GENERAL SPECIFICATIONS

Skyhawk provides militaries around the world with long-endurance, long-range, mobile unmanned aircraft system solutions for intelligence, surveillance, and reconnaissance (ISR) missions.

UNRIVALED PERFORMANCE
The Skyhawk MIL tactical unmanned aircraft is an excellent choice for ISR missions.

This aircraft is optimized for gyro-stabilized day and night payloads, the endurance of up to 17 hours, and radio link range of 320 km.

TAILORED FOR MILITARY USE
Skyhawk military configuration of the tactical series aircraft is tailored specifically for military use and applications.

Additional features such as artillery fire control functionality, advanced data-links, anti-jamming features, and state of the art day and night payloads are available.

ISR MISSIONS

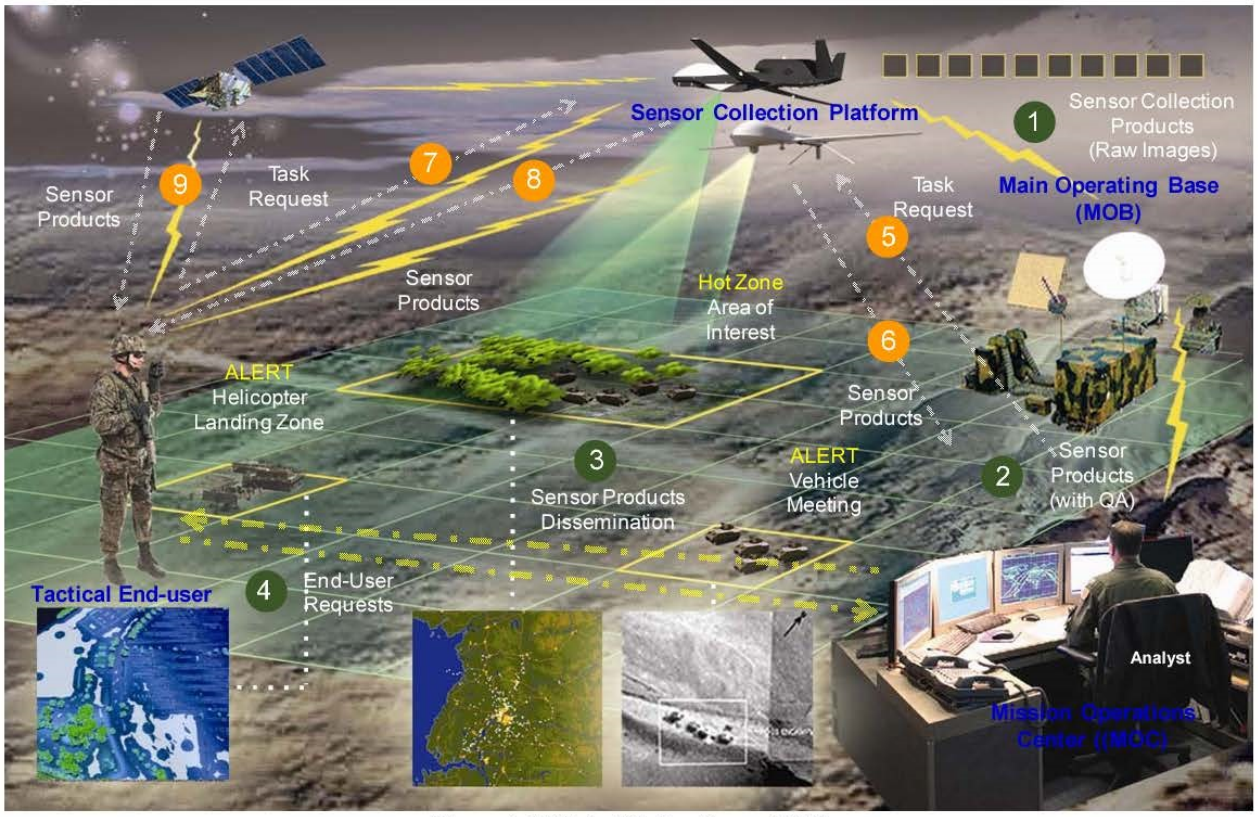


Figure 1: MiData Mission Support OV1

The Multi factor Information Distributed Analytics Technology Aide (MiData). MiData is a composable system comprising independent factors integrated to perform critical processing functions that autonomously transform data to information. These factors may be distributed between mission segments located in the air, on the ground, or at sea based on the mission requirements and PED resource availability. This distribution enables resource reduction, operator and analysts' productivity increases across the ISR mission segments, and response-time improvements to meet time-critical needs of end-users.

ISR missions require the ability to track targets of interest for extended periods of time while remaining undetected. Small tactical unmanned aircraft have proven to be a valuable tool for ISR missions around the world. ISR missions demand a unique set of requirements for the unmanned aircraft and payload.

The aircraft will remain undetected during the entire operation. In order to achieve this requirement, the aircrafts day and night payload that has human target recognition range, which is significantly greater than the acoustical detection range (factor of >2 is desirable). This ensures that the aircraft remains acoustically undetected while the payload operator has the full ability to visually control the target and the aircraft is flying away from the object of interest. the visual and acoustical ranges is 2.2x and thus the aircraft can always remain undetected during the night ISR operations.

ARTILLERY FIRE CONTROL

Skyhawk 60 Tactical Unmanned Aircraft are highly suitable for the performing artillery fire correction function. In this application, Skyhawk unmanned aircraft equipped with gyro-stabilized EO/IR payload provides information on the projectile point of impact and correction data that is necessary to hit the target. There are a number of advantages to using unmanned aircraft for artillery fire correction instead of the classical method that has been used for more than a century.

Some of the benefits are:

- Artillery observer or Forward Observer function is not necessary
- Real time sensor-to-shooter cycles
- Supports effective artillery fire
- Target acquisition beyond LOS
- Optional integration to artillery C2 network
- Calculates mean average hit deviation

Skyhawk aircraft has artillery fire correction feature integrated into the gyro-stabilized day and night payloads. The aircraft operator can quickly obtain and report the correction data through an easy-to-use software interface. The software can calculate the correction based on the single firings as well as to calculate Mean Point of Impact (MPI).

Skyhawk integrated Inertial Navigation System (INS) sensors that provides maximum precision of the geographical data. Industry-leading stabilization with minimal image jitter. The precision bore sight calibration is performed between all sensors.

TECHNICAL DATA AND SPECIFICATIONS

Wingspan	5980mm
Length	3550mm
Height	1.20 m
Maximum take-off weight	175 kg
Payload	45 kg
Maximum range from GCS	320 km
Maximum distance	2,600 km
Cruising speed	95 - 160 km/h
Stalling speed	75 km/h
Endurance	17 hours

Maximum altitude	3,900 m
Runway length	VTOL Version 0 m, Tricycle Version 300 m (985 ft)
Navigation system	GPS/Galileo/Glonass/Beidou
Air traffic control	Transponder S-Mode
Communication	Radio Datalink 5 - 6 GHz or Satellite Communication Inmarsat
Equipment	Standard HD/MWIR camera on gimbal mount

Options including Lidar sensor
Customized sensors / payload configuration as required

VTOL Fixed Wing Drone Frame / Kit, Triumph 60, 6 Meter (20') Wingspan. Long range UAS missions. The aircraft is fitted for VTOL with electric motors in quad configuration and a gas / heavy fuel pusher engine for horizontal flight.

TECHNICAL DATA AND SPECIFICATIONS

Wingspan5980mm (20')

Length3550mm (12')

Height1.20 m (4')

Maximum take-off weight175 kg (385 lbs)

Payload10 kg (100 lbs)

Maximum range from GCS320 km (200 mls)

Maximum distance1,600 km (1,000 mls)

Cruising speed 95 - 160 km/h (60 - 100 mph)

Stalling speed 75 km/h (46 mph)

Endurance up to 8 hours

Maximum altitude3,900 m (12,800')

Runway lengthVTOL Version 0 m

Main Propulsion Engine

Heavy Fuel Engine 20hp
Engine Configuration 2-stroke boxer engine;
Engine Displacement ~180cc
Power ~19hp @ 6,250rpm

Generator 800W
Full Authority Digital Engine Controller with Electronic Fuel Injection

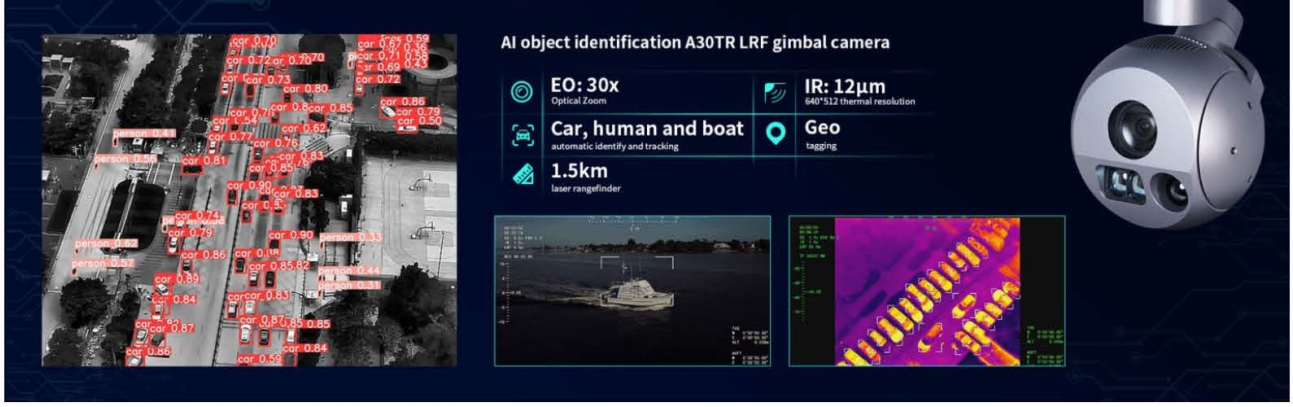
Spark ignited kerosene-based fuels: Non-ethanol 93-100 octane gasoline (R+M)2, Jet-A, JP5, JP8, TS-1 (theatre-proven) and gasoline operation with no change to engine calibration
TBO ~500hrs

High specific power; greater than 70kW/L
Low fuel consumption; 30%+ reduction during cruise conditions
Cold start capability; demonstrated to -30°C
Proven environmental capabilities: -30 to +49°C, up to 20,000ft DA, 0-100% relative humidity
Noise compliance to MIL-STD-1474D
Automatic altitude compensation
Electronic oil metering

EO/IR Sensor

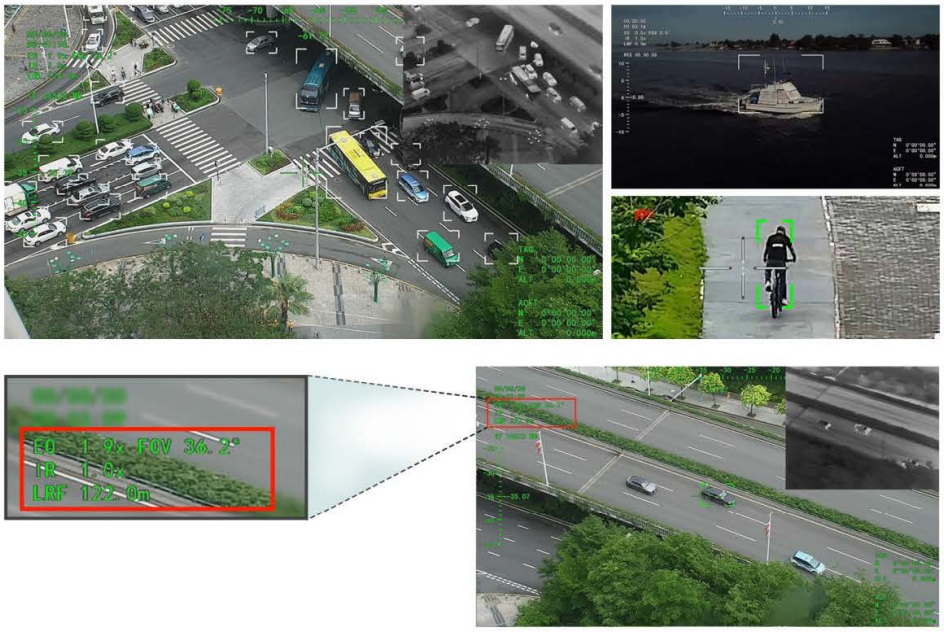
Next Generation AI Camera A30TR Versatile Hybrid Payload

The A30TR is a 3-axis high-precision gimbal with an integrated AI sensor with a 30x optical zoom EO SONY camera, a 19mm lens 640*512 IR thermal sensor and a 1.5km laser rangefinder. It features fast focus, aluminum alloy housing and anti-interference.The 3 axis gimbal can achieve stabilization in yaw, roll and pitch.



Super ViewSONY 30x Zoom Camera

Powered by SONY 1/2.8" "Exmor R" coms module, 2.13 mega effective pixel, combined with 30x advanced optical zoom technology, the observation range is up to 3000 meters, which can meet the application requirements of various domains.



Thermal Imager 640*512resolution
Integrated ULIS high-precision uncooled long wave (8μm ~14μm) 19mm thermal image sensor with higher resolution 640*512 detector pixel and advanced 12μm pixel size, A30TR can record and transmit thermal image and visible images at the same time in PIP format. It supports IR thermal and PIP switch, IR color palette switch, thermal digital zoom.

AI Identification And Tracking Human / Land and Sea Vehicle
The highlight of A30TR is the AI object identification and tracking module, which can identify vehicle, human and vessel autonomous recognition and tracking by choosing the corresponding tracking mode, simultaneous detection of more than 10 objects

The automatic target recognition technology uses computer vision to replace manual decision-making, and combines deep learning technology to extract and classify the targets in the field of view. Efficiently identify targets of interest, enhance the autonomy and intelligence level of UAV systems, allowing the UAV to operate autonomous without operators.

It reduces the operator's burden, shortens the reaction time of the entire system, improves the anti-interference capability, and provides accurate and reliable information for the next reconnaissance on the target.

At the same time, it supports the development of artificial intelligence vision applications, the rapid deployment of algorithms, and the unlimited expansion of applications. With precise target GPS coordinate resolving, A30TR is widely used in UAV industries of public security, electric power, fire fighting, zoom aerial photography and other industrial applications