



# Information Sharing

## Deep Vision's data abstraction technology delivers fast and efficient information sharing.

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

The abstractions created from the raw data are extremely compact. For instance, 64 abstractions (averaging 16 symbols each) requires 1 KB of storage capacity.

The compact nature, coupled with robust descriptive capabilities, makes the data abstractions ideal for real-time communication between members of a multi-modal, distributed sensor system.

For example, it would take 5.5 minutes to transmit 30 lossless compressed images<sup>α</sup> over a persistent 128 kbps communication link. While, it would only take 2 seconds to transmit the data abstractions<sup>β</sup>.

The transmission of the data abstractions not only promotes the sharing of information but also reduces transmission times thus potentially reducing the strain on the power supply by the transmitter.

<sup>α</sup> 30 grey-scale PNG images, 640x480, circa. 5,130 KB (177KB each).  
<sup>β</sup> Typical results. 45 abstractions per image totaling 33 KB for 30 images.

### Exploitation Value

- Counter-mobility Systems
- UAVs
- Distributed self/group aware multi-modal sensor systems

### Input Requirements

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

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### Operating Facts

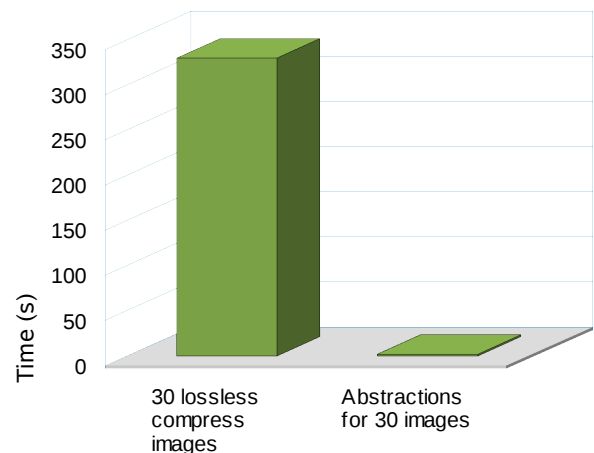
- Operating System: Any (*GNU/Linux recommended*)
- Hardware Requirements: *None*
- Sensor Modalities: *Visual, Thermal, Sonar*
- Timings<sup>†</sup>: 100+ FPS
- Runtime Memory Requirements<sup>†</sup>: 300 KB
- Storage Requirements<sup>‡</sup>: 1.1 KB

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

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

### Transmission Times

1 second worth of images (30 FPS)



### Features

- Communication of low volume/high value information.
- Real-time situational awareness capability
- Reduced transmission and reception times.
- Increased effective communication payload capacity.

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