Digital Travel
credentials

Introduction &
Thales Trial Packages

The path to travel credentials' digitalisation

Facilitating travel experience

From 2024, air travellers' number will exceed pre-pandemic levels and according to IATA (International Air Transport Association), 4 billion people will take to the skies. **With this upward trend only set to continue, passenger terminal operators, border control authorities and other stakeholders are all seeking new ways to manage the growth in demand for international travel.**

At the same time, **digital identities are striving all over the world** with more than **1 billion digital credentials in circulation by 2027** according to the latest report from ABI Market Research. Citizens are getting used to the convenience of use of the digital era and are increasingly expecting similar experiences with government services and identity documents.

The digitalization of the passport into a **Digital Travel Credential (DTC)** sits at the convergence of these two trends. Already experimented today to facilitate travellers' journey in some airports, DTC will in the future allow to cross borders. It will then become a powerful ally of the physical document.

What is a Digital Travel Credential?

Digital Travel Credentials are a digital representation of a traveller's identity, intended to **substitute a conventional passport either temporarily or permanently.** As such, they are designed to be **as secure as their physical counterpart** and will embed a representation of the exact same information.

The International Civil Aviation Organization (ICAO), in charge of designing policies and standards to ensure cross border interoperability, has defined **three types of DTC,** which will **allow progressive development and adoption with a smooth transition from the current requirement** for passengers to present a physical passport **to a future where a smartphone can be presented to cross borders.**

DTC Type 1 (eMRTD Bound)

The DTC Type 1 is derived from the physical document by the user. As such, the DTC does not have an independent lifecycle from the physical passport. The DTC can be used for travel facilitation use cases only (immigration forms, bag drop, lounge, etc.). The physical passport must be presented to cross borders. ICAO specifications for DTC Type 1 have been published.

DTC Type 2 (eMRTD-PC Bound):

DTC Type 2 is an independent credential from the physical passport. It is derived from the physical document but digitally signed by the issuing authority.

DTC Type 3 (PC-bound):

DTC Type 3 is a fully independent digital credential, with its own lifecycle. Travellers will be able to use DTC Type 3 to cross borders and will unlock use cases such as emergency issuance of digital passport in case of lost document or supply chain delay.

3 TYPES OF DIGITAL TRAVEL CREDENTIALS IN A NUTSHELL

	TYPE 1 « self-derived » *eMRTD-bound*	TYPE 2 « authority-derived » *eMRTD PC-bound*	TYPE 3 « issued by authority» *PC-bound*
DESCRIPTION	**Digital copy** of eMRTD (derived). No dedicated lifecycle.	Unique digital credential, **data is derived from an eMRTD. Own lifecycle** linked to eMRTD.	Unique digital credential. **Autonomous from any eMRTD. Independent lifecycle.**
ISSUANCE	No issuance: simple file created from eMRTD. Holder must have an eMRTD	Issued by eMRTD Issuing Authority **from existing eMRTD**. Holder must have an eMRTD	Issued by the eMRTD Issuing Authority **from central system**. No physical eMRTD needed.
TYPICAL USES	• **Travel facilitation**: touchless experience in less sensitive checkpoints (face identification) • **Pre-travel** procedures (DTA, etc)	Same as Type 1, plus • Touchless in **sensitive checkpoints:** border, etc. (under travel's authority approval)	Same as Type 2, plus • **Digital emergency passport** • **Substitute to passport**
SECOND FACTOR FOR HIGHER SECURITY (PHYSICAL COMPONENT)	Holder must present eMRTD as well	Holder must present either eMRTD or/and mobile device	Holder must present the linked mobile device
STANDARDS READINESS		Est. 2025	Est. 2025

The promises of Digital Travel Credentials

In much the same way as today's ePassports enable passengers to use automated gates and bypass manual passport control, Digital Travel Credentials (DTC) will play a similar role – just processing people faster and more efficiently.

But digitalisation of the passport will do much more than accelerate existing self-service processes by enabling new ones.

Use cases enabled by DTC Type 3, starting in 2025

- **Instant digital emergency passport issuance:** Passengers that have lost their physical passports will be able to request the instant issuance of a Digital Travel Credential (Type 3) into their digital wallet. The DTC will be immediately issued from a centralized digital issuance system, in a secured and efficient manner. As such, nationals who are travelling and lost their passport abroad will be able to smoothly come back home, without having to visit consulates or embassies to get an emergency document.

  Consulates and embassies no longer have to manage decentralized personalization bureaus, saving on associated costs and logistics (blank booklets, etc.).

  Passengers get a replacement document in the matter of a few hours and do no longer have to spend time at local embassies or consulates, nor to re-arrange their trip.

- **Dual issuance of physical and digital documents:** Citizens will be granted the possibility to use a harmonized and integrated interface to request for both their physical passport and their DTC (Type 3). The issuing authority will be able to smoothly manage the operations of both issuances, and to provide make the most of the advantages of both formats (for example instantly issue DTC when physical passport issuance is facing supply constraints such as during post-Covid period).

  Citizens' expectations are improved by being delivered a travel document whatever the constraints on physical supply chain.

  Issuers' authorities improve their efficiency by handling both physical and digital issuance at once.

Use cases starting today, with DTC Type 1

- **Automated, remote & accurate form filling:** For passengers, the benefit of using a DTC Type 1 begins at home, as they avoid the need to enter their biographic details manually when completing web forms for on-line check in, or applying for an ETA, for example. Instead, the DTC, which is basically a data file, is shared with the relevant carrier or authority. The information provided is therefore 100% accurate and can be authenticated by the organisation it is shared with. This will increase border control security, as authorities will have increased capabilities to pre-screen travellers ahead of them arriving to the destination thanks to the DTC sharing.

  Carriers and authorities no longer need to spend time resolving erroneous data entries, the provision of accurate and early data creates further opportunities to enhance operational efficiency.

  Travellers will be able to instantly apply for and be issued a digitalized ETA that is securely provisioned and stored in their mobile Digital Travellers' Wallet, alongside other travel related secure documents.

- **Frictionless, paperless airport experience:** mobile DTC enables passengers to provide their data and consent in advance for participation in fly-to-gate airport programmes. They can therefore arrive at the airport and make their way through check-in, bag drop, security and boarding without ever having to take their passport out of their pocket. Along the way, either the DTC wirelessly communicates with the various kiosks and gates, or biometric matching is performed at controlled checkpoints.

  Travellers benefit from a true 'Fly-to-Gate' experience, based on an end-to-end chain of biometric-enabled touchpoints that stretch from the terminal entrance to departure gate.

  Stakeholders can better manage passengers flow and peak in demands while improving the user experience and without compromising on high security standards required at airports
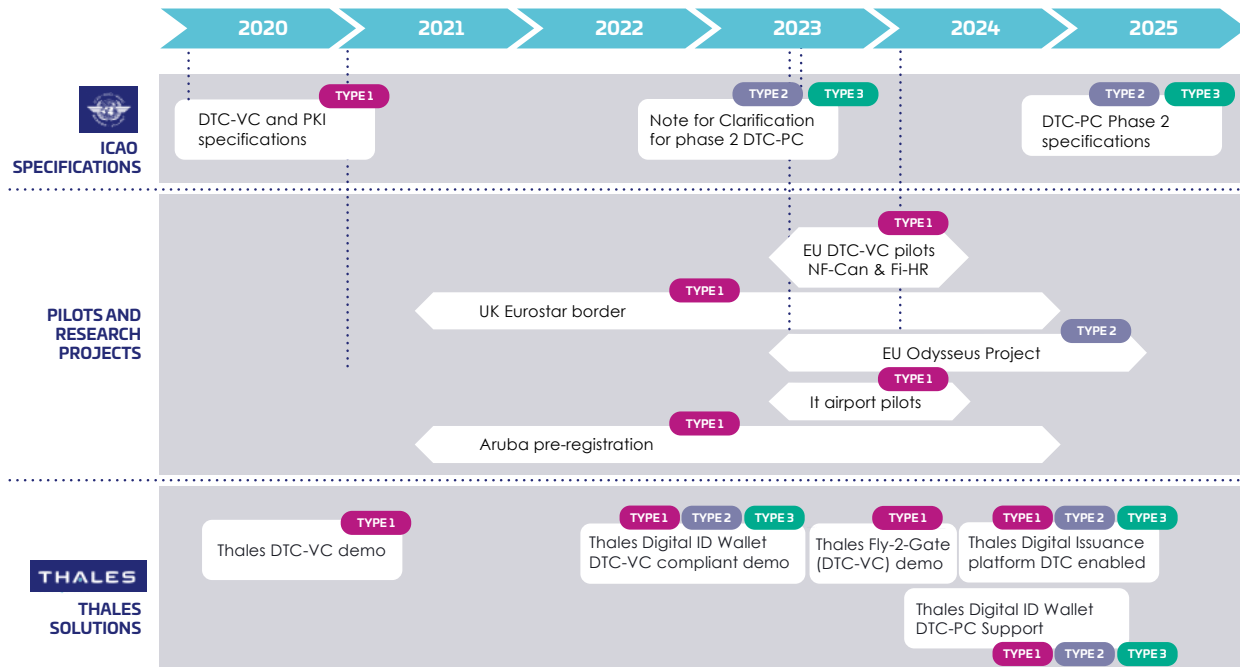
DTC represents the next wave of digital innovation and with the wide range of new use cases the technology enables, there's little doubt it will be at the centre of a new generation of border management systems.
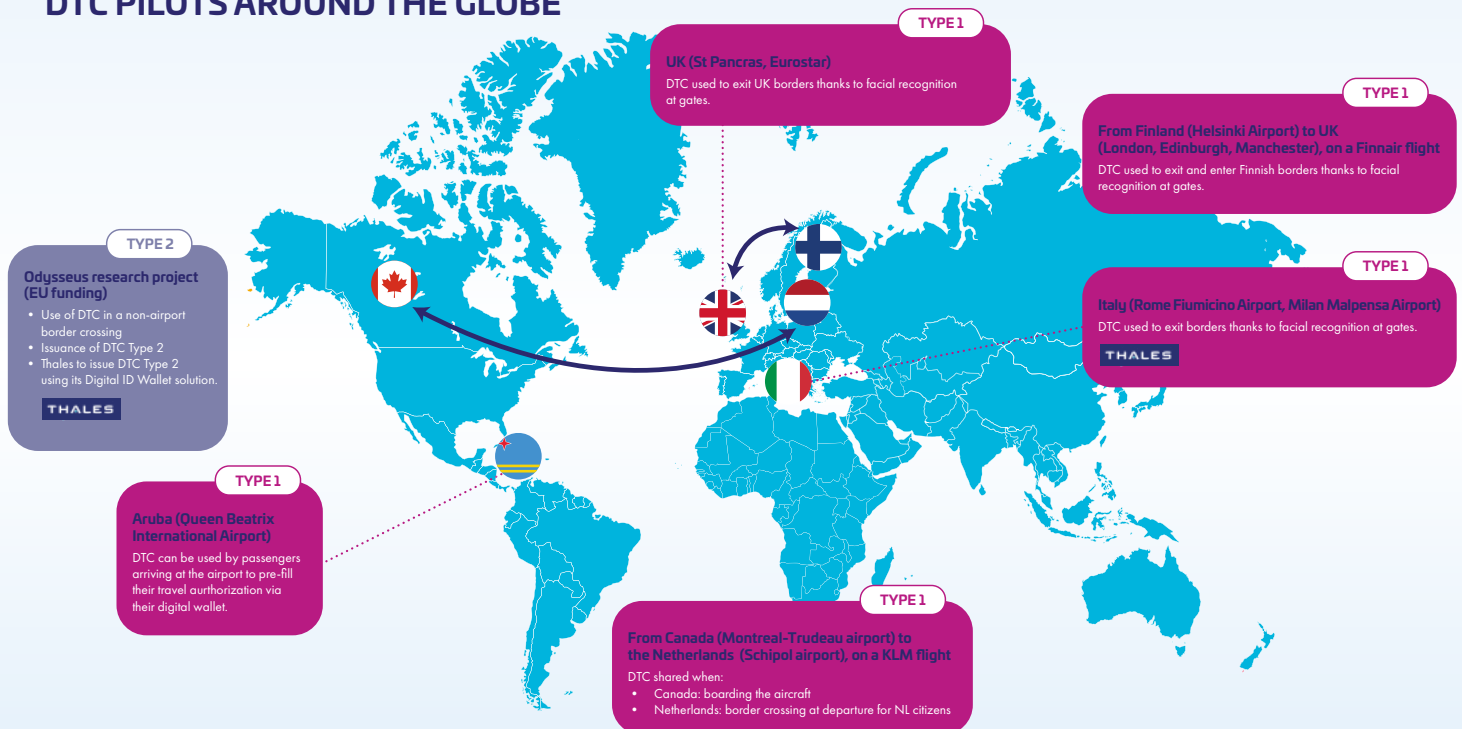
DTC status & pilots around the world

Standards, technology, and practice are being developed to make DTC a reality. As the timeline graph shows, the first DTC standard on DTC Type 1 was released by the International Civil Aviation Organisation (ICAO) in november 2020. Standardisation on DTC-PC Type 2 and 3,is expected to be finalised and endorsed by ICAO in 2025.

Thales is actively engaged in ICAO working groups, nurturing a virtuous feedback loop between our product roadmaps and international specifications. Our product suite is now 'DTC-ready' and already fully compliant with DTC standards as of 2024.

HIGH LEVEL TIMELINE

DTC PILOTS AROUND THE GLOBE

UK (St Pancras, Eurostar) — TYPE 1
DTC used to exit UK borders thanks to facial recognition at gates.

From Finland (Helsinki Airport) to UK (London, Edinburgh, Manchester), on a Finnair flight — TYPE 1
DTC used to exit and enter Finnish borders thanks to facial recognition at gates.

Italy (Rome Fiumicino Airport, Milan Malpensa Airport) — TYPE 1
DTC used to exit borders thanks to facial recognition at gates.

Odysseus research project (EU funding) — TYPE 2
- Use of DTC in a non-airport border crossing
- Issuance of DTC Type 2
- Thales to issue DTC Type 2 using its Digital ID Wallet solution.

Aruba (Queen Beatrix International Airport) — TYPE 1
DTC can be used by passengers arriving at the airport to pre-fill their travel aurthorization via their digital wallet.

From Canada (Montreal-Trudeau airport) to the Netherlands (Schipol airport), on a KLM flight — TYPE 1
DTC shared when:
- Canada: boarding the aircraft
- Netherlands: border crossing at departure for NL citizens

Why choose Thales to support your DTC initiative?

With unrivalled experience in the verification and authentication of travel documents and passports, biometrics, and mobile device and software security, benefit from a unique positioning to address DTC. Thales started investing in digital travel credentials more than 5 years ago, both through active participation to international standards and technology development.

Thales has combined leadership in :

- **Physical passport :** #1 in nb of docs issued
- **Footprint:** Every day, citizens from over 40 countries travel with a Thales ePassport
- **Border solutions :** 27 border & travel projects
- **Digital identity:** 20+ customer references around the globe
- **Digital security:** world leader in cyber security with expertise in both hardware, software security and data encryption.

Thales is actively investing in DTC:

- Active representation in international standardization bodies (ICAO)
- Currently delivering some DTC Type 1 pilots (Italy)
- Part of one of the only DTC Type 2 international research programs (ODYSSEUS)
- Thales product suite is fully DTC-compliant as per 2024
- GDPR compliant solution based on user consent

Industry recognition:

- Thales won Frost & Sullivan's 2019 Global Company of the Year Award, for innovative Mobile ID and Digital ID Wallet solutions that offer advanced features, certified security, and strong overall performance.
- Juniper Research recognised **Thales as the Established Leader in Digital ID for 5th year in a row** (2019, 2020, 2021, 2022, 2023)
- Thales repeatedly achieves **top rank results in NIST's ongoing biometric performance** evaluations.
- Thales recognized as the #1 Digital Identity Player in 2024 Juniper's report
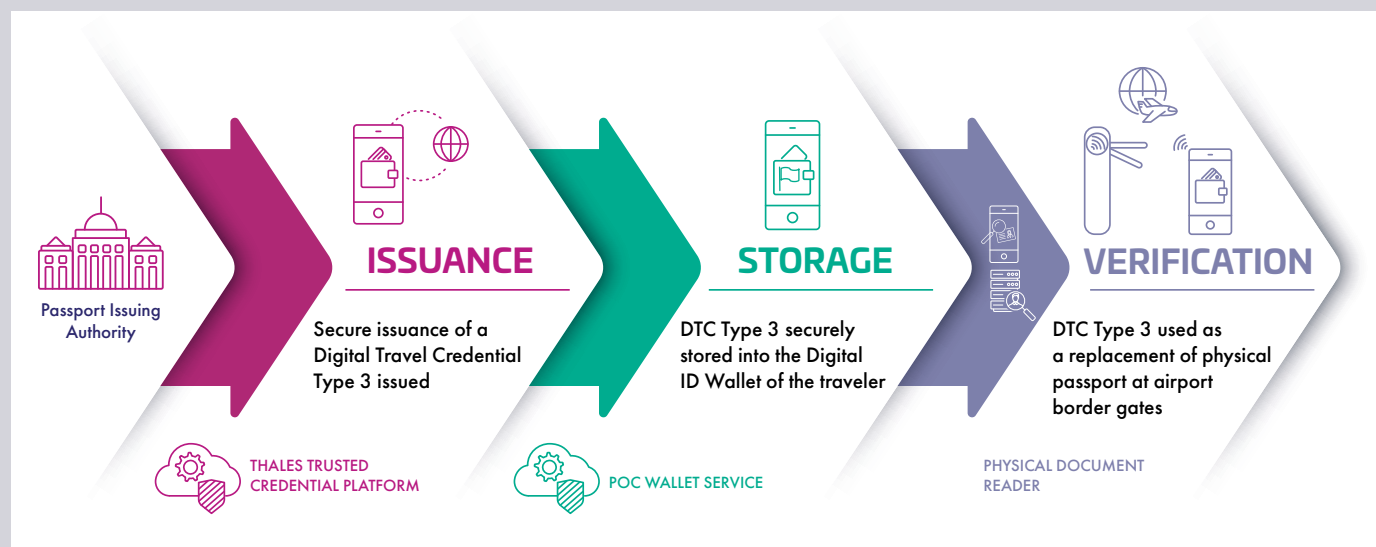
Trial Pakages

Thales would be delighted to work closely with you in the piloting of a Digital Travel Credential. A few pilots have already been ran as previously mentioned in this paper on Type 1 DTC, this is why we would recommend focussing on experimenting DTC Type 3.

To achieve this, we can offer a stepped approach:

STEP 1: Internal POC

The objective of that first step is to experiment the concept and demonstrate it to both internal and external stakeholders. It would consist of a full DTC ready product-suite to **experiment DTC Type 3 issuance, storage onto a wallet, and presentation to cross a border gate.** The POC would run on 'mock' citizens identity information generated by Thales for the purpose of the experimentation.

PROPOSED POC FUNCTIONAL SCOPE

Passport Issuing Authority

ISSUANCE

Secure issuance of a Digital Travel Credential Type 3 issued

THALES TRUSTED CREDENTIAL PLATFORM

STORAGE

DTC Type 3 securely stored into the Digital ID Wallet of the traveler

POC WALLET SERVICE

VERIFICATION

DTC Type 3 used as a replacement of physical passport at airport border gates
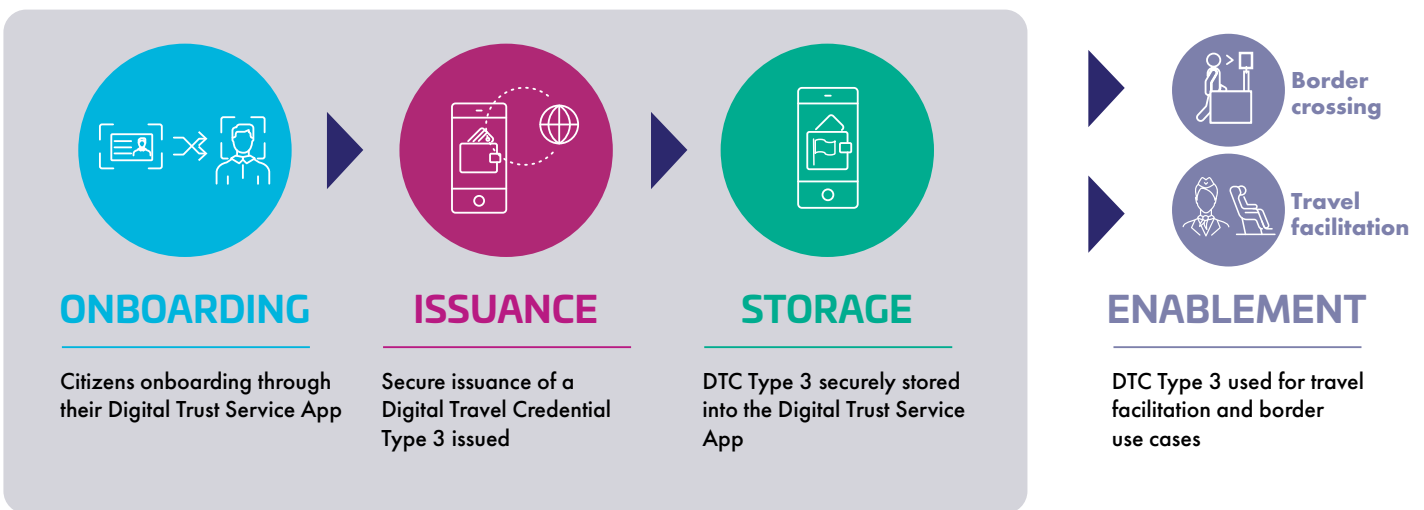
PHYSICAL DOCUMENT READER

STEP 2: International pilot including another country

That second step would be focused on demonstrating DTC Type 3 usage in real life for international travel, from your country to an international partnering country. That time, it would include a set of real beta-testers and multiple parties within the country (passport office, border forces, possibly an airline) and in the partnering country.

Several use cases will be experimented by the group of beta testers, such as:

• instant emergency issuance of a Digital Travel Credential
• paperless airport experience from border crossing to dropping luggage, entering the lounge, etc.

PROPOSED PILOT FUNCTIONAL SCOPE

ONBOARDING
Citizens onboarding through their Digital Trust Service App

ISSUANCE
Secure issuance of a Digital Travel Credential Type 3 issued

STORAGE
DTC Type 3 securely stored into the Digital Trust Service App

ENABLEMENT
Border crossing

Travel facilitation

DTC Type 3 used for travel facilitation and border use cases

EVERYONE EVERYTHING EVERYDAY

At Thales, we have a vision of a more secure future. A future we can all trust.

As technology transforms our lives, secure proof of identity, and authentication for connected services become ever more important. We are world leaders in delivering secure digital identities, and the means to verify them, for everyone and everything. Already trusted by governments and enterprises globally, our certified solutions deliver the robust yet smooth interactions that keep your world moving, your business growing and digital identity secure, every single day. Building a future we can all trust.

Why Thales?

We offer a chain of trust for organisations and convenience for end users. As the world becomes more and more digital, it is still our people that make the difference. They understand the nuances of different sectors and organisations. Importantly, they understand what motivates people and put the user first to ensure any new digital identity project delivers success and rapid adoption.

Digital identity is part of our DNA. We are already at the heart of multiple markets – from telecoms and government to financial services – and share best practices between our teams. We know that our pivotal position in the digital identity ecosystem and collaborative approach with partners means we can find or develop a solution for our customers.

There are many more people who work hard behind-the-scenes at Thales to ensure every service we provide is seamless for our customers. Testing infrastructure security. Ensuring compliance with the latest regulations. Advancing biometric technology.

Innovation is critical across Thales. Without exploring new ideas we could not offer the kind of future-proofing our customers need. As a Group we invest heavily in R&D, and our approach to innovation has even won awards, including not just one but two Nobel Prizes for Physics.

THALES

Building a future we can all trust

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