The Regional Ministerial Conference on Aviation Security in Africa and the Middle East

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GASeP: The Roadmap to Foster Aviation Security in Africa and the Middle East

Sharm El Sheikh, Egypt 22-24 August 2017

Summary

This presentation presents an overview of the -Cyber threats to the global civil aviation system and the successive developments in the field of hacking and electronic attacks.

And the efforts of the Arab Republic of Egypt to curb these cyber attacks and encouragement towards the development of regional and global strategy to counter those attacks and raise risk awareness.
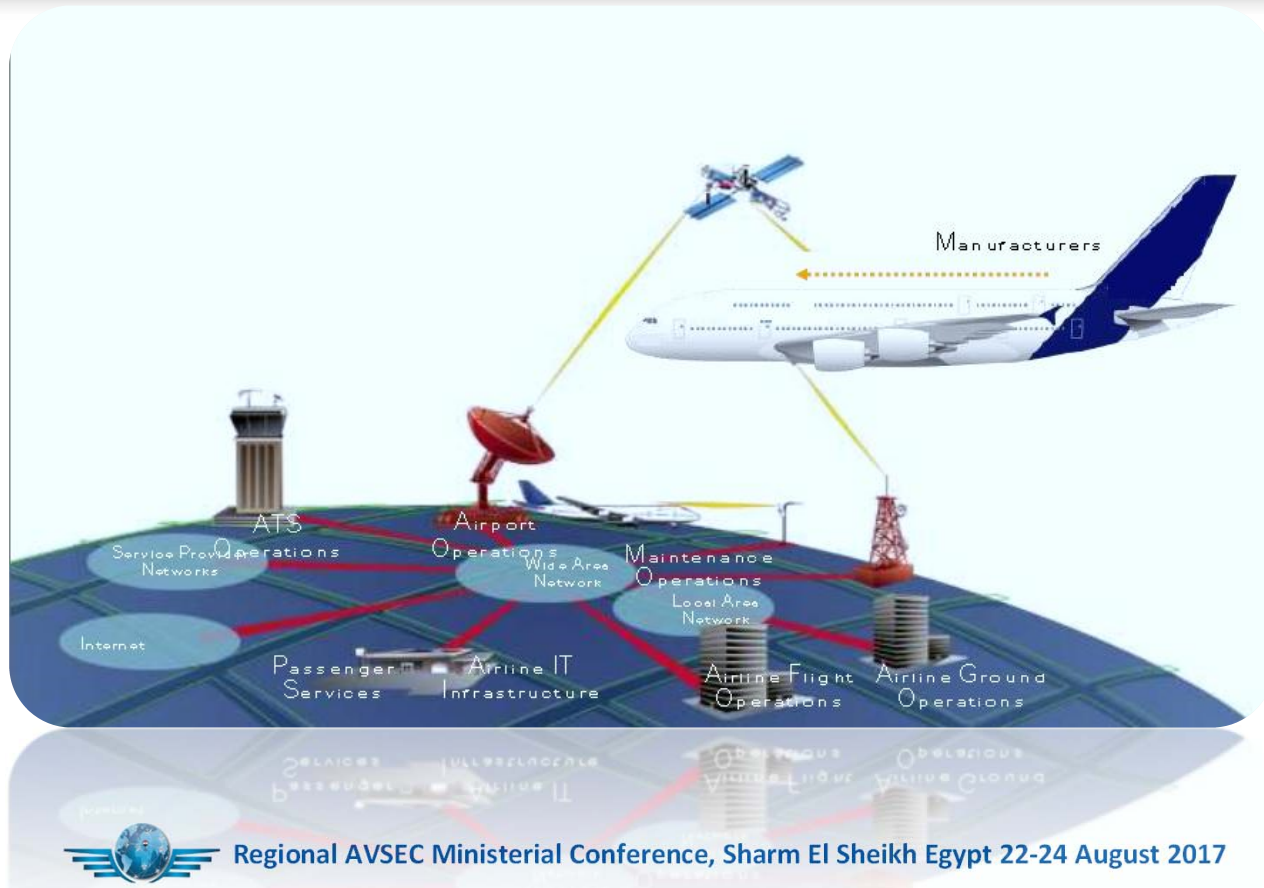
Preface

Cyber Attacks

Are described as attacks targeting civil aviation in the electronic field or through it, including the Internet, the network of communications, computers, data processing devices and control devices within the network.

These attacks include:

- Break into navigation systems and aerial surveillance.

- Jamming on radars and communications systems.

- Affecting the various airports equipment and causing disorder.

AMENDMENT (15)TO ANNEX 17 — SECURITY

- 4-9-1 Recommendation.— Each Contracting State should, in accordance with the risk assessment carried out by its relevant national authorities, ensure that appropriate measures are developed in order to protect the confidentiality, integrity and availability of critical information and communications technology systems and data used for civil aviation purposes from interference that may jeopardize the safety of civil aviation.

- 4.9.2 Recommendation.— Each Contracting State should encourage entities involved with or responsible for the implementation of various aspects of the national civil aviation security programme to identify their critical information and communications technology systems and data, including threats and vulnerabilities thereto, and to develop and implement protective measures to include, inter alia, security by design, supply chain security, network separation, and remote access control, as appropriate.

- According to technological progress nowadays and also all civil aviation authorities rely on electronic systems in addition to the complexity of information systems, remote software updates, and links shared data inside the aircraft and with external sources.

- Spread of cyber attacks has been increased and there are many paths that may be followed by terrorists to carry out attacks against electronic civil aviation services and stakeholders and infrastructure providers.

According to an annual survey, the total number of cyber security threats detected in 2016 has increased tremendously:

29 million in 2014
43 million in 2015
55 million incidents in 2016.

With the expectations of global cybercrime losses to reach $6 trillion a year by 2021.

Recent efforts to address cyber security threats

- In recent years, civil aviation actors have paid more attention to the challenges posed by Cyber-security threats to civil aviation operations.

- In 2014, the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) and the International Airport Council (ACI) developed a joint action plan on Cyber-security in the civil aviation of aviation industry associations to address these challenges.

- The Threats and Risk Working Group of the Aviation Security Panel Team has presented a series of evaluations and advices to The Cyber Attacks and Risk Team, There for the coordination of the Aviation Security Panel Team and the ICAO Safety Teams has been initiated to streamline and harmonize efforts on this subject.

Threat Assessment of Cyber Threats

- The probability of most scenarios being classified in a low probability category   because of the low level of skills and knowledge, and the access and preparations needed to carry them out.

- Therefore, the remaining possibilities for skilled internal persons should be considered. The potential for current threats has been classified as low.

Efforts of Egypt to reduce the Risks of Cyber Threats

- Egypt is aware of the dangers of cyber threats and the catastrophic consequences that may result.

- National legislation has been introduced to criminalize cyber attacks and to regulate the rules of national programs in compliance with Annex 17 - Amendment 15 and related security documents.

Legislation

- Egyptian National Civil Aviation Security Program.

- Procedures and measures related to the Cyber threat, and

- Procedures and measures for the protection of technology and flight information systems.

Egyptian Civil Aviation Law

Chapter Fifteen (Penalties)

Article 169 Life imprisonment or the rigorous imprisonment shall be the penalty if one of the following acts is done deliberately:

1- Destroying, damaging, disabling or sabotaging any of the means of air transport during flight or being at the airport or in the landing area.

2- Destroying, damaging, sabotaging or disabling any devices, equipment or facilities of the air navigation, aerodromes or other facilities of air transport service.

3- Putting devices or substances in one of the means of carriage by air with the purpose of destroying, damaging, sabotaging or disabling or jeopardizing the safety of the flight.

4- Every behavior intended to harm means of communication and control assigned to the air navigation if it is to jeopardize the safety of flying.

Training

- Training courses have been organized to explain current and emerging threats and how it can be mitigated.

- Training courses have been developed to all aviation security personnel and employees, including airport, airlines, navigation service, service providers employees etc..

Summary

- It is important that ICAO cooperates with the aviation security authorities, the industry and all civil aviation stakeholders in order to raise awareness, draw up practical and sustainable policies, guidelines and measures, including developing training and capacity-building programs, to protect civil aviation against cyber threats and to mitigate its risks at the global civil aviation system.

Recommendations

- Invite the participating States to present and share their experiences regarding the measures they have taken to counter the threat of Cyber attacks on navigational devices and communications used in civil aviation operations.

- Emphasize the need to establish a regional system or a working group on ways to mitigate cyber attacks at work environment in accordance with the instructions issued by international organizations and aviation security authorities.

- Taking into consideration The ICAO Cyber Summit and Exhibition - Making Sense of Cyber- Dubai, United Arab Emirates 2017 REMARKS .

- The need to take care of the insider threats that targets human resources and the development of restrictions that may mitigate this threat such as means of behavior detection systems and electronic control.

- Establish a national legislation to criminalize cyber attacks and to develop rules governing national programs.

- Training to raise   security awareness of the cyber threats for all relevant and aviation security personnel.

- To establish appropriate confidentiality and prohibition degrees on information related to procedures of dealing with cyber attacks and electronic data management systems.