

Themes at eSI

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The aim of a Theme is to achieve new insights into a specific topic by investigating it in depth over a sustained period.

What is a Theme?

This is a new development for the e-Science Institute (eSI). As is the case for the [Isaac Newton Institute for Mathematical Sciences](#), a Theme typically consists of a connected series of events, visitors and workshops. It will in general address e-Science research in a deep and sustained effort to advance knowledge and capability in its area.

A Theme is driven by a Theme Leader ('TL' - in effect a funded long-term visitor) committed to the topic for its duration and who is responsible for developing a connected programme spanning many months. A theme will engage leading researchers in the specific field over an extended period and visitors and other e-Scientists will work with the TL throughout the theme. Themes are designed to generate events and visitors, and are intended to contribute to the summer schools programme.

The e-Science Institute plans to run two active themes and to have two in preparation at any time. Scientific oversight of the Themes programme will be done by the Science Advisory Board ('SAB' - to meet every 6 months) and the more local Programme Committee (PC) which will meet monthly.

Procedures for Establishing and Running a Theme:

Publicity: eSI will make six monthly calls for Themes via direct approaches to senior members of the research community, through the Research Councils' publications, by prestigious interdisciplinary titles such as 'Nature', and the web.

Initiation: The proposal for a theme will be made via the Deputy Director of eSI (DD) and may be created by any of the following actions:

- i. A research community external to eSI recognise a theme as important and timely. They outline the topics and suggest a TL – or they ask eSI for help in finding a suitable TL.
- ii. A potential TL recognises a theme as important and timely. They show that there is broad community interest or ask eSI to assess the level of interest.
- iii. The SAB or PC identifies a theme and then seeks a TL and evaluates community interest.
- iv. An existing theme identifies another theme that should be pursued.

Development and pre-selection: A dialogue mediated by the DD will follow between the proposers and the PC, with advice being collected from experts on topics, timeliness, relevance and proposed leadership. This will normally take less than two months. During this dialogue it may be decided that the proposed theme is well founded, or conversely that it does not meet required criteria, that it is not yet fully prepared or that a suitable TL is unlikely to be found. The outcome will be formally agreed by the PC and the proposers will be notified.

Selection: The DD will present the proposed themes to the SAB, who will advise the Director on their selection. At this stage and throughout a theme the SAB may suggest significant changes.

Implementation:

- i. The TL will provide material to the eSI team. The web designer and technical editor will work with the TL and produce web pages, a poster and a flyer on the theme.

- ii. The publicity team will then use a wide variety of media to notify the community of the selected theme, call for visitors, Associated Workshops and talks by the TL.
- iii. The TL in conjunction with the eSI team will agree a provisional set of dates for events, visits and talks.
- iv. The TL will be hosted by a member of the PC or a local research leader to ensure they are supported and engage with the UK e-Scientists relevant to their theme.

Progress Review: The development of the theme will be monitored by the PC. At the 6-month boundary the PC will decide whether there is a requirement to terminate the theme. Termination should be rare and would always involve discussion with the TL and representatives of the SAB. It would be reviewed at the next SAB. Such a QA mechanism is necessary as a last resort, but proper oversight should prevent it ever being necessary.

Completion: As the end of a theme approaches, the TL and eSI will produce:

- i. A publishable report on the achievements of the theme.
- ii. Material for a poster on the outcomes.
- iii. The eSI team will collect and analyse supporting statistics such as attendance and document downloads.

All outputs are mandatory. They will normally be published. All themes will have their own mini-website which will develop as a theme progresses.

Metrics for the determination of a Theme's scope:

1. Span of low – high level covering immediate issues to long-term research
2. Breadth of international involvement
3. Breadth of field involvement – over time the application disciplines engaged should be diverse and well balanced, and a range of technical and computing science issues should be visited
4. Breadth of knowledgeability of participants to engage new workers as well as established experts
5. Breadth of organisational type: university, research institute/lab, government labs, R & D in industry.
6. Coverage of the theory to practice pipeline.

Metrics for the determination of the success of a Theme:

Measurement of the outcome is non-trivial as a successful Theme will often encourage work after its completion which will not be directly attributable to it. This should be covered in the Report where this is possible. Different disciplines also have very different mechanism for the dissemination of results, so these will have to be tailored to the subject. With this in mind, outcomes might include:

- Papers
- A Special Issue, Conference Proceedings or Workshop at a major conference
- Public attention (web hits, articles)
- Spawning an activity or working group
- New collaborations
- Tech Watch papers on the eSI web as part of the Technical Report series (to include an ISSN number – this may require a review panel).
- Outreach to other disciplines

Duties & Responsibilities of a Theme Leader:

1. Develop a Theme over a period of 12 months. Shorter period are also possible.

2. A Theme will *minimally* consist of:
 - 2 public talks
 - 1 workshop on current fundamental issues
 - 2 talks on research issues
 - A final report on outcomes to the SAB and to appear in the eSI Annual Report and Web. A particularly successful outcome would be for the report on the Theme and its results to appear as a Special Issue in e.g. Journal of Grid Computing.
3. The TL will also:
 - Engage with groups across the UK to encourage related activities not at eSI to become 'Associated Workshops'.
 - Liaise with international and UK groups to bring researchers engaged in related activities to eSI over the period as Visitors.
 - Work with the eSI team to provide content for Theme web pages, including discussion pages in an appropriate format (Forum, Wiki, NeSCForge etc.)
 - Produce content for:
 1. Poster at the start of a Theme
 2. Poster summarizing the outcome at end.
 3. Presence at AHM or similar meetings.
 - Work with the eSI team to promote the Theme in appropriate (e-)journals, magazines and other media.
 - Link with the 'Summer' Schools programmes organised by eSI and ICEAGE.

Support for Theme Leaders:

1. 50% of salary for 12 months (or *pro rata* for shorter Themes) to a maximum of £25k. Reviewed after first 6 months by which time a Theme should be fully developed.
2. Normal travel costs to and from Edinburgh.
3. A travel budget to enable the TL to engage in discussions both nationally and internationally. Items 2 and 3 not to exceed £12k in total (and *pro rata*).
4. Help with finding suitable accommodation in Edinburgh, and with other relocation issues.
5. Use of eSI facilities.
6. Support from a professional team to help organise events and meetings.
7. Access to the e-Science community through eSI and NeSC contacts and dissemination mechanisms
8. Web-based infrastructure to support collaborative work and research community development
9. Support for other visitors to work with the TL to develop the theme.

The Theme Life Cycle & Current Position:

This is shown in Figure 1 in idealised format, and represents the longer term steady state position. It is wholly dependent on success in the recent bidding round and continued funding post July 2006 (shown as a red line). There will be a call in September 2005, for proposals to select two Themes as a lead-up to establishing the steady state cycle, but implementation of these will be subject to continued funding.

We are in the middle of Theme 1: *Information services for smart decision making*, led by Dr J. Schopf of Argonne.

Theme 2, *Exploiting diverse sources of scientific data* is in preparation. This is currently being led by the Director and the extensive Edinburgh team researching and developing scientific data exploitation, including R. Baldock, P. Buneman, P. Clark and R. Mann. The week-long meeting on Spatio-Temporal Data in November and the DIALOGUE meeting will be early events in this theme.

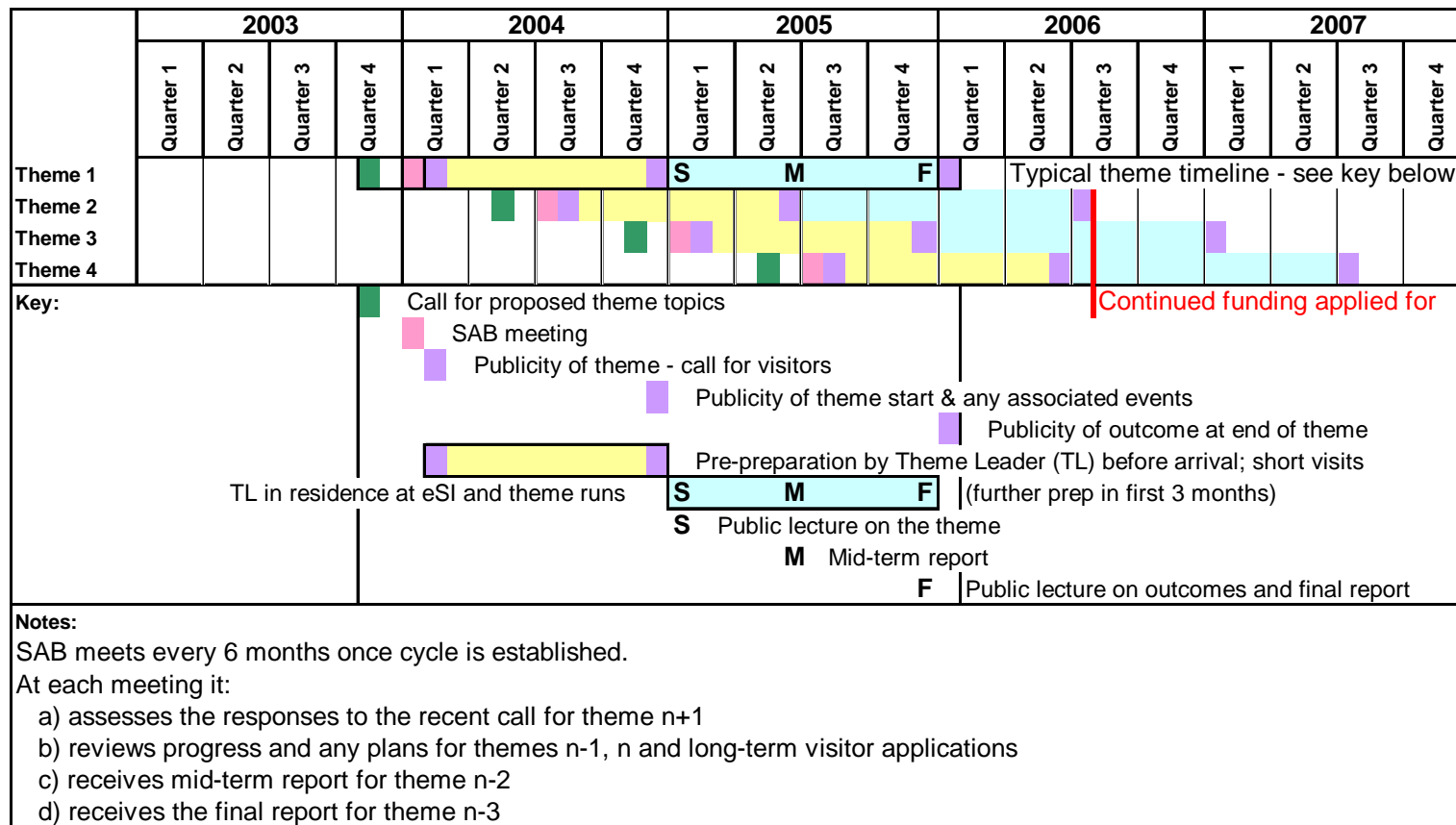


Figure 1