



SIXTH FRAMEWORK  
PROGRAMME

European Commission

Community Research



## Key Technologies Working Group

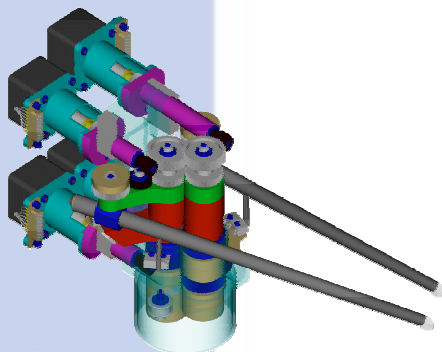
Astronomy is an observational science and progress is often driven by the availability of new instruments, detectors and observing techniques. The OPTICON Key Technologies Working Group is investigating what will be required for the next generation of European facilities. From this activity OPTICON is defining a number of Joint Research Projects which will be an integral part of the proposed OPTICON FP6 Integrated Infrastructure Initiative. These research projects will ensure that European observatories will have the technological capabilities to remain at the cutting edge of world astronomy.

The goal of the Key Technologies Working Group is to identify technologies that are needed for European telescopes and instruments in the next decade. The ultimate intention is to find common objectives and to make bids to the EU FP6 programme.

Since the scope of the activity is so large, at its first meeting a number of sub-groups were formed to consider various specific areas in more detail. These groups are each discussing their topic areas with other experts in these fields

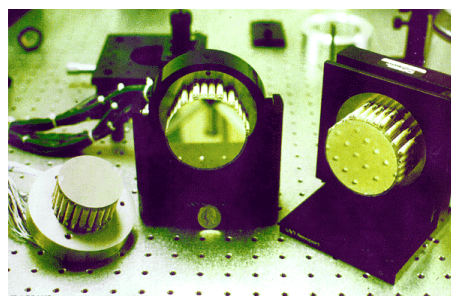
### Proposed Joint Research Projects as part of the OPTICON Initiative

- Smart Focal Planes: optical feed systems using cryogenic mechanisms and MEOMS (Micro electro-optical mechanical systems) for multi-object spectroscopy of faint, distant galaxies



Precision Optical Pick-off Arm

- Advanced wavefront sensors & correctors for adaptive optics and coronagraphy - including large adaptive mirrors- to enhance high resolution imaging and spectroscopy with current and future telescopes.



Wavefront Correctors

- Metrology of complex optical surfaces to enable economic manufacture of large adaptive mirrors, mirror segments and complex optical components such as image slicers.

- Detectors: Fast, high sensitivity infrared focal plane arrays for high angular resolution astronomy to allow access to many more natural guide stars in the infrared, and hence direct imaging of faint objects near stars.

### Links to Industry and SMEs

We are building connections with European Industry in order to develop partnerships that will enhance European astronomy technology, for instance through the Smart Optics Faraday Partnership in the UK; for details see [www.smartoptics.org](http://www.smartoptics.org)

## Our Mission

The OPTICON Infrastructure Coordination network brings together all of Western Europe's owners and operators of large observatories and data centres. Our goal is to identify opportunities where greater progress can be made by collaboration than by competition, and to take unified actions to achieve those agreed goals.

## Contacts

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**OPTICON - The Optical Infrared Coordination Network for Astronomy**

