Name: François KAAG

(he/him/his)

Country: France

Affiliation: SYADEM

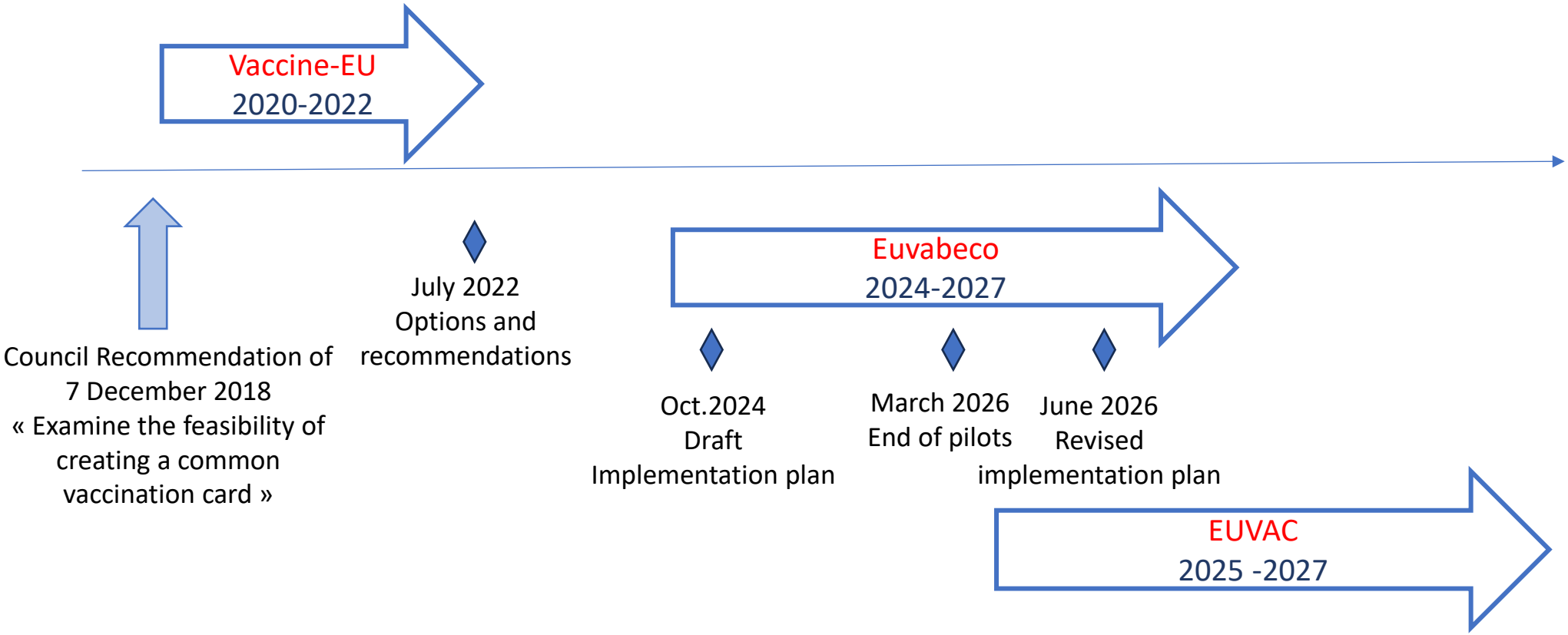
Function: Compliance Manager

Main expertise (1-2 lines):

Systems architecture, interoperability
Personal data protection, information security management

Implementation of the portable European Vaccination card in seven countries

EVC related projects



Declaration of interests

- Working for SYADEM:
  - As technical lead of the Vaccine-EU study.
  - As technical coordinator of the EUVABECO project.
  - As project manager, compliance and interoperability expert.
- Co-chair of the International Vaccine Codes initiative (https://ivci.org) promoting the NUVA terminology for vaccination records interpretation and transcription.

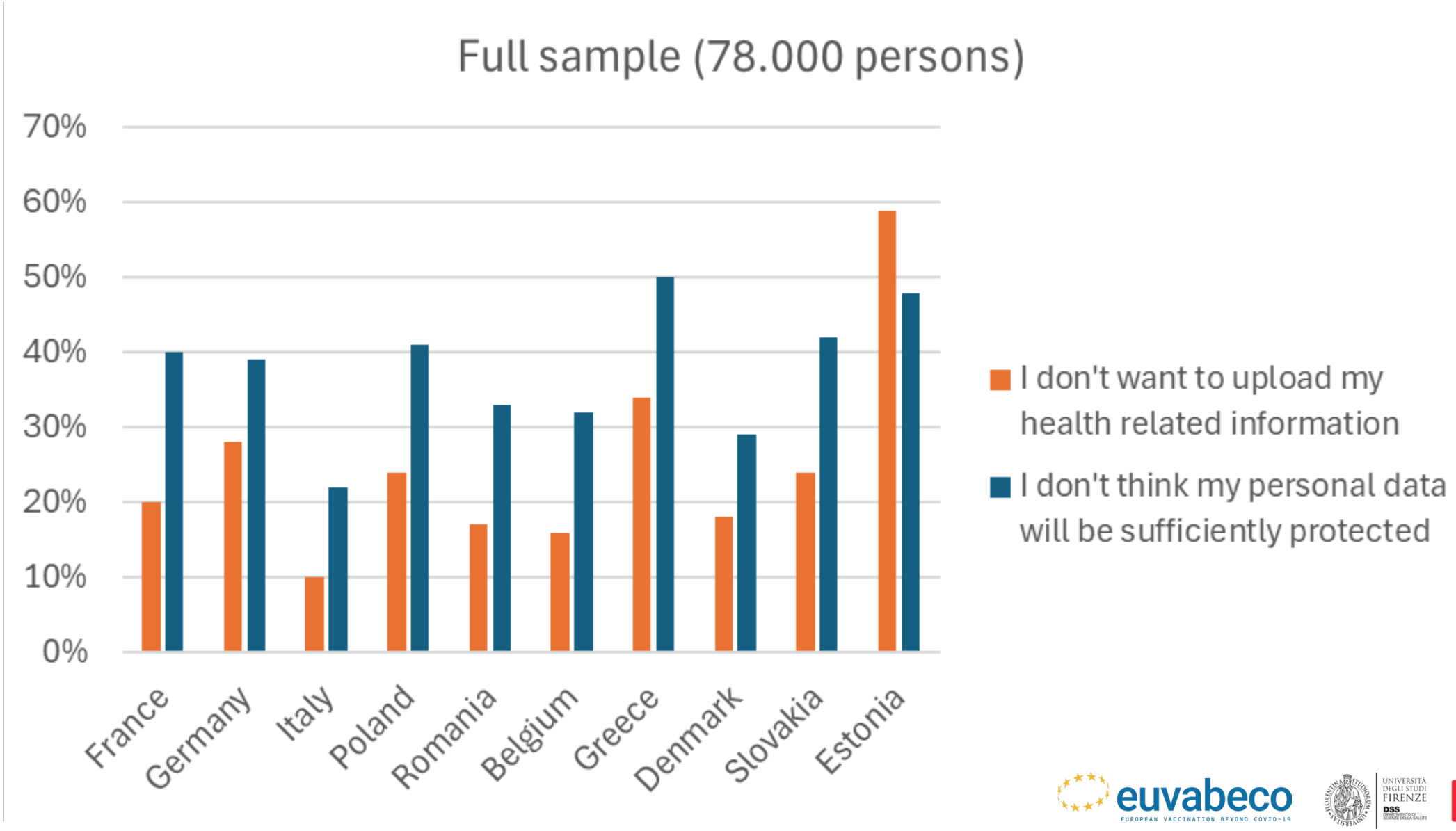
NUVA and the EVC specification are common goods available under a Creative Commons license at https://github.com/orgs/IVC-NUVA/

EVC, EHR and IIS

Both the EVC and the IIS support the continuity of care, but with different approaches.

	EVC	EHR	IIS
Nature	Document	Information system	Information system
Holder	Regarded person	Health structure	Health authority
Scope	Individual	Patients of structure	Population
Personal data protection	Intrinsic	Managed	Managed
Unique patient identifier	Optional	Mandatory (local)	Mandatory (global)
Acceptability	Familiar	Accepted	Concerning
Intended uses	Continuity of care across professionals	Care within structure	Continuity of care Secondary use
Citizen empowerment	Intrinsic	Optional	Optional
Update for professionals	During encounters	During encounters	At any time
Infrastructure / Integration	Lightweight	Preexisting	Heavy

2021 survey (IPSOS) – Barriers to EVC usage



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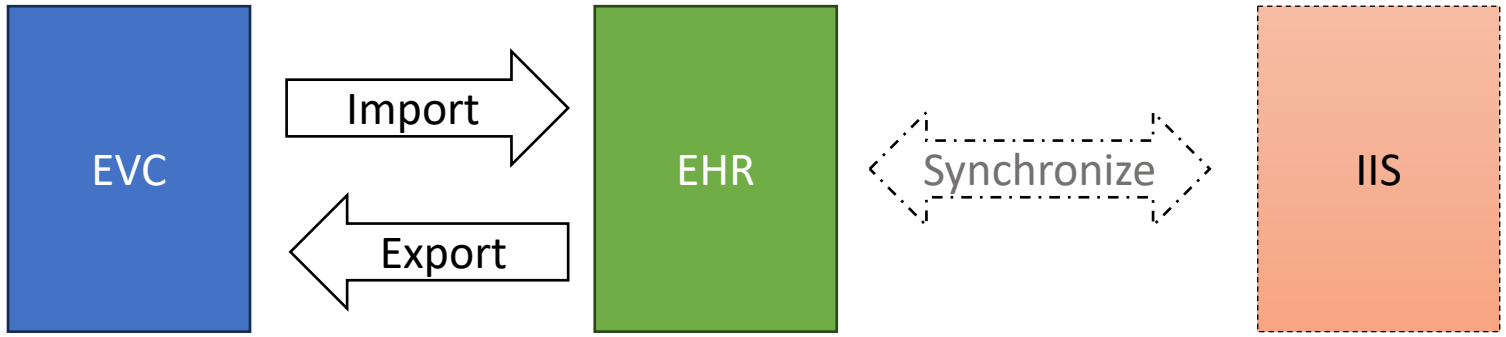
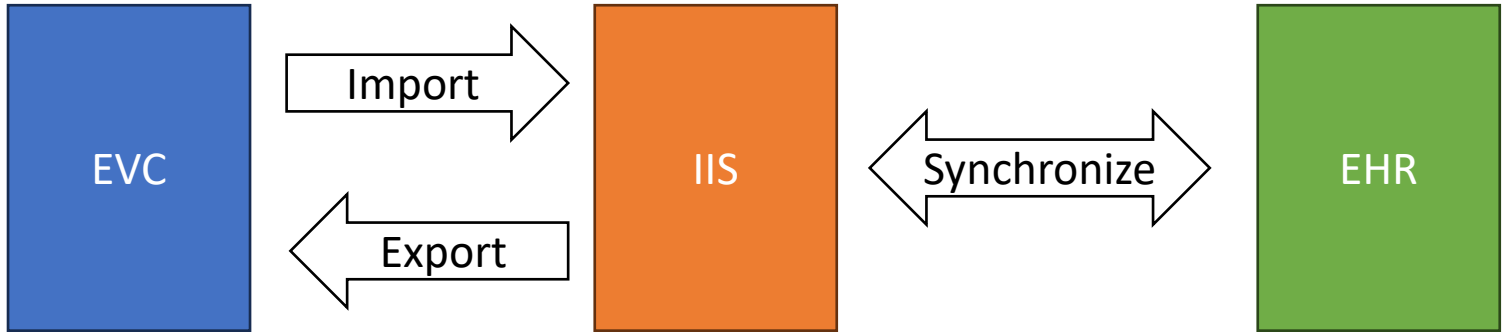
Relationship between EVC and IIS

If it exists, the IIS may be:

- a facilitator to import or deliver EVC.
- A repository for master records.



But these roles can also be distributed across different systems.



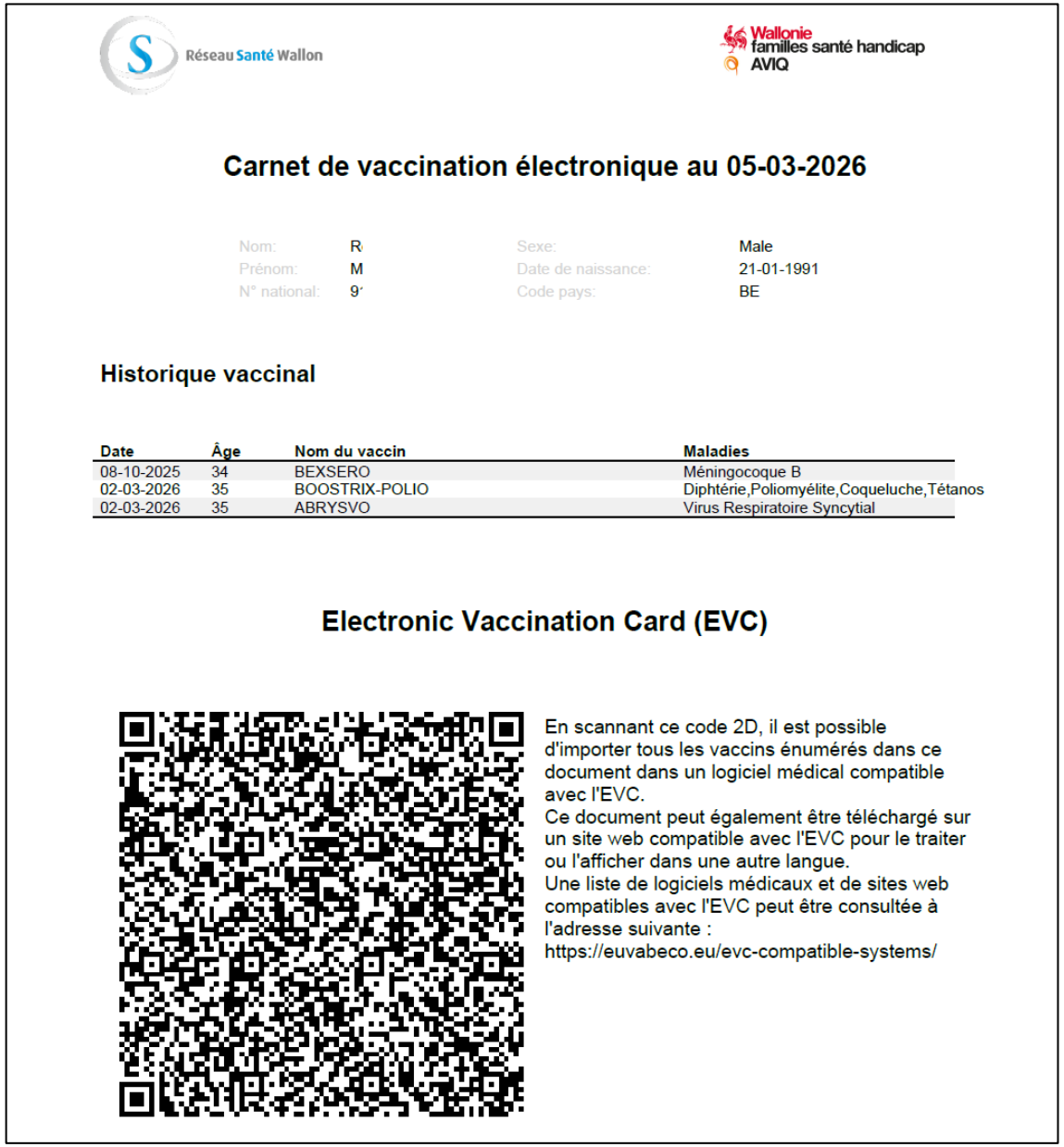
EVC – Example of rendering

An enriched document held by the citizen with the lifetime history of administered vaccines:

- As plain text
- As a 5x5 cm QR code for scanning
- As embedded PDF metadata for uploading

The digital formats (QR code and metadata) are signed to preserve their integrity.

Each administration record is bound to a master record held by an authorized health structure (expressing who is liable for this record).



Réseau Santé Wallon

Wallonie familles santé handicap AVIQ

Carnet de vaccination électronique au 05-03-2026

Nom:	R	Sexe:	Male
Prénom:	M	Date de naissance:	21-01-1991
N° national:	9'	Code pays:	BE

Historique vaccinal

Date	Âge	Nom du vaccin	Maladies
08-10-2025	34	BEXSERO	Méningocoque B
02-03-2026	35	BOOSTRIX-POLIO	Diphtérie,Poliomyélite,Coqueluche,Tétanos
02-03-2026	35	ABRYSVO	Virus Respiratoire Syncytial

Electronic Vaccination Card (EVC)

En scannant ce code 2D, il est possible d'importer tous les vaccins énumérés dans ce document dans un logiciel médical compatible avec l'EVC.
Ce document peut également être téléchargé sur un site web compatible avec l'EVC pour le traiter ou l'afficher dans une autre langue.
Une liste de logiciels médicaux et de sites web compatibles avec l'EVC peut être consultée à l'adresse suivante :
https://euvabeco.eu/evc-compatible-systems/

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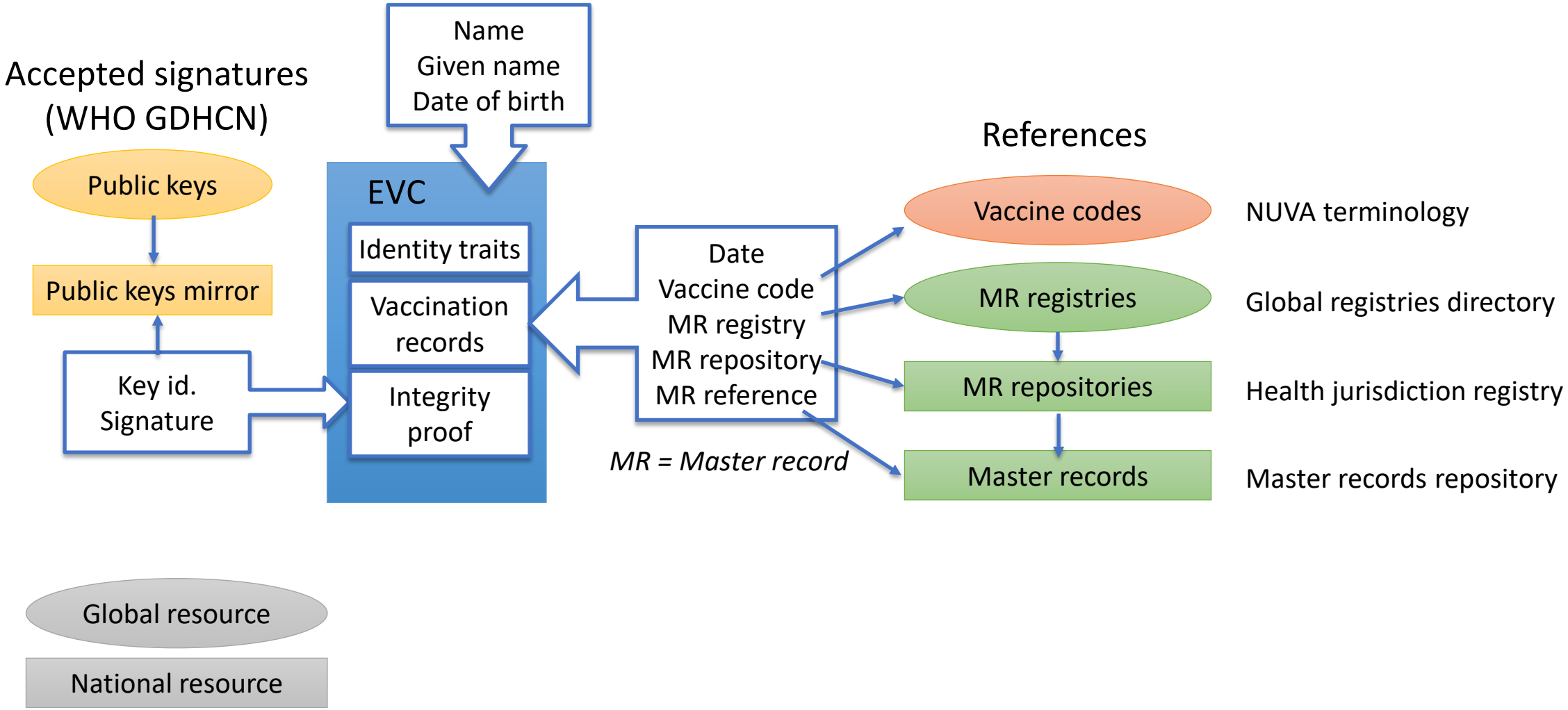
Digital content



The vaccine codes global resource (NUVA)

- Allows for representation of any administered vaccine, anywhere at any time.
- Allows for transcription across different code systems, even at different levels of abstraction (actual products and generic codes)
- Proposed as a global common good :
  - Delivered as a SNOMED-CT Community Content
  - Global governance through the International Vaccine Codes Initiative
  - Launch conference on 9 May 2025 in Bordeaux

EVC implementations

Country	Context	Source	Mode	Implementer	Stage
Belgium	EUVABECO	Vaccicard	RW	MedSoc	Preproduction
France	Private	MesVaccins	RW	SYADEM	Production
Germany	EUVABECO	IISAAR	W	Intersystems	Aborted
Greece	EUVABECO	Project IIS	RW	SYADEM	Pilot finalized
Latvia	EUVABECO	Project IIS	RW	SYADEM	Pilot finalized
Luxembourg	National	CVE	W	SYADEM/INCERT	Preproduction
USA	CLVR	HL7 IPS	RW	NIST/AIRA	Public resource
(Reference impl.)	EUVABECO	HL7 Bundle	RW	SYADEM	Public resource
(Online translator)	EUVABECO	Existing EVC	RW	SYADEM	Production

Lessons from implementations

Worked from the box

- Implemented by 5 independent teams with different programming languages (Ruby, C#, Java, Python, PHP)
- Implementation and deployment in less than 2 months, programming workload < 10 days
- Reuse of NUVA assets for transcoding of national vaccine codes (CNK, CTI-Extended, CVX, CIS)
- Produced EVCs are compatible across all implementations

Had to be tuned

- Define user interfaces for deduplication of preexisting records in the EHR

Could not be done

- Use the GDHCN infrastructure (lack of support from a GDHCN member or the EC)
  A specific alternative keystore was deployed.

EUVABECO implementation plans content

Revised implementation plans will be released in July 2026.

Module	Content
Functional description	Overview, functional and non-functional requirements, use cases
Prerequisites	Conditions for launching the project
Architecture	Components and their interactions
Data	External data needed (NUVA, accredited health professionals)
Security and privacy	Privacy impact assessment
Deployment	Resources, workflow and planning for deployment
Verification	Conditions for release to production
Operations	Tasks to keep the tool operational
Resources	All further assets that may be useful to implementers

EUVABECO EVC resources

All these resources are or will be exposed/referenced from the EUVABECO GitHub repository by July 2026.

Resource	Description
Detailed technical documentation	Step by step explanations on each used standard Decoding walkthrough
Reference implementations	In Ruby, Python and Java
NUVA resources	NUVA publication and associated libraries
Keystore	The keystore used as an alternative to GDHCN
Deduplication policy	Proposed user interface for deduplication
Registry management policy	Proposed policy for maintaining the registry of repositories
Reference EVCs	From the different tools, for testing of further implementations

Test and Questions

Scan to access
EVC reader …

…then read that one
(from EVC Latvian implementation)

contact@euvabeco.net

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