

The ADS-B Webinar



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Muhammad Abdel Hamied

Egypt Experience on ADS-B implementation



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□ Part 1

Experience of NANSC on ADS-B implementation

Muhammad Abdel Hamied

□ Part 2

Experience of ECAA on ADS-B certification

Ahmed Abdel Wahab ElMarady



Agenda (Part 1)

- Benefits of Using ADS-B System.**
- Egypt's Future Vision.**
- Current implementation progress.**



Benefits of Using ADS-B

Using ADS-B as backup system of MSSR :

- High refresh rate.
- In case of having a periodic maintenance in MSSR.
- In case of critical failures in SSR we don't lose the data.
- Overcoming limitations of Mode A/C radars, including false targets, aircraft positions temporarily not displayed and split tracks.



Disadvantages of ADS-B

- Aircraft must be equipped with ADS-B Transponder.
- Dependent on GNSS; outage of GNSS affects ADS-B, overcome this problem using a Multi-constellation GNSS.



Egypt's Future Vision

- Egypt Ambitious Plan to install 22 Radar Complex with ADS-B Ground Stations.
- All the Stations are connected through fiber-optic cables to new National Airspace Management Centre (NASMC) , then to Cairo Air Navigation Center (CANC).
- NASMC will act as an integrated civil-military coordination Centre which is an Essential part of Egypt PBN Plan.



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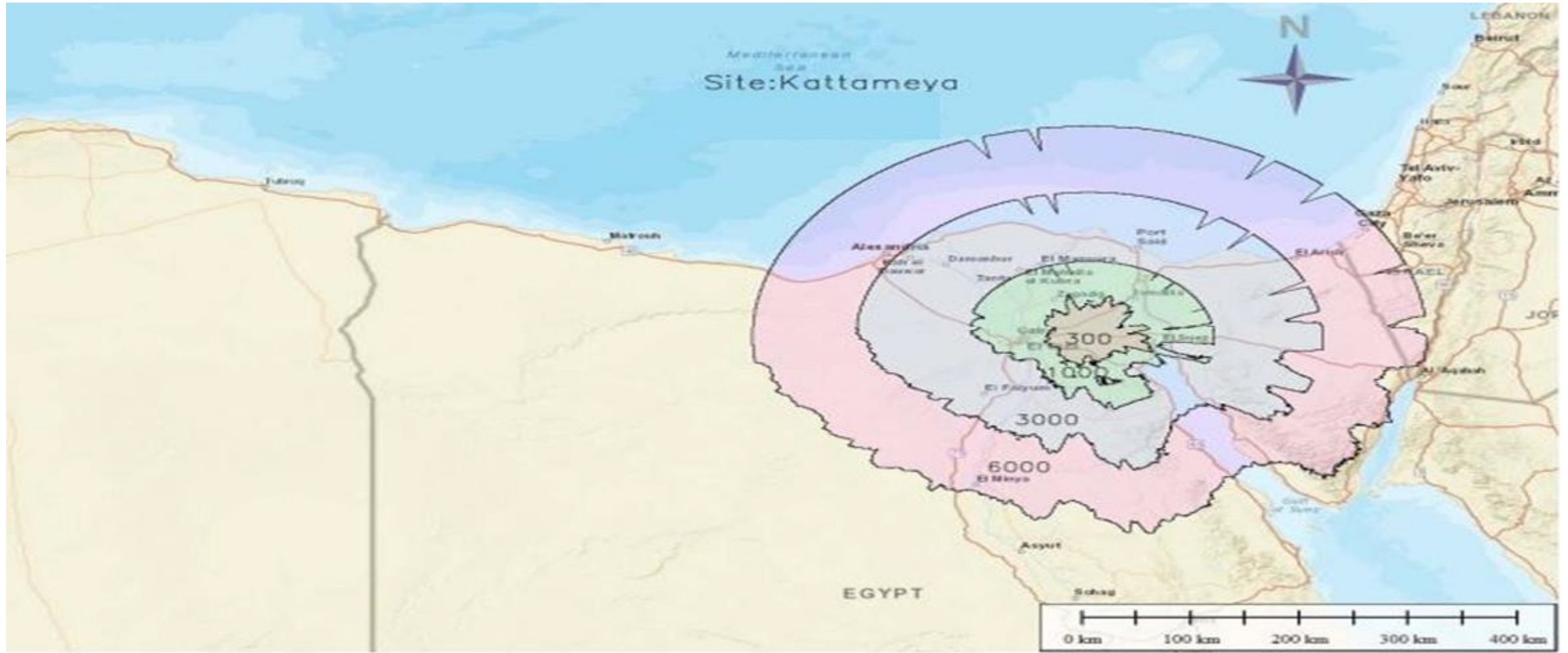


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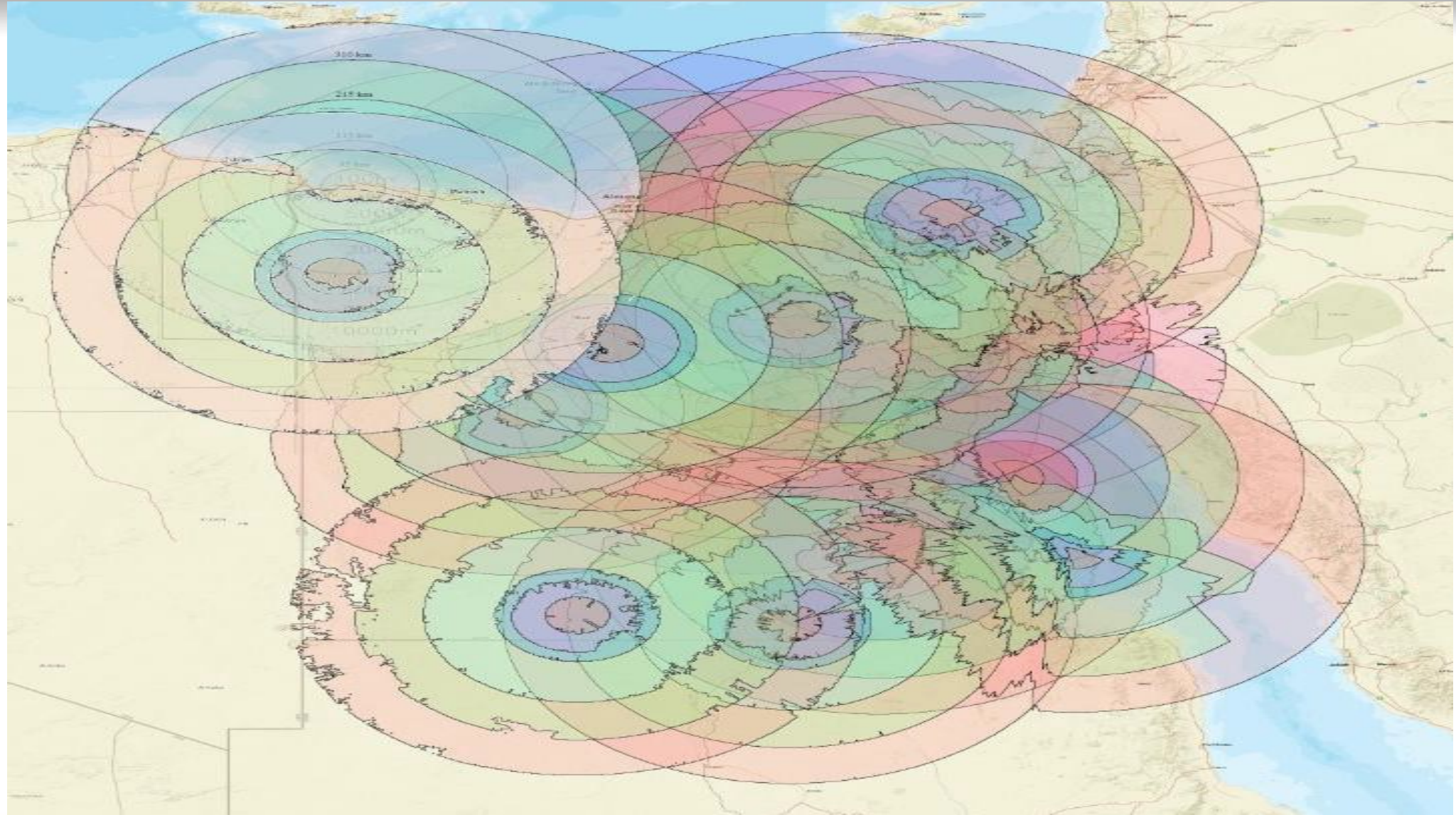


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Current Implementation Progress

- First Station was commissioned in September 2018 at Borg el Arab International Airport.
- Currently, we have 7 stations in operation and connected to NASMC.
- We have additional 2 stations at site acceptance test (SAT) phase and waiting for flight check.
- Another 2 stations; one of which is located at Cairo International airport are in installation phase, they will be ready by the end of this year.
- The whole project is expected to be completed by 2023.



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□ Part 1

Experience of NANSC on ADS-B implementation

□ Part 2

Experience of ECAA on ADS-B certification



Agenda

- National Regulations and procedures for ADS-B
- Components of Certification
- Certification Process



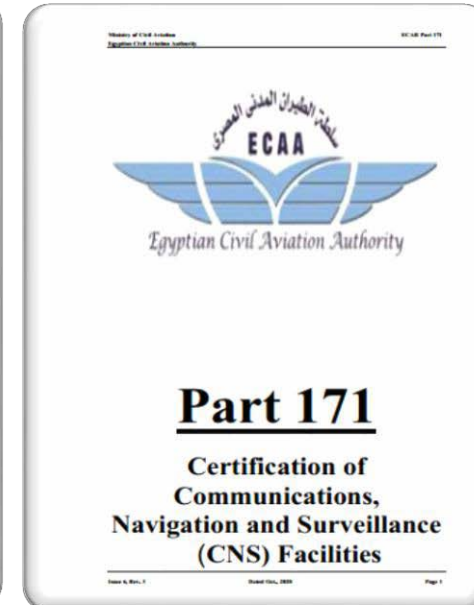
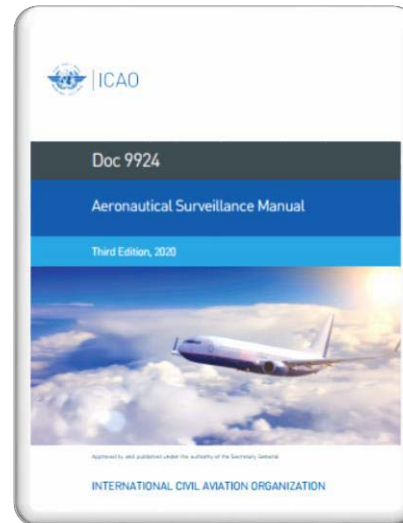
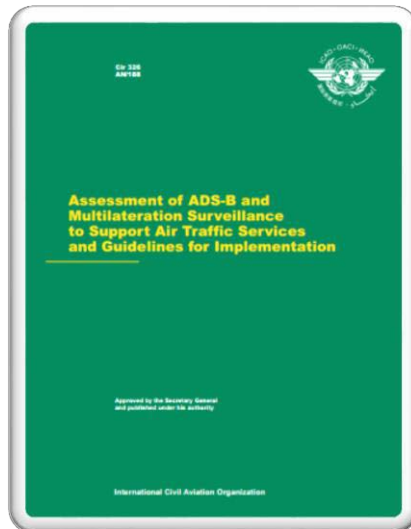
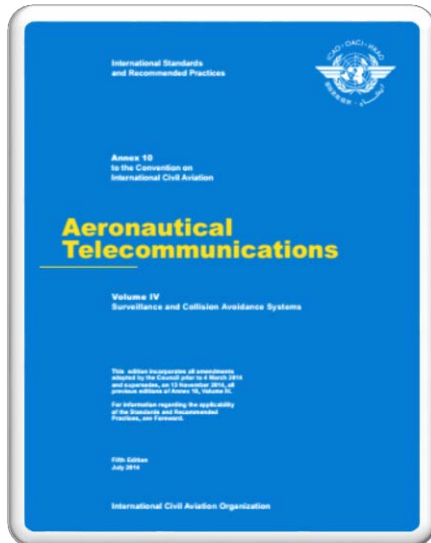
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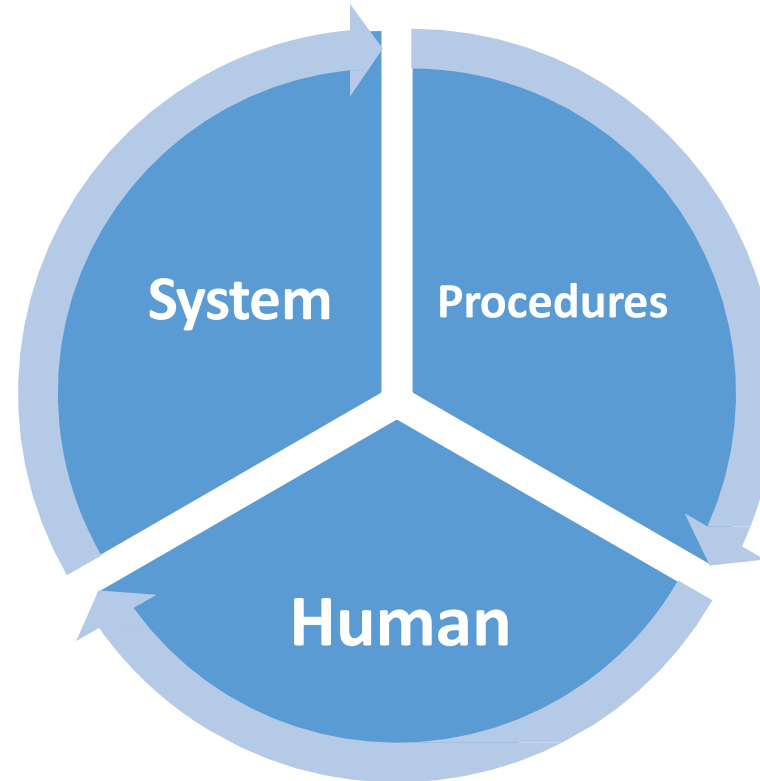
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Regulations of ADS-B Surveillance





Components of Certification



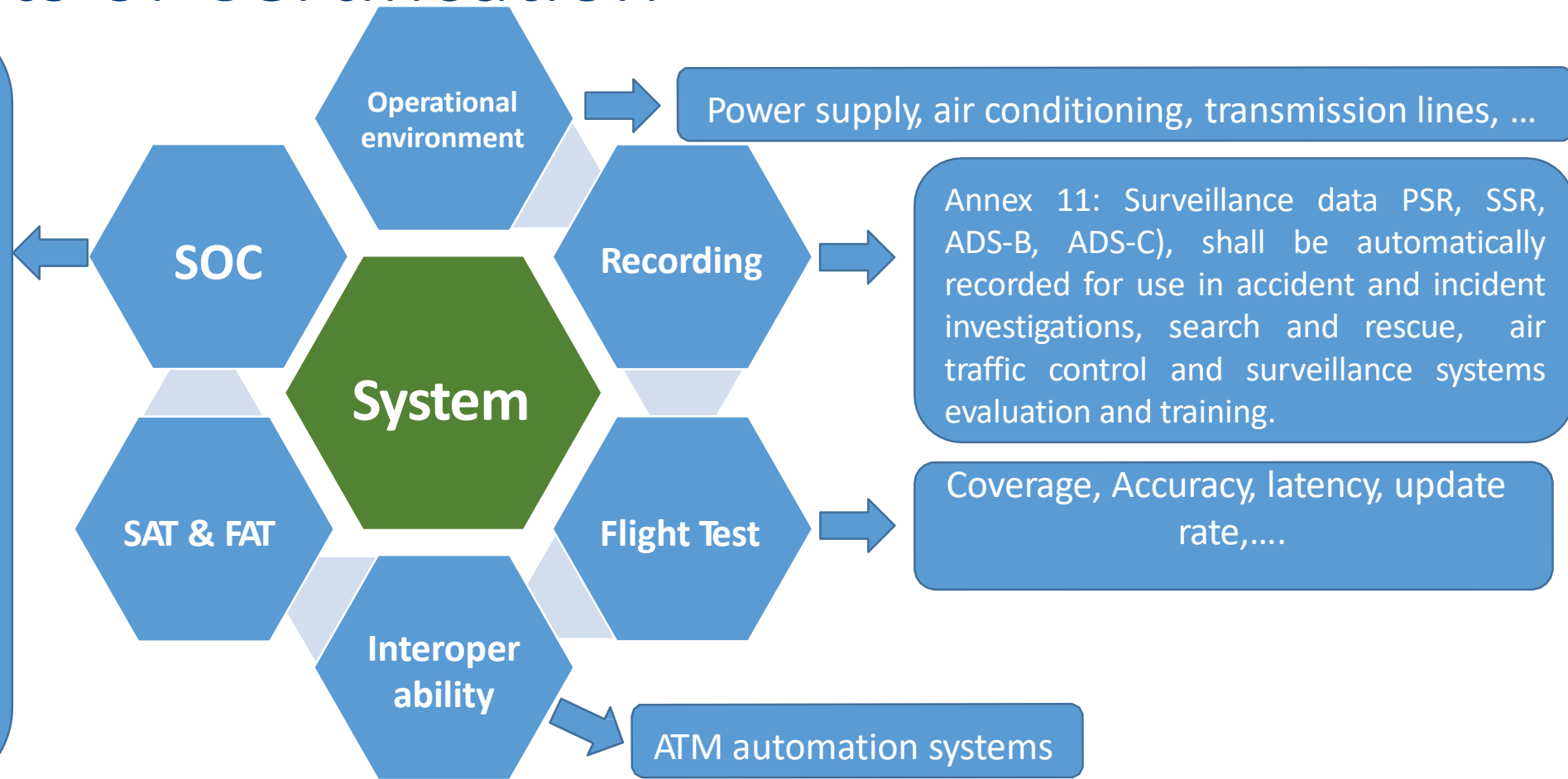


Components of Certification

Compliance with ECAR 171 & SARPS

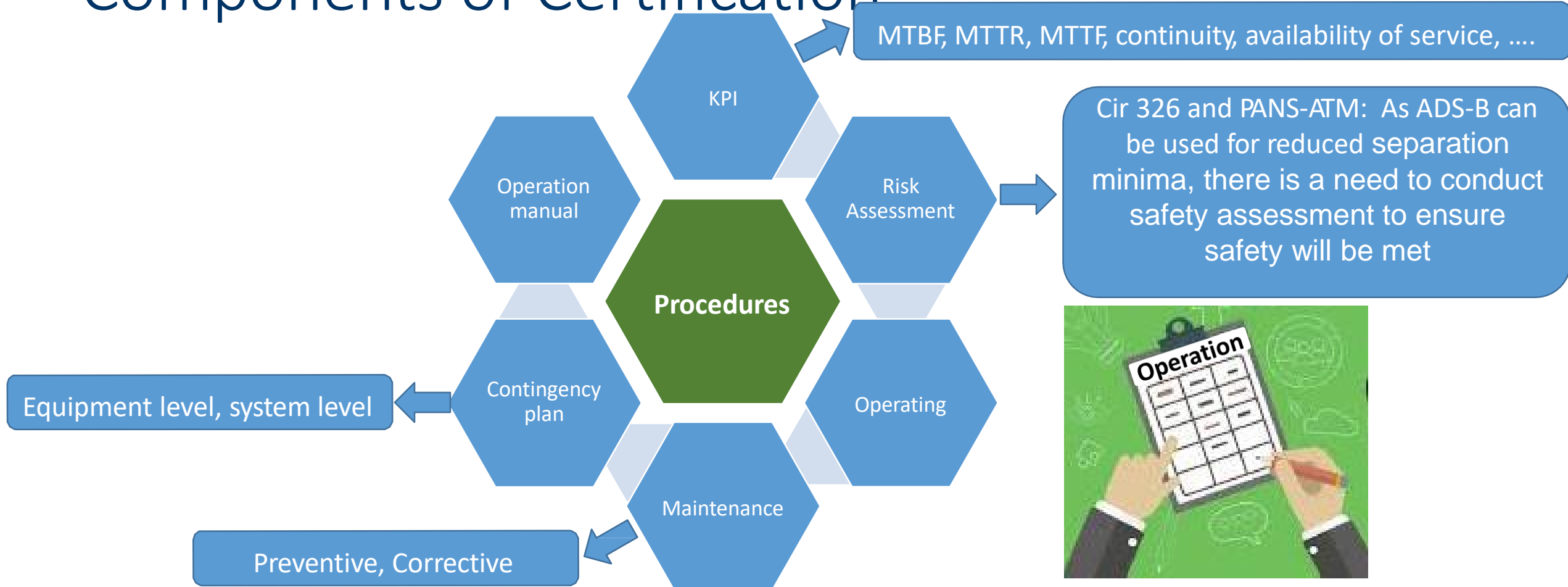
cyber security issues. Doc. 9924 TRANSITION TO DEPENDENT SURVEILLANCE SYSTEMS

Some surveillance systems such as SSR and ADS-B are vulnerable to spoofing, appropriate precautions, safeguards and measures to address cyber security is advisable, Careful assessment of security for ADS-B



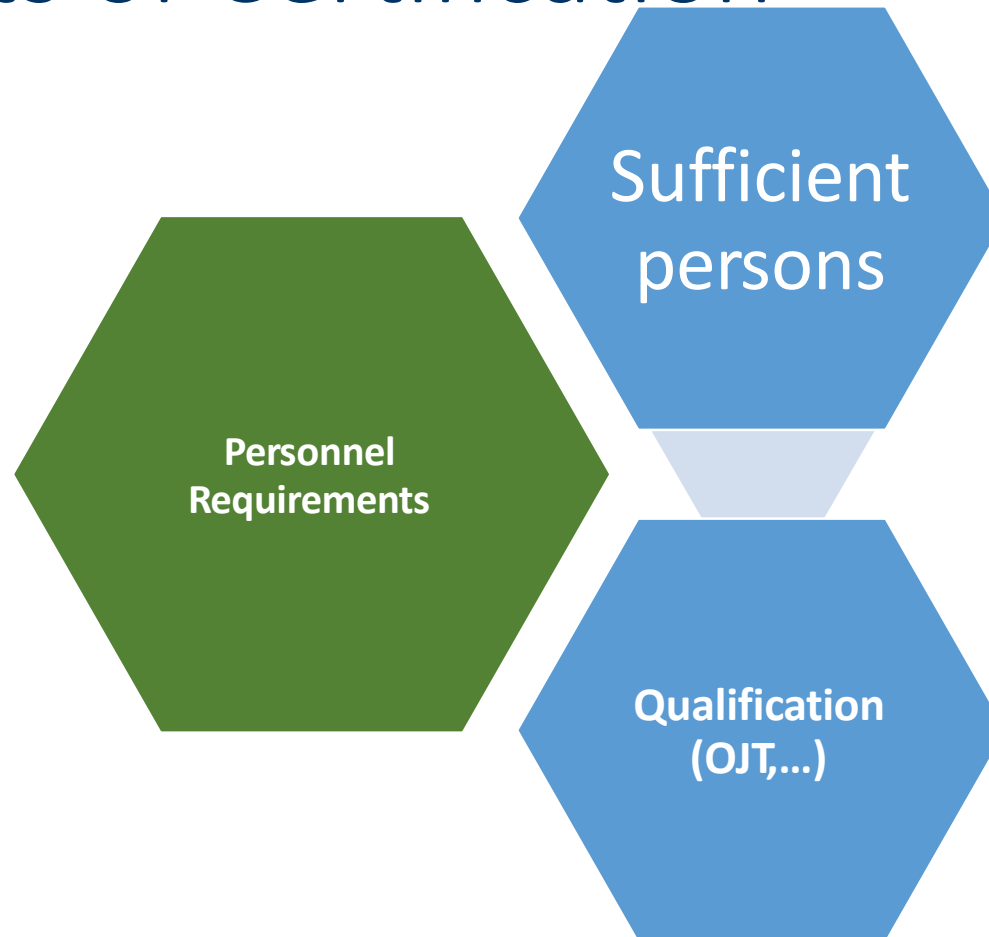


Components of Certification



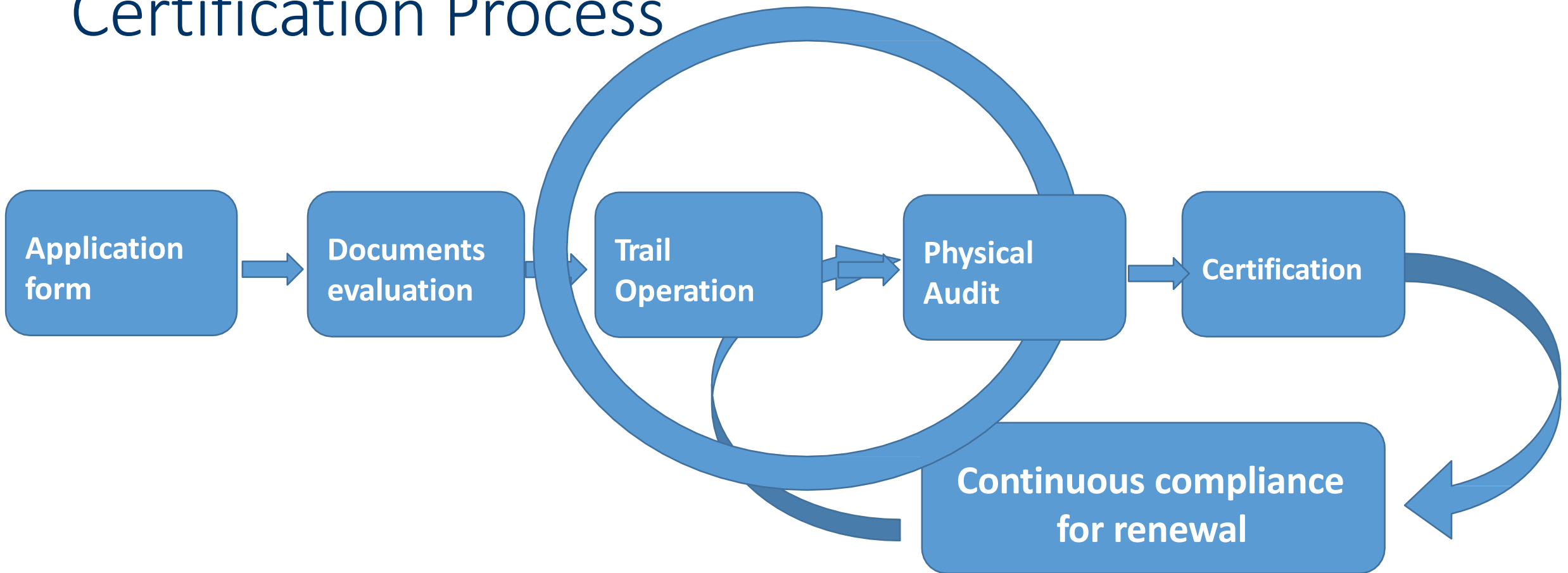


Components of Certification





Certification Process





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