



WORKING PAPER

COUNCIL — SPECIAL MODEL SESSION

Subject: Next Generation of Aviation Professionals (NGAP) – Next Generation of Aviation Security Professionals.

(Presented by Portugal)

EXECUTIVE SUMMARY

This working paper intends to address the predictable impacts of the civil aviation market growth trends for the period of 2014-2033 in the Aviation Security (AVSEC) System and their implications in the performance of AVSEC NGAP.

Observing the growth trends and the development of the civil aviation market it is predictable that the current AVSEC System will become unable to maintain the adequate levels of security measures against acts of unlawful interference, at least in the direct proportion to their current levels of effectiveness. Taking into account this situation it will be necessary the development of strategies to attract, train, educate and retain a new breed of AVSEC NGAP able to deal with the future AVSEC challenges.

Action: The Council is invited to approve the following:

1. The ICAO Regional Offices (RO) in close cooperation with Member States (MS) assess until the end of 2015 the impacts of the civil aviation market growth trends in the performance and in the future needs of AVSEC Professionals and define the strategies to attract, train, educate, and retain these AVSEC NGAP based on education and training programs and/or courses;
2. The RO and the Aviation Security Training Centers (ASTCs) develop until the end of the first half of 2016, AVSEC training programs and/or courses to allow the development and implementation of risk-based principles in the AVSEC decision-making processes; and
3. The RO in cooperation with MS and universities develop until the end of 2016, academic degrees in Aviation Management and AVSEC Management that provide theoretical and practical skills in the field of the Annex 17 and DOC 8973 and promote a standardized way to apply a risk-based AVSEC Management.

<i>Financial implications:</i>	The proposals described in this working paper must preferably use the resources available in the regular budget in conjunction with the support of MS, ICAO, ASTCs and universities. MS with difficulties may request support (human resources, know how, voluntary contributions) from the MS of its own region or from other regions.
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<i>References:</i>	Annex 17 A37-WP/64 A138-WP/138 <i>Boeing Current Market Outlook 2014-2013</i> DOC 8973, <i>Aviation Security Manual – Eighth Edition</i> Kölle, Rainer; Markarian, Garik; Tarter, Alex; <i>Aviation Security Engineering – A Holistic Approach.</i>
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1. INTRODUCTION

1.1 Civil aviation is a complex industry gathering a huge number of different players and stakeholders. This complexity results in various supply and value chains of human resources, technology and processes to support safe, secure, orderly and efficient aviation operations.

1.2 Maintaining the safety and efficiency of civil aviation requires not only technology or effective and efficient processes, but also, above all, requires the right people, with the right training and competencies to operate in this complex system.

1.3 According to the *Boeing Current Market Outlook 2014-2033* (long-term forecast), the gross domestic product (GDP) will rise 3.2 percent over the next 20 years, which will drive passenger traffic to grow 5.0 percent annually (revenue passenger-kilometers, RPKs) and cargo traffic (which also depends on global trade) to grow 4.7 percent annually (revenue tonne-kilometers, RTKs).

Market Growth Rates	2014 to 2033
World economy (GDP)	3,2%
Airplane fleet	3,6%
Number of passengers	4,2%
Airline traffic (RPKs)	5,0%
Cargo traffic (RTKs)	4,7%

Table 1.1 – Market Growth Rates¹

1.4 *The 2014 Boeing Pilot and Technician Outlook* projects that 533,000 new commercial airline pilots and 584,000 new maintenance technicians will be needed to fly and maintain the world fleet over the next 20 years.

1.5 In contrast to the forecasts of growth and development for the civil aviation market and increased demand for aviation professionals, it is expected in the coming years a large number of retirements of aviation professionals, thus, jeopardizing the sustainability of the air transport system.

1.6 The NGAP Task Force, taking into account this problem and the objectives of implementing effective strategies to attract, train, educate, and retain the next generation of civil aviation professionals, will present at the end of 2014 the results of their work on competencies for the Air Traffic Controllers and Air Traffic Safety Electronics Personnel.

1.7 With this background, this working paper will intend to address these issues and their potential impact on the AVSEC System as well as to understand the new challenges that may arise for the AVSEC NGAP.

2. BACKGROUND AND AVSEC NGAP CHALLENGES

2.1 The ICAO defines, in Annex 17, aviation security as “Safeguarding civil aviation against acts of unlawful interference. This objective is achieved by a combination of measures and human and material resources”. Annex 17 further specifies unlawful interference as “acts or attempted acts such as to jeopardize the safety of civil aviation (...)”.

2.2 Over the last years multiple security measures have successfully averted a considerable number of possible threats. This was achieved through a focused perspective on preventive measures to meet historic threat scenarios.

¹ According to the *Boeing Current Market Outlook 2014-2033*.

2.3 Taking into consideration the forecasts of growth and development of the civil aviation market, one may conclude that in the future the AVSEC system and their professionals will face new challenges to maintaining the adequate implementation levels of security measures against acts of unlawful interference.

2.4 For these new AVSEC challenges, the AVSEC NGAP needs to understand the limitations and constraints of the current AVSEC system, particularly with regard to the following issues:

- Regulatory framework depending on historic threat scenarios;
- Increasing technical demands regarding AVSEC training;
- High requirements of human resources based on operational competencies;
- High exposure to human factor and human error; and
- High costs directly proportional to the growth of the civil aviation market, as well as to the present regulatory framework tendency.

2.5 From this point of view, the AVSEC NGAP needs to undertake a new approach, which allows the identification of an appropriate combination of managerial, operational and technical security measures. This new approach should be based on a systematic and realistic risk-based approach.

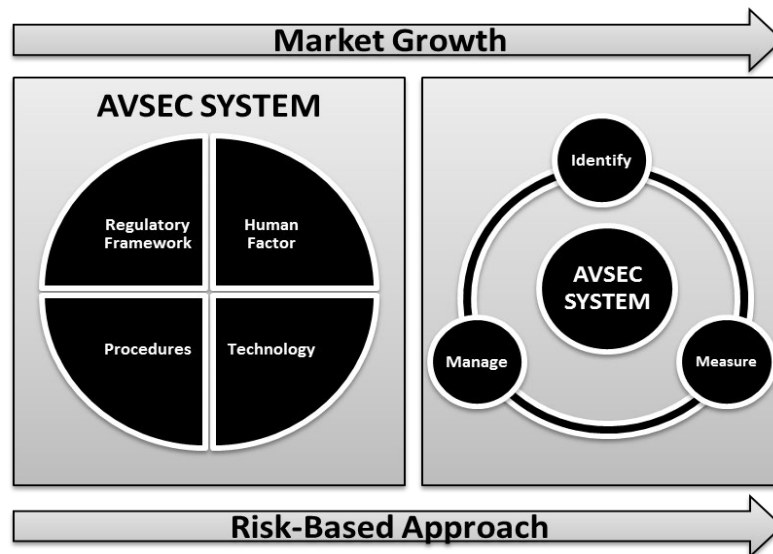


Figure 2.1 – AVSEC System evolution

2.6 For this approach it is necessary that the AVSEC NGAP are capable to identify the different views and goals of each aviation security stakeholder, such as:

- **Passengers:** minimal discomfort and impact;
- **Airport operators:** lower security costs, efficient procedures, a better quality service for passengers and a sustainable security culture;
- **Regulators:** implementation and supervision of the security measures;

- **Manufacturers:** efficient and low cost-based standards; and
- **Security staff:** good operational and work environment, low risk and other motivations.

3. CONSIDERATION OF ISSUES

3.1 With the expected market growth, it is predictable that the current AVSEC System will become unable to maintain the adequate levels of security measures against acts of unlawful interference, at least in direct proportion to their current levels of effectiveness.

3.2 To avoid this situation the AVSEC NGAP will need to have the enough qualifications and competencies to understand the AVSEC System interdependencies and drive the appropriate decision-making process concerning the most adequate, effective and efficient security measures. To achieve these goals it would be useful to consider the AVSEC Professions and their relevance in the Phase 2 of the NGAP initiatives.

3.3 Accordingly, it is proposed that until the end of 2015 the RO in cooperation with MS develop actions to assess the impacts of the civil aviation market growth trends for the period of 2014-2033 in the performance and in the future needs of AVSEC Professionals (AVSEC Managers, AVSEC Inspectors, AVSEC Instructors and aviation security personnel responsible for the implementation of security measures). These assessment should also allow the definition and the financial implications of implementing strategies to attract, train, educate, and retain AVSEC NGAP based on education and training programs and/or courses dedicated to AVSEC NGAP and AVSEC new challenges.

3.4 Regarding to the strategy that will be defined, it is proposed that until the end of the first half of 2016 the RO and the ASTCs develop training programs and/or courses similar to current courses and training programs offered (Aviation Security Training Packages, Aviation Security Professional Management Course). These new training programs and/or courses must use the most suitable methods of training in cooperation with industry and must take into account the new methodologies of risk-based approach in order to allow the development and the implementation of risk-based principles in the AVSEC decision-making processes.

3.5 To educate the AVSEC NGAP, and according to the strategy that will be defined, it is proposed that until the end of 2016 the RO in cooperation with MS and the leading local and regional universities develop graduate degrees, post-graduate degrees and master's degrees in Aviation Management and AVSEC Management that provide a deeper AVSEC theoretical and practical skills in the field of the Annex 17 and DOC 8973- *Aviation Security Manual*, and also promote a standardized way to apply a risk-based AVSEC Management.

4. FINANCIAL IMPLICATIONS

4.1 To assess and define the strategies to attract, train, educate, and retain these AVSEC NGAP the RO must preferably use the resources available in the regular budget in conjunction with the support of MS, ASTCs and universities. MS with difficulties may request support (human resources, know how, voluntary contributions) from the MS of its own region or from other regions.

5. ACTION

5.1 The Council is invited to approve the following:

5.1.1 The RO in close cooperation with MS assess until the end of 2015 the impacts of the civil aviation market growth trends in the performance and in the future needs of AVSEC

Professionals and define the strategies to attract, train, educate, and retain these AVSEC NGAP based on education and training programs and/or courses;

5.1.2 The RO and the ASTCs develop until the end of the first half of 2016, AVSEC training programs and/or courses to allow the development and implementation of risk-based principles in the AVSEC decision-making processes; and

5.1.3 The RO in cooperation with MS and universities develop until the end of 2016, academic degrees in Aviation Management and AVSEC Management that provide theoretical and practical skills in the field of the Annex 17 and DOC 8973 and promote a standardized way to apply a risk-based AVSEC Management.

6. CONCLUSION

6.1 To ensure that AVSEC NGAP in the future will be capable to maintain the adequate levels of security measures against acts of unlawful interference, it is necessary to ensure that they will have the enough qualifications and competencies to operate, manage and maintain the AVSEC System, being thus necessary the development of strategies to attract, train, educate and retain a new breed of AVSEC NGAP able to deal with the future AVSEC challenges.

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