

# Object Recognition

## Deep Vision's data abstraction technology delivers real-time object recognition.

Deep Vision's novel concept of data abstraction quickly transforms abundant sensor data into a form that is easily classified and efficiently analysed.

The abstractions created from the raw data accurately describe the content of the data. By utilising the descriptive properties of the abstractions, couple with their invariant properties (e.g. Rotation, skew and scale) the perception, recognition, and differentiation of objects is enabled.

Deep Vision's data abstraction technology operates with a throughput of 100+ frames per second in complex and cluttered environments and under diverse lighting conditions, both spatial and temporal.

### Exploitation Value

- Target detection, identification, and locking
- Automatic Target Cueing (ATC)
- Moving platform, moving target location and velocity estimation.
- Autonomous systems – sense and avoid, search and destroy, etc.
- Missile seekers
- Weapon sub-systems – sighting, fusing etc.

### Input Requirements

- Archived videos and image
- Real-time acquisition from visual, thermal, or sonar sensors.

### Operating Facts

- Operating System: Any (*GNU/Linux recommended*)
- Hardware Requirements: *None*
- Sensor Modalities: *Visual, Thermal, Sonar*
- Timings<sup>†</sup>: 100+ FPS
- Runtime Memory Requirements<sup>†</sup>: 300 KB
- Storage Requirements<sup>‡</sup>: 1.1 KB

<sup>†</sup> Typical. Based on a 640 x 480 data set

<sup>‡</sup> Typical. Based on 45 abstractions (avg. 25 symbols each)



### Features

- Object classification
- Feature extraction
- Multiple objects per scene
- Robust to occlusion
- Characteristic of Dynamic Template Matching

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