NORTH ATLANTIC (NAT) AIR NAVIGATION PLAN

VOLUME III

30 June 2024

ENDORSED BY NAT SPG/60*

Secretariat Note: An update of Parts 0 and I is being coordinated with ICAO Headquarters and Regional Offices.

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* NAT SPG Conclusion 60/13 refers

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NAT ANP, VOLUME III
PART 0 – INTRODUCTION

1.   INTRODUCTION

1.1   The background to the publication of ANPs in three volumes is explained in the Introduction in Volume I. The procedure for amendment of Volume III is also described in Volume I. Volume III contains dynamic/flexible plan elements related to the implementation of the air navigation system and its modernization in line with the ICAO Aviation System Block Upgrades (ASBUs) and associated technology roadmaps described in the Global Air Navigation Plan (GANP).

1.2   The information contained in Volume III is related mainly to:

- Planning: objectives set, priorities and targets planned at regional or sub-regional levels;

- Implementation monitoring and reporting: monitoring of the progress of implementation towards targets planned. This information should be used as the basis for reporting purposes (i.e.: global and regional air navigation reports and performance dashboards); and/or

- Guidance: providing regional guidance material for the implementation of specific system/procedures in a harmonized manner.

1.3   The management of Volume III is the responsibility of the North Atlantic Systems Planning Group (NAT SPG).

1.4   Volume III should be used as a tool for monitoring and reporting the status of implementation of the elements planned here above, through the use of tables/databases and/or references to online monitoring tools, as endorsed by NAT SPG. The status of implementation is updated on a regular basis as endorsed by the NAT SPG.

2.   AVIATION SYSTEM BLOCK UPGRADES (ASBUs), MODULES AND ROADMAPS

2.1.   The ASBU Modules and Roadmaps form a key component to the GANP, noting that they will continue to evolve as more work is done on refining and updating their content and in subsequent development of related provisions, support material and training.

2.2.   Although the GANP has a worldwide perspective, it is not intended that all Block Upgrade Modules are required to be applied in every State, sub-region and/or region. Many of the Block Upgrade Modules contained in the GANP are specialized packages that should be applied only where the specific operational requirement exists or corresponding benefits can be realistically projected. Accordingly, the Block Upgrade methodology establishes an important flexibility in the implementation of its various Modules depending on a region, sub-region and/or State's specific operational requirements. Guided by the GANP, ICAO NAT regional, sub-regional and State planning should identify Modules which best provide the needed operational improvements.

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NAT ANP, VOLUME III
PART I - GENERAL PLANNING ASPECTS (GEN)

1.   PLANNING METHODOLOGY

1.1   Guided by the GANP, the regional planning process starts by identifying the homogeneous ATM areas, major traffic flows and international aerodromes. An analysis of this data leads to the identification of opportunities for performance improvement. Modules from the Aviation System Block Upgrades (ASBUs) are evaluated to identify which of those modules best provide the needed operational improvements. Depending on the complexity of the module, additional planning steps may need to be undertaken including financing and training needs. Finally, regional plans would be developed for the deployment of modules by drawing on supporting technology requirements. This is an iterative planning process which may require repeating several steps until a final plan with specific regional targets is in place. This planning methodology requires full involvement of States, service providers, airspace users and other stakeholders, thus ensuring commitment by all for implementation.

1.2   Block 0 features Modules characterized by technologies and capabilities which have already been developed and implemented in many parts of the world today. It therefore features a near-term availability milestone, or Initial Operating Capability (IOC), of 2013 for high density based on regional, sub-regional and State operational need. Blocks 1 through 3 are characterized by both existing and projected performance area solutions, with availability milestones beginning in 2018, 2023 and 2028 respectively.

2.   REVIEW AND EVALUATION OF AIR NAVIGATION PLANNING

2.1.   The progress and effectiveness against the priorities set out in the regional air navigation plans should be annually reported, using a consistent reporting format, to ICAO.

2.2.   Performance monitoring requires a measurement strategy. Data collection, processing, storage and reporting activities supporting the identified global/regional performance metrics are fundamental to the success of performance-based approaches.

2.3.   The air navigation planning and implementation performance framework prescribes reporting, monitoring, analysis and review activities being conducted on a cyclical, annual basis. An Air Navigation Reporting Form (ANRF) reflecting selected key performance areas as defined in the Manual on Global Performance of the Air Navigation System (ICAO Doc 9883) has been developed for each ASBU Module. The ANRF is a customized tool which is recommended for the application of setting planning targets, monitoring implementation, and identifying challenges, measuring implementation/performance and reporting. If necessary, other reporting formats that provide more details may be used but should contain as a minimum the elements described in the ANRF template. A sample of the ANRF is provided in **Appendix A**. A sample Template of a planning table which may be used to show the elements planned in an ICAO region is provided in **Appendix B**.

3.   REPORTING AND MONITORING RESULTS

3.1   Reporting and monitoring results will be analyzed by the PIRGs, States and ICAO Secretariat to steer the air navigation improvements, take corrective actions and review the allocated objectives, priorities and targets if needed. The results will also be used by ICAO and aviation partner stakeholders to develop the annual Global Air Navigation Report. The report results will provide an opportunity for the international civil aviation community to compare progress across different ICAO regions in the establishment of air navigation infrastructure and performance-based procedures.

3.2   The reports will also provide the ICAO Council with detailed annual results on the basis of which tactical adjustments will be made to the performance framework work programme, as well as triennial policy adjustments to the GANP and the Block Upgrade Modules.

3.3   **Table GEN III-1** contains a minimum set of Implementation Indicator(s) for each of the eighteen ASBU Block 0 Modules necessary for the monitoring of these Modules (if identified as a priority for implementation at regional or sub-regional level). These indicators are intended to enable comparison between ICAO Regions with respect to ASBU Block 0 Modules and will apply only to commonly selected ASBU Modules. All regions/PIRGs reserve the right to select the ASBU Modules relevant to their needs and to endorse additional indicators, as deemed necessary. No reporting is required for ASBU Block 0 Modules that have not been selected.

Note: The priority for implementation as well as the applicability area of each selected ASBU Block 0 Module is to be defined by the NAT SPG. This should be reflected in Part II – Air Navigation System Implementation.

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TABLE GEN III-1 – IMPLEMENTATION INDICATOR(S) FOR EACH ASBU BLOCK 0 MODULE

Explanation of the Table

1   Block 0 Module Code
2   Block 0 Module Title
3   High level Implementation Indicator
4   Remarks   *Additional information as deemed necessary.*

Module Code	Module Title	Implementation Indicator	Remarks
1	2	3	4
B0-APTA	Optimization of Approach Procedures including vertical guidance	% of international aerodromes having at least one runway end provided with APV Baro-VNAV or LPV procedures	
B0-WAKE	Increased Runway Throughput through Optimized Wake Turbulence Separation	% of applicable international aerodromes having implemented increased runway throughput through optimized wake turbulence separation	1. Not to be considered for the first reporting cycles due to lack of maturity. 2. List of Ads to be established through regional air navigation agreement.
B0-RSEQ	Improve Traffic flow through Runway Sequencing (AMAN/DMAN)	% of applicable international aerodromes having implemented AMAN / DMAN	1. Not to be considered for the first reporting cycles due to lack of maturity. 2. List of Ads to be established through regional air navigation agreement.
B0-SURF	Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)	% of applicable international aerodromes having implemented A-SMGCS Level 2	List of Ads to be established through regional air navigation agreement.
B0-ACDM	Improved Airport Operations through Airport-CDM	% of applicable international aerodromes having implemented improved airport operations through airport-CDM	List of Ads to be established through regional air navigation agreement.
B0-FICE	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	% of FIRs within which all applicable ACCs have implemented at least one interface to use AIDC / OLDI with neighbouring ACCs	
B0-DATM	Service Improvement through Digital Aeronautical Information Management	- % of States having implemented an AIXM based AIS database - % of States having implemented QMS	

Module Code	Module Title	Implementation Indicator	Remarks
1	2	3	4
B0-AMET	Meteorological information supporting enhanced operational efficiency and safety	- % of States having implemented SADIS / WIFS - % of States having implemented QMS	
B0-FRTO	Improved Operations through Enhanced En-Route Trajectories	% of FIRs in which FUA is implemented	
B0-NOPS	Improved Flow Performance through Planning based on a Network-Wide view	% of FIRs within which all ACCs utilize ATFM systems	
B0-ASUR	Initial capability for ground surveillance	% of FIRs where ADS-B OUT and/or MLAT are implemented for the provision of surveillance services in identified areas.	1. Not to be considered for the first reporting cycles due to lack of maturity.
B0-ASEP	Air Traffic Situational Awareness (ATSA)	% of States having implemented air traffic situational awareness	1. Not to be considered for the first reporting cycles due to lack of maturity.
B0-OPFL	Improved access to optimum flight levels through climb/descent procedures using ADS-B	% of FIRs having implemented in-trail procedures	1. Not to be considered for the first reporting cycles due to lack of maturity.
B0-ACAS	ACAS Improvements	% of States requiring carriage of ACAS (with TCAS 7.1 evolution)	
B0-SNET	Increased Effectiveness of Ground-Based Safety Nets	% of States having implemented ground-based safety-nets (STCA, APW, MSAW, etc.)	
B0-CDO	Improved Flexibility and Efficiency in Descent Profiles (CDO)	- % of international aerodromes / TMAs with PBN STAR implemented - % of international aerodromes/TMA where CDO is implemented	
B0-TBO	Improved Safety and Efficiency through the initial application of Data Link En-Route	% of FIRs utilising data link en-route in applicable airspace	
B0-CCO	Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)	- % of international aerodromes / TMAs with PBN SID implemented - % of international aerodromes/TMA where CCO is implemented	

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Appendix A

SAMPLE TEMPLATE

1.   AIR NAVIGATION REPORT FORM (ANRF)
(This template demonstrates how ANRF to be used.
The data inserted here refers to ASBU B0-05/CDO as an example only)

Regional and National planning for ASBU Modules

2. REGIONAL/NATIONAL PERFORMANCE OBJECTIVE – B0-05/CDO: Improved Flexibility and Efficiency in Descent Profiles **Performance Improvement Area 4: Efficient Flight Path – Through Trajectory-based Operations**					
3. ASBU B0-05/CDO: Impact on Main Key Performance Areas (KPA)					
	Access & Equity	**Capacity**	**Efficiency**	**Environment**	**Safety**
Applicable	N	N	Y	Y	Y
4. ASBU B0-05/CDO: Planning Targets and Implementation Progress					
5. Elements		**6. Targets and implementation progress (Ground and Air)**			
1. CDO					
2. PBN STARs					
7. ASBU B0-05/CDO: Implementation Challenges					

Elements	Implementation Area			
	Ground system Implementation	**Avionics Implementation**	**Procedures Availability**	**Operational Approvals**
1. CDO				
2. PBN STARs				

8. Performance Monitoring and Measurement 8A. ASBU B0-05/CDO: Implementation Monitoring	
Elements	**Performance Indicators/Supporting Metrics**
1. CDO	Indicator: Percentage of international aerodromes/TMAs with CDO implemented Supporting metric: Number of international aerodromes/TMAs with CDO implemented
2. PBN STARs	Indicator: Percentage of international aerodromes/TMAs with PBN STARs implemented Supporting metric: Number of international aerodromes/TMAs with PBN STARs implemented

8. Performance Monitoring and Measurement 8 B. ASBU B0-05/CDO: Performance Monitoring	
Key Performance Areas (Out of eleven KPAs, for the present until experienced gained, only five have been selected for reporting through ANRF)	**Where applicable indicate qualitative Benefits,**
Access & Equity	Not applicable
Capacity	Not applicable
Efficiency	Cost savings through reduced fuel burn. Reduction in the number of required radio transmissions.
Environment	Reduced emissions as a result of reduced fuel burn
Safety	More consistent flight paths and stabilized approach paths. Reduction in the incidence of controlled flight into terrain (CFIT).

9. Identification of performance metrics: It is not necessary that every module contributes to all of the five KPAs. Consequently, a limited number of metrics per type of KPA, serving as an example to measure the module(s)' implementation benefits, without trying to apportion these benefits between module, have been identified on page 5. For the family of ASBU modules selected for air navigation implementation, States/Region to choose the applicable performance (benefit) metrics from the list available on page 5. This approach would facilitate States in collecting data for the chosen performance metrics. States/Region, however, could add new metrics for different KPAs based on maturity of the system and ability to collect relevant data.

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AIR NAVIGATION REPORT FORM
HOW TO USE - EXPLANATORY NOTES

1.   **Air Navigation Report Form (ANRF):** This form is nothing but the revised version of Performance Framework Form that was being used by Planning and Implementation Regional Groups (PIRGs)/States until now. The ANRF is a customized tool for Aviation System Block Upgrades (ASBU) Modules which is recommended for application for setting planning targets, monitoring implementation, identifying challenges, measuring implementation/performance and reporting. Also, the PIRGs and States could use this report format for any other air navigation improvement programmes such as Search and Rescue. If necessary, other reporting formats that provide more details may be used but should contain as a minimum the elements described in this ANRF template. The results will be analysed by ICAO and aviation partners and utilized in the Regional Performance Dashboards and the Annual Air Navigation Report. The conclusions from the Air Navigation Report will serve as the basis for future policy adjustments, aiding safety practicality, affordability and global harmonization, amongst other concerns.

2.   **Regional/National Performance objective:** In the ASBU methodology, the performance objective will be the title of the ASBU module itself. Furthermore, indicate alongside corresponding Performance Improvement area (PIA).

3.   **Impact on Main Key Performance Areas:** Key to the achievement of a globally interoperable ATM system is a clear statement of the expectations/benefits to the ATM community. The expectations/benefits are referred to eleven Key Performance Areas (KPAs) and are interrelated and cannot be considered in isolation since they are necessary for the achievement of the objectives established for the system as a whole. It should be noted that while safety is the highest priority, the eleven KPAs shown below are in alphabetical order as they would appear in English. They are access/equity; capacity; cost effectiveness; efficiency; environment; flexibility; global interoperability; participation of ATM community; predictability; safety; security. However, out of these eleven KPAs, for the present, only five have been selected for reporting through ANRF, which are Access & Equity, Capacity, Efficiency, Environment and Safety. The KPAs applicable to respective ASBU module are to be identified by marking Y (Yes) or N (No). The impact assessment could be extended to more than five KPAs mentioned above if maturity of the national system allows and the process is available within the State to collect the data.

4.   **Planning Targets and Implementation Progress:** This section indicates planning targets and status of progress in the implementation of different elements of the ASBU Module for both air and ground segments.

5.   **Elements related to ASBU module:** Under this section list elements that are needed to implement the respective ASBU Module. Furthermore, should there be elements that are not reflected in the ASBU Module (example: In ASBU B0-80/ACDM, Aerodrome certification and data link applications D-VOLMET, D-ATIS, D-FIS are not included; Similarly in ASBU B0-30/DAIM, note that WGS-84 and eTOD are not included) but at the same time if they are closely linked to the module, ANRF should specify those elements. As a part of guidance to PIRGs/States, every Regional ANP will have the complete list of all 18 Modules of ASBU Block 0 along with corresponding elements, equipage required on the ground and in the air as well as metrics specific to both implementation and performance (benefits).

6.   **Targets and implementation progress (Ground and Air):** Planned implementation date (month/year) and the current status/responsibility for each element are to be reported in this section. Please provide as much details as possible and should cover both avionics and ground systems. This ANRF being high level document, develop necessary detailed action plan separately for each element/equipage.

7. **Implementation challenges**: Any challenges/problems that are foreseen for the implementation of elements of the Module are to be reported in this section. The purpose of the section is to identify in advance any issues that will delay the implementation and if so, corrective action is to be initiated by the concerned person/entity. The four areas, under which implementation issues, if any, for the ASBU Module to be identified, are as follows:

- Ground System Implementation:
- Avionics Implementation:
- Procedures Availability:
- Operational Approvals:

Should be there no challenges to be resolved for the implementation of ASBU Module, indicate as "NIL".

8. **Performance Monitoring and Measurement:** Performance monitoring and measurement is done through the collection of data for the supporting metrics. In other words, metrics are quantitative measure of system performance – how well the system is functioning. The metrics fulfil three functions. They form a basis for assessing and monitoring the provision of ATM services, they define what ATM services user value and they can provide common criteria for cost benefit analysis for air navigation systems development. The Metrics are of two types:

A. **Implementation Monitoring**: Under this section, the indicator supported by the data collected for the metric reflects the status of implementation of elements of the Module. For example- Percentage of international aerodromes with CDO implemented. This indicator requires data for the metric "number of international aerodromes with CDO".

B. **Performance Monitoring**: The metric in this section allows to asses benefits accrued as a result of implementation of the module. The benefits or expectations, also known as Key Performance Areas (KPAs), are interrelated and cannot be considered in isolation since all are necessary for the achievement of the objectives established for the system as a whole. It should be noted that while safety is the highest priority, the eleven KPAs shown below are in alphabetical order as they would appear in English. They are access/equity; capacity; cost effectiveness; efficiency; environment; flexibility, global interoperability; participation of ATM community; predictability; safety; and security. However, out of these eleven KPAs, for the present until experienced gained, only five have been selected for reporting through ANRF, which are Access & Equity, Capacity, Efficiency, Environment and Safety. Where applicable, mention qualitative benefits under this section.

9. **Identification of performance metrics:** It is not necessary that every module contributes to all of the five KPAs. Consequently, a limited number of metrics per type of KPA, serving as an example to measure the module(s)' implementation benefits, without trying to apportion these benefits between module, have been identified on page 6. For the family of ASBU modules selected for air navigation implementation, States/Region to choose the applicable performance (benefit) metrics from the list available on page 6. This approach would facilitate States in collecting data for the chosen performance metrics. States/Region, however, could add new metrics for different KPAs based on maturity of the system and ability to collect relevant data.

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Appendix B - Main Planning Table Template

Bloc k	Objectives					Priorities and targets			Reference
	ASBU module s and element s Enable rs	Performanc e Improveme nt Area	Applicab le or not in [Region] (Yes/No)	Region al plannin g element s	Enable rs	Priority allocate d in [Region]	Target(s) in [Region]	Indicator(s) / Metric(s)	Supporti ng Planning Documen t (ANRF, other)

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NAT ANP, VOLUME III
PART II – NAT VISION

1. NAT VISION STATEMENT

1.1   Through collaboration and by leveraging innovation, the NAT SPG leads the way for the provision of safe, secure, efficient, sustainable and resilient Air Traffic Management Services to ensure an optimized seamless service.

2   NAT VISION HIGH LEVEL PRINCIPLES

2.1   Following are the agreed NAT Vision High Level Principles:

     a)   Respond to changing traffic profiles in a safe, efficient and sustainable manner based on agreed performance based measurable criteria. Meet, and where possible, exceed the NAT Safety Targets.

     b)   Enhance and develop the NAT airspace to safely and effectively integrate all anticipated airspace users, while aligning with the Global Air Navigation Plan (GANP) and Global Aviation Safety Plan (GASP), as required.

     c)   Utilise operational and technological developments to improve safety, service delivery and efficiency of operations.

     d)   Implementations should be based on business analysis encompassing safety, service and environmental benefits, cost and practicality.

     e)   Include all stakeholders, and, when relevant, military authorities, in a collaborative decision making process to effect change."

2.2   Following are the agreed NAT Vision Goals and Objectives:

	Goal	Objective
1	Ensure as far as possible that all NAT developments are implemented in cooperation with all adjacent regions and industry wide stakeholders to achieve seamless boundaries.	All stakeholders, including other regional environments, will be engaged in the development and implementation of the NAT Vision to ensure all operational and technical capabilities are appropriately exploited such that we have seamless operational boundaries.
2	Enhanced resilience and predictability of the NAT wide operations.	1. Weather and other operational impacting events are managed through appropriate and agreed plans with minimum of operational impact. 2. That operations consistently adopt across the NAT, new advanced tools to enhance proactive management of potentially operational impacting events. 3. The NAT Contingency procedures shall be continually reviewed to take account of the developing understanding of advancements in aircraft/new entrants technical resilience. 4. Resilience of communications infrastructure is ensured.

	Goal	**Objective**
3	The NAT operations take account of both the prevailing and forecast operational and stakeholders' capabilities and implements proportionate performance based outcomes.	1. New technology will be supported by an agreed Concept of Operations and a safe and cost-effective solution. 2. The NAT will optimize utilization of current capabilities whilst ensuring all new developments do not inadvertently impact prevailing capabilities. 3. The development roadmap will be continually validated to ensure it remains relevant.
4	The NAT technology roadmap is aligned to the practical capabilities that will exist to 2030.	Maximised benefits from available technologies.
5	Safety, Service, Value and Environment benefits are measurable using representative metrics and are part of not only the business case for all developments but are used to monitor the NAT performance.	Performance based metrics and meeting the NAT safety targets, including TLS, as well as any other future performance targets.

3   GOALS, OBJECTIVES AND POTENTIAL IMPROVEMENT AREAS

3.1   Following is the agreed list of NAT Vision goals, objectives and potential improvement areas:

NAT Vision Matrix					
• Prioritisation: (1 to 5): One (Essential/Benefit); Two (Preferred) Three (Enhancement) Four (New); Five (Desirable but not 1 - 4) • Group current assigned: (IMG, SOG, POG, TIG etc.).					
Goal-1	Ensure as far as possible that all NAT developments are implemented in cooperation with all adjacent regions and industry wide stakeholders to achieve seamless boundaries.				
	Potential Improvement	**Prioritisation**	**Feasibility Timeline**	**NAT Sub-Group**	**Linked to Goal**
1-2	Consider ATS B2 introduction	4	2026-2031	TIG	(Goal 4)
1-3	Reduce the footprint of the OTS (lateral, vertical and time period)	2	2022-2026	POG	(Goal 4)
1-4	Enhance the use of User Preferred Routings (UPR)	2	2022-2026	POG	(Goal 4)
1-5	Only apply speed restrictions when needed for separation (OWAFS);	1	2021-2024	POG	(Goal 4)
1-6	Discontinue oceanic clearances;	1	2021-2024	POG	(Goal 4)
1-7	Accommodation of new entrants – supersonic aircraft	3	2026-2031	IMG	(Goal 4)
1-8	Drive and develop standard procedures for new entrants – UAS, UTM, balloons and operations above FL460.	3	2026-2031	IMG	(Goal 4)
1-9	Safe integration of Commercial Space Operations (CSO)	2	2023-2025	IMG	(Goal 4)

NAT Vision Matrix					
• Prioritisation: (1 to 5): One (Essential/Benefit); Two (Preferred) Three (Enhancement) Four (New); Five (Desirable but not 1 - 4) • Group currently assigned: (IMG, SOG, POG, TIG etc.).					
Goal-2	Enhanced resilience and predictability of the NAT wide operations.				
	Potential Improvement	**Prioritisation**	**Feasibility Timeline**	**NAT Sub-Group**	**Linked to Goal**
2-1	Communication systems resilience – Digital HF developments	3	2026-2031	IMG	(Goal 4)
2-2	Communication systems resilience – Space Based VHF	3	2021-2026	TIG	(Goal 4)

NAT Vision Matrix					
• Prioritisation: (1 to 5): One (Essential/Benefit); Two (Preferred) Three (Enhancement) Four (New); Five (Desirable but not 1 - 4) • Group currently assigned: (IMG, SOG, POG, TIG etc.).					
Goal-3	The NAT operations takes account of both the prevailing and forecast operational and stakeholders' capabilities and implements proportionate performance-based outcomes.				
	Potential Improvement	**Prioritisation**	**Feasibility Timeline**	**NAT Sub-Group**	**Linked to Goal**
3-1	Space-based ADS-B surveillance (work already in progress);	1	2021-2026	POG	(Goal 1)
3-2	Support implementation of SWIM and FF-ICE;	3	2026-2031	POG/TIG	(Goal 1)

NAT Vision Matrix					
• Prioritisation: (1 to 5): One (Essential/Benefit); Two (Preferred) Three (Enhancement) Four (New); Five (Desirable but not 1 - 4) • Group currently assigned: (IMG, SOG, POG, TIG etc.).					
Goal-4	The NAT technology roadmap is aligned to the practical capabilities that will exist to 2030.				
	Potential Improvement	**Prioritisation**	**Feasibility Timeline**	**NAT Sub-Group**	**Linked to Goal**
4-1	The ICAO Aviation System Block Upgrades (ASBU) document will be reviewed at every Spring IMG.	1	2023-2031	IMG	(Goal 3) and (Goal 4)

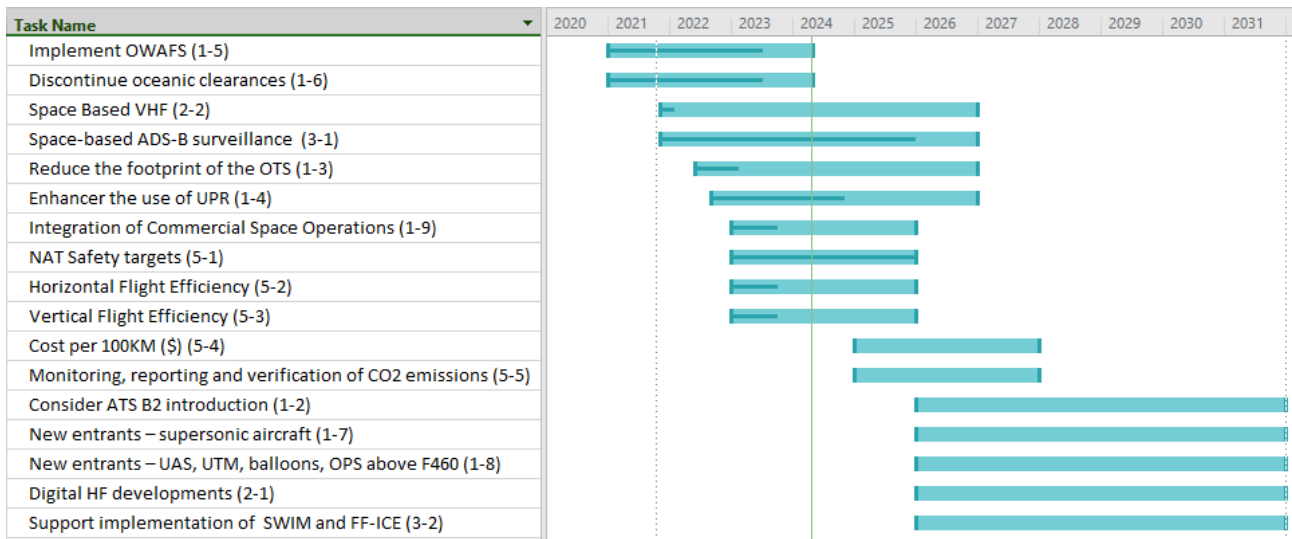| NAT Vision Matrix					
• Prioritisation: (1 to 5): One (Essential/Benefit); Two (Preferred) Three (Enhancement) Four (New); Five (Desirable but not 1 - 4) • Group currently assigned: (IMG, SOG, POG, TIG etc.).					
Goal-5	Safety, Service, Value and Environment benefits are measurable using representative metrics and are part of not only the business case for all developments but are used to monitor the NAT performance.				
	Potential Improvement	**Prioritisation**	**Feasibility Timeline**	**NAT Sub-Group**	**Linked to Goal**
5-1	NAT Safety Targets;	1	2023-2025	SOG	
5-2	Horizontal Flight Efficiency;	1	2023-2025	SPG	
5-3	Vertical Flight Efficiency;	1	2023-2025	SPG	
5-4	Cost per 100KM ($);	1	2025-2027	SPG	
5-5	Monitoring, reporting and verification of CO_2 emissions in accordance with Annex 16, Volume IV, and the Environmental Technical Manual (Doc 9501), Volume IV.	1	2025-2027	SPG	

3.2 Following is a status summary of those NAT Vision improvement areas that are already in progress:

1-3	Reduce the footprint of the OTS (lateral, vertical and time period)
	• 2022: The vertical footprint of the OTS has been reduced by removing FL310, FL320 and FL330. • 2022: The NAT OTS Focus Group (NOD FG) continues its work on NAT OTS re-evaluation.

1-4	Enhance the use of User Preferred Routings (UPR)
	• 2022: NAT POG proposal to amend NAT Doc 007 with UPR guidance for Bodo, Shanwick and Santa Maria. • 2023: NAT Doc 007 updated with UPR guidance for Bodo, Shanwick and Santa Maria.

1-5	Only apply speed restrictions when needed for separation (OWAFS);
	• 2021: Oceanic clearances still include assigned Mach number and ATC issues a clearance to RESUME NORMAL SPEED after oceanic entry whenever possible. • The final step in OWAFS implementation will take place in Q4 2024 when oceanic clearances are discontinued, and the norm becomes that aircraft enter the NAT Region on normal speed.

1-6	Discontinue oceanic clearances;
	• 2021: Concept of operations is complete. • 2022: Documentation changes have been drafted and agreed in POG (Doc 7030, Doc 007, NAT OPS Bulletin 2023_001). • NAT Regional safety case approved by NAT SOG in December 2022. • Implemented in Reykjavik and Santa Maria on 21 March 2024. • Implementation is expected in Bodo, Gander and Shanwick on 4 December 2024.

1-9	Safe integration of Commercial Space Operations (CSO)
	• 2024: NAT New Entrant Guidance Material in development with the NAT NER PT. • 2024: NAT Workshop on New Entrants Integration in May 2024.

2-2	Communication systems resilience – Space Based VHF
	• 2022: Initial information material discussed at NAT TIG/14. • 2024: Information material discussed at NAT TIG/17.

3-1	Space-based ADS-B surveillance
Implementation status: Bodo: • All of Bodo FIR. Iceland: • All of Reykjavik OCA except below FL255 south of 70N within Reykjavik FIR. Shanwick: • All of Shanwick OCA from 100 to 60.000 feet Gander: • All of Gander OCA from 5500 to 60.000 feet. Santa Maria: • All of Santa Maria FIR. New York OCA East • None.	

4-1	The ICAO Aviation System Block Upgrades (ASBU) document will be reviewed at every Spring IMG.
	• 2024: First review will be done in spring 2024.

5-1	NAT Safety Targets
	• 2024: Safety KPIs reviewed every 3 years by NAT SOG and included in NAT Doc 001.

5-2 5-3	Horizontal Flight Efficiency. Vertical Flight Efficiency.
	• 2024: In work by the NAT Common Metrics Project Team.

4   NAT Service Development Roadmap

4.1   The following is the NAT Service Development Roadmap in accordance with section 3 above.

Task Name	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Implement OWAFS (1-5)												
Discontinue oceanic clearances (1-6)												
Space Based VHF (2-2)												
Space-based ADS-B surveillance (3-1)												
Reduce the footprint of the OTS (1-3)												
Enhancer the use of UPR (1-4)												
Integration of Commercial Space Operations (1-9)												
NAT Safety targets (5-1)												
Horizontal Flight Efficiency (5-2)												
Vertical Flight Efficiency (5-3)												
Cost per 100KM ($) (5-4)												
Monitoring, reporting and verification of CO2 emissions (5-5)												
Consider ATS B2 introduction (1-2)												
New entrants – supersonic aircraft (1-7)												
New entrants – UAS, UTM, balloons, OPS above F460 (1-8)												
Digital HF developments (2-1)												
Support implementation of SWIM and FF-ICE (3-2)												

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NAT ANP, VOLUME III

PART III – AIR NAVIGATION SYSTEM/ASBU IMPLEMENTATION

Published as part of the NAT GANP/ASBU annual implementation status report
(https://www.icao.int/EURNAT/Pages/EUR-and-NAT-Document.aspx)

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NAT ANP, VOLUME III

PART IV - AIR NAVIGATION SYSTEM/REGIONAL AVIATION SYSTEM IMPROVEMENT (RASI) IMPLEMENTATION

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