Cyber Threat and risks in Air Navigation Systems, Vulnerabilities and global security of the ANS/ATM system

AEFMP Experience
AEFMP

ATM Evolution Framework through Multipurpose Partnership

A long-lasting inter-regional cooperation in Western Mediterranean for an Air Traffic sustainable development
AEFMP ANSPs: airspace coverage

FIR and UIR:

- Algeria ENNA
- Spain ENAIRE
- France DSNA
- Morocco ONDA
- Portugal NAV
- Tunisia OACA
AEFMP area: an increasing air traffic density

Airports representation
- 1 - 14999
- 15000 - 58929
- 58930 - 140764
- 140765 - 303197
- 303198 - 592762

Flows representation
- 2101 - 47072
- 1001 - 2100
- 401 - 1000
- 166 - 400
- 1 - 165

Source ICAO GIS (2018)
Interregional Seminar ECAC-AFCAC-ACAO
« Innovation & CyberSecurity »

AEFMP area: an increasing air traffic density

Airports representation

Flows representation

Source ICAO GIS (2018)
AEFMP area: several capacity challenges

A sensitive area for the European traffic evolution

Major entry/exit areas inside and at the interface of the FRA area
(extract from SESAR JU Proposal for the future architecture of the European airspace, 11/2018)
Successive working arrangements between up to six Western Mediterranean ANSPs today, supported by CAAs.
AEFMP organizational Structure

**Steering Committee (SC, CEO level):**
- Guidelines provision to WG
  - Once a year
  - Chairmanship rotating yearly

**Working Group (WG):**
- Coordination of actions
  - Twice a year
  - Chairmanship rotating yearly

**Working Subgroups:**
- Operational (OPS WSG)
  - Once or twice a year
- Technical (TECH WSG)
  - Twice a year

**Task Forces, Experts groups & workshops**
- ANS telecom TF
- ATS Ground Voice Network TF
- IP implementation TF
- Performance EG
- GNSS Workshop & EG
- ToD implementation TF
- ...
Some external partnerships

EUROMED Phase I (2010)
Trainings

EUROMED Phase II (2014)
Trainings
Presentation on best practices

CETMO (Centre d’Etudes de la Méditerranée Occidentale, 2016)
Study on 5+5 ANSP's Cooperation in the Western Mediterranean Area

ESSP/EC (2018)
GNSS workshop

ACAO/ICAO (2019)
Joint ACAO/ICAO ASBU Symposium for EUR/NAT and MID Regions
Cooperation on European context related items

Some technical ...
- 550/2004: formalization of delegation of Air Traffic Services
- 552/2004: Interoperability
- IR FMTP: IP networks use
- IR SPI: Sharing of surveillance data and related Performance aspects

Some operational ...
- Contingency procedures
- European tools trainings and use (NEST, AUGUR, ...) 
- East/West tracks capacity improvements 
- FRA implementation and impact on adjacent centers
Our proudness

During WAC2019, AEFMP was granted by EC a Special Mention in “Cooperation” domain for its long lasting cooperation in the field of Air Traffic Management

Special Mention of the Jury

To
AEFMP

by
DSNA, ENAIRE, ENNA, NAV Portugal, OACA, ONDA

2019
What about Cyber security?

- In 2019, AEFMP Working Group proposed integrate Cyber Security in its work plan,
- AEFMP roadmap was confirmed by AEFMP top management during AEFMP Steering Committee in January 2020,
- The topic will take advantage of our active cooperation structure,
- External expertise will be warmly welcome,
- A working session with Eurocontrol CERT is already planned mid-april besides next AEFMP Working Group
- Thanks to its advanced cooperation with Eurocontrol, ONDA - Morrocan ANSP has already initiated exchanges with EUROCONTROL CERT
Cybersecurity in AEFMP Area

A Cybersecurity Seminar was held in Casablanca - Morocco in March 2019 with the collaboration of Eurocontrol’s Security Experts. Such support by European institutions is welcomed by AEFMP. The AEFMP ANSPs will support the follow up of this initiative and promote its extension for the benefit of Algeria and Tunisia.

Actions have already been initiated within AEFMP
Where could AEFMP support Cybersecurity?

Lead and govern
- Leadership and governance
- Cybersecurity Management System

Identify
- Asset Management
- Risk Assessment
- Information sharing
- Supply Chain Risk Management

Protect
- Identity Management and Access Control
- Human-Centred Security
- Protective Technology

Detect
- Anomalies and Events

Respond
- Response Planning
- Mitigation

Recover
- Recovery Planning

From EUROCONTROL ATM Cybersecurity Maturity Model
Where could AEFMP support Cybersecurity?

- **Lead and govern**
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  - Mitigation

- **Recover**
  - Recovery Planning

From EUROCONTROL ATM Cybersecurity Maturity Model
Cybersecurity in AEFMP Area

ANSPs recommended Cybersecurity Action plan

1) Collaboration in Cybersecurity – Share of experiences -
2) Conduct Security Risk Assessment for ATM
3) Engage ANS Personnel for Cybersecurity – Training and certification of experts -
4) Build and Exploit Cybersecurity Intelligence means SOC, SIEM, NOC and CERT
5) Ensure Operational – Cybersecurity procedures
6) Certify for Cybersecurity – National security stakeholders

AEFMP members support is to be consolidated in the next months
Conclusion

- AEFMP introduced efficient and continued coordination between experts supported by ANSPs & CAA top level management
- AEFMP cooperation has shown for years its interest for Western Mediterranean area, very significant entry point of EC air traffic
- Rationalisation of means has been continuously developed through the promotion of data and facilities exchanges
- Coordination, mutual recognition and trust are permanent between AEFMP members
- Inter-regional cooperation is, for AEFMP, the foundation of an Air Traffic sustainable development, older than European FABs.
- AEFMP warmly welcomes the support of Eurocontrol and any other organisation in the field of cybersecurity for the benefit of all its members
Thank You

Meet us on www.aefmp-atm.org