



International Civil Aviation Organization

**The Twenty-First Meeting of the Regional Airspace Safety Monitoring
Advisory Group (RASMAG/21)**

Bangkok, Thailand, 14-17 June 2016

Agenda Item 2: Review Outcomes of Related Meetings

ROLE AND RESPONSIBILITIES OF EMA REGARDING PBCS

(Presented by JASMA)

SUMMARY

This paper presents the review of the presentation “Roll and responsibilities of EMA regarding PBCS” conducted at the ICAO APAC Operational Data link Seminar and FIT-Asia/5.

1. INTRODUCTION

1.1 Civil Aviation Bureau of Japan (JCAB) made a presentation about future activities of EMA regarding Performance-based Communications and Surveillance (PBCS) and national transition strategy for PBCS at the above-mentioned meeting. We introduce the contents of the presentation in Attachment 1.

2. DISCUSSION

2.1 See Attachment 1.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.



Ministry of Land Infrastructure Transport and Tourism

Attachment 1

CIVIL AVIATION BUREAU OF JAPAN

Session 4 Roll and responsibilities of EMA regarding PBCS

2-6 May 2016 ICAO APAC Operational Data link Seminar
and FIT-Asia/5

Natsuki IBE
ANS Planning Division,
Civil Aviation Bureau of Japan (JCAB)
lbe-n24hy@milt.go.jp

National Transition Strategy for PBCS

- ✓ ICAO is developing the draft of Manual on Monitoring the Application of Performance-based Horizontal Separation Minima (PBHSM)
- ✓ PBHSM will be published on November 2016.
- ✓ Monitoring organizations for safety monitoring will work for PBCS framework based on PBHSM

Doc [PBHSM] (DRAFT)



DRAFT **Manual on Monitoring the** **Application of Performance-** **based Horizontal Separation** **Minima**

SASP/28 agreed that this draft version is ready for regional and Secretariat review.

Version 8.4 — 14 May 2015

International Civil Aviation Organization

Doc [PBHSM] (DRAFT)

Version 8.4 — 14 May 2015

Chapter 2. DESCRIPTION OF THE FUNCTIONS NECESSARY TO MONITOR THE APPLICATION OF PERFORMANCE-BASED HORIZONTAL SEPARATION MINIMA

2.1 Description

2.1.4 The safety oversight group would, in turn, report periodically the status of separation-related safety to the region's planning and implementation regional group (PIRG) or regional airspace safety group (RASG).

2.1.5 The safety oversight group would establish a programme for carrying out specific functions and duties to provide these monitoring services. The safety oversight group may establish a separate organization to provide these functions, or allocate these duties and responsibilities to existing groups within the existing PIRG sub-groups. These functions, duties and responsibilities are summarized in this chapter.

2.1.6 Within a region, these functions could be combined with the functions of the Regional Monitoring Agency (RMA), established to provide airspace safety assessment and monitoring services to support the continued safe use of the reduced vertical separation minimum (RVSM), and supported by other monitoring programmes, such as the performance-based communication and [surveillance \(PBCS\) monitoring programme established by air navigation service providers \(Doc 9869\)](#).

2.2 Duties and Responsibilities for Monitoring the Application of Performance-based Horizontal Separation Minima

2.2.1 The associated duties and responsibilities are:

- a) to establish and maintain a database of operational approvals specific to the horizontal separation minima being applied in the airspace;
- c) to proactively undertake data collections as required by the regional oversight group which oversees the safety of regional airspace to:
 - 3) establish or add to databases of operational performance, including lateral navigation and/or communication and/or surveillance performance for:
 - i) the aircraft population;
 - ii) aircraft types or categories;
 - iii) individual airframes;
- e) to initiate necessary remedial actions and coordinate with oversight groups as necessary in the light of monitoring results;
- f) to monitor the level of risk as a consequence of operational errors and inflight contingencies identified from a range of available safety data as follows:
- g) to initiate checks of the approval status of aircraft operating in the relevant airspace, identify non-approved operators and aircraft using the airspace and notify the appropriate State of Registry/State of the Operator accordingly; and
- h) to submit reports as required to the PIRG/RASG through the region's safety oversight group.

3.4 Responsibilities and Standardized Practices for Both Pre-Implementation and Post-Implementation Phases

3.4.1 Establishment and Maintenance of Database of Performance Based Operation Approvals

3.4.1.1 The experience gained through the introduction of the RVSM has shown that the concept of utilizing monitoring organizations is effective in ensuring safety in a region. Monitoring organizations have a significant role to play in all aspects of the safety monitoring process. One of the functions for monitoring the application of performance-based horizontal separation minima is to establish a database of operators and aircraft types/systems approved for performance-based communications (PBC), performance-based navigation (PBN) and performance-based surveillance (PBS) operations by the appropriate authority. Guidance on these approvals is contained in Doc 9613 and Doc 9869.

3.4.1.2 Aviation is a global industry; many operators may be approved for performance based operations and their approvals registered with an organization performing regional monitoring functions to support the application of horizontal separation minima that rely on performance-based operations. Thus, there is considerable opportunity for sharing the information from monitoring functions among the regions. A region or sub-region introducing horizontal separation predicated on performance-based specifications may need its own designated monitoring organization to act as a focal point for the collection and collation of approvals for aircraft operators operating solely in that region. However, because some aircraft operators may have approvals from States outside the Region, the organization will need to coordinate with other regional monitoring organizations to determine the aircraft operator approval status.

(Continued)

3.4.1 Establishment and Maintenance of Database of Performance Based Operation Approvals

3.4.1.3 To avoid duplication by States in registering approvals with any specific regional monitoring organization, the concept of a designated monitoring organization for processing approval data has been established. Under this concept, all States are associated with a specified designated monitoring organization for reporting performance based operation approvals. A listing of States and the respective designated monitoring organization for performance based operation approvals should be maintained on ICAO Regional websites. Designated monitoring organizations should contact the appropriate monitoring organization for a State, to address safety matters for operators registered with that State.

3.4.1.4 In airspace where implementation of performance-based separation is planned, not all aircraft may have the required approvals. Therefore, a State's designated monitoring organization is required to establish a means to coordinate with the State authority to maintain a precise description of the approval information required. Appendix A, section A.1 provides typical forms, with a brief description of their use, that can be transmitted to a State authority to obtain information on aircraft performance based operation approval status.

3.4.1.5 To avoid duplication of work effort, wherever possible, any regional monitoring organization should collect State approval information from the regional monitoring organization associated with the State of the Operator. This collection will be facilitated if the regional monitoring organization maintains a database of these State approvals in a similar electronic form.

3.4.2 Monitoring of Operator Compliance with State Approval Requirements

3.4.2.1 After the database described in section 3.4.1 has been established, monitoring of operator compliance with State approval requirements should begin and be maintained while performance-based horizontal separation minima is being applied in the airspace. The aircraft approval status as listed in the data base is compared with the aircraft equipment and capability filed in the flight plan. This is required if State approval for performance based operations is a prerequisite for applying the horizontal separation in such airspace.

3.4.2.2 Two sources of information are needed to perform this monitoring:

- a) Aircraft identification (Item 7), aircraft type (Item 9), aircraft registration and PBC, PBN, and/or PBS capability indicated in items 10 and 18 of the flight plan; and
- b) the database of State PBC, PBN, or PBS approval status, which is obtained from the State of the Operator or State of Registry.

3.4.2.3 As a minimum, compliance monitoring of the complete airspace for at least a 30-day period annually should be conducted. More frequent monitoring of operator approvals enables noncompliant operators to be efficiently identified and any risk associated with their operation in the airspace mitigated. Figure 3-2 provides a flow chart depicting the process required for monitoring of operator compliance with State approvals.

PBHSM(Chapter 3)

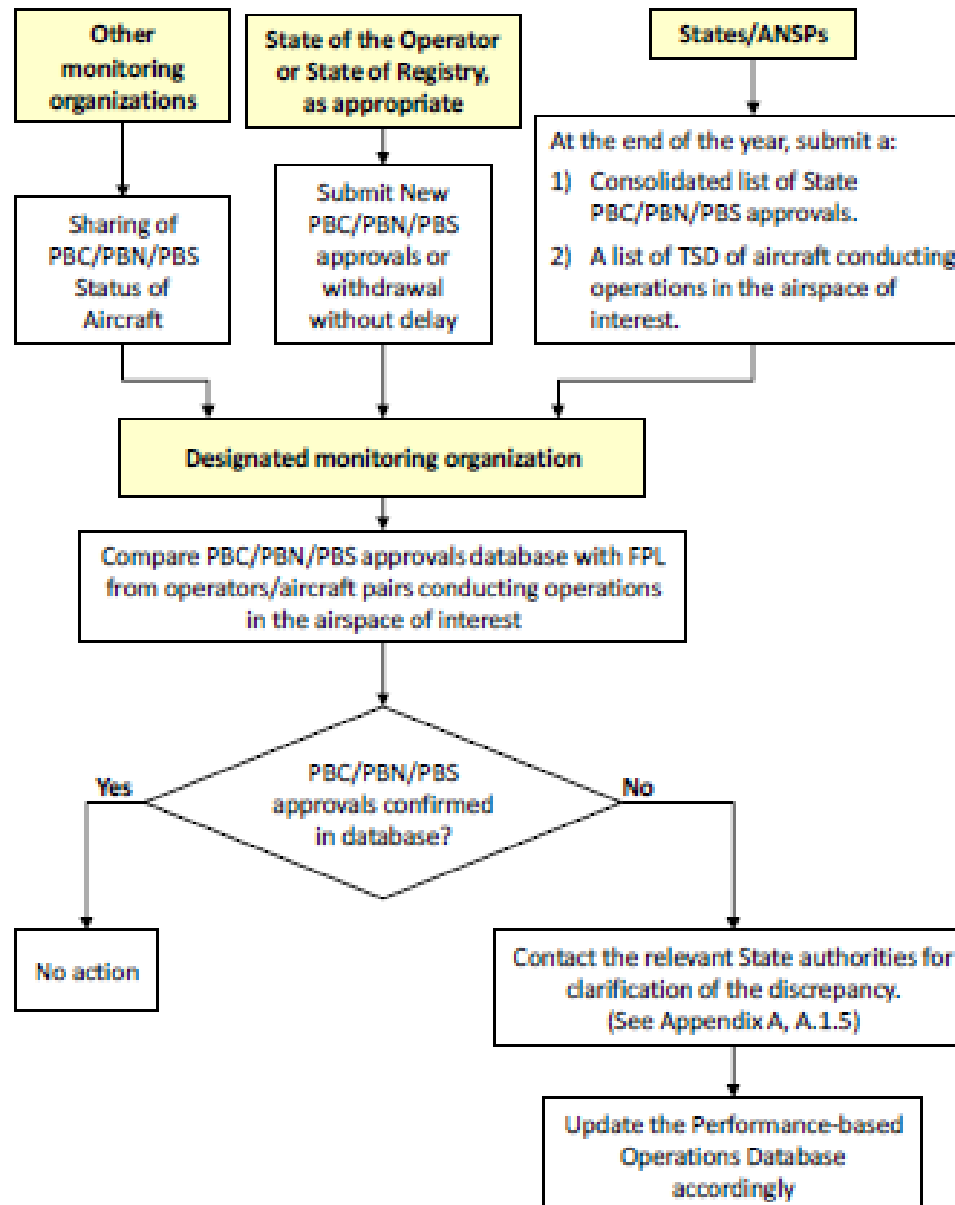


Figure 3-2. Monitoring of operator compliance with State approval requirements flow chart

PBHSM(Chapter 3)

3.4.2.4 When conducting compliance monitoring, the filed equipment and capability indicated in the flight plan for each aircraft movement should be compared to the database of State approval status for the operator and the particular aircraft type/system within the operator's fleet. When a flight plan shows a performance based operational approval not confirmed in the database, the monitoring organization should officially notify the appropriate organization using a letter similar in form to that shown in Appendix A, section A.1.5 to resolve the discrepancy. The appropriate organization is as follows:

- a) State of the Operator or State of Registry, as appropriate, if the State is assigned to the designated monitoring organization; or
- b) The designated monitoring organization to which the State of the Operator or State of Registry is assigned.

3.4.2.5 The responsibility to take any action should an operator be found to have filed an incorrect declaration of State approval for performance-based operations lies clearly with the State authority, not the designated monitoring organization. The responsibility of the monitoring organization is only to officially notify the appropriate State authority

A.1.3 Record of State Performance-Based Operation Approval

A.1.3.1 When a State of Registry approves or amends the approval of an operator/aircraft for State performance-based operations, details of that approval must be recorded and sent to the appropriate organization without delay.

A.1.3.2 Please refer to the accompanying notes on the following page before providing the information requested below. **PLEASE USE BLOCK CAPITALS.**

State of Registry:
State of Operator:
Operator Identifier:
Name of Operator:
Operator Type:
Registration Date:
Aircraft Type:
Aircraft Series:
Manufacturers Serial Number:
Registration Mark:
Mode S Address Code (Hex):
Number of Navigation System:
Make/Model of Long Range Navigation System:

* Civil / * Military (* delete as appropriate)																			

PBC/PBN/PBS Approval Type:
PBC/PBN/PBS Time Limit:
Date of Approval:
Date of Expiry:
Approval Authority (CAA):
Approving CAA Official:
Region for PBC/PBN/PBS Approval:
State of PBC/PBN/PBS Approval:
Status of Previous PBC/PBN/PBS Approval:

None Withdrawn

If withdrawn, please provide previous
Registration Mark:

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Remarks

A.1.5 Letter to State authority requesting clarification of the state performance based operation approval status of an operator

When the State performance based operation approval status shown in filed flight plan is not confirmed in the database of State approvals, a letter similar to the following should be sent to the relevant State authority.

<STATE AUTHORITY ADDRESS>

1. The (monitoring organization name) has been established by the ICAO Asia/Pacific Regional Airspace Safety Monitoring Advisory Group (RASMAG) to support safe implementation and use of the horizontal separation in (airspace where the monitoring organization has responsibility), in accordance with guidance published by the International Civil Aviation Organization.
2. Among the other activities, the (monitoring organization name) conducts a comparison of the State performance based-operation approval status, provided by an operator to an air traffic control unit, to the record of State performance-based operation approval available to us. This comparison is considered vital to ensuring the continued safe use of horizontal separation.

(Continued) A.1.5 Letter to State authority requesting clarification of the state performance based operation approval status of an operator

3. This letter is to advise you that an operator which we believe is on your State registry provided notice of State performance-based operation approval which is not confirmed by our records. The details of the occurrence are as follows:

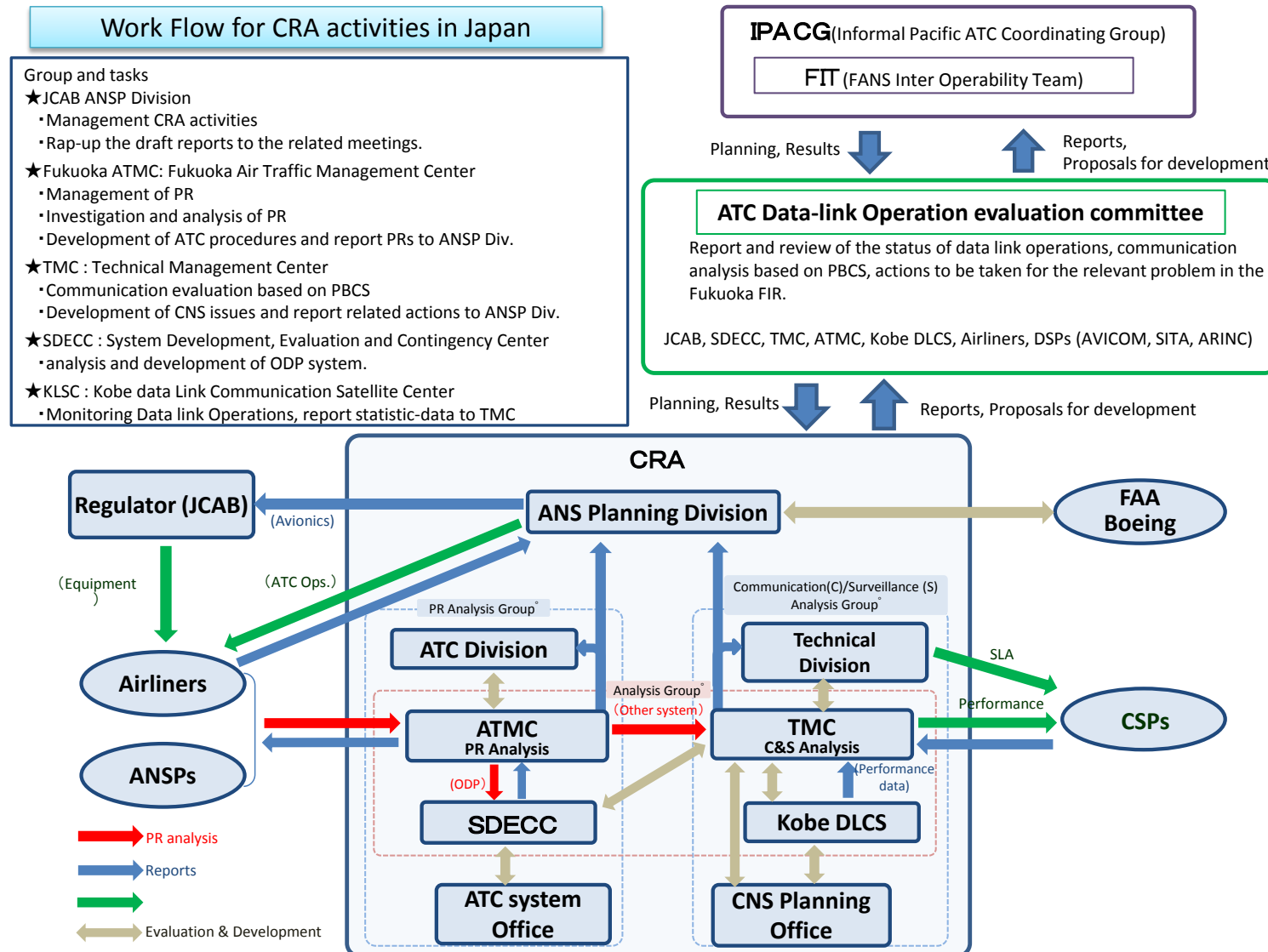
- a) Date:
- b) Operator name:
- c) Aircraft flight identification:
- d) Aircraft type:
- e) Registration mark:
- f) Filed performance based operation approval type:
- g) ATS unit receiving notification:

4 We request that you advise this office of the State performance-based operation approval status of this operator. In the event that you have not granted a State performance-based operation approval to this operator, we request that you advise this office of any action which you propose to take.

National Transition Strategy (PBHSM)

CRA Activities (Current Status)

- JCAB works as CRA for the evaluation of Oceanic ATC Data link operations.
- JCAB CRA has conducted the evaluation based on FOM until 2014.
- JCAB CRA started the new evaluation activities based on PBCS concept in April 2015.



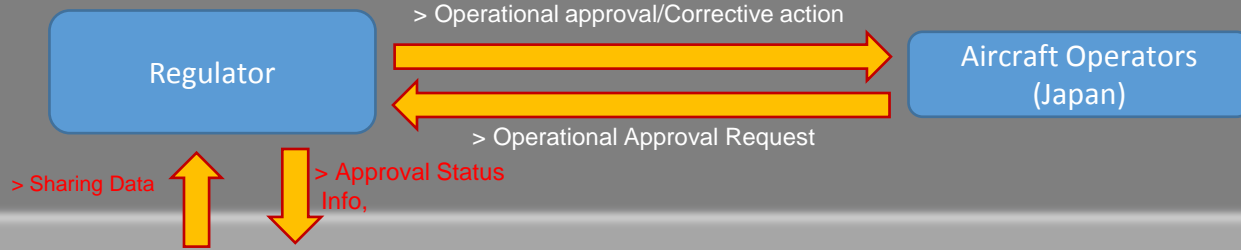
National Transition Strategy for PBCS

- ✓ Japan concluded to establish a “national” transition strategy.
- ✓ We are conducting actions in accordance with the amendments of SARPs and manuals.
- ✓ Major actions to be taken by JCAB will include;
 - a) Establishment of an operational approval process
 - b) Establishment of evaluation committee for PBCS implementation
 - c) Prescription of AIP including RCP/RSP specification, interoperability standards and ATM operation.
 - d) Modification to ATC automation to adopt the appropriate separation standards
 - e) Application of reduced separation minimum (30/30NM, 50NM)
 - f) Implementation of PBCS monitoring programme
 - g) Implementation of PBHSM monitoring programme

National Transition Strategy – Approval Process, Evaluation, Corrective Actions

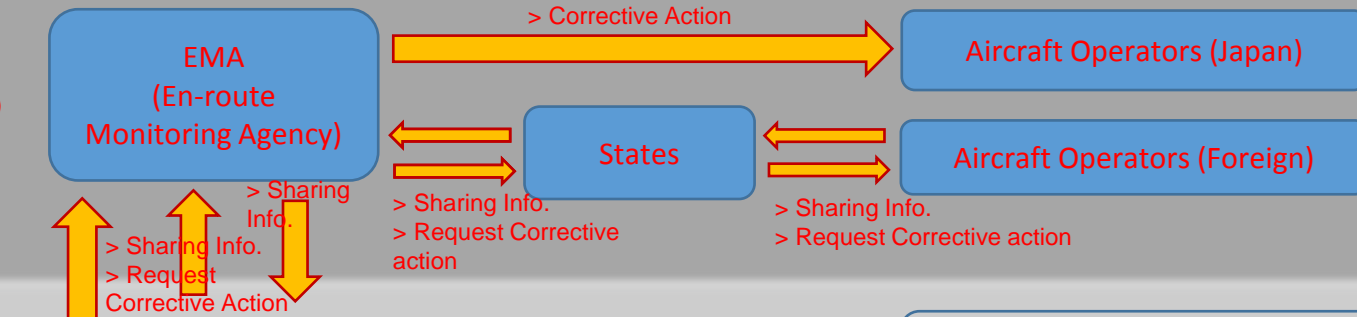
Operational Approval

- > Operational Approval
- Information sharing with EMA



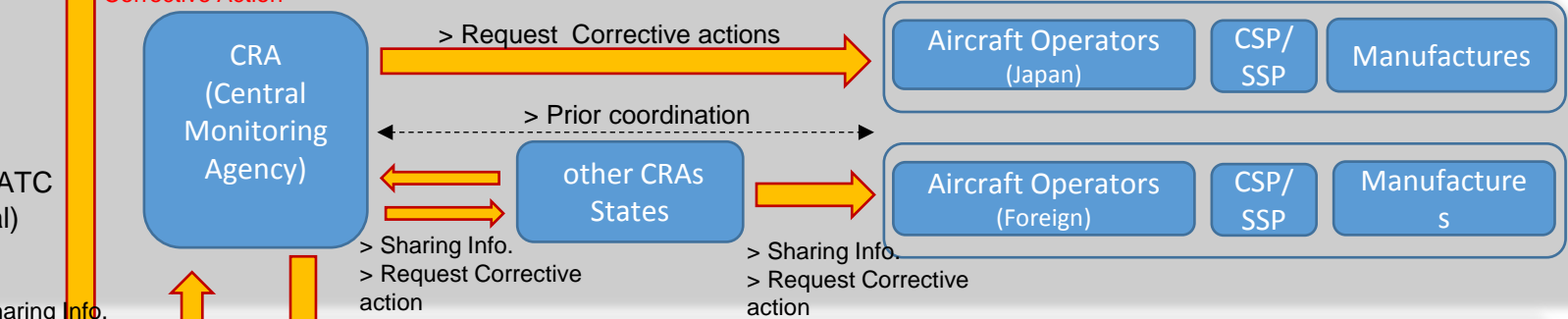
Corrective Actions

- > Check of Database (PBHSM)
- > Sharing information (Info.) with Regulator and CRA
- Corrective actions



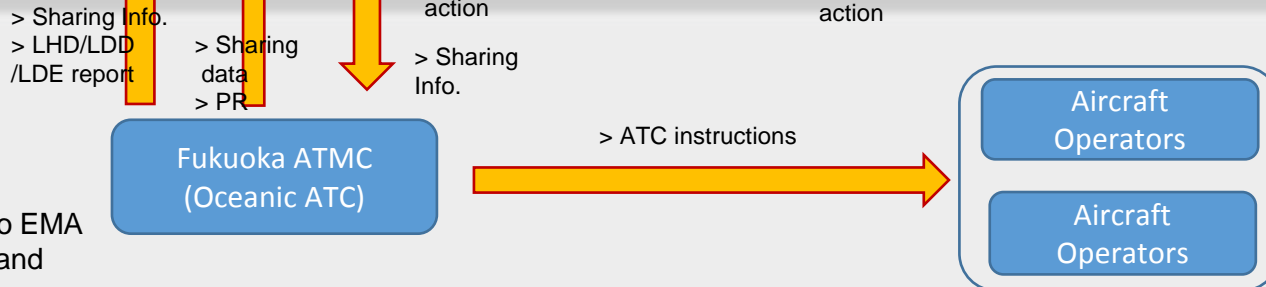
Corrective Actions (Technical)

- > PBCS monitoring
- > Data sharing with EMA and ATC
- > Corrective actions (Technical)



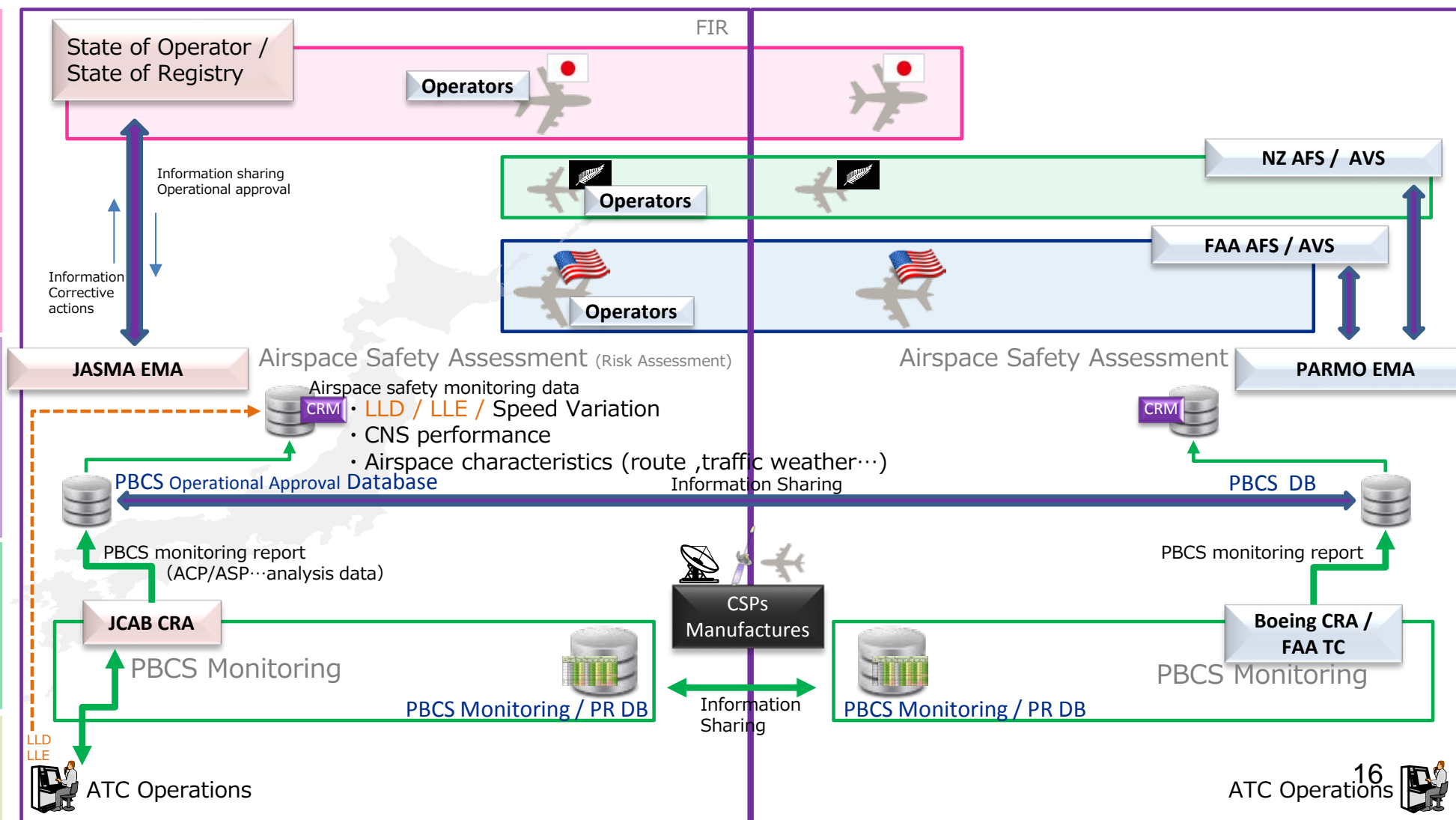
ATC Operations

- > ATC operations
- > PR
- > LHD/LDD/LDE reports to EMA
- > Data sharing with CRA and EMA



National Transition Strategy for PBCS

- ✓ Correlation chart regarding two monitoring programs of PBCS and PBHSM
- ✓ JASMA (Japan Airspace Safety monitoring Agency) is designated as EMA by ICAO
- ✓ JASMA will play a roll for safety assessment and corrective actions in accordance with PBHSM





Any Question ?