

APPLICATIONS

TrackEye Stores Release 6DoF

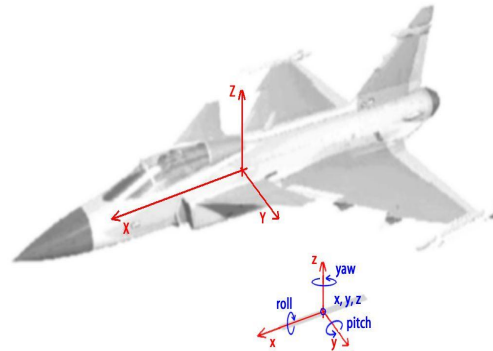
Verifying the simulated behaviour of a store during flight tests is a technically complex issue.

Using TrackEye Stores Release 6DoF makes the task easy to, even with only one camera, analyze and obtain time stamped complete 6DoF data.

6DoF

3D position (x, y & z)
Attitude (roll, pitch & yaw)

The 6D (six degrees of freedom, 6DoF) optional add-on package for TrackEye that provides functionality for computing the position (x, y, z) as well as the attitude (roll, pitch yaw) of one or more rigid objects, which are observed by at least one camera.



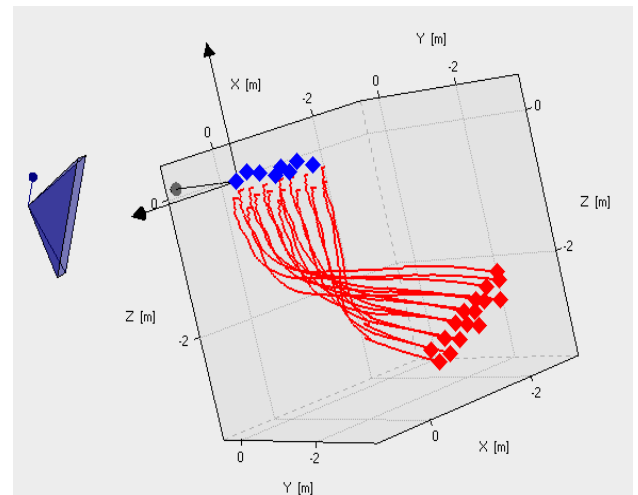
For each target the operator must define a target model containing well-defined points with 3D coordinates in the targets own coordinate system. A target is a rigid structure where individual points are not moving relative to each other, typically a store, an

aircraft, etc.

There is no upper limit to the number of points that can be used for each target. Using a larger number of observed points normally increases the accuracy of the result. Recommended lower limit of number of points is five.

The TrackEye 6DoF will automatically use all visible points available, not necessary the same from frame to frame.

When several cameras are used to observe the same target the cameras do not have to view the same points on the target.



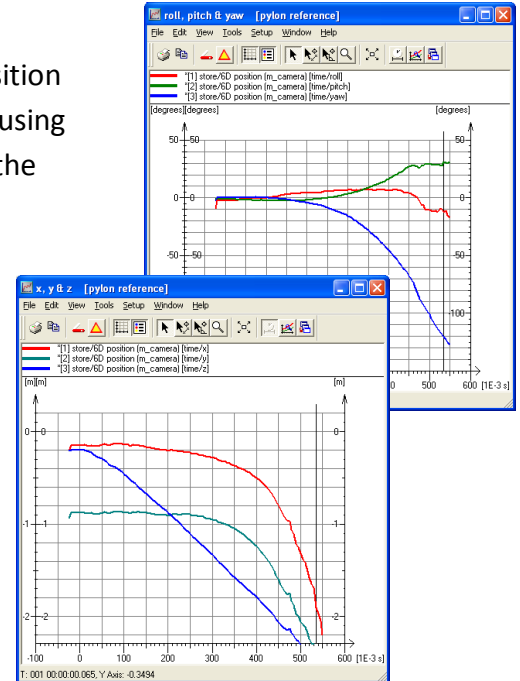
Significant rotation of store(red) relative to pylon(blue)



For asynchronous cameras the tracked data is synchronized automatically by re-sampling to a common time base, provided each frame is accurately time stamped.

Normally camera/lense combinations must be calibrated.

- Wing pod mounted camera(s)
For each frame the camera's position and attitude will be determined using target points on the fuselage of the aircraft.
- Central pod mounted cameras
No reference points on the fuselage will be visible in the field of view of the cameras. Furthermore, the camera's position will be fixed within the aircraft coordinate system. The camera's position and attitude in the aircraft coordinate system will be determined through a calibration procedure in the hangar.
This procedure requires a theodolite or the 'TEMA Static3D' module.



TrackEye software modules required

- TrackEye Basic
- 6DoF

Optional

- TEMA Static 3D
- Lens calibration



Stores release analysis is a demanding application at any test range.

The TrackEye Stores Release 6DoF is the perfect tool.



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