# Fortem TrueView Radar Model DAA-R20

The Fortem TrueView Radar model DAA-R20 is the next generation of its proven, safe, complete and small SWaP-C radar solutions designed for high volume, high reliability, and mission-critical detect and avoid operations. The Fortem TrueView Radar is derived from a hardened radar technology used in the US Department of Defense drone program the last 6 years. It was adapted for safe commercial drone applications. The Fortem TrueView Radar provides the aircraft integrator the capability to quickly and easily detect objects from the air at long range to avoid manned aircraft or other non-cooperative objects such as birds, wires or other drones. Optional modules allow for complete end-to-end integration for tracking, classification, command and control and pre-integrated autopilots.

The Fortem TrueView Radar model DAA-R20 enables companies to use drones to provide safe and cost-effective package delivery services, large infrastructure inspections, border patrols, etc. Also, human pilots of general aviation aircraft and helicopters can fly safely in a more crowded airspace with TrueView Radar.

Dozens of software-defined parameters are available through an easy-to-use GUI to optimize the unit for your application. The design conforms to FCC, FAA and industry design and safety guidelines. Simplicity of integration is a serial connection with 18-36V input voltage, Gigabit Ethernet, and a simple API for easy integration by Fortem or the aircraft manufacturer. Mounting points allow flexibility to meet the needs of specific aircraft integrations. The DAA-R20 consists of a fully functional, bits-in and bits-out radar unit, Quick Start Guide, and Interface Control Document (ICD).

The Fortem TrueView Radar is the ideal solution to the ‘see and avoid’ problem. It can detect obstacles in the air with sufficient time to determine the potential for a collision or near miss, and stay well clear of the potential collision by maneuvering to a safe place. Fortem TrueView Radar is an ideal solution because it is engineered for the following key requirements of manned and unmanned aircraft:

- **Timely.** Fortem TrueView gives the high speed aircraft sufficient time to make a decision and maneuver
- **Complete.** Fortem TrueView does not miss potential threats day or night, in fog, smog or at high altitudes in the clouds
- **Accurate.** Fortem TrueView provides high quality data at range
- **Clean.** Fortem TrueView does not falsely indicate a threat

## Product Overview

**Scanning**

- Built-in proprietary antenna technology
- Azimuth field of view (FOV) is 120˚
- Elevation FOV is 40˚
- Simultaneous detection of multiple objects
- Proven algorithms for high accuracy, minimal false positives

**Threat Information**

- Detects 1m² RCS (Radar Cross Section) from 1500m
- Detection of wires, construction cranes, towers, gliders, balloonists, and terrain
- Outputs are range/distance, 2˚ accuracy, velocity (range rate), and size (radar cross section)

**Interfaces**

- The sensor is a compact sensor with bits in and bits out
- Serial or Ethernet connectors for control and data are alongside a power connector
- Serial RS-232 for outputs of object detections
- Serial RS-232 for inputs from GPS or altitude, heading reference data
- Ethernet web-interface for easy configuration
- 18-36V DC

**Data**

- Object detection is performed in real time on board
- Data Rate: Data rate is under 3kHz per intruder with a 8 Hz update rate
- Data outputs for object detection are position, velocity vector, and size
- All measurements from the sensor come with associated measurement uncertainties