XYZ Aerospace

Nomad Program Overview

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Overview

- Nomad Overview
- Wanderer Description
- Nomad Program Overview
- Nomad Specific Modifications

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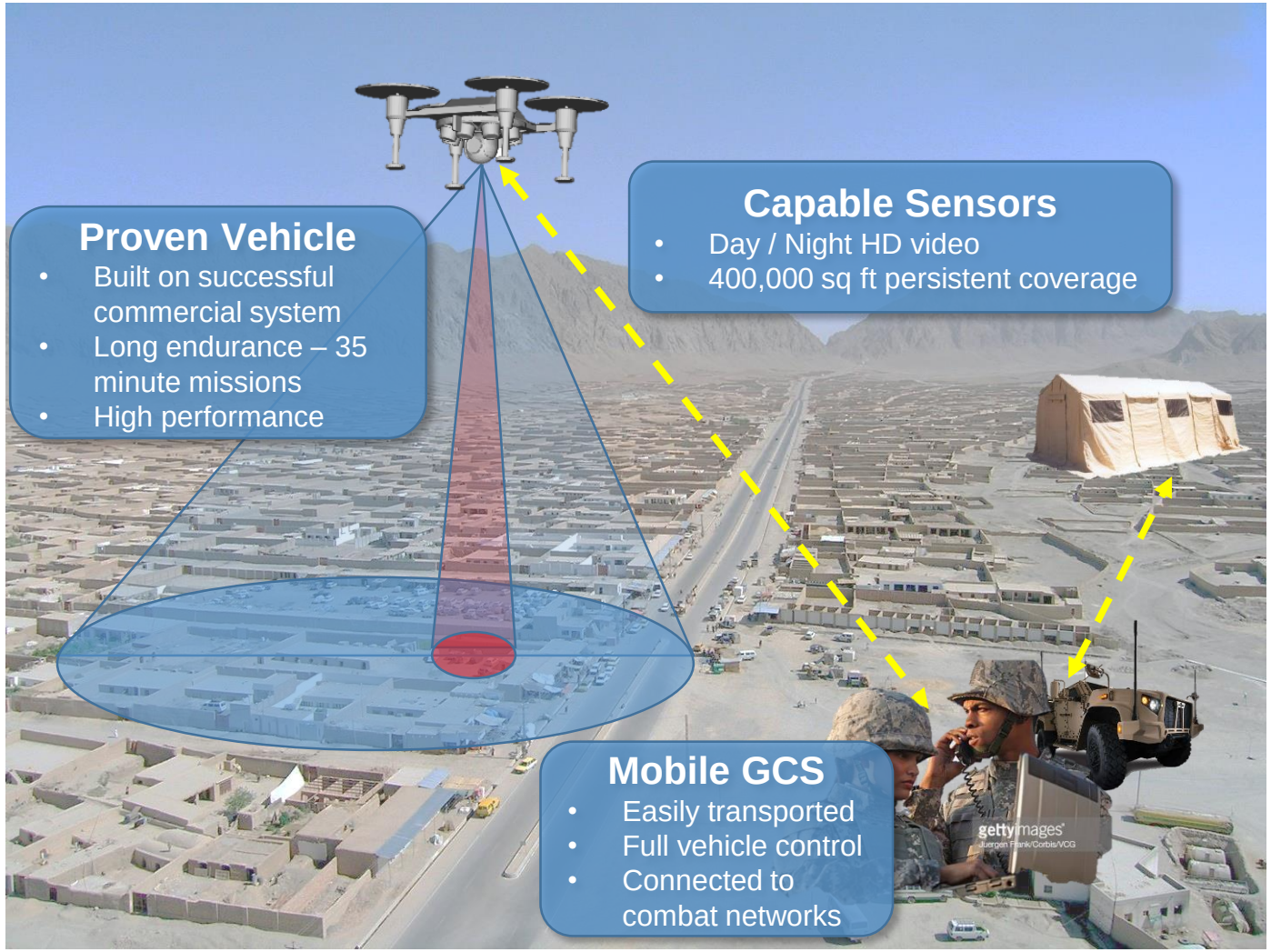
Nomad Overview



- *Built from wildly successful Wanderer heavy-lift quadcopter*
  - Over 800 currently operating in US airspace
  - FAA 14 CFR part 107 Compliant
- *Tailored for OTSS-E requirements*
  - Non-Import vehicle computers
  - High performance sensors
  - GPS Jam resistant
  - Rapidly deployable ground station
  - Military communications

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History

10 Jul 19: OTSS-E Phase 1 Award

Jul - Dec 19: Nomad Development

- Jul 19: Legacy system analysis/re-testing
- Aug 19: Flight Performance Expansion
- Sep 19: Initial Payload Testing
- Nov 19: Final Payload Testing
- Nov 19: Deployment Testing

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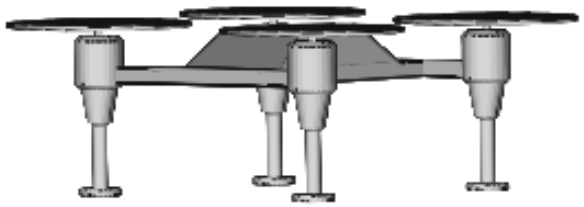
Wanderer Overview

High Performance – Heavy Lift Utility Quadcopter

Extremely Capable

- Heavy payloads – up to 80 lbs
- Long endurance – as long a 2 hours
- High altitude – greater than 1200 ft AGL
- High speed – 50 mph capable

**depending on configured options*



Versatile Payloads

- Offered with multiple payloads
- Or configurable by user
- Modular mounting plate for payload attachment
- Flexible ground station options

Proven Operations

- Over 800 currently operating in US airspace – film, gas pipelines, aerial survey, security operations
- FAA 14 CFR part 107 Compliant
- Robust long range control link
- Highly reliable > 600 flight hour life

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Wanderer Variants

- Mark 1 – Video Photography
  - Configured with multiple camera configurations, including 4k filming rig, ultra zoom photography, thermal survey cameras
  - Short range, high bandwidth optical payload datalink
- Mark 2 – Aerial Survey
  - Multiple wide angle cameras to capture large swathes of land
  - Intended for semi-autonomous operation
- Mark 3 – Remote access point
  - Long range line of sight comms to air vehicle
  - Wifi networking to remote points beneath vehicle

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Nomad Capabilities

- Leverages Wanderer baseline
  - Primary structure
  - Motors
  - Electrical system
  - Control Link
- Demonstrated to meet OTSS-E performance requirements!

Nomad Payloads

System	Model	Performance
Full Motion Video	CloudCap TASE 415HD	HD EO and MWIR Imagery
Wide Area Camera	XYZ Bluefire Camera System	0.50m GSD EO/IR imagery
Payload Datalink	Z4 Technologies Multi-band Datalink	35mb/s AES256 encrypted link
GPS	Puck Solutions PS450 Jam Resistant GPS	GPS with improved functionality in GPS degraded env

Mobile GCS

- Combined transit case / base station
- Lightweight (<30 lbs)
- Multiple power options – battery, shore, vehicle
- Extremely rugged

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Wanderer Modifications

- Needed updates to sensors to meet new performance requirements
  - New, larger imaging sensor/optics – new lenses
  - Required mounting more forward than wanderer to provide unobstructed FOV
- Improved communications range / encryption
- Legacy flight controller was made in China
  - New security requirements required the development of a new FCS
  - Demonstrated to be functionally equivalent to legacy variant
  - Successfully tested using legacy system configurations

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