

## Embedded Target Tracking Software

An image processing software library for Intel or ARM processor platforms under a Windows or Linux operating system.



Tracking a jet-ski using IR video

### Key Features

- Multiple object detection and tracking
- Centroid & edge measurement
- Feature based correlation algorithm
- Moving object detection
- Adaptive background removal
- Automatic coast
- Grey level invariant algorithms
- Robust clutter rejection

### Applications

- Security and surveillance
- UAV & UGV
- Manned vehicles
- Automated video analysis
- Laser based Directed Energy Systems
- Test range TSPI

### Video Detection & Tracking

A video tracker analyses video image sequences from a sensor system (one or more cameras), mounted on a servo controlled pedestal (platform) to keep the camera pointing at the nominated person or object. In this context, a Tracker has two primary processing functions:

- Detecting and locating objects of interest in the video image (object location).
- Controlling the platform (Pan and Tilt) position and rate such that the camera follows the designated object (Pan and Tilt Control).

DART can provide the user with these functions as components within the GRIP-VMS modular video management system or as a stand-alone application.

Designed in the UK

The application can run on a commercial desktop or laptop PC. The improved speed and commercial availability of multicore CPUs make an off-the shelf, embedded software tracking platform increasingly powerful and achievable. For OEM customers we can also offer custom solutions tailored for specific or non-standard hardware platforms.

Existing hardware based tracking systems are in general highly proprietary and expensive to adapt to meet a tracking requirement. In contrast Vision4ce's DART software based tracker allows for rapid implementation of new and different tracking algorithms offering advanced functionality and low research and development costs.

The software's architecture can also take advantage of commercially available peripherals (e.g., touch screen monitors, joystick controllers, SMPTE 292M, CoaXPRESS, Camera Link image frame grabber cards, etc.).

DART is resolution and frame rate agnostic so can work with high resolution and high framing rates for applications such as Laser based Directed Energy systems which require high bandwidth tracking of up to 500Hz and beyond.

### GRIP Hardware

DART is fully compatible with the Vision4ce GRIP range of rugged PCs, enabling a complete, low cost, detection and tracking system to be implemented using COTS hardware.

