

International Aviation Trust Framework (IATF) *Overview and update*



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Drivers for Change

- Passenger & freight growth
- Capacity and efficiency demands
- Digital transformation of aviation ecosystem
- New entrants
- New and emerging cyber threats



Diverging Efforts

- Economic drivers require the increase of automation, increasing digital data exchange, requiring international interoperability
- States recognize need for securing their information exchange
- New Entrants need a robust and secure digital network
- ICAO is late to act on this need



Many Viewpoints - Shared Problem...



...Establish Identity and Maintain Trust



Converging Strategy

- Interoperability requires global coordination and cooperation
- Identify common needs that can unite the diverse community
- Develop common solutions that build on existing foundations
- Agree on a common destination – where there is still one interoperable sky



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Identity and Trust

- The foundational principal of the global aviation network that connects us today
- A core function of ICAO since 1944
- A modern Identity and Trust Framework now seems essential
 - Based on common standards
 - Anchored in State sovereignty
 - Facilitate global recognition of trust
 - Applied consistently across the system



Credibility Flows from the Regulator

- Regulators spend countless hours interacting with all the components of the aviation ecosystem
- If a State regulator authorizes an electronic certificate to be issued to an airplane, facility, or service under control, the world can trust that electronic identity



Licenses, certificates, authorizations and approvals already handled by regulators

- Aerodromes
- Air Operators
- Aviation Maintenance Organizations
- Producers of aircraft, engines, propellers and parts
- Air Traffic Service Provision
- MET Service Provision
- AIS Service Provision
- Telecommunications and Navigation Facilities
- Remotely Piloted Aircraft Systems
- Design of aircraft, engines and propellers
- RVSM Monitoring Agencies
- Personnel
- Unmanned Traffic Management (UTM)
- Upper class E Traffic Management (ETM)
- Future Autonomous Systems?

Digital Identity

- Public key infrastructure (PKI)
- Trust anchored in proven regulatory processes
- Commercial certificate authorities handle the mechanics of electronic certificate issuance under policies and processes developed by States and Industry
- Requires a trust bridge for interoperability



Trust Bridge

- In aviation, a trusted digital identity needs to be validated and recognized as it travels across the globe
- In legacy aviation this was done with paper and fax machines
- In a digital world it is done through the exchange of digital information across interconnected registries





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A trusted digital identity is essential, but so is a modern resilient secure network





How the ICAO IATF is addressing that need

- Working group of IATF is defining a Global Resilient Aviation Interoperable Network (GRAIN)
- A federated global network that takes advantage of IP-based infrastructure while providing logical isolation from the public internet
- ICAO will eventually request a large IPv6 address block and Top-Level Domain
- These assets will be made “private” and will provide a first layer of logical isolation from the public internet
- ICAO defines the governance and procedures required to allow for secure global interoperability



What Has Happened Since DE/2

- Following the 13th Air Navigation Conference, Air Navigation Commission and Council agreed to for a Study Group that has the flexibility to include industry participants from non-aviation industries
- First meeting in May 2019.
 - Three working groups identified
 - Trust Reciprocity and Operational Needs (TRON)
 - Digital Identity Working Group (DIWG)
 - Global Resilient Interoperable Network Working Group (GRAIN)



What Has Happened

- Groups have had multiple face-to-face meetings since May. Virtual meetings and telecons are nearly continuous
- Multiple use cases are under development
- Certificate Policy for the IATF under development (target Q2 2020)
- Network policies and requirements are under development which will address governance, addressing, naming, and operational oversight
- Test plans being developed to validate policies and processes in the field
- Additional industry and government support is expected as the products mature and the benefits become apparent



What Will Happen

- Working groups will meet face-to-face several times per year.
- Next full meeting of TFSG in February 2020.
- States and industry will continue expanding their support.
- Technical requirements will be matured and passed on to panels and ANC.
- Much of the work will focus on harmonization of Standards, policies and practices already in place across regions.
- Proof of concept is being planned between Eurocontrol & FAA and will be expanded incrementally to other regions.
- TFSG work is expected to conclude its work as quickly and possible (about 2 years). Not expected to be a standing committee.