

**True-AG**  
**16 December 2025**  
**Summary of Discussion for Meeting/12b (Virtual)**

**1.0 WELCOME, OPENING REMARKS, and ATTENDANCE**

1.1 The meeting was opened, and the attendees were welcomed by the Chair.

1.1.2 Introductions one new member and an ICAO OPS intern:

- IATA: Andres Ospina; *new* Member
- Brazil: Lieutenant Langowski; *new* Advisor
- ICAO OPS Intern: Marya Mahdid

1.1.3 There were no objections to a Teams recording and transcription of the meeting.

1.1.4 The meeting agenda was accepted with no objections.

1.2 The Chair recalled the [True AG Terms of Reference](#), as a review of the work to be performed by the Group. A few highlights are listed below:

1.2.1 Scope

Assist ICAO in developing a framework for a safe and efficient global transition to True North, including in-depth studies, development of a Concept of Operations, a transition plan, and provision of strategic advice to ICAO.

1.2.2 Tasks

- a) Develop CONOPS for the global implementation of True North;
- b) conduct further studies on the impact of a True North transition on different stakeholders, based on the CONOPS, including a cost-benefit analysis, safety assessment and SWOT analysis;
- c) present such information to assist the ANC in evaluating the outcome of the TRUE-AG, including at the results of a) and b), for review and agreement by the ANC followed by validation by States and industry stakeholders;
- d) develop a comprehensive transition plan; and
- e) coordinate with relevant Panels, on the development of work programme items for job cards, subject to the outcome of the review in c)

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1.2.3 It was recalled that no work would proceed until ICAO's Air Navigation Commission (ANC) has reviewed and agreed the recommendation, followed by validation by States and industry stakeholders.

1.2.4 Working arrangements and Timelines

- Activities will be conducted through plenary sessions, specialized working groups, teleconferences, and face-to-face meetings as required.
- Reporting will be made to the ANC via the ICAO Secretariat.
- All tasks are expected to be completed within three years from the first True AG meeting.

1.2.5 All intellectual property developed by the True AG shall be retained by ICAO unless ICAO expressly decides otherwise.

1.3 Attendance

1.3.1 Attendance is recorded in the True-AG secure portal, as well as presented in Appendix I of this meeting summary. [Members - Advisors Master Attendance List](#)

**2.0 ACTION ITEM REVIEW**

Action Items (AI) 10, 54, 57, 62, 63, 65, 66, 71, 72 and 74 were discussed. AI 65 and 66 were closed. Refer to secure portal [Master Action Item List](#) for full details.

Action Item 10 – Impact Briefings

Possible briefing from IFALPA in February

Action Item 54 – Engage Standards Development Organizations (SDOs), specifically EUROCAE/RTCA, about need to understand dependencies on magnetic input to existing Minimum Operational Performance Standards (MOPS) for common avionics technical standards.

The Chair will reach out to the POC for an update.

Action Item 57 – Runway Identifier Change Suspension/Netherlands

A status update was requested by a participant. It was noted the next action is expected by the POC during ADOP/WG/9 - June 2026.

Action Item 62 – Avionics Behavior in Areas without Magnetic Models

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- Discussed avionics behavior in regions where no magnetic variation model is available (commonly referred to as the “keyhole” areas near the magnetic poles).
  - See Appendix II for Keyhole diagrams.
- Preliminary observations indicate:
  - Some aircraft display No Computed Data (NCD) on ARINC label for magnetic when operating in True North reference.
  - Variability in aircraft behavior when transitioning in and out of these regions.
- A few participants confirmed that investigations are ongoing across multiple aircraft platforms and systems (FMS, GPWS, IRS).
- A more comprehensive report is expected in the coming months.

Action Item 63 – Update of ICAO Impact Assessment Tool

- The Chair reported on updates to the ICAO tool hosted on the secure portal, including:
  - Incorporation of the 2025 World Magnetic Model;
  - Latest available aeronautical data.
- The tool is intended to provide representative regional impact assessments, not absolute cost figures.
- Enhancements allow analysis based on:
  - Statistical percentages;
  - Absolute numbers;
  - Geographic visualization (e.g., Google Earth outputs).
- The updated version of the tool is expected to be shared before the end of the year, e.g., 31 December 2025.

Action Item 65 – Determine source for global airport list

- The ICAO list is limited and does not include non-paved/smaller airports. This action was closed based on the information in AI63.

Action Item 66 – Garmin to brief how they manage the Magnetic Variation (MagVar) capability today and its implications on our work activities. Include how Garmin manages MagVar tables on the backside.

- The presentation was received at meeting/12b. AI is closed.

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Action Item 71 – Part 1) Write Working Paper (WP) and submit to AIRP to request action to inform the AIRP that operators should maintain MagVar based on True-AG MagVar discussion, and Part 2) informally brief the Information Management Panel (IMP).

1. Part 1) WP to AIRP – completed and feedback to be provided to True-AG by 6 March 2026, [AIRP12-WP.03](#)
2. Part 2) Informally briefed the IMP during the week of 15 September 2025 and a sub working group was identified. After receiving feedback from AIRP, the IMP POC will write an Information Paper (IP), as appropriate, for the IMPs sub-working group's July meeting in July 2026.
  - a. Do we ask for a mandate to update? Not ready for that as we are a study group.
  - b. Identified two paths, AIRP and IMP.
  - c. Need to identify the deficiencies.
  - d. Need to consider a secondary effect and accelerate TN.

Action Item 72 – Consider bringing NASA ASRS on as an Advisor or SME (under USA) and/or request a presentation on magnetic anomalies and other MN issues being reported.

POC stated that it is a work in progress and reaching out to other stakeholders.

Action Item 74 - Send authors (Octavian and Christian) of the Engineering Proceedings (two documents) a list of questions and request for them to speak at a True AG meeting.

1. Documents are uploaded in the secure portal, Meeting/11 folder.
2. Ask ANSP Focus Group to endorse and submit.

POCs met with authors on 29 September 2025, and they are willing to participate in True-AG. Considered bringing onboard under USA or CANSO (A MacKay checking with Program Manager at CANSO to bring on via CANSO).

Determine if they should be invited to April 2026 meeting.

## 3.0 PRESENTATIONS

### 3.1 GAMA Advisor, Dustin Kilgore, Garmin

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GAMA advisor, Dustin Kilgore presented Garmin's Avionics and Magnetic North, [Garmin Avionics and Magnetic North-Restricted to True-AG use only](#). This presentation is available on the secure portal for True-AG only and not for use beyond this Group.

#### 3.2 Magnetic Variation Discrepancies – Airworthiness Panel (AIRP) Considerations

The Group discussed the working paper (WP) that was submitted to the Airworthiness Panel (AIRP) for review at their November 2025 meeting. The WP addressed discrepancies between:

- Ground-based magnetic data update cycles; and
- Airborne system update practices.

Key points:

- Rapid changes in Earth's magnetic field may result in outdated data in some aircraft systems.
- This raises potential continued airworthiness and operational awareness concerns.
- The paper seeks guidance on managing aircraft systems that:
  - Cannot be updated; or
  - Are not updated in a timely manner.

The AIRP Members have been instructed to provide comments to the True-AG and AIRP Secretaries by 30 January 2026. Feedback from the AIRP expected by 6 March 2026, per WP.

#### 3.3 Briefing to ICAO's Flight Operations Panel (FLTOSP)

The Co-Chair presented a familiarization briefing to the FLTOSP on 20 November 2025. Questions from the FLTOSP were answered and are shared below:

#### [FLTOSP Familiarization Briefing November 2025](#)

- 1) Provide further clarification of what is true native aircraft.
  - a. Referred to the presentation slide on the definitions provided and their differences.
- 2) The General Aviation impact is real, and so are States who may not want to comply.
  - a. Shared the expressed concerns, cost of avionics, and lack of participation/interest from States, and even those expressing that they do not see a benefit.
  - b. Stated that until the sensors are economical, that will become less of an issue, but the risk still needs to be documented.
- 3) Have quantum sensors been considered, and have we explored using them?

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- a. Stated they are not easily accessible and quite expensive.
- b. Need to identify if there is a POC in True-AG who may be familiar with the topic and write about it in our deliverable document, and/or have a contact to invite for a presentation.

### 3.4 Aircraft Operations Focus Group update

The Aircraft Operations Group moved their parking lot items to the Deliverables Document, therefore only looking at one file.

### 3.5 Deliverables Document Updates by IFATCA member, Dan Walker

IFATCA member Dan Walker presented an overview of updates to the True-AG Deliverables Document, version 5.0 (link below is to v4.1). Additional work on v5.0 will be shared with the rapporteur for each focus group on 12 January with a request for review and input by each focus group during their meeting/13a on 26 January. At virtual meeting/13b on 10 February, a discussion and upload of v.5.0 will take place as the new working version in Teams.

[Deliverables Document v4.1 in Teams](#)

## **4.0 CLOSING REMARKS, FUTURE MEETINGS, AGREEMENTS and DECISIONS**

### 4.1 Closing Remarks

#### 4.1.1 Present responsibilities and identify Rapporteurs for Focus Groups

Rapporteurs are expected to call meetings of their respective Focus Group, record attendance, document the meeting, brief the True-AG, and provide input to the Deliverables Document.

It is expected that meeting/13a on 26 January 2026 will be used for the Focus Groups, and they may meet at other times determined by the individual Groups.

- ANSP/NavData: Dan Walker and Kyle Phillips (co-rapporteurs)
- Aerodromes: Don Taylor will survey the Group
- Aircraft Operations: Susan Cheng sent an email to the Group to request volunteers.

### 4.2 Future Meetings

4.2.1 Save the Date for Meeting/13: Reserved for the individual Focus Groups to meet and discuss their respective work. The reserved day and time: 26 January 2026, 0900-1300 (Canada/USA eastern).

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- Focus Group Rapporteurs will create and send Teams links to the respective participants.

4.2.2 Meeting/14 (13-17 April 2026) hosted by NATS in Southampton, UK. All are welcome to attend in-person.

Actions:

- i. Advise in-person attendance plans no later than February 28, 2026 to [cmadden@icao.int](mailto:cmadden@icao.int)
- ii. Attendees are required to submit name, passport number, and employer organisation by no later than March 13, 2026 to [Mike.HORNBY@nats.co.uk](mailto:Mike.HORNBY@nats.co.uk)

4.2.3 List of remaining Virtual and In-Person Meetings:

# 13a	Jan 26, 2026	Virtual	Reserved for Individual Focus Groups to meet	
# 13b	Feb 10 2026	Virtual		
<b># 14</b>	<b>April 13-17, 2026</b>	<b>In-Person</b>	<b>Southampton, UK</b>	<b>Hosted by NATS and UK CAA</b>
# 15a	TBD	Virtual		
# 15b	TBD	Virtual		
# 16a	TBD	Virtual		
# 16b	TBD	Virtual		
<b># 17</b>	<b>Sep 14-18, 2026</b>	<b>In-Person</b>	<b>Abu Dhabi, UAE</b>	<b>Hosted by UAE</b>
# 18a	TBD	Virtual		
# 18b	TBD	Virtual		
# 19a	TBD	Virtual		
# 19b	TBD	Virtual		
<b># 20</b>	<b>Mar 1-5, 2027</b>	<b>In-Person</b>	<b>Brussels, Belgium</b>	<b>Hosted by Eurocontrol</b>

4.3 Agreements and Decisions

4.3.1 Refer to 4.2.2: All members, advisors and subject-matter experts (SMEs) were requested to send in-person attendance plans and passport information for meeting/14.

4.3.2 Refer to Action Item Review, section 2.0 above.

4.3.3 Some talking points for meeting/13b, 10 February 2026 agenda:

- Impact briefings – possibly IFALPA

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- Deliverables document additions by Focus Groups
- Update on RTCA/Eurocae update (AI10)
- Meeting/13a Focus Group brief-outs by rapporteurs.

**5.0 ADJOURN**

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**Appendix I – Attendance**

Brazil	Member (former Advisor)	Franca, Renata Captain	ANSP/NavDat a	renatargfs@decea.mil.br
Canada	Member	Mutton, Scott	Aerodrome	scott.mutton@tc.gc.ca
CANSO	Member/ Chair	MacKay, Anthony	All	anthony.mackay@navcanada.ca
Chile	Member	Orellana, Daniel	Aerodrome	dorellanae@dgac.gob.cl
Chile	Advisor	Uzieda, Francisco	ANSP/NavDat a	fuzieda@dgac.gob.cl
China	Member	Jie, Ren	ANSP/NavDat a	jren@cauc.edu.cn
China	Advisor	Yannan, Qi	Aircraft Ops	yannan.qi@yahoo.com
Eurocontr ol	Member	Lipp, Andreas	ANSP/NavDat a	andreas.lipp@eurocontrol.int
France	Member	Bizet, Philippe	ANSP/NavDat a	philippe.Bizet@aviation- civile.gouv.fr
GAMA	Member	Hennig, Jens	Aircraft Ops	jhennig@gama.aero
GAMA	Advisor	Fenton, Bryce	Aircraft Ops	bfenton@txtav.com
GAMA	Advisor	Kilmore, Dustin	Aircraft Ops	Dustin.Kilgore@garmin.com
IAIN	Member	Banning, Bart	Aircraft Ops	b.f.t.banning@lvnl.nl
IAOPA	Member	Hofmann, Frank	Aircraft Ops	fhofmann1941@gmail.com
IAOPA	Advisor	McClay, Jim	Aircraft Ops	james.mcclay@aopa.org
IATA	Member	Ospina, Andres	Aircraft Ops	ospinaa@iata.org
IATA	Advisor	Dasgupta, Neil	Aerodromes	neil.dasgupta@ba.com
IATA	Advisor	Allen, Kevin (AA)	ANSP/NavDat a	kevin.allen@aa.com
ICAO – OPS	Secretar y	Madden, Christine	All	cmadden@icao.int

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ICAO – OPS	Secretariat	Mahdid, Marya	N/A – temporary/interim	n/a
ICCAIA	Member	Cheng, Susan	Aircraft Ops	susan.S.Cheng@boeing.com
ICCAIA	Advisor	Casement, Arthur	Aircraft Ops	arthur.casement@aero.bombardier.com
ICCAIA	Advisor	Laplante, Martin (Bombardier)	Aircraft Ops	martin.laplante@aero.bombardier.com
ICCAIA	Advisor	Roesch, Scott (Honeywell)	Aircraft Ops	srr@honeywell.com
ICCAIA	Advisor	Norris, Marie	Aircraft Ops	marie.Norris@Honeywell.com
ICCAIA	Advisor	Rondeau-Garon, Etienne	Aircraft Ops	erondeau-garon@bellflight.com
ICCAIA	Advisor	Phillips, Kyle	ANSP/NavData	kyle.phillips@boeing.com
IFALPA	Member	Bonanno, Michael	Aircraft Ops	<a href="mailto:michael.bonanno@alpa.org">michael.bonanno@alpa.org</a>
IFATCA	Member	Walker, Daniel	ANSP/NavData	dan.walker@ifatca.org
Norway	Member	Hofgaard, Hans Jacob	ANSP/NavData	hans.jacob.hofgaard@avinor.no
Norway	Advisor	Jakobsen, Espen	ANSP/NavData	espen.jakobsen@avinor.no
Russian Federation	Member	Severin, Anton	ANSP/NavData	severin_av@gosniiga.ru
South Africa	SME	Matumba, Owen	Aircraft Ops	matumbao@caa.co.za
Spain	Member	Perez Ramos, Jesus	ANSP/NavData	<a href="mailto:jpramos@enaire.es">jpramos@enaire.es</a>
United Arab Emirates	Member	Almarashda, Saqr	ANSP/NavData	smarashda@szc.gcaa.ae

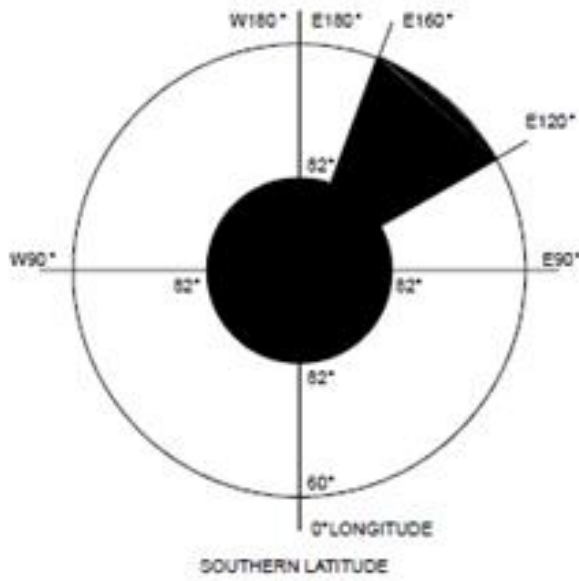
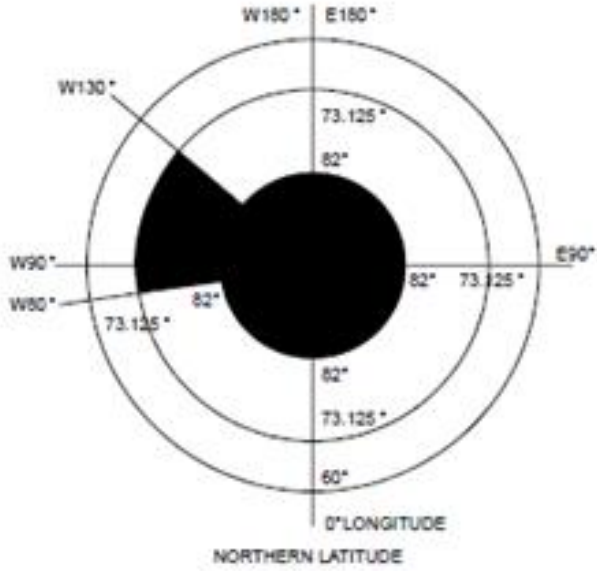
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United Kingdom	Member	Roberts, Matt	Aerodrome	matt.roberts@caa.co.uk
United Kingdom	Advisor	Hornby, Mike	ANSP/NavData	mike.hornby@nats.co.uk
United States	Member	Taylor, Donald	Aerodrome	donald.taylor@faa.gov
United States	Advisor	Harvey, Curtis	Aircraft Ops	<a href="mailto:curtisharvey@mitre.org">curtisharvey@mitre.org</a>
United States	Advisor	Harris, Timothy	Aircraft Ops	<a href="mailto:timothy.harris@faa.gov">timothy.harris@faa.gov</a>
United States	Advisor	Lanier, Don	ANSP/NavData	donald.h.lanier@faa.gov
United States	Advisor	Frasier, Joseph	ANSP/NavData	joseph.r.frasier.civ@army.mil
United States	Advisor	Maturo, David	ANSP/NavData	david.p.maturo@faa.gov
United States	Advisor	Wilson, Mark E	ANSP/NavData	mark.e.wilson@faa.gov
United States	Advisor	Letzgus, Eric	Aerodrome	eric.letzgus.5@us.af.mil
United States	Advisor	Atkinson, David	ANSP/NavData	david.L.Atkinson@nga.mil
United States	Advisor	Murphy, David	ANSP/NavData	david.M.Murphy@nga.mil

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**Appendix II: Keyhole Diagrams**



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Figure 503. Magnetic Variation Northern and Southern Latitude Cutouts