# Navigating Networks Service: Development Schedule

The Navigating Networks service development schedule is staged to ensure ongoing collaboration with researchers and testing partners continues throughout. Endeavour to incorporate as many researcher needs as possible, as identified during the initial researcher consultation stage, is included in the schedule with Alpha testing phases consecutively built upon many of these concepts. The final result, provision of an interactive interface for navigating and analysing the network of artistic collaborations embedded in the AusStage dataset, will be delivered following testing and service revision phases by May 2010.

| **Date:** 28 June – 8 October 2010<br>**Task:** Develop Navigating Networks Engine | |
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| **Goals** | **Activities** |
| • To build upon the ARC LIEF funded AusStage Phase 3 (2007 – 2008) and eResearchSA Summer Scholarships (Dec 2008 - Jan 2009) work already undertaken. | • In depth consideration and discussion of the report written and work undertaken by Nathan Lambert and Jonathan Bollen (*Visualising Networks of Artistic Collaboration in AusStage*, April 2009). |
| • To evaluate and potentially incorporate as many Researcher needs and ideas as possible. | • Comprehensive consultation process with Humanities Researchers and LIEF Navigating Networks reference group members.<br>• Development of a prioritised listing of desired Navigating Networks service functions.<br>• Convene a special Navigating Networks phase preliminary workshop for Aus-e-Stage Taskforce brainstorming. |
| • To develop a comprehensive understanding of available and usable software. | • Software selection, testing and experimentation with specific attention to research into currently available software and technological advancements suited to Aus-e-Stage needs and systems. |
| • To research and investigate contemporary humanities networking representations and practices at both national and international levels. | • Examination of software used by humanities researchers at national and international levels including, but not limited to, attendance at:<br>➢ The *Networks and Network Analysis for the Humanities* program at the University of California, Los Angeles (August 2010), and<br>➢ The THATCamp Unconference in Canberra, Australia (August 2010). |
| • To streamline and standardise models and programming needs between the Aus-e-Stage services. | • Evaluate the potential to use software and technologies developed and tested in the Aus-e-Stage Mapping phase and cross reference as possible. |
| • To incorporate expertise from a range of sources to ensure a well rounded and applicable service is developed. | • Ongoing development discussions with Project Committee and Taskforce members who have a breadth of knowledge and range of technological experience. |
| **Date:** 11 October – 22 October 2010<br>**Task:** Alpha Testing 1 | |
| **Goals** | **Activities** |
| • To communicate progress and ideas to date to the Researchers and other regular users. | • Regular email, videoconference, teleconference and face to face meetings with the user group to ensure the service under development is usable and testable. |
| • To receive feedback on service development progress in line with initial aims and plans. | • Review initial consultation process discussions and prioritised listing. |

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| | • Develop a specific Navigating Networks service attributes testing schedule and communicate to the user group for feedback. The testing group in this instance will be predominantly those closely involved in the development process to date. |
| • To examine information received on additional needs, capabilities and limitations and potential Navigating Networks service expansion. | • Evaluate new information and concepts to assess feasibility for incorporation into further service revisions and prototypes.<br>• Discuss and outline service revisions and extensions for the next development phase in line with re-prioritised Navigating Networks service functions. |
| **Date:** 11 October – 7 January 2011<br>**Task:** Service Extensions | |
| **Goals** | **Activities** |
| • To build upon the Navigating Networks service with revisions and extensions to suit Researcher and user needs and feedback. | • Develop and implement additional service revisions and extensions as outlined in the Alpha 1 Testing phase.<br>• Breakdown and delegation of tasks to available Software Engineers and Aus-e-Stage affiliates. |
| **Date:** 10 January – 18 February 2011<br>**Task:** Alpha Testing 2 | |
| **Goals** | **Activities** |
| • To continue to communicate development progress to Researchers and the user community. | • Regular email, videoconference, teleconference and face to face meetings with the user group to ensure the service under development is still progressing in a usable and testable manner. |
| • To receive feedback on Navigating Networks service development progress in line with initial aims and plans and Alpha 1 Testing recommendations. | • Review initial consultation process, prioritised function listing and Alpha 1 Testing feedback.<br>• Develop a round two Navigating Networks service testing pro forma and communicate to the user group for feedback. The testing group will be broadened from the Alpha 1 group to include a wider range of users. |
| • To further disseminate and gather feedback on the Navigating Networks service from the wider community. | • Initial dissemination activities to include, but not limited to:<br>➢ The ALIA Information Online Conference & Exhibition 2011 in Sydney, Australia (31 January – 3 February, 2011). Presentation titled *Aus-e-Stage Navigating Networks: Visualizing Artistic Networks in the Performing Arts* |
| • To examine feedback information received and prioritize further Navigating Networks service refinements. | • Evaluate new information to assess feasibility for further incorporate into the Navigating Networks service. |
| **Date:** 31 January – 11 March 2011<br>**Task:** GUI Development | |
| **Goals** | **Activities** |
| • To ascertain the Graphical User Interface (GUI) needs for the Navigating Networks service in consultation with the user group and feedback received on these aspects. | • List and discuss feedback relating to GUI wants and needs, if these are achievable and delegation of duties to Aus-e-Stage employees. |
| • To engage technological support and knowledge in initial GUI testing. | • Consider practical and technological limitations for GUI representation, the reality of what can be presented within realms of current technology and |

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| | systems in use. |
| • To fully develop a professional and creatively appropriate GUI for the Navigating Networks service. | • Engage external support as required to develop a contemporary and aesthetic interface suited to the Navigating Networks service needs. |
| **Date:** 14 March – 8 April<br>**Task:** Beta Testing | |
| **Goals** | **Activities** |
| • To ensure that all feedback received in Alpha 1 and 2 testing phases has been considered and incorporated into the Navigating Networks service as possible. | • Review initial consultation process, prioritised listing and Alpha 1 and 2 Testing feedback.<br>• Develop a Beta release statement for dissemination to the AusStage community. |
| • To release the Beta version of the Navigating Networks service to the AusStage community for comment and use. | • Seek and gather feedback from users and evaluate use of the Navigating Networks service. |
| • To examine AusStage community feedback received and complete testing reports for the Navigating Networks service. | • Evaluate feedback received and ensure targets are met for key user groups. |
| **Date:** 28 March – 6 May 2011<br>**Task:** Bug Fixing | |
| **Goals** | **Activities** |
| • To ensure the Navigating Networks service works to all expectations and complete minor alterations prior to final release. | • Quickly and effectively sort through bug fixes as required. |
| **Date:** 9 May – 30 June 2011<br>**Task:** Production Release, Documentation, Demonstration Projects and Training | |
| **Goals** | **Activities** |
| • To promote the release of the Navigating Networks service. | • Liaise with Researchers and other users, LIEF partners, the AusStage Community, the Flinders University, NeAT and eResearch to advertise the Navigating Networks service release. |
| • To release the Navigating Networks service to the world wide web. | • Move the Navigating Networks service to the AusStage production server. |
| • To educate and support the Navigating Networks service users | • Provide documentation on line and in hard copy (on request) to users to assist them in effectively using the Navigating Networks service.<br>• Demonstrate to individuals or groups as possible how the Navigating Networks service works and user benefits.<br>• Offer additional training to new users and interested parties as required. |
| • To evaluate the uptake of the Navigating Networks service by the broader community. | • Monitor activity reports for use of the Navigating Networks service and ascertain, as possible, the types of requests, user locations, length of time spent using the service and usage repetitions. |
| **Date:** June 2011<br>**Task:** Aus-e-Stage final reporting | |
| **Goals** | **Activities** |
| • To complete NeAT funding requirements. | • Write final reports to complete NeAT funding requirements prior to June 30, 2011. |

# Prioritised Navigating Networks Service Functions Development Schedule

## SUMMARY

| NAVIGATING NETWORKS SERVICE FUNCTION | SCHEDULE DATES | RANK |
|---|---|---|
| **IN PREPARATION FOR ALPHA 1 TESTING** (11 October - 22 October *(amended)*) | | |
| 1. NETWORK BROWSING - Person-to-person (Graphic Interface) | 28 June - 24 September | |
| 1.1 Graphic interface | | 100% |
| 1.2 Time-slider | | 84% |
| 1.3 Faceted browsing | | 84% |
| 1.4 Pop-ups | | 76% |
| 5. NETWORK BROWSING - Event-to-event | 30 August – 8 October | |
| 5.1 Event-to-event network graphic | | 68% |
| 5.2 Advanced browsing features | | 56% |
| 5.3 Search and display - Advanced | | 56% |
| **IN PREPARATION FOR ALPHA 2 TESTING** (10 January – 18 February) | | |
| 3. NETWORK SEARCH AND DISPLAY - Person-to-person | 11 October – 12 November | |
| 3.1 Search for connections between collaborators | | 88% |
| 3.2 Search for events matching criteria | | 68% |
| 3.3 Search by organisation | | 64% |
| 3.4 Search by venue | | 56% |
| 2. NETWORK BROWSING - Person-to-person (Text Interface) | 11 October – 12 November | |
| 2.1 Key collaborators | | 84% |
| 2.2 Key organisations | | 72% |
| 4. NETWORKS+TIMELINES | 15 November - 7 January 2011 | |
| 4.1 Contributor and collaborator timelines | | 76% |
| 4.2 Connections between collaborators | | 60% |
| **ADDITIONAL (IF PROJECT TIME PERMITS)** | | |
| 6. DYNAMIC NETWORKS | February 2011 | |
| 6.1 Animation | | 64% |
| 6.2 Time-slices | | 60% |
| 6.3 Fly-throughs | | 56% |
| 7. NETWORKS+MAPS | March 2011 | |
| Map Visualisations | | 60% |
| 8 STATISTICAL ANALYSES and PATTERN MATCHING | April 2011 | |
| Statistics and patterns | | 44% |

# LISTING DETAILS

**1. NETWORK BROWSING - Person-to-person - Graphic Interface**

1.1 Graphic Interface - I'm looking at director Neil Armfield in AusStage - and I can see a network graphic in which Neil is a spot at the centre of his network of collaborators. I can see all the people he's worked with and their connections as well. If I click on one of those people, I get to see all the people they've worked with, and so on. Neil is the starting point for a potentially endless visual exploration.
**Rank: 100%**

1.2 Time-slider - as I'm browsing through network, there is a time-slider where I can set the time-period (start date and end date) - and the network only displays collaborations which occurred on events between those dates. When I specify a start date and end date, collaborations that fall outside the period fade from review.
**Rank: 84%**

1.3 Faceted browsing - as I'm browsing through a network, there is a panel to the side where I can click on options or specify criteria to narrow the display of contributors and their links. For example, just show me female directors, or just show me actors, over the age of 40, who have also been directors. When I specify these criteria, some areas of the network are highlighted, others fade into the background.
**Rank: 84%**

1.4 Pop-ups - as I'm browsing through a network, I can click on people to find out more information such as other names, gender, date of birth, nationality, company associations and training history. I can also click on links between people to find out information about their number of collaborations, their frequency, date range, their roles in relation to each other, and so on.
**Rank: 76%**

**2. NETWORK BROWSING - Person-to-person - Text Interface**

2.1 Key collaborators - I'm looking at Rosalba Clemente in AusStage - and I can see a list of the people she has worked with. The list is ranked in order of frequency - most frequent collaborators at the top – and alongside each name is a date range and a list of their roles. When I click on a collaborator's name I get to their page and see the list of their collaborators, and so on.
**Rank: 84%**

2.2 Key organisations - I'm looking at Rosalba Clemente again - and I can see a list of the organisations she has worked with. The list is ranked in order of frequency - most frequent organisations at the top - and alongside each name is a date range, and a list of roles. When I click on an organisation's name, I get to the organisation page.
**Rank: 72%**

**3. NETWORK SEARCH AND DISPLAY - Person-to-person**

Search AusStage for contributors and events, and display the results graphically as an interactive network. Search provides another way into exploring networks of collaboration between people. The interface for displaying results could also enable further navigating through the network, refining the display with time-slider, faceted browsing and so on.

3.1 Search for connections between collaborators - I select two or more contributors - and display the network of contributors that connects them. This is a way of exploring closeness, degrees of separation, lines of influence, artistic families, and so on. For example, what's the connection between Jim Sharman and Benedict Andrews? I could see they're linked by Patrick White.
**Rank: 88%**

3.2 Search for events matching criteria - I provide some search criteria for genre, status, content indicators and/or keyword, etc - and I ask AusStage to display the network of all the people who worked on events matching those criteria. For example, show me the network of collaborators who've worked in burlesque. **Rank: 68%**

3.3 Search by organisation - I select an organisation (or organisations) and ask AusStage to display the network of all the people who worked at the organisation. For example, show me the network of collaborators who worked on events produced by HotHouse Theatre.
**Rank: 64%**

3.4 Search by venue - I select a venue (or venues) and ask AusStage to display the network of all the people who worked at the venue. For example, show me the network of collaborators who've worked at Belvoir Street in Sydney.
**Rank: 56%**

**4. NETWORKS+TIMELINES**

4.1 I'm looking at a contributor's career as a line on a timeline. Their collaborators are also lines on the timeline, running in parallel. When two or more contributors are working together on an event, their lines converge, running in tandem for the duration of the event, and then they spread out. Reading along the timeline, I can see the frequency of

collaborations and their duration over time. I can also see which collaborators are converging, at which points in time and how often.
**Rank: 76%**

4.2 Shona: I want to map the works on BUZZ, STRUT, STEPS and LINK while also catching the career pathways of individual AD's of each company. In my mind the companies sit on one axis (say horizontal) and the individuals sit on another (say vertical). I then imagine where the lines cross. For example, Felicity Bott will cross STEPS and BUZZ. Alice Hollands will cross STEPS and STRUT. There will also be Phillipa Clarke crossing BUZZ and LINK, Chrissie Parrott and Michael Whaites for LINK. And many more too. The idea of incorporating a third dimension for time also sounds good. JB: I'm seeing companies as the horizontal lines, with artists as lines weaving across them and intersecting at events. If the events are spread along the company lines in chronological order, that would get the time element included. So to construct this kind of diagram - you'd select one or more companies and one or more artists - and then ask the system to build a timeline that weaves them together.
**Rank: 60%**

**5. NETWORK BROWSING - Event-to-event**

Event-to-event networks provide an alternative way of exploring collaborations. In these graphics, the events are the spots and the lines connecting them are people.

5.1 Event-to-event network graphic: I'm looking at an event in AusStage - and I can see a network graphic. The event I'm looking at is a spot at the centre of a network of related events. These related events are linked by the artists who have worked on them. If I click on a link, I find out who it is, and I can see their pathway through a series of events. If I click on an event on the edge, the display reveals the connections to further events. The event is the starting point for visual exploration of artists' pathways from event to event.
**Rank: 68%**

5.2 Advanced features for refining the display of event-to-event networks could also include pop-ups, time-slider and faceted browsing.
**Rank: 56%**

5.3 Search and display by venue, organisations, event-criteria and connections could also be used as a way into exploring event-to-event networks.
**Rank: 56%**

**6. DYNAMIC NETWORKS**

I'm looking at a network of collaborations in AusStage and I want to see how that network has changed over time, how it has evolved, where people joined and left, who stuck around, when the network grew, shrank, changed shape and so on.

6.1 Animation - I'm looking at a network at a particular point in time. I hit play and the network animates through a series of changes - as new people are added, others leave with each collaboration, the network shifts and changes shape. I can hit pause at any point and see the time. I can also use a time-mark to scrub through the animation.
**Rank: 64%**

6.2 Time-slices - I'm looking at a network as a series of time-slices- each representing the network at successive points in time. The time-slices are arranged in three-dimensional space, with time as the third dimension. By manipulating the view, and looking at the time-slices from different angles, I can explore change over time.
**Rank: 60%**

6.3 Fly-throughs - I'm looking at a network as a series of time-slices - arranged in three-dimensional space. But this time, instead of rotating the object, I can fly through it - moving forwards and backwards in time, I can see the state of the network at any point in time.
**Rank: 56%**

**7. NETWORKS+MAPS**

I'm looking at a contributor's career as a line on a map. The line links the venues at which the contributor has performed in chronological order. Following the line from beginning to end, I can see where the contributor has performed over time. If I start adding their collaborators to the map, I can see where those collaborators have worked together, how often, and at which points they head off on their own. This is similar to the timeline, with events displayed geographically on a map.
**Rank: 60%**

**8. STATISTICAL ANALYSES and PATTERN MATCHING**

I'm looking at a network of collaborations in AusStage and I want to explore its statistical properties - degree of connection, shortest path, clustering and so on. I might want to compare its statistical properties to other networks. I might want to search AusStage for other network areas with similar or matching properties.
**Rank: 44%**