



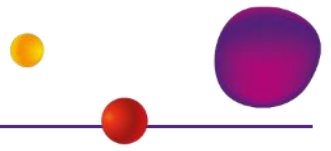
SITA's Digital Travel Journey Verifiable Credentials

Eu-LISA Industry Roundtable

Oct 12, 2022

By: Michael Zureik, SITA Lab Digital Identity

SITA



<https://www.youtube.com/watch?v=VU05Brpjtc4>

At the heart of the air transport industry

IT and industry expertise for air travel...

95%

Of **international destinations** are served by SITA

2,500+

Airlines, airports, ground handlers and governments, **all working closely with SITA**

1,000+

Our airport footprint. With services provided to around **200 countries & territories**

1,700

strong global team of **service professionals & field engineers** 'on the ground', 24/7/365

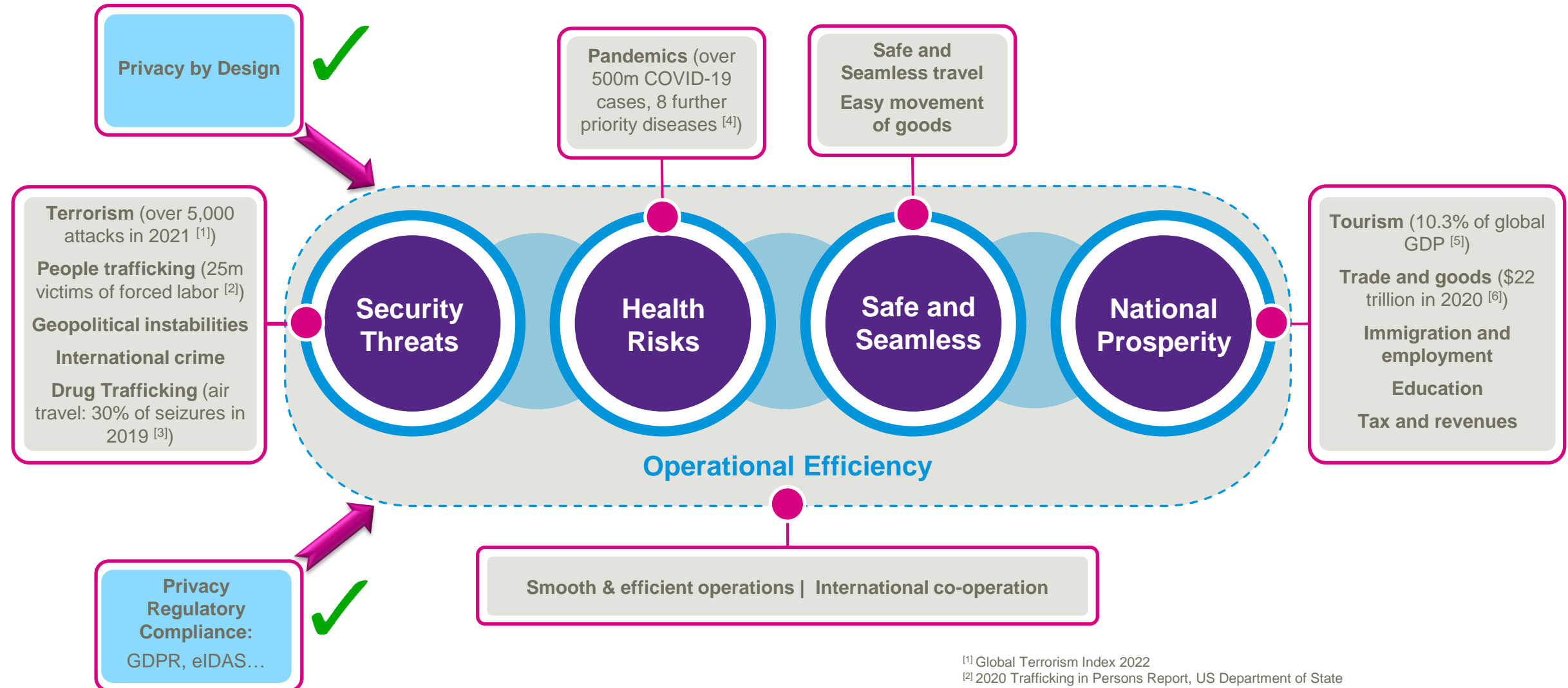
...supporting almost every airline and airport in the world

SITA was founded in February 1949 by eleven airlines to share infrastructure and realize cost efficiency by combining their communications networks. The original airlines were: British European Airways Corporation (BEAC), British Overseas Airways Corporation (BOAC), British South American Airways (BSAA), KLM, Sabena, Swissair, TWA, Swedish A.G. Aerotransport, Danish Air Lines, Norwegian Air Lines and Air France.

SITA

Border management industry drivers

Governments aim to balance the need to control threats whilst promoting open borders



^[1] Global Terrorism Index 2022

^[2] 2020 Trafficking in Persons Report, US Department of State

^[3] UN ODC World Drug Report 2021

^[4] WHO May 2022

^[5] WTTC 2021 Travel & Tourism Economic Impact Report

^[6] WTO 2021 World Trade Statistical Review

The Future with Digital Travel

Digital Travel is able enabling travelers to securely share their travel information prior to departure



Pre-Clearance / DTC Biometric Verification

Authenticated traveller information (eTA, Visa, DTC, Declaration) submitted via mobile devices provides the ability for expedited facilitation at the border crossing upon arrival using biometric identity verification.

→ Risk Assess Earlier, Biometric Gallery

- ✓ Biographic risk assessment
- ✓ Biometric risk assessment

Low-Risk Traveller Segmentation

Travellers that are deemed to be low-risk by the government will be offered low touch facilitation based on biometric corridors. Arrivals Halls are a thing of the past as a traveller can walk directly to their baggage.

→ Remove the Hay from the Hay Stack



Multi-Modal Processing

Enhancing iAPI/PNR with the DTC improve passage record reconciliation using a single biometric token for traveller identification across all modes.

→ Multi-Modal Entry / Exit

Operations Integration

An integrated approach for travel will allow all parties to work together to provide a seamless travel experience. Real-time modelling using Digital Twin visualization enhanced will AI/ML can simplify operations decision making

→ Seamless Travel Operations



Standards and Interoperability

The future is evolving and with autonomous conveyances, drones, Electric Vehicle (EV), and virtual travel. Borders need to be fluid as the future or travel is evolving.

→ Interoperate across Multiple Vendors.



Dynamic Staffing Culture

Officers focus on higher value duties, earlier targeting, enforcement, and more complex entry requirements. Primary and secondary processing can occur at any time, including remote processing.

→ Staff Can Focus on Higher Risk Duties

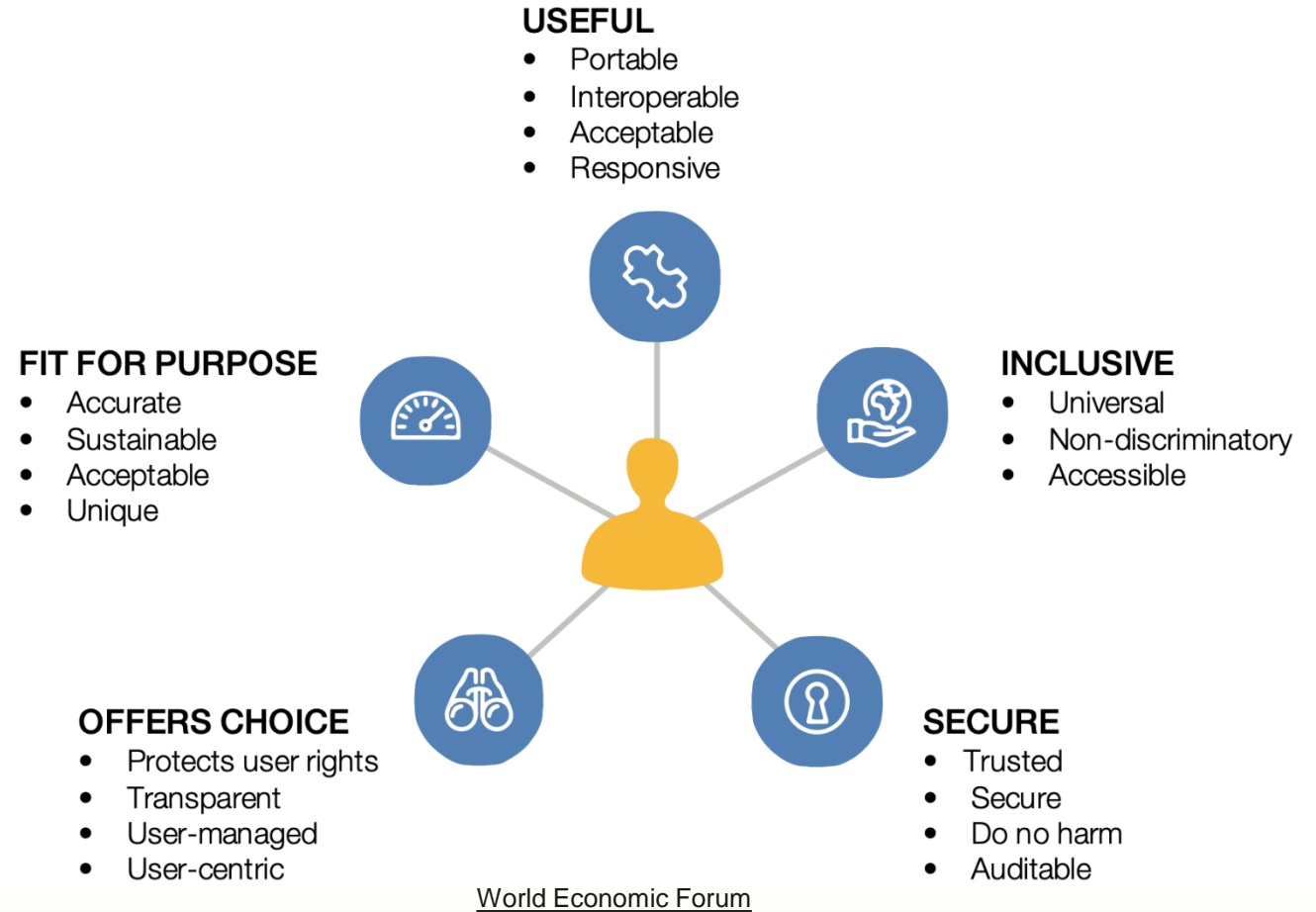
Digital Identity: Travelers, Airlines, and Governments

The SITA Lab vision

Travelers have a right to own and control their digital identity. Governments have been strengthening privacy legislation to protect individuals as industry automates burdensome manual identity processes. All parties want to be able to benefit from sharing of personal information, without the risk of data breaches, brand implications, and liability exposure.

SITA Lab has been working with the Aruba government to demonstrate HOW a trust network can support Digital Travel that is:

1. Privacy Preserving;
2. Consent Based Sharing;
3. Selective Disclosure; and
4. W3C Verifiable Credentials.



SITA Trust Network

The Aruba Story

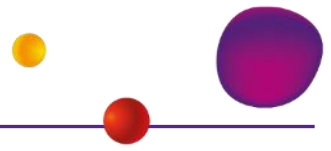
Aruba is a small constituent country of the Kingdom of the Netherlands with a population of approximately 120,000. Pre-COVID, over 2 million tourists visited annually, ranking 69th in the world. Starting in the mid-2010's, Aruba started to work on their Happy Flow project, introducing eGates at immigration control and US outbound departures.

Drivers for change:

1. Long immigration wait times (entry/exit). Long US departure boarding time;
2. Travel process is cumbersome, clashes with the Holiday mood.
3. Need safer, secure identity verification for travelers;
4. Evolve passenger processing in a competitive travel and tourism market. Data Privacy, control, convenience.
5. Facilitation for off airport vendors, quickest way to the beach



Aruba - Decentralized Identity Pilots 2020-2022+



Proving Verifiable Credentials and the Linux Foundation for Public Health (Cardea project)

Principles taking queue from Self Sovereign Identity (SSI) concepts for health and identity:

- **Traveler holds their information**: Decentralized, held in the travelers digital wallet;
- **Privacy preserving**: Traveler consents what information to selectively disclose;
- **Technology follows standards**: Linux Hyperledger, DIF, ICAO 9303 and DTC
- **SITA code open sourced**: Linux Foundation for Public Health (Cardea project)

Pilots successfully demonstrated:

- Digital Wallets are ready for travel;
- A Trust Network can meet the needs for industry, government, and travelers;
- Integrating with government infrastructure can be easy;
- Airlines can leverage existing secure messaging networks to simplify compliance obligations;
- Reduction in fraud and data quality issues can be mitigated;
- The value proposition for the tourism industry can be demonstrated;
- ... the list goes on.

What was achieved?

- Alignment with GDPR and proving selective disclosure is possible;
- Travelers COVID-19 health information from Aruba, the State of NY, and the Province of Ontario issued as Verifiable Credentials
- The Aruba EDCard application process accepted verifiable health information; and
- Health credential verified at tourist venues including a casino and butterfly farm.



2. Aruba Envisioned... From Enrollment to Arrival

Thinking beyond health and identity

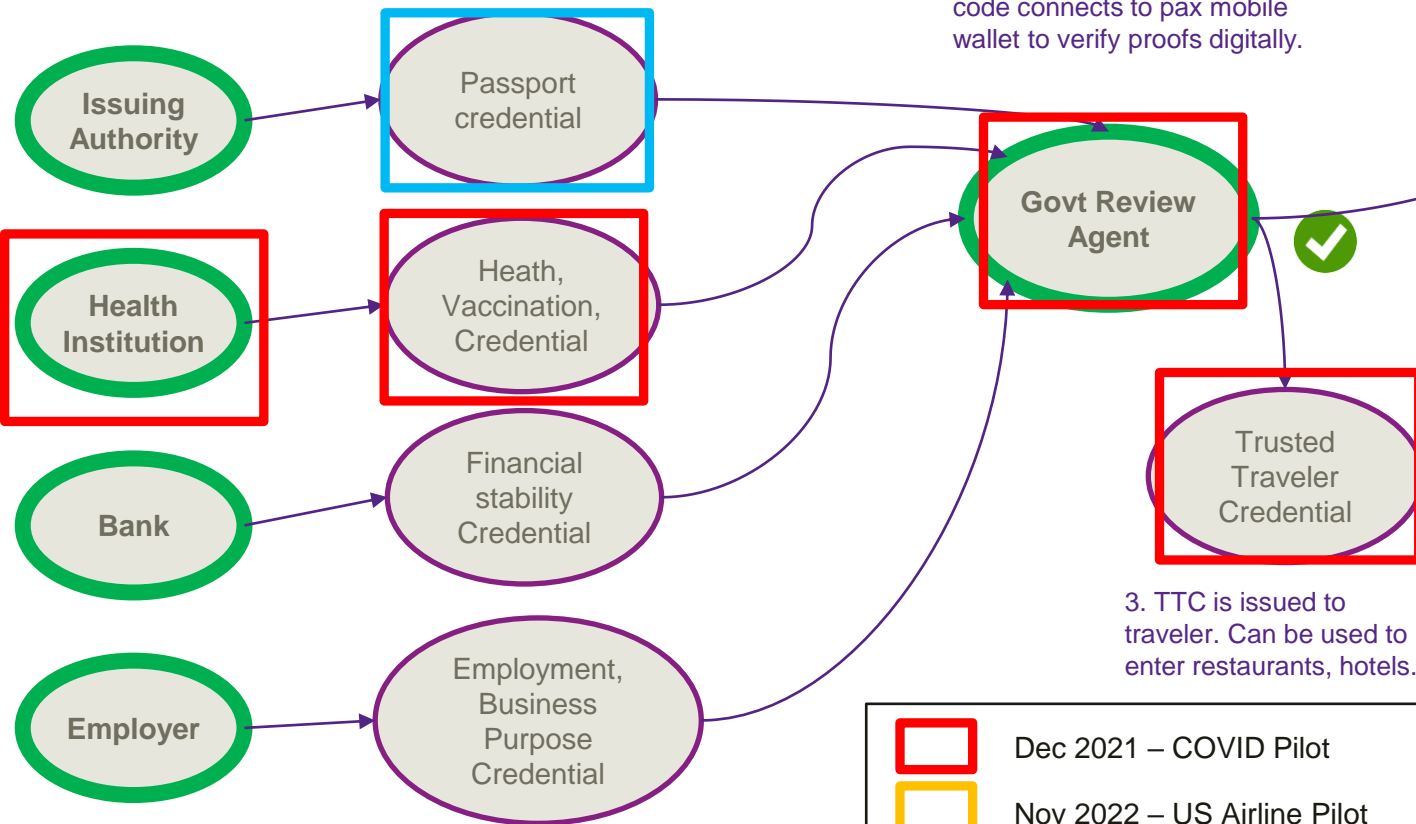
Credential Issuance

Proof Presentation

eTA Type Approval

Board and Fly

1. Pax app wallet holds Credentials, many obtained months before travel.



2. Govt Travel Portal. Fill in declaration forms. Web QR code connects to pax mobile wallet to verify proofs digitally.

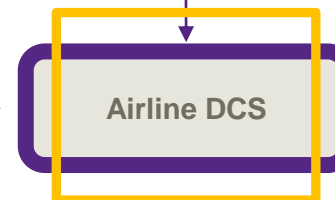
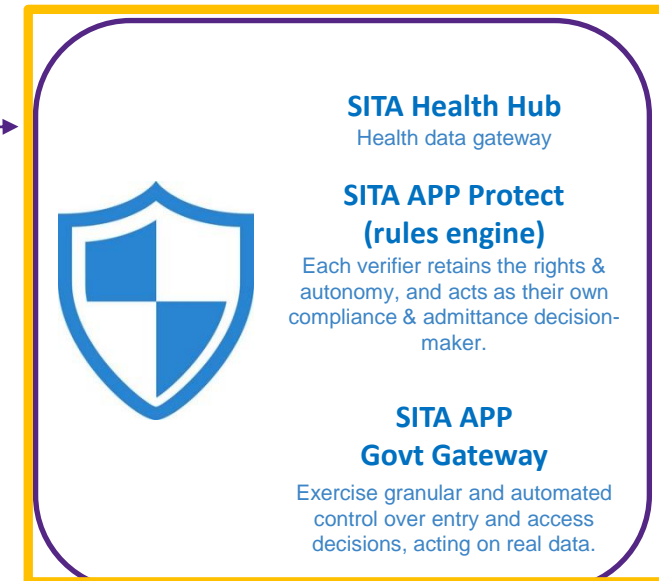
3. TTC is issued to traveler. Can be used to enter restaurants, hotels.

- Dec 2021 – COVID Pilot
- Nov 2022 – US Airline Pilot
- Dec 2022 – DTC Pilot

4. Check-in. Standard APP call DCS to GG



5. Match biometric for Borders e-gate entry.



Awareness of where are we heading....

Planning and preparation for a robust ecosystem.

Member states may decide to not settle on a single, pan European wallet. Although this may complicate the industry, standards can mitigate the risk:

1. Decentralized Ecosystem Governance

Decentralized Ecosystem Governance is a way of managing issuers and information flows in a decentralized way, so that multiple issuers and verifiers and millions of holders can cache these rules for interaction in their software and in ways that meet the requirements of sovereign authorities. By propagating and caching governance rules as machine readable files with each participant in the ecosystem, the system reduces friction in managing complexity and, critically, provides offline functionality.

2. Interoperability by following standards and engaging the open source community

Open source community have successfully driven interoperability between wallets, credentials, issuers, verifiers, and networks through “interopathons,” collaborative events that test and solve interoperability issues.



Health Credentials and Digital Identity: Open Source

SITA Recognizes that to be successful, open standards are necessary to support interoperability across various vendors/platforms



- Cardea Community Working Group
<https://cardea.app>
Thursdays, 12:00 PM ET



COVID-19 CREDENTIALS
INITIATIVE

- COVID-19 Credentials Initiative
<https://www.covidcreds.org>
Meets Monthly



- Decentralized Identity Foundation, DID:Comm working Group
<https://identity.foundation>
Mondays, 3:00 PM ET



- IEEE Spatial Web Foundation
<https://spatialwebfoundation.org>
Meets Monthly



- TOIP Utility Foundry Working Group
<https://wiki.trustoverip.org>
Meets: Every other Tuesday at 2:00 PM ET



- Hyperledger Foundation, Identity Implementers Working Group
<https://wiki.hyperledger.org>
Meets Every Other Thursday, 11:00am ET



- Hyperledger Foundation, Indy Working Group
<https://wiki.hyperledger.org/display/indy>
Meets Weekly, Tuesday 11:30am ET

- Hyperledger Foundation, Aries Working Group
<https://wiki.hyperledger.org/display/aries>
Meets Weekly, 10:00am ET

- Hyperledger Foundation, Aries Bifold Working Group
<https://wiki.hyperledger.org/display/ARIES/Aries+Bifold+User+Group+Meetings>
Meets Bi-weekly, Tuesdays, 11:00am ET



- Hyperledger Foundation, Membership Marketing Committee
Meets Monthly

Key Success Factor - Experience in Collaboration

Confidence in being small but we make a point in the value of working with others

Aruba Happy Flow

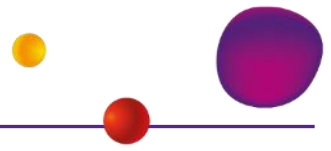


ED Card – Health App – Pandemic Innovations



Aruba Happy One Pass (HOP)





SITA named 2022 winner Category: Verifiable Credentials and Decentralized Identity

European Identity and Cloud Conference 2022
May 10 – 13, 2022 | Berlin, Germany | KuppingerCole

“In the category Verifiable Credentials and Decentralized Identity...SITA was rewarded for its implementation of a verifiable credential solution for safe travel in the country of Aruba. With the use of a decentralized network, travelers can present secure health credentials to airlines, hotels, and hospitality partners in a private manner.”





Appendix

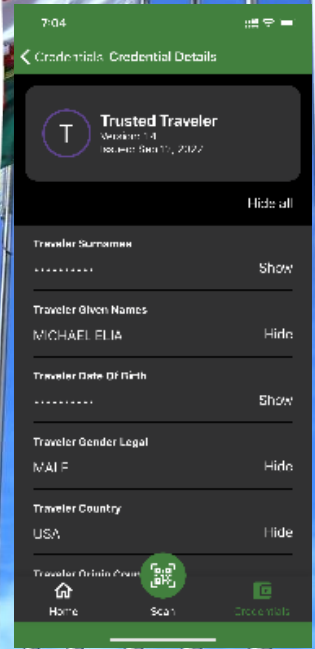
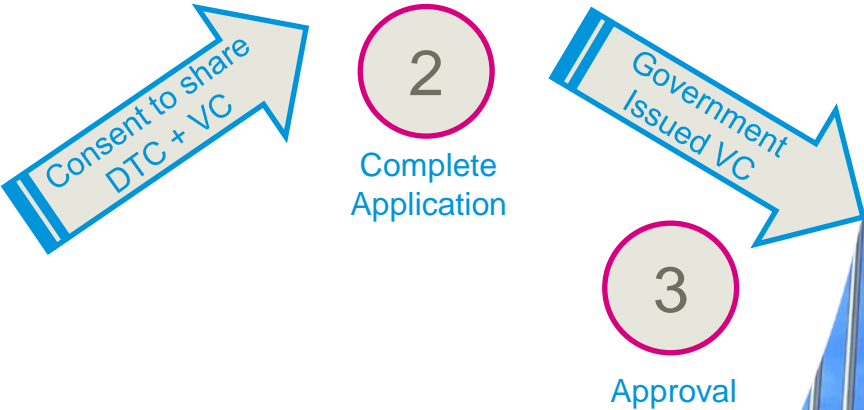
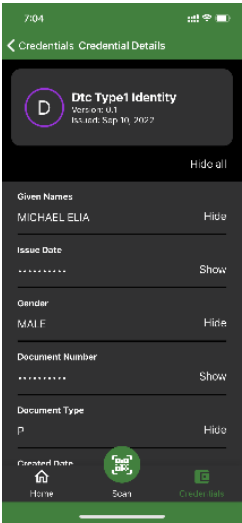
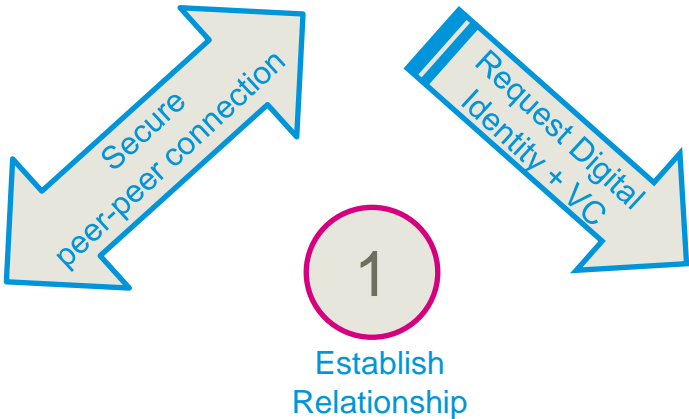
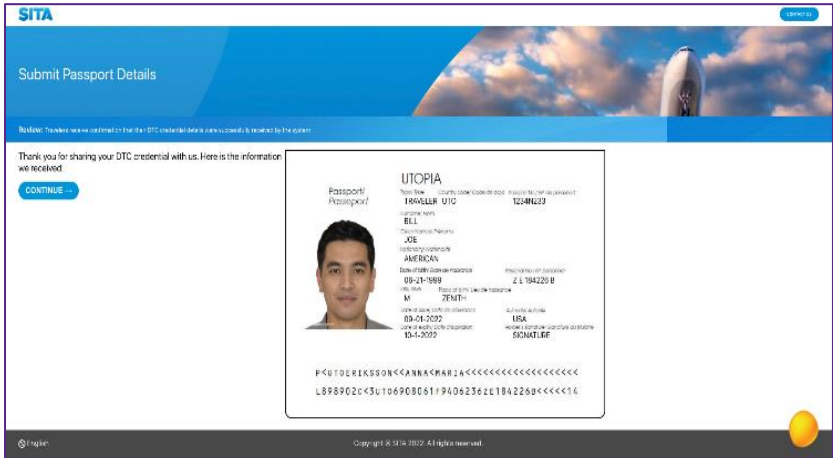
Aruba – Expanding to support the ICAO DTC 2022+

Applying for an Aruba EDCard can be easy as 1-2-3

A traveler, using their digital wallet, can easily apply receive an electronic travel authorization by consenting to share their health and DTC verifiable credentials.



Government eTA Web Site



Consuming Verifiable Credentials (VC)

The power of having Verifiable Credentials in a Digital Wallet.

The power of VCs is that they can be used behind the scenes for systems to exchange and trust information from a traveler. Imagine a world where....

- Biometrics can be linked to a VC for boarding from the airline DCS...
- Biometric corridors upon arrival for known and low risk travelers...
- Air Industry: Lounge, Duty Free, Security Screening....
- Other markets: cruise, rail, hotel, tourism venues...

