Amdocs Drone-Aided Site Audits

Communication tower maintenance represents an ongoing operations challenge for service providers.

Drone technology provides a safe, rapid way to inspect wireless infrastructure, mitigating the cost and human safety issues associated with physical inspections. With high-resolution imagery and images of tower structures and equipment, the technology enables operators to quickly identify and verify equipment specifications and damage.

Amdocs Drone-Aided Site Audits is an advanced, safe, end-to-end service for maintaining communication towers. Powered by partner software, the service employs autonomous drone flights with standardized flight paths and image capture, thereby standardizing the process of data capture and digital inventory of assets, while removing the human element.

Highly reliable and scalable, the service includes all the necessary hardware and software for the performance of vital tasks, including field collection, back-office engineering and customized data delivery into a data repository. We supply pilots, drones, drone software, image analysis software and report rendering.
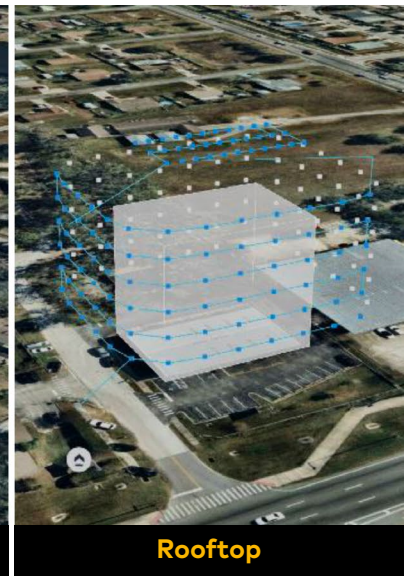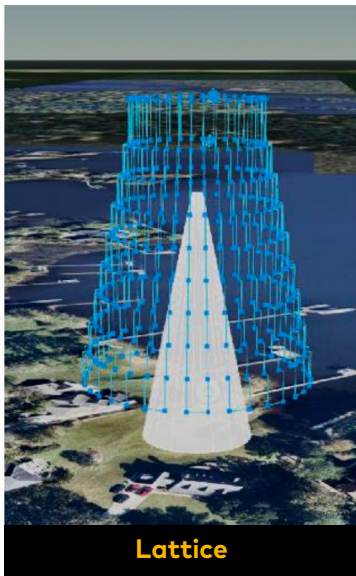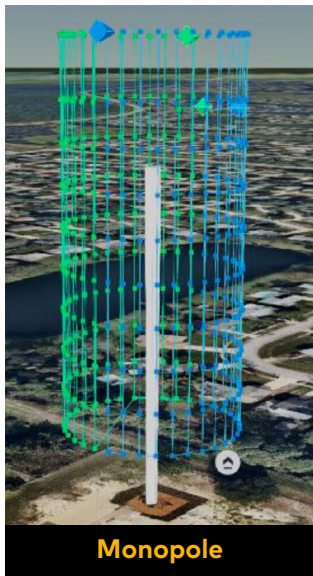
Our service offering includes:

- **Field engineering:** Field surveys, drone inventory management, drone maintenance and training

- **QA inspection:** Mount mapping, tower inspections, preventative maintenance (e.g. rust, faults)

- **Inventory:** Verification, comparison and synchronization, FUZE updates (RF, system performance, construction, RE/REG, etc.)

- **A&E site survey:** Asset verification, portfolio of all three sectors and radiation center accuracy

- **Compliance and audits:** Analysis, inspections, discrepancy list

- **Construction acceptance:** Pre-/post-inspection

- New **site acquisition** and **candidate selection:** Line of site

Power of analytics

Using advanced technologies, we extract the most important data to create comprehensive reports containing key insights. These technologies include:

- **High-resolution imagery:** Organized in 3D space with tagging and annotation; ensures consistent 360-degree flight and data capture; eliminates human error; zoom capability enables granular view; zero and -30 degree images

- **Digital twins:** Photorealistic, interactive 3D model, with measurement interface that provides inventory analytics; measurement accuracy +/- 0.5", Azimuth accuracy +/- 1 degree – captures line of sight and identifies changes in tower assets between flights

- **3D analytics:** 3D tagging of asset inventory and faults

- **Analytics reports:** Detailed listing and 2D cross-sections of inventory and faults in production

The drone utilizes four autonomous flight options:

Monopole **Lattice** **Guy Wire** **Rooftop**

Benefits

- **Reduced cost:** Traditional mount mappings require 2-3 human crews for data collection; while cranes and boom lifts are sometimes required due to safety conditions that prevent technicians from climbing a structure, drones eliminate this need

- **Faster delivery:** Traditional methods limit the number of surveys to 1-2 per day. Drones can perform 3-5 surveys, depending on the distance between sites

- **Accurate inventory:** With an accurate 3D digital twin, it becomes cost-effective to maintain accurate inventory records and identify if new equipment can be added without an additional climb

- **Green:** Lower carbon footprint through reduced truck rolls

- **Lower human risk:** Drones negate the need for dangerous climbs by field technicians

- **Standardized flight path and collection:** Automated flight patterns eliminate human error when collecting correct images; removes pilot's subjective input

- **Automated:** More reliable, accurate data and data collection

Why Amdocs

Amdocs has a proven track record supporting projects throughout all phases of network rollout and acceptance – including but not limited to RAN, transport and core design, provisioning and troubleshooting services, pre/post launch optimization, provisioning, triage and so on – for multi-vendor, multi-technology heterogeneous networks.

With an experienced network provisioning team staffed by professionals in the area of transport, core, as well as RF engineers, our strength lies in adapting to our customers' needs and requirements, while orchestrating various support teams/vendors to ensure timely delivery.

As a preferred vendor for Tier-1 and Tier-2 service providers across the globe, our vast complex configurations integration experience and holistic approach to network management ensures you can deliver faster, within budget and with the highest levels of quality.

Partner with us to benefit from our proven tools, processes and time-tested methods, as well as customized services for all major network equipment providers and technologies, so you can be confident in your ability to meet your customer experience goals.

For more information on our network deployment services, visit Amdocs Mobile Network Services.

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