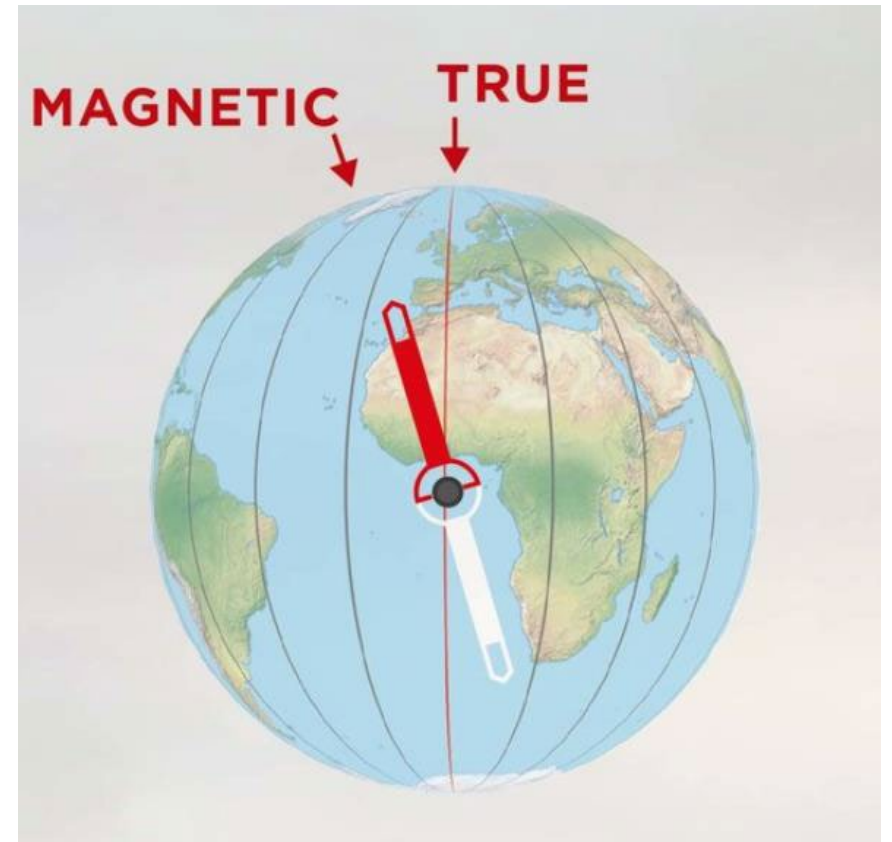
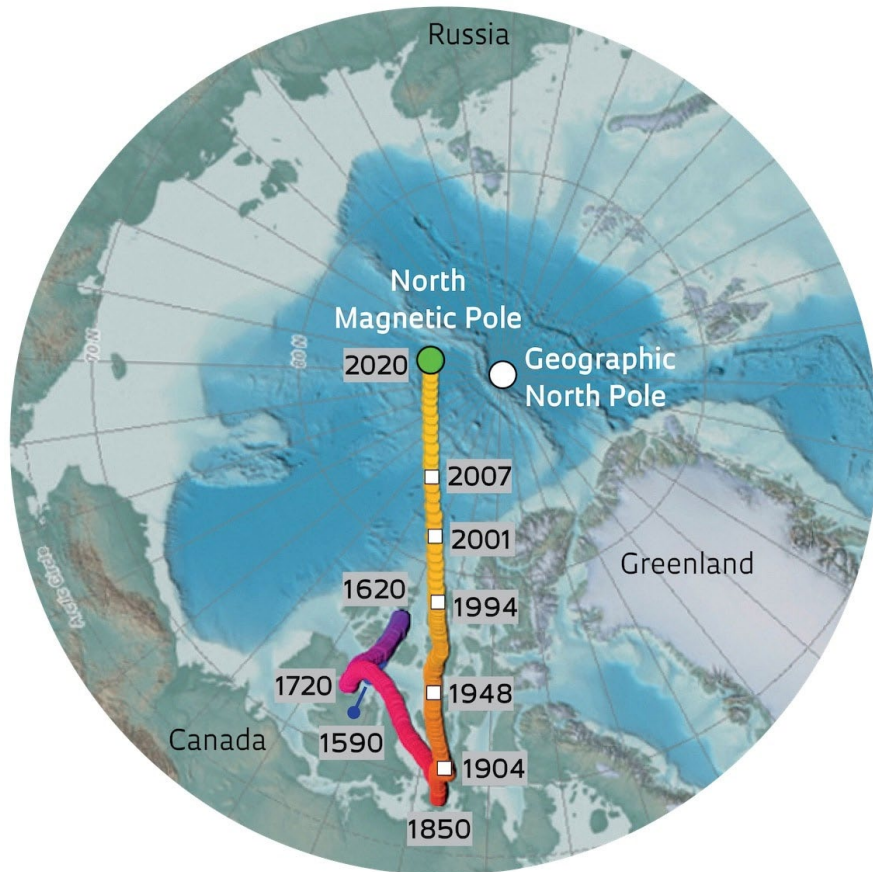


# Evaluation of the Transition's Impact from Magnetic to True North Presented By: UAE





# PBN SG/8 Working Paper Overview (Doha, 12-13 Dec)

## ICAO Survey on Moving from Magnetic to True North

- ICAO conducted a survey to assess the transition's impact on air operations.
- Feedback gathered from states covered technical, operational, and cost impacts.
- The conclusion highlighted the importance of global collaboration for a successful transition.

INTERNATIONAL CIVIL AVIATION ORGANIZATION  
A UN SPECIALIZED AGENCY  
ICAO SURVEY ON MOVING FROM A MAGNETIC TO A TRUE NORTH  
G/8 (DOHA, QATAR, 12 - 13 DECEMBER 2023)

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## Related Working Papers

- Canada presented papers to the ANC detailing the change to switch to a True North Reference system in aviation
  - AN Conf/12 WP/147
    - Para 6.5.25: ICAO invited interested states to study the technical, operational, and economic impacts, as well as the costs and benefits.
  - AN Conf/13 WP/114
    - Para 3.44: ICAO should explore the costs and feasibility of adopting True North.
    - *Recommendation 3.5/4*: Conduct a detailed study on the technical, operational, and economic feasibility.



## ICAO State Letter – Expert Nominations (3 January 2024)

- ICAO Request for Expert Nominations (Ref.: AN 11/65-IND/24/1)
  - At the seventh meeting of its 224th Session, held on 7 November 2023, supported the establishment of the True North Advisory Group (TRUE-AG)
    - ICAO invited states and organizations to nominate experts for TRUE-AG.
    - Participating Countries & Organizations:
      - Australia, KSA, USA, UAE, Incorporated (ARINC), (CANSO), (EASA), (EUROCONTROL), (GAMA), (IAIN), (IAOPA), (IATA), (IBAC), (ICASC), (ICCAIA), International Federation of Air Line Pilots' Associations (IFALPA), (IFATCA) and others.
    - Task: Develop CONOPS, analyse impacts, and conduct studies on costs, benefits, and safety.



## Tasks and Required Expertise for TRUE-AG

### ➤ Tasks:

- Develop CONOPS for True North implementation.
- Conduct studies on impacts (cost-benefit analysis, safety, and SWOT).

### ➤ Required Expertise:

- Air navigation, regulatory compliance, avionics, air traffic control (ATC), procedure designers, etc.





Subject	Components/Systems:
<b>All Aeronautical Data published by a state:</b>	
	Charts (IFP, ENR Charts)
	Navigation Data (Tabular Description)
	AIP (ENR Data, AD Data)
	Data Exchange (AIXM)
	Publication systems
	IFP Design
	Data Origination
<b>Third party data providers:</b>	
	Production Systems
	Processing Standards (ARINC, RTCA, EUROCAE)
	Charts
	NavData
	AMM/AMDB
	Obstacles/Terrain
	3rd party Procedure Design
	UAS
<b>Flight Planning Systems:</b>	
	FP Processing and distribution systems (state, regional, etc.)
	Flow management systems
	Data exchange (i.e. FIXM, FF-ICE)/Creation, conformance
	3rd party FP service providers
<b>Surveillance Systems:</b>	
	Ground Based (RADAR, ADS-B, MLAT, ASDE, SMR)
	Space Based (ADS-B, ADS-C, GADSS, ADT)
<b>Navigation Systems:</b>	
	Ground Based (VOR, DME, TACAN, NDB, VDF, ILS)
	Space Based
	Management System
<b>Communication Systems:</b>	
	VHF, SATCOM, CPDLC, UHF
<b>Weather systems:</b>	
	Weather/MET Sensing and Display (Video Mapping)
<b>ATM/UTM System:</b>	
	ATS/ATC Procedures (Separation, etc.)
	Chart Video Mapping
	Surveillance data processing
	Flow and capacity tools
	ATS/ATCO displays (targets, target tools, maps, overlays, display orientation)
	ATS (ATCO, ATC and ATS Specialists) Personnel

A	B	C	D	E	F	
Subject	Components/Systems:	System Change/Impact	Operational Change/Impact	Training Change/Impact/Requirement	Additional Considerations	
All Aeronautical Data published	Charts (IFP, ENR Charts)	Software changes, if necessary, for hardware changes envisioned	Significant impact during the transition due to introducing new procedures on charts. After transition, minimal impact	Awareness education, Coordination	Thorough, Manual updating of examined charts	
	Navigation Data (Tabular Description)	Software changes, if necessary, for hardware changes envisioned	Navigation data will need to be updated	Awareness education, Coordination		
	AIP (ENR Data, AD Data)	Software changes, if necessary, for hardware changes envisioned	AIP ENR section and AD Dispersing pages need to be updated	Awareness education, Coordination	Consistency with publications today. Not all states publish their training manuals. For instance, ESB will require ATOs to be aware of these changes and to train their staff accordingly.	
	Data Exchange (AIXM)	Usage of 51 will have not require a change	Usage of 51 will have not require a change	Usage of 51 will have not require a change	Agreement is by the ICAO. This covers all states should be using AIXM for their.	
	Publication systems	Software changes, if necessary, for hardware changes envisioned	Some software may change		Awareness education, Coordination. 20 percent may need additional training depending on the change to the publication system.	
	IFP Design	Software changes, if necessary, hardware changes may be needed for validation	Design and ground validation tools will need to be updated by the respective state or company/procedure		Awareness education, Coordination. IFP Design personnel should receive additional training depending on the change to the IFP design system.	
Third party data providers:	Data Origination	Software changes, if necessary, for hardware changes envisioned	Data to be delivered to AIS	Awareness education, Coordination		
	Production Systems	Software changes, if necessary, for hardware changes envisioned	More data outputs, that software changes	Awareness education, Coordination	Agreement is that this is for the Type I providers.	
	Processing Standards (ARINC, RTCA, EUROCAE) Charts	Software changes, if necessary, for hardware changes envisioned	Potential new fields and potential new processing steps. Depends on volume.	Depends if a change occurs. Awareness education, Coordination.	Staff training needed due to change to product depiction.	
	NavData	Software changes, if necessary, for hardware changes envisioned	Significant impact during the transition due to introducing new procedures on operational data. After transition, minimal impact.			
	AMM/AMDB	Software changes, if necessary, for hardware changes envisioned	Depends on the aircraft requirements. May require need to significant changes to operations.	Many awareness training. Depends on implementation when the production system, although training may be required.		
	Obstacles/Terrain	Software changes, if necessary, for hardware changes envisioned	Potential new fields and potential new processing steps. Needs changes envisioned to the related support tools. Training may address. Mapping design changes.		Awareness education, Coordination	
Flight Planning	3rd party Procedure Design	Software changes, if necessary, hardware changes may be needed for validation	Design and ground validation tools will need to be updated by the respective state.		No training needed as no change is envisioned.	
	UAS	Software changes, if necessary, for hardware changes envisioned	Design and ground validation tools will need to be updated by the respective state.		Awareness education, Coordination. IFP Design personnel should receive additional training depending on the change to the IFP design system.	
	FP Processing and distribution systems (state, regional, etc.)	Software changes, if necessary, for hardware changes envisioned	Field needs to be present and needs to be evaluated whether by a system or ATCO. Even today many FP providers are not equipped to handle ATC data.	Training needed for FP processing individuals whether as operators or as ATCOs. ATCOs may require additional training as operators or as ATCOs. ATCOs may require additional training as operators or as ATCOs.		
	Flow management systems	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned
	ATS/ATCO displays (targets, target tools, maps, overlays, display orientation)	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned
	ATS (ATCO, ATC and ATS Specialists) Personnel	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned	Software changes, if necessary, for hardware changes envisioned

الهيئة العامة للطيران المدني  
GENERAL CIVIL AVIATION AUTHORITY



# Thank You