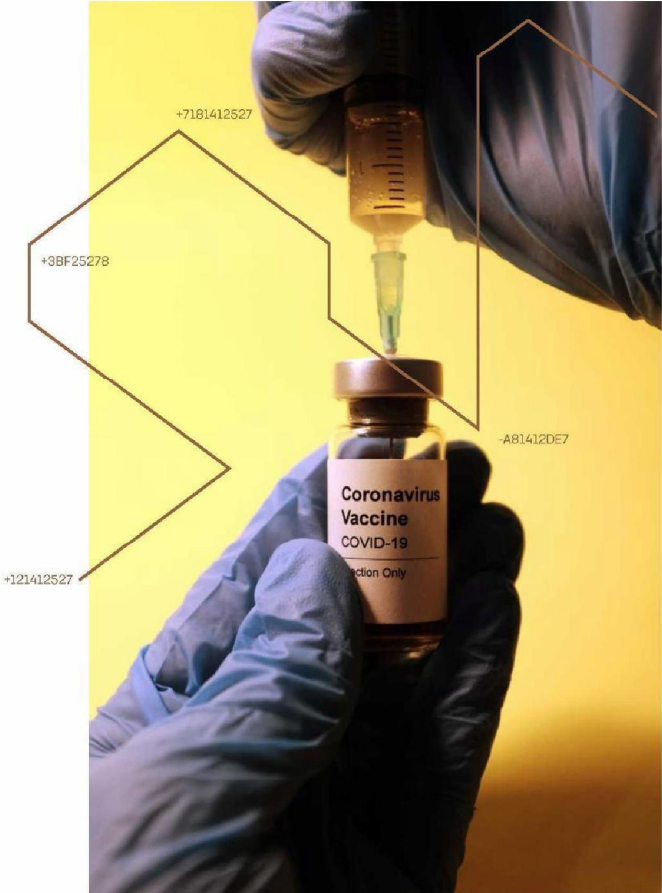




# HOW GUARDTIME VACCINEGUARD HELPS CURB COVID EPIDEMICS

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

MARCH 2021



## DIGITAL COLLABORATION BETWEEN ESTONIA AND THE WORLD HEALTH ORGANISATION

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Estonia offers its  
**experience and technology**  
to WHO and Member States  
for digital innovation

**Smart Vaccination Certificate**  
as the first use-case  
led by Guardtime VaccineGuard



<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 on October 6, 2020  
Picture: Stenbock House, Tallinn, Estonia

## THE BIGGEST PRODUCT LAUNCH IN HISTORY REQUIRES REAL-TIME SITUATIONAL AWARENESS

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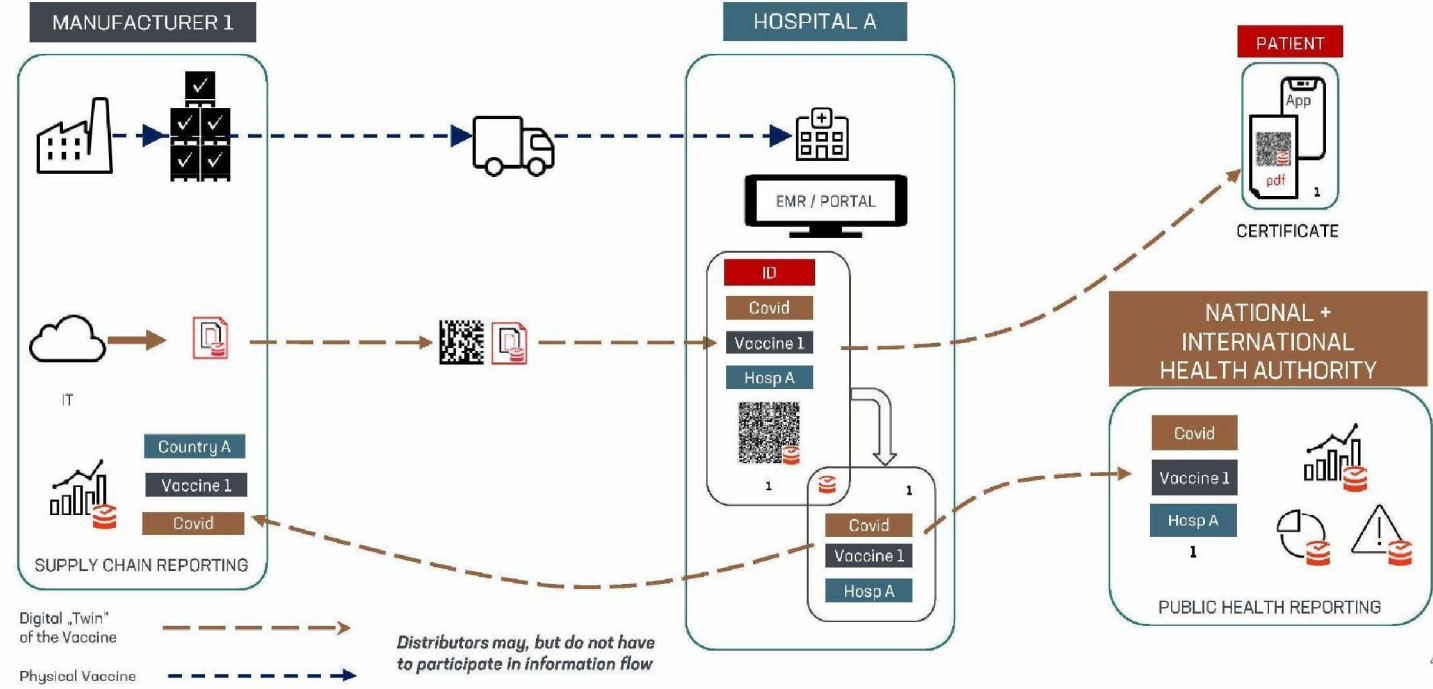


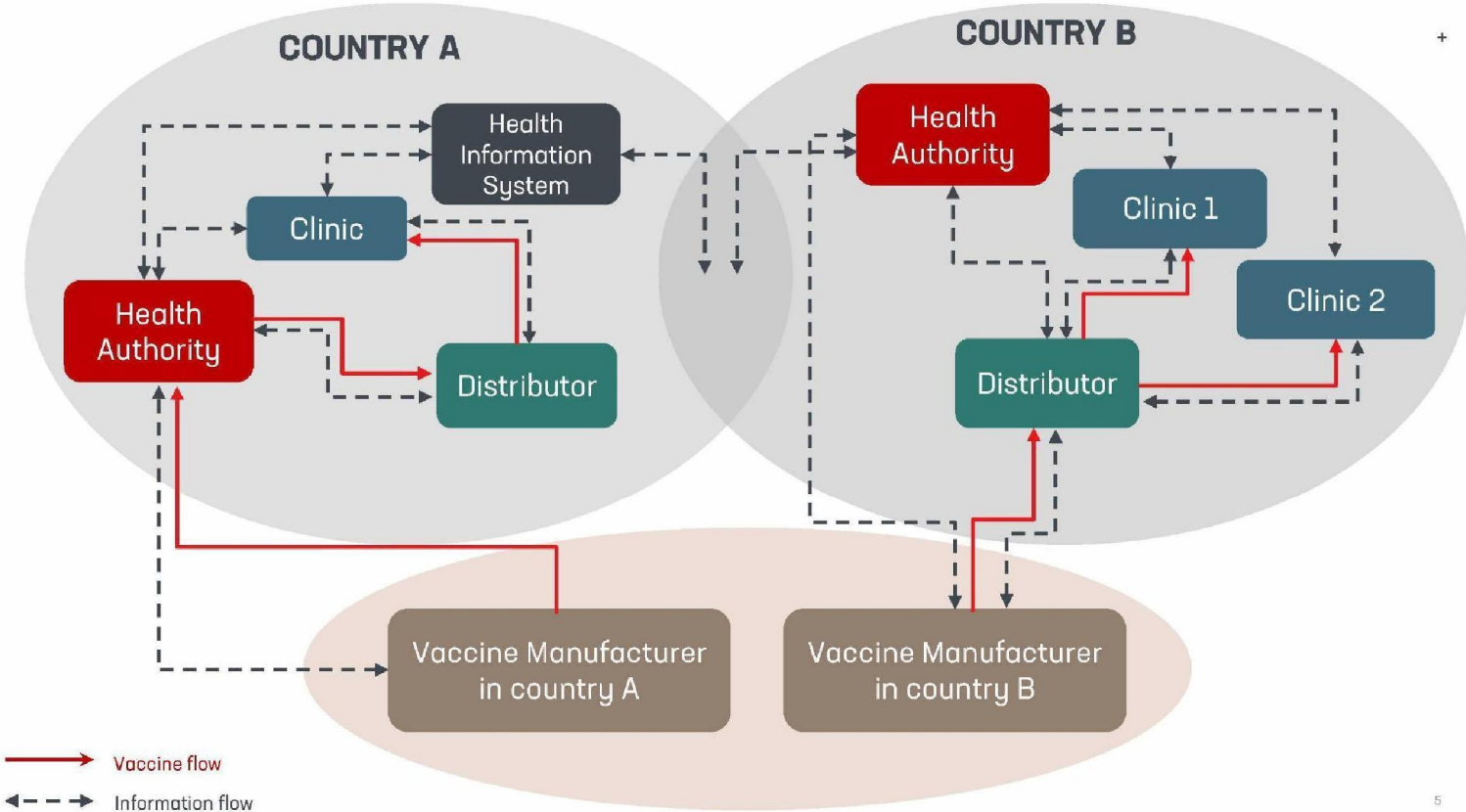
- + How to enable **globally valid and privacy-preserving digital vaccination certificates**?
- + How to **link authentic vaccine distribution information with vaccination activities and certificates** in clinics?
- + How to manage **vaccine distribution in coordination with the vaccination needs** in clinics?
- + How to provide **real-time situational awareness** to all participants (health authorities, clinics, distributors, manufacturers, public)?
- + How to **manage effectively vaccination campaigns for patients** (onboarding, dose timing etc)?



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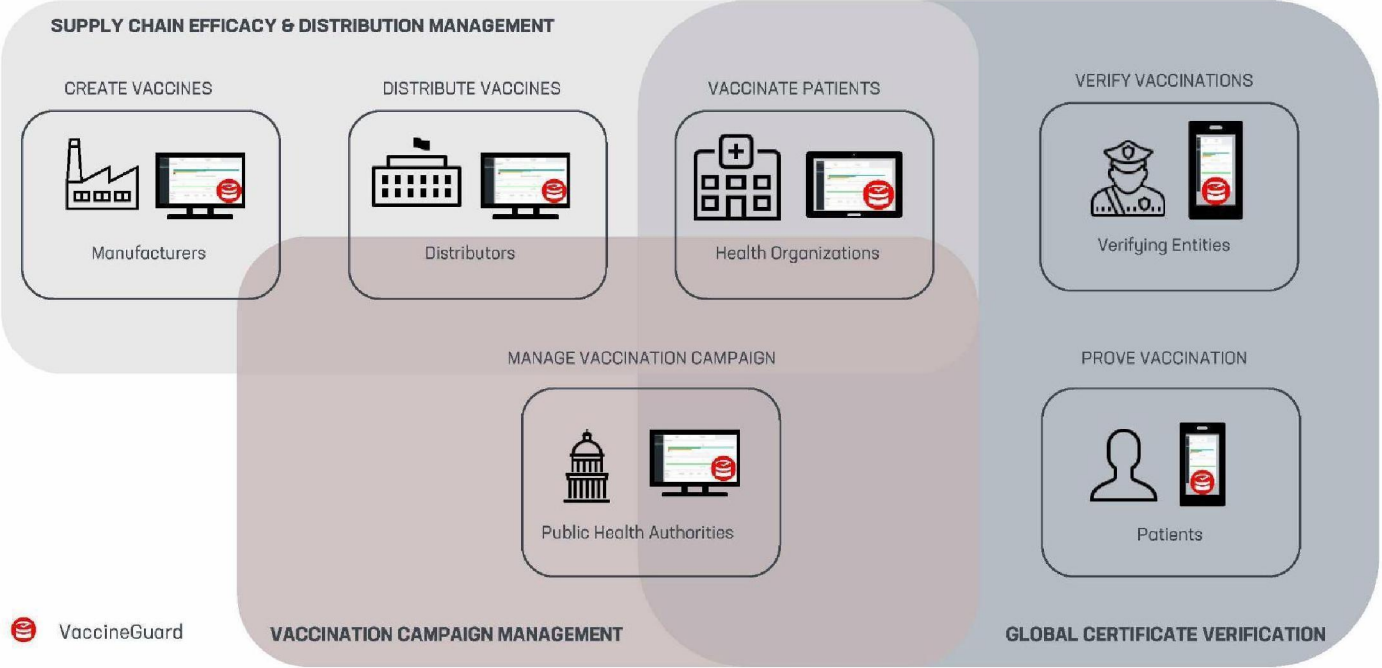
# VACCINEGUARD BY GUARDTIME LINKING VACCINATION RECORD WITH END-TO-END VACCINATION FLOW





# VACCINEGUARD CONNECTS WORKFLOWS OF DIFFERENT ROLES AND ACTORS

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## VACCINEGUARD: GLOBALLY VERIFIABLE CERTIFICATES AUGMENTING VACCINATION CAMPAIGN EFFECTIVENESS

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### GOVERNMENTS

1. Quick info on distribution and vaccinations
2. Authentic vaccine supply guarantee
3. Global vaccination data interoperability

### CITIZENS

1. Convenient cross-border travel
2. Transparent access to authentic vaccines
3. No personal information sharing

### MANUFACTURERS

1. Real-time reporting from last mile
2. Early counterfeit and diversion warning
3. Reliable post-market quality monitoring

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# VACCINEGUARD

## USER ROLES AND RELEVANT FUNCTIONALITIES



## VACCINEGUARD ENABLES RELIABLE VACCINATION PROGRAMMES AND GLOBAL VERIFIABILITY

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The overall goal of the product is to enable social and economic interactions within and across national borders without health-related restrictions. VaccineGuard supports **secure and reliable vaccine distribution** for **well-coordinated vaccination campaign** in combination with privacy-preserving facilitation of **globally recognized Vaccination Certificates**.

In order to create trusted Vaccination Certificates, authorities overseeing the implementation of as well as organizations involved in distribution and administering of vaccines need **trusted and real time situational information and assurance** about:

1. The vaccines being used are authentic and effective
2. The vaccination campaign is deployed efficiently and without waste
3. The Vaccination Certificates are based on real vaccines and real vaccination
4. The Vaccination Certificates are globally provable for an identifiable person with protected privacy
5. All the above is independently provable in real time to target vaccination goals and enable social interactions

In order to achieve these goals, VaccineGuard provides functionality for different user groups with different perspectives to execute their tasks in an interlinked manner throughout the value chain.

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# VACCINEGUARD FUNCTIONALITIES FOR NATIONAL, STATE OR LOCAL HEALTH AUTHORITIES

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## VACCINE DISTRIBUTION INSIGHTS

1. Verify and Inventory vaccines.
2. View and prove the origin of vaccines throughout the supply chain.
3. Manage and report distribution of vaccines.
4. Get alerts and report on possible counterfeits or diversion within the supply chain.

## VACCINATION INSIGHTS

1. Overall vaccination coverage and progress vs target vaccination rate.
2. Vaccination coverage by predefined patient groups or ad hoc analytical insights.
3. Vaccination efficiency (time, waste) and accountability (priority and target management).
4. Predict and manage vaccine supply needs by location.

## PLATFORM GOVERNANCE

1. Vetting and Onboarding of all users/roles of the Vaccination Platform, including Health Organizations performing vaccinations and issuing Vaccination Certificates.
2. Overseeing the basic operation of the different entities in the value chain.
3. Enabling Patients to obtain mechanisms such as mobile apps for participation.

# HEALTH ORGANIZATIONS HOSPITALS, CLINICS AND VACCINATION CENTERS

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## VACCINE STOCK MANAGEMENT

1. Making orders for vaccines.
2. Verifying the origin of vaccines throughout the supply chain and inventorying vaccines.
3. Managing vaccine stock by vaccinations and legitimate write-off.
4. Getting overview and generating reports of vaccine stock, administration and write-off.

## VACCINATION DOCUMENTATION AND CERTIFICATE CREATION

1. Linking identifiable person with unique authentic vaccine.
2. Linking single vaccinations into multi-dose vaccination regimen across various health organizations.
3. Linking demographic or other descriptive individual characteristics with the unique vaccination for real-time distributed reporting.
4. Linking verifiable and portable Vaccination Certificate with completed vaccination regimen (single- or multidose)
5. Enabling portable Vaccination Certificate in various formats (paper and digital) for global verification.
6. Enabling anonymous reporting based on unique Vaccination Records and Certificates.

## VACCINATION INSIGHTS

1. Overall vaccination coverage and progress vs target vaccination rate.
2. Vaccination coverage by predefined patient groups or ad hoc analytical insights.
3. Vaccination efficiency (time, waste) and accountability (priority and target management).
4. Predict and manage vaccine supply needs.

# VACCINE DISTRIBUTORS PUBLIC OR PRIVATE ORGANIZATIONS

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## PLANNING, MANAGING AND OVERSIGHT OF THE DISTRIBUTION

1. Verify the origin of vaccines throughout the supply chain and inventory vaccines
2. Accept and manage vaccine orders
3. Manage and Report distribution of vaccines
4. Get alerts and report on possible counterfeits or diversion within the supply chain

# VACCINE MANUFACTURERS

## VACCINE DISTRIBUTION MANAGEMENT

1. Recording digital identity for each vaccine (to the level of a lot and/or serial number) sent for distribution.
2. Accepting orders for vaccines.
3. Earmark vaccines for use in dedicated location or by selected organization (country, distributor, etc).

## VACCINE DISTRIBUTION INSIGHTS

1. Vaccine inventory within the supply chain and by location.
2. Reporting on distribution and use of vaccines
3. Alerts and reporting on possible counterfeits or diversion within the supply chain (via reports on vaccination or certificate overuse)
4. Prediction and management of vaccine supply needs.

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# PATIENTS

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## PATIENTS WILL GAIN

1. Globally verifiable Vaccine Certificates with maximum privacy protection
2. Proof the vaccines are authentic and valid
3. Freedom to achieve multi-dose vaccination by any Health Organization

## VERIFYING ENTITIES CROSS-BORDER TRANSPORT OR IMMIGRATION OFFICIALS, PLACES OF WORK

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### VERIFYING ENTITIES WILL

1. Achieve Immediate Cryptographic Verification of the reliability and correctness of Vaccine Certificates
2. Allow Cross border verification of Vaccine Certificates
3. Track and Detect Counterfeit Vaccine Certificates

## BENEFITS OF THE VACCINEGUARD

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### FOR INDIVIDUALS:

- + Provides a **SOLUTION TO MANAGE AND VERIFY ADULT VACCINATIONS**
- + Enables **IMMEDIATE ACCESS TO INDIVIDUAL VACCINATION HISTORY** for a variety of purposes that can include return to work, return to school, international travel (within travel bubbles or bilateral travel agreements between countries in lieu of updated IHR (International Health Regulations) to include COVID-19)
- + Reduces need to manage multiple vaccination records
- + Can be used **ONLINE AND OFFLINE, ACROSS MULTIPLE SYSTEMS**

### FOR IMMUNIZATION PROGRAM MANAGERS:

- + Allows access to quality and timely individual-level data for public health monitoring. **UNIFORMLY CAPTURES DATA** based on pre-defined terminology, value sets, and data formats - reducing data quality issues
- + **AUTOMATICALLY AGGREGATES DATA** for reporting
- + **EASILY SCALABLE SOLUTION**
- + **DUAL-USE**, able to provide an individual certification while also preparing systems for the case of international travel
- + **EASIER TO UPDATE** vaccination certificate template, if needed
- + Improved quality of care when healthcare providers have easy access to patient's vaccination history



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# THE COMPANY



# THE LEADING TRUST TECHNOLOGY COMPANY

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## 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



# CONTACTS



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