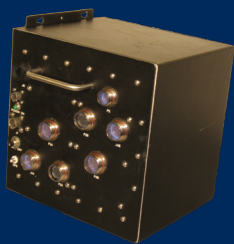




communications
Geneva Aerospace

MOBIUS™ OPTIONALLY PILOTED AIRCRAFT (OPA) SYSTEM

WHEN THE MISSION MATTERS



FlightTEK



MX-15 EO/IR FMV



Mini-TCDL



Rover RVT



VideoScout Remote Video Exploitation Terminal Ex RVT



Unmanned Configuration



Manned Configuration

L-3 Geneva Aerospace is pleased to offer the **Mobius™ optionally piloted aircraft (OPA) system**. The aircraft is designed to fulfill a wide range of unmanned ISR and RSTA missions. The aircraft can also be flown in a manned configuration providing flexibility for operations, training, and R&D. Open architecture across the entire system design assures maximum operational flexibility.

The Aircraft & Key Components

Based on a proven, FAA-certificated design (Experimental R&D Certificate), the carbon-composite aircraft overcomes many of the operational and logistical limitations of more classic, glider-like designs found in nearly all of today's unmanned aircraft. The table below summarizes the Mobius™ airframe design benefits.

Key Aircraft Features

- **Increased cross-wind takeoff & landing performance** 25+ kts demonstrated
- **Increased rate-of-climb and descent** 1500 fpm / 6000 fpm
- **Increased maneuverability and g-loading** rated to +12 G's
- **Wider range of speeds** 70 - 215 kts
- **Higher useful payload / total weight ratio** 1000# load / 3000# GWOT
- **FAA-certified, general aviation powerplant** Lycoming 185hp IO-360

Mobius has been designed for low- and medium-altitude, long-endurance ISR. Provisions have been made for carriage and release of external stores. **Alternate engine configurations** include Lycoming's IO-540 for increased top end speed or the turbo-normalized TSIO-360 for increased altitude capability.

All components incorporate either **commercial or MILSPEC standards** to provide maximum component interoperability and to minimize integration schedule and cost. The aircraft is currently configured with L-3 Wescam's high-performance MX-15 EO/IR FMV payload, Geneva's flight control systems and Communications Systems West's mini-TCDL DataLink.

Mobius™ Optionally Piloted Aircraft (OPA) System

When the Mission Matters

The Command & Control System

For unmanned, semi- or fully-autonomous operations, Mobius uses L-3's flight control system (flightTEK®) installed in a redundant configuration. With a higher level of autonomy, using tightly coupled inner and outer control loops, Mobius is able to conduct **self-contained, hands-free takeoff and landings without the need for any ground-based hardware** or tedious pre-programming of intermediate departure and approach waypoints. The Ground Control Station (GCS) is comprised of ruggedized, military hardened, laptop-sized computers with STANAG-4586 interoperability and L-3's MissionTEK™. The man-machine interface uses common, Windows™-based, intuitive keyboard and mouse commands, minimizing training requirements. The system is designed to integrate with L-3's two primary remote video terminals, Rover and Video Scout.

The Datalink

Command and control signals for Mobius are transmitted via a tactical common datalink (TCDL) radio set. As the U.S. military standard for secure, anti-jam, anti-spoof, encrypted communications, L-3's **mini-TCDL implementation provides maximum capability in a minimal footprint**. It can be configured as either a surface or airborne terminal on the fly, and can be matched with a variety of antenna and power amplifier options to meet virtually any application that calls for wideband data throughput. Currently configured on Mobius for line-of-sight operations out to 100nm, provisions have been made for both beyond-line-of-sight SATCOM and relay configurations.

Mini-TCDL Specs

- *Symmetric & Asymmetric Data Rates*
Up to 45 Mbps with ranges up to 150 Nautical miles
- *Software*
 - Control GUI including router configuration
 - Video display
 - MPEG-2
 - H.261
- *Supports both omni and directional antenna systems*
- *CDL Specification Annex A & B compliant*
- *Interface*
 - Dual Ethernet 10/100 Base-T
 - NTSC/RS-170, PAL
 - Wideband Network Router
 - 28 VDC Power

The Open Architecture

Both the flight avionics and core GCS components employ an **open-architecture that is platform, payload and datalink agnostic**. Geneva has demonstrated their system on 16 distinct platforms, 11 payloads, 9 GCS and 8 datalinks with a demonstrated average integration time of 4 months. This provides the Mobius system with unprecedented configuration flexibility.

Length, Wingspan, Height	18.5' x 26.7' x 7.5'
Weights	1200 lbs empty 1000 lbs payload capacity 3000 lbs MGTOW 500 lbs ea. Wing
Payload Volume	~35 cu ft.
Fuel Capacity	110 gal 192 gal (w/aux int. tanks)

Runway Requirements (@ Sea Level)	T/O Distance: -2000' (nominal) -4000' (MGTOW) Landing Rollout: 2500'
Speeds	Min Loiter: 70-90 kts Cruise: 160-180 kts Dash: 215 kts Vne: 375 kts
Service Ceiling	27K' (w/IO-360) 36K' (w/TSIO-360)
Climb / Descent	Climb: 1500 fpm Descent: 6000 fpm

For further information contact:

L-3 Communications
Geneva Aerospace
4240 International Parkway
Carrollton, TX 75007
TEL: 469-568-2376
FAX: 469.568.2100
www.l-3com.com/Geneva

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