



THE PROBLEM

- Optical surfaces are typically manufactured with rotationally symmetry. due to constraints in the manufacturing process
- This leads to design solutions are often large, heavy and expensive.
- The symmetry of optics limits to traditional designs, but freeform optics have shown promise to drastically reduce size and weight of optics assemblies.
- As spacecrafts become smaller in size, it is essential that space-based optics are compact, lightweight, and cheap to manufacture.



THE SOLUTION

- Develop a space-qualified free-form optics manufacturing process with additive manufacturing and coatings processes.
- Prototype and validate space-grade materials and coatings for optical and structural components, including standards and specification for additively manufactured materials.
- Develop a fully functional compact optical system for applications to small satellites and other markets such as drones and binocular and telescope systems.



RESEARCH CAPABILITY

UniSA - Future Industries Institute

- Materials, science and engineering.
- Optical design and engineering.
- Additive manufacturing & Advanced manufacturing.
- Product testing and evaluation.
- Surface Science & nano-technology.
- Design and deposition of multi-layer thin film coating systems.
- Developing environmentally robust coatings for real-world applications.
- Device design and fabrication.



PROJECT PARTNERS



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CONTACT DETAILS - PROJECT LEAD

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