Use of CAD Data for Real-Time Target-Position Guidance and Geometry Validation

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The VISRAD model communicates the target design and position specifications to target fabricators and to Omega Operations.

An accurate VISRAD model of each target configuration is a requirement for every Omega campaign proposal.

TARGET FABRICATION
- Campaign planning
- System safety
- Target fabrication
- PI communication
- Quality control

TARGET POSITIONING
- Mechanical interference checks
- Target positioning

TARGET VALIDATION
- Experimental Operations
- Experimental Support

All LLE stakeholders use the VISRAD file.

All information necessary to position and safely shoot targets can be extracted from the VISRAD model.

The Target Viewing System (TVS) provides shadowgraph data on the actual targets in the target chamber.

VISRAD can output scaled image overlays of model for use in the Target Viewing System.

The exported VISRAD overlay files emphasize a feature on this target that is not built to spec.

The exported VISRAD overlay files show that the target is not rotated correctly or the stalk mounting angle is incorrect.

The exported VisRad overlay files are superimposed over the live Target Viewing System images to validate actual target geometry and position.

The exported VISRAD overlay files are useful for catching subtle errors.

Target positioning reticles are defined based on VISRAD target features.

Ellipses locate circular or square surfaces.

Larger circles locate spheres or circular objects.

Small circles (dots) mark target corners.

The exported VISRAD images are used for shooting the target.

Ideal target images in z-axis view

Ideal target images in y-axis view

Target overlay images are useful for catching subtle errors.

X-TV5 rotation reference

Target rotated to calculated offset

Final position of target with overlay

Correct

Incorrect