

November 6, 2018

Gilberto Lopez Meyer
Senior Vice President Safety & Flight Operations
International Air Transport Association
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Dear Mr. Lopez Meyer,

Subject: IATA Position – Proposed Space-based ADS-B Deployment

Thank you for your letter dated November 1, 2018. Mr. Wilson has asked that I respond on his behalf. I would start by saying we respectfully disagree with what you have written. Your letter contains a number of factual errors and assumptions and makes a number of false statements. We regret that you have chosen to circulate this letter to your member airlines without confirming your facts first. Your letter has damaged the relationship that NAV CANADA has with your organization. My comments on your letter on air space modernization are as follows.

We fundamentally disagree with the implicit premise in your letter that today's levels of safety and efficiency are in effect, "good enough". We are pleased that you have confirmed that your member airlines are continuing to make investments to improve their safety performance. The provision of a safe service for those using Canadian controlled airspace remains our highest priority and our ultimate obligation, superseding all others.

We differ from your stated view and the stated view of your airline stakeholders that "today's operation is safe enough, and that significant ground and air investments already made ensures risk levels are acceptable". What is good enough today is not good enough. Our objective is to reduce existing safety risk levels today, tomorrow and into the future. We strive for continuous improvement. We seek ways to improve our safety performance.

As stated in our 2017 Annual Report, our strategies and investments consider longer term actions in order to address any evolving safety risks arising from air space changes. We evolve our methods of operations to improve safety, and where we deem appropriate to our ultimate mandate, we make investments in and introduce modern technologies that improve safety.

You conclude risk levels are acceptable to IATA and its members. We disagree. Your safety conclusion relies on your use of ICAO's North Atlantic Region's 2017 Annual Safety Report. However, we note that current ICAO safety targets, in relation to estimated vertical collision risk, today are not being met. They will only be met with the introduction of space based surveillance technology. Current ground based systems and procedures will not allow this to occur.

We don't believe ICAO's targets were set to be aspirational. We believe that implementing this safety standard, in the busiest Oceanic traffic flow in the world, is in the interest of every member of the travelling public that crosses the North Atlantic. Our calculations show that the additional cost to individual members of the general public, flying on the North Atlantic to reach that safety target, is minimal.

You may recall a presentation to you and the IATA OSC in April 2017 in Seoul Korea by our EVP of Service Delivery. In it, he provided information which is contrary to your view. The presentation included a summary of analysis jointly undertaken by the ICAO NAT Region Mathematician Working Group Analysis and Scrutiny Group of 2015/2016 data. This analysis concluded that if Space Based ADS-B (SB ADS-B) had been in service we would have seen a 76% reduction in vertical collision risk.

Your reference to neighbouring ANSPs is incorrect. I draw your attention to a recent publication in Aviation Daily (October 2, 2018) which refers to the FAA's evaluation of SB ADS-B. I would also draw your attention to the NAT business case presented at the ICAO NATSPG, which included a paper delivered by the US based on a study they requested from MIT that indicated a reduction of 60% in conflicts over the North Atlantic.

Your letter contradicts what had previously been provided to us in writing. We are pleased that IATA and its members have now recognized there may be potential for performance improvements. As recently as the end of September, IATA staff were adamant there were no benefits which could be obtained from SB ADS-B.

By using satellite surveillance, we can safely reduce the minimum distance between aircraft to optimize and then remove the oceanic organized track system. We expect around 90% of traffic across the North Atlantic will be allocated requested flight trajectory, compared with around 60% at present. We understand that UK NATS has stated around 80% of traffic will fly without speed restriction. Currently all aircraft fly at an allocated fixed speed. Combined, we believe these are substantial benefits to promoting efficient aircraft operations, to improving on time gate access and airport operations, and to your stakeholder customer's convenience. We think your member carriers would be wise to make use of these available opportunities as their competitors will do so, even if they do not.

Flight efficiency will reduce your stakeholder's fuel burn and CO₂ emissions. Depending on the aircraft type, fuel savings could be between 406Kg and 649Kg of fuel, equivalent to around 1290Kg to 2060 kg of CO₂ emission per flight. We recognize that some airlines disagree with these calculations to some extent. Without SB ADS-B, we see no measurable opportunity to change our current operations, or to improve constrained flight operations.

You state that the proposed approach is to charge airlines on a cost per hour basis. That is not correct. It is not our current approach. It has not been our approach for some period of time. It is also not consistent with the flat monthly fee we are being charged by Aireon.

Early in the consultation process, we heard the airlines' concerns to a proposed per hour charge. We responded to their input and changed our thinking. We are proposing a charging approach, which will follow our current methodology, for calculating domestic enroute service fees.

Our approach to cost recovery has evolved through what has been an informal but open consultative collaborative decision-making process. We note that our discussions on this subject have been ongoing with IATA and the member carriers for more than two years.

Your letter implies that we are proposing a charging structure which does not follow ICAO principles. That is incorrect. Our approach, using weight and distance, exactly matches what you indicate are the broad ICAO charging principles of non-discrimination, cost relatedness, and transparency.

We have consistently advised IATA that our preferred approach for North Atlantic Oceanic enroute service charge is to use a weight distance approach. This methodology is supported by ICAO. Our approach will be the same as we use for our domestic enroute service fees and one which your member airlines are familiar with and have accepted. Following the charging principles in our governing statute, our preference is to use similar charging methodologies when similar types of services are being provided.

We understand that UK NATS is also proposing an approach, which would see prices calculated by dividing costs by forecast traffic for each year, which is consistent with their current Oceanic charging methodology.

You imply that neither UK NATS or NAV CANADA will follow a regulatory framework to implement new service charges. That is not correct. UK NATS is currently in a formal consultative process with both the carriers and IATA. NAV CANADA must follow a formal regulatory framework in order to make any changes to service fees.

Your comments on cross subsidization are inaccurate and wrong. Revenues from surveillance service sales from other parts of the world actually serve to reduce the cost for the North Atlantic surveillance. Without those world-wide revenues, and based on a service only provided for the North Atlantic, those surveillance costs would be significantly higher. Aireon's business model considers the world-wide revenues required to offset operating expenses. Airlines flying

on the North Atlantic routes actually benefit from revenue earned on the world-wide sale of the surveillance technology.

As already provided to IATA and your member carriers, through the UK NATS regulatory hearing, Euroconsult has presented its analysis of the Aireon surveillance charges. They demonstrate the return being earned by Aireon is reasonable. This would imply that the data service fees being charged to Air Navigation Service Providers are reasonable for the surveillance services being provided.

Your comments on a 12-year term as representing an unacceptable risk for your members are also inaccurate and factually incorrect. The contracts with Aireon require Aireon to provide a service. If no service is provided, no fee is paid. Your members are not exposed to either a technology or deployment risk. They will only pay for the service when it is provided.

Your stakeholders make strategic investments in technologies, aircraft and operations that benefit their operations in both the short and longer term. We make similar investments, however with a longer-term perspective, driven by the regulatory constraints of our environment and the statute that we operate under. We invest in business cases where the financial or business returns may not be immediate, but where over time we will obtain the best strategic value or benefit. Business decisions with Investment horizons exceeding 10 years are normal for our business.

You suggest we should be constrained to using technology that dates from the 1940's - even if it could be utilized over the North Atlantic. We don't think so. We continue to invest in new technologies, in new procedures and the redesign of our air space to improve safety, to reduce the risk of significant delays in air traffic and congestion, and the noise experienced by communities. Our investments in CAATS and GAATS are proof of this longer-term strategic approach to making ongoing investments in air navigation service modernization. Our investment in SB ADS-B is part of that longer-term modernization strategy.

We disagree with your short-term view on pricing. Purchasing a data service contract for a 12-year term is appropriate for a service which will be fundamental to our surveillance of the North Atlantic, and which will become part of our integrated surveillance network. There is a cost in time and money to our changing service providers or service platforms. There are no viable alternative providers at the current time and due to the long lead time to design and deploy space-based systems, it is unlikely there will be for the foreseeable future. Due to the operational dependency on SB ADS-B technology for North Atlantic surveillance, and to reduce operations risk, a long-term contract is preferred.

We look at our investment in purchasing SB ADS-B surveillance no differently than we would a capital investment in other surveillance technologies. We do not buy radar systems with the expectation of only using them for a short time period. We consider these technologies, as we do our investment in SB ADS-B and the purchase of the service, to be multi year investments. We take the same risk on the emergence of new or cheaper technologies when we make investments in ground based surveillance, communications or ILS systems. Your members

You think we should wait until there is a safety concern before we implement a solution. We don't. We continually strive to improve our safety performance and are convinced that the deployment of SB ADS-B, and our use of that system, will deliver transformational safety benefits. We understand that many of your members state that safety improvement is a number one priority of their airline. We are not sure why IATA does not have the same view.

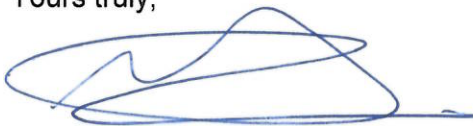
Even though we may have looked at our investment in SB ADS-B as being for the long term, safety and operating benefits will be immediate. There will be no phase in or waiting period for those improvements. They will be available when the system goes into operation.

Additional costs will be offset to carriers through the capacity and fuel cost savings that cannot be delivered by current available alternate ground based technologies. There are social benefits that airlines can point to in their ability to be able to lower CO₂ emissions. A number of your member airlines, who report annually on their progress in reducing green house gas emissions, will be able to point to this technology as being beneficial. Our purchase of SB ADS-B surveillance will provide immediate benefits today and in the future as airspace in Canada and over the North Atlantic becomes increasingly busy, complex and capacity constrained.

We would have thought our relationship with IATA was better and that you would have at least attempted to verify your facts before putting them in writing. Your letter leaves the question of how we might productively discuss the issue of SB ADS-B very much an open question.

We remain fully committed for the reasons noted above and believe it is in the best interest of every member of the travelling public that we implement SB ADS-B surveillance in Canadian controlled airspace.

Yours truly,



Alexander (Sandy) Struthers
Executive Vice-President, Finance & Chief Financial Officer
NAV CANADA

cc: Martin Rolfe, Chief Executive Officer, UK NATS
Jeff Miller, Assistant Director, SFO – The Americas, IATA
Federico Munoz, Charges Manager, Airport, Infrastructure, The Americas, IATA