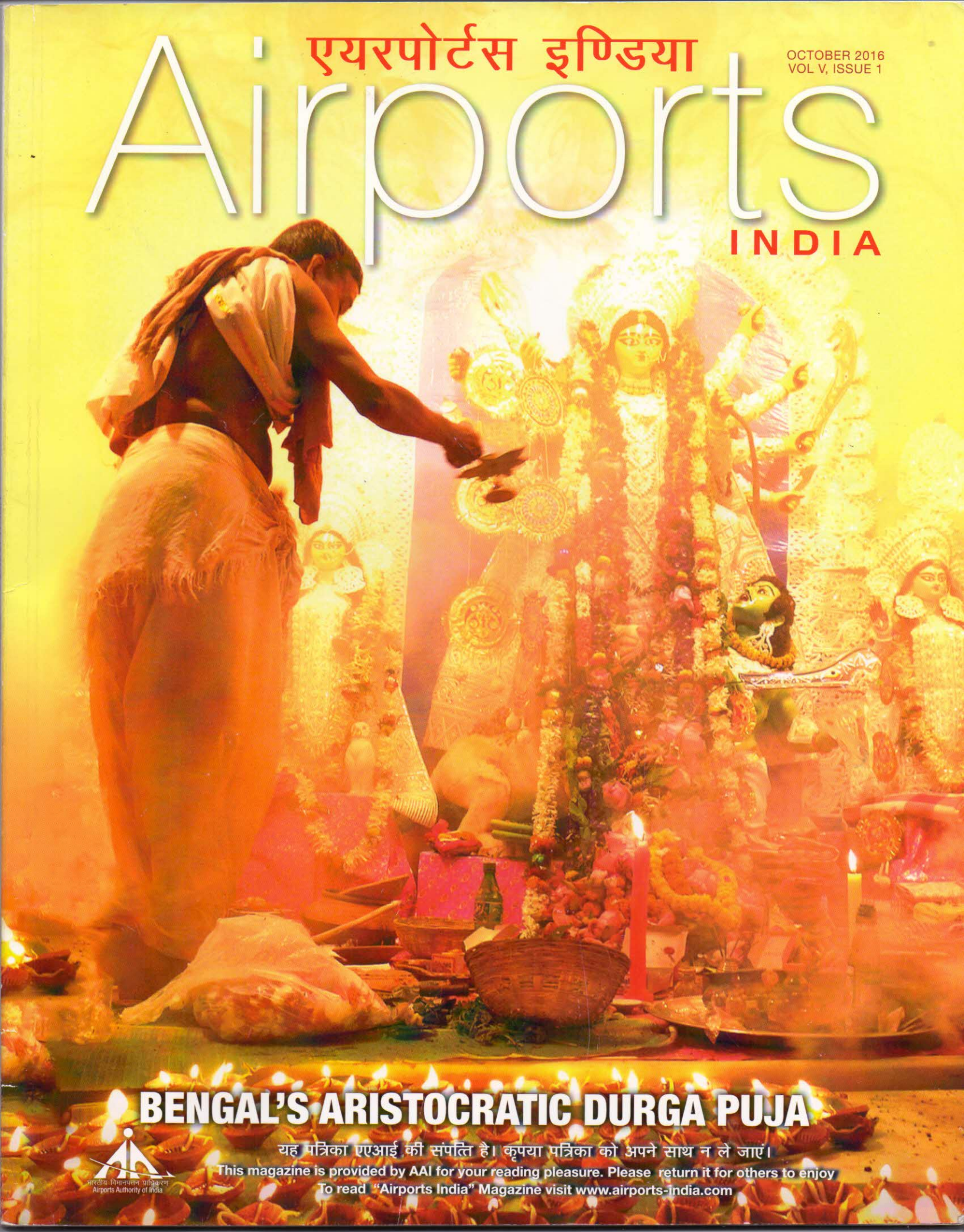
एयरपोर्टस इण्डिया

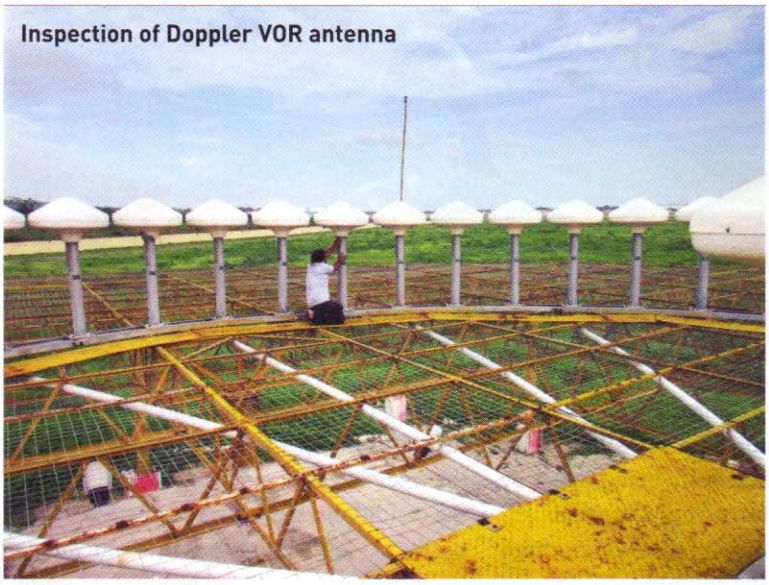
Airports INDIA

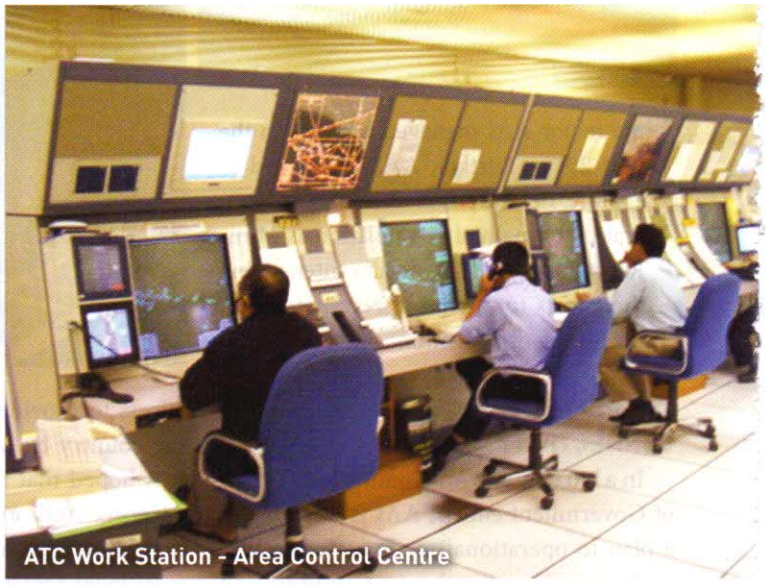
OCTOBER 2016
VOL V, ISSUE 1



BENGAL'S ARISTOCRATIC DURGA PUJA

Human Resources in next generation Aviation


Inspection of Doppler VOR antenna


ATC Work Station - Area Control Centre

With the growth of traffic in Indian airspace touching 21% and expected to be sustained in the double digit growth rate in the next decade, India is tipped to be the 3rd largest aviation market in the globe by the turn of 2030. As with every such growth story, this aviation growth is also having its due share of challenges to be met.

Ensuring sustained safety levels while simultaneously enhancing both airspace and aerodrome capacities, improving route structures for efficient aircraft operations resulting in reduced fuel burn and the resultant reduction in carbon foot print are the identified strategic objectives to meet the twin goals of economic growth and protection of environment.

In pursuit of meeting the strategic objectives of the International Civil Aviation Organization (ICAO), human resources for the next generation of aviation is a challenge recognized by ICAO resulting in various initiatives like Next Generation of Aviation Professionals (NGAP) programme. Many states/regulatory authorities, international organisations, industry players and education/training institutes around the globe are in support of this NGAP programme. The ICAO NGAP task force have brought out the list of competencies (identified as essential to manage next generation of aviation systems) for both Air Traffic Controllers (ATCOs) and the Air Traffic Safety Electronics Personnel (ATSEP). ICAO has also brought out guidance materials in the form of training manuals for both ATCOs and ATSEPs outlining a structured training programme using systems approach towards competency based training development through its flagship TRAINAIR Plus Programme (TPP).

In India, the Ministry of Civil Aviation (MoCA) of Government of India (GOI) has unveiled the country's maiden National Civil Aviation Policy (NCAP) on 15th June 2016, aiming to sustain the growth momentum in this sector and to leverage for maximum socio-economic benefits. All the other players forming part of the civil aviation industry including the regulatory authority, the Director General of Civil Aviation (DGCA) of India and Airports Authority of India (AAI) are gearing up to meet the demands of the unprecedented growth of air traffic in this part of the globe.

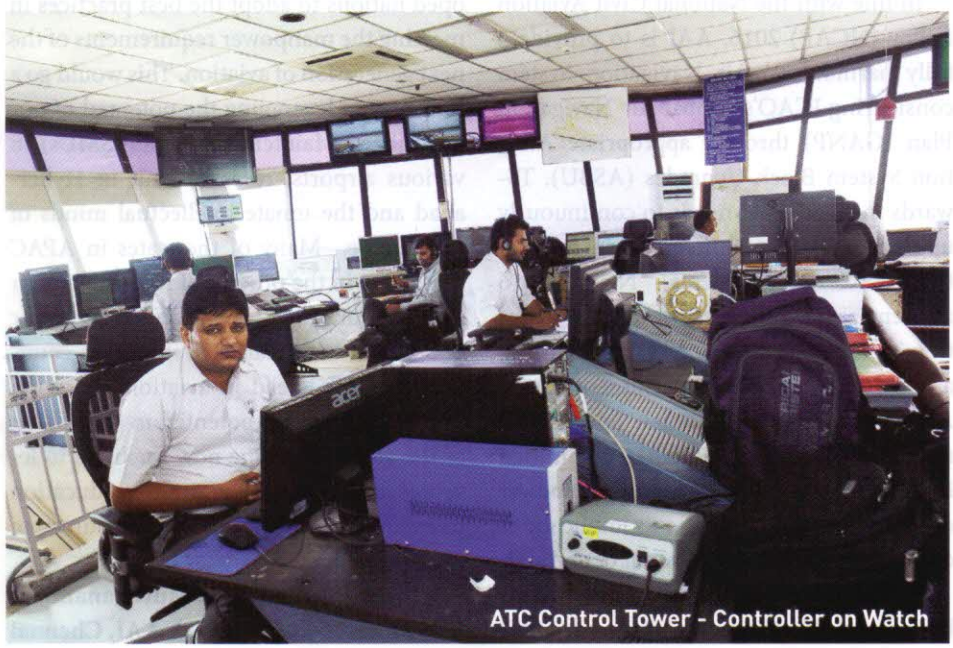
Airports Authority of India (AAI) as the Air Navigation Service Provider (ANSP) in India has taken lots of initiatives to meet the demands of this growth scenario. Harmonization of Upper airspace, Performance Based Navigation (PBN) Route structures using concepts of RNAV and RNP, Reduced Vertical Separation, Continuous Descend Operations (CDO) etc are some of the advanced ATM techniques that are introduced/being introduced so as to enhance the airspace capacity to accommodate the growing air traffic. To realize the above operational procedures and the associated benefits in ATM, the ATSEP (Air Traffic Safety Electronics Personnel - CNS maintenance and operations personnel) of AAI have put in place a number of CNS/ATM systems that include remotely controlled VHF communication systems for augmented VHF coverage and increased number of surveillance sensors (RADARs and ADSB Receivers) to plug the surveillance gaps in the airspace and provide an integrated ATM automation system with

state of the art decision support system (DSS) tools for the ATCOs to provide safe air traffic services. Besides, an increased number of ground based navigational systems have been deployed in addition to the development of GAGAN infrastructure for satellite based navigation. It is important to understand that lots of state of the art CNS/ATM infrastructure both on ground and in aircraft avionics go into realizing these advanced techniques of air traffic management. For instance, consolidation/ sectorization of airspace, design and operations of a PBN route structure demands a number of reliable CNS/ATM systems of very high integrity and availability both on ground and in the aircraft.

Managing the next generation air transportation system is therefore a continuous process of development in areas of CNS/ ATM systems and corresponding aircraft equipage and the associated ATM techniques. Any deficiency in either of these three important and closely interrelated elements is likely to result in safety risks and/or inefficient air traffic management. It is therefore very important to ensure reliable CNS/ATM systems to achieve the standards of accuracy, integrity, availability and continuity of service. Unless we are sure of these, any amount of augmentation/ improvement in ATM concepts/procedures are likely to face bottlenecks in the realization of optimum operational benefits.

In-Country component Level Repair Facility

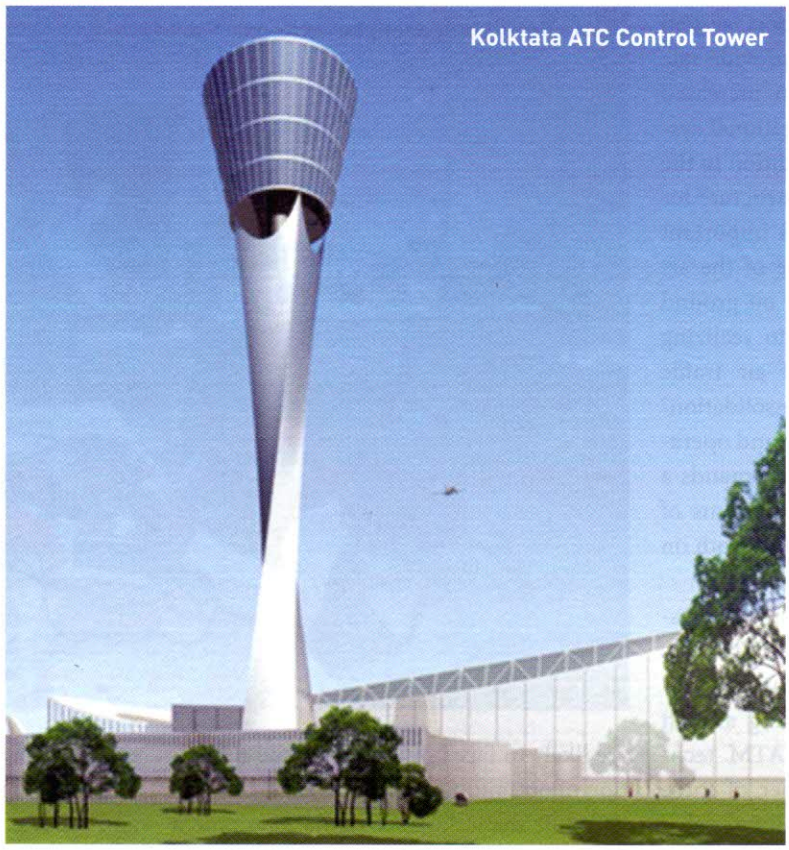
While the industry Original Equipment Manufacturers (OEMs) come up with more accurate CNS/ATM systems, the integrity, availability and continuity of service of these systems can be ensured only by adequately trained competent ATSEP community. These professionals not only put together various elements of CNS/ATM equipment required for the specific operational environment but also configure and monitor them continuously for safe and reliable services. Adequate number of qualified ATSEP professionals with the requisite competencies are essential to manage the ever increasing number of CNS/ATM systems. Further, in a networked environment of CNS/ATM infrastructure there exists a dependency on externally hired services from players like BSNL, RailTel, etc for transportation of various CNS/ATM data formats across a number of sites pan India. This dependency is also a factor that is bound to affect the overall CNS/ATM system availability. AAI had installed quite some years ago its own Dedicated Satellite Communication Network (DSCN) to become self sufficient for its need of data transportation among its CNS/ATM systems. With the growing requirements, the capacity of these systems are being studied for appropriate augmentation. Additionally, the CNS directorate of AAI has planned for developing its Futuristic Telecommunication Infrastructure (FTI) for the desired level of reliability. Sooner it is in place better would be the operational efficiency of CNS/ATM systems across the country.



ATC Control Tower - Controller on Watch

While the work of pilots and the ATCOs being at the service delivery point capture

the attention of the users, the role of the ATSEP who maintain the core CNS/ ATM infrastructure for the ATCOs and Pilots to make use of, remain largely unnoticed. It is pertinent to take note of the quantum and quality of CNS/ATM systems infrastructure in India on to which these advanced ATM techniques/procedures are built for safe air traffic control over the huge volume of Indian airspace. Make no mistake - advanced ATM surely depends on a robust CNS/ATM systems infrastructure.


Kolktata ATC Control Tower

The present generation ATCOs are provided with number of state of the art CNS/ATM systems with decision support tools to meet the demands of growing air traffic. Surely, the present generation ATCOs are truly dependent on the services of the advanced CNS/ATM systems for they are considerably assisted/ supported by these systems in the provision of safe air traffic services. This makes the job of ATSEP critical and stressful as of any other job in aviation. ATSEP ensure that the operations of these CNS/ATM systems meet the desired accuracy, integrity, availability, and continuity of service for safe ATS. It is therefore imperative that we take a closer look into the human resources requirements for maintaining theNext-GenCNS/ATM systems. Deployment of adequate number of appropriately trained and competentATSEP professionals has become a necessity to ensure high levels of availability and continuity of service being delivered to the aircraft in flight. Effective training to ATSEP therefore becomes imperative in getting these workforce competent in identifying and selecting suitable technologies, installing, configuring, testing and certifying the various CNS/ATM systems and above all continuous monitoring of the systems serviceability for appropriate and timely actions so as to ensure 99.9% availability as committed in MOU with the MOCA. It would do a lot of good if adequate focus is given to this aspect of ensuring appropriate human resources to manage the NextGen CNS/ATM systems.

In line with the National Civil Aviation Policy (NCAP) 2016, AAI is to provide a fully harmonized Air Navigation System considering ICAO's Global Air Navigation Plan (GANP) through appropriate Aviation System Block Upgrades (ASBU). Towards this end, AAI needs to continuously upgrade its ANS technological infrastructure (CNS/ATM systems). NCAP 2016 also envisages development of Civil Aviation Training College (CATC) of AAI into a world class training establishment for the ANS professionals of Indian and Global market. The MoCA, GOI has committed in its NCAP 2016 to address the manpower crunch on priority owing to its implications on the safety and cost of aircraft operations.

AAI, has already trained a good number of its ANS officers in Advanced ANSP Management through an MOU with French aviation regulator - DGAC and the French aviation university ENAC. It is time that AAI, makes use of these trained people for planning and training the younger generation of the organization. With the national policy NCAP 2016 in place, AAI would do well to plan the human resources not only for air traffic control but also for ATSEP (CNS professionals) of the next generation. The present training system have delivered quite efficiently and effectively over a number of years. However, it may not meet the fast changing requirements and ICAO's latest training guideline for ATSEPs. There is an urgent need to adapt the training process in CNS training establishments in India so as to develop the competencies in ATSEP required to manage next generation CNS/ATM systems. AAI may explore the possibilities of tying up with leading academic universities/research institutes of India and other developed nations to adopt the best practices in meeting the manpower requirements of the next generation of aviation. This would go a long way in leveraging the potential of our Specialized Maintenance Units (SMUs) in various airports, research unit in Hyderabad and the innate intellectual minds of our people. Many of the states in APAC region are in the process of reforming their aviation education. For instance, Republic of South Korea is latest in the list of countries to forge ahead in aviation education to meet the growth potential in this region of the globe. It is time now for India to leverage its potential in aviation education to ensure world class human resources in aviation.

V. Muruganandam
Jt. General Manager (CNS), AAI, Chennai