

AstroGrid Project

AstroGrid-3 Lifetime Project Plan (AG3-LPP)

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(A) Introduction

This is the top-level **Lifetime Project Plan (LPP)** for the AstroGrid-3 project. Once agreed, it remains fixed within the two year lifetime of the project. Guided by this long term framework, a firmer but still top-level **Cycle Plan** is made at the beginning of each six month cycle. Within each cycle, the Project Manager produces a **Detailed Project Plan**.

The original AstroGrid project began in late 2001, with a second phase "AstroGrid-2" project beginning in 2005. In late 2006 a proposal was made to PPARC to fund an *Operational VO Service for the UK* using AstroGrid software. This was funded for an initial period of two years, to begin *deployment and operations*, with a further review on long term funding expected during 2008-9. This initial two-year period is informally known as "AstroGrid-3".

The LPP consists of several parts :

- (A) Introduction
- (B) Vision and Goals
- (C) Methodology
- (D) Work Areas
- (E) Project Roadmap
- (F) Leadership, Management and Governance
- (G) International Obligations
- (H) Staffing Plan
- (I) Budget Plan

This is the public version of the Plan, with simplified and non-confidential versions of parts H and I, the staffing and budget plans. More detailed and confidential versions of parts H and I are held separately. This plan sets out general goals, principles, and working methods; concrete details are held elsewhere.

(B) Vision and Goals

The **Virtual Observatory Vision** is one of transparency - that all the world's astronomical data should feel as if it is sitting on your desktop, ready to find, access, and manipulate. Wherever the data may be, and whoever is responsible for it, the software tools you have are able to understand it and analyse it. The VO is not a monolithic system, but, like the Web, a set of standards which make all the components of the system interoperable - data and metadata standards, agreed protocols and methods, and standardised mix-and-match software components. These standards and software modules constitute the VO Framework. To achieve the whole vision, however, data centres, tools writers, and facility builders will all work within this framework.

The **AstroGrid Vision** is to provide both a generic infrastructure for the world and a specific deployment for UK astronomy. AstroGrid is committed to the open framework approach for the VO. The first part of the AstroGrid vision is to build the *infrastructure* that will make this possible. As well as open standards, this means specific software components which implement those standards. We aim to make our infrastructure available worldwide, by constructing software components that are mix-and-match, and as far as possible plug-and-play, so that they can easily be used with other products from around the world. We therefore aim to build to a high standard of software engineering and documentation. The second part of the AstroGrid vision is to deliver a working system of daily use to UK astronomers. To achieve this, we will deploy our own infrastructure components at data centres in the UK, work with our colleagues at those data centres, and will integrate tools and applications emerging from the UK and elsewhere.

At the end of the AstroGrid-2 project, a first version of the software infrastructure suite is essentially complete; we have been running an incrementally improving prototype deployed service for two years; a number of compliant tools have been constructed by third parties; and a considerable number of IVOA compliant data services have become available. AstroGrid is therefore ready to begin an operational service.

The **Top-Level AstroGrid-3 Goals** are therefore :

- to create a first fully-working VO service for UK astronomers
- to continue to refresh and enhance the AstroGrid software and service
- to prepare for long term service operations

To achieve these goals, AstroGrid-3 will carry out these **Key Tasks** :

- complete testing and debugging of all infrastructure software
- work with the data centres to ensure "VO readiness" of all the key datasets
- deploy all the key datasets through our "Data Set Access (DSA)" software
- set up new MySpace disk storage and processing power to run VO services
- deploy "core" VO services at the six main sites
- help University Departments across the UK to install "local" VO services
- set up thorough documentation
- set up and run a Help Desk system for astronomers
- run a training and support programme for astronomers
- run a series of competitive "Science Calls" to develop new tools
- maintain and upgrade the software
- assess and test new technologies, to keep refreshing the infrastructure
- continue working on international standards through the IVOA
- establish metrics for monitoring use and plan for future capacity
- continue to improve and enhance infrastructure components and the User Interface

Note : the specific infrastructure components, core services, deployed datasets, and so forth are specified in the AG3 Deployment Plan and other detailed documentation.

(C) Methodology

Project methodology remains essentially the same as in AstroGrid-2.

Planning and Development Philosophy. AstroGrid uses an agile but goal driven development philosophy. Iterative flexibility in both goal setting and development is becoming standard industry practice. It is particularly important in the VO world because the external environment (W3, industry, and IVOA) is evolving fast and somewhat unpredictably, and because user requirements change as they get used to the new software. We publish a *Lifetime Project Plan* (this document); we use six month *Planning Cycles* at which we set public goals and deliverables; and within a Cycle the Project Manager develops a *Detailed Project Plan* which can evolve rapidly and flexibly.

Collaborative Open Project working. AstroGrid maintains as much collaborative working as possible, through the team editable web pages using the Plone content management system; through the continuing use of the AstroGrid *Twiki*, through the use of Jabber, and through physical meetings. We are not an *open source* project in the sense of allowing any outsiders to contribute code; but we are an *open project* in that everything we do is visible from the outside, all source code is available, and we exchange code and ideas freely with related projects.

Engineering Standards. AstroGrid intends its software components to be used by external projects. They therefore need to be constructed and documented to product standards. The software is not a monolithic system, but a series of components. These components inter-operate with components from other VO projects, and other e-Science projects. This requires compliance with IVOA and W3C standards as well as engineering standards of robustness and reliability. (We will of course be pro-active in defining IVOA standards.) Our components are intended to be plug-and-play and also mix-and-match.

Operational Service Standards. As we move into operations, we will likewise adopt professional standards in our relations with both users and resource providers. The service provided to users will be robust, reliable, comprehensible, well documented, and of fast enough performance to be of value in daily work. A helpdesk system will supplement the documentation. Metrics will be established in order to monitor success and plan for the future. We will not guarantee 24/7 performance, but aim to come close. With resource providers worldwide we will establish a good working relationship, but will also provide extensive technical documentation. For key resource providers in the UK (including departmental system managers) we will establish close working relationships, and where appropriate formal Service Level Agreements. Note that operations is continuous but we still maintain six month cycles for work planning purposes.

(D) Work Areas

Work is planned within the following *work areas* :

A0 Leadership, Co-ordination and Management

- A0.1 Leadership and Policy
- A0.2 Management

A1 User Support

- A1.1 Help Desk
- A1.2 Science Engagement
- A1.3 Science Calls

A2 VO Service Operations

- A2.1 Technical Support
- A2.2 Deployment
- A2.3 Technical Engagement
- A2.4 VO-enabling Data Sets

A3 VO Engineering

- A3.1 Maintenance
- A3.2 Code Enhancement
- A3.3 Release Packaging

A4 VO New Technology

- A4.1 IVOA Standards
- A4.2 New technology

Note that formally Work Area A4 is unfunded. The review of the 2006 proposal declined to provide support for this area, as the priority is to provide an operational service. However we cannot cease work completely in this area, or AstroGrid will be uncompetitive in a year and dead in three. We will therefore use a necessary minimum of effort in this area. This resource problem is a significant risk for the project, which will be reflected in the Risk Register.

(E) Project Roadmap

Here we list **key milestones** for the project. A detailed calendar, including events planned for related projects such as VOTECH and AIDA, is maintained in a shared calendar which is currently implemented using the Google Calendar system - the [AstroGrid Calendar](#). The Appendix to this plan has a text list of calendar events as of 2007-10-11.

Key milestones

| | | | |
|-----|------|--------|--|
| M01 | 2008 | Jan 01 | Project Start |
| M02 | 2008 | Jan 15 | Beta Release of VO Desktop |
| M03 | 2008 | Feb 01 | AIDA project start |
| M04 | 2008 | Feb 25 | Phase-1 Deployment starts (consortium core services) |
| M05 | 2008 | Mar 03 | Critical Service Review-1 |
| M06 | 2008 | Mar 31 | VO Desktop Release |
| M07 | 2008 | May 21 | IVOA Spring Interop |
| M08 | 2008 | Jun 03 | User workshop-1 |
| M09 | 2008 | Aug 25 | Resource Providers Workshop-2 |
| M10 | 2008 | Sep 04 | Phase-2 Deployment starts (DC services outwith consortium) |
| M11 | 2008 | Oct 01 | Likely UKVO proposal submission |
| M12 | 2008 | Nov 17 | New Technology Report |
| M13 | 2008 | Dec 31 | VOTECH project end |
| M14 | 2009 | Jan 05 | Revised Long Term Project Plan (LPP) issued |
| M15 | 2009 | Jan 19 | User Workshop-2 |
| M16 | 2009 | Feb 23 | Critical Service Review-2 |
| M17 | 2009 | Mar 02 | Resource Providers Workshop-2 |
| M18 | 2009 | Apr 06 | Significant New User Release |
| M19 | 2009 | May 19 | IVOA Spring Interop |
| M20 | 2009 | Jun 01 | UKVO planning phase starts |
| M21 | 2009 | Aug 03 | Demo at IAU General Assembly, Brazil |
| M22 | 2009 | Sep 03 | Phase-3 Deployment starts (Enhanced DC services) |
| M23 | 2009 | Dec 08 | Conclude UKVO planning phase |
| M24 | 2010 | Jan 01 | UKVO long term operations start |

(F) Leadership, Management and Governance

The AstroGrid Board (AB)

The AstroGrid Board (AB) is the ultimate authority. It is the successor to the "AGLI" used in AG1 and AG2. It defines top level policy, takes decisions on resource allocation, and is ultimately responsible for the strategic direction of the project. It also provides oversight and guidance. For AG3, the AB will meet once every two months, usually by telecon. Each AB meeting will receive a brief report from each of the PL, PM, and PS, and a brief report from each participating institution. Every three meetings (i.e. once every six months) will be a finance meeting, with reports on expenditure and commitments from each of the constituent grants. A list of AB members and records of meetings are kept online on the AstroGrid wiki.

The AstroGrid Board Members are :

| | | | |
|------------|------------------|-----------|-------------------------|
| Bristol | Mark Birkinshaw | Cambridge | Richard McMahon |
| RAL | Peter Allan | RAL | Ian McCrea (solar lead) |
| Edinburgh | Andy Lawrence | Leicester | Mike Watson |
| Manchester | Simon Garrington | MSSL | Len Culhane |

AstroGrid Associates

A number of scientists across the UK are closely involved with AstroGrid, but are not formally members of the AstroGrid Board. These Associates have access to AB documentation except for confidential items and have a standing invitation to project meetings. The current list is :

| | |
|------------|-------------|
| Edinburgh | Bob Mann |
| UCL | Ofer Lahav |
| Portsmouth | Bob Nichol |
| Exeter | Tim Naylor |
| Leeds | Ken Brodlie |

The AstroGrid Management Team (AGMT)

Strategic direction and planning is developed by the management team for approval by the AB. The management team is responsible for producing the six-monthly Cycle Plan and seeing that it is implemented; for producing material for STFC; and for liaising with external partners and projects. They report bi-monthly to the AB.

| | |
|-------------------|------------------------------|
| Project Leader | Andy Lawrence |
| Project Manager | Keith Noddle |
| Project Scientist | Nic Walton |
| AB reps | Mike Watson, Richard McMahon |

The **Project Leader**, assisted by the AB reps, has overall responsibility for project policy and delivery, acting on behalf of the AB from day to day. Assisted by the Project Manager

The **Project Manager** has responsibility for the definition of AstroGrid product, the strategic technical development of AstroGrid, financial control, and overall planning. (Financial planning assistance is provided by a part time project administrator in Edinburgh.) He plans and oversees the work of all engineers and scientists on the team. By agreement with local line managers, the Project Manager has direct control over individual staff members, rather than working through local

workpackage managers.

The **Project Scientist** is the main liaison point with the astronomical community, has prime responsibility for the support of astronomers using the operational system, and by advising the Project Manager works to see that the system delivers science capability. The Project Scientist takes the lead on planning and implementing the marketing of AstroGrid through for example demos, talks and workshops.

The **AstroGrid Advisory Group (AGAG)** is a body set up and run by AstroGrid to provide independent community advice on whether AstroGrid is meeting its goal of delivering a working system that delivers science facility. The prime purpose is advice on science requirements and assessment of performance as seen by end-users, but it also provides advice on technical requirements for Data Centres and Departments on implementation of services. The AGAG therefore contains mostly active research astronomers, supplemented by some data centre staff, and local system administrators. It meets once every six months. (Note : this is an enhanced version of the original AG Science Advisory Group. The other AG2 body, the "AGDAG" will be closed down - we need a close relationship with resource providers, not just an occasional committee.)

Formal external oversight for the funding agency, STFC, is provided by the **AstroGrid Oversight Committee (AGOC)**, a committee set up and run by STFC. This contains a mixture of astronomers, computer scientists, and members of other e-Science projects. It monitors progress against the Lifetime Plan and each Cycle Plan; oversees the expenditure of the project; receives reports from the AGAG; and requests any paperwork it sees as necessary to assess the state of the project.

Financial Resource allocation is relatively simple, as our costs are dominated by the staff salary component, which has been essentially decided up front at the beginning of the project. Expenditure is then undertaken through a portfolio of separate grants. Grant holders report on expenditure and commitment to the AB twice a year. However, if it seems necessary, the Project Manager may propose to the AB a redistribution of funds; if the AB agrees, we will ask for our constituent grants to be re-announced as necessary. For travel and equipment, each institution holds a local budget, but travel is only by the approval of the PM. If institutional spend rates differ for good reasons, we will arrange fund transfer as necessary.

Staff Effort resource allocation is under the control of the Project Manager, but is monitored by the AGMT. Note that WPs are not allocated to institutions; the project works as a single distributed team. For planning purposes, we have an initial expected allocation of tasks to individuals (see Appendix A); but from cycle to cycle the PM allocates staff effort flexibly as required. For each cycle, the PM will allocate staff time to tasks within each of the four substantive work areas (A1 to A4). This will effectively make within any one cycle four **Internal Staff Teams** - Support Team, Operations Team, Engineering Team, and R&D Team - but note that these teams can change from one cycle to another, and any one individual may be in more than one team.

(G) International Obligations

AstroGrid interacts with a wide range of Virtual Observatory and e-Science stakeholders worldwide, for example playing a key role in setting up and running an Astro Research Group within the Open Grid Forum. However we have specific formal obligations in two main areas : with the International Virtual Observatory Alliance (IVOA), and with our Euro-VO partners, through formal funded projects.

International Virtual Observatory Alliance (IVOA)

The IVOA has two main functions - it is the key international forum for exchange of ideas and technology within the VO arena, and develops international standards for the VO, through a series of working groups, and twice yearly *Interoperability Workshops*. (Standards are subsequently endorsed through IAU Commission 5). The AstroGrid Project Leader is a member of the IVOA Executive, and the AstroGrid Project Scientist acts as the secretary to the Executive. The AstroGrid project maintains membership of all IVOA working groups, which is of crucial technical importance. At any one time we are also usually providing the chair or vice chair of at least one working group, which means that we have a formal obligation to the IVOA. In the past we have provided the chair of the Registry Group, and the Grid and Web Services Group. Currently (November 2007) we provide :

| | | |
|-----------------------|------------|----------------|
| Data Access Layer | Chair | Keith Noddle |
| Applications | Vice Chair | Mark Taylor |
| Data Model | Vice Chair | Anita Richards |
| Grid and Web Services | Vice Chair | Paul Harrison |

Euro-VO

The European Virtual Observatory (Euro-VO) partnership originally comprised the core partners in the FP5 AVO project - AstroGrid, ESO, ESA, and CDS - but has now expanded to include a much larger and flexible list of European institutions committed to collaboration in the VO area. During 2006 a formal MOU was developed by eight European organisations and national agencies - ESO, ESA, INAF, INSU, INTA, Max Planck, NOVA, and PPARC. This commits these partners to general principles and intentions but not to specific projects or funding. The Implementation Plan includes a small Euro-VO Executive, a Euro-VO Science Advisory Committee (VOSAC), and three distributed virtual organisations - the VO Facility Centre (VOFC), the VO Technology Centre (VOTC), and the VO Data Centre Alliance (DCA).

The AstroGrid Project Leader is a member of the Euro-VO Executive, and the Project Scientist attends the VOSAC in his capacity as VOTECH/VOTC Project Scientist. The VOFC is led jointly by ESO and ESA; the DCA is led by CDS; the VOTC is led by AstroGrid. The VOTC is currently essentially synonymous with the VOTECH project, but in the future will become a more subtle alliance of technology projects. The three virtual organisations are "bring your own bottle" parties; they have no funding of their own, but are run through contributions of resource in three ways - by effort from the subscription based treaty organisations ESO and ESA; by effort from nationally funded projects; and by effort from EC funded collaboration projects such as VOTECH, VODCA, and AIDA.

VOTECH

VOTECH is an EC FP6 project led by AstroGrid (Edinburgh is formally the co-ordinating partner) and also involving CDS, INAF, and ESO. Staff from ESA also informally collaborate. This

provides resource to the AstroGrid partnership, but also commits us to the expenditure of resource from STFC funding, and to the leadership of several work packages within the project. It also commits us to specific deliverables and milestones. We have been careful to align VOTECH and AstroGrid goals as far as possible, seeing VOTECH as providing the R&D necessary for future AstroGrid engineering. The work-cycle for VOTECH is deliberately 3 months out of phase with AstroGrid, to make this as easy as possible. The key working method established by VOTECH is the twice yearly open "Technology Forum", including the very successful "hackathons".

VOTECH continues through 2008. During 2009 we will rely on effort from AIDA to achieve the same ends.

VODCA

VODCA is an EC FP6 project led by CDS, with AstroGrid represented by Leicester. It aims at co-ordinating the deployment of VO technologies across Europe, and especially at European Data Centres. It provides a modest amount of resource to AstroGrid, and some workpackage obligations, but also provides very important links including access to European as well as UK data centres.

Astronomical Infrastructure for Data Access (AIDA)

AIDA is a new EC FP7 project led by CDS, with AstroGrid represented by Edinburgh. It is an "Integrated Infrastructure Initiative (I3)" and so is intended to fund elements of all of VOFC, DCA, and VOTC. It will provide approximately 2 FTEs to AstroGrid for 2 years. The project starts on Feb 1st 2008, lasting for 2.5 years, and so overlaps VOTECH.

(H) Staffing Plan

We have distinct staff types, but we do not have distinct functional teams. Project staff work as a single flexible team under the direction of the Project Manager, with allocation to work areas decided cycle by cycle.

Current Staff List

These are the staff involved in the project, including those formally working on VOTECH and DCA, as of Jan 1st 2008. (Not all are funded for the duration of the project). The funding source named is that applicable as of Jan 1st 2008.

| Name | Location | Staff Type | FTE | Funding | Note |
|-------------------|-----------------|-------------------|------------|----------------|-------------------|
| Allan, Peter | RAL | Investigator | 0.05 | STFC | |
| Andrews, Kona | Edinburgh | Engineer | 1.00 | STFC | |
| Auden, Elizabeth | MSSL | Engineer | 0.50 | STFC | |
| Benson, Kevin | MSSL | Engineer | 1.00 | STFC | |
| Birkinshaw, Mark | Bristol | Investigator | 0.03 | STFC | |
| Culhane, Len | MSSL | Investigator | 0.10 | STFC | |
| Dalla, Silvia | UCLAN | Scientist-Co-I | 0.50 | STFC | |
| Garrington, Simon | Manchester | Investigator | 0.10 | STFC | |
| Gilchrist, Gary | Leicester | System Manager | 0.80 | STFC | |
| Gonzalez, Eduardo | Cambridge | Scientist | 0.50 | STFC | |
| Gray, Norman | Leicester | Engineer | 0.50 | EC | |
| Greimel, Robert | Cambridge | Scientist | 0.50 | EC | |
| Harrison, Paul | Manchester | Engineer | 1.00 | EC/STFC | |
| Holliman, Mark | Edinburgh | System Manager | 0.80 | EC/STFC | |
| Holloway, Ant | Manchester | System Manager | 0.25 | STFC | |
| Lawrence, Andy | Edinburgh | Investigator | 0.10 | STFC | Project Leader |
| Lusted, Jeff | Leicester | Engineer | 1.00 | STFC | |
| McCrea, Ian | RAL | Investigator | 0.05 | STFC | |
| McMahon, Richard | Cambridge | Investigator | 0.10 | STFC | |
| Morris, Dave | Cambridge | Engineer | 1.00 | STFC | |
| Noddle, Keith | Leicester | Manager-Co-I | 1.00 | STFC | Project Manager |
| Quin, Catherine | Leicester | Engineer | 0.90 | STFC | |
| Richards, Anita | Manchester | Scientist | 0.75 | STFC | |
| Rixon, Guy | Cambridge | Engineer | 0.75 | STFC | |
| Taylor, Mark | Bristol | Engineer | 1.00 | STFC | |
| TBD | Edinburgh | Engineer | 1.00 | STFC | ex-John Taylor |
| Tedds, Jonathan | Leicester | Scientist | 0.50 | EC/STFC | |
| Walshe, Brian | Edinburgh | Engineer | 1.00 | EC | |
| Walton, Nic | Cambridge | Scientist-Co-I | 0.75 | STFC | Project Scientist |
| Watson, Mike | Leicester | Investigator | 0.10 | STFC | |
| Wild, Mathew | RAL | Archive Developer | 0.25 | STFC | |
| Williams, Peredur | Edinburgh | Administrator | 0.10 | EC/STFC | |
| Winstanley, Noel | Manchester | Engineer | 0.50 | STFC | |
| Witherick, Dugan | UCL | Scientist | 0.50 | STFC | |

Associate Data Centre Staff

Below are key contacts at UK astronomical data centres. (These names may evolve). We will attempt to find funding for at least some of these or equivalent named individuals, and so formally call on their time.

| | | | | |
|-------------------|-----------|-------------------|-----|-----|
| Read, Mike | Edinburgh | Archive Developer | n/a | n/a |
| Law-Green, Duncan | Leicester | Archive Developer | n/a | n/a |
| Lewis, Jim | Cambridge | Archive Developer | n/a | n/a |
| Smith, Mike | MSSL | System Manager | n/a | n/a |
| Rainnie, John | RAL | Archive Developer | n/a | n/a |
| Allan, Alasdair | Exeter | Engineer | n/a | n/a |

Associate Investigators

| | | | | |
|--------------|------------|-----------|-----|-----|
| Mann, Bob | Edinburgh | Associate | n/a | n/a |
| Lahav, Ofer | UCL | Associate | n/a | n/a |
| Nichol, Bob | Portsmouth | Associate | n/a | n/a |
| Naylor, Tim | Exeter | Associate | n/a | n/a |
| Brodlie, Ken | Leeds | Associate | n/a | n/a |
| Linde, Tony | Leicester | Associate | n/a | n/a |

Staff roles

The **Project Leader**, assisted by the AstroGrid Board representatives on the management team, has overall responsibility for project policy and delivery, acting on behalf of the Board from day to day.

The **Project Manager** has responsibility for the definition of AstroGrid product, the strategic technical development of AstroGrid, financial control, and overall planning. He plans and oversees the work of all engineers and scientists on the team. By agreement with local line managers, the Project Manager has direct control over individual staff members, rather than working through local workpackage managers.

The **Project Scientist** is the main liaison point with the astronomical community, has prime responsibility for the support of astronomers using the operational system, and by advising the Project Manager works to see that the system delivers science capability. The Project Scientist takes the lead on planning and implementing the marketing of AstroGrid through for example demos, talks and workshops.

The **Project Administrator** assists the Project Leader and Project Manager in supplying and analysing financial information, tracking the use of the various grants, co-ordinating meetings, and helping to prepare paperwork.

The **Staff Engineers** take on a variety of duties as required by the Project Manager, including a mixture of (1) coding of core infrastructure components; (2) code maintenance, upgrading and re-factoring; (3) production of technical documentation; (4) wrapping and integration of existing tools and applications; (5) implementation of new components that come out of the R&D programme; (6) contributions to the R&D programme, for example testing of new technologies; (7) contributions to the IVOA standards programme; (8) deploying, operating, and maintaining AstroGrid components on real machines, and assisting data centre staff and other VO projects worldwide in deploying AstroGrid components. Staff Engineers are selected to cover a variety of key technical skills.

The **Staff Scientists** take on a variety of duties as required by the Project Manager, including a mixture of (1) design of user interface components with designated engineers; (2) production of end-user documentation; (3) supporting end-users; (4) contributions to the R&D programme, for example investigating new technologies and testing prototypes; (5) contributions to the IVOA standards programme; (6) working with data centre staff to assist deployment of AstroGrid components, and publication of datasets; (7) training users through workshops and seminars. Staff Scientists are selected to cover a variety of science areas and technical skills.

The **Staff System Administrators** are responsible for deploying, maintaining, and operating the core services run by the working AstroGrid system (Registries, VOSpace servers, Community, and Application Servers). In addition, they will advise on deployment and maintenance of DSA components in front of consortium owned data services, and on deployment and maintenance of Community components at UK institutions deploying those components. On occasion, they will also contribute to code development and maintenance.

(I) Budget Plan

Planned expenditure in Oct 2007 k£ for the two year duration is summarised below. This is only the STFC-FEC budget, not the EC projects budget.

| | |
|-----------------------|------|
| Investigators | 145 |
| Staff | 1577 |
| Capital Equipment | 124 |
| Estate Costs | 313 |
| Travel | 84 |
| Consumables etc | 81 |
| Indirect costs | 941 |
| Total FEC costs | 3198 |
| Total with indexation | 3306 |
| STFC contribution | 2645 |

Notes : (i) The equipment line is for planned servers at each core site - personal equipment is included elsewhere. (ii) Travel funds are not held in a central fund, as was done in AG2, but simply allocated to each institution. (iii) The above figures include the project "working allowance". STFC holds a separate contingency amount. (iv) Because of the rather different accounting methods at different institutions, the above division into categories is not precise

Planned expenditure at each partner is as follows :

| | |
|------------|-----|
| Edinburgh | 488 |
| MSSL-UCL | 508 |
| Cambridge | 650 |
| Manchester | 363 |
| UCLAN | 78 |
| Leicester | 821 |
| RAL | 80 |
| Bristol | 210 |

Appendix : Detailed Roadmap as of Oct 2007

The table below lists all the planned events for AstroGrid-3 and related projects, as of October 2007. The detailed calendar is of course being continually updated. It is currently held as a [Google Calendar at this address](#)

| | | |
|------|---------------------|---|
| 2007 | Oct 01 | VOTECH S1 start |
| 2007 | Oct 08 | VOTECH External Review |
| 2007 | Oct 08-11 | VOTECH DSRP |
| 2007 | Oct 10 | AGLI Telecon |
| 2007 | Oct 16 | AGOC-11 |
| 2007 | Oct 16 | Draft of Lifetime Project Plan (LPP) and Deployment Plan (DP) |
| 2007 | Oct 22 | VOTECH Technical Advisory Panel (TAP) |
| 2007 | Oct 22 | AGLI Telecon |
| 2007 | Oct 29 | AGSAG-13 (Southampton) |
| 2007 | Oct 05 | Draft SLAs |
| 2007 | <i>Oct 07</i> | VOTECH Board |
| 2007 | Oct 15 | Help Desk s/w installed |
| 2007 | Dec 03 | AG3-C1 Planning meeting |
| 2007 | Dec 10 | LPP and DP agreed by AGLI |
| 2007 | Dec 10 | AGLI (Last one..) |
| 2007 | Dec 13-14 | Full Project Meeting AG-PM13 (Leicester) |
| 2008 | Jan 01 | AG3-C1 start |
| 2008 | Jan 07 | Kick off meeting of AstroGrid Board (AB-0) |
| 2008 | Jan 14 | Risk Register complete |
| 2008 | <i>Jan 14</i> | Oversight Committee (AGOC-12) |
| 2008 | Jan 15 | VODesktop beta release |
| 2008 | Jan 17 | IVOA Exec Telecon |
| 2008 | Feb 01 | AIDA Kick off phase starts |
| 2008 | Feb 18 | SLAs agreed (Services; Sys Admin; App Programmer) |
| 2008 | Feb 25 | Phase-1 deployment (AG owned core services) |
| 2008 | <i>Feb 26</i> | AB-1 |
| 2008 | Feb 27 | Metrics Doc complete |
| 2008 | Feb 28 | HelpDesk Operational |
| 2008 | Feb 29 | AIDA Board |
| 2008 | Mar 03 | CSR (Critical Service Review; combined with AGAG) |
| 2008 | Mar 03 | AGAG-1 |
| 2008 | <i>Mar 17-20</i> | VOTECH S7-DSRP (=AIDA Kick-off) |
| 2008 | <i>Mar 27</i> | AIDA WPMT/IST |
| 2008 | Mar 31- - Apr 04 | RAS National Astronomy Meeting (Belfast) |
| 2008 | <i>Mar 31</i> | VOTECH TAP-Board |
| 2008 | Apr 01 | VOTECH S7 start |
| 2008 | Apr 02 | VODesktop 1.0 release |
| 2008 | Apr 21 | Science Call-1 |
| 2008 | <i>Apr 29</i> | AB-2 |
| 2008 | May 01 | AIDA C1 start |
| 2008 | May 19-24 | IVOA interop (Trieste) |
| 2008 | <i>Jun 03-04</i> | User-workshop-1; combined with AGAG and planning meeting |
| 2008 | Jun 04 | AGAG-2 |
| 2008 | Jun 05 | C2 planning meeting |
| 2008 | <i>Jun 16-17</i> | AG-PM14 |

| | | |
|------|------------------|---|
| 2008 | <i>Jun 23</i> | AB-3 |
| 2008 | <i>Jun 27</i> | AIDA-SAC-1 |
| 2008 | <i>Jul 01</i> | AG3-C2 start |
| 2008 | <i>Jul 07</i> | AGOC-13 |
| 2008 | <i>Jul 15</i> | Submit UKVO proposal |
| 2008 | <i>Aug 25-26</i> | Resource Providers Workshop-1 |
| 2008 | <i>Sep 01</i> | AB-4 |
| 2008 | <i>Sep 04</i> | Phase-2 Deployment (DC services outwith consortium) |
| 2008 | <i>Sep 15-18</i> | VOTECH S8 DSRP S8 = AIDA Tech Forum-2 |
| 2008 | <i>Sep 22-24</i> | ADASS-18 |
| 2008 | <i>Sep 25-26</i> | IVOA interop |
| 2008 | <i>Sep 29</i> | VOTECH TAP/Board |
| 2008 | <i>Oct 01</i> | VOTECH S8 start |
| 2008 | <i>Oct 12</i> | AB-5 |
| 2008 | <i>Oct 15</i> | UKVO proposal PPRP review |
| 2008 | <i>Oct 22-23</i> | AIDA community feedback workshop-1 |
| 2008 | <i>Oct 23</i> | AIDA WPMT |
| 2008 | <i>Nov 17</i> | New Technology Report |
| 2008 | <i>Nov 21</i> | AIDA-SAC-2 |
| 2008 | <i>Dec 01</i> | AGAG-3 |
| 2008 | <i>Dec 02</i> | C3 planning meeting |
| 2008 | <i>Dec 15-16</i> | AG-PM15 |
| 2008 | <i>Dec 16</i> | AB-6 |
| 2008 | <i>Dec 31</i> | VOTECH end |
| 2009 | <i>Jan 01</i> | AG3-C3 start |
| 2009 | <i>Jan 05</i> | Revised LPP |
| 2009 | <i>Jan 12</i> | AGOC-14 |
| 2009 | <i>Jan 19-20</i> | User workshop-2 |
| 2009 | <i>Feb 18-19</i> | AIDA Hands-on workshop |
| 2009 | <i>Feb 23</i> | CSR2 (Second Critical Service Review) |
| 2009 | <i>Feb 23</i> | AB-7 |
| 2009 | <i>Mar 02-03</i> | Resource Providers Workshop-2 |
| 2009 | <i>Mar 16-19</i> | AIDA Tech-Forum-3 |
| 2009 | <i>Mar 31</i> | AGAG-4 |
| 2009 | <i>Apr 06-10</i> | RAS NAM (Herts ?) |
| 2009 | <i>Apr 06</i> | New Release |
| 2009 | <i>Apr 15</i> | UKVO proposal result |
| 2009 | <i>Apr 17</i> | AIDA WPMT |
| 2009 | <i>May 01</i> | AIDA C2 start |
| 2009 | <i>May 01</i> | AIDA WPMT/IST |
| 2009 | <i>May 05</i> | AB-8 |
| 2009 | <i>May 12</i> | Science Call-2 |
| 2009 | <i>May 14</i> | AIDA Board |
| 2009 | <i>May 18-21</i> | IVOA interop |
| 2009 | <i>May 29</i> | AIDA-SAC-3 |
| 2009 | <i>Jun 01</i> | AGAG-5 |
| 2009 | <i>Jun 02</i> | C4 planning meeting |
| 2009 | <i>Jun 15-16</i> | AG-PM16 |
| 2009 | <i>Jun 22</i> | AB-9 |
| 2009 | <i>Jul 01</i> | AG3-C4 start |
| 2009 | <i>Jul 06</i> | AGOC-15 |
| 2009 | <i>Jul 15</i> | UKVO proposal negotiation |

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| 2009 | Aug 03-14 | IAU General Assembly, Brazil (major demo) |
| 2009 | Sep 03 | Phase-3 Deployment (Enhanced DC services) |
| 2009 | Sep 08 | AB-10 |
| 2009 | Sep 22-25 | AIDA Tech-Forum-4 |
| 2009 | Sep 23 | AIDA Data Centre workshop |
| 2009 | Oct 05-07 | ADASS-19 |
| 2009 | Oct 08-09 | IVOA interop |
| 2009 | Oct 22-23 | AIDA community feedback workshop-2 |
| 2009 | Oct 23 | AIDA WPMT |
| 2009 | Oct 27 | AB-11 |
| 2009 | Nov 23 | AIDA-SAC-4 |
| 2009 | Dec 07 | AGAG-6 |
| 2009 | Dec 08 | UK1 planning meeting |
| 2009 | Dec 17-18 | AG-PM17 |
| 2009 | Dec 12 | AB-12 |
| 2010 | Jan 01 | UK1 start |
| 2010 | Jan 04 | AGOC-16 |
| 2010 | Feb 17 | AGAG-7 |
| 2010 | Feb 23 | AB-13 |
| 2010 | Mar 01-04 | RAS NAM |
| 2010 | Mar 16-19 | AIDA Tech-Forum-5 |
| 2010 | Apr 20 | AB-14 |
| 2010 | May 03 | AIDA closure phase |
| 2010 | May 17-21 | IVOA interop |
| 2010 | May 31 | AIDA WPMT/IST |
| 2010 | Jun 07 | AGAG-8 |
| 2010 | Jun 08 | UK2 planning meeting |
| 2010 | Jun 17-18 | AG-PM18 |
| 2010 | Jun 21 | AB-15 |
| 2010 | Jun 29 | AIDA Board |
| 2010 | Jul 01 | UK2 start |
| 2010 | Jul 05 | AGOC-17 |
| 2010 | Aug 31 | AIDA end |
| 2010 | Sep 01 | AB-16 |