OPTICAL INFRARED COORDINATION NETWORK FOR ASTRONOMY

Fourth Annual Report

Contract No:	HPRI-CT-1999-40002
Start date of Contract:	1 March 2000
End date of Contract	28 February 2004
Network Title:	Optical Infrared Coordination Network for Astronomy
Website address:	http://www.astro-opticon.org
Name of Coordinator:	Particle Physics and Astronomy Research Council
Science Coordinator, and Contact:	Professor Gerard Gilmore email: gil@ast.cam.ac.uk

Participant number (Coordinating partner as participant N^{o} 1)	Name of Participating Organization	Name of responsible person	Role in network
1	Particle Physics and Astronomy Research Council	Ms Rowena Sirey	Coordinator
2	The Chancellor, Masters and Scholars of the University of Cambridge	Professor Gerard Gilmore	USER
3	Universite Louis Pasteur – Strasbourg 1	Professor Francoise Genova	LSF-OTH
4	European Space Agency	Professor Alvaro Gimenez	LSF-IHP
5	European Southern Observatory	Professor Guy Monnet	LSF-OTH
6	Institut D'Astrophysique de Paris	Professor Alain Omont	USER
7	Institut National des Sciences de l'Univers du Centre National de la Reserche Scientifique	Dr Anne-Marie Lagrange	LSF-OTH
8	Instituto de Astrofisica de Canarias	Professor Francisco Sanchez	LSF-IHP
9	Instituto Nazionale di Astrofisica	Professor Piero Benvenuti	LSF-OTH
10	Universiteit Leiden	Professor George Miley	USER
11	Max-Planck-Gesellschaft zur Foerderung der Wissenschaften e.V.	Professor Simon White	USER
12	Max-Planck-Institut für Astronomie.	Professor Hans-Walter Rix	LSF-OTH
13	Netherlands Research School for Astronomy	Professor Tim De Zeeuw	USER
14	Nordic Optical Telescope Scientific Association	Dr Leo Takalo/ Prof Johannes Andersen	LSF-OTH

1 EXECUTIVE SUMMARY

The OPTICON network has been dominated in its fourth year activities by its major expansion into FP5. This has entailed very considerable effort to ensure that the original FP4 goals remained in focus, and that all contract deliverables were completed as agreed.

Overall, in the fourth year, OPTICON has managed to exceed all its contract goals, and at the same time establish itself in place, in expanded form, for FP5. The various technical working groups all produced reports and plans of action which have led to successful further developments and proposals. The networking activities have strengthened and developed the community, leading to greater co-ordination and greater efficiency overall in the community.

2 PARTNERS' MEETINGS

2.1 EIGHTH PARTNERS' MEETING

The eighth partners' meeting was held at Chania, Greece, September 4 2003.
35 attendees were present, at a meeting opened by the local Metropolitan Archbishop.

The primary business was to review the status of the FP5 program, and to begin detailed planning for FP6.
The partners agreed that OPTICON had met or exceeded all its FP5 commitments, and had in fact proved substantially more successful that could have reasonably been anticipated. The considerable success of OPTICON in FP6 was direct evidence of its achievements in FP5.

INSTRUMENTATION: There had been many future instrumentation developments and several of the FP5 activities had developed into JRAs and networks under FP6. Among those, the Adaptive Optics, the Smart Focal Planes and the Key Technology Working Groups, had become established as part of the I3 proposal.

ELT SCIENCE CASE: Development of quantitative science cases for the ELT had been initiated.
Euro50 and Owl design programs had been brought together into a single proposal and many specialist meetings had been held.

NETWORKING: Action on the exploitation of space observatories had sponsored a new network called NUVA (the proposed name of UVNet was subsequently changed to Networwork for UV Astronomy).

ACCESS PROGRAM: The medium telescope working group had developed a detailed proposal to ensure better EU-wide access to excellent medium-sized facilities.

Under FP5, Opticon established new working groups and of course developed the major I3 proposal, which includes all the major European agencies.

ELITE FELLOWSHIPS: The present Chairman of this working group, Professor Piero Benvenuti, was unable to continue because of other commitments, so another Chair had to be found.

3 PROGRESS OF THE JOINT SCIENTIFIC/TECHNOLOGICAL ACTIVITIES

As working activities have developed from initial proposals into reality, the OPTICON activities have become organized into a series of working groups:

1 Elite Fellowships (Contract section 3.J,3.F,3.K)
2 Interoperability (Contract section 3.B,3.G,3.H)
3 Astrophysical Virtual Observatory (Contract section 3.F,3.G,3.I,3.K)
4 Astrowise (Contract section 3.G,3.K)
5 EURO-3D (Contract section 3.G,3.K)
6 ASTROVIRTEL (Contract section 3.G,3.H,3.I)
7 New Technologies (Contract section 3.A,3.K)
8 Coordination of Medium-sized telescopes (Contract section 3.C,3.E,3.F)
9 Future Extremely large Telescopes (Contract section 3.D,3.K)
10 Interferometry Working Group (section 3.I)

A list of meetings is maintained at http://www.astro-opticon.org/fp5/diary.html

3.1 ELITE FELLOWSHIPS:

Chair: Piero Benvenuti (ESA, Garching) 2003
www.astro-opticon.org/fellowships.html

3.1.1 Summary of Specific Objectives

This WG aims to produce a feasibility study for enhanced Fellowships, allowing fellowship support from the EU at a comparable level with the best available internationally.

3.1.2 Overview of Progress

A feasibility study was completed, and provided to the EU. In spite of very positive support, it seems too late to affect FP6 projects, so the work will continue leading towards as one of the networks of the OPTICON I3. The report is available at:
www.astro-opticon.org/fellowships.html

3.1.3 Comparison of intentions and outcomes

The formal goal has been achieved. At the mid-term review the Elite Fellowship proposal developments had been received very favourably by the EU: this effort should continue under FP6.

3.1.4 Plans for the future

This study will be expanded, in collaboration with the ESF, under FP6 I3 support

3.1.5 *List of major meetings*

No relevant meetings were held during the reporting period.

3.2 OPTICON WORKING GROUP ON INTEROPERABILITY

Chair: Francoise Genova, CDS Strasbourg
http://www.astro-opticon.org/networking/interoperability.html

3.2.1 *Summary of Specific Objectives*

The OPTICON Working Group on Interoperability has two main objectives:

- preparation of EURO-VO proposals for FP6;
- discussion of interoperability standards and tools with European archive managers and Virtual Observatory projects.

3.2.2 *Overview of Progress*

There has been an intense activity to prepare EURO-VO proposals in the Framework of FP6 following the very successful Phase A program "Astrophysical Virtual Observatory" (AVO). Three EURO-VO proposals have been prepared for several 'Infrastructure' Announcement of Opportunities: VO-INT as an I3 for FP6-2002-Infrastructures-1; VO-NET as an I3 for FP6-2002-Infrastructures-2; VO-TECH as a Design Study implemented as SSA for FP6-2003-Infratructures-4. The two first ones have unfortunately been rejected, the third one is still being evaluated.

There is also a sustained activity for the definition of interoperability standards, with active international email forums and regular face to face meetings. Two very successful 2003 meetings have been organized with support from OPTICON.

3.2.3 *List of major meetings*

- Information day FP6 Infrastructures: Grids, Brussels, March 18, 2003
- Information day FP6 Infrastructures 2: Grids, Brussels, March 25, 2003
- Interoperability meeting, Cambridge, May 12-16, 2003
- Interoperability meeting, Strasbourg, October 16-17, 2003

3.2.4 *Plans for the Future*

This important activity will continue inside the AVO project.

3.3 ASTROPHYSICAL VIRTUAL OBSERVATORY (AVO)

Chair: Peter Quinn (ESO, Garching)
http://www.eso.org/projects/avo/

3.3.1 *Summary of Specific Objectives*

The AVO contract (HPRI-CT-2001-50030) was an outcome of the OPTICON working group. This contract began on 1 November 2001. Within a three-year work programme the project aims to lay the scientific and technical basis for an

operational virtual observatory in Europe. The project consists of three main work areas (Science, Interoperability and Technology), utilizes approximately 54 man years of effort involving more than 50 staff spread over six partner organizations and consortia.

The second year of the project, which overlaps the third and fourth year of the OPTICON contract, had 5 main objectives:

- Complete hiring of AVO staff
- Plan, d evelop and implement the first demonstration of AVO technologies in January 2003 at an AVO Science Working Group meeting held at Jodrell Bank Observatory
- As a member of the International Virtual Observatory Alliance, participate in a coordinated demonstration and exhibition of VO technologies and systems at the International Astronomical Union General Assembly held in Sydney, Australia in July 2003
- Coordinate and align AVO technical and interoperability work programs with the priorities set out by the International Virtual Observatory Alliance (IVOA) at thier January 2003 meeting and provide AVO representation in the IVOA working groups for AVO strategic areas of work
- Prepare and submit FP6 proposals for components of the AVO Phase B work program (EURO-VO).

3.3.2 *Overview of Progress*

All of these objectives have been fully met within this reporting period. The AVO demonstration of new VO functionality during the January 2003 SWG meeting at Jodrell Bank Observatory, UK (the AVO First Light), our contribution to the definition, development and deployment of new international data standard for Virtual Observatories in coordination with the IVOA and our successful demonstration and outreach actions a the IAU General Assembly are recent highlights.

In January 27, 2004 AVO had its '1st Science' at a meeting in Garching. The AVO team showed scientific results and the means used to derive them to an advisory committee of Astronomers and international visitors. One highlight of this event was that for the first time spectroscopic data were analyzed within the Virtual Observatory framework.

3.3.3 *Comparison of Intentions and Outcomes*

All of the AVO objectives have been fully met. The AVO demonstration of new VO functionality during the January 2003 SWG meeting at JBO (AVO First Light), our contribution to the definition, development and deployment of new international data standard for Virtual Observatories in coordination with the IVOA and our successful demonstration and outreach actions a the IAU General Assembly are the highlights.

3.3.4 *Plans for the Future*

AVO will continue to attempt to find the level of funding required to ensure its future as a stable and major part of European astronomy

3.3.5 *List of Major Meetings*

Most activities required by the AVO effort were supported a part of the interoperability working group or from other sources.

The major funded activity was the AVO "1st Science" meeting at Garching in January 2004. Eleven participants received a flat rate contribution towards their travel and subsistences costs, finding their remaining funds from other sources. This followed the AVO-NVO joint meeting in Garching in June 2002.

3.4 OPTICON WORKING GROUP ON ASTRO-WISE ACTIVITIES: WIDE FIELD IMAGING

Chair: Edwin Valentijn (Groningen, Nl)
http://www.astro-wise.org/

3.4.1 *Summary of Specific Objectives*

The ASTRO-WISE programme co-ordinates the development work to deal with and access astronomical wide field imaging data. It provides an operational environment for researchers to analyse and access the huge data volumes of observational data produced by a new generation of Europe's wide field imaging telescopes.

3.4.2 *Overview of progress*

The OPTICON working Group for ASTRO-WISE developed the successful funding proposal for this activity. When its own funds became available, the OPTICON WG completed its activity.

.

3.4.3 *Comparison of intentions and outcomes*

Quite excellent progress is being made.

3.4.4 *Plans for the future*

Astro-Wise is now an independent self-managed project. OPTICON sponsored this working group, which has completed its ambitions.

3.4.5 *List of major meetings*

Astro-wise now has its own (FP5 RTD) budget. No OPTICON-funded meetings took place.

3.5 OPTICON WORKING GROUP ON 3D SPECTROSCOPY (EURO-3D)

Chair: Martin Roth, (AIP Potsdam)
http://www.aip.de./Euro3D/

3.5.1 Summary of Specific Objectives

The 3D Spectroscopy Working Group was initiated by OPTICON with the remit to coordinate European activities in the field of 3D spectroscopy (mostly, but not exclusively, integral field spectroscopy). A series of five meetings over a period of 16 months brought a wide degree of consensus among the many European groups involved in 3D spectroscopy. It was identified that the current strong lead in 3D instrumentation is not matched by excellent science returns, on account of the perceived complexity of 3D data. The goals to apply for an RTN to deliver training in 3D spectroscopy through high profile science and to facilitate the RTN by lead-up activities were successfully accomplished.

3.5.2 Progress

The three year RTN requesting nearly Euro 1.5M and entitled "Promoting 3D Spectroscopy in Europe" was submitted in May 2001 to the 5th Framework. The RTN was awarded and contract negotiation led to a start date of July 01 2002.

3.5.3 Comparison of Intentions and Outcomes

All ambitions have been met.

3.5.4 Plans for the future

The work of the 3D Spectroscopy Working Group is now fully encompassed by the RTN and the Working Group is now dissolved. Its goals of fostering European coordination in 3D spectroscopy have been fully realized by award of the Euro3D RTN.

3.5.3 Working Group Meetings

The WG is now self-funded. No OPTICON sponsored meetings have been held.

3.6 OPTICON WORKING GROUP ON ASTROVIRTEL:

Chair: Piero Benvenuti (ESA ST-ECF, Garching)
http://ecf.hq.eso.org/astrovirtel/

3.6.1 Summary of Specific Objectives

The Astrovirtel WG acts both as science overview for the ASTROVIRTEL FP5 access program (which reports independently) and more generally as a Science Working Group to assist in definition of the Astrophysical Virtual Observatory.

3.6.2 *Overview of Progress*

During the reporting period, the main activity and expenditure were related to the Opticon AVO `First Science' Meeting, in Munich in January 2004. This was jointly with the AVO Working Group (section 3.3.3 above) and is reported there.

3.6.3 *Comparison of intentions and outcomes*

Relevant science cases were identified, and successfully implemented in the AVO `first science' demonstration

3.6.4 *Plans for the future*

The WG will continue to refine and define science cases for AVO during FP6. This activity will then be taken up inside the AVO I3 programme.

3.6.5 *List of Major Meetings*

None specific to this WG were held.

3.7 OPTICON WORKING GROUP ON KEY TECHNOLOGIES

Co- Chair: R Rebolo (IAC, Spain), C Cunningham (UKATC, UK)
http://www.astro-opticon.org/technologies.html

3.7.1 *Summary of Specific Objectives*

The Key Technologies Working group was set up by the OPTICON Board in 2001 following an initiative by R. Rebolo.

The WG was formed with the following goals:

- Identify key technologies needed in the next decade for optical and infrared instruments and telescopes.
- Find common challenges and promote wide European collaboration in this area establishing coordinated and complementary initiatives.
- Promote interactions between the academic community and industry

3.7.2 *Overview of Progress*

The Key Technology Working Group has identified the following major areas of activity and established evolving working groups for each area.

- Detectors (convenor C. Erd, ESA)
- Smart Optics/Innovative Optical components (convenor C. Cunningham, UK ATC)
- Interferometry (convenor P. Kern, LAOG)
- Adaptive Optics (G. Love, Durham Univ.)

It was agreed that these groups would be open to experts from the community and would suggest actions and best strategies to the OPTICON Board. With this purpose some groups had open meetings:

1) Interferometry and Smart Optics, Paris 10th April 2002, and 4 subsequent interferometry-related meetings
2) Innovative Optical Components, ATC Edinburgh, 12th April 2002, with a follow up meeting at the SPIE conference in Hawaii for those members attending the conference and others established a fluent electronic exchange of information.

In 2003, focus was put onto actions for the FP6 I3 Programme. An intense activity culminated with the preparation of several proposals for Joint Research Activities (JRAs) (including Adaptive Optics, Fast Detectors, and Smart Focal Planes) for the OPTICON Integrated Infrastructure Initiative under FP6. These proposals were reviewed at the Tenerife partners meeting in January 2003 and rationalised to form the portfolio of JRAs which were presented in the FP6 proposal. Several small meetings and teleconferences were held to bring together effective partnerships for these JRAs.

3.7.3 *Comparison of intentions and outcomes*

An extensive list of subfields requiring major developments was provided by each subgroup and reported to the OPTICON Board. JRAs formed a major component of the OPTICON I3 proposal.

3.7.4 *Long Term Plans*

To complement these Research Activities, it was proposed that the Key Technologies working group evolve into a network with the following strategic mission: identify key technology needs, look for opportunities which technology developments in other sectors provide for astronomy, encourage European collaborative technology development projects, and provide a forum for discussing potential routes for further development.

It will do this by a series of mechanisms: workshops, newsletters and an interactive website, and an industry club. A major activity will be to develop a technology roadmap for European optical and infrared astronomy. We identified a gap in information about European capabilities both in industry and in research organisations, and we aim to fill this by developing a database of technologies and expertise key to development of the next generation of astronomical instruments and systems. The interferometry activity has evolved into a major network in its own right, with substantial FP6 I3 activity expected.

3.7.5 *List of Major Meetings (including sub-group activities)*

Edinburgh, Jan 28-29, 2001; Tenerife, Feb 24-28, 2002 (outside formal reporting period, some related travel claims are reported here), Paris 10th April 2002; Edinburgh, April 11-

13, 2002; Porto September 2002 (at JENAM); Grenoble, Oct 23-25, 2002; Nice, Oct 29-31, 2002; Vienna, Jan 9-10, 2003; Edinburgh, Jan 16-18 2003. London, March 11 2003. Prague, 9-11 April 2003, Marseille, 11 June 2003, Grenoble, September 23-24 2003, Munich, 25 September 2003, Garching, December 16-17 2003; Bremen, January 29-30 2004

3.8 OPTICON WORKING GROUP ON MEDIUM SIZED TELESCOPES:

Chair: J Davies

3.8.1 *Summary of Specific Objectives*

This WG had two main goals: to initiate closer collaboration and sharing of best practice between all European-owned world-class medium sized telescopes; and to prepare a major access program to be included as part of the FP6 I3 project.

3.8.2 *Overview of Progress*

The medium telescope working group concentrated its activities in refining plans for the FP6 proposal round. Much of this preparation took place by electronic mail and telephone contact. The decision to incorporate additional optical-infrared telescopes located in the Canary Islands which was taken in February 2003 ensured that the OPTICON Telescope Network includes all the major European operated infrastructures in this class. The addition of several state-of-the art solar telescopes to the network offers further opportunities for the seeding of new collaborations where, for example, common techniques may be applied to different scientific aims. Full participation of the IAC (Tenerife) in the operation of the new access programme ensured maximum use of existing expertise gained under the FP5 programme.

Following the approval in principle of the OPTICON I3 proposal, energetic and immediate efforts were begun to raise awareness of the new trans-national access opportunities. For example the project scientist presented the programme at the 2003 JENAM meeting in Budapest (August 2003) and the Polish Astronomical Society's national astronomy meeting in Torun (September 2003).

3.8.3 *Comparison of Intentions and Outcomes*

The goal, to integrate all European medium sized telescopes into a single network, has been achieved. Considerable interest is already manifest in the expanded trans-national access programme

3.8.4 *Plans for the Future*

The I3 access programme will be delivered and regular meetings of the expanded working group, henceforth to be known as the OPTICON Telescope Directors forum, will ensure that real benefits accrue from the collaboration.

3.8.5 List of Major Meetings

Medium Telescopes Working Group final meeting, Tenerife, 22-23 January 2004.
Presentations to potential trans-national access programme users;
Torun, Poland 10 September 03.
Budapest, Hungary 27 August 03
Paris, France 20 December 03

3.9 OPTICON WORKING GROUP ON EXTREMELY LARGE TELESCOPES

Co-Chair: Roberto Gilmozzi (ESO, Garching), Gerry Gilmore
http://www.astro-opticon.org/fp5/ELT.html

3.9.1 Summary of Specific Objectives

To provide a science case supporting and guiding technical developments towards the next generation extremely large telescope, and to provide a focus for community support for and involvement in the ELT project.

3.9.2 Overview of Progress

European ELT science working group formed/expanded. Many of the members were involved previously (for example at the Leiden 2001 OPTICON meeting) but many more have been added. Currently there are approximately 80 people on the mailing list. The group is divided into three science groups, "Starts + Planets", "Stars + Galaxies", "Galaxies + Cosmology", each co-chaired by two European astronomers.

Two meetings on the ELT science case were held in 2003 (see below). Note that one meeting was postponed and some costs associated with cheap, and so non-refundable, air fares were incurred.

A web site was set up specifically dedicated to the European ELT science case (linked into the main OPTICON web site). Programmes and reports on meetings can be found here, as well as science case documents as they are developed. See http://www-astro.physics.ox.ac.uk/~imh/ELT/

An ELT science case "Highlights" document (a result of the Marseille meeting, see below) was made available on the web in November 2004. This is intended to be accessible by non-specialists.

FP6 OPTICON proposal prepared. Preparations made for use of FP6 OPTICON funds (e.g. appointment of scientist to coordinate the ELT science case work).

A science case was written to support the proposal to FP6 for an ELT Design study. This case was based on the above highlights plus other input from previous

OPTICON science meetings (particularly the documents following the Leiden 2001 meeting).

3.9.3 *Comparison of Intentions and Outcomes*
All intended outcomes have been achieved.

3.9.4 *List of major meetings*

- 1-day meeting in Oxford, UK, 28th April, 2003 Organiser: Isobel Hook
  12 participants plus 2 more by phone.
  Aim: review current status of the science case and plan future work.

- 2.5 day meeting in Marseille, France, 5-7 November 2003.
  Organisers: Isobel Hook and Denis Burgarella.
  50 people participated. Note that this was originally scheduled for 1-2 September 2003 but was postponed. Some cancellation charges were incurred on low cost air tickets.

Aims: (1) To select "highlight" science cases to support the proposal to FP6 for an ELT design study. (2) Discuss and develop the wider science case for an ELT.

Outcome: Four science highlights were identified:
(1) Terrestrial Planets or "Extra-Solar Systems"
(2) Stellar populations across the Universe
(3) The Physics of Galaxies from z=2 to z=5
(4) The First Objects and Re-ionisation structure of the Universe
Summaries of these were written up after the meeting and made available on the web site.

4 Feb 2003 Delft, Netherlands. ELT WG Adaptive Optics.

20 Feb 2003. Edinburgh UK. ELT WG Splinter Meeting, Instrumentation.

10 Mar 2003. Edinburgh UK. ELT WG Splinter Meeting, Instrumentation

18 March 2003 Marseilles, France ELT WG. Techinical meeting with Fogale/LAM

8 April 2003. Garching, Germany. ELT WG Splinter Meeting, Instrumentation

28 April 2003. Oxford UK. ELT Science Case Meeting.

4 June 2003. Garching, Germany. ELT WG Review Meeting for the preparation of the proposal

16 June 2003. Nice, France. ELT WG site characterization WP

2-10 August 2003, Lund, Sweden. ELT Board Meeting.

8-12 September, Backaskog, Sweden. ELT science working group and design study proposal team meetings during workshop on future Extremely Large Telescopes

13 October 2003. Munich, Germany. Mini-workshop on AO and site testing (see http://www.eso.org/gen-fac/pubs/astclim/espas/workshops/AO-ATMO-2003/ for the ELT design study proposal. This mini-workshop was a coordination meeting between the Site testing experts and the AO specialist in order to converge about the required site data relevant for the selection of an ELT site.

5-7 November 2003. Marseille, France. ELT Science Case Meeting.

11-12 November 2003 Edinburgh UK. ELT WG Splinter Meeting: Instrumentation

13 November 2003 Garching, Germany. ELT Science Case WG: AO

17-18 December 2003 Galway, Ireland. ELT WG: Enclosures

19 January 2004 Heidelberg, Germany. ELT WG Meeting: Interferometry

3-4 February 2004 Galway, Ireland. ELT WG: Enclosures

29 February 2004 Garching, Germany. ELT WG: AO. For definition of the role of the National University of Ireland in the studies related to the ELT enclosure within the proposed FP6 programme. The leader of the civil engineering part of the study took part at video-conference/ telecon level.

3.10 OPTICON WORKING GROUP ON INTERFEROMETRY

3.10.1 Summary of Specific Objectives

- Ensure that Europe will play a leading role in the development of optical interferometry over the next decade;
- Enable European astronomers to fully exploit the scientific potential of the existing and planned large facilities;
- Enable the Candidate Countries of central Europe to participate fully in the technical and scientific progress in optical interferometry;
- Create opportunities for students and young researchers to receive training in one of the affiliated institutions;
- Disseminate our results widely to technical and general audiences, and engage the general public in the excitement of astronomical research and the associated technologies

3.10.2 Overview of Progress

The Interferometry Working Group involves 14 countries plus ESA and ESO and concerns more than 40 European Laboratories. It has had 7 face to face meeting in

2002 and 2003, and final meeting at the beginning of 2004 which marked the conclusion of the FP5 activity and its transition into part of the OPTICON I3 .The main activity has been the detailed definition of the interferometry project called Euro-Interferometry Initiative (EII). The latter has been divided into 3 parts, two of which form part of the OPTICON I3.

- Joint Research Activity 4
- Network 5
- Marie-Curie Program

JRA4: (3 Work Packages)

- WP1.1: Advanced Instruments (2nd generation of VLTI instruments)
- WP1.2: Advanced Instruments (Co-phasing & Fringe Tracking)
- WP2: Software (Off-line data reduction software)

Network 5: (3 Work Packages)

- Exchange visitor program
- Working groups
- Next generation interferometric facility

Marie-Curie Program: Training (submitted to EU)

A dynamical WEB page at the address, http://eii-jra4.ujf-grenoble.fr, was established for the JRA4. It contains the description of WP, lists of contributors, Working Groups and to date more than 30 documents.

Another WEB page at the address, http://www.strw.leidenuniv.nl/~Eurinterf, has been established for the Euro-Interferometry Initiative and the Network 5.

3.10.3 Comparison of Intentions and Outcomes

All objectives have been met. The JRA4 and the Network 5 were funded within OPTICON. The Marie-Curie programme was submitted to the EU in April 2004.

3.10.4 Plans for 2004 and long-term

Three main events are programmed in the next 12 months:

- Network 5: "Science case for the Next Generation Optical/Infrared Interferometric Facility". 23-27 August 2004, Liège University, Belgium
- JRA4 Progress Meeting, November 2004, Grenoble University, France
- Joint EII/ESO Workshop, April 2005, Garching, Germany

3.10.5 List of major meetings

- Euro-Interferometry Meeting # 1: January 30, 2002, Heidelberg (10 participants)
- Euro-Interferometry Meeting # 2: March, 18, 2002, Nice (5 participants)
- Euro-Interferometry Meeting # 3: May, 22, 2002, Leiden (18 participants)
- Euro-Interferometry Meeting # 4: September, 7, 2002, Porto (19 participants)
- Euro-Interferometry Meeting # 5: October, 30 & 31, 2002, Nice (19 participants)
- Euro-Interferometry Meeting # 6: January, 10, 2003, Vienna (17 participants)
- Euro-Interferometry Meeting # 7: February, 27, 2003, Gdansk (23 participants)
- Final FP5 Meeting: January, 7 & 8, 2004, Nice (40 participants)

In addition there were smaller meetings related to the preparation of the FP6 proposal involving only key members of the proposal writing team in Grenoble on 27 May 2004 and 21- 22 Aug 2004.

Telconferencing between members of the working group was carried out on the following dates:
31 January 2003, 19 February 2003, 14 March 2003, 22 August 2003, 02 September 2003, 03 October 2003

4 LIST OF DELIVERABLES

The primary deliverable is a series of reports from WGs, reported above:
This includes – minutes of all relevant meetings, available on the OPTICON WWW site;
the ELITE Fellowships report to the EU;
the RTN and RTD proposals for ASTROwise and EURO3D;
the largest deliverable is the FP6 I3 proposal, for OPTICON;
the AVO FP6 proposal became an independent entity grown from an OPTICON WG.
The EC published a brochure describing OPTICON, provided by the coordinator.

5 EXPLOITATION AND DISSEMINATION OF RESULTS

Invited presentations were made at two JENAMs, and 4 other national meetings (including in the US, without OPTICON funding). The www page continues to attract much attention. Overall, OPTICON has become widely recognized as a leading instrument in the integration of European astronomy. A lapel badge, printed pen, and a set of one-page sheets describing OPTICON were produced for the FP6 launch conference, and proved extremely popular. A regular series of articles was published in the newsletter of the European Astronomical Society, as this (albeit expensive – see below) is a very effective means to contact astronomers in central Europe and the Accession Countries. The Coordinator was invited to present his experience dealing with the EC to a UK Government study on future UK relations with Europe.

6 MANAGEMENT AND COORDINATION ASPECTS

6.1 NETWORK COORDINATION

Management proceeded as usual, largely by phone/e-mail, with bi-annual full partners meetings. Relevant meetings/budget items are:
internal management meetings (20, 29, 30), national presentations (51), joint meetings with RADIOnet (32).
Completion and distribution of the various reports and proposals to the partners in the final year became a major effort, with substantially increased demands on managerial computing resources, and use of courier deliveries. Significant page-charge publicity costs were required. All these items are included under the budget line `computing' in the financial report of the science Coordinator.

6.2 BUDGET INFORMATION

Table attached. No significant deviations from expectation have occurred.
Total budget: the total expenditure over the four year program has been managed to match total available resources to high accuracy.

6.3 A table providing a cross index between the individual partners accounts, the meetings sponsored, and this report, is attached, clarifying every listed expenditure, and providing a specific reference to the relevant part of this report.

Note that several trips were not adequately reported in last year's reports or occurred very close to the end of the financial year. They are correctly reported this time. In addition PPARC overhead were incorrectly calculated in period 2 and an adjustment has been applied

Annexes: Minutes of the Eighth Partners meetings are attached.

Table This table provides a summary list of all meetings funded by OPTICON and reported in the financial reports. The column 'Report Section' identifies the section of the annual report which mentions the meeting.

Period: 1 March 2003 to 29 February 2004

Meeting No.	Destination	Date	Report Section	Purpose
1	Meudon, Paris, France	10/4/02	3.7.5	Smart Optics and Interferometry sub-group meeting
2	Tuorla, Finland	3/5/02	3rd Annual Report 2.1	OPTICON Board Meeting
3	Tuorla, Finland	3/5/02 – 4/5/02	3rd Annual Report 2.1	Kick-off meeting for ELT R&D working group
4	Garching, Germany	June 2002	3.3.5	AVO-NVO Joint Meeting
5	Porto, Portugal	3/9/02 – 8/9/02	3.7.5	JENAM meeting
6	Paris, France	23/9/02 – 24/9/02	3rd Annual Report 2.2	Partners Meeting
7	Nice, France	30/10/02 – 31/10/02	3.10.5	Interferometry Working Group Meeting
8	Vienna, Austria	10/1/03	3.10.5	Interferometry Working Group Meeting
9	Edinburgh, U.K	17/1/03	3.7.5	Smart Focal Planes Working Group Meeting
10	Tenerife, Spain	24/1/03	3rd Annual Report 2.3	OPTICON 7th Partners Meeting
11	Delft, Netherlands	4/2/03	3.9.4	ELT WG Adaptive Optics
12	Edinburgh, U.K.	20/2/03	3.9.4	ELT Working group Meeting: Instrumentation
13	Gdansk, Poland	27/2/03	3.10.5	Interferometry Working Group Meeting
14	Garching, Germany	28/2/03	3rd Annual Report 2.4	Special Partners Meeting

15	Edinburgh, U.K.	10/3/03	3.9.4	ELT Working Group Meeting: Instrumentation
16	London, UK	11/3/03	3.7.5	Key Technologies WG on Smart Focal Planes
17	Marseilles, France	17/03/03- 19/03/03	3.9.4	ELT WG. Techincal meeting with Fogale/LAM
18	Brussels, Belgium	18/3/03	3.2.3	FP6 Infrastructures Grid
19	Brussels, Belgium	25/3/03	3.2.3	FP6 Infrastructures Grid
20	Cambridge, U.K.	1/4/03 – 3/4/03	6.1	Management Meeting
21	Garching, Germany	8/4/03	3.9.4	ELT WG – Instrumentation
22	Prague, Czechoslovakia	9/4/03 – 11/04/03	3.7.5	Key Technology Working Group
23	Oxford, U.K.	28/4/03	3.9.4	ELT Science Case Meeting
24	Cambridge, U.K	12/5/03 – 16/5/03	3.2.3	Interoperability Working Group Meeting
25	Grenoble, France	27/5/03	3.10.5	Interferomertry WG splinter group
26	Garching, Germany	4/6/03	3.9.4	ELT Working Group Meeting
27	Marseille, France	11/6/03 – 12/6/03	3.7.5	Key Technology Working Group
28	Nice, France	16/6/03	3.9.4	ELT Site Selection Meeting
29	Lund, Sweden	2-10/8/03	6.1 & 3.9.4	ELT Board Meeting
30	Brussels, Belgium	7/8/03 – 8/8/03	6.1	Consortium Management
31	Grenoble	21/8/03-22/8/03	3.10.5	Interferometry WG Splinter
32	Budapest, Hungary	25/8/03 -30/8/03	6.1 & 3.8.5	Consortium Agreement, Radionet round table meeting.

33	Chania, Greece	4/9/03 – 5/9/03	2.1	OPTICON 8th Partners Meeting
34	Backaskog, Sweden	9/9/03 – 11/9/03	3.9.4	ELT Science Working Group Meeting & Workshop on ELT
35	Grenoble, France	23/9/03 – 24/9/03	3.7.5	Key Technology WG on Detectors
36	Munich, Germany	25/9/03	3.7.5	Key Technology WG on Detectors
37	Munich, Germany	13/10/03	3.9.4	ELT WG – Site Testing and AO Workpackage
38	Strasbourg, France	16/10/03 – 17/10/03	3.2.3	Interoperability Working Group Meeting
39	Marseille, France	5/11/03 – 7/11/03	3.9.4	ELT Science Case Meeting
40	Garching, Germany	13/11/03	3.9.4	ELT Science working Group Meeting : AO
41	Edinburgh, UK	11/11/03 – 12/11/03	3.9.4	ELT Working Group Meeting: Instrumentation
42	Garching, Germany	16/12/03-17/12/03	3.7.5	Key technology WG Splinter Meeting on detectors
43	Galway, Ireland	17/12/03-18/12/03	3.9.4	ELT WG: Enclosures
44	Paris, France	17/12/03 – 21/12/03	3.8.5	Medium Telescope WG and Consortium Management
45	Nice, France	7/1/04 – 8/1/04	3.10.5	Interferometry Working Group Meeting
46	Heidelberg, Germany	19/1/04	3.9.4	ELT Working Group Meeting: Instrumentation
47	Tenerife, Spain	22/1/04 – 23/1/04	3.8.5	Medium Telescope Working Group
48	Bremen, Germany	29/1/04-30/1/04	3.7.5	Key Technology WG: Smart Focal Planes
49	Munich, Germany	31/1/04	3.6.2	AVO First Science Demo
50	Galway, Ireland	3/2/04-4/2/04	3.9.4	ELT WG: Enclosures

51	London, UK	9/2/04	6.1	OPTICON/ FP5 Meeting
52	Garching, Germany	29/2/04	3.9.4	ELT WG: AO

OPTICAL INFRARED COORDINATION NETWORK FOR ASTRONOMY (OPTICON)
Minutes of the Eighth Partners Meeting held at the Chania Chamber of Commerce, Crete
4-5 September 2003

Present:

Professor G. Gilmore (Chairman, OPTICON, IoA)
Professor J. Andersen (NOTSA)
Professor A Ardeberg (Lund)
Professor P. Benvenuti (ESA/ST-ECF)
Dr W Boland (NOVA)
Dr Jesus Burgos (IAC)
Dr A Chelli (Grenoble, France)
Dr C Cunningham (ATC, Edinburgh, UK)
Dr. J. Davies (OPTICON Project Scientist, UKATC)
Dr M Dennefeld (IaP, Paris)
Professor R-J Dettmar (RDS)
Dr P Feautrier (LAOG, France)
Dr Alvaro Gimenez (ESA/ESTEC)
Dr R Gredel (MPIA)
Dr E Harlaftis (NOA)
Dr N Hubin (ESO)
Professor N Kylafis (University of Crete)
Professor G Monnet (ESO)
Mr. P Moschopoulos (EC)
Professor B. Nordstrom (EAS, Observer)
Professor A Omont (CNRS/INSU and IAP, Paris)
Professor A Quirrenbach (Leiden Obs)
Professor R Rebolo (IAC)
Professor J Seiradakis (GNCA, Greece)
Ms R Sirey (PPARC)
Dr H Spruit (MPA)
Professor J-P Swings (OSTC)
Dr L Takalo (NOTSA)
Professor G Vettolani (INAF, Italy)
Dr S Wagner (LSW, Germany)
Ms K Disney (OPTICON Secretary)

Apologies: These were received from Professor S D M White, who was represented by Dr Henk Spruit; Professor T de Zeeuw, who was represented by Dr W Boland; Dr F Casoli, who was represented by Prof A Omont; Prof H-W Rix, who was represented by Dr R Gredel; Professor Cristos Goudis and Professor S Lilly

Welcome

The Chairman opened the eighth meeting of Opticon by welcoming the following distinguished visitors, who each gave words of welcome:

Archbishop Eireneos, Metropolis of Kidonias & Apokoronou and the Vice Prefect, George Agorastakis, who gave a brief history to the island of Crete in his welcome.

Mr Kyriakos Virvidakis, the Mayor, welcomed and thanked Opticon for choosing the Chamber of Commerce in Chania as the meeting place for the meeting.

Mr Evangelos Spanoudakis, the President of the Chamber of Commerce thanked Opticon for choosing Chania as the venue for its meeting.

The Chairman thanked all distinguished guests and also welcomed Professor N Kylafis of the University of Crete and Dr Emilios Harlaftis from Athens. Mr Deniozos, the General Secretary

for Research and Technology had sent a letter of thanks, but had to decline owing to other commitments. Professor Cristos Goudis had hoped to attend, but had to cancel due to problems with travel.

1 Agree Agenda

Delegates were forewarned that two observers to the Executive Committee of the I3 had to be elected, who had to represent organizations and communities not already included. A Chairman to the Board was also required to be elected.

The Agenda was adopted as tabled.

2 Minutes of Meeting 7

The minutes of meeting 7 were accepted as a correct record.

3 Action from Meeting 7

John Davies presented the current status of activities under FP5 and identified those activities continuing under FP6. PPARC was the coordinating agency under FP5, but under FP6, the University of Cambridge would take on this role.

4 2002 Annual Report and 2003 Budget

There had still been no news from the EU regarding the 2002 Annual Report and 2003 budget.

JKD gave details of how Opticon was to manage its cash flow for the remainder of the FP5 program.
JKD explained that the budget at the beginning of FP5 had been 1Meuro and had been received from the EU in parts over the four years. 40% of the total budget was received as pre-financing at the start of FP5, and divided between all the partners. Annual spending is then reimbursed on approval of annual reports. The EU will retain 15% of the total budget until final end-of-period contract deliverables have been delivered and approved, in spring 2004.

Actual spend to date had been calculated overall at 751KE, almost precisely 75% of the budget at the end of the third year of four. This leaves 248KEuro remaining in the contract to fund the fourth year activities. However, the EU retention means that very little cash is available prior to spend during this period. Taking into account monies that had been advanced to partners and remained unspent, only about 50 KEuro will be available for distribution this summer.

The summer 2004 end of project payment must be sufficient to pay all outstanding balances. That is, Opticon partners should ensure that all FP5 available money is spent, but not overspent. The agencies that had not spent all their funds would be asked to send John Davies details of

their account balances, and to assist with upcoming meetings which would require financial support.

The Chair emphasized that there was no cash available at present, but I3 cash should be available by March 2004. There was concern with the refund financing system adopted by the EU, which could cause problems for some partners.

ACTION: Partners to send JKD details of their funds and to respond as soon as possible with spends since March 2003 and further projected spending in 2003-04 for a rolling budget update.

ACTION: JKD to synthesize information by October 2003

5 Status of FP5 Activities - Have we achieved our goals?

JKD summarized the Opticon achievements, what has still to be done to meet our FP5 deliverables, and the implications on activities for the rest of the year.

INSTRUMENTATION: There had been many future Instrumentation developments and several of the FP5 activities had developed into JRAs under FP6. Among those, the Adaptive Optics, the Smart Focal Planes and the Key Technology Working Groups, had become established as part of the I3 proposal.

VIRTUAL OBSERVATORY ACTIVITIES: Several deliverables included definition of required standards, enlarged databases, a fellowship proposal and an RTD proposal on software tools. These had all been achieved
An interoperability working group under Francoise Genova had been established and from this had defined international standards, with particular success in international adoption of the VOTable standard.

DATA ANALYSIS: Opticon had supported the successful Euro3D RTN proposal, and assisted in the development of the successful Astrowise software proposal.

ELT SCIENCE CASE: Development of quantitative science cases for the ELT had been initiated.
Euro50 and Owl design programs had been brought together into a single proposal and many specialist meetings had been held.

NETWORKING: Action on the exploitation of space observatories had sponsored a new network called UVNet,.

ACCESS PROGRAM: The medium telescope working group had developed a detailed proposal to ensure better EU-wide access to excellent medium-sized facilities

Under FP5, Opticon established new working groups and of course developed the major I3 proposal, which includes all the major European agencies.

At the mid-term review the Elite Fellowship proposal developments had been received very favourably by the EU: this effort should continue under FP6. The present Chairman of this working group, Professor Piero Benvenuti, was unable to continue because of other commitments, so another Chair had to be found.

As part of the FP6 proposal, Jean-Loup Puget was identified as the coordinator for future space-ground activities, representing the European Science Foundation, and being active in ESA projects. He was also acting as Coordinator for the Elite Fellowship at present.

ACTION: To find a new Coordinator for the Elite Fellowship
Alvaro Gimenez, Jean-Loup Puget, Piero Benvenuti

Panayotis Moschopoulos explained that, according to the EC treaty, mainstream ('top-down') EU science policy aims to eventual industrial benefits. Fellowships are a 'bottom up' activity which, by design, does not earmark funding for any field. Therefore, for Astronomy Fellowships to obtain funding in FP7, discussions should begin early with those involved in the design of FP7 (governments and the EC) to see if it is possible to support an adequate scheme.

Finally, the FP5 activities had resulted in a single European-wide FP6 proposal, which was successful.

In summary, all the FP5 approved activities had been completed with considerable success.

Prof Andersen thanked GG for providing the strong leadership needed to make such substantial progress in FP5. GG thanked JKD and JB for their efforts in preparing the FP6 proposal

ACTION: JKD to put details of relevant meetings on the web page.

6 Status of the European Large Telescope Design Study Activities

Meetings related to ELT developments were planned over the next few months as follows:

2-3 November 2003	Marseille (ELT Science Case Meeting)
1-2 December 2003	Munich (OECD Astronomy meeting)

Prof Vettolani would supply further details of the Munich meeting, which would initiate development of a global roadmap for the future development of astronomy.

The Chair noted that Opticon is a `cooperating organization' in support a future telescopes meeting of SPIE due to be held in Glasgow in June 2004. There is to a large meeting in Berlin on 21st Century astronomical facilities scheduled for 19-21 May 2004.

Prof Dennefeld suggested that an IAU symposium on ELTs might be organized in the 2005 time frame.

It was noted that there was still a national imbalance in participants to the ELT science case meetings, with the German community in particular inadequately represented.

Prof Ardeberg reported that the two US ELT proposals had been merged under the name TMT, the Thirty Metre Telescope. This activity is presently requesting funding at a level of about $80 million for design work.

ACTION: Partner and Agencies to encourage participation in these meetings.

7 Astrophysical Virtual Observatory – The present and the future

The Chairman of the VO, Prof Benvenuti, summarized recent activities, and reported that the current FP5 activity is proceeding well. There had been a presentation at the IAU in Sydney in July 2003. There will be presentations every January and February, coordinated with US efforts, in the US and Europe respectively. Preparations are underway for the next series of meetings. The European AVO works independently of the US project, but activities are coordinated through the international project, IVOA.

Two AVO proposals had been submitted to FP6 and had been rejected. This had made the future very grim with a financial cut off threatened. The FP6 funds were very over-subscribed, and the competition had been tough, but Prof Benvenuti was surprised at the relatively low score. It seemed from this that Europe ran the risk of losing its leadership of the AVO effort.

The Commission Work programme for 2004/2005 has not been approved yet; however another call is expected to be published towards the end of 2004, to include integrating activities, with the deadline probably in early 2005. For Integrated Infrastructure Initiatives, it can be expected that at least 50M Euro will be available for this 2004/2005 session.

AVO will resubmit revised proposals to this second call. In the interim, the AVO community requests Opticon and Radionet to provide bridging support to enable AVO to continue to operate. There would need to be the same frequency of meetings as have been held under FP5 to keep AVO to the current level of activity. Otherwise it would mean Europe losing its leadership to the US.

Several members expressed the support of their national agencies for AVO activities and the Board agreed to this proposal, noting that the same level of support was given to other activities within Opticon. The AVO was supported by the UK, Italy, France, ESA and ESO, with ESO putting in extra resources.

8 Attendance at I3 Board Meetings Policy on Contractor and Other National Participation

The membership of the Executive Committee is fixed, and consists of : Chair (Coordinator), ESO, France (INSU), Germany (MPG.MPA), Italy (INAF), Netherlands (NOVA), UK (PPARC), Spain (IAC), and NOTSA (Scandinavia).

Two observers may be elected from Board member organizations which are not members of the organizations already represented. The term is for one year renewable. All present entitled to vote selected from the following nominated organizations:

SANW Switzerland
KIS
EAS
ESA
Greece
RDS/RUB
RA3

The following were elected as observers to the Executive Committee:

SANW Switzerland (nominated individual: Prof Simon Lilly)
European Astronomical Society EAS: (nominated individual Prof. Birgitta Nordstrom)

The Chairman summarized the current policy for attendance at OPTICON Board meetings. In order to allow information on Opticon to be widely available, the Board endorsed its present policy of holding meetings in turn in different countries and, in each case, inviting local national representatives to attend. It was recognized that these meetings would probably evolve into two day events, with an open meeting for information exchange and for broad opinions to be expressed, with a closed session to follow for detailed decision making. The open meeting should allow the participation of representatives Central European countries.

ACTION: Rowena Sirey to draft a protocol for openness, who shall be invited and where the financial responsibility for those attending shall lie.

9 Status of the FP6 I3 Proposal

9.1 Timescales for Contract Actions

The 12 September deadline for the submission of the Contract Preparation Forms was one week after this Board meetings, and involved considerable input during the last week. It was hoped that the Contract negotiations would be underway around the middle of October.

9.2 Consortium Agreement

The draft Consortium Agreement, based on that provided on the EC website and developed by a consortium of French research organizations, was discussed. Some minor errors and wording inconsistencies were identified. Rowena Sirey, Wilfried Boland and Johannes Andersen were delegated to check the Agreement, and to correct inconsistencies and errors where necessary,

especially in relation to the management section. A major importance of this Agreement is in relation to Industrial contracts and IPR. Colin Cunningham noted that the agreement was not over-restrictive, and one's own intellectual property rights could be defined. It was emphasized that a contractor cannot be legally accepted until the Consortium Agreement is signed.

ACTION: RS, WB and JA to provide a new draft Consortium Agreement with the minimum changes for approval by the Coordinator and the major partners

9.3 Contract Formalities

The final version of Annex One would be seen and agreed by all contractors prior to contract award by the Commission.
Panayotis Moschopoulos also pointed out that the Consortium agreement must be ready when the contract is signed.

Several delegates expressed concern with the short time of 6 weeks over summer holidays between receiving the Contract Preparation Forms and Evaluation Report and the required re-submission date fro a full revised program. P M remained convinced that there had been sufficient time in which to acquire and complete the required information.

10 I3: The Evaluation Summary Report

10.1 Philosophy in implementing the revised budget

The Board endorsed the philosophy proposed to implement the budget cuts. This emphasizes doing fewer things well, rather than cutting everything.

DECISION: Opticon Board endorses the proposed budget implementation.

Rafael Rebolo regretted that the parts of the proposal excluded by the EU evaluators implied a loss of scientific synergy.

10.2 FP6 I3 overview

The Chairman asked the EU representative to give an overview and outline of the calls.
Panayotis Moschopoulos summarized the I3 proposal process and outcome.

The Program had 190Meuro to allocate. 154 proposals requesting 1000Meuro were received. Of these 72% were above the required scientific threshold, but only 22% were able to be funded.

Those approved included:

9 Transnational Access Projects (9/84 success)
14 I3 Projects (14/58 success)
1 Coordinated Action (1/12 success)

Overall with both Opticon (19.2Meuro) and Radionet (12.4Meuro) astronomy did well.

11 Chairman Election

Professor Alain Omont was unanimously elected as the Chairman of the Board for the period 2004-2005 for one year, starting at the Spring Board meeting. This meeting would commence with the present Chairman seeing the formal end of the FP5 Board and Prof Omont chairing the start of the FP6 Board. Professor Gilmore had been elected at the Paris meeting as Chairman of the Executive Committee for the duration of the FP6 program.

12 Other Business

A number of Opticon handouts remaining from the FP6 Infrastructures launch in November 2002 were made available to Board members.

12 Date and Place of Next Meeting

The Chairman announced that it had been decided to hold the next Opticon Board in the Spring of 2004 in Belgium. The Minister of Science had offered to contribute funds to the meeting, which would see the folding up of FP5 and the launch of FP6 activities

The following dates were considered suitable for the next meeting: Thursday, 1 April and Friday, 2 April

ACTION: Chair to ensure that local arrangements can be made.

Information was given regarding the Executive Committee and JRA meetings to be held that afternoon in the hotel and then the meeting closed.

Joint Research Activity presentations

A series of JRA presentations took place after the main business of the meeting, to establish how the activities would proceed with the funds available. JRA PIs had the opportunity to meet with the EC representative to discuss the Contract Preparation Forms in detail.

For budget planning purposes, the networks had been cut to 11%, the Access program to 40% and the JRAs to 2/3 of what had been requested.

1 JRA1 – Adaptive Optics

The Coordinator of JRA1, - Adaptive Optics, Norbert Hubin, gave a brief presentation on how the reduced funds, from 6.3ME to 4.8M Euros would be implemented. They will give priority to technology R&D. It would mean fewer meetings and cut backs in various parts of the work packages. Some of the work packages had to be removed altogether: there would be some additional support from ESO to ensure completion of the work related to prototype construction. It was reiterated that ESO would support and act as a contingency to certain packages, as long as they were already in the ESO long-range plan.

The EC representative asked why certain work packages were being excluded, when the EU expert evaluators had not said so in the Evaluation Summary Report and therefore seemed to expect PIs to take short cuts to reach the original goals. It was emphasised by those experienced in such work that technological developments require complete and detailed study to have any value. Incomplete development is not a viable basis on which to proceed. It is not feasible to produce the same quantity of work as originally proposed without the financial support.

The PI of JRA1 emphasised that the funds available for Adaptive Optics would support a valuable programe.

2 JRA2 – Fast WaveFront Sensors

The Coordinator of JRA2 – Fast IR Detectors, Philippe Feautrier, presented the JRA2 proposal as it was and as it had become because of reduced funds, (2.8ME to 1.3ME). He emphasised that development of an enhanced IR detector array was NO LONGER possible because of reduced resources. The original price from European industry was as low as could be negotiated. He reiterated that the project could have been successful if fully funded.

Given available resources, it was necessary to reconsider the goals of JRA2. JRA3 was considered alongside JRA2 as there were many complementarities between the two activities. The general ambition for both JRA2 and JRA3 was to develop the best detectors in the world and evaluate new technology for AO wavefront sensing applications.

On balance, considering especially those aspects of the project which are unique in Europe, the most productive way forward is to concentrate JRA2 on Fast L3CCD for AO Applications.

3 JRA3 – High Time Resolution

Stefan Wagner, the Coordinator of JRA3 summarized the proposal and then gave a brief presentation on how the reduced funds would affect their work. They were happy to agree to concentrate on complementary technologies to those in JRA2. In particular, to retain the goal of IR developments originally intended for JRA2, they would ensure development of the most red-sensitive systems in their technology plan.

4 JRA4 - Interferometry

A summary of the proposal was made by the Coordinator, who explained that the network included 14 countries, as well as ESA and ESO.

Their original ambition had been 3.2ME to cover four work packages. This was reduced by the OPTICON Executive committee so that by submission of the proposal this had been reduced to 2 ME. Following reduced approval of OPTICON their allocation was now 1.1ME. It was intended to keep WP1, Advanced Instruments and WP2, European Software and move WP3, Models and Technology for Interferometry into the associated network activity. This move would make the network effort larger, by including working visits.

Proposed meetings:

Early 2004 Kick-off meeting

Early 2005	Meeting between JRA and network
2005	Meeting between ESO and the network

5 JRA5 – Smart Focal Planes

Colin Cunningham, PI for JRA5, gave a brief outline of what could be done and the progress since the proposal was put together in relation to the budget reduction of 2.7ME to 1.8ME. Insufficient funds would mean that it would not be possible to do the laboratory end to end system stage and some subcontracts would have to be done or cut out altogether. It may be possible to do two smaller feasibility studies.

This reduction in funds would result in a reduced timescale for the work available, from 4 years to 3 years.

It is hoped that by the end of Phase A, when the money had run out, that Opticon or ESO could find money for the proposed Phase B activities to be completed.

The Future Technologies Working Group, which initiated JRA5, had discussed, and suggested in their proposal, that they should establish a Science/Technology Steering Committee: recent discussions had proposed Professor Simon Lilly as Chairman. This proposal needs to be considered by the OPTICON Executive Committee in relation to the needs of other JRAs.

6 JRA6 – VPH Gratings

Professor Vettolani gave a brief summary of this JRA. This was proposed to receive 100% funding and so its activities had not changed from the I3 proposal submitted in April. This JRA had received support from CSL, ESO, INAF Obs di Brera and IAC. It involved unique production processes and unprecedented quality devices, as well as being of value to European Industry.

Summary Overview of Rebalancing and budget allocations

Clarification was given in relation to budgets. The allocated numbers are indicative for planning purposes, and are subject to regular review by the OPTICON Executive Committee. Only the first 18 month budgets are fixed, so that rebalancing could take place later. The PI of the JRAs should plan for a study phase prior to major commitment of resources.

The reduced budget had been proportioned in the following way; relative to their original requests.

JRAs	55%
Access	42%
Networks	11% total,
Management	central admin is 6% of total, reduced pro rata.

ACCESS PROGRAMME

The proposed access program, modified by the referee's comments, will proceed. The essential aspects are inclusion of all approved telescopes. Given the budget reduction, only half as much

access can be funded as in the original proposal. The Board agreed that definition and overview of the Access program remained under the immediate review of the Telescope Directors' Forum, which would propose internal priorities.

Given program approval, and impending observing time deadlines, immediate publicity is desirable.

ACTION: Michel Dennefeld in consultation with JKD to announce opening of the access program via the EAS mailing list

NETWORK IMPLEMENTATION

Network 1: OPTICON Management Structure

Under FP5, PPARC had been the coordinator for Opticon. However, under FP6 the University of Cambridge was now the coordinator, because PPARC was unable to continue in the role, due to UK government financial restrictions. As the legal coordinator, the UCAM Financial Services Department will receive and distribute funds, ensure legal requirements are met, and act as central legal advisor. The total cost for this charged by UCAM is 0.5FTE at a median administrative grade (ie, not legal rate). For Cambridge, the total cost for effort for the five years, including Coordinator's secretary, travel support, etc, would be in the region of 400K E. This increase in FTE at Cambridge had been counter-balanced by a significant reduction in the proposed staff at the ATC, with the result being around 2 FTE, to include the Project Scientist plus finance, media services and project support staff on an as-used charging rate..

Any unspent balance below notional allocation will be returned to the central travel fund.

New Network 2, merging three in the original proposal:

Network 2: ENO Facilities: Human Resources and dissemination of good practices
Network 3: ENO Facilities: Site Characterisation of the Canarian Observatories
Network 4: ENO Facilities: Information, Evaluation of Scientific Productivity and Transfer of
Knowledge

A very detailed series of Gantt charts were shown in relation to work packages, participants, finances and schedules, highlighting where the lower budget would still permit work to be done, with a total budget of 600 KE for the new combined network.

New Network 3: European Wide Astronomy, Now and for the Future

A total budget of 950KE had been allocated to this network to cover the ELT Science WG chaired by Isobel Hook at Oxford; the Key Technologies Working Group; general travel and other activities including HTRA and UVNet, AVO-related interim support, and support for proposal development for future software environments.

Prof Omont commented that the ELT Project Scientist support should be transferred to the ELT Design Study proposal. There was no other support for this suggestion. The Chair mentioned continuing efforts to find national funding to support this, and other aspects of the Design Study. Overall, since motivating European astronomy towards an ELT was a major aspect of the OPTICON raison d'etre, there was nothing to be gained by reducing ELT-related support.

New Network 4: Interferometry.

The PI highlighted the main activities of the Forum, noting that the JRP had two different goals. There was a separate Marie Curie proposal where funding had been requested for four summer schools, split as introduction and advanced. An exchange visit programme had also been established to encourage the movement of Interferometry into mainstream astronomy.

There had been three work packages in the original proposal, with the third work package being removed because of the funding. The topics were: next generation instruments and Data reduction software.

New Network 5: OPTICON Telescope Network - Directors' Forum

The Directors' Forum combines several activities. It will oversee the running of the Access programme and the transnational access office, provide a form for discussions of mutual interest to medium sized telescope operators and provide input to the research experience activities lead by Prof Dennefeld.

The Chair of the Directors' Forum is to be John Davies. The Directors' Forum has the right to invite Directors of telescopes outside the access program to join a meeting where they consider it appropriate to enhance the program.

Prof Benvenuti remarked that with a worldwide move towards more service observing and database mining, one action of the telescope directors forum should be to consider the synergies of AVO, trans-national access and the NEON type observing schools.

Access Office

A centralized structure for the management of the access programme had been agreed for the proposal

Jesus Burgos presented an overview of the role and budget for this office. Under FP5, the IAC had already managed the access to telescopes. It was planned to advertize and publicize widely by the use of newsletters, direct mailing and from this set up a database of contacts. The users

would have to comply with the terms and conditions of the contract and appropriate documentation would be maintained to support and justify the amount of access.

There was concern regarding the budget for the office, which was estimated by Dr Gredel as too large by a factor of two. Prof Andersen noted that the proposed budget would be for 18 months in the first instance, rebalancing could occur after this period. Any problems would be dealt with at a local level by the IAC, then to the Directors' Forum and finally to the Executive Committee if a solution could not be found. Prof Rebolo indicated that the IAC could only undertake this function if its costs were met in full, as the IAC could not subsidize the office from its internal resources. In response to a question from Dr Gredel, Prof Rebolo indicated that would be possible for another organization to fill this role if the IAC could not or did not wish to carry it out.

Dr Gredel commented that the number of nights of access agreed in the contract to be funded by the EC funds are a minimum limit on what could be made available by Telescope Operators, not a maximum.

DECISION: Directors' Forum to oversee the Access program, and to review the operation of the Access Office after 18 months.

H:/opticon/meetings/crete/minutesdraftkd