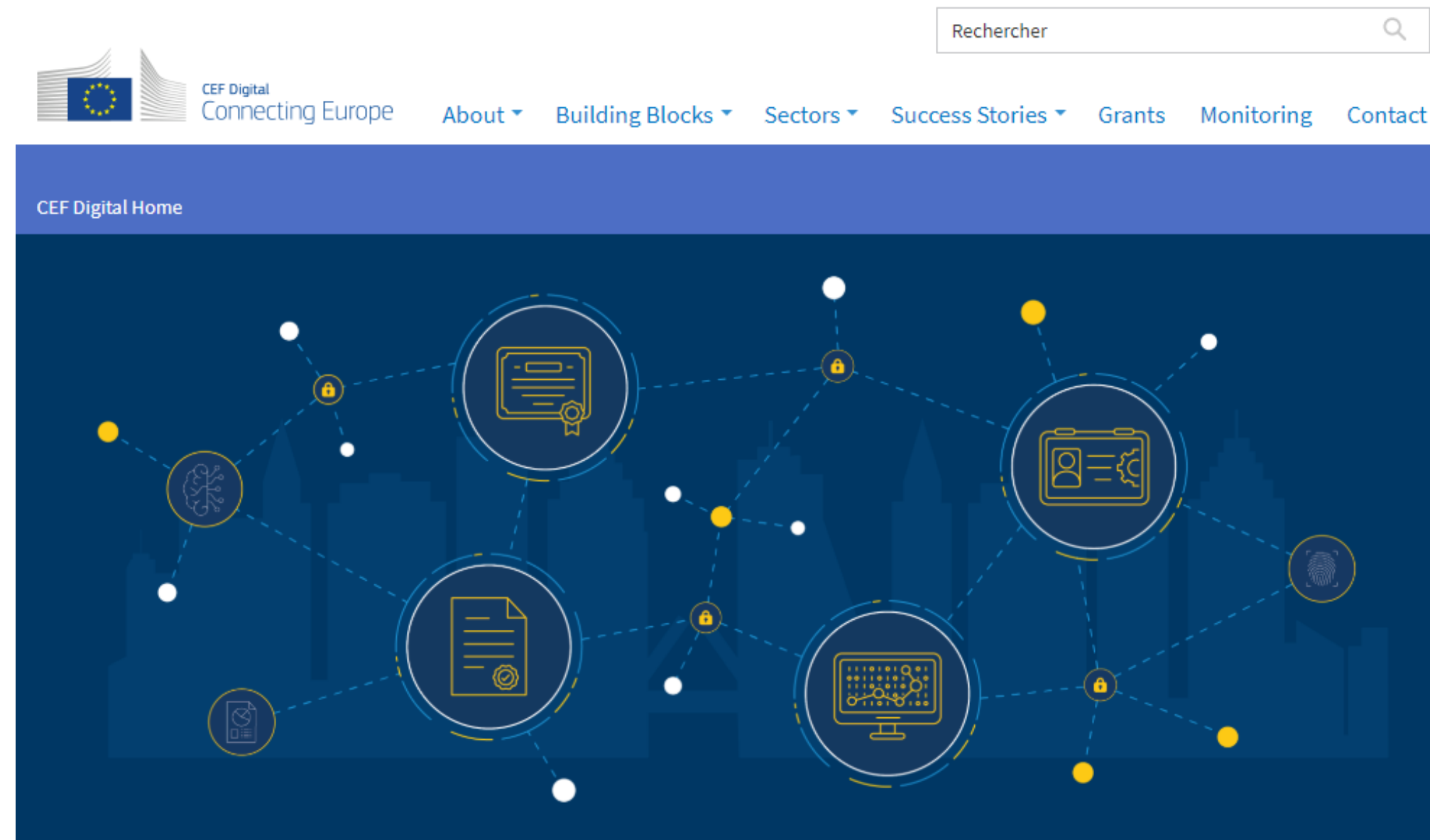
Integrate any application to the EBSI infrastructure using the Infrastructure APIs

As an alternative to using the Core Services APIs, applications may be integrated to native APIs where developers choose to create additional functionality to the ones available.



Integrate your applications

Want to know more?



Introducing the European Blockchain Service Infrastructure (EBSI)

Blockchain technology has enormous potential to enhance the way that citizens, governments and businesses interact, by enhancing trust between entities and improving the efficiency of operations.

The European Blockchain Services Infrastructure (EBSI) is a joint initiative from the European Commission and the European Blockchain Partnership (EBP) to deliver EU-wide

increasing number of applications focused on specific use cases. In 2020, EBSI will become a CEF Building Block, providing reusable software, specifications and services to

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