



Structure, Tower &
Antenna Council
Conseil des structures,
pylônes et antennes

UAV SERVICES FOR THE COMMUNICATIONS TOWER INDUSTRY



UAV Services for the Communications Tower Industry

This document was developed by the Structure, Tower & Antenna Council (STAC) to help tower owners and tower contractors identify the various unmanned aerial vehicle (UAV) services that are currently available and applicable to the communications tower industry.

This document was developed in consultation with members of the STAC New & Emerging Technologies Committee, including representatives of UAV operators and suppliers: Canadian UAV Solutions Inc., Gap Wireless and inUAVi.

Imaging Services

Video Inspection, Video Record (Unprocessed Data) \$

- This is basic service, not zoomed in for fine detail
- Can be performed with entry level prosumer grade UAVs
- Could be performed by internal personnel

Detailed Video Inspection/Investigation \$\$

- More detailed closer/higher resolution sensors
- Able to identify fine items (such as serial/part numbers)
- Video record of inspection
- Requires more professional grade UAV with better sensors
- Requires professional expertise of a trained UAV operator*
- Detailed analysis may or may not be included (see Data Management below)

Detailed HD Multiple Images \$\$\$

- Camera zoomed in to very fine resolution able to see greater detail
- Provides scalable images
- Data can be utilized in pre-design information for new components
- Line of sight verification
- Requires more professional grade UAV with better sensors
- Requires professional expertise of a trained UAV operator*

Live Video Feed to Closed Broadcast Network \$\$\$\$\$

- Able to see live video in real time from anywhere in the world
- Requires professional grade UAV and live broadcast equipment
- Requires professional expertise of a trained UAV operator
- Requires reliable and robust Internet connectivity on site

Generation of Geo-located 3D Model \$\$\$\$\$\$

- 3D model can be exported to CAD design software
- Very useful for designing additional, or upgraded components
- Provides full scaled measuring capabilities
- Requires Upgraded Professional UAV and professional processing software
- Requires professional expertise of a trained UAV operator
- Requires professional expertise to utilize processing software



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Network Optimization

RF Performance Monitoring \$\$\$+

- Monitor and measure performance of WCDMA and LTE sites
- Includes demodulating the signal and reporting/collecting statistics that are specific to the technology
- Antenna azimuth and tilt measurement
- Interference analysis
- Requires more professional grade UAV with RF measurement sensors
- Requires professional expertise of a trained UAV operator
- Requires professional expertise to utilize RF measurement instruments

Data Services

Data Management \$\$

- Add-on item compatible with any other service
- Manage and organize various levels of data (eg: real or generated tower models that show inspection results)
- Maintain video or Image library for each site
- Online (cloud) client data sharing
- Contact UAV service provider for more details about data management options

Provision of Services

Cell on Drone (COD) \$\$\$\$\$\$

- Provide location-specific cellular coverage for a period lasting day or even weeks
- Typically used for large-scale events and following natural disasters that disable existing infrastructure
- Requires specially designed UAV
- Requires tethering for consistent power supply
- Custom solution for each use case
- Typically does not require Special Flight Operations Certificate (SFOC)

**Note that qualified in-house personnel may be capable of providing the level of professional expertise required to complete some UAV services.*



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