INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

REPORT OF

ICAO APAC IMPLEMENTATION OF ADS-B WEBINAR

Video Tele-Conference (VTC)
1 September 2021

The views expressed in this Report should be taken as those of the Webinar and not the Organization.

Published by the ICAO Asia and Pacific Office, Bangkok

HISTORY OF THE WEBINAR **Page**

LIST OF ATTACHMENTS

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1. Introduction

1.1 The ICAO Asia Pacific Implementation of ADS-B Webinar was held on *1 September 2021*. The Webinar was organized via Video Tele-Conference (VTC) using Microsoft Teams.

2. Attendance

2.1 The Webinar was attended by 298 attendees from 21 States/Administrations, 2 International Organizations and 11 Airlines/Aviation Industries including Australia, Bangladesh, Bhutan, China, Hong Kong China, Macao China, Fiji, India, Indonesia, Japan, Lao PDR, Malaysia, New Zealand, Nepal, Pakistan, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, USA, IATA, IFALPA, All Nippon Airways, China Southern Airlines, Hawaiian Airlines, Singapore Airlines, Lion Jet, Korean Air, Hong Kong Express, Tibet Airlines, Thales, Aireon, CASRI and ICAO. In addition, 3 Technology/Solutions providers namely Thales, Aireon and the Second Research Institute of CAAC (CASRI) sponsored the Webinar. The list of participants is provided in **Attachment 3.**

3. Opening of the Webinar

3.1 The Webinar was opened by Dr. Manjit Singh, Acting Regional Director, ICAO Asia and Pacific Office. Dr. Manjit Singh extended warm welcome to all participants and expressed his thanks to States/Administrations and to the Aviation Industry's Safety and Security Partners for the continuous support to ICAO Regional Activities. He expressed that the aviation community is still suffering the COVID-19 pandemic challenge in 2021 and this prolonged challenge indicated the time to innovate and navigate the new norm is now. He informed that the ICAO Asia & Pacific Office is organising a series of webinars in the year 2021 to increase participants' awareness and understanding of the ICAO requirements needed to support regional planning and implementation activities. He extended warm welcome to all speakers who come from Singapore, Italy and Australia to support this webinar and of the broad range of audiences, and appreciated States commitment to implement ICAO provisions as well as collaborate extensively on the international front which will result in the gradual and steady recovery of air transport in the region.

4. Officers and Secretariat

4.1 Mr. Luo Yi, Regional Officer, CNS of ICAO Asia and Pacific Regional Office acted as the Moderator of the Webinar with the support of Ms. Soniya Nibhani, Regional Officer, ANS (CNS) Implementation, Ms. Zhong Wenhan, Associate CNS Officer, Mr. How Sze Lung, Associate CNS Officer and Ms. Bhabhinan Sirapongkosit, the Programme Assistant of the same office. Ms. Zhong Wenhan, Associate CNS Officer operated Pigeonhole Q&A throughout the Webinar. The Programme for the Webinar is provided in **Attachment 1**.

5. Organization, Working Arrangements and Language

5.1 The Webinar was conducted via Video Tele-Conference (VTC) using Microsoft Teams platform supported by Pigeonhole tool for Q&A. The working language was English inclusive of all documentation and this Report.

6. Summary of Presentations

6.1 Total **Four** (4) presentations were delivered by Experts from Singapore, Italy, and Australia. The Q&A from this Webinar are provided as **Attachment 2** to this report. The presentation materials can also be accessed by the link:
https://www.icao.int/APAC/Meetings/Pages/2021-ADS-B-Webinar.aspx .

The summary of all presentations is as follow:

SP101 - Introduction to Automatic Dependent Surveillance–Broadcast

6.2 Mr. Ho Wee Sin, Deputy Director (ANS Support and Master Planning), Civil Aviation Authority of Singapore, and Co-chair of DAPs Working Group shared the brief introduction, concepts, and benefits of ADS-B with participants. Firstly, he introduced the concept of the Automatic Dependent Surveillance – Broadcast and the benefits of implementation ADS-B, such as increasing track accuracy, higher update rate and cost effective. The three types of ADS-B technology were analyzed, involving Mode S 1090MHz extended squitter, Universal Access Transceiver (UAT) and VHF Datalink Mode 4 (VDL Mode 4). He elaborated the major differences between the three protocol definitions (DO 260, DO260A and DO260B) when applying Mode S 1090MHz extended squitter. Through sharing the four common certification standards, Mr. Ho Wee Sin encouraged the APAC States to adopt all the mentioned standards when implement ADS-B. Lastly, he explained the Eurocontrol ASTERIX CAT 21 which is the data format for transmission from ADS-B system to ATC system and highlighted that both system (ADS-B receiver and ATC system) must use the same edition in order to implement the ADS-B data.

SP102 - CNS – ADS-B Technologies of the future

6.3 Mr. Massimiliano Ferla, expert in Navigation aids systems and Non-Radar Surveillance equipment, product line manager for Navigation Aids & Non Radar Surveillance from Thales Italy. He shared the way to support efficient delivery and system resilience of ADS-B in APAC region, and introduced the innovative approaches to optimize the CNS with future ADS-B technology and capabilities. By analyzing the issues in cybersecurity, GNSS and transponder conformance, he informed the participants about the security protection methods to handle such issues. The new generation of ADS-B ground station equipment and solutions to cope with non-ADS-B equipped aircraft were shared. Furthermore, he provided a common framework for future sustainable investments to achieve and enhance ADS-B operations in APAC region.

SP201 - Sharing of Singapore's experience of ADS-B Implementation

6.4 Mr. Ho Wee Sin, Deputy Director (ANS Support and Master Planning), Civil Aviation Authority of Singapore, and Co-chair of DAPs Working Group shared the Singapore's experience on ADS-B implementation that included ADS-B mandate, ADS-B data sharing, implementation issues, and measures taken to support ADS-B operation. He introduced that data sharing agreements were signed between many States and Singapore had the agreements with Indonesia, Vietnam, Philippines and Brunei. He further explained the process in managing different inputs and outputs in ADS-B system implementation, shared the system implementation issues, and elaborated the measures to mitigate these issues. The ADSB operations experiences were shared by explaining the publication of ADS-B requirements, identification of ADS-B aircraft, automation system coupling, coordination across FIRs, and reduction of Separation. Furthermore, the safety cases and safety assessments experiences were summarized. Lastly, he introduced the implementation progress in space-based ADS-B and informed that space-based ADS-B has been integrated and used in ATM system on 15 Jul 2020 in Singapore.

SP202 - Space-based ADS-B

6.5 Mr. Adam Burford, Aireon Regional Director of APAC and Mr. Greg Dunstone, Sales Engineer of Aireon shared an introduction of space-based ADS-B. The presentation provided an overview of the key differentiators when provisioning ADS-B from space and the key benefits that can be derived for ANSP's in the APAC Region by this provision of service. They also provided an update on the deployment of space-based ADS-B in the region and globally, as well as specific use cases for air traffic surveillance, reduced oceanic separation standards, situational awareness, and air traffic flow management (ATFM). Lastly, the challenges and solutions in deployment of space-based ADS-B under Covid-19 were shared.

7. Closing of the Webinar

7.1 On behalf of the ICAO Secretariat, Mr. Luo Yi, Regional Officer CNS concluded the Webinar. He summarised the key messages from each presentation and emphasized that ADS-B, as an evolving technology, has been a hot topic and under implementation in our region for years. He also expressed thankfulness to all participants from States/Administrations, international organizations, and industry partners including Thales, Aireon and the Second Research Institute of CAAC (CASRI) for their significant contributions and active participation in making the Webinar a successful and fruitful one.

7.2 During the Webinar, Questions and Answers (Q & A) sessions were held at end of each presentation via the Pigeonhole tool. Throughout the Webinar, a total of **63 questions** were asked and **more than 65 feedbacks** for the Webinar were provided by participants with **100% positive response.**

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ICAO Asia/Pacific Regional Webinar

Implementation of ADS-B

01 September 2021 (UTC+7)

Opening Session	
09:00 – 09:05	**Inauguration** *Dr. Manjit Singh , Acting Regional Director*
09:05 – 09:15	**Introduction** ✓ Introduction of Participants **Logistics information** ✓ Administrative information ✓ Pigeonhole tool instructions **Please download all documents/presentations here.**
Webinar Session-1	
9:15 – 10:30	**Moderator-** *Mr. Luo Yi, Regional Officer, CNS* **1. SP101 - Introduction to Automatic Dependent Surveillance – Broadcast** *Mr. Ho Wee Sin,* *Deputy Director (Air Navigation Services Support and Master Planning) of Aeronautical Telecommunications and Engineering Division, Civil Aviation Authority of Singapore, Co-chair of DAPs Working Group* **Abstract:** The presentation will share the brief introduction, concepts, different types of technology used, common certification standards, and benefits of Automatic Dependent Surveillance – Broadcast (ADS-B). **Question and Answer** **2. SP102 - CNS – ADS-B Technologies of the future** *Mr. Massimiliano Ferla,* *Product Line Manager for Navigation Aids & Non Radar Surveillance, Thales Italy* **Abstract:** The presentation will focus on the way to support efficient delivery and system resilience of ADS-B in APAC region and introduce innovative approaches to optimize the CNS with future ADS-B technology and capabilities. The aim of the presentation is to provide a common framework for future sustainable investments to achieve and enhance ADS-B operations in APAC region. **Question and Answer**
10:30 – 10:45	*Refreshment Break*

ICAO Asia/Pacific Regional Webinar

Implementation of ADS-B

01 September 2021 (UTC+7)

Webinar Session-2	
10:45 – 12:00	**Moderator-** *Mr. Luo Yi, Regional Officer, CNS* **3. SP201 - Sharing of Singapore's experience of ADS-B Implementation** *Mr. Ho Wee Sin,* *Deputy Director (ANS Support and Master Planning) , Civil Aviation Authority of Singapore, Co-chair of DAPs Working Group* **Abstract:** The presentation will share the Singapore's ADS-B implementation experiences that include ADS-B mandate, ADS-B data sharing, implementation issues, and measures taken to support ADS-B operation. **Question and Answer** **4. SP202 - Space-based ADS-B** *Mr. Adam Burford, Aireon Regional Director, APAC* *Mr. Greg Dunstone, Sales Engineer of Aireon* **Abstract:** The presentation will provide an overview of the key differentiators when provisioning ADS-B from space and the key benefits that can be derived for ANSP's in the APAC Region by this provision of service. The presentation will provide an update on the deployment of space-based ADS-B in the region and globally, as well as specific use cases for air traffic surveillance, air traffic flow management (ATFM) and beyond. **Question and Answer**
Closing Session	
12:00 – 12:10	**5. Review Outcomes from Webinar and Closing Remarks** *Mr. Luo Yi* *Regional Officer, CNS*

NOTE: This tentative programme is subject to change.
All times indicated are in Local Bangkok Time

Pigeonhole Live

Q&A

SP101 - Introduction to Automatic Dependent Surveillance-Broadcast

01 Sep 2021, 09:00 - 23:59

The presentation will share the brief introduction, concepts, different types of technology used, common certification standards, and benefits of Automatic Dependent Surveillance – Broadcast (ADS-B).

62	51	15	12
Participants	Total votes	Questions	Questions answered
73	8	15	0
Interactions*	Highest vote	Allowed	Dismissed

* Interactions include the total number of questions, votes, comments and answer ratings

15 Questions Allowed

8 VOTES

Anonymous • 01 Sep 2021 09:17 • ✓ ANSWERED

Since the cost of ADS-B is much less than the radar, and the coverage is almost the same. If it is possible that the ADS-B can replace radar in the future?

1 Comment:

Anonymous • Allowed on 01 Sep 2021, 09:33 • Shown

Yes

0 Upvotes | 0 Downvotes

6 VOTES

Anonymous • 01 Sep 2021 09:27 • ✓ ANSWERED

From the AIGD, In tier 1 AIGD recommend to use Site monitor. Can you explain work process or standard of ADS-B Site monitor ?

5
VOTES

Anonymous • 01 Sep 2021 09:19 • ✓ ANSWERED

Can a State that has never had Radar control implement ADS-B? What would be the ADS-B back-up in this case?

1 Comment:

Anonymous • Allowed on 01 Sep 2021, 09:32 • Shown

Yes, many of the PACIFIC Islands have no radar but have ADSB

Greg Dunstone : The major challenge for sttaes without surveillance currently, is to have an ATC system that works with surveillance and training of the ATC staff. On the other side, the cost of an ADS-B only system is much much lower than a radar solution.

(Edited)

1 Upvote | 0 Downvotes

5
VOTES

SIVAKUMAR GANGADHARAN • 01 Sep 2021 09:41 • ✓ ANSWERED

What is the mandate for ADSB in APAC region on priority over Radar surveillance data , while multiple sensors are used in an automation system. Any deadline has been anounced

1 Comment:

SIVAKUMAR GANGADHARAN • Allowed on 01 Sep 2021, 09:54 • Shown

thank you

Greg D: ICAO doesn't define how the ATM processes data, however the APAC ICAO website does have a paper on multisensor fusion. In general the problem is usually that radar is much less accurate (except very close to the radar) and azimuth alignment is the big issue.

(Edited)

0 Upvotes | 0 Downvotes

4
VOTES

Anonymous • 01 Sep 2021 09:27 • ✓ ANSWERED

The accuracy and integrity indicators used across different versions of ADS-B Out could be different. Is there a conversion table between equivalent values of these indicators across different version

1 Comment:

Anonymous • Allowed on 01 Sep 2021, 09:35 • Shown

Yes

See Eurocae ED129 B

(Edited)

0 Upvotes | 0 Downvotes

4
VOTES

Anonymous • 01 Sep 2021 09:31 • ✔ ANSWERED

ADS B process will taken into consideration of ionospheric disturbances during calculations of integrity parameters?

1 Comment:

P S HARI. INDIA • Allowed on 01 Sep 2021, 09:40 • Shown

From PS HARI. INDIA

Greg Dunstone : The GPS Horizontal Protection Level output by the GPS reflects ionosheric effects in the same way it does for NAV/RAIM. The HPL value is converted to ADS-B integrity NIC by the ATC transponder.

(Edited)

0 Upvotes | 0 Downvotes

4
VOTES

Holger Neufeldt • 01 Sep 2021 09:36 • ✔ ANSWERED

What is ICAO's position regarding DO260C introduction and usage, particularly the new 1090 MHz phase overlay

---

3
VOTES

P S HARI. INDIA • 01 Sep 2021 09:25 • ✔ ANSWERED

Aircraft will get weather data from DATIS or own RADAR to send on 260C?

3
VOTES

Anonymous • 01 Sep 2021 09:25 • ✔ ANSWERED

Since Eurocontrol CAT 21 edition 2.1 is compatible with edition 1.x , does the upcoming standards will still be compatible with the old versions?

---

3 VOTES

Anonymous • 01 Sep 2021 09:54 • ✓ ANSWERED

Due to what reasons in an ADSB receiver, the position accuracy provided by ADSB will differ from that provided by RADAR. What corrections can be done in ADSB to reduce this positional error.

1 Answer:

Greg Dunstone

Sales Engineer of Aireon • Submitted on 01 Sep 2021, 10:11

1. In general ADS-B is more accurate than radar. Radar suffers from somewhat large azimuth error, which becomes a large distance at longer ranges. 2. The ADS-B position is reported. The report also includes two quality values : a) The accuracy assuming that the GPS is operating correctly b) An integrity value which represents the distance of the aircraft from reported position which has a chance of 1 * 10-7 chance of being larger than that value. A radar does not provide any realtime integrity report with each message.

1 Comment:

Anonymous • Allowed on 01 Sep 2021, 10:16 • Shown

Sir, so considering ADSB as reference, what changes can be done in RADAR to reduce the positional error

3 Upvotes | 0 Downvotes

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2 VOTES

Anonymous • 01 Sep 2021 09:26

As you mentioned, the ADS-B has higher update rate. So do we really need such high update rate and what are the pros and cons ?

---

2 VOTES

Anonymous • 01 Sep 2021 09:39 • ✓ ANSWERED

I believe ADS-B NIC/NAC/NACp are output performance, Is there a way that a receiver could recognize if ADS-B transmitter conforms to that specs?

1 Answer:

Greg Dunstone

Sales Engineer of Aireon • Submitted on 01 Sep 2021, 10:13

Yes and no. For DO260B the transponder outputs SDA which tells the receiver whether the ADS-B source is "certified". Of course that is an installation parameter that depends on the installation work done.

---

1 VOTE

Anonymous • 01 Sep 2021 09:27 • ✓ ANSWERED

Would you please compare the advantages and disadvantages of the three downlink protocols ?

1 Answer:

Greg Dunstone

Sales Engineer of Aireon • Submitted on 01 Sep 2021, 10:14

The only widely used technology is 1090 ES. The cost and time to retrofit aircraft fleets would be massive.

1
VOTE

Anonymous • 01 Sep 2021 09:29

1090Mhz was known to be saturated in some places. Is using UAT a good idea as an alternative? UAT is known to be used in smaller aircraft, why is that so?

1 Comment:

Holger Neufeldt • Allowed on 01 Sep 2021, 09:56 • Shown

UAT is a completely differnt data link and not compatible to 1090 ES. A "translation service" would be required that increase4s spectrum load.

Greg Dunstone : And ADS-B is used aircraft to aircraft so the aircraft in an airspace have to use the same technology if you want to avoid lots of "translation" equipment.

(Edited)

0 Upvotes | 0 Downvotes

0
VOTES

A K Tiwari • 01 Sep 2021 11:22

Whether separation standards using Space Based ADS-B have been defined by Singapore

Pigeonhole Live

Q&A

SP102 - CNS – ADS-B Technologies of the future

01 Sep 2021, 09:00 - 23:59

The presentation will focus on the way to support efficient delivery and system resilience of ADS-B in APAC region and introduce innovative approaches to optimize the CNS with future ADS-B technology and capabilities. The aim of the presentation is to provide a common framework for future sustainable investments to achieve and enhance ADS-B operations in APAC region.

56	41	12	7
Participants	Total votes	Questions	Questions answered
65 Interactions*	6 Highest vote	12 Allowed / 0 Dismissed	

* Interactions include the total number of questions, votes, comments and answer ratings

12 Questions Allowed

6 VOTES

Anonymous • 01 Sep 2021 10:09 • ✓ ANSWERED

Is it possible to forge ADS-B Out packets giving wrong information to confuse ATCs? Any countering technologies to detect / prevent it?

1 Comment:

Holger Neufeldt • Allowed on 01 Sep 2021, 10:11 • Shown

IN principle yes. All suppliers do it diurung testing in the lab. thales counter-technologies prevent the impact of this on operational data

0 Upvotes | 0 Downvotes

5 VOTES

Anonymous • 01 Sep 2021 10:06 • ✓ ANSWERED

If an aircraft reported own position wrong, how can we identify this situation?

1 Comment:

Holger Neufeldt • Allowed on 01 Sep 2021, 10:10 • Shown

There is possibility to measure prtial aspects of position and to analyze consistency of datal

0 Upvotes | 0 Downvotes

5
VOTES

Anonymous • 01 Sep 2021 10:08 • ✓ ANSWERED

Can you explain more about CAT 53, why we use it to replace CAT21?

1 Comment:

Holger Neufeldt • Allowed on 01 Sep 2021, 10:09 • Shown

cat 21 is essentially full and cannto be extended anymore (new data items). Eurocontrol proposes to introdcue a new renovated cat53 in the futurel

0 Upvotes | 0 Downvotes

4
VOTES

ABHAY SINGH • 01 Sep 2021 10:18

How much cost effective of combining ADS-B & WAM?

2 Comments:

ABHAY SINGH • Allowed on 01 Sep 2021, 10:44 • Shown

We are procuring various ANS facilities like RADAR, ADS-B, GBAS etc. As, ADS-B cost is very much less compared to other surveillance sensors (like RADAR). If ADS-B is combined with WAM (additional WAM) for covering non-ADS-B equipped Aircraft, how much cost will increase compared to standalone ADS-B?

0 Upvotes | 0 Downvotes

Holger Neufeldt • Allowed on 01 Sep 2021, 10:36 • Shown

very :) all our ADS-B ground stations are WAM stations and just need the central component (central processing station, CPS). Additional funcitonality, e.g. interrogator, dual sync independent of GPS is certainly also avialble.

0 Upvotes | 0 Downvotes

4
VOTES

Anonymous • 01 Sep 2021 10:27 • ✓ ANSWERED

What reasons cause wrong position detected by ADSB considering aircraft reported proper position and also no atmospheric anomalies.

1 Answer:

Greg Dunstone

Sales Engineer of Aireon • Submitted on 01 Sep 2021, 10:36

Some Reasons : 1. Software design error (mainly in earlier days) 2. GPS satellite ranging error - but this is flagged by poor HPL- hence poor NIC and the ATC system deletes it 3. GPS geometry - usually flagged by HFOM and hence bad NAC and the ATC system deletes it 4. GPS interference / GPS loss - but this is flagged by poor HPL- hence poor NIC and the ATC system deletes it

3
VOTES

Anonymous • 01 Sep 2021 10:09 • ✓ ANSWERED

you present ADS-B security/GNSS monitoring – is it available

1 Comment:

Holger Neufeldt • Allowed on 01 Sep 2021, 10:12 • Shown

Yes from the new product basseline

0 Upvotes | 0 Downvotes

3
VOTES

Anonymous • 01 Sep 2021 10:11 • ✓ ANSWERED

In the slides you mentioned about the capability of detecting anomalies in data. Besides detection, how these anomalies are screened out in the system? or processed at end user side, eg in ATMS?

1 Comment:

Holger Neufeldt • Allowed on 01 Sep 2021, 10:12 • Shown

INdicated as suspect information.Detaisl available in specific protocols. (not to disturb the normal ATM process)

0 Upvotes | 0 Downvotes

3
VOTES

P S HARI. INDIA • 01 Sep 2021 10:14 • ✓ ANSWERED

Thales have solutions for interoperability issues?

1 Comment:

Holger Neufeldt • Allowed on 01 Sep 2021, 10:15 • Shown

yes

0 Upvotes | 0 Downvotes

3
VOTES

P S HARI. INDIA • 01 Sep 2021 10:20

Is Thales support other NTP services for time synchronisation?

2 Comments:

P S HARI. INDIA • Allowed on 01 Sep 2021, 13:05 • Shown

Thank you very much

0 Upvotes | 0 Downvotes

Holger Neufeldt • Allowed on 01 Sep 2021, 10:39 • Shown

Yes

0 Upvotes | 0 Downvotes

3
VOTES

Anonymous • 01 Sep 2021 10:21

There are lots of ADS-B receivers around and for public use, is there any way that these setups can contribute/ or create problems in the future?

1 Comment:

Holger Neufeldt • Allowed on 01 Sep 2021, 10:38 • Shown

Not the ADS-B receivers as tehy are passively receiving data only (the only trouble might be that they "see" aircraft data). The main concern is however the public availability of low cost software defined transmitters (low power though) and related software on the internet. we are protecting against this threat.

0 Upvotes | 0 Downvotes

2
VOTES

Carl Yung • 01 Sep 2021 10:16

How Thales ADS-B system handles the compatibility issue between the CAT21 edition 2.2 to the previous CAT 21 version?

1 Comment:

Holger Neufeldt • Allowed on 01 Sep 2021, 10:17 • Shown

Ground staiton are capabkle of outputting bioth simultaneously, ADS-B servers can cinvert itl

0 Upvotes | 0 Downvotes

0
VOTES

Anonymous • 01 Sep 2021 10:58

Since the ADS-B will have some problems like Time-stamp issues and time lag of VHF, what method will the system take to deal with the lagged data?

Pigeonhole Live

Q&A

SP201 - Sharing of Singapore's experience of ADS-B Implementation

01 Sep 2021, 09:00 - 23:59

The presentation will share the Singapore's ADS-B implementation experiences that include ADS-B mandate, ADS-B data sharing, implementation issues, and measures taken to support ADS-B operation.

54	75	18	5
Participants	Total votes	Questions	Questions answered
102	7	18	0
Interactions*	Highest vote	Allowed	Dismissed

* Interactions include the total number of questions, votes, comments and answer ratings

18 Questions Allowed

7 VOTES

MUHAMMAD ASAD • 01 Sep 2021 10:54 • ✓ ANSWERED

how many ADS-B sensors do Singapore have to cover its air space?

7 VOTES

Sereima • 01 Sep 2021 10:57 • ✓ ANSWERED

The ADS-B filtering processor that upgrades/converts/translates the different Asterix CAT 21 version editions. Is this unit of the Automation system or is it part of the ADS-B Processor?

1 Comment:

Anonymous • Allowed on 01 Sep 2021, 11:06 • Shown

Filtering process part of Automtn as per docs

0 Upvotes | 0 Downvotes

7 VOTES

Anonymous • 01 Sep 2021 11:01 • ✓ ANSWERED

When sharing ADS-B data with other countries, what were the problems encountered in Singapore, both technical and operational aspects?

6 VOTES

Carl Yung • 01 Sep 2021 10:05

Referring to slide 24 about the ADS-B track using Mode A code, how does SGP implement the Mode A code in your ADS-B system?

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6 VOTES

Anonymous • 01 Sep 2021 10:55

ADS-B Filtering and processing system, Is it a proprietary system or a vendor supply?

---

6 VOTES

Anonymous • 01 Sep 2021 10:58 • ✓ ANSWERED

Do SGP experiences issues with mismatching aircraft address/ flight ID with that filed in flight plans? How SGP handles the mismatch cases?

---

6 VOTES

Anonymous • 01 Sep 2021 10:59

Handling of Distress Code: Do you see any chance that the Mode A is squawking 7500/7600/7700 yet the priority bits are not reflecting/ not correct/ or vice versa?

1 Comment:

Holger Neufeldt • Allowed on 01 Sep 2021, 11:01 • Shown

Not very likely as the trnasponder handles the priority/emrgency codes itself, so ADS-B and Mode A codes is the same equipment in this respect.

1 Upvote | 0 Downvotes

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6 VOTES

P S HARI. INDIA • 01 Sep 2021 11:15 • ✓ ANSWERED

In multi sensors fusion which has top priority whether RADAR or ADS B in Automtn? Which ICAO docs will clarify this issue?

2 Comments:

P S HARI. INDIA • Allowed on 01 Sep 2021, 11:28 • Shown

Thank you all

0 Upvotes | 0 Downvotes

Greg Dunstone • Allowed on 01 Sep 2021, 11:27 • Shown

Greg Dunstone : see
https://www.icao.int/APAC/Documents/edocs/cns/grpt_atcmulti_adsbdata.pdf

0 Upvotes | 0 Downvotes

5
VOTES

ABHAY SINGH • 01 Sep 2021 11:19

Automation system integrates many sensors data to provide complete coverage of Airspace. Track splitting is most common issue. How to minimize the splitting of tracks due to various sensors?

1 Comment:

ABHAY SINGH • Allowed on 01 Sep 2021, 11:28 • Shown

How to minimize the splitting of tracks due to ADS-B and other sensors?

0 Upvotes | 0 Downvotes

4
VOTES

Anonymous • 01 Sep 2021 10:59

Since the ADS-B will have some problems like Time-stamp issues and time lag of VHF, what method will the system take to deal with the lagged data?

3
VOTES

Anonymous • 01 Sep 2021 10:58

SGP manages a shared list of aircraft issues eg Poor NUC. How SGP handles poor positions yet with good NUCp in ADSB data?

3
VOTES

Anonymous • 01 Sep 2021 11:01

As for Automation System coupling order, as you mentioned, Mode A code could lead to error, so why not consider to give priority to the Aircraft Address as it supposed to be unique?

3 Comments:

Holger Neufeldt • Allowed on 01 Sep 2021, 11:15 • Shown

That is correect of course - so Aircraft ID is good for humans (controllers) while 24 bit adddress is good for machines (automated flight plan coupling).

0 Upvotes | 0 Downvotes

Greg Dunstone • Allowed on 01 Sep 2021, 11:08 • Shown

Greg Dunstone : Aircraft address - 6 hexadecimal characters is very poor for humans to manage. It was designed to solve tracking problems by machines. In addition, in my view Mode A is an historical anachronism and should be replaced by Flight ID which is meaningful to all, and whilst possibly useful as a backup - too many error occur using aircraft address in flight plans (eg change airframe, typo etc) for it to be considered the "prime".

0 Upvotes | 0 Downvotes

Holger Neufeldt • Allowed on 01 Sep 2021, 11:07 • Shown

Older ADS-B transponder versions do not provide Mode A as part of ADS-B, so code not available for these in non-radar airspace. Use of Mode S address for coupling would be good if supported by the ATM system

0 Upvotes | 0 Downvotes

2 VOTES

Anonymous • 01 Sep 2021 11:18

Can you briefly elaborate how you managed any ATCO's hasitance and distrust on the possible inaccuracy and reliability for the use of separation?

---

2 VOTES

Anonymous • 01 Sep 2021 11:19

Does CAAS has plan to use Space Based ADS-B Date in order to offer separation in Oceanic Airspace? or utilize only for Air Traffic Management?

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2 VOTES

Anonymous • 01 Sep 2021 11:21

S-ADS-B Vs ADS-C?

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1 VOTE

Anonymous • 01 Sep 2021 10:59

Do SGP experiences issues with mismatching aircraft address/ flight ID with that filed in flight plans? How SGP handles the mismatch cases

---

1 VOTE

Anonymous • 01 Sep 2021 11:18

S-ADS B implementation, do you apply same separation standards where there is no VHF contact

---

1 VOTE

Sivakumar Gangadharan • 01 Sep 2021 11:18

In your MST (Multi sensor tracks) , what is the priority of the various sensors used in track association?

1 Comment:

Sivakumar Gangadharan • Allowed on 01 Sep 2021, 11:24 • Shown

Please ignore . Already asked.

0 Upvotes | 0 Downvotes

Pigeonhole Live

Q&A

SP202 - Space-based ADS-B

01 Sep 2021, 09:00 - 23:59

The presentation will provide an overview of the key differentiators when provisioning ADS-B from space and the key benefits that can be derived for ANSP's in the APAC Region by this provision of service. The presentation will provide an update on the deployment of space-based ADS-B in the region and globally, as well as specific use cases for air traffic surveillance, air traffic flow management (ATFM) and beyond.

43	75	18	7
Participants	Total votes	Questions	Questions answered
93	8	18	0
Interactions*	Highest vote	Allowed	Dismissed

* Interactions include the total number of questions, votes, comments and answer ratings

18 Questions Allowed

8 VOTES
P S HARI. INDIA • 01 Sep 2021 11:47 • ✓ ANSWERED
Is aircraft need two antennas both bottom and top for ADS-B & Space based ADS B? Any instructions for aircraft manufacturers regarding this issues?

6 VOTES
Anonymous • 01 Sep 2021 11:36 • ✓ ANSWERED
You say you detect all ADS-B equipped aircraft. How can you gaurentee this?

6 VOTES
Anonymous • 01 Sep 2021 11:38 • ✓ ANSWERED
How about the latency time of the space-based ADS-B data? How to deal with the latency problem?

6 VOTES
Holger Neufeldt • 01 Sep 2021 11:43 • ✓ ANSWERED
Ground coverage seems to work nicely in low density areas,. What is you experience in higher density airspace, particularly wiht respect to probability of detection?

6 VOTES

Anonymous • 01 Sep 2021 11:49 • ✓ ANSWERED

How does the operation cost compares between owning a ADS-B receiver + management system with direct use of Space based ADS-B as a service?

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5 VOTES

Anonymous • 01 Sep 2021 11:42

Can we say that in future, we can use space-based ADS-B to get full surveillance coverage which will totally replace radar and ground based ADS-B.

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5 VOTES

Anonymous • 01 Sep 2021 11:45 • ✓ ANSWERED

As you mentioned that space based ADS-B is financial efficiency, so how many percentage of money will be saved to get the same coverage when using space-based ADS-B?

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5 VOTES

Anonymous • 01 Sep 2021 11:51

How do ou address the issue of data sovereignity?

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5 VOTES

Anonymous • 01 Sep 2021 11:53 • ✓ ANSWERED

what is the probability of Jamming on space based ADSB

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4 VOTES

Holger Neufeldt • 01 Sep 2021 11:41

Are there any issyues detecitng aircraft with a bottom only antenna? (typical GA)?

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3 VOTES

P S HARI. INDIA • 01 Sep 2021 11:51

S ADS B coverage at poles of earth?

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3 VOTES

ABHAY SINGH • 01 Sep 2021 11:59

Space is also covered with so many satellites and so many terrestrial bodies. What are the probability of failure of space based ADS-B satellite & ADS-B service ?

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3 VOTES

Sivakumar Gangadharan • 01 Sep 2021 12:00

Has Space based ADSB tested for 3 NM Approaches along with Radars anywhere in the world?

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2 VOTES

Anonymous • 01 Sep 2021 11:34

S-ADS-B vs ADS-C?

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2 VOTES

Anonymous • 01 Sep 2021 11:42

How many percentage of aircrafts are space-based ADS-B capable?

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2 VOTES

Holger Neufeldt • 01 Sep 2021 11:44

Can you elaborate on ADS-B validation, i.e. how do you deal with transponder anomalies and adverse effects?

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2 VOTES

Holger Neufeldt • 01 Sep 2021 11:47

Which ground network provisions are required by ANSP?

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2 VOTES

Holger Neufeldt • 01 Sep 2021 12:01

whihc update rate do you support

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