

# COVID-19 Vaccination Certificates in the form of Verifiable Credentials (VCs)

ETSI ISG E4P ad hoc meeting 4.02.2021

<https://portal.etsi.org/TB-SiteMap/E4P/List-of-ISG-E4P-Members-and-Participants>

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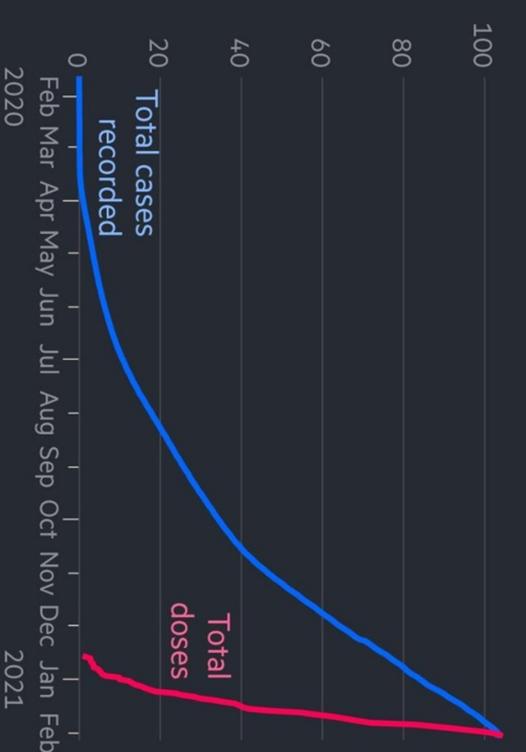
Reference document: <http://tiny.cc/VaccCertifAsVCs>

“eIDAS eID as VC” Demo: <https://www.linkedin.com/feed/update/urn:li:activity:6762429962956873729>

# A Vaccination Certificate: necessary and inevitable

## A milestone in the race to vaccinate

Confirmed global coronavirus cases and vaccination doses administered (m)



Source: Our World in Data

FINANCIAL TIMES

- ❑ Vaccination roll-outs rates are accelerating quickly (red line)
- ❑ However, the threat from the spread of more transmissible variants of SARS-CoV-2 virus negatively affects the growth predictions for 2021 world GDP growth (Oxford Economics forecasts now a positive growth rate for 2021 which slightly exceeds the 4% fall of the economy during 2020)
- ❑ The bigger risk is the possibility of tighter restrictions to contain the new Covid-19... The project of a common vaccinated credentials is proposed as an antidote, a facilitator of traveling and people mobility - including local(\*) mobility...
  - ❑ In any case, there is a clear “volonté politique” to get Europe open again for business, academic exchanges, and traveling
- ❑ Of course they are fears and concerns but the common sense says that **Vaccination Certificates are set to happen...**



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# Verifiable Vaccination Credentials

- We can see two reasons for that:
  - The Economist: A Vaccination passport is **necessary** (for health case workers etc.) and **inevitable** (private companies will use any opportunity than promises a “slightly cracked” lockdown door)
  - The Lancet (Personal Views): “If we have the technology to decide who is not a risk, **we should use it**” ,,,
- **But which is the technology we need? Do we need technology only?**
- Vaccination Certificates will be provided in various forms to people receiving a vaccine jab
  - A data format has been recently published by the eHealth Network: Guidelines on proof of vaccination for medical purposes - basic interoperability elements
    - [https://ec.europa.eu/health/sites/health/files/ehealth/docs/vaccination-proof\\_interoperability-guidelines\\_en.pdf](https://ec.europa.eu/health/sites/health/files/ehealth/docs/vaccination-proof_interoperability-guidelines_en.pdf)
- Such a tool needs to be further processed in order to create a digital document that can provide a clear, trustworthy and privacy-safeguarding proof about the exact Covid-19 vaccination status of the holder of the Certificate - **must be “automatically” meaningful to any Relying Party** (an entity that wants to verify it)
- We (and other people, such as the [CCI Initiative](#)) propose to build the technology for the efficient management and use of Vaccination Certificates on a new powerful technological trajectory called “**Verifiable Credentials**”, and thus to create **early EU leadership on safeguarded identity and personal data management**



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# Verifiable Credentials in a nutshell

- ❑ Verifiable Credentials (VCs) are at the core of key identity and data management frameworks being developed at an EU level, like the European Self-Sovereign Identity Framework (ESSIF)
- ❑ VCs are **W3C standardized artifacts** that live within **Self-Sovereign Identity technology infrastructures** (mobile phones, blockchains, modern cryptography tools etc.)
- ❑ They include personal data and information (obtained from authoritative or other resources) that is managed and “**packaged for presentation**” **only from the data/information owner**...
- ❑ A **VC Issuer** has initially created such a Verifiable Credential (to ensure the integrity of the process of personal data retrieval from the Data Providers, where the Data Subject points to), and cryptographically signed it (to ensure its validity)
- ❑ The VC Issuer passes the issued VC to the Subject; the Subject can **share this Credential (the entire content or selectively) with Service Providers (SPs)**, i.e., Relying Parties, to get access to specific services
- ❑ The SP acts as a Verifier, and uses an online service to validate to check the validity of the seal of the Issuer and receive the content disclosed by the Subject
- ❑ There is no direct link between a VC Issuer and a SP (the constitutional basis for **unlinkability**...)

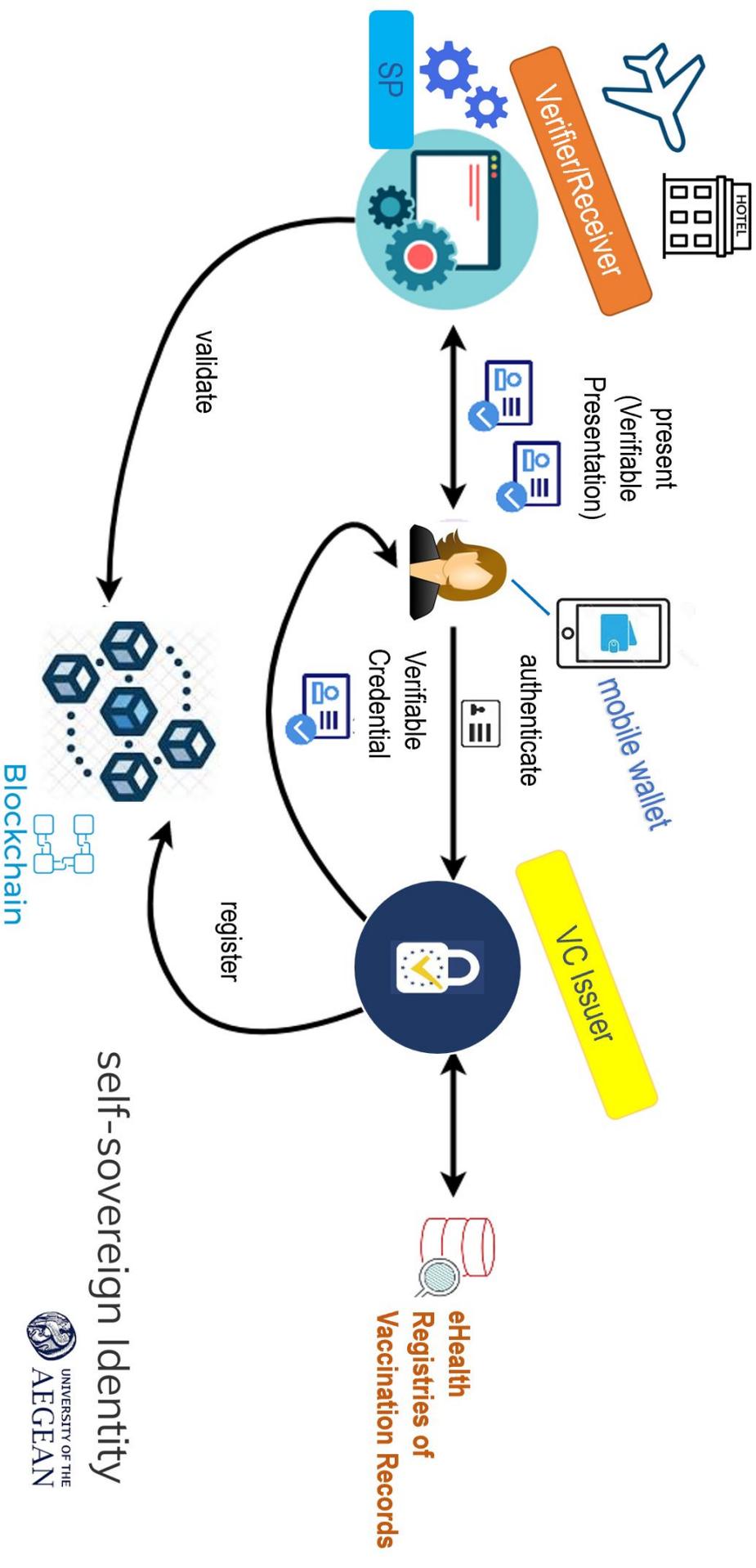


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# Vaccination Verifiable Credentials: the process life-cycle



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# Organizational design and opportunities

- ❑ **VC Issuer: a new species of (meta)Data Provider with two “threshold” capabilities**
  - ❑ Access to the Users Devices
  - ❑ Infrastructure build-up capability
  - ❑ (Note - Similar Case: Remote Digital Signature Providers)
- ❑ **Bundle together different Covid-19 related data documents, such as:**
  - ❑ eID
  - ❑ Vaccination Certificate
  - ❑ Passenger Location Form (PLF)
- ❑ **Enable complete or minimal data disclosure** (depends on the SP request and the Data Subject's willingness to disclose)
  - ❑ **Disposable** Vaccination Verifiable Credentials (see [OMG webinar](#) on Disposable SSIDs)
- ❑ **Create a European privacy-friendly and technology efficient (i.e., decentralized) proposition** for the management and use of Covid-19 personal Vaccination Data (a first step to enter the large emerging market for health digital records...)



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