

APPLICATION GEOGRAPHICAL INFORMATION SYSTEM IN AVIATION

A geographic information system (GIS) is a system designed to capture, store, manipulate, analyze, manage, and present all types of geographically referenced data. A GIS can be thought of as a system—it digitally creates and "manipulates" spatial areas that may be jurisdictional, purpose, or application-oriented. Generally, a GIS is custom-designed for an organization.

GIS is applied in the wide range of areas. There are many businesses, government agencies and others who are using GIS. Also this system is very useful and efficient for aviation industry. Nowadays there are many airports have been using GIS to display the main terminal, buildings, gate cluster buildings, parking structures and tramways. GIS helps to display aeronautical situation, air traffic strategic and tactical planning and also to construct and represent trajectories of aerodrome charts.

Commercial, emergency, and defense-related airfields use GIS to

- Manage facilities, both air side and land side.
- Model and monitor noise.
- Track environmental compliance.
- Manage construction and maintenance.
- Plan traffic and capacity.

Let's see how aviation agencies benefit from the use of geographic analysis and GIS on the example of Spanish Airport. More than 190 million passengers pass through airports in Spain each year. Air transport in the country is managed by Spanish Airports and Air Navigation (Aena) public authority, headquartered in Madrid, Spain. Aena's mission is to guarantee safe, fluid, effective, and economic air travel. This mission requires Aena to publish several cartographic products. With the ArcGIS system, Aena has gained the flexibility needed to generate new cartographic products and deliver spatial services throughout the organization. The transition to GIS for data management and cartography was a major cultural shift for the organization. Despite this, Aena is already receiving benefits from its improved processes and workflows.

GIS has computer software which is used to design charts of flight operation procedures in different parts of airspace. It helps to create charts very promptly, accurately and easily.

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