



Fifth Meeting of the Directors General of Civil Aviation- Middle East Region

الإجتماع الخامس للمدراء العاميين للطيران المدني في منطقة الشرق الأوسط

DGCA-MID/5

Kuwait 4-6 Nov 2019



الطيران المدني
Civil Aviation
دولة الكويت - State of Kuwait

Cyber Security



Muna ALNADAF

RO/ Communications, Surveillance and
Navigation



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الإيكاو ٢٠١٩
٧٥ عاماً
من التأسيس لرجاء التميز



Cybersecurity in the context of international civil aviation

- Traffic increase
- New aircraft types, airspace users and operations
- Increasing complexity



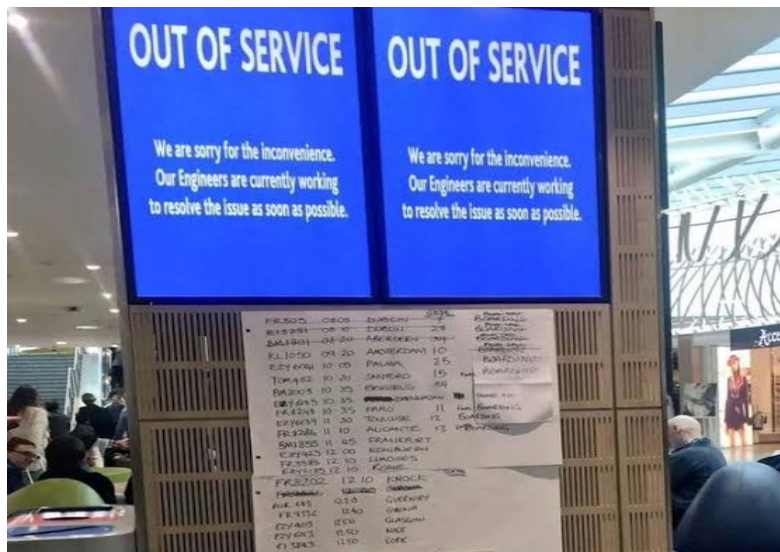
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الإيكاو ٧٠ عاماً
من التأسيس من أرواح العزم





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الإيكاو ٢٠١٩
٧٥ عاماً
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ICAO's Vision

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



Relevant Resolutions and activities

- **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**



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Regional Declarations on Cyber Security

- RIYADH DECLARATION ON AVIATION SECURITY AND FACILITATION
Riyadh, Saudi Arabia, 31 August 2016
- DECLARATION ON CYBERSECURITY IN CIVIL AVIATION
DUBAI, UAE, 4-6 April 2017



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ICAO Cyber Security & Resilience Symposium

MSG CONCLUSION 6/34: CYBER SECURITY AND RESILIENCE SEMINAR

That, in order to enrich the cyber security awareness and strengthen the cyber resilience in the MID Region, ICAO organise a Cyber Security and Resilience Seminar in 2019 jointly with ACAO

ICAO Cyber Security and Resilience Symposium was held in Amman, Jordan, 15-17 October 2019, under the theme “*TOWARDS A RESILIENT AVIATION CYBER SPACE*”



Symposium Objectives

The main objectives of the Cyber Security and Resilience Symposium were to:

- address cyber security from three different perspectives (AVSEC, ANS and IT);
- raise awareness about cyber threats, risks, challenges and solutions;
- foster a cyber-security culture that promotes a resilient and secure cyberspace; and
- provide a forum for sharing experience and best practices.



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Attendance

- 128 Participants
- 23 States
- 6 International Organizations
- 8 Exhibitors/Sponsors



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Challenges

- Tremendous growth in passenger numbers and air traffic;
- Rise of cyber attacks including Data breach/malware attack/cloud abuse/hacking/ransomware;
- Cyber Terrorism – a new cyber warfare;
- Fraud;
- Complex infrastructure;
- Multiple stakeholders;
- Lack of regulatory framework;
- Lack of cybersecurity expertise/training;



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Challenges

- Lack of ICAO definition for cyber security;
- Lack of budget and resources;
- Dynamic, fast moving, evolving nature of cyber attacks makes effective mitigation challenging;
- Emerging technologies are more and more interconnected and data-dependent;
- ANS Systems' vulnerabilities, systems commonality and emerging technologies and SWIM implementation;
- Constantly evolving attacks, quickly evolving threats landscape;



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Challenges

- Obstacles facing Operational Technology (OT)/Internet of Thing (IoT) cyber in airports; and
- Securing sensitive data.



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Recommendations

- States to establish a cyber security culture supported by leadership and guided by example;
- States to develop/implement a cyber security strategy;
- Global collaboration & strategic alliances to strengthen regional cyber security in addressing cross-border cyber attacks and cyber crimes;
- States to adopt more proactive and holistic approaches in order to stay ahead of cyber threats;



Recommendations

- States to ensure that aviation critical systems are secured by design (concept; design; development; delivery; operations; and maintenance);
- States to establish legislative and regulatory framework with enforcement policy;
- States to ensure cross-functional coordination by involving relevant domains (AVSEC, ANS, IT, Airports, Airlines, etc);
- States to recruit and retain a talent pool of technical cyber security specialists;



Recommendations

- ICAO to develop additional aviation cyber security guidelines;
- States to integrate cyber security architecture and threat intelligence system;
- Treat cybersecurity as part of an organizational wide risk management framework, considerate of all applicable domains;
- Encourage States to ratify the Beijing Protocol (2010);
- States to avoid prescriptive/descriptive regulations on cyber security;
- States to develop contingency/disaster recovery plans as part of the resilient aviation ecosystem;



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Recommendations

- States to carry out table top exercises on regular basis, with ICAO support, as appropriate;
- CAAs are encouraged to collaborate with their National Computer Emergency Response Team (CERT) for cross industry incident management, as appropriate; and
- States/Stakeholders are encouraged to use the ATM Data Security Portal (www.adscportal.ae) to share their experience and best practices related to cybersecurity



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ICAO2019



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CELEBRATE



YEARS OF CONNECTING THE WORLD

Thank You