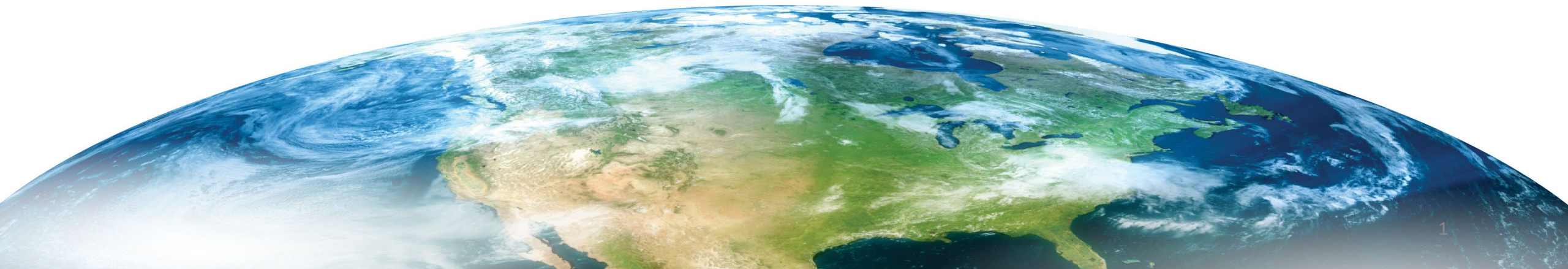




International Aviation Trust Framework (IATF)

August 2020



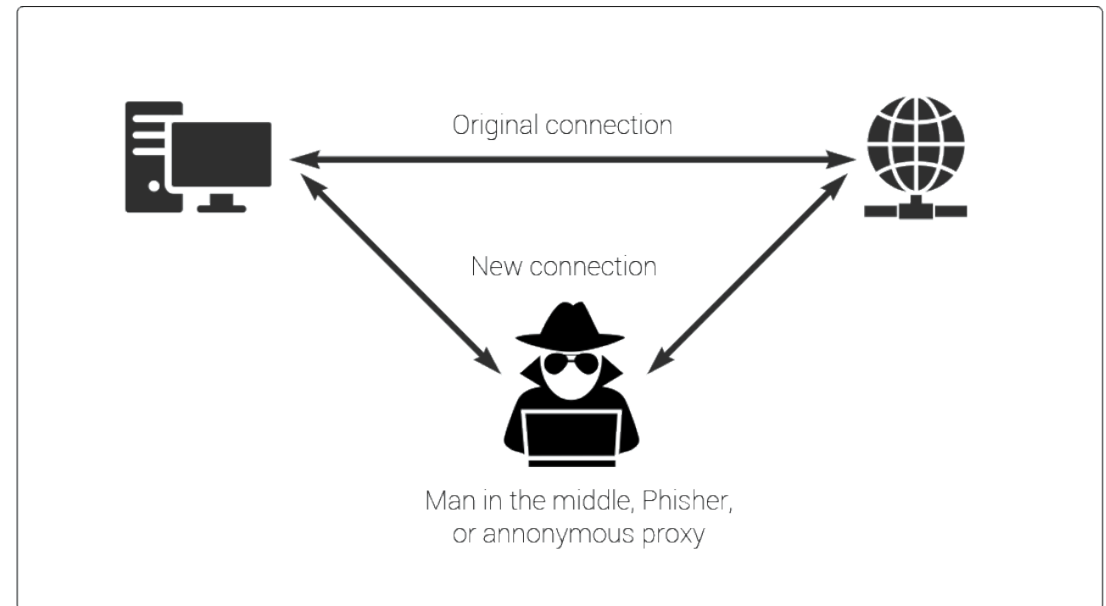
Problem Statement

- The cost of fit for purpose networks and the use of protected spectrum limits the ability to grow the network connectivity, bandwidth and worldwide ATM automation integration required to grow aviation capacity and the integration of Unmanned Aerial systems
- The use of ubiquitous network peering across commercial networks including unprotected spectrum will require end to end information integrity between information producer and consumer to assure network trust and safety



Man in the Middle (MITM) Attacks: an Aviation Threat

- Man-in-the-middle(MITM) attacks occur when the attacker manages to position themselves between the legitimate parties to a conversation
- The attacker spoofs the opposite legitimate party so that all parties believe they are actually talking to the expected party
- A MITM attack allows the attacker to eavesdrop on the conversation between the parties, or to actively intervene in the conversation to achieve some illegitimate end

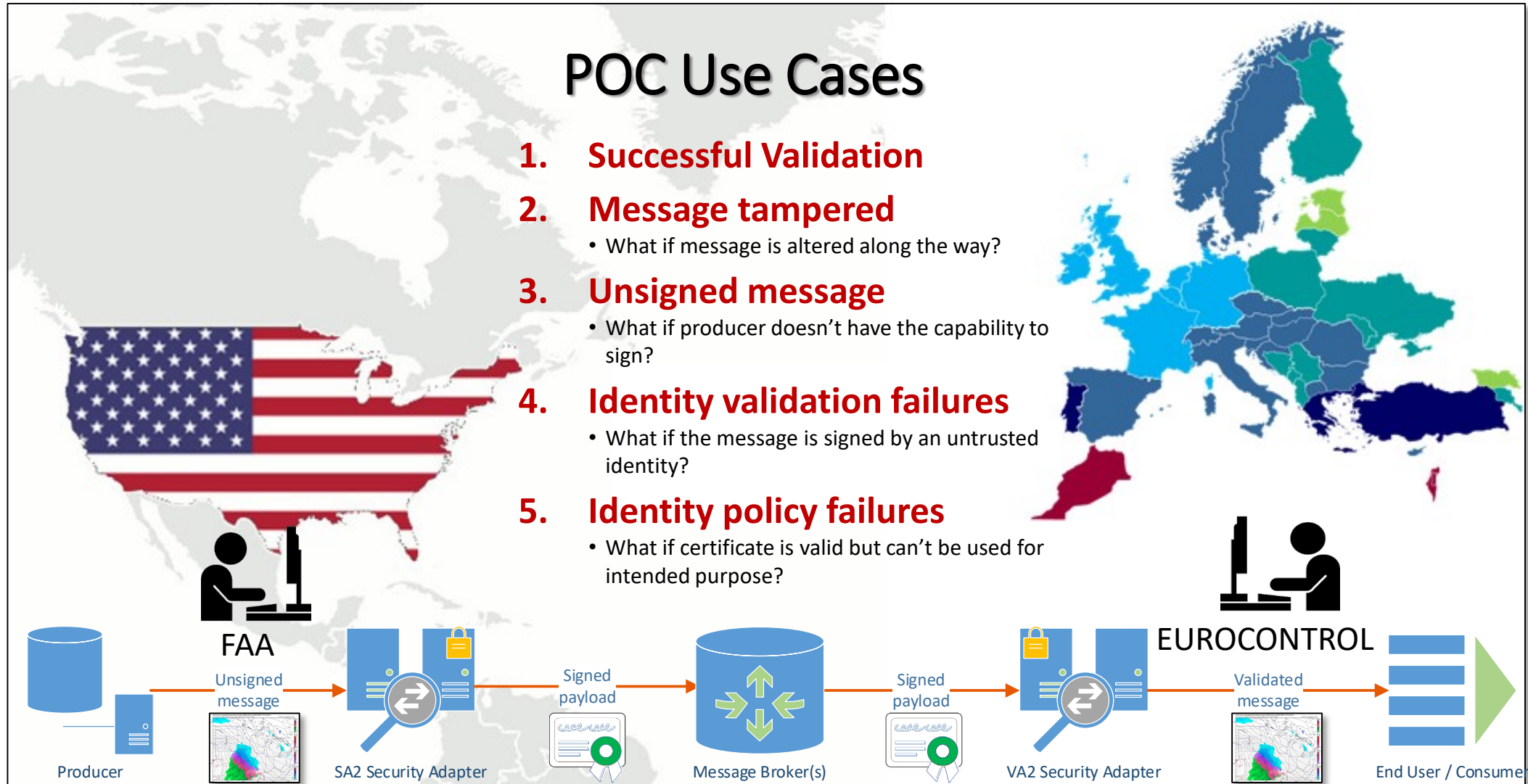


- A MITM attack can also occur by modifying information at rest (e.g. stored on a cloud server)

SWIM Signing as a Service (Sa²) and Validation as a Service (VA²)

POC Use Cases

1. **Successful Validation**
2. **Message tampered**
 - What if message is altered along the way?
3. **Unsigned message**
 - What if producer doesn't have the capability to sign?
4. **Identity validation failures**
 - What if the message is signed by an untrusted identity?
5. **Identity policy failures**
 - What if certificate is valid but can't be used for intended purpose?



International Aviation Trust Framework (IATF)

- IATF participant Identities are trustable:
 - Common IATF Master Trust Framework agreement
 - Common Identity Policies audited through IATF
- Information flow between IATF participants are attributable to the IATF identity source of the information by digitally signing the information
- IATF enabling networks called Global Resilient Aviation Information Network (GRAIN) is trustable:
 - Common Network Policies audited through IATF
 - Trusted Network addressing
 - Trusted Domain Naming Services
 - Trusted Network Operations through security monitoring



IATF Scope

- **Unified legal agreement**

- Terms and conditions
- Liabilities
- Indemnifications
- Warranties

- **Industry based audit practice**

- e.g. Web trust Audit
- e.g. ISO 27001 ISMS

- **Managed performance based requirements**

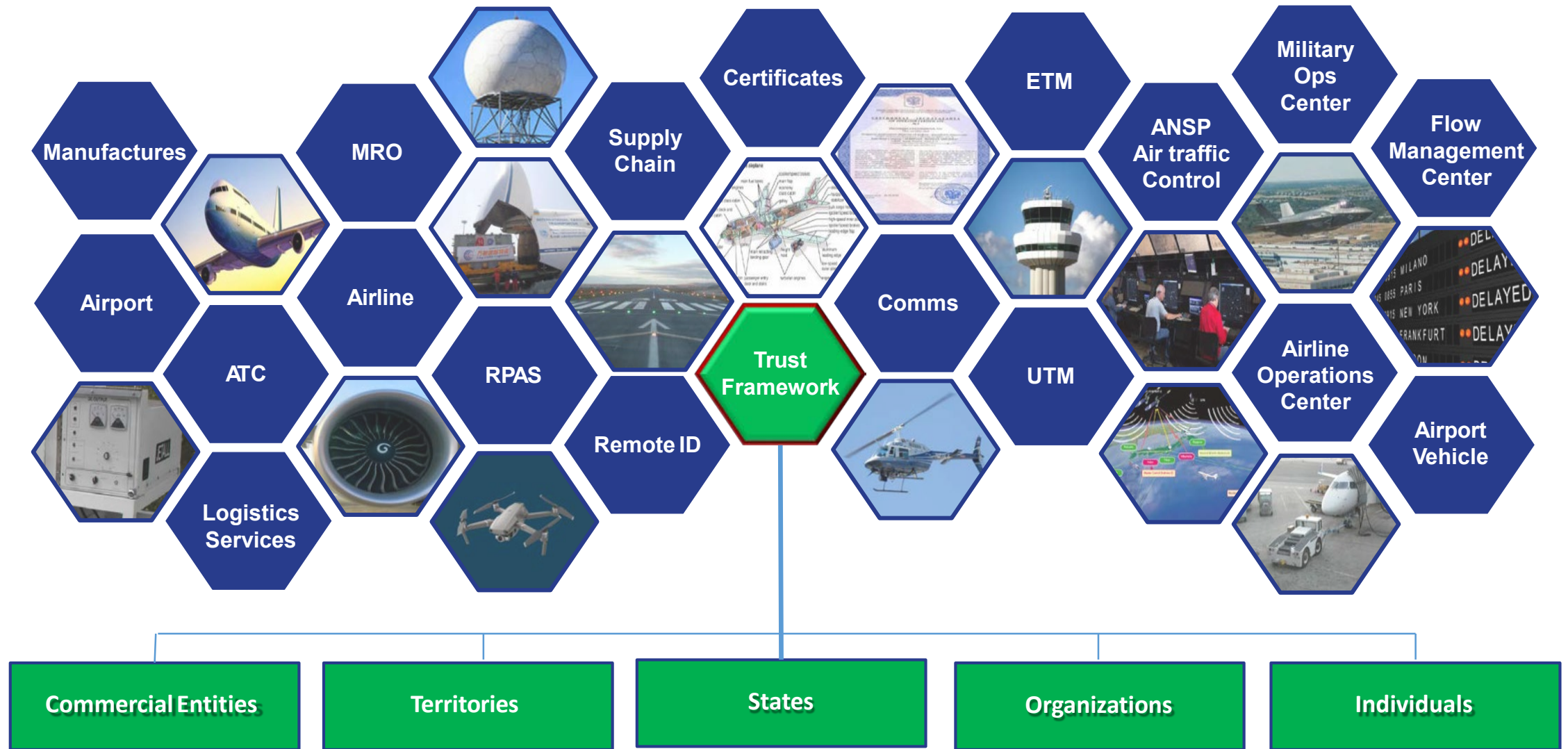
- Trusted Identities
 - Identity policy
- Trusted Networks
 - Network policy

- **Managed services**

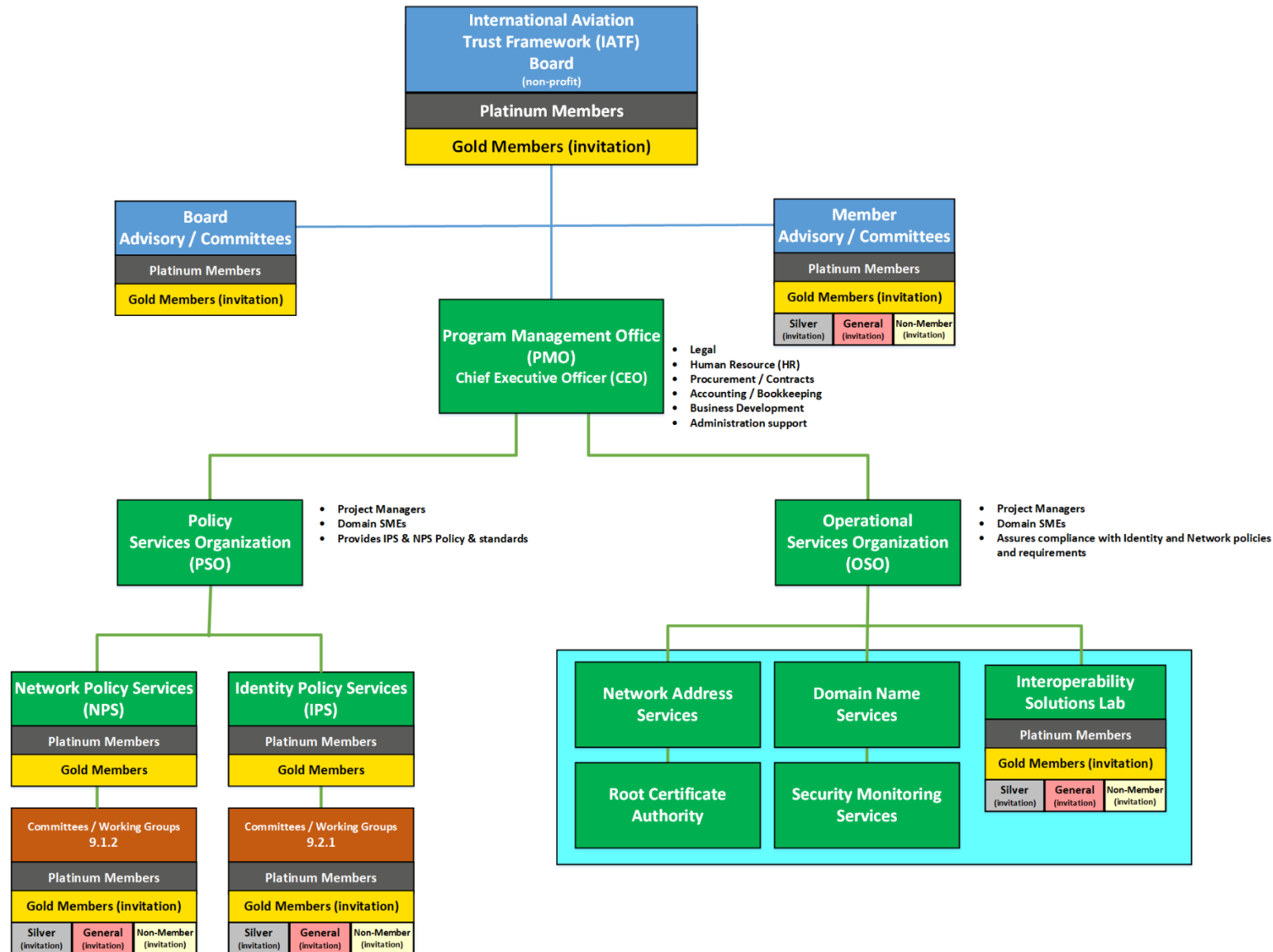
- Trust Anchor
- Domain Naming
- Network addressing
- Security Monitoring
- Interoperability Lab



Common Need Across the Ecosystem... Establish Trust and Maintain Trust



IATF Organization



Legend



Purpose of IATF Bylaws

The purpose of the IATF Bylaws is to:



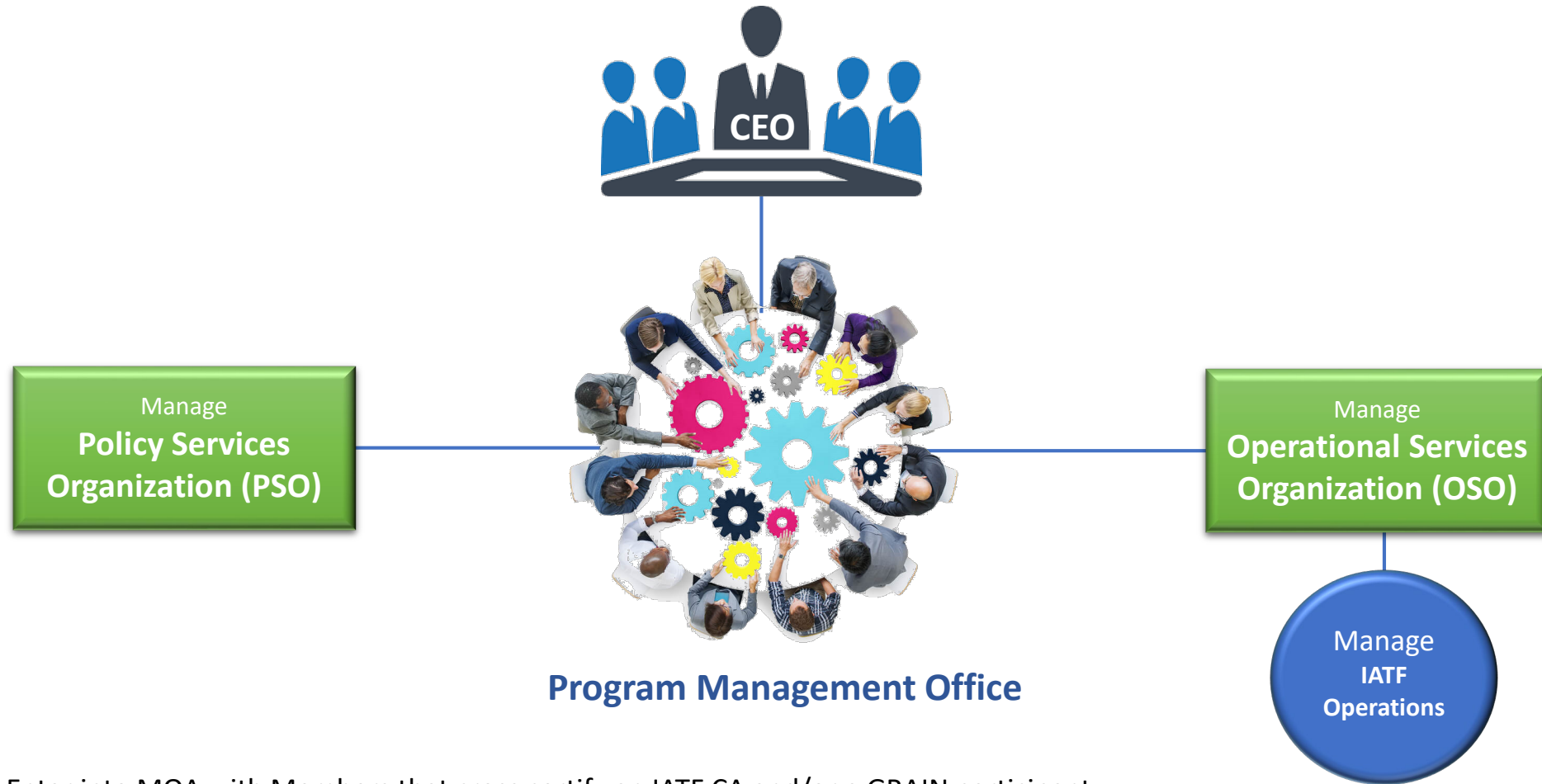
- Establish IATF's management structure and the roles and responsibilities of its Board and Members
- Establish the IATF Committees and Organizations
- Define IATF's procedures, dispute resolution processes, and specify how IATF will conduct its affairs

IATF Bylaws Contents Overview

Article I	IATF Name	Article X	IATF Program Management Office (PMO)
Article II	Registered Office and Agent	Article XI	Policy Services Organization (PSO)
Article III	IATF Purposes and Powers	Article XII	IATF Operations Service Organization (OSO)
Article IV	IATF Members	Article XIII	IATF Member Committees
Article V	Board	Article XIV	Contracts, Checks and Deposits
Article VI	Meetings of the Board	Article XV	Books and Records; Fiscal Year
Article VII	Board Committees	Article XVI	Indemnification
Article VIII	Board Advisory Groups	Article XVII	Conflicts of Interest
Article IX	Board Officers		



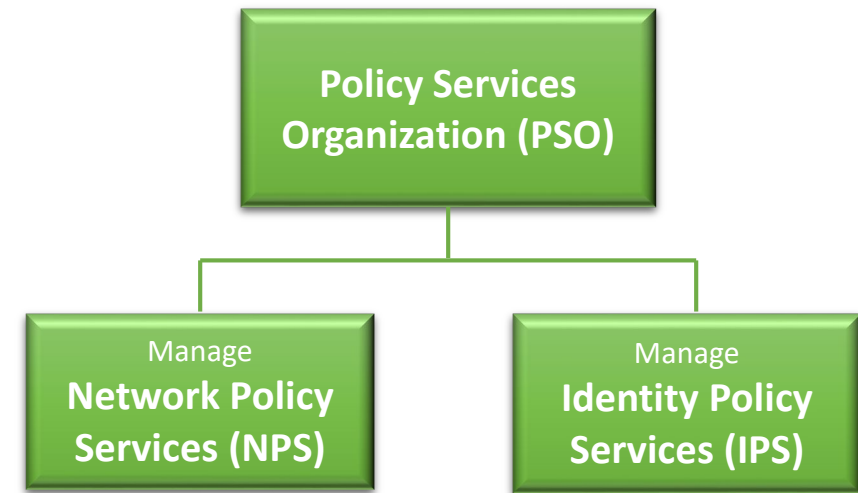
IATF Program Management Office



- Enter into MOA with Members that cross certify an IATF CA and/or a GRAIN participant
- Legally obligate to relevant contracts, policies, and Master Trust Framework Service Agreement (MTFSA) with certified Members

Policy Services Organization (PSO)

- Operates under the PMO
- Responsible for all activities in the Identity Policy Services (IPS) and the Network Policy Services (NPS) organizations
- Led by the VP of Policy who is responsible for the operation of the IATF Identity and Network Services



- Ensures IATF member's compliance with IATF requirements
- Oversees that certified Members, service providers and suppliers are operationally compliant with their own policies
Policy Accepts or rejects applications from members desiring to interoperate using the IATF and approve certification of members.
- Ensures continued conformance of a certified Member with applicable requirements as a condition for allowing continued interoperability using the IATF

Identity Policy Services Organization (IPS) & Network Policy Services Organization (NPS)

The IPS and NPS Executive Bodies consists of the Policy Chair and three Platinum or Gold members. The Program Management Office (PMO) acts as advisors.

Identity Policy Services (IPS)

- Reports directly to the PSO
- Is composed of representatives from IATF Platinum and Gold members.
- Establishes and approves policies and standards related to its credentials and its Certificate and Identity Authority,
- Manages the digital identity system through which members can trust each other's credentials
- Determines that the appropriate levels of assurance are satisfied consistent with the standards, specifications, and common operating rules for the IATF
- Enforces identity standards for trusted identity authentication across and between members
- Ensures that IATF Members fulfil their responsibilities under the IATF policies
- Defines the Digital Identity policy and works as required with the NPS to ensure policies are consistent
- PSO and IPS define network policies and ensures they are consistent between network and the IATF Identity Policies

Network Policy Services (NPS)

- Reports directly to the PSO.
- Is composed of representatives from IATF Platinum and Gold members.
- Establishes, approves and maintains policies and standards related to the GRAIN and ensures compliance by the IATF members participating in GRAIN.
- Is responsible for oversight of compliance of policies

Operations Service Organization (OSO)

Operational Services Organization (OSO)

- Operates under the PMO
- Is led by the VP of Operations
- Is responsible for the operation of the IATF Identity, Network Services, Interoperability Lab and Service providers
- Is responsible for establishing and maintaining an Interoperability Lab to validate that Members are compliant with the Identity and Network policies.
- Complies with IATF Identity and Network policies and requirements
- Conducts and manages identity and network day to day operations
- Oversees the operations and appoints individuals to other roles within the identity or network services.
- Establishes and maintains contractual relationships if services are outsourced.
- Keeps the PMO informed of any material or significant issues and their resolution by providing detailed after action reports which include the facts surrounding the issue encountered, and the resolution of the matter.
- Keeps the PSO informed of any desired policy changes that need to be considered resulting from ongoing operations.

IATF Members

Member Categories: Airlines, Air Navigation Service Providers (ANSPs), Aviation manufacturers, Communication Service Providers (CSPs), Identity Service Providers, Domain representatives, Region representatives, Registration Service Providers, States etc.

Classes of Members: Platinum, Gold, Silver, General, (Non-Members)



Platinum Member Rights & Responsibilities

Rights



- Serve on the Board through leadership roles in the direction, policy, and governance of IATF (**voting role**)
- Serve on Board Committees and Advisory Groups (**voting role**)
- Participate in the Identity Policy Services Organization (IPS), Network Policy Services Organization (NPS), committees, advisory working groups and project teams
- Chair or Co-Chair IPS and/or NPS
- Access to IATF Interoperability Lab and IATF Specifications

Responsibilities



- Access to draft and released IATF specifications
- Provide executive leadership to the Board and support for executive committees and advisory groups
- Participate in and provide resources to the IPS, NPS working committees and groups and project teams
- Be in good standing with the IATF policies and requirements, Identity and Network Audits
- Align its roadmap to the IATF capabilities and policies at the Member's discretion
- Promote the use of IATF specifications

Gold Member Rights & Responsibilities

Rights



- Participate in the direction, policy and governance of the IATF (in a **non-voting role**)
- Serve on Board Committees and Board Advisory Groups (in a **non-voting role**)
- Participate in the IPS, NPS, committees, advisory working groups and project teams
- Chair or Co-Chair IPS and/or NPS
- Access to the IATF Interoperability Lab
- Access to draft and released IATF specifications

Responsibilities



- Provide executive input to the Board and support for all executive committees and advisory groups
- Participate in and provide resources to the IPS, NPS working committees and groups, and project teams
- Be in good standing with the IATF policies and requirements, Identity and Network Audits
- Align its roadmap to the IATF capabilities and policies at the Member's discretion
- Promote the use of IATF specifications

Silver Member Rights & Responsibilities

Rights



- Participate in an advisory role on committees, working groups or project teams
- Access to the IATF Interoperability Lab
- Access to draft and released IATF specifications

Responsibilities



- Align its roadmap to the IATF capabilities and policies at the Member's discretion
- Be in good standing with the IATF policies and requirements, Identity and Network Audits
- Promote the use of IATF specifications
- Adjust the Member company's products and services roadmap towards becoming compliant with IATF specifications

General Member Rights & Responsibilities

Rights



- Participate in advisory committees, working groups or project teams (invitation)
- Access to the IATF Interoperability Lab (pay for service)
- Access to released IATF specifications

Responsibilities



- Participate in IATF Special Interests Groups and Symposiums
- Facilitate industry collaboration in the operational implementation of relevant policies
- Be in good standing with the IATF policies and requirements and Audits



State Rights & Responsibilities

Rights



- Government can be platinum, gold, silver or general membership
 - States can only have 1 representative as Board or (IPS and/or NPS) voting member
- Governmental organizations have all the rights of the membership category they belong to

Responsibilities



- Governmental organizations have all the responsibilities of the membership category they belong to



Non-Member Rights & Responsibilities

Rights



- Advise in limited committees, groups and project teams as subject matter experts (SMEs) (by invitation)

Responsibilities



- Be in good standing with the IATF policies in particular non-member non disclosure agreement (NDA)
- Have a Member Sponsor
- Facilitate industry collaboration in the operational implementation of relevant policies



IATF Board

Composition



- Representatives of the IATF's Platinum Membership
- Elected at the annual meeting of the Platinum Members
- Composed of nineteen (19) Platinum Members, not including of the Chief Executive Officer of the IATF, who shall serve ex-officio without vote
- Board Members may select one alternate
- Nominations to be made at or prior to any annual meeting of the Platinum Members

Term of Office

- Each Board Member shall serve for a term of three years with a maximum number of two consecutive terms or until a replacement is elected.



IATF Board Committees (Platinum and Gold Members)

Strategy Committee



Make recommendations to the Board regarding the IATF's strategic goals and objectives.

Government Alignment Committee



Exchange information concerning issues related to the harmonization of State regulations as they impact the direction of the IATF.

Aviation Alignment Committee



Exchange information concerning issues related to the harmonization of aviation policies and operations as they impact the direction of the IATF.

Technical Architecture Committee



Make recommendations to the Board regarding the IATF's architecture, roadmap, and other technical matters.

Questions



IATF Board Duties & Activities

Powers



- Manages and oversees business and affairs of the Board and acts on IATF's behalf
- Defines and approves high-level goals, specifications, and requirements to be implemented in the IATF
- Holds and exercises corporate authority and fiduciary duties of the IATF
- Develops policies on issues affecting the management of identity management and network systems or services for IATF Members
- Responsible for endorsing selection of an IATF Operator (OA) by the Program Management Office (PMO)

Duties



- Establishes and maintains IATF corporate structure
- Establishes IATF's mission, purposes, goals, and program priorities through a strategic planning process
- Ensures development and implementation of the IATF operational governance and policies and sets the IATF operating policy
- Establishes fiscal policy and creates and maintains the budget, contractual and legal resources
- Submits an Annual Report, by the Board Chairman, to the IATF Members
- Maintains information regarding or access to resources related to: Legal, Regulatory, Privacy, Security and HR requirements

IATF Board Meetings

Regular Board Meetings



- Annual meeting of the Board shall be held at the same time and place as the annual meeting of the Platinum Members
- Board may provide by resolution or calendar notice the time and place for the holding of additional meetings
- Election of Board Members will occur at the annual meeting

Special Board Meetings

- Special meetings of the Board may be called by, or at the request of, the Chair or any two board members, or by a majority of the Platinum Members

Annual Platinum and Gold Members Meeting

- Annual Platinum and Gold Members meetings may be held at any place specified by the Board

Voting

- Each Board Member elected by and representing a Platinum Member shall have one vote
- Affirmative vote of a majority of the Board Members is made by a two-thirds (2/3) quorum of the Board members, required for the adoption of any matter voted upon by the Board

IATF Board Committees (Article V-IX)

Executive Committee



- Comprised of the Chair, the Secretary, the Treasurer, and one or more Board members, elected at large each year by the Board
- Possesses and exercises all powers of the Board in the management of the business and affairs of the IATF when the Board is not in session

Governance & Bylaws Committee

- Comprised of to five Board members appointed by the Board Chair.
- Responsible for maintenance of IATF Bylaws and oversight of Board's governance activities

Finance and Audit Committee

- Reviews and provides guidance for IATF's financial matters.
- Reviews IATF's financial statements and reports on financial activity to the Board
- Reviews IATF's revenues and expenditures, balance sheet, investments related to its ongoing financial viability
- Approves annual budget and submits it to the Board for approval

IATF Board Advisory Groups

Executive Advisory Group

- Comprised of executive representatives of Platinum and Gold Member
- Serves as advisors to the Board on the strategic direction of the IATF

Leadership Advisory Group



- Serves as advisors on the development of the IATF's annual strategy and roadmap development activities
- Establishes and manages committees and working groups necessary to support roadmap development activities and ensure alignment of work products to IATF's strategic goals and objectives
- Composed of representatives of Platinum and Gold Members and reports to the PMO

Legal Advisory Group

- Advises the Board on legal, policy and governance issues, particularly with regard to compliance with applicable laws and regulations
- Comprised of attorney representatives or designees from Platinum and Gold Members



IATF Board Officers/Duties

The Chair, Vice Chair, Secretary, and Treasurer serve two-year terms and are elected by the Board every other year at the annual Platinum meeting.

Chair



- Presides at meetings of the Members, the Board, and the Executive Committee
- Determines the regular agenda of meetings of the Executive Committee, the Board Members, and the Members
- Presents a report at the Annual Meeting
- Appoints the chairs and members of committees (except the Executive Committee)

Vice Chair



- Acts in place of the Chair in the event of the absence of the Chair
- Exercises other duties delegated by the Board

Secretary



- Maintains Certificate of Incorporation and the Bylaws, as well as any dated amendments
- Maintains minutes of all meetings of the Members and the Board, and any committees having any of the authority of the Board
- Serves as custodian of IATF records and ensures that IATF documents are executed on behalf of the IATF

IATF Board Officers/Duties

Treasurer



- Maintains of the properties and financial transactions of the IATF
- Deposits monies and other valuables in the name of and to the credit of the IATF
- Causes all the funds of the IATF to be disbursed as ordered by the Board.
- Renders an accounting of all IATF financial transactions and a statement of the financial condition of the IATF
- Causes an annual audit of the IATF's financial affairs to be conducted

Chief Executive Officer



- Has necessary authority to operate the IATF in all its activities
- Acts as the duly authorized representative of the IATF
- Responsible for the management of the IATF
- Responsible for the application and implementation of established policies in the operation of the IATF
- Acts as an ex-officio member of the Board without a vote
- Maintains appropriate records and prepares all necessary reports, returns, and filings
- Prepares an operating budget and financial statements

Amendments to Bylaws

- Power to alter, amend, or repeal the Bylaws of the IATF, or to adopt new bylaws, is vested in the Platinum Members
- Notice of any proposed amendment is provided to all Platinum members of the Board
- Affirmative vote of a two-thirds (2/3) quorum of the Board members effectuates the change or amendments.
- A vote on the proposed changes will be taken, with the Secretary noting the outcome of the voting.
- Record of the change is maintained in IATF records
- Digitally signed copy of the amended bylaws is distributed to board members via email.

