



CYBER SECURITY AND RESILIENCE SYMPOSIUM

TOWARDS A RESILIENT AVIATION CYBERSPACE

AMMAN, JORDAN | 15-17 OCTOBER 2019

Setting the Scene

*Captain Andreas Meyer
Aviation Cybersecurity Officer
Aviation Security and Facilitation
International Civil Aviation Organization*



Cybersecurity in the context of international civil aviation

Traffic increase

- An estimate of 8.2 billion air traveler by 2037 (IATA forecast)

New aircraft types, airspace users and operations

- UAS, RPAS, Space (operations above FL600)

Increasing complexity

- Mixed operational environment



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Digital Evolution – Airborne Platform (20yrs)





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The new cyber era in the Middle East

Governments, enterprises, and individuals in the Middle East are adopting connected digital technologies and applications on a massive scale in a process known as digitization. The Middle East's digital markets are expanding at an overall compound annual growth rate of 12 per cent and could add as much as US\$820 billion to gross domestic product and create 4.4 million new jobs by 2020



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Cyberspace

risks are growing rapidly and
cybersecurity needs to address
asymmetrical threats, as well as
complex system architecture



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ICAO's vision for global cybersecurity is that the civil aviation sector is resilient to cyberattacks and remains safe and trusted globally, whilst continuing to innovate and grow.



This can be achieved through:

- Member States recognizing their obligations under the *Convention on International Civil Aviation* (Chicago Convention) to ensure the safety, security and continuity of civil aviation, taking into account cybersecurity;
- coordination of aviation cybersecurity among State authorities to ensure effective and efficient global management of cybersecurity risks, and
- all civil aviation stakeholders committing to further develop cyber resilience, protecting against cyber-attacks that might impact the safety, security and continuity of the air transport system.



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ICAO's Organizational Goals Civil Aviation Cybersecurity

- ICAO to have the leadership of cybersecurity in the field of civil aviation
- ICAO to better support States in addressing cybersecurity in civil aviation
- ICAO to have a holistic approach to cybersecurity



ICAO – How to go about the Global Vision on Civil Aviation Cybersecurity

- Assembly Resolution A39-19 instructed ICAO to develop a comprehensive cybersecurity work plan and governance structure;
- Assembly Resolution A40-10 Addressing Cybersecurity in Civil Aviation;
- Secretariat Study Group on Cybersecurity (SSGC) developed the Cybersecurity Strategy endorsed by the ICAO 40th Assembly;
- The SSGC is currently on the implementation plan of the Cybersecurity Strategy.
- Trust Framework



ICAO HQ – Cybersecurity Work Programme

Who is Who

Sylvain Lefoyer
Deputy Director
Aviation Security and Facilitation
Air Transport Bureau
slevoyer@icao.int

Saulo Da Silva
Chief, Global Interoperable Systems
Air Navigation Bureau
sdasilva@icao.int
Desk: +1 (514) 954-8219 ext. 5872

Dr Sorana Pop Paun
Aviation Cybersecurity Officer
Aviation Security Policy (ASP)
spop@icao.int
Desk: +1 (514) 954-8219 ext. 6724

Mike Goodfellow
Tech. Officer, Global Interoperable Systems
Air Navigation Bureau
mgoodfellow@icao.int
Desk: +1 (514) 954-8219 ext. 6149

Captain Andreas Meyer
Aviation Cybersecurity Officer
Aviation Security Policy (ASP)
ameyer@icao.int
Desk: +1 (514) 954-8219 ext. 8121

Olga de Frutos
Tech. Officer, Air Navigation
Air Navigation Bureau
odefrutos@icao.int
Desk: +1 (514) 954-8219 ext. 6021





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Regional Declarations on cyber security

**DECLARATION ON CYBERSECURITY IN CIVIL AVIATION
DUBAI, UNITED ARAB EMIRATES
4 TO 6 APRIL 2017**

**RIYADH DECLARATION
ON AVIATION SECURITY AND FACILITATION
31 AUGUST 2016**



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Riyadh Declaration 2016

F Undertake to:

12. Promote and facilitate the sharing of Cyber Threat Indicators and Defensive Measures;



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Dubai Declaration 2017

1. It is the responsibility of States to act in such a way as to mitigate the risk posed by cyber threats, to build their capability and capacity to address such threats in civil aviation, and to ensure their legislative framework is appropriately established to take action against actors of cyber-attacks;
2. Cyber capabilities applied to aviation should be used exclusively for peaceful purposes and only for the benefit of improving safety, efficiency and security;
3. Collaboration and exchange between States and other stakeholders is the sine qua non for the development of an effective and coordinated global framework to address the challenges of cybersecurity in civil aviation;
4. Cybersecurity matters must be fully considered and coordinated across all relevant disciplines within State aviation authorities;
5. Cyber-attacks against civil aviation must be considered an offense against the principles and arrangement for the safe and orderly development of the international civil aviation; and
6. The ratification and entry into force of the Beijing Instruments would ensure that a cyber-attack on international civil aviation is considered an offence, would serve as an important deterrent against activities that compromise aviation safety by exploiting cyber vulnerabilities, and therefore it is imperative that all States and ICAO work to ensure the early entry into force and universal adoption of the Beijing Instruments, as called for in ICAO Assembly Resolution A39-10: Promotion of the Beijing Convention and Beijing Protocol of 2010; and
7. Reiterate our commitment to the development of a robust, efficient and sustainable civil aviation system.



Middle East initiative on cyber security

Jordan, Oman, Saudi Arabia, and the UAE have all taken critical steps in either enacting cybercrime law or introducing special systems:

- The UAE's Federal Decree Law no. 5, entitled On Combating Cybercrimes, was issued in 2012.
- Saudi Arabia also has a cybercrime law issued by a royal decree in 2007.
- Oman issued a law to combat cybercrime in 2011.
- Jordan has an Information Systems and Cybercrime Law that contains 18 articles dealing with the complete spectrum of cybercrime.

Furthermore, some countries in the Middle East are beginning to appreciate the importance of safeguarding individuals' personal information and are addressing this through effective data protection legislation. Egypt, Israel, Saudi Arabia and the UAE all have data protection legislation.



Next Steps

- States and Industry to adopt the Cybersecurity Strategy ;
- States to adopt and implement the Beijing 2010 Convention and Protocol;
- ICAO to analyze and develop a future structure for the cybersecurity work programme that will ensure a cross-functional issues across all Bureaus of ICAO;
- SSGC to finalize the Cybersecurity Implementation Plan;
- ICAO to launch the Cybersecurity Repository and Point of Contact network.
- ICAO to continue its work on the development of a Trust Framework (SGTF)



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Thank You