ArcNews

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Briefly Noted

Esri Launches Africa GeoPortal
Organizations and citizens throughout Africa—from the African Union and national governments to nongovernmental organizations, businesses, and educators—now have access to the Africa GeoPortal, a comprehensive cloud-based platform that provides users with ArcGIS Online and geographic data and imagery related to the continent. This complimentary software-as-a-service technology is offered to all who are addressing the most urgent needs in Africa, including economic development, climate adaptation, conservation, and health care. Get more information at go.esri.com/Africa_geoportal.

Sentinel-2 Image Services Available at No Extra Cost
Users who want to better understand catastrophic events and natural disasters can now access Sentinel-2 image services via their ArcGIS Online subscriptions. Esri makes it easy to employ this multispectral imagery by extracting it with ArcGIS Image Server and publishing an image service through ArcGIS Living Atlas of the World, hosted on Amazon Web Services. Find out more about harnessing the power of Sentinel-2 imagery—part of Copernicus, the world's largest single earth observation program—at go.esri.com/Sentinel-2.

***Forbes* Names Esri a Leading US Employer**
For the third consecutive year, *Forbes* has named Esri to the America's Best Midsize Employers list. The magazine cited work-life balance, outstanding benefits, collaboration with colleagues around the world, and the opportunity to make a difference as some of the primary reasons employees enjoy working at Esri.

Esri Selected to Modernize Cyprus Cadastre

Creating One of the Most Advanced National Systems

Cyprus has a rich, centuries-long history of individual landownership—and now will get one of the most advanced and encompassing digital cadastral systems of the modern age.

In April, the Department of Lands and Surveys, within the Ministry of Interior, signed an agreement with Esri to upgrade its current GIS, called the Cyprus Integrated Land Information System (CILIS). CILIS currently underpins all cadastre and land registration processes and procedures in the Mediterranean island nation and will become a government-wide system based on the ArcGIS platform, covering the whole country.

"Cyprus will become one of the leading places in Europe to have an integrated land registry and taxation system based entirely on Esri technology," said Mark Williams, a senior consultant at Esri and the project manager for this cadastral system upgrade. "At the end of the project, Cyprus will have one of the more sophisticated cadastre systems in the world."

The Department of Lands and Surveys is seen as one of the most important government divisions in Cyprus because everything else depends on it, according to Constantinos Papantoniou, the technical consultant at Esri who is the technical lead on the project.

"If citizens want to buy land, a house, or an apartment, they have to go to the lands and surveys department to get the titles," he said. "Other government entities get data from the Department of Lands and Surveys as well, including the Ministry of Defence, the Ministry of Finance, the Ministry of Interior, and the Ministry of Foreign Affairs."

At the signing ceremony, Minister of Interior Constantinos Petrides stated that the Department of Lands and Surveys is likely the largest provider of property-related data in Cyprus and is certainly the country's primary provider of GIS data. According to him, that makes this upgrade all the more urgent.

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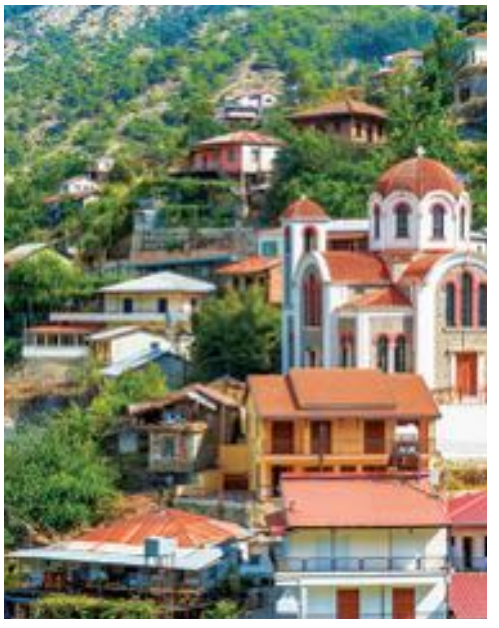

↑ Cyprus has a long, rich history of cadastral record keeping.

At the Forefront of GIS and the Future of Software

Esri Developer Summit 2018

Every year, the theme of the Esri Developer Summit (DevSummit)—held in Palm Springs, California, in March—is By Developers, for Developers. And Esri staff stay true to it. Dozens of technical sessions are geared toward what geospatial app developers want and need to know about building apps using Esri technology, as well as which tech trends—such as artificial intelligence (AI), augmented reality (AR), and virtual reality (VR)—are on the horizon.

"This week is…all about you looking at the technology and getting your hands on it and interacting with it," Jim McKinney, ArcGIS program manager at Esri, said in opening the 2018 Plenary Session. "But it's also about people, and it's also about relationships."

Before the tech presentations started, Esri president Jack Dangermond praised the audience for their app development work.

"You are clearly the people that are making a huge difference in our field and in your organizations," Dangermond said. This, in turn, makes the world a better place.

"You are driving rationality in the way people think," he continued. "*[You're]* not just a collection of developers. *[You're]* a collection of developers with purpose."

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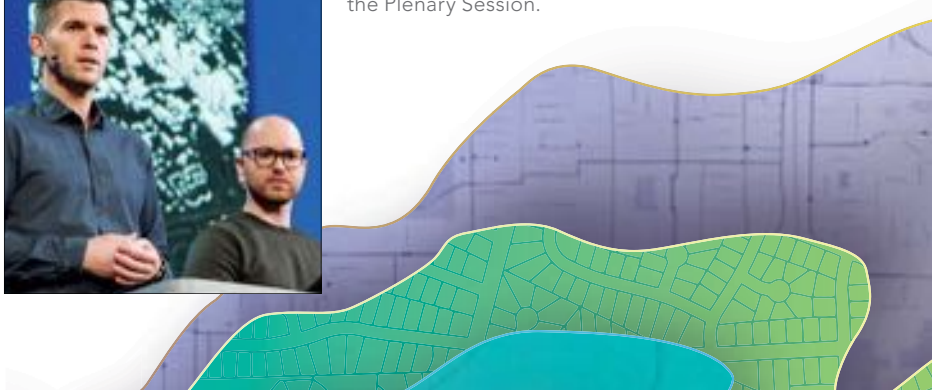
← From left to right (top row first), Esri's Jeremy Bartley, Lauren Bennett, Euan Cameron, Sud Menon, Adrien Meriaux, and Javier Gutierrez and Russell Roberts demonstrated new and improved developer capabilities in the ArcGIS platform at the Plenary Session.



One Month, Thousands of Assets, and Two People

How a Small Arizona Electric Cooperative Completed a Large Data Collection Project Quickly and Efficiently

Gathering data in remote, rugged areas can be very challenging. In typical situations, this requires a large team to put in lots of time and effort. But in 2017, Sulphur Springs Valley Electric Cooperative (SSVEC), based in southeastern Arizona, managed to collect data on more than 7,000 locations in 32 days—with only two staff members. The secret to this success? Collector for ArcGIS.

↓ Electricity poles are made up of a combination of assets, from transformers and crossarms to insulators and secondary voltage support structures.

How to Gather Lots of Data, Fast

SSVEC is a rural electric cooperative with 190 employees, more than 4,000 miles of power lines, and a service region roughly the size of Connecticut. Much of the terrain in SSVEC's service area is mountainous with high-desert valleys.

In early 2017, the operations office at SSVEC issued an urgent request: it needed an inventory of all the asset records from a particular substation and its associated feeders. An audit had indicated missing or inaccurate data on poles, underground equipment, vaults, and service meters. The operations office needed field staff to correct the errors in the data and fill in any gaps.

In the past, SSVEC's data collection methods were manual, slow, and GIS-intensive.

"We collected high-accuracy data in the field and downloaded it when back in the office," said Kurt Towler, SSVEC GIS supervisor and the lead on this data collection project. "It then required GPS postprocessing, converting the data into shapefiles, and importing it into ArcGIS. That was time-consuming and very GIS heavy."

For this project, Towler knew that field staff would have to collect a lot of data. For example, one pole is not one asset. Poles are made up of a combination of assets: transformers, crossarms, insulators, and secondary voltage support structures. Towler calculated that there were 87 different combinations of assets that could make up a single pole—and that doesn't even take into consideration the data that had to be collected on other pieces of equipment.

Speed and accuracy were going to be high priorities for this project. The work needed to target more than 7,600 locations and had to be completed against a tight, six-month timeline. What's more, the operations office was hoping that what it learned while fixing these data collection mistakes could be applied across the organization.

Towler realized that leveraging mobile technology would be the fastest and most accurate way to hit the deadline. Since the project was going to involve SSVEC staff working separately in the field, he also knew that data collection had to be simple and streamlined, negating the need for careful coordination. Usability, scalability, and user independence were going to be key.

SSVEC already stored its existing data in ArcGIS, so Towler naturally looked first for an Esri-powered solution. With its intuitive interface and easy-to-use workflows, Collector fit the bill. Towler's team decided to store pole data as point features in ArcGIS Online and any other associated asset data as related records.

"GIS staff needed to acquire GPS, or GNSS, technology; design the field data collection process; and publish to a mobile app within six weeks," said Towler. "Having in place all that is required for project success—and hiding complexity from those in the field actually doing the data collection—was critical. We needed to make data collection fast and efficient."

Increasing Productivity While Improving Accuracy

To configure Collector quickly and get it out to line workers on iPad Minis on short notice, GIS employees first created reference and editable map layers in ArcGIS Online. Since much of the work would need to be done in places that lacked wireless connectivity, they also prepared tile packages for basemaps and side loaded them into Collector through iTunes so the basemaps could be used in the app's offline mode.

Towler was concerned about precision, since decimeter accuracy was critical to the project. By coincidence, the previous release of Collector had introduced support for GNSS receivers via Bluetooth. So Towler decided to pair the iPad Minis with the Arrow Gold GNSS receiver from Esri partner Eos Positioning Systems. The receiver connects to Arizona's Real-Time Kinematic (RTK) satellite navigation network, which enabled field staff to use the Eos Tools Pro app to monitor position accuracy in real time.

GIS staff decided to keep all the project data in ArcGIS Online, where it is easier to access, via the cloud, without adding to SSVEC's on-premises infrastructure. Towler and his team spent time up front creating the maps, uploading data to ArcGIS Online, configuring the app, and training the line workers before they headed out to collect data. While in the field, the line workers could see which locations needed to be checked; at the same time, staff back at the office could easily monitor their progress.

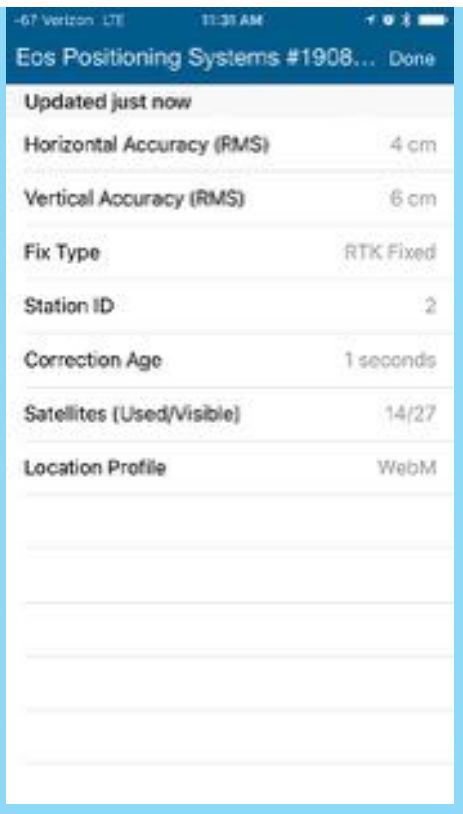
"We can send high-accuracy positions and inventory data from Collector directly to the cloud geodatabase," said Towler. "That means the line workers can now do their jobs without software or hardware getting in the way."

The results were impressive. Just two linemen inspected 7,640 locations in 32 days. On the most productive days, the linemen collected over 600 data points. Overall, they entered more than 25,000 related asset records. And the accuracy of most locations was four centimeters or less.

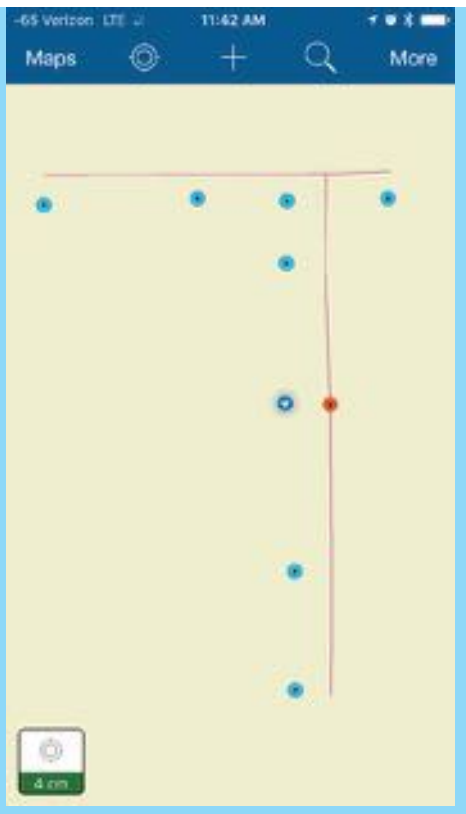
"Productivity was proved, as was scalability and reliability," reflected Towler. "This project showed me that high-quality location and asset data is easier and much less expensive to collect than in the past."

SSVEC is now looking to apply the same approach and methodology to similar projects in other parts of the organization.

For more information on how SSVEC implemented Collector with ArcGIS Online, email Towler at ktowler@ssvec.com or listen to his podcast, *Speaking of GIS* (speakingofgis.com), in which he discusses similar topics.



↑ Field staff at Sulphur Springs Valley Electric Cooperative (SSVEC) collected a lot of data fast using Collector for ArcGIS.



↑ The two linemen conducting the inspection entered over 25,000 related asset records into Collector.

↑ The GIS team also used the Arrow Gold GNSS receiver from Eos Positioning Systems to monitor position accuracy in real time.

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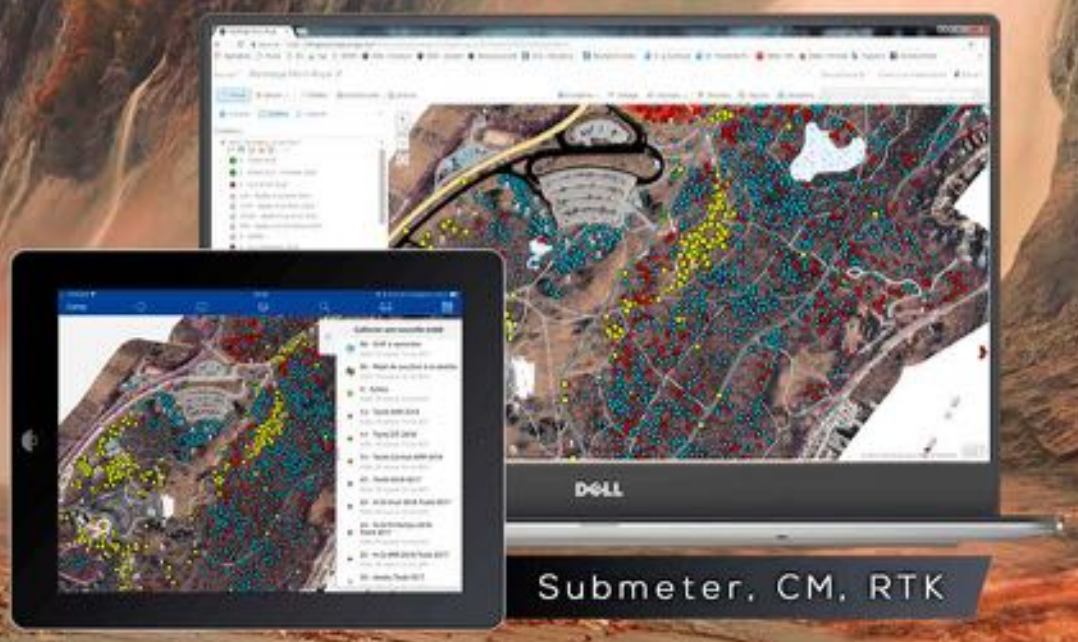

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