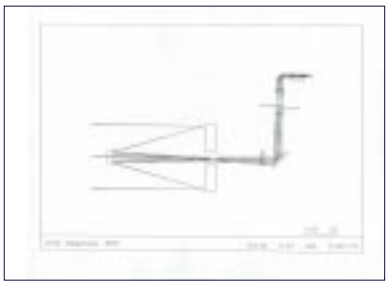
OPTO-MECHANICAL ENGINEERING

Develop system configurations to meet customer mission requirements

Optical lens design —
ZEMAX is utilized for detailed lens design and system performance analysis. Receiver Raytrace shown to the right.

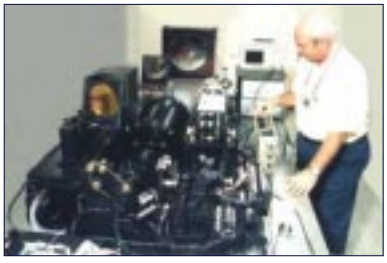


Visible, IR and laser optical system design Opto-mechanical instrumentation is developed from concept through system delivery.

Finite Element Analysis —
COSMOS is utilized to perform stress and thermal analysis in all critical areas of mechanical design, such as the mounting stability of the mounting foot shown at right.

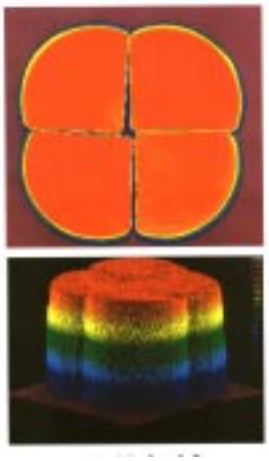
Opto-mechanical packaging — AutoCAD is used for all mechanical design. Complex designs are modeled in 3D

Precision mechanism design — Mechanical designs are generated for precision servo controlled mechanisms used to position optical assemblies.



Optical system alignment and performance testing laboratory — Engineering operates a well-instrumented optics lab, which is used for the alignment and performance testing of optical instrumentation. Visible and IR optics can be accommodated.

Laser testing and beam analysis —
Laser system alignment, testing and analyses are supported.



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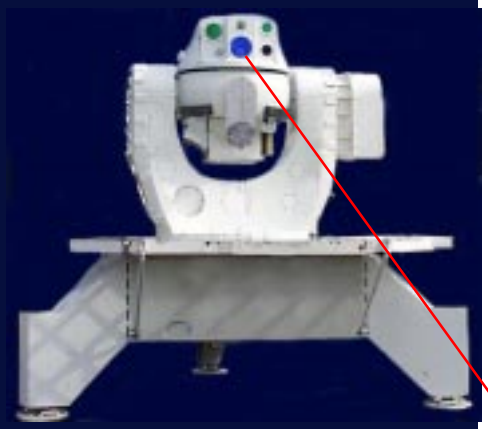


Laser Tracking Instrumentation

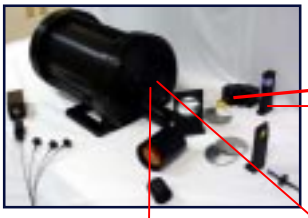
Opto-Mechanical System Design Capability

BAE SYSTEMS transceivers are designed with an “open architecture”.

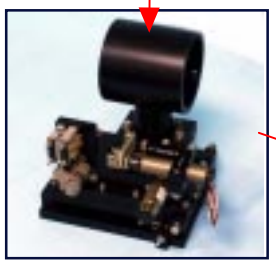
All system components are designed as modules and fitted to special purpose optics benches. The optics benches are stacked according to system requirements to form the opto-mechanical portion of the transceiver.

The transceiver is then encased in a floating enclosure that provides mechanical and thermal stress protection.

Optical components are packaged into optical modules that are designed to meet specific system requirements.

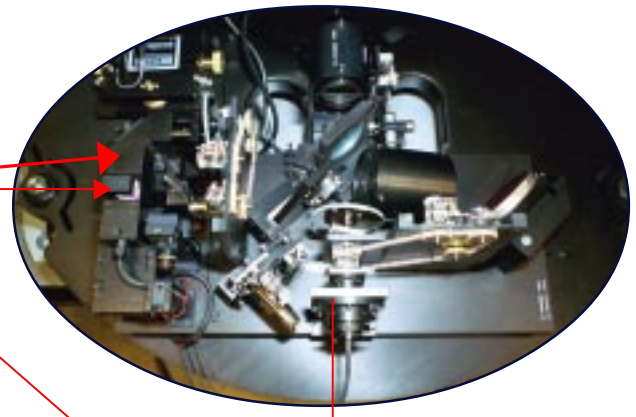


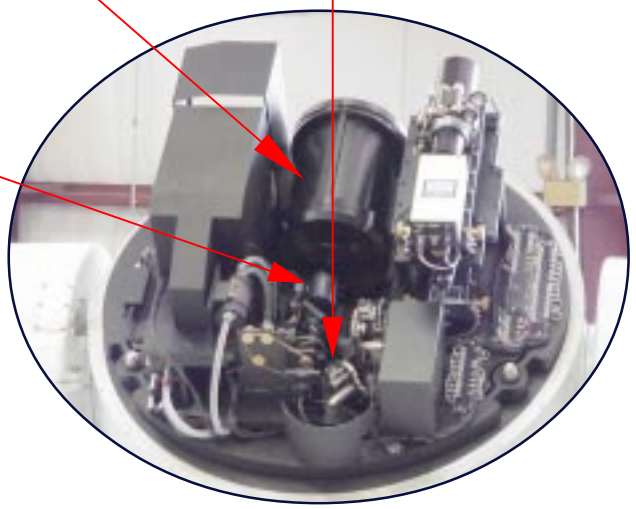
Optics modules that require motion are configured into mechanized modules. Focus mechanism shown above.



Modules are mounted on special purpose optical benches to generate functional building blocks.

Secondary optics bench provides zero droop characteristics over a wide temperature range and all orientations.





LIDAR transceiver configured using optical components, optical modules, functional building blocks, and mechanized modules.

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