



NΩHMIA

Market Assessment of Large Deformable Mirrors

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- Scope
 - Large mirrors $>10\text{cm}$
 - No MEMS
 - No liquid crystal technology
 - Looking at new and existing applications
 - Detail on mirror materials
 - Focus on supply chain issues
 - UK perspective



ΝΩΗΜΙΑ

- Study Process
 - Visit experts:
 - System Designers
 - Users
 - Manufacturers
 - Industry
 - Academia
 - 11 contacted directly
 - Internet research

- Results
 - Horses for courses
 - Most promising for space applications
 - Composites
 - Electro formed
 - James Webb (NGST) to use Beryllium
 - Actuators?

- Applications
 - Astronomy
 - Space and UAV optics
 - High powered lasers
 - Optical Communication (and RF?)
 - Solar Concentrators for propulsion
 - 3D imaging technology

- Study Recommendations
 - Research
 - Composite and electroformed mirrors
 - Dielectric coatings for laser applications
 - Actuator designs to be investigated
 - Exploitation
 - More collaboration between applications groups
 - Funding sources – ESA and Framework 6
 - Supply Chain
 - Dedicated Faraday meeting needed
 - General
 - Importance of overall system design
 - Links to smart structures to be investigated
 - Public outreach



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- Acknowledgements



BAE SYSTEMS

QinetiQ



Central Laser Facility
Rutherford Appleton Laboratory

MORGAN
Unconventional silver