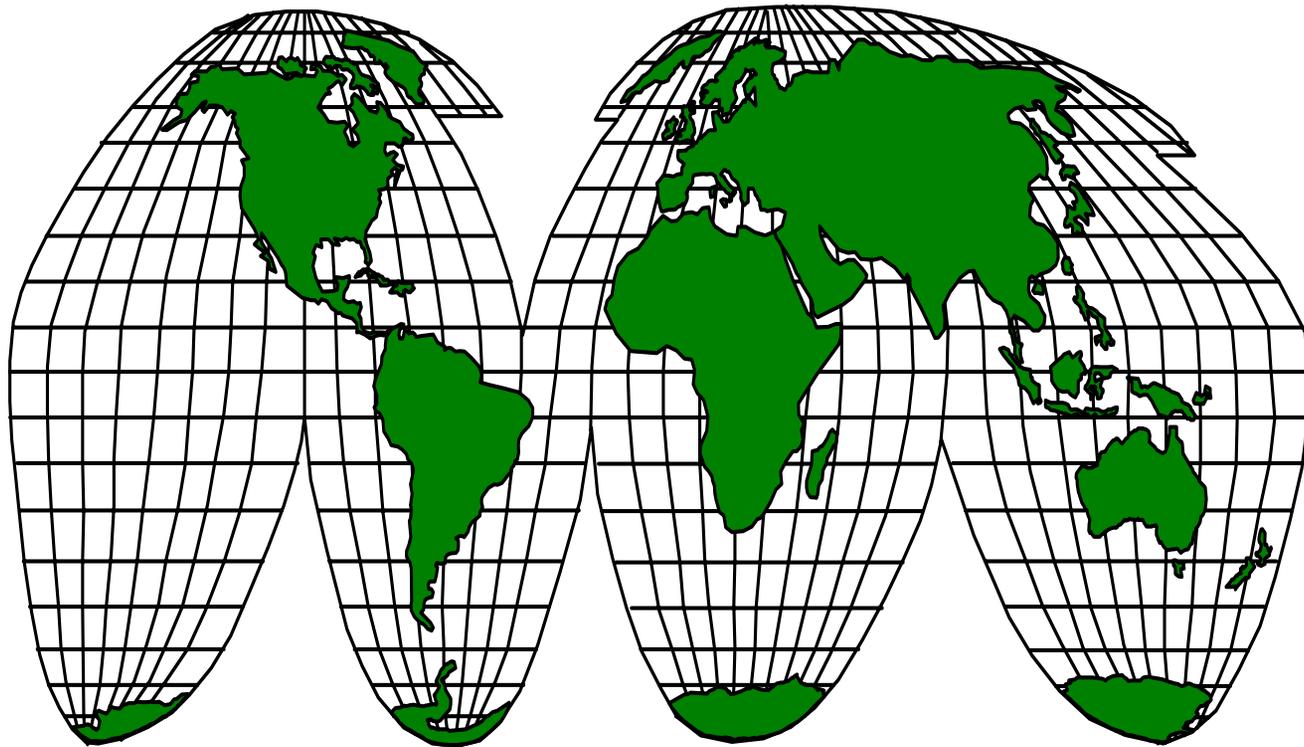


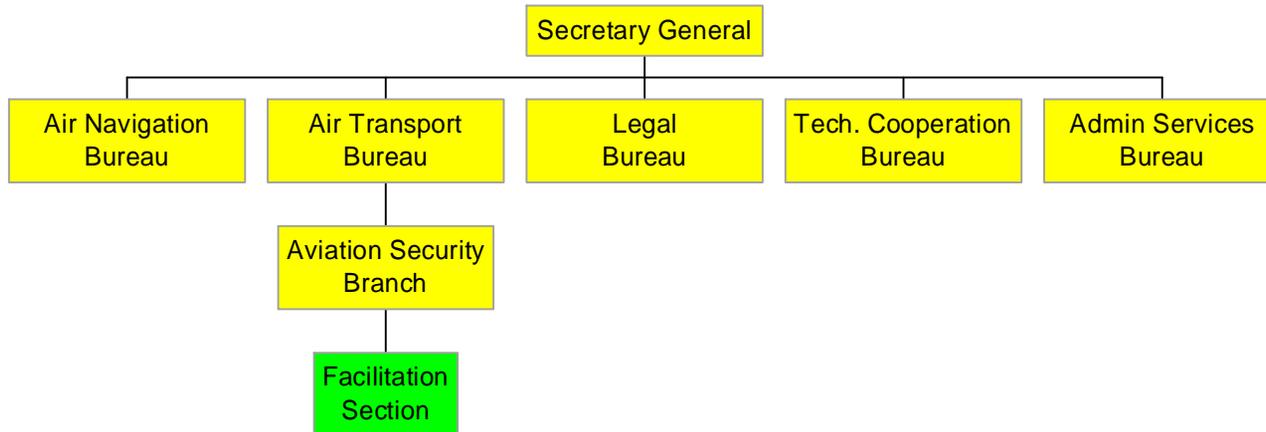
# **ICAO: THE TECHNICAL ADVISORY GROUP FOR MACHINE READABLE TRAVEL DOCUMENTS**



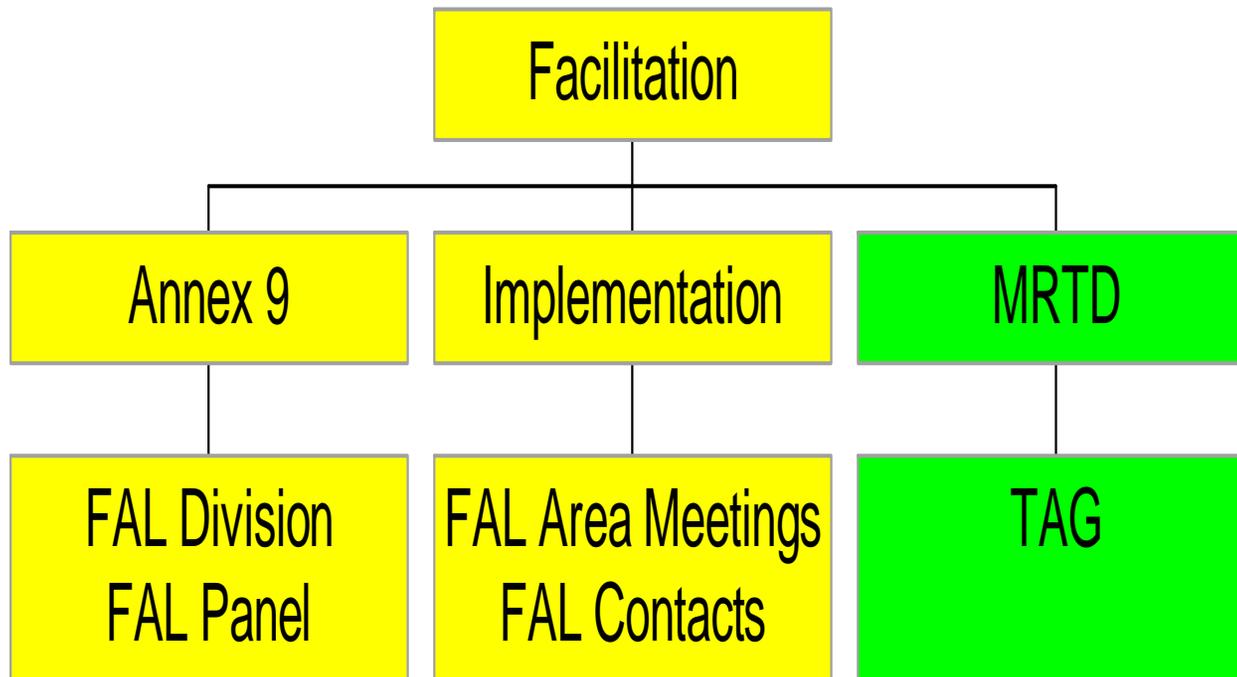
# **International Civil Aviation Organization (ICAO)**

- ❖ **United Nations specialized agency**
- ❖ **Established in 1945 by Chicago Convention**
- ❖ **Headquarters in Montreal**
- ❖ **Regional Offices in 7 Countries**
- ❖ **ICAO Assembly (188 Nation States)**
- ❖ **ICAO Council (33 Nation States)**
- ❖ **ICAO Committees (e.g. Air Transport Committee)**

# ICAO Organization Chart



# Facilitation “FAL” Responsibilities



# **TAG Members**

- ❖ **USA**
- ❖ **Canada**
- ❖ **Australia**
- ❖ **Netherlands**
- ❖ **United Kingdom**
- ❖ **France**
- ❖ **Japan**
- ❖ **Germany**
- ❖ **Czech Republic**
- ❖ **Sweden**
- ❖ **New Zealand (1998)**
- ❖ **India**
- ❖ **Russia (1998)**

## **TAG –Observers**

- Argentina
- Austria
- Belgium
- Brazil
- Cameroon
- China
- Croatia
- Egypt
- Estonia
- Ethiopia
- Finland
- Ghana
- Greece
- Honduras
- Hong Kong
- Ireland
- Israel
- Jamaica
- Korea
- Latvia
- Lesotho
- Mali
- Mauritius
- Mexico
- Moldova
- Nigeria
- Norway
- Pakistan
- Panama
- Philippines
- Poland
- Portugal
- Saudi Arabia
- Singapore
- Spain
- Sri Lanka
- Switzerland
- Thailand
- Turkey

# Stakeholders in TAG-MRTD

- ❖ **Governments**
  - Passport and Visa issuing agencies
  - Border Control and Immigration
  - Customs
  - Police and Forensic Labs
  - Others, e.g. FAA, Public Printers, USDA
  - Int'l Orgs, e.g. UN, ICAO, Interpol, WCO
- ❖ **Non-Governmental Organizations (NGOs)**
  - Int'l Standards Organization (ISO)**
  - Int'l Air Transport Association (IATA)
  - Airports Council International (ACI)
  - World Travel & Tourism Council (WTTC)

# **ISO/IEC JTC1/SC17 Committee**

**Int'l Stds Org/Int'l Elect Comm Joint Tech Comm 1/Sub Comm 17  
“Identification Cards and Related Devices”**

- ❖ **WG1 - Physical Characteristics & Test Methods**
- ❖ **WG3 - Machine Readable Travel Documents**
- ❖ **WG4 - Integrated Circuit Cards with Contacts**
- ❖ **WG5 - International Issuer Numbers and Application Identifiers**
- ❖ **WG8 - Contactless Integrated Circuit(s) Cards**
- ❖ **WG9 - Optical Memory Cards**
- ❖ **WG10 - Drivers Licenses**
- ❖ **OWG -Other Working Group**

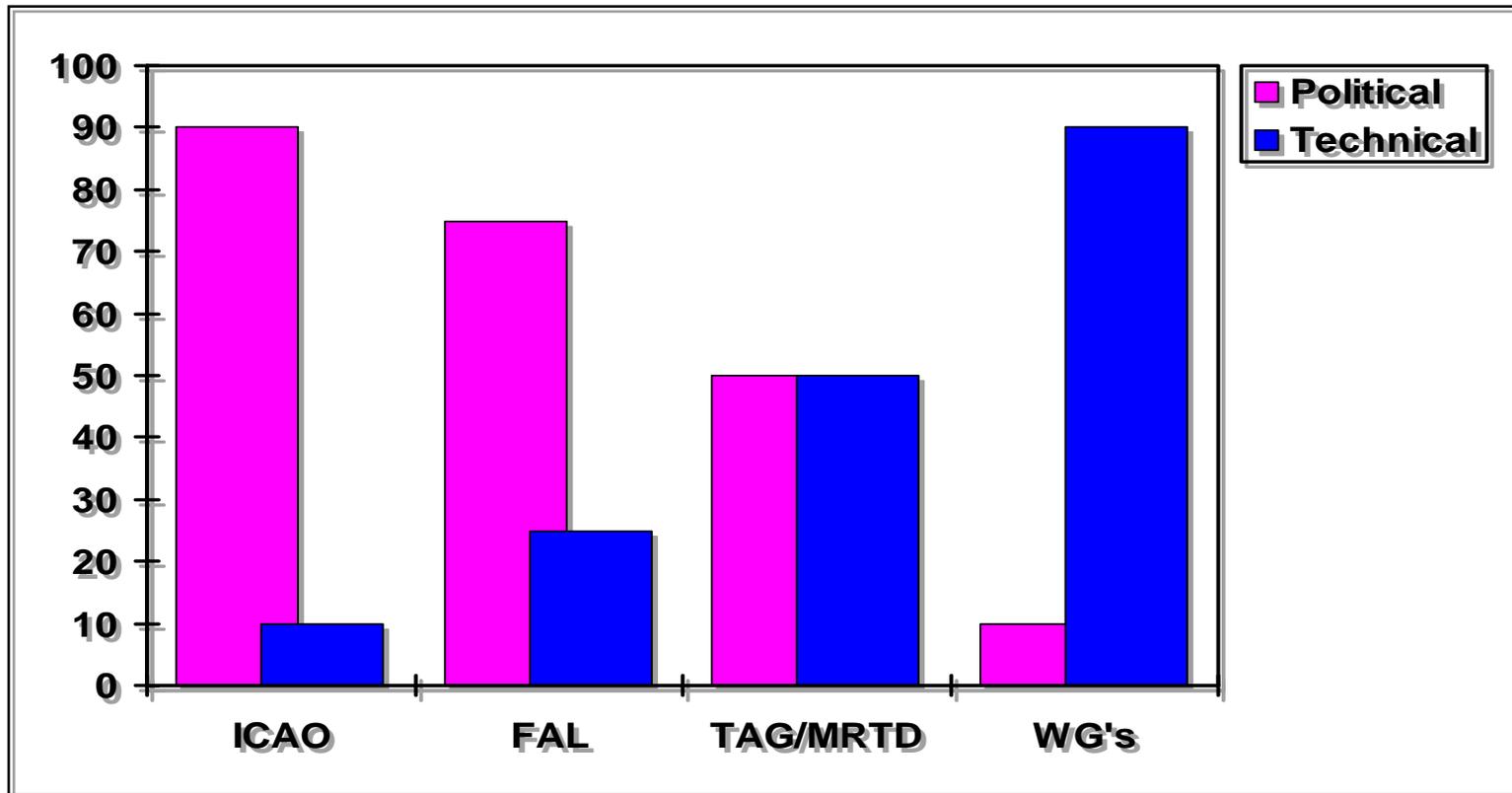
# Comparison of ICAO and ISO

| <b>Main</b>      | <b>ICAO</b>                                                                                                                                              | <b>ISO</b>                                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Oversight</b> | Facilitation Section (FAL)                                                                                                                               | Sub Committee 17 (SC17)                                                                                                       |
| <b>Focus</b>     | Technical Advisory Group (TAG/MRTD)                                                                                                                      | Working Group 3 (WG3)                                                                                                         |
| <b>Technical</b> | Working Groups <ul style="list-style-type: none"><li>- Doc Content &amp; Format</li><li>- Education &amp; Promotion</li><li>- New Technologies</li></ul> | Task Forces <ul style="list-style-type: none"><li>- Harmonization</li><li>- Applications</li><li>- New Technologies</li></ul> |

# **Documents of ICAO & ISO**

- ❖ **ICAO Doc 9303 = ISO Standard 7501**
- ❖ **Doc 9303 Parts 1 (Passports) and 2 (Visas) are endorsed by ISO as Std 7501 Parts 1 & 2**
- ❖ **Doc 9303 Part 3 (Travel Documents a.k.a. Cards) endorsed by ISO as Std 7501 Part 3**

# Relationship between Political and Technical Factors



# **Key Considerations Concerning Biometrics Deployment**

- ❖ **Public acceptability**
- ❖ **Practicality of capture**
- ❖ **Practicality of deployment**
- ❖ **Proprietary ness - protecting investment against changing infrastructure or changing suppliers**
- ❖ **Impact on MRTD issuance process**
- ❖ **Impact on Border Security and Border Control**
- ❖ **Impact on design and manufacture of MRTDs**
- ❖ **Costs of deployment**

## Overarching ICAO/NTWG Goals

- **Global Interoperability** – the crucial need for specifying how the biometrics deployed are to be used in a universally interoperable manner
- **Uniformity** – the need to minimize via specific standard setting, to the extent practical, the different solution variations that may potentially be deployed by member States
- **Technical Reliability** – the need for provision of guidelines and parameters to ensure member States deploy technologies that have been proven to provide a high level of confidence from an identity confirmation viewpoint; and that States reading data encoded by other States can be sure that the data supplied to them is of sufficient quality and integrity to enable accurate verification at their end
- **Practicality** – the need to ensure that recommended standards can be operationalized and implemented by States without them having to introduce a plethora of disparate systems and equipment to ensure they meet all possible variations and interpretations of the standards
- **Durability** – that the systems introduced will last the maximum 10-year life of a travel document, and that future updates remain backwards compatible.

**“ICAO TAG-MRTD/NTWG RESOLUTION N001 -  
Berlin, 28 June 2002**

**ICAO TAG-MRTD/NTWG endorses the use of face recognition as the globally interoperable biometric for machine assisted identity confirmation with machine readable travel documents.**

**ICAO TAG-MRTD/NTWG further recognizes that Member States may elect to use fingerprint and/or iris recognition as additional biometric technologies in support of machine assisted identity confirmation.**

***Endorsement: Unanimous”***

In reaching this resolution, NTWG observed that for the majority of States the following advantages applied to face:

- **Facial photographs do not disclose information that the person does not routinely disclose to the general public**
- **The photograph (facial image) is already socially and culturally accepted internationally**
- **It is already collected and verified routinely as part of the MRTD application form process in order to produce a passport to ICAO Document 9303 standards**
- **The public are already aware of its capture and use for identity verification purposes**
- **It is non-intrusive – the user does not have to touch or interact with a physical device for a substantial timeframe to be enrolled.**
- **It does not require new and costly enrolment procedures to be introduced**

- **Capture of it can be deployed relatively immediately and the opportunity to capture face retrospectively is also available**
- **Many States have a legacy database of facial images captured as part of the digitized production of passport photographs which can be encoded into facial templates and verified against for identity comparison purposes**
- **It can be captured from an endorsed photograph, not requiring the person to be physically present**
- **It allows capture of children's biometrics without the children having to be present**
- **For watch lists, face (photograph) is generally the only biometric available for comparison**
- **It always acquires**
- **Human verification of the biometric against the photograph/person is relatively simple and a familiar process for border control authorities**

## NEW ORLEANS RESOLUTION 21 March 2003

In order to clarify NTWG Resolution N001 of June 28, 2002 (commonly referred to as the "Berlin Resolution"), and taking into account recent developments in data storage technologies, the NTWG hereby resolves:

ICAO TAG-MRTD/NTWG recognizes that Member States currently and will continue to utilize the facial image as the primary identifier for MRTDs and as such endorses the use of standardized digitally- stored facial images as the globally interoperable biometric to support facial recognition technologies for machine assisted identity verification with machine-readable travel documents.

ICAO TAG-MRTD/NTWG further recognizes that in addition to the use of a digitally stored facial image, Member States can use standardized digitally- stored fingerprint and/or iris\* images as additional globally interoperable biometrics in support of machine assisted verification and/or identification.

Member States, in their initial deployment of MRTDs with biometrics identifiers, are encouraged to adopt Contactless IC media of sufficient capacity to facilitate on-board storage of additional MRTD data and biometric identifiers.

\* at the time the resolution was made, the endorsement of iris was "subject to the resolution of intellectual property issues". At its meeting in The Hague in February 2004, NTWG determined that on the basis of subsequent correspondence, these issues have now all been resolved to the satisfaction of NTWG.

## **The Logical Data Structure (LDS) Technical Report**

**To ensure global interoperability for machine reading of stored details, TAG/MRTD initiated the development of a standardized organization of data (“Logical Data Structure” or ‘LDS’) for the recording of details in a capacity expansion technology.**

**As part of this work, unique ‘mappings’ – ways of storing the Logical Data Structure - were developed to ensure optimal recording for each capacity expansion technology, as well as compliance with published International Standards specific to that technology.**

## **The PKI Issue**

**The ICAO PKI initiative is intended to provide standards and a simple international infrastructure to support digital signatures applied to machine readable passports.**

**These digital signatures are particularly intended to permit authentication of basic data as contained in the machine readable zone of the passport, plus digitized biometrics and other data, that are stored in the passport's chip.**

**The *PKI Technical Report* presents a customized approach that will enable the MRTD community to fast-track implementation of this application for MRTDs with IC Chip read-only access, and take advantage of its benefits without attempting to address larger PKI policy issues and complex hierarchies.**

**Certificates are used for security purposes, along with a proposed methodology for public key (certificate) circulation to member States, and the infrastructure is customised for ICAO purposes.**

## **ICAO Specifications have aided Countries deploying E-passports. Where?**

- Andorra
- Australia
- Austria
- Belgium
- Brunei
- Bulgaria
- Canada
- Denmark
- Estonia
- Ethiopia
- Finland
- France
- Germany
- Iceland
- Ireland
- Italy
- Japan
- Liechtenstein
- Luxembourg
- Malaysia
- Monaco
- Netherlands
- New Zealand
- Norway
- Portugal
- Romania
- Russia
- San Marino
- Singapore
- Slovenia
- Somalia
- Spain
- Sweden
- Switzerland
- Thailand
- United Kingdom
- United States