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# C-ATFM System- Future Plans



ATFM/SG/11



# Introduction



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## Introduction of Integrated Flight Plan Processing

- The C-ATFM network consists of a Central Command Centre (CCC) and various Flow Management Positions (FMP) placed at ATC units of major airports across the country.
- The CCC is the nodal center for ATFM implementation in India and communicates with FMPs
- Phased implementation of ATFM

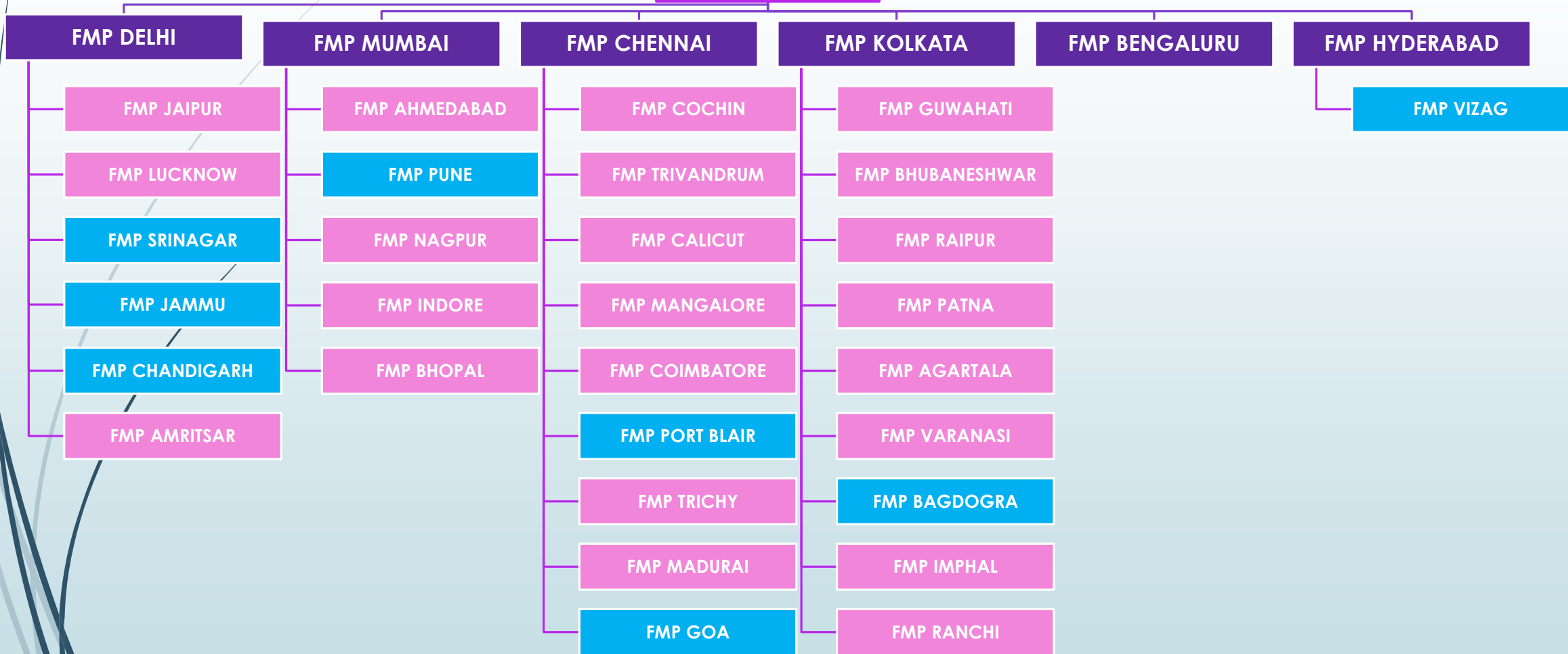


# C-ATFM Network Architecture



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CCC DELHI





# Phased Implementation



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## Phase I

- Activation of 36 FMPs
- Implementation of Ground Delay and Ground Stop Program

## Phase II

- ATFM Integration with Airport CDM systems at 8 airports
  - Airspace Flow programs - such as Miles/Minutes in trail, Sequencing Programs (Arrival, Departure, En-route), Fix Balancing, Re-routing etc.

## Phase III

- Implementation of cross border ATFM measures
- Enhanced Post Ops Analysis tools and capabilities
- Closer integration with Airspace Management



# Preparing for Cross Border ATFM



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- Interaction enabled through internet access so the system is scalable across the Indian airspace and beyond.
- Central Command Center (CCC) will act as the ATFM node for Cross Border ATFM process.
- Presently ATM Automation systems in India are not equipped to interpret ADEXP messages. The CATFM system will interpret and disseminate the information.
- Cross border ATFM operations will be dependent on establishment and operation of ATFM centers in South Asia and Mid East.

- Will be provided with capability of cross border multi-nodal ATFM information exchange
- Cross border ATFM information will also be exchanged via the ATFM-ACDM or ATFM-AODB interchange mechanism
- Planned to include the ATFM information exchange and processing capability in all future ATM automation systems upgrade.
- Long range ATFM facilitated by extended coverage of Space Based ADS-B data may be considered in future



# Integrated Initial Flight Plan Processing System (IFPS)



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- Implementation of Integrated Initial Flight Plan Processing system (IFPS) & pan India ATS Message Handling System (AMHS) for filing the flight plan & disseminating and processing ATS messages
- A web portal for Flight Plan submission will also be provided for the Airline Operators who do not have the access to AFTN
- Gradual transition from AFTN-AMSS to IFPS-AMHS will provide flexible and low-risk change management capability to meet any emerging challenges
- The proposed IFPS-AMHS system will also support B2B APIs.
- The AMHS/UAs/web Services of AMHS will be ADEXP compatible
- The network architecture will form the basis for future SWIM services.



# Introduction of FF-ICE



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- AAI plans to offer FF-ICE planning, filing and flight data request services as part of C-ATFM IFPS system in future
- The FF-ICE services will be offered as additional services to Airspace Users having the FF-ICE capability
- Phased FF-ICE implementation to ensure a smooth, harmonized transition.



# Creating ATM Data Centre



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- Current and future ATM operations will continue to become more data-intensive, as more information is exchanged between aircraft
- A common, centralized information platform to obtain and marshal this data is a key aspect specifically to help identify the status and progression of CNS/ATM technologies identified in ICAO blocks
- C-ATFM system captures a vast range of data on airspace and air routes usage, flight data (planned and actual), CNS equipment, meteorological data, ATM sectors etc.
- AAI has created a central ANS data centre using the valuable data archives from C-ATFM system.



# ATFM-ACDM Integration



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- A-CDM systems of Mumbai, Kolkata, Chennai, Delhi, Ahmedabad, Jaipur, Trivandrum and Guwahati airports are integrated with the ATFM system.
- AAI plans to pursue an aggressive ACDM implementation roadmap, enabling all international airports in India to become part of the ACDM-ATFM network enabling situational awareness for all stakeholders.
- As envisaged in NOPS-B0/4, the first objective of the A-CDM integration with ATFM via exchanges of specific messages has been achieved.
- The second objective is to ensure ATFM slot adherence and limited ATFM slot swapping to meet airline demands in line with capacity declarations.



# Integration of Airspace Management with Air Traffic Flow Management



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- India has established the Flexible Use of Airspace (FUA) process and improved data exchange between civil and military stakeholders
- National Airspace Management Cell (NAMC) which oversees airspace reservation requests and coordinates with ATFM, has been established and is collocated with Central Command Center of CATFM since July 2020.
- FRTO-B1/3 requires FUA and airspace management (ASM) to be enhanced with collaborative airspace data sharing between all ATM actors, negotiation procedures, system support and real time ASM data integration
- NOPS-B1/5 envisages a continuous, seamless and iterative airspace management and air traffic flow management approach.
- AAI plans to realize the full integration of ASM with ATFM in line with ASBU B1 modules in a collaborative manner.



## Introduction of Integrated Flight Plan Processing System (IFPS)

*Thank You*