



ICAO

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North American, Central American and Caribbean Office  
WORKING PAPER

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**Thirty Sixth MEVA Technical Management Group Meeting  
(MEVA/TMG/36)**

On-line, from 1 to 3 June 2021

**Agenda Item 4: MEVA Phase IV  
4.3 New CAR Communications Needs**

**FEDERAL AVIATION ADMINISTRATION (FAA) NETWORK REQUIREMENTS PROJECTIONS**

(Presented by United States)

EXECUTIVE SUMMARY	
This working paper presents the FAA projections for network requirements based on traffic volumes and new functionality.	
<b>Action:</b>	Suggested actions are presented in Section 4.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"><li>• Safety</li><li>• Air Navigation Capacity and Efficiency</li></ul>
<i>References:</i>	<ul style="list-style-type: none"><li>• “Effects of Novel Coronavirus (COVID-19) on Civil Aviation: Economic Impact Analysis”, Montreal, Canada, 1 April 2021, ICAO Economic Development – Air Transport Bureau.</li><li>• Global Air Navigation Plan, 5th Edition, 2016-2030, ICAO Document 9750.</li></ul>

**1. Introduction**

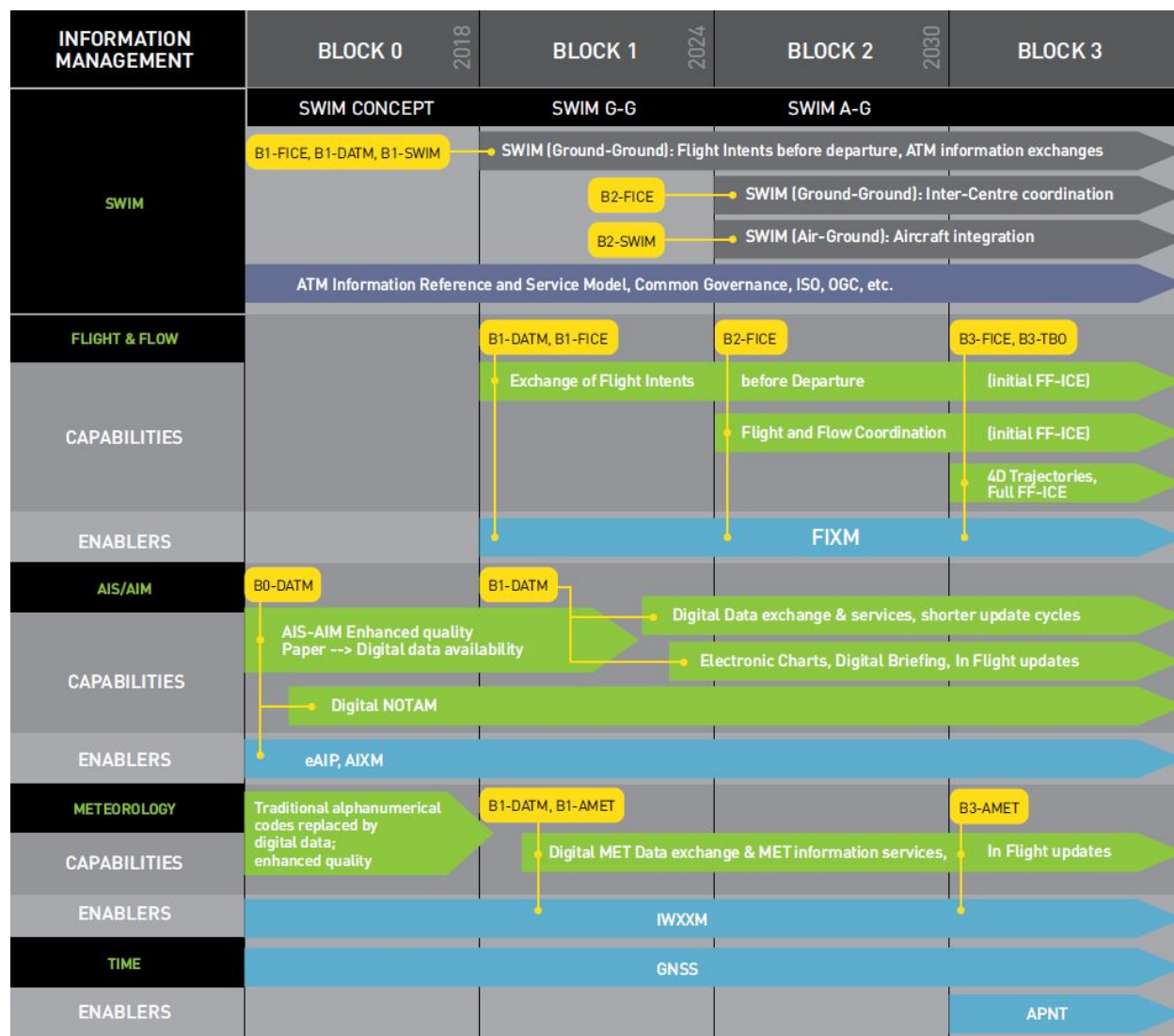
1.1 Bandwidth needs for CANSNET are driven by air traffic volumes and the introduction of new services and functionality. COVID-19 has impacted traffic volumes and also impacted the development schedules for the introduction of new functionality. As such, the timescales for bandwidth demand for CANSNET have changed.

**2. Discussion**

2.1 Traffic volumes were drastically affected by COVID-19. A recent report from the ICAO Economic Development Air Transport Bureau<sup>1</sup> indicates that it will be at least 2022 before traffic volumes return to their 2019 levels. This is a minimum two-year slip in previously projected traffic.

<sup>1</sup> “Effects of Novel Coronavirus (COVID-19) on Civil Aviation: Economic Impact Analysis”, ICAO Economic Development – Air Transport Bureau, Montreal, Canada, 1 April 2021.

2.2 The following Aviation System Block Upgrades (ASBUs), shown best in ICAO's 2016 Global Air Navigation Plan (GANP)<sup>2</sup>, are likely to influence bandwidth demand for inter-centre traffic: Digital Air Traffic Management (DATM), Flight and Flow Information for a Collaborative Environment (FICE), System-Wide Information Management (SWIM) and Network Operations (NOPS).



Information Roadmap (from GANP 2016)

2.3 DATM recommends the incorporation of XML data formats for weather and flights objects by 2024 from ASBU Block 1 (2019-2024). The most advanced implementation is for the ICAO Weather Information Exchange Model (IWXXM) carried as Aeronautical message handling system (AMHS) message attachments. ICAO set a November 2020 target for IWXXM exchange but that has yet to be achieved in the NAM/CAR region. The first international exchanges from the U.S.A. National Weather Service (NWS), via the ATN, are likely to be with the Regional OpMet Databanks (RODBs) of Brazil, Japan and U.K.. A significant increase in bandwidth for transmission within the region, e.g. with

<sup>2</sup> Global Air Navigation Plan, 5<sup>th</sup> Edition, 2016-2030, ICAO Document 9750.

Cuba, is likely to be mitigated by compression. Note that the NWS intends to maintain Traditional Alphanumeric Code (TAC) weather distribution until at least 2026.

2.4 FICE services are intended to operate in a SWIM environment. The current Block 1 ASBU (FF-ICE/1: application before departure) is targeted by 2025 and multi-center SWIM operation with FIXM in the 2025-2030 timeframe.

2.5 Note that SWIM is not yet an approved service to operate over the private Aeronautical Telecommunication Network (ATN); any support of SWIM should not impact the flow of elements of the ATN that are essential to air safety: controller voice, flight plans, flight progress, weather information, NOTAMs and search and rescue.

2.6 NOPS addresses collaborative ATFM measures to regulate peak flows involving departure slots, and managed rates of entry into airspaces. This information is not essential to air safety and has previously been exchanged with the FAA over the Internet (e.g. Trinidad and Tobago). The CANSO ATFM Data Exchange Network for the Americas (CADENA) Operational Information System (OIS) is an early inexpensive regional implementation over the Internet. Further regional implementation plans are uncertain.

2.7 In March 2021 the Dominican Republic initiated 'NAM ICD Class 2' automated active flight plan exchange with FAA Miami ARTCC. In June 2021, Cuba will expand its 'Class 1' exchanges to Houston in addition to Miami. These time-dependent message exchanges put further demand on the availability requirements for CANSNET.

### **3. Conclusions**

3.1 Increased bandwidth demands for CANSNET are uncertain because of the COVID-19 impact to traffic volumes and delays in feature development. Regional traffic is unlikely to reach 2019 levels until 2022 at the earliest.

3.2 The most immediate bandwidth requirement is for the introduction of IWXXM weather as AMHS FTBP attachments. Demands from the region are likely to be slow.

3.3 CANSNET bandwidth demands from new functions are uncertain but unlikely to materialize before 2025.

3.4 With increased traffic time-dependence, there may be a greater need for path redundancy rather than bandwidth.

3.5 Other additional IP traffic demands (e.g. additional AIREON traffic) could to be handled by the current system.

### **4. Suggested actions**

4.1 The Meeting is respectfully encouraged to:

- a) Review the information presented in this Working Paper

- b) Discuss its contents and take appropriate action

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