Leica GS5+...

Creates an Address Database for the City of Industry, California

Urban and Municipal

In a forward-thinking move, the City of Industry decided to use a Leica GS5+ GPS receiver to record and store GPS coordinates along with each address in the database. The GS5+ unit requires absolutely no setup - it includes a built-in U.S. Coast Guard beacon receiver for performing real-time correction. The Leica GS5+ has made the City's address database extremely accurate.

California has its share of earthquakes, wildfire, and other natural disasters. In the early 1990's, a severe fire ravaged an upper middle class neighborhood in Oakland, California, east of San Francisco. After that event, the state of California recommended that all disaster response units (police, fire, and others) prepare a standardized disaster plan so that a coordinated effort could be launched in the face of the next crisis.

As part of the disaster response plan the City of Industry, California, wanted to create a database for every address (business, residences, churches, etc.) within the city limits. Established primarily as a business community in 1957, the City of Industry lies at the east end of Los Angeles County. As its name implies, the city is attractive to many industries for two primary reasons: 1) its taxing structure and, 2) the city's strategic access to dominant transportation corridors.

In a forward-thinking move, the City of Industry decided to use a Leica GS5+ GPS receiver to record and store a latitude longitude coordinate along with each address in the database. The Leica GS5+ was chosen for its ease-of-use, accuracy, and durability. The city thought it would be a good idea to store coordinates in the database because coordinates are constant, while addresses, landmarks, and other surroundings can change. Having a latitude/longitude coordinate in the database, in addition to an address, would also be especially useful for police and fire crews to have during emergency and disaster response.

The task of providing an electronic database fell to the city's law enforcement personnel. The City of Industry contracts with the Los Angeles Sheriff's Department for law enforcement services, and A.D. Hall serves as the city's liaison deputy sheriff. Deputy Hall tried to obtain addresses from city records, but discovered much of the information was stored on paper records rather than in a comprehensive electronic database. As a result, Hall secured an electronic address database from an outside company to use as a starting point.

Hall sorted the new electronic database by street name and then printed out all of the addresses. He and his partners used these paper printouts to drive all of the streets in the City of Industry in order to verify what was actually there. They noted all additions and made some deletions when making their rounds. At the same time, the city mailed a questionnaire to every address within the city that respondents could fax back when completed. The questionnaire focused on verifying a correct address, phone number, business type, and telephone number of responsible persons to call in case of an emergency after hours or on the weekend.

Once the database was complete, Hall began making it available internally to City Hall staff and Sheriff and Fire Department personnel. What he found was that each City department had different needs. The city used the database to verify if an address was

Deputy Sheriff A.D. Hall uses a Leica GS5+ to assign GPS coordinates to addresses in the City of Industry, California.

actually within the city limits, in order to determine if emergency services needed to be provided. The Fire Department requested a fire prevention module be added to the database to record information from fire inspections. As requests from these other City departments came pouring in, it became evident that the database needed a constant coordinate to go along with each address, and the city decided that GPS was the answer.

Hall says that he remembers thinking "How am I going to implement the City's request?" and "How am I going to apply GPS in the field?" Immediately, Hall began researching and learning about GPS, in order to come up to speed quickly. After he had a knowledge base, Hall began searching for a suitable GPS receiver. Given the city's geography, he knew that the GPS receiver had to be accurate to within a few feet, in order to distinguish between areas where stores and/or driveways are close together, such as strip malls. He also knew that any GPS equipment purchased had to be able to be put into use almost immediately, as there was not enough money in the city's budget to accommodate any training.

The City of Industry selected the Leica GS5+ GPS receiver because of its accuracy and ease-of-use. The GS5+ includes a built-in U.S. Coast Guard beacon receiver for performing real-time correction in the field. This integrated antenna means that the unit is easy to set-up, requiring absolutely no configuration or unwieldy cables. Basically, all a user has to do is plug the GS5+ receiver into an output device, and it is ready to go!

The city's GS5+ ties into a Fujitsu pen computer running MS Windows® CE to collect the readings. Once the addresses are collected, they are exported out of MS Access into a text file, and uploaded into FieldWorker software. The GPS coordinates are then displayed and stored in the master database available to all database users.

Hall and his partners are doing the GPS data collection, and have been impressed with the accuracy of the GS5+. Hall says he consistently "achieves accuracy to within a couple of feet." When asked if the GPS unit is difficult to use, his reply is "It is extremely easy to use. I learned 'on the job' through trial-and error. After I transferred the street files into the pen computer anybody could easily go out and take the actual readings."

Because of the City of Industry's proactive approach, the City's address database is now extremely accurate. Hall says that "If a record does not have a GPS coordinate, then we still have to go out and drive to that address. It's still very early in the project, but I can tell you, the simple fact that we actually have the GPS coordinates is valuable. We anticipate it to accelerate the response of emergency services with future dispatch systems being designed."

Overall, the City's "address/GPS database" has been widely accepted. Hall says "In the future I'm sure that our dispatch system will be 'hot-linked' to our address/GPS database – and that address will show up on a map display. So far, the program has expanded to a dozen other communities neighboring the City of Industry. It keeps moving into other communities, and may eventually expand county-wide."

To learn more, call 1-866-LEICAGIS or visit www.gis.leica-geosystems.com
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