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# Review of Policy ATS 3.8: Radar Monitoring

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**SUMMARY**

This paper reviews IFATCA's Technical and Professional Manual (TPM) Provision of Air Traffic Services (ATS) policy 3.8 - Radar Monitoring, evaluating its continued relevance in light of evolving ICAO provisions and current operational practices aimed at maximizing airspace efficiency. While the policy's core intent remains valid, updates are proposed to enhance clarity, align terminology with modern ICAO definitions, and broaden applicability. Recommended amendments aim to ensure the policy remains operationally relevant, technically accurate, and reflective of contemporary surveillance practices.

## 1. INTRODUCTION

1.1. The aviation industry continues to experience steady growth, driving the need to accommodate an increasing number of aircraft. Given the finite nature of airspace, there is a growing focus on leveraging technological advancements in aircraft navigation coupled with Air Traffic Services (ATS) surveillance to optimize airspace use.

1.2. This paper examines IFATCA's policy ATS 3.8 – Radar Monitoring (TPM 2025a), evaluating its continued relevance in the context of current ICAO provisions and evolving industry strategies aimed at increasing airspace capacity. It seeks to affirm the policy's applicability and, where appropriate, recommend updates to ensure its alignment with modern operational needs and future developments.

## 2. DISCUSSION

2.1. General

2.1.1. ATS surveillance is known and accepted to be a valuable tool in the provision of the air traffic control service. The accurate, trustworthy, real-time presentation of an aircraft position allows for reduction in separation minima (ICAO 2012). This presentation allows Air Traffic Control Officers (ATCO) to see flight path deviations and provide guidance quickly to maintain safety.

2.1.2. The introduction of Performance Based Navigation (PBN) has reduced the reliance on ground-based navigation aids (NAVAIDS) for aircraft navigation. A capability of PBN of this is the flexibility in route placements allowing for more efficient use of airspace (ICAO 2023a).

2.1.3. While not a requirement for PBN, ATS surveillance is identified as an enabler (ICAO 2023b) and can be used to assist in contingency procedures to mitigate the “blunder errors” and to reduce route spacing (ICAO 2023c).

2.1.4. As ATS surveillance, and the subsequent ATCO flight path monitoring, continues to be an enabler for concepts to improve airspace efficiency, IFATCA policy must be robust enough to ensure ATCO concerns are considered.

2.2. ATS 3.8 – Radar Monitoring

2.2.1. Current IFATCA ATS 3.8 – Radar Monitoring policy states (TPM 2025a),

**Route spacing standards should not be reduced below those that would otherwise be required purely because of the use of radar monitoring.**

**Any introduction of Performance Based Navigation (PBN) routes that are closely spaced should be subjected to safety analysis. Such a safety analysis may result in hazards being identified that require automated monitoring assistance for the controller to adequately mitigate the hazard.**

**Any introduction of closely spaced routes should ensure that controllers can, upon identification or notification of a deviation, carry out the necessary action so that the required separation minimum is not likely to be infringed.**

2.2.2. The policy consists of three components, each about route spacing. This discussion will examine the policy in its entirety, while highlighting individual provisions of the policy. Additionally, the policy title will be assessed to determine whether it accurately reflects the policy’s intent.

2.2.3. Policy Title

2.2.3.1. The policy's current title, "Radar Monitoring", warrants reconsideration. ICAO documentation provides clarity on the terminology of surveillance. ICAO Doc 9924 (ICAO 2020) refers to "aeronautical surveillance" without prescribing a specific system type, instead describing it as the provision of aircraft position and other relevant information to Air Traffic Management (ATM) and/or airborne users.

2.2.3.2. The utilisation of the term "radar" to indicate surveillance changed in 2010. Amendment 3 of ICAO Doc 4444 (ICAO 2010) introduced a definition of "ATS Surveillance System" as a generic term encompassing a range of systems used to identify aircraft. Simultaneously, the definition "Surveillance Radar" was removed showing the move to a broader interpretation of surveillance.

2.2.3.3. Traditionally, within the Air Traffic Control (ATC) context, "radar monitoring" has been understood as the controller's task of observing the surveillance display. A key aspect of this task involves monitoring aircraft to detect deviations from their cleared flight path and providing relevant information or advisories. ICAO Doc 4444 (ICAO 2016b) formally refers to this as "Flight Path Monitoring.".

2.2.3.4. 2007 IFATCA Working Paper 92 (IFATCA 2007) reinforces that the policy in question pertains to the monitoring of aircraft flight paths. The term "radar monitoring," as currently defined in the TPM (TPM 2025b), is broader in scope, intended to support regulatory and control functions beyond flight path observation alone.

2.2.3.5. Given that the primary focus of ATS 3.8 is specifically on flight path monitoring, a more appropriate and accurate title is proposed,

**ATS 3.8 ~~RADAR~~** FLIGHT PATH MONITORING

2.2.4. ATS 3.8, component 1,

**Route spacing standards should not be reduced below those that would otherwise be required purely because of the use of radar monitoring.**

2.2.4.1. The policy item originated from the 1994 IFATCA Working Paper 101 (IFATCA 1994) during a period when better surveillance capabilities were increasingly being used to reduce lateral separation minima. The paper concluded that monitoring constitutes only one element of a controller's responsibilities and separation should not be based solely on radar monitoring.

The paper further concluded that ATCOs should not bear responsibility for aircraft navigation in environments where separation is reduced below surveillance minima unless they are exercising positive control (e.g., vectoring). Although PBN was largely conceptual at that time, the paper anticipated its potential development and implications. On that basis, the policy was adopted.

2.2.4.2. Since 1994, PBN has matured significantly. ICAO has since published guidance in ICAO Doc 9613 (ICAO 2023d), which clearly states that PBN route spacing must not be equal to or less than prescribed radar separation minima. In this respect, one could argue that the original policy concern has been addressed within today's regulatory framework. However, this does not render the policy obsolete.

2.2.4.3. As anticipated in the 1994 paper, the aviation industry continues to evolve, consistently seeking methods to increase capacity and optimize airspace utilization. The principle mentioned in 2.2.4.2 is within guidance material and has not yet reached such maturity that it is in an Annex or the PANS-ATM and therefore is more susceptible to change. Retaining the policy therefore preserves IFATCA's position that flight path monitoring should not serve as the primary means for reducing route spacing—particularly where such reductions would fall below established surveillance separation minima.

2.2.4.4. In retaining the policy, it is recognised that the final part of the item "radar monitoring" is a term that is broader than the intent of the policy, as explained in section 2.2.3 of this paper. As such, it should be amended to reflect the intent of flight path monitoring and the following is proposed,

**Route spacing standards should not be reduced below those that would otherwise be required purely because of the use of ~~radar monitoring~~** flight path monitoring.

2.2.5. ATS 3.8 component 2,

**Any introduction of Performance Based Navigation (PBN) routes that are closely spaced should be subjected to safety analysis. Such a safety analysis may result in hazards being identified that require automated monitoring assistance for the controller to adequately mitigate the hazard.**

2.2.5.1. The directive in this item to conduct a safety analysis is redundant. ICAO Annex 11 (ICAO 2018b) and ICAO Doc 4444 (ICAO 2016c) both contain clear and mandatory requirements

for safety assessments when implementing changes to airspace. Additionally, ICAO Doc 4444 (ICAO 2016d) specifies that route spacing falls within the scope of such safety assessments.

2.2.5.2. The PBN Manual (ICAO 2023c) notes that in an ATS surveillance environment, route spacing is dependent on the availability of appropriate controller tools. As such, the current wording in the first sentence of the TPM policy merely echoes existing ICAO provisions and adds no new value.

2.2.5.3. To better reflect IFATCA's position, the policy should be revised to emphasize the importance of including air traffic controllers as key stakeholders in any safety assessment regardless of the route spacing. This would help ensure that controller concerns are adequately considered in the analysis process.

2.2.5.4. The second sentence of the item does not constitute a policy statement; rather, it outlines a possible outcome of a safety assessment. The intended message is to highlight the necessity for appropriate controller tools to support ATCOs, as emphasized in 2007 IFATCA Working Paper 92 (IFATCA 2007). To be effective as policy, the wording should clearly state that any "controller tools" identified as necessary through safety analysis must be in place prior to the implementation of PBN routes.

2.2.5.5. To align the policy with IFATCA's position and strengthen its wording, the following amendment is proposed,

ATCOs must be a key stakeholder and participate in any safety analysis relating to ~~A~~a**ny introduction of Performance Based Navigation (PBN) routes.** ~~**that are closely spaced should be subjected to safety analysis. Such a safety analysis may result in hazards being identified that require automated monitoring assistance for the controller to adequately mitigate the hazard.**~~ Any controller tools identified as hazard mitigation in the safety analysis must be in place prior to the implementation of the PBN route for which the analysis was conducted.

2.2.6. ATS 3.8 component 3,

**Any introduction of closely spaced routes should ensure that controllers can, upon identification or notification of a deviation, carry out the necessary action so that the required separation minimum is not likely to be infringed.**

2.2.6.1. The PBN Manual states that route spacing must not be equal to or less than the prescribed radar separation minima (ICAO 2023b), reaffirming the continued importance of this principle. However, the current policy wording is limited to the context of route introduction. To improve clarity and long-term relevance, the policy should be revised to more generally address the availability of any closely spaced routes.

2.2.6.2. The policy also does not account for route spacing in relation to Special Use Airspace (SUA). SUA refers to designated volumes of airspace where access may be restricted for non-participating aircraft and may include areas such as restricted areas (ICAO 2021).

2.2.6.3. In practice, many States require ATS surveillance separation between aircraft and the boundaries of SUA when surveillance services are in use. For instance, in Canada, the required separation distance varies from 1.5 to 10 nautical miles depending on the classification of the surveillance source (CARS 2025).

2.2.6.4. Similar to the considerations for closely spaced routes, those located near SUA requiring separation should also be addressed in the policy. Controllers must have adequate time to intervene before separation standards are infringed. Including routes near SUA within the scope of the policy would ensure these situations are appropriately considered.

2.2.6.5. To better reflect this intent and provide more comprehensive policy guidance, the following amendment is proposed,

**Any ~~introduction~~** availability **of closely spaced routes** and routes in relative proximity to Special Use Airspaces (SUA) requiring ATS surveillance separation**, should ensure that controllers can, upon identification or notification of a deviation, carry out the necessary action so that the required separation minimum is not likely to be infringed.**

2.2.7. New ‘Special Use Airspace’ Acronym and Definition,

2.2.7.1. Given the discussion of SUA in section 2.2.5, it would be appropriate to include an acronym and definition of SUA in the TPM. This would enhance the document’s clarity and provide a convenient reference to support the interpretation of related policies. To maintain consistency with established terminology, the definition should align with the one presented in ICAO Doc 10088 (ICAO 2021).

2.2.7.2. The following definition and abbreviation for Special Use Airspace is therefore proposed,

Abbreviation: SUA – Special Use Airspace

Definition: Special Use Airspace - a generic term used for airspace volumes designated for specific operations, such as military training, exercises and operations, of a nature such that required limitations on airspace access may be imposed on other aircraft not participating in those activities. These may include, but are not limited to, restricted, danger and prohibited areas or temporary reserved areas (TRA).

## 3. CONCLUSION

3.1. The review of ATS 3.8 confirms that its core intent remains valid. However, targeted revisions are needed to improve clarity and better align the policy with current ICAO terminology and IFATCA's operational viewpoint. Specifically, replacing "radar monitoring" with "flight path monitoring" more precisely reflects the policy's intent and maintains consistency with ICAO definitions.

3.2. Emphasizing the role of ATCOs in safety analysis and referencing special use airspace broadens the policy's applicability, allowing it to address a wider range of route configurations beyond those merely spaced in close proximity.

3.3. Collectively, these proposed amendments strengthen the policy's language and ensure its continued relevance. The inclusion of updated terminology and definitions enhances the TPM's clarity and scope, supporting a policy that is both operationally practical and internationally aligned.

## 4. DRAFT RECOMMENDATIONS

4.1. To ensure ATS 3.8 more accurately reflects its intended purpose, aligns with ICAO terminology, as well as enhance the clarity and scope of the TPM, the following amendments and additions to the current TPM (TPM 2025c) are proposed

### 4.1.1. IFATCA TPM 3.8 – Radar Monitoring

It is proposed to amend the policy to clarify the intent, capture relevant situations and align with standard ICAO language.

**IFATCA TPM ATS 3.8 – Radar Monitoring**

IFATCA Policy is:

**ATS 3.8 – ~~Radar Monitoring~~** Flight Path Monitoring

**Route spacing standards should not be reduced below those that would otherwise be required purely because of the use of ~~radar monitoring~~** flight path monitoring.

ATCOs must be a key stakeholder and participate in any safety analysis relating to **~~A~~any introduction of Performance Based Navigation (PBN) routes. ~~that are closely spaced should be subjected to safety analysis. Such a safety analysis may result in hazards being identified that require automated monitoring assistance for the controller to adequately mitigate the hazard.~~** Any controller tools identified as hazard mitigation in the safety analysis must be in place prior to the implementation of the PBN route for which the analysis was conducted.

**Any ~~introduction~~** availability **of closely spaced routes** and routes in relative proximity to Special Use Airspaces (SUA) requiring ATS surveillance separation, **should ensure that controllers can, upon identification or notification of a deviation, carry out the necessary action so that the required separation minimum is not likely to be infringed.**

4.1.2. **NEW Abbreviation and Definition – Special Use Airspace (SUA)**

It is proposed to add a new abbreviation and definition in TPM for Special Use Airspace.

**IFATCA TPM (NEW), Abbreviations and Definitions – Special Use Airspace (SUA)**

**Proposal:**

**Abbreviation**
SUA – Special Use Airspace

**Definition**
Special Use Airspace - a generic term used for airspace volumes designated for specific operations, such as military training, exercises and operations, of a nature such that required limitations on airspace access may be imposed on other aircraft not participating in those activities. These may include, but are not limited to, restricted, danger and prohibited areas or temporary reserved areas (TRA).

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