# International Civil Aviation Organization
# New Technologies Work Group
# 2013/2014 Request for Information

## 1 BACKGROUND

The International Civil Aviation Organization (ICAO) Technical Advisory Group on Machine-Readable Travel Documents (TAG MRTD) is responsible for the development of specifications for travel documents with the goal of global interoperability. In addition, the TAG MRTD seeks to advise ICAO on technology issues related to the issuance and use of machine-readable travel documents.

The TAG MRTD, through its New Technologies Working Group (NTWG), issues an RFI every three years in order to keep abreast of new and improving technologies. Relevant information gathered during the RFI process is summarized and shared among the 191 ICAO Contracting States. ICAO also considers this information when international standards are developed.

## 2 AREAS OF INTEREST

Information regarding technologies that may be used in machine-readable passports, visas and card-based travel documents is sought for consideration. The technologies sought are to assist in the following areas:

assessment of applicant eligibility

document security and production

linking documents to holders/bearers

providing reliable authentication of genuine documents

facilitating secure and reliable transit of travelers through airports, seaports and other international border control points.

Interested parties are invited to provide technical, application environment and pricing information for technologies in the following categories:

| Category | Requirement |
|---|---|
| 1. Cryptography | Cryptography that can be used for access control and authentication of e-MRTDs.<br>● Anti-skimming method<br>● Chip authenticating method |

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| | | ● Data protecting method |
| 2. | Live Capture of Images | Biometrics including face, fingerprint and iris that may be used for online applications and/or kiosk systems and/or open air (outdoor) applications. Live capturing image systems for following purposes are also welcomed:<br>● for border inspection process working under environmentally harsh conditions; and/or<br>● for children's application and/or border inspection. |
| 3. | Facial Matching Algorithms | Algorithms that can be used to verify facial images at travel document application or border control.<br>● Comparing an image submitted by applicant with registered images in databases.<br>● Comparing a live captured image with registered images in databases.<br>● Consider aging, different poses, glasses or other factors that inhibit accurate matching.<br><br>Algorithms that work for children's photos are also welcomed. |
| 4. | Photo Quality Assessment Systems | Assessment Systems that can be utilized to judge whether a facial photo submitted by travel document applicants is compliant with the photo specifications provided in Doc 9303 and appropriate ISO standards. |
| 5. | Image Manipulation Detection Systems | Image manipulation detection systems that can be utilized for inspection of submitted facial photos by travel document applicants in order to prevent attacks such as morphing. |
| 6. | Hand Held Traveller Processing Systems | Systems that can be utilized to inspect travel documents and verify their holders in various situations where online systems cannot be used.<br>● Smart phones and their application with MRTDs<br>● Smart phones and their applications for the use of ICAO PKI to authenticate MRTD data |
| 7. | Physical Security Features | Physical security features that protect travel documents from counterfeiting, photo-substitution, alteration of text on the data page, and replacement of IC inlays. Features that can make it easy to recognize visually and/or be authenticated at automatic border |

| | | control by automated inspection systems are welcomed. |
|---|---|---|
| 8. | Machine Authentication of Documents | Systems and/or software that can optically and electronically read travel documents and be used for confirmation of their integrity at passport application with kiosk systems or automatic border control. <br> ● Design rules and examples for documents suited for machine authentication <br> ● Reader systems <br> ● Authentication software and reference databases |
| 9. | Data Mining Analytics | Data mining analytics that can be utilized for risk assessment while undertaking: <br> ● border crossing; and/or <br> ● passport issuance and enrolment. |

## 3 CONSIDERATIONS

Interested parties must present their technologies in the context of ICAO Document 9303, which prescribes international format and on-board data storage standards for machine-readable passports, visas, and other official machine-readable travel documents. Interested parties must also be able to substantiate any claims related to performance of the technology proposed.

Proposals will be reviewed against a variety of qualitative and quantitative factors, depending on the category. Generally, this will include such aspects as cost, innovation, and compatibility with current and future document issuance and border control processes. Dependant technologies, reliability, accuracy and speed are also factors that may be considered by the selection panel.

Interested parties should also recognize that in the application of these technologies, the NTWG panel will give particular consideration to the ICAO goals of facilitation, security, and global interoperability.

## 4 SUBMISSIONS

Written responses to this RFI must be provided by 31 March 2014 to:

Rie Fujii, RFI Coordinator

ICAO New Technologies Working Group

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Supporting information and descriptive literature may be provided as part of the response. However, a succinctly written three (3) page summary paper **must** be included in all responses. Submissions that do not include this summary paper **will not** be considered.

The international selection panel will be reviewing material through virtual/electronic means. All summary papers and additional information must be submitted in a format compatible with this approach. Submissions must be written in English.

The summary papers will be used to form a compilation of technology information, which can then be provided to ICAO Contracting States. The format, background material on the requirements, and instructions for completion of the summary paper can be downloaded at http://www.mofa.go.jp/ca/pss/page22e_000052.html.

Following the receipt of summary sheets, descriptive literature and information, vendors will be invited to make oral presentations to government members of the New Technologies Working Group, representatives of ICAO Contracting States. Oral presentations are planned for the week of 21-25 July, 2014 at ICAO HQ, Montreal, Canada. The language of work is English.

Interested parties are advised that ICAO is under no obligation to designate any standard or take any further action with any party as a result of this Request for Information. Summary sheets supplied in response to this RFI will be made available to Contracting States. Accompanying information and descriptive literature may also be made available to Contracting States. With the exception of the summary sheets, any other information that is considered non-disclosable to all ICAO Contracting States should be identified as such. Non-disclosable information will be retained exclusively for the use of the government members of the I CAO New Technologies Working Group.

Requests for copies of ICAO standards documents (ICAO Document 9303, Parts 1 to 3) should be directed to: http://www.icao.int/Security/mrtd/Pages/Document9303.aspx

This Request for Information is placed by the Ministry of Foreign Affairs in Japan in furtherance of its participation in the TAG/MRTD also being a contracting State of ICAO, a United Nations specialized agency. The Japan Government and its employees accept no responsibility for the actions or undertakings of ICAO, ICAO participants, or ICAO staff.