



IMAPS, LLC

Providing accurate aeronautical data in a timely manner

Problem

Maintaining accurately edited aviation charts every 28 days

Goals

- Create 143 charts every 28 days.
- Edit up to 1,000 features per chart.
- Provide guaranteed QC of charts.
- Create final hard copy of each chart.

Results

- Staff members use automated QC checks.
- Aviation customers have up-to-date, clear, and consistent charts for navigation.
- Chart production is more efficient.
- Costs are reduced by eliminating the need for "stickups."

"With enhancements to GIS software, the concept of database driven charts, straight from the data, with minimal or one-time-only cleanup has become a reality."

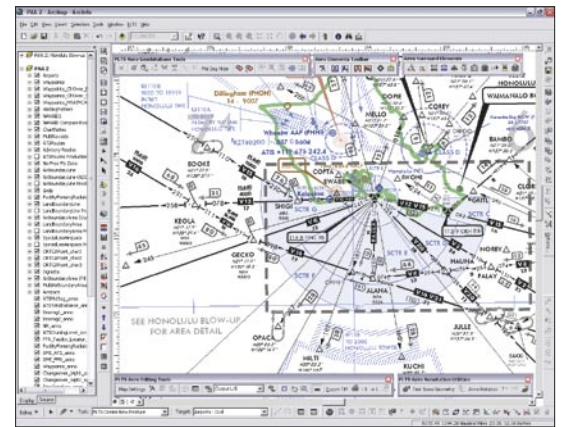
Mark Munsell
President, IMAPS, LLC

IMAPS, LLC, based in Columbia, Illinois, publishes navigation information on the Internet. Specializing in the marine and aviation markets, IMAPS, LLC, is a contractor to the Aeronautical Division of the National Geospatial-Intelligence Agency (NGA) through the Global Geospatial Intelligence (GGI) program. This program allows contractors to provide timely and accurate global aeronautical geographic information and services for the United States national, military, and civil aircrews.

The Challenge

IMAPS produces digital Enroute Instrument Flight Rules (IFR) charts and Area Arrival Charts Depicting Terrain Data (AACDTD) for NGA for many parts of the world including Africa (AFR); Caribbean and South America (CSA); Eastern Europe and Asia (EEA); Pacific, Australasia, and Antarctica (PAA); Europe, North Africa, and the Middle East (ENAME); and select U.S. cities. IMAPS faces the challenge of publishing new charts for these regions every 28 days or multiples of 28 days. At times, there are as many as 83 charts due on the same day. The maintenance process for the aeronautical charts includes receiving data updates in four distinct sets from NGA, then processing them according to NGA specifications. At times there are more than 1,000 edits to be made to the charts. The last of these four sets of data arrives at IMAPS with only a two-day turnaround for final delivery. Then, the final charts need to be ready for printing, a process that used to involve strip wax film instead of digital processing.

"There was a big challenge in producing the digital charts in that the same air feature could be displayed differently from chart to chart depending on the altitude depiction of the chart. And given that no two charts had the same scale and that the projections varied within and between the chart series, a robust solution was needed to be able to quickly produce, update, and output each chart," says Andy Dearing, production manager at IMAPS.



The Solution

IMAPS is able to turn around these large quantities of charts accurately and on time by using ESRI® PLTS™ for ArcGIS®-Aeronautical Solution. This GIS software combines cartographic editing tools, database models, aeronautical symbols and styles, and workflow management components to enable a streamlined aeronautical chart production environment. First, the geodatabase is loaded with data, then updated frequently during the 28-day cycles using the GIS Data ReViewer tools found in Aeronautical Solution.



Learn more about PLTS for ArcGIS at www.esri.com/plts.

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ESRI Software Used

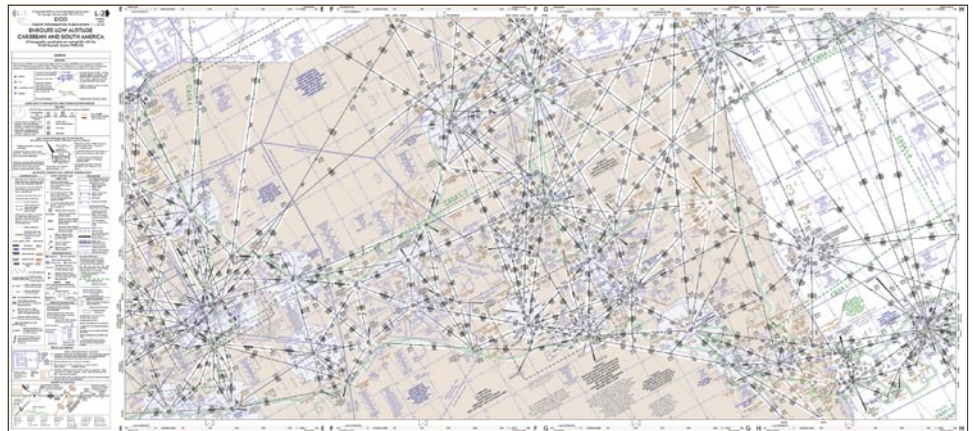
PLTS for ArcGIS—

Aeronautical Solution

ArcEditor™

ArcSDE®

These tools guide the operator through merging changes in the geodatabase as they arrive. Cartographic features are then made from the master feature in the geodatabase. Critical data, such as flight levels, that is consistent on each copy of the feature is maintained on all features, while information specific to just that feature, such as abbreviation options, is saved on the particular cartographic feature only. PLTS tools allow for editing the annotation and modifying the features in the charts as well as changing the information on the front panel, legend, or any other surrounding elements on the charts. IMAPS uses feature-linked annotation capabilities to produce this clear textual information that changes automatically as the underlying geographic features and attributes change. Now, instead of intensive manual or CAD-based cartographic editing, IMAPS charts are designed and managed with intelligent elements that are automatically updated based on the content within the geodatabase.



Results

IMAPS has found that using Aeronautical Solution allows for quick and accurate mapping of the many Enroute chart features. One-time data entry allows for greater accuracy by eliminating the possibility of errors in the production chain. Maintaining these charts is simple with the PLTS GIS Data ReViewer table, which is generated when updates are applied to the database. Analysts can step through each change that a given chart has received and verify that the change was made accordingly. Performing update management this way is more efficient than traditional manual chart production, allowing IMAPS to produce charts for NGA much quicker and easier than before. After QC checks, the chart is converted to four-spot color inks and rendered to an Encapsulated PostScript (EPS) file for transfer to printing plates. The result is an up-to-date, consistent, clear air chart product. Mark Munsell, president of IMAPS, says, "Using the PLTS for ArcGIS tools adds visual and spatial QC checks of the data and provides NGA with a higher quality product."

Using Aeronautical Solution, countless errors have been eliminated and product quality has been elevated. NGA continues to deliver millions of Enroute charts to aviators every 28 days without delay.

For More Information



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