Enterprise Data Warehouse and Electronic Records Management

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**Introduction**

Every kind of and organizations of all levels needs Information management System to handle all activities and operations effectively and efficiently. Information Management System is used by the organizations to handle their information, improve work efficiency, enhance productivity as well as improve time management practices where the aviation industry has been found highly involved in adaptation of IS Practices and Solutions. The selected three Management Information Systems for this paper are; Computerized Maintenance Management System (CMMS), Electrical Monitoring System, and Environmental Management System.

**Computerized Maintenance Management System (CMMS)**

CMMS (Computerized Maintenance Management System) is the software-based system which used for the purpose to enhance operations’ efficiency in the areas like inventory management system through maintaining developing and maintaining a maintenance information database associated to the operations as well as practices of the organization.

Generally, the organizations who have the capability to operate efficiently and in an effective always enjoy competitive advantages over all of the competitors in the industry and market. In this sense, airports are larger facilities platforms which always have huge complex practices and systems which need to be operated in an efficient way (Johnston, & Vitale, 1999). This is done for the purpose to minimize the cost to the possible extent as well as to provide high level and most convenient services to the passengers or visitors as on their expectations. The CMMS is the way which makes the airport able to provide highly convenient and services and comfort expected by the passengers and visitors (Infotech, 2019). The CMMS provides higher efficiency in operating processes, enhance and empower inventory management and reduce the costs and related expenses like labor and operating costs.

The system also helps facility managers in tracking inventory levels and human resources of the airport. It also helps in linking assets and inventory and ensures the availability of required spare parts (Infotech, 2019). Beyond that, the CMMS helps facility managers in scheduling preventative maintenance days, weeks, months and even entire years in advance.

In the airport, the CMMS can be operated on the WLANS of the airport with connectivity with other systems like RACS (Restricted Access control System), CCTV and BMS, Revenue Management System, Fire Systems and many other systems. The system may also be hosted online with the help of the SaaS provider. In this way the airport recompenses fee for using CMMS as a web application but it helps to avoid the cost and expenses of buying and installation of CMMS hardware and software (Marks, Rietsema, & Hudson, 2013).

Hippo CMMS is one of the most powerful software that provides user-friendly web-based maintenance management solutions to different organizations especially airports. The Hippo CMMS has been equipped with tools and techniques that optimize the order of work management, preventive maintenance, manages equipment, assets and provide spare parts management (Leitm, 2019). The software further provides customizable interactive drawings and dashboards for floor plans and site maps.

**Electrical Monitoring System**

The Electrical Monitoring System which is a particle and exchangeable system with the BMS incorporate all devices which record and Monitor existing voltages of power systems. It is a fact that airports utilize a huge amount of power or electricity in daily routine. Electrical power is needed for every kind of organizations and even only buildings, runways or taxiways, parking lots and all other segments or areas of an airport. In most of the regions or cities, airports are the large users of power or electrical power. Airports are also required to meet the expectations of the FAA where one requirement is the proper and adequate lightening etc. for which airport needs enough amount of electrical power.

The internal electrical systems of airports are monitored by the BM of airports where EMS make sure that all of the load factors have been met while the required and fine voltage has been offered/supplied. Here, several systems like RACS, ALS (Airfield Lighting System) Fire Alarm Monitoring System are their required backup system is monitored by several software systems for the purpose to ensure the required and correct voltage is being provided consistently (Marks, Rietsema, & Hudson, 2013).

Electrical Monitoring systems allows operators to check and monitor the actual time status of all electrical circuits and levels of power load as shown on the graphical representation. It further allows the operator to monitor cost related to the electrical power like allocation of costs, consumption, allocations of units and energy audits (Infotech, 2019). The fast increase in the pricing of electrical utility is somehow out of the control of many airports where they consequently work to find possible ways for to reduce the utilization of electrical power where their basic concern is to reduce the costs of electrical systems.

For Electrical Monitoring System in the airport, Entronix EMP can be found as one of the finest software that runs independently from alongside and provides high-level building automation system. The system of this software work in the way where energy and control data are sent in a secure way to the cloud where highly customizable and pre-prepared reports and dashboards are available through highly secure web gateway. Beyond that, the software can be used by airports for detection of fault(s), maintenance, billing, budgeting and other purposes which have been covered cost-free in the EMP.

**Environmental Management System**

The Electrical Monitoring System which is a particle and exchangeable system with the BMS integrates the entire network of sensors as well as monitor and manage and control the systems that record and report environmental settings and conditions of the airport environment.

Environmental concerns have huge importance for airports. Airports stance major environmental concerns airports work as small sustaining cities and they produce environmental waste and air pollution etc. which have huge impacts on the health of public and community as well as it affects the habits of the surrounding society and businesses or firms (Melville, 2013). In this case, the airports are also required to work on the reduction of environmental wastage and pollution which they directly or indirectly create. For this purpose, they are being granted by the state to implement strategies, practices and other programs to reduce the noise level, and other pollution they create.

Most and even all of the airports have solid effective programs and departmental units developed for the purpose of reducing the amount of noise and pollution and focus on the environment wellbeing and compliances. Those units work on enhancing air quality, remediation of water/groundwater, and prepare for the requirements of NEPA (National Environmental Protection Agency) noise compatibility practices and programs (Leitm, 2019). They work to handle the monitor and cater to noise complaints and work as an advocate of environmentally friendly practices and programs like water conservation and material recycling.

There are numerous sensation (sensor) networks with microphones which are installed at a specified distance in the abatement map of the airport. These sensors record sounds in surroundings in volumes to determine that the sound created by the craft while departure and arrival are under the acceptable exposure limit for the near people, businesses, surrounding community. The management use number of systems and software to analyze the collected data from the devices to monitor the air and water quality and amount of noise so that they could adjust the mitigation programs and practices to control and limit of unsafe exposure to the possible extent (McLeod, & Schell, 2009). For instance, the computer software application like Bruel and Kjaer Airport Noise and Operating Management System (ANOMS) recognize and track patterns, noise and other unhealthy and unsafe noise areas and levels. For this purpose, the computer-based simulation models are used and run to govern the projected level of noise.

In hardware, the Environmental Management System includes different field monitoring devices which count/measure noise and amount of particular chemicals creating the operations of the airport. ADMS (Adaptive data Modular System) is the systems which are highly used by airports to determine, measure, monitor as well as control environmental concerns of the airport (Melville, 2013).

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