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REVIEW 2024

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SMART AIRPORT EXPERT

MOHAMMED ABDUL IMRAN

COVER PERSONALITY



SMART AIRPORT EXPERT MOHAMMED ABDUL IMRAN

He is presently working on Kingdom of Saudi Arabia Airport projects to have the Smart Airports concept implementation upgrades, which cover the design of Digital Airport Operation Control Centre (DAOCC) / Airport Predictive Operation Centre (APOC) for smooth operation of the 16 operational actives of the airlines. He is specialised in the detailed engineering of many Airport ICT systems and Master Systems Interfaces/Integrations (MSI) in Smart Airports around the globe. **Aviation World Magazine** is pleased to feature **Mohammed Abdul Imran, Smart Airport Expert** in this edition which includes his professional journey and exclusive interview, where he explains his expertise on DAOCC and many other technologies used in developing an smart airport.

Mohammed Abdul Imran (MAI) is a seasoned Aviation Master Plan detailed Engineer having extensive experience in the aviation sector. He is specialised in Airport Master Systems Integration (MSI) & System Integrator (SI) in the mega aviation projects. He holds an M.Tech Degree in Electrical Power Systems from JNTUH and an e-MBA in Project Management.

Imran has demonstrated a strong commitment to excellence in his field and has worked across various countries for the Green Field / Smart Airport projects. He has cultivated a diverse and impressive career that spans across multiple countries including India, UAE, Qatar, Oman, Bharain, KSA, Singapore, China and several nations in Africa.

Imran's career is marked by significant achievements in the aviation industry, particularly in the management and execution of large-scale airport projects. He has played a crucial role in delivering 15 international and 2 VIP terminals, along with 23 domestic airport projects. His expertise encompasses project management, design consultation, contractor management, and Operational Readiness And Transfer (ORAT) support.

Imran's commitment to innovation and strategic project execution has earned him certifications, including a Certified Lean Six Sigma Black Belt and memberships in prestigious organizations such as NFPA, IET, and IEEE (The Institution of Engineers India) / Chartered Engineer. His ability to navigate complex projects while ensuring compliance with international standards has solidified his reputation as a leader in the field of airport systems engineering.

Through his career, Mohammed Abdul Imran has consistently demonstrated a passion for advancing aviation infrastructure, contributing to the development of smart, efficient airports worldwide. He is an Aviation Expert consultant for the following systems:

- ▲ Airports Fire strategy maintain safe & efficient egress with the sequence of



operations of cause & effect matrix integration with ICT systems integration (SI) with Engineering judgements.

- ▲ Baggage Handling system with automatic sortation's for the Addis Abba International Airport having capacity of 10600 BPH with the baggage holding system of STD 2,3 EDS X-rays TSA with EASA compliance of screening levels for hold baggage system, comprising EDS (ECAC std 2&3), Explosive trace detection system (ETD) and conventional X-ray machines for oversize bags and terminal bags including threat containment vessel (TCV) and Cargo/E-commerce MHS/ETV/BHS/TTS - Tilt Tray Sorter System with LLC/HLL/BSM/SAC with MDS Testing & Commissioning and ORAT operation, etc. He ensures the overall operations to compliance and passengers safety for Ethiopians Airlines.

- ▲ Specializes in the detailed

engineering of many Airport ICT systems and Master Systems Interfaces/Integrations (MSI) in SMART Airports around the Globe.

- ▲ His skills in Innovative Advanced Dimensions as a leader in aviation technology has offered multi-disciplinary services and a sizable pool of resources. Mr. Imran is a pioneer in large-scale infrastructure. According to IATA, ICAO, FAA, TSA, and EASA and Aviation technology globally, such as specialization in Aviation Industry Airports Special System Management.

He is presently working on Kingdom of Saudi Arabia Airport projects to have the SMART Airports concept implementation upgrades, which cover the design of Digital Airport Operation Control Centre (DAOCC) / Airport Predictive Operation Centre (APOC) smooth operation of the 16 operational actives of the airlines ATC



– VOHS flight plan activated, CTOT allocation, Take off from outstation, FIR Entry, Final Approach, Aircraft Landing, Aircraft In Block, Ground Handling starts, TOBT updates, TSAT Issues, Boarding starts, Aircraft ready, start up request, start up approved, off block, Take off the flights. This whole process of aircraft runway in /out to taxiway in /out, Boarding /Apron and control with all required systems interface & master integrations to operations has unveiled digital APOC. It is empowering a wide range of airport stakeholders to enhance passenger experiences through smarter and more efficient operations in three critical areas: Terminal, Landside, and Airside monitor remotely by stakeholder's app base applications. A Smart Solution For Smart Airports to the Stakeholder, Airside Process, Terminal process, Landside, technical operation technology / information technology / cyber security. The APOC is built on cutting-edge technology, including a locational intelligence and situational awareness platform, AI/ML capabilities, and a digital twin framework. This ensures the solution is not only scalable and easy to deploy but also provides actionable intelligence in real-time

Mohammed Abdul Imran mentions: "The DAOCC enables the operations team to steer, monitor, and manage airport

performances. From scenario-based planning to day-to-day operations, it anticipates imbalances, identifies disruptions, and ensures a continuous balance between airport demand and capacity."

The Digital Airport Operation Control Centre (DAOCC) provides situational awareness, predictive solutions, and is AI/ML-enabled. It offers actionable intelligence, is scalable, and easy to deploy, making end-to-end operations intuitive, incisive, and immersive. Post-operations Analysis service evaluates disruptions, assesses performance plan actuality, identifies necessary improvements, and ensures mitigation actions were suitable to solve disruptions. This interfaces with cameras, Wi-Fi, displays, and various airport systems such as Runways ILS, DME, GP, Radar, UHF, VHF Commutations, ICT, AVDGAS, PBB, PCA, GPU, AODB, TRUSS, CUSS, BHS, BMS, FDAS, ACS, CCTV, PAVA, SBD, e-gates, etc. It also integrates with IT systems for monitoring compute, storage, and network status, and smart sensors at the perimeter.

The benefit from implementing DAOCC Airports can benefit by achieving world-class passenger experiences, improving operational efficiency, ensuring safety and security, and gaining insights through real-time analytics. It transforms the airport's overall performance and

enhances the travel experience. Adds

Mohammed Abdul Imran, "DAOCC in airport management is not just a solution; it's a game-changer for the aviation industry. With a focus on innovation, technology, and client collaboration, it brings a new era of Total Airport Management, making end-to-end operations intuitive, incisive, and immersive."

Excerpts of the interview with Mohammed Abdul Imran:

Q: Share with our readers about yourself? Your journey into Aviation, profile, and work?

A: I am a Senior Aviation Expert Engineer specializing in airport systems. My journey into aviation began after completing my B.Tech in Electrical and Electronic Engineering in 2008. Since then, I have accumulated over 17 years of experience in the field, working on numerous mega aviation projects across various countries. My educational background includes an M.Tech in Electrical Power Systems and an e-MBA in Project Management, which have equipped me with the technical and managerial skills necessary to excel in this domain. Throughout my career, I have been involved in the design, implementation, and management of various airport systems, contributing to

the development of smart and efficient airport infrastructures globally.

Q: What is your current role and where are you based?

A: Currently, I am positioned as a Senior Airport SPL Systems Engineer at Hill International, based in Saudi Arabia. In this role, I oversee critical projects for several airports, focusing on modernizing systems to enhance operational efficiency and safety. My responsibilities include managing the Capex budget, conducting feasibility studies, and ensuring compliance with international aviation standards.

Q: Airport modernization and Smart Airport seem to be your core domain. What value addition are you doing for the development of the global sector?

A: In my role, I focus on leveraging advanced technologies to modernize airport infrastructures. This includes upgrading green field projects of CNS, ILS III upgrades to avoid zero visibility flight delays and safety on the Runways, Taxiways, Apron, Contactless Energy & Data Distribution (CEDD) airfield lighting systems, implementing sophisticated security systems, and enhancing data centre operations in line with master plans for the digital airport operation control centre (DAOCC).

My work aims to create smart airports that not only improve operational efficiency but also enhance passenger experience through integrated systems and innovative solutions. By collaborating with various stakeholders, I ensure that airport projects meet the evolving demands of the aviation sector.

Q: Indian Airports are handling record numbers of pax. How do you see the enhancement of tech in managing such numbers and providing pax convenience?

A: The increasing passenger numbers at Indian airports necessitate the adoption of advanced technologies. Implementing smart systems like biometric check-ins,



automated baggage handling, and real-time data analytics can significantly enhance passenger convenience and streamline operations. By integrating technologies such as IoT and AI, airports can improve crowd management, reduce wait times, and provide a seamless travel experience, ultimately boosting overall operational efficiency.

Q: What type of projects you can take care at airports?

A: I specialize in managing a variety of projects at airports, including:

▲ Airport Systems Integration: Overseeing the design and implementation of baggage handling systems, passenger boarding bridges, and airport ICT systems.

▲ Infrastructure Upgrades: Managing the modernization of Contactless Energy & Data Distribution (CEDD) technology airfield lighting, TSA, EASA security systems, and communication networks to meet contemporary standards.

▲ Project Management: Leading multidisciplinary teams to ensure seamless execution of projects from planning through to completion.

▲ Operational Readiness and Transfer (ORAT): Facilitating the transition of systems and processes to ensure smooth airport operations post-implementation.

Q: What is your take on the huge ongoing airport expansion plans of KSA?

A: Saudi Arabia's ambitious airport

expansion plans present a significant opportunity for growth in the aviation sector. These developments aim to enhance capacity and improve passenger experience, aligning with the country's vision for economic diversification and increased tourism. I believe that these expansions will incorporate modern technologies and sustainable practices, positioning KSA as a leading hub in the region and upcoming FIFA World Cup 2034.

Q: Artificial Intelligence Role in the development of airports. How do you see that?

A: Artificial Intelligence (AI) plays a transformative role in the development of airports by optimizing operations and enhancing passenger services. AI can streamline processes such as security screening, predictive maintenance of airport systems, and real-time data analysis for better decision-making. By leveraging AI, airports can improve efficiency, reduce costs, and provide personalized services to passengers, ultimately leading to a more seamless travel experience.

As the aviation sector continues to evolve, I anticipate that AI will become an integral part of airport operations and management and benefits to the Smart Digital Airport Operation Control Centre (DAOCC). [AW](#)