THE A³ CONSORTIUM

A³-HT-100

The World's Most Advanced Autonomous Inspection System

SWISS ENGINEERED.
CANADIAN INNOVATION.

INTRODUCTION

THE A³ CONSORTIUM

The A³ team is a unique coming together of some of the most experienced minds in the field of aircraft and sensor development and flight operations, all sharing the same passion – ***to redefine the future of uncrewed aerial inspection***.

Our unique technical and operational teams consist of experienced composite, mechatronics, electronics, aircraft maintenance, flight test, and software engineers that work hand in hand with electro optical engineers, AI/ML software and geospatial analysts. A team that allows us to move from concept development to commercially viable solutions, all in-house.

ABOUT US

ANAVIA is a Swiss Corporation that specialises in the design development & manufacturing of Vertical Takeoff & Landing (VTOL) systems of up to 500 kg. The company offers industry leading unmanned helicopter systems for various mission profiles, such as Surveillance & Reconnaissance, Inspection or Mapping & Cargo.

AETHON is a Canadian corporation that is a leader in the development and commercial deployment of airborne LiDAR, imaging systems and software for power line inspection and mapping. The company has developed a series of fully autonomous LiDAR and imaging systems that are operated domestically and internationally on both helicopters and UAVs.

AEROVISION is a commercial operator in Canada that provides Remotely Piloted Aircraft Systems (RPAS), asset survey/mapping and modeling services, delivering cost effective aerial inspections and high-quality data to their clients.

CIRUS, a division of the Southern Alberta Institute of Technology, as our Flight Test and Evaluation partner provides Flight Support and O&M training in Canada.

FACILITIES & SUPPORT

With facilities, located in Canada, the USA, APAC and Europe the A³ team has both a global footprint and staffing to provide efficient manufacturing, product support and operational expertise to Utilities and end users on three continents.

SECURE SUPPLY CHAIN

Our robust, European and North American supply chain allows us to offer rapid turnaround times while ensuring the highest of quality standards. All systems and subsystems remain free of ITAR restrictions.

A³-HT-100 SPECS

65 KG PAYLOAD

STATE OF THE ART LIDAR SENSOR WITH DUAL 65MPIX CAMERAS

AI/ML CONTROLLED AIC INSPECTION CAMERA

MODULAR AVIONICS BUS FOR PLUG & PLAY SENSORS

HIGHEST AVAILABILITY WITH MANNED AIRCRAFT TYPE, ALL-INCLUSIVE PREDICITIVE MAINTENANCE PROGRAM

2X MAIN ROTOR/NO TAIL ROTOR FLETTNER SYSTEM

6 HOURS/600 KM OF MAX. ENDURANCE/ FLIGHT DISTANCE

LOWEST OPERATING COSTS, ONLY 9 L/PH FUEL BURN

JET A-1 POWERED TURBINE ENGINE WITH 1,000H TBO

MULTIPLE DATA LINK OPTIONS - TERRESTRIAL (200 KM)/LTE/ SATCOM

MULTI MISSION CAPABLE

AERIAL INSPECTION

LiDAR Missions
Orthophoto & DEM
Point Cloud & 3D Models
Multispectral Data & Thermal Images

PAYLOADS

Aethon AIC-8
Riegl VUX 1LR/120/160/240
65-120Mpix Nadir & Oblique Cameras
Thermal IR & Multispectral Options

ADDITIONAL CAPABILITIES:

ISR (INTELLIGENCE, SURVEILLANCE, RECONNAISSANCE)

Border Control
Narco Interdiction
Illegal Fishery
Crime Investigation
Traffic Investigations & Surveillance
Fire Fighting & Fire Prevention
Anti-Poaching

PAYLOADS

Epsilon 180/140 LC/140Z G2
Trakka TC-300
L3 Harris Wescam MX10
TK-7/TK-9 WAMI System

CARGO + LOGISTICS

Transport & Cargo of Mission Critical Parts
Cold Chain Logistics
Medically Critical Cargo (Organs, Blood, Chemotherapy)
Battlefield Resupply,

PAYLOADS

Modular Cargo-Box with multiple options:
Various Sizes & Configurations
Active Cooling
Armoured/Reinforced/Insulated
Skyhook-System with 70 m rope & net
Remote Drop System

TECHNICAL DATA

SAFETY

- Pre-programmed automation
- Flight Control redundancy, four actuators - individual failures cause no jamming/locking
- ADS-B Mode S Transponder + FLARM System
- Parachute System + ELT
- Proprietary Detect & Collision Avoidance System
- Terrain/Asset Following System
- Front & Bottom View Cameras
- Automated RTH & GNSS Loss/Denied Redundancy

CAREFREE MAINTENANCE

- All-inclusive maintenance plans structured for fixed price, ease of maintenance
- AMMs and all technical documentation written to a manned aircraft certification standard
- Predictive maintenance ideology ensures maximum uptime with parts provided before they are required
- Spare parts available on all continents

15 KW TURBINE ENGINE

- Custom Swiss designed & built helicopter grade turbine engine
- Long endurance with 9 liter per flight hour Jet-A1, JP-5, JP-8
- Lowest vibration especially when compared to wankel/piston engines
- Low maintenance & high reliability - 1,000h TBO

FLETTNER ROTOR SYSTEM

- Highest efficiency with no tail rotor
- 30% energy saved for payloads or flight missions
- Highest stability in demanding flight conditions
- No mechanical parts in tail boom, removable for easy transport and storage

TECHNICAL DATA

TURBINE	15 kW shaft turbine
ROTOR	Flettner double rotor system
EMPTY WEIGHT	55 kg (121 lbs)
TANK CAPACITY	60 liters (15.8 gallons)
FUEL TYPES	Jet A1 - other fuel types on demand (JP-8, JP-5)
FUEL CONSUMPTION	9 l/h
DATA LINK TYPE	Fully encrypted MESH IP (SATCOM & LTE on demand)
DATA LINK RANGE	Depending on national regulations, radio setup, antenna configuration, and terrain topography up to 200km
OPERATING TEMPERATURE	-25 °C to +55 °C, -13 °F to +131 °F
MAX. WIND SPEED	46 km/h (25 kn)
START & LANDING	Fully autonomous

PERFORMANCE

PAYLOAD & FUEL	65 kg (143 lbs)
MAX. ENDURANCE	6 hrs
MAX. AIRSPEED	120 km/h (65kn)
MAX. FLIGHT DISTANCE/ PAYLOAD WEIGHT	100 km/58 kg 200 km/51 kg 500 km/32 kg 600 km/28 kg
MAX. TAKE-OFF WEIGHT	120 kg (264 lbs)
OPERATING CEILING (MAX. DENSITY ALTITUDE)	6,000 m (19.685 ft)

DIMENSIONS

ROTOR DIAMETER	3.75 m (12.00 ft)
DIMENSIONS L/W/H	2.82 m x 0.72 m x 1.00 m (9.25 ft x 2.36 ft x 3.28 ft)

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