BFS-ASW UAV System

Bricon and CAE are pleased to announce the launch of BFS-ASW, Highly Advanced Magnetic Anomaly detection System for ASW

The TD100 Unmanned Aircraft System™ (small class UAS) equipped with the CAE-MAD-XR System - A highly advanced magnetics anomaly detection system

TD100 is a fully autonomous unmanned aerial system from launch to recovery. The UAV is designed by utilizing state of the art structural and aerodynamic design principles to achieve superior performance. This along with state of the art materials result in an UAV that delivers consistent performance and operation characteristics over a wide range of flight requirements. The system also consist of a proven mobile aircraft launcher and a rugged aircraft recovery system that can be deployed in minutes

CAE MAD-XR System: CAE is a world leader in the design and manufacturing of advanced magnetics anomaly detection (MAD) systems. MAD-XR (Magnetic Anomaly Detection Extended Role) is a small form factor but highly advanced MAD detection system with reduced size, weight and power requirements manufactured specifically for small unmanned aerial systems. The agility and the long duration flight capability of the Brican TD100-M combined with the ultra-sensitive MAD-XR offers unparalleled magnetic anomaly detection capability.

The state of the art sensor provides aircraft maneuver related interference compensation allowing optimized flight planning and control. Other magnetic interference originated as a result of solar flares, geological interference and aircraft itself are also suppressed using an adaptive filtering process. The sensor also renders an automatic contact recognition through a two stage frequency detection function. Working with CAE and NRC (National Research Council) engineers, Brican has optimized the TD100 design to eliminate aircraft generated magnetic noises on the MAD-XR sensor to improve the detection accuracy to unimaginable heights.

BFS-ASW CAPABILITIES

- Performs automatic target detection and alert the operator with an audio alert and visual indication of a MAD contact and estimated position
- Can fly low and slow to gain high detection accuracy with the Brican TD100 System
- Operable in harsh environments: No Pilots No Risk
- Compensates for magnetic disturbances related to the maneuver of the platform
- Automatically switches between the sensors in a seamless manner
- Compensates for heading errors related to orientation between sensor and Earth’s field
- Performs advanced signal processing to enhance the anomaly signal and to suppress noise generated by other sources

Applications

Tactical/Reconnaissance Mapping

- Detect and track targets of interest e.g: ASW
- UXO Detection
### Mineral Exploration
- Map targets, geology and geologic structures
- Detect gold, diamond, platinum group metals and base metals

### Oil and Gas
- Perform frontier evaluation
- Augment seismic data in hydrocarbon exploration
- Map Pipelines

### TD100 Specifications

<table>
<thead>
<tr>
<th></th>
<th>Electric</th>
<th>Multi Fuel</th>
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<tbody>
<tr>
<td>Empty weight</td>
<td>Electric: 15.87 Kg / 35lb</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multi Fuel: 15.87 Kg / 35lb</td>
<td></td>
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<tr>
<td>Maximum take-off weight</td>
<td>25 kg / 55 lb</td>
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<tr>
<td>Useful Payload</td>
<td>9.1 kg / 20 Lbs</td>
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</tr>
<tr>
<td>Wingspan</td>
<td>5.0 m / 16ft</td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>2.0 m / 6 ft 6&quot;</td>
<td></td>
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<tr>
<td>Air frame</td>
<td>Composite Carbon Fibre</td>
<td></td>
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<tr>
<td>Autopilot</td>
<td>Piccolo/Rockwell Collins Athena 111m</td>
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### Consistency Performance
The TD100 is based on a proven conventional layout with high wing and dihedral for stability and a t-tail configuration utilizing state of the art structural and aerodynamic design to achieve superior performance. This along with state of the art materials result in an UAV that delivers consistent performance and operation characteristics over a wide range of flight requirements.

Brican’s UAV design is focussed on the current MTOW with Transport Canada (Small Category). With an empty weight of 35 lbs, the aircraft’s deliverable is a full 20 lbs of useful airborne sensor and or associated technologies. The Multifuel engine will operate on Bio-fuel, Diesel and a variety of other fuels.

Specifications and performance criteria for two aircraft configurations are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Electric</th>
<th>Multi Fuel</th>
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<tbody>
<tr>
<td>Cruise Speed</td>
<td>83 kph (45 knots)</td>
<td>83 kph (45 knots)</td>
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<tr>
<td>Max Speed</td>
<td>185 kph (100 knots)</td>
<td>185 kph (100 knots)</td>
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<tr>
<td>Ceiling</td>
<td>7600 m</td>
<td>7600 m</td>
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<tr>
<td>Endurance</td>
<td>Up to 3 hrs</td>
<td>Up to 40 hrs</td>
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<tr>
<td>Range</td>
<td>Up to 200 km (108 nm)</td>
<td>Up to 3000 km (1620 nm)</td>
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<tr>
<td>Operating Temperature</td>
<td>-20°C to 45°C (-4°F to 113°F)</td>
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