



HOW GUARDTIME VACCINEGUARD HELPS MANUFACTURERS

VERIFY COVID-19 STATUS OF INDIVIDUALS.
MAINTAIN ACCURATE OVERVIEW OF
VACCINATION PROGRAM EFFECTIVENESS.

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DIGITAL COLLABORATION BETWEEN ESTONIA AND THE WORLD HEALTH ORGANISATION

In October 2020, Estonian Prime Minister Jüri Ratas and WHO Director-General Dr Tedros Adhanom Ghebreyesus signed a **Memorandum of Understanding to share the experience of Estonia** and its companies in healthcare digitization using distributed information architecture and interoperability with WHO and its member states.



<https://guardtime.com/blog/who-digital-covid-19-vaccination-infrastructure>



Estonian Prime Minister Jüri Ratas and World Health Organization Director Dr. Tedros Adhanom Ghebreyesus signing a memorandum of understanding at a video ceremony
Picture: Stenbock House, Tallinn, Estonia

DIGITAL COLLABORATION BETWEEN ESTONIA AND THE WORLD HEALTH ORGANISATION

- + The first pilot will be a **digitally verifiable international vaccination certificate („Smart Vaccination Certificate“)**, which could potentially support the effective implementation of the Covid-19 vaccination program.
- + **The technical leader of the project is Guardtime**, an Estonian-born cybersecurity company leveraging the EU eIDAS-accredited trust service KSI Blockchain in its solution for tamper-proof digital certificates.

THE WORLD HEALTH ORGANIZATION IS LOOKING FOR A SMART VACCINATION CERTIFICATE TO LINK ACROSS MULTIPLE SYSTEMS INTEGRAL TO VACCINATION DELIVERY

+

GETTING VACCINATED. GETTING CERTIFICATE

Harry receives a vaccination from Nurse Hermione and he receives a certification of that vaccination
It can be on paper with a scannable QR code or as an application on Harry's smart phone



PII SHARING **Needed** ✓

INTERNATIONAL TRAVEL

Fortunately, Harry is better, and he is ready to meet some friends overseas.
Harry presents his vaccination certificate at border patrol to prove that he has received the appropriate vaccination.
Border patrol scans the Smart Vaccination Certificate to validate

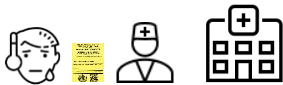


PII EXTERNAL SHARING **NOT** Needed ✗

PII =
Personally Identifiable Information

REPORTING ADVERSE EVENTS

Unfortunately, Harry feels ill after receiving the vaccination. He goes to the nearest hospital and provides Doctor Luna with his vaccine certificate.
She prepopulates the Adverse Event reporting form with data scanned from Harry's vaccination certificate



PII SHARING **Needed** ✓

PUBLIC HEALTH MONITORING

Once Hermione provides Harry with the vaccine, she logs that onto Harry's vaccination certificate.
That information can also be extracted and de-identified and automatically submitted for monitoring purposes at the Ministry of Health.



PII SHARING NOT Needed ✗

SUPPLY CHAIN INTERGRITY

The vaccination certificate Harry was issued also contains information that overlaps with supply chain data



PII SHARING NOT Needed ✗

VACCINEGUARD:

globally verifiable vaccination certificate platform
enabling effective management of vaccination
campaigns and distribution of vaccines

VACCINEGUARD: END-TO-END SUPPLY-CHAIN VISIBILITY USING REAL TIME VACCINATION DATA



Proof that 1 vaccine has been used to vaccinate 1 individual.



Proof that the vaccine has been used where it was sent.



Real time overview of vaccine uptake among population. Everywhere.



Real time alerts on counterfeits and pharmacovigilance.

SMART VACCINATION CERTIFICATE CAPTURES UNIQUE VACCINATION EVENT

INTERNATIONAL VACCINE CERTIFICATE

This is to certify that
Ain Aaviksoo

Passport
AA1511370

Received Vaccine
856BH

Batch ID
TOK7

On Date
Tue Nov 24 2020

Health Organization
St. Theresa's Hospital

Administered by
Dr George Martin



To validate the certificate click on the link below
<https://vaccine.gtuslabs.com/verify/37a880cf-a125-3730-a7ba-7c5d009e3454/vaccine.gtuslabs.com>

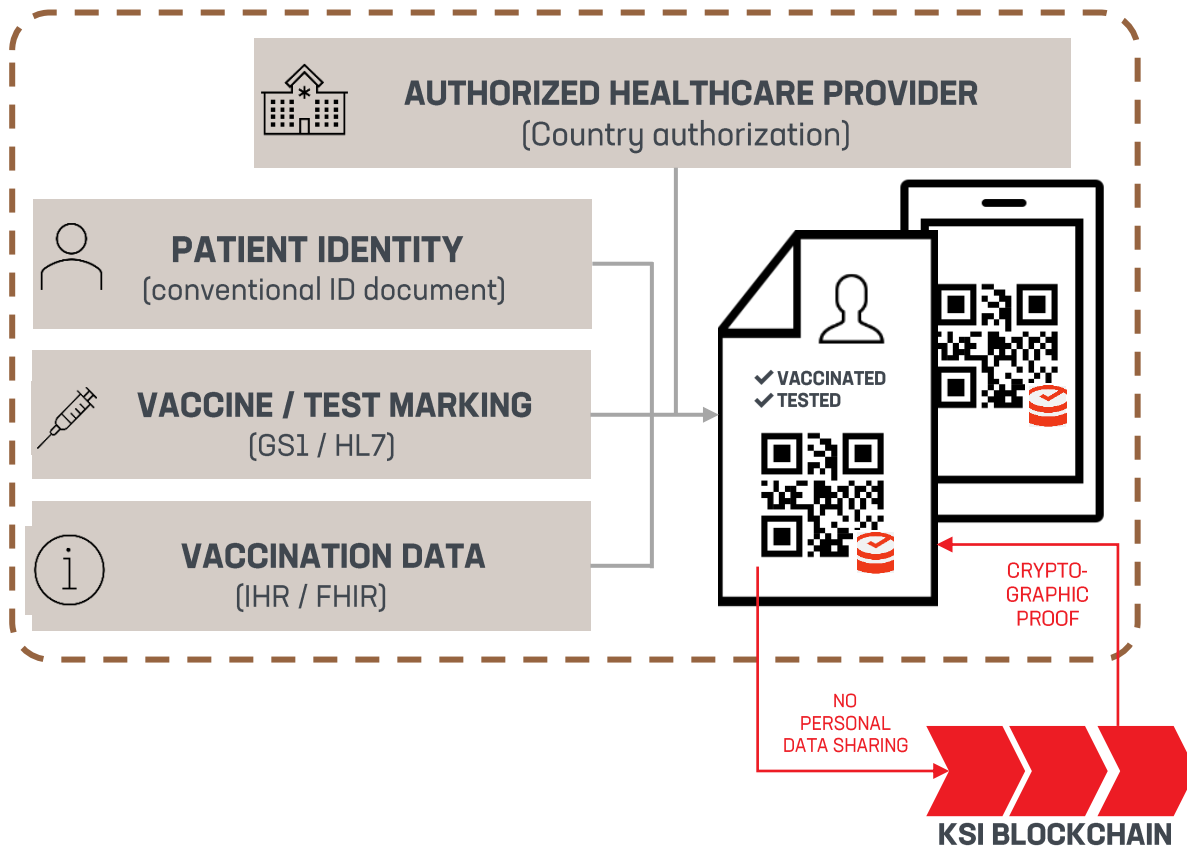


How to Validate:

Read the QR code to be directed to the validation page. Check if the details match between the certificate and validation page.

SIMPLE AND SECURE APPROACH TO SMART VACCINATION CERTIFICATE BY VACCINEGUARD

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VACCINATION PROMOTOR (GOVERNMENT / WHO) guarantees:

- + control of issuer authorizations

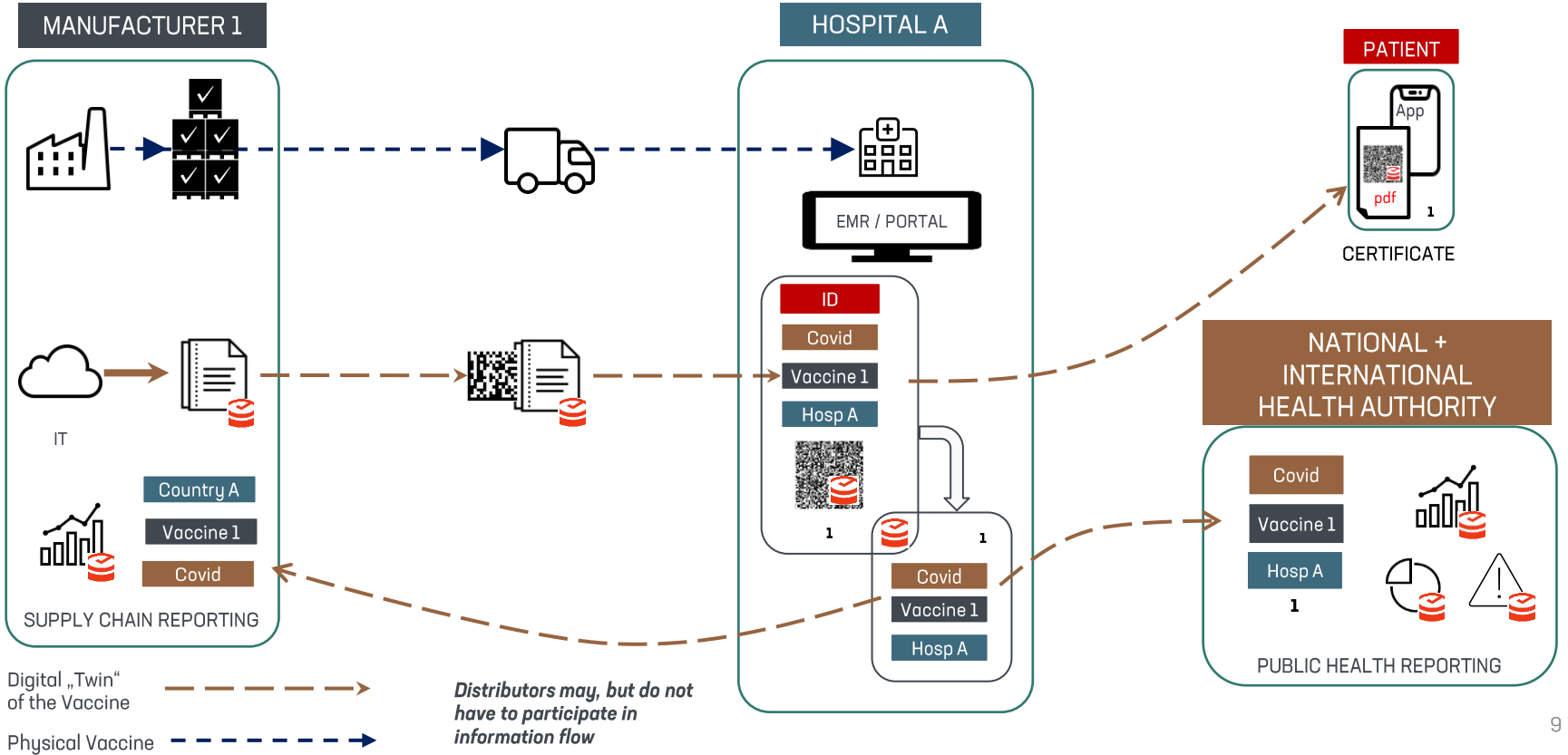
AUTHORIZED ISSUER guarantees:

- + patient authentication
- + data accuracy

VACCINEGUARD guarantees:

- + proof of content authenticity
- + process integrity
- + privacy protection

VACCINEGUARD BY GUARDTIME LINKING VACCINATION RECORD WITH END-TO-END VACCINATION FLOW



1

CERTIFICATE IS ISSUED BY HEALTHCARE PROVIDER
AS PRINTOUT OR SENT VIA E-MAIL / MOBILE PHONE



2

THE CERTIFICATE IS HELD AND TRANSPORTED
BY PATIENT ONLY (NO CENTRALIZED DATASTORE)

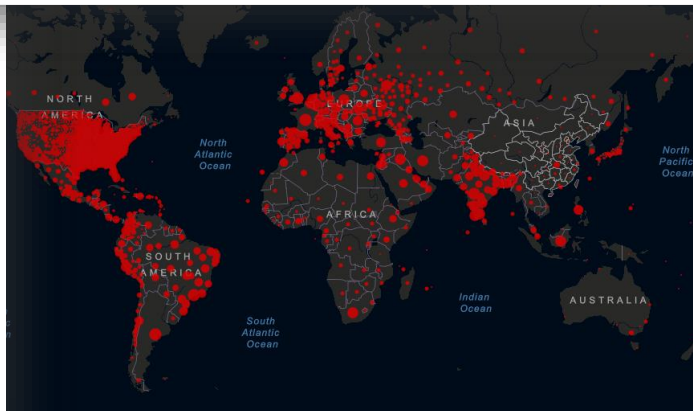
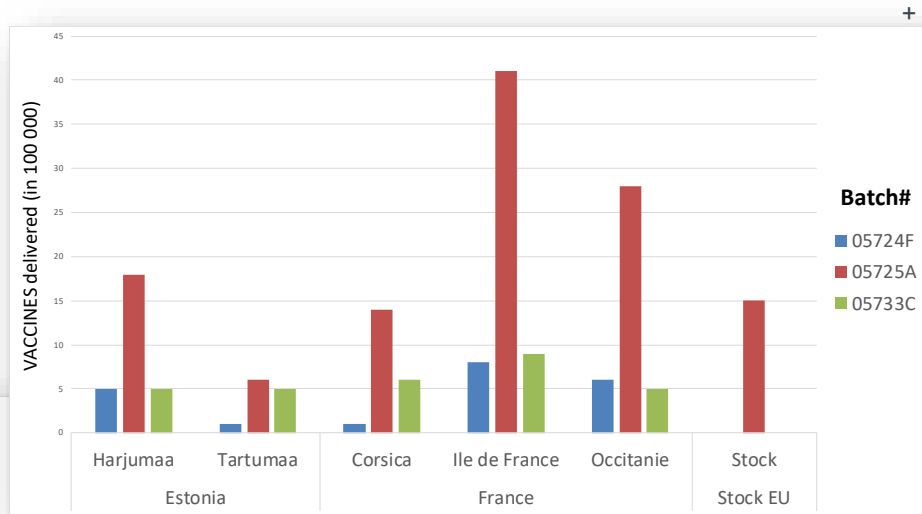
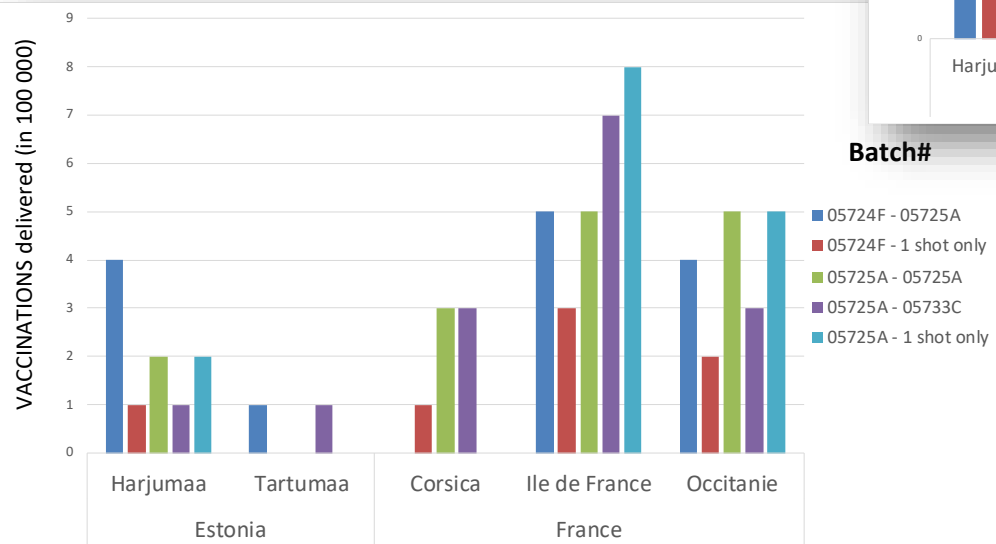


3

REPORTING OF CRYPTOGRAPHICALLY LINKED
UNIQUE EVENTS VIA ANONYMOUS DATA GATHERING



REPLACING INFECTION INCIDENCE WITH VACCINATION COVERAGE AND SUPPLY CHAIN INTELLIGENCE



BENEFITS OF VACCINEGUARD

FOR IMMUNISATION PROGRAMME MANAGERS:

- + **Automatic aggregation of data** for reporting.
- + Allows access to quality and timely individual-level data for public health monitoring.
- + **Easily scalable solution**
- + **Dual-use**, able to provide an individual certification while also preparing systems for the case of international travel
- + Improved quality of care when healthcare providers have easy access to patient's vaccination history

FOR VACCINE MANUFACTURERS:

- + **Automatic aggregation of data** for reporting.
- + End-to-end **supply-chain traceability** and **pharmacovigilance**
- + Easy to **integrate with existing IT** systems and workflows
- + **Real-time intelligence for counterfeit and diversion mitigation**
- + **Easily scalable solution**
- + Can be used **online and offline, across multiple systems**

THE COMPANY



THE LEADING TRUST TECHNOLOGY COMPANY

GUARDTIME

GUARDTIME: is a cryptographic engineering company founded in 2007 in Estonia, to solve the data integrity challenges first faced by the world's most advanced digital government. Our purpose is to make the world's information universally reliable and globally verifiable.

TECHNOLOGY: recognized technology leaders with a robust trust computing stack deployed globally at industrial scale since 2012

ACCREDITATION: technology has been accredited by US, EU and China regulators for deployment on to government networks

APPLICATIONS: core technology is 'horizontal' in nature, can be applied to large number of solutions and products at industrial scale across various sectors like government, telecommunications, healthcare and life sciences, logistics, financial.

GUARDTIME HEALTH PRODUCTS:

- + Real World Data Engine for Market Access
- + VaccineGuard
- + Drug Shortage Manager
- + Data Access and Governance Manager

AIN AAVIKSOO, MD MPH, CHIEF MEDICAL OFFICER



20 years of experience in digital technologies and health innovation.

In 2015-2018 Mr Aaviksoo was **Undersecretary for e-Service and Innovation** at the **Ministry of Social Affairs** overseeing the digital transformation and innovation of social security area in Estonia, including health, labour and social services.

Earlier work experience include physician, international level consultant on large system transformation and technology adoption in healthcare, CEO of public policy think-tank and health-tech entrepreneur. Dr Aaviksoo obtained MD from **University of Tartu** and MPH from **Harvard University**.

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