

IOWA

Operator Performance Lab Two Instrumented Jet Aircraft

Providing low-cost two-ship tactical in-flight simulation & flight test services



LET OPL SERVE YOUR FLIGHT TEST NEEDS

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IOWA

Technology
Institute



FULL SERVICE FLIGHT TESTING

INSTRUMENTED AERO L-29 DELFIN AIRCRAFT

INSTRUMENTED EXTERNAL HARD POINTS

- Pod adaptors capable of mounting:
 - ARDS, CRIIS, TCTS-II
 - AIM-9
 - ALQ-167
- Breakout wiring from cockpit to hard point
 - 1553 data Bus
 - Discrete twisted pairs
 - Ethernet
 - 28volt DC
 - 110 400hz AC

TACTICAL UTILITY DATA LINK

- Useful for flight test management and real time situational awareness during flight test

TACTICAL GRADE ADHARS

- Capable of recording of high performance maneuvers

MULTIPLE GPS AND RF ANTENNAS

- Offers wide range of uses for customer payloads and experiments
- Hookups accessible inside cockpit

INSTRUMENTED FLIGHT CONTROLS

- Full stick and throttle HOTAS
- Control mapping to record and analyze all stick and throttle movement

REAR-SEAT F-35 CUEING HELMET (JSF)

- Runs off standard graphics package offering customer flexibility
- OLED displays
- Integrated head tracker
- Flight-ready integrated eye-tracking
- No Dependency on Operational Flight Program
- HMD resolution of 1280x960
- HMD usable in day or night

REAR-SEAT MULTI-FUNCTION DISPLAY

- Resolution of 1920x1080, 21" Diagonal
- Touchscreen
- High brightness
- Daylight readable

FLIGHT HARDENED COTS COMPUTERS

- 5 PCs, 1 Linux computer
- Provides easy customer software integration and flight test

COGNITIVE AVIONICS TOOL SET (CATS)

- Software tool to synchronously calculate, record, and display human physiological state, performance, and aircraft state
- Capabilities
 - Software tools include cognitive workload based on physiological state
 - ECG monitoring

EYE TRACKER

- Binocular eye tracker integrated in F-35 helmet
- Dikablis Professional eye tracker installed in F-35 helmet
- Calculates, records, and broadcasts real time gaze and eye movement.

HIGH-DEFINITION AUDIO AND VIDEO RECORDERS

- Rear seat MFD framebuffer
- Helmet HMD framebuffer
- Pilot Facing camera view
- Eye Tracker computer framebuffer
- Front cockpit forward view
- Four-channel audio recording and linear time code

AIRCRAFT IN-LOOP (AIL) SIMULATORS

- Both L-29 aircraft are fully equipped to act as AIL simulators in the hangar
- Simulation-integrated controls allowing for full in-cockpit simulation
- F-35 HMD helmet fully operational in sim mode
- Can fly in any (virtual) location
- Integrated with Coalescence Mixed Reality system for full immersion
- Prepar3d simulation software fully integrated for flight and sim
- CORE sim software allowing A/G and A/A simulation

L-29 SPECS

CREW:

- 1 front seat, 1 back seat

WEIGHTS:

- Empty: 2,280 kg (5,030 lb)
- Loaded: 3,286 kg (7,244 lb)
- Max takeoff: 3,540 kg (7,800 lb)

PERFORMANCE:

- Powerplant: 1× Motorlet M-701C (8.7 kN (1,960 lbf))
- Maximum speed: 820 km/h (443 knots, 510 mph)
- Range: 900 km (486 nm, 560 mi)
- Service ceiling 11,500 m (37,700 ft)
- G-loading: Gz +7.5/-3.5 with stores +8/-4 without stores

