

University of New South Wales – Electron Microscope Unit

Grid-enabled Access to a National Archive of Nanostructural Imagery (GRANI) Project

Requirements Analysis - Survey of Existing and Required Archival Facilities and Services

Notes:

1 login name
Password
Account #

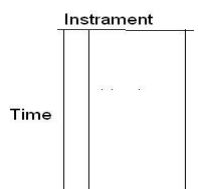
2 Photo

3 User login on booking system

- make bookings
- view bookings
- usage logbook
- access images (Archive, users, transport)

4 Make booking

- Location.
- Choose instrument.
- View other bookings.
- Email others.
- Matrix for day and time.



- View daily, weekly, monthly bookings.
- Facility Status – Shows lab at moment.
- Usage logbook – Shows usage per user for a day, week & month.

- Different user categories
 - Paul can book for next 6 months
 - PhD Student only see one month ahead
 - Can generate log books for users
 - Shows usage stats
 - Shows faculty usage –
 - Who used it
 - How long
 - Change/hours
 - Hours used and Charged
- Excel Spreadsheet
- Billing and internal transfers
- Extract money from designated account

Usage Profiles:

- Can init
- Uses a category
- Need to design a common set of categories across nodes
- Privileges of how far ahead you can book and what you can book.

System Manager:

- Prof Paul Munroe (Director)
- Dong Ming Zheng (Systems Administrator)
 - Account management
 - Can change user details
 - Can provide privileged access
- User Category –
 - A – 4 hours
 - B – 9 – 5
 - C - Weekends
- Users special category
- EMU Admin, General and System Admin staff 3 months ahead.
- Special power
- Special unlimited booking

(User special category, Special power. Special unlimited bookings could be combined)

Sydney, QLD –

- Don't log hours precisely
- Not charging by the hour

Logbook manager

- ? usage logbooks and override data
- People forget to login and logout

Propriety language?

Underlying database?

Ding Ming \leftrightarrow Martin Saundes

- Swipe cards
- Can't ?
- ISIS eds , SEM
- Tiff

PCs – analysis

- Can't use mike
- ? you login
- Choose account

FTP – large files / groups of files

- **Annotations**
- Photoshop
- Live video
- Video Signal –
 - On website
 - ? firewall
 - Secure login
 - Webcam mike
- 3D datasets
- 3D movie clips
- 60MB files
- MB \rightarrow GB
- Networking

- Annotations - Word files
- Metadata for images (file names)
- Nova (logbook) – Folders

Archive Folder 220GB
 19982005

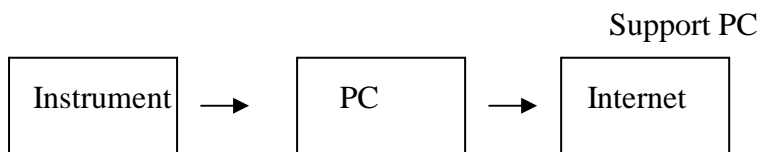
2.4 TB server

- Images (Instruments) – want to store an image then folder of user name is needed
- Check folder size manually.
- Don't archive user folders.
- CD ?
- Can access own folders from booking system
- Delphi (Paradox) - booking system

Dong Ming

Windows NT , 98, 2000

- Loop usage
- From Clients
- Hosts booking system
- Each instrument has it's own ftp site



- PCs behind firewall
- Login on web

1 Operational computer
 1 Support computer (Networked)

User Registration:

- Safety Disclaimer
 - Account
 - Training
 - Swipe Cards
-
- Internet Access

Notes From the back page of survey form:

13 Microscope – most have attached PCs

- All data digital
- Images

- Folder set up – on shut specify login name
 - Login name
- Anyone can login and can access peoples folders
- Out to CD's on memory stick
- Inactive part of server if no use after 4 months
- 350 users a year
- GB's of data, only complain if too much
- Most images **1MB**
- +- **200GB storage capacity**
- 3 years activity
- Numerous students – 3 months activity
- All archive to tapes
- Every user and every mike has a folder

- J0840 –
 - - 2-3 folders
 - –
 - --

- Server –
 - Staff
 - Users
 - Images –
 - Instruments –
 - -
 - -
 - -
 - Archive

- **General**

1. How many instruments does your centre support? Which ones are in most demand?
2. How many users do you have – individuals or organisations?

Access to Instruments

3. What is the process for registering as a user and booking an instrument?
4. Do you have an online booking system? How is this accessed?
5. Do you have secure logon procedures for registered users? Is it password controlled? How do users register and acquire a login id and password?
6. Are there restrictions on how long/when users can book an instrument?
7. What is your charging scheme – subscription or time-based? Individual or organization-based?
8. How do you log usage?
9. What security mechanisms are used to stop vandalism and hackers? Are the instruments behind firewalls? Do you use swipe cards?

10. What databases do you currently maintain, what information do they store, what platforms are they on, do they talk to each other?

11. How often do you backup administrative data and users' data?

Telemicroscopy

12. Are all of your instruments online? If not, how many instruments do you have and what percentage/how many are online?

13. Can you control the instruments remotely or only view current image in real-time remotely?

14. Are they connected to broadband networks? i.e., GrangeNet? What bandwidth? Private LANs (e.g., VPN) or internet?

GrangNet 100Mbps

15. How are the samples transferred and prepared?

16. Is simultaneous videoconferencing available and a necessity? Do you use both video and audio or only audio? How many web cameras?

17. How often is telemicroscopy actually utilized? Under what circumstances is it used/useful?

Image Archival

18. How do users save and organize their images and analytical data ? As flat files in folders or in databases?

19. What image formats are supported?

Tiff, movie clips

20. What other types of data (e.g., spectrometry data) do users need to save? What formats are used/required?

21. Do users save images in multiple formats?

Shy scan –

- *each image – folder contains lots of files*
- *Folder contains multi dimensional array*

22. What image conversion services would be useful? e.g., tiff -> thumbnail

3D - EDAX 3D image browsing

Matlab

23. Does each instrument have its own camera and proprietary software?

Most computers upgraded with image capture software

24. Are there built-in image analysis and manipulation tools?

25. Are any instruments connected directly to databases?

26. What facilities exist for saving metadata/data with images?

27. What data/metadata can be saved automatically/manually?

Text files

Tiff

28. How do users relate an image to precise sample coordinates? What happens when a session is interrupted?

29. Are there limitations on users' storage space?

30. What happens when users exceed their space limitation?

Script generates report, monthly

- Ask user why?
 - Email, phone

31. Are there time-limits on local users' data storage?

32. Are there any search and retrieval services for finding stored images/data?

33. What kinds of search and browse facilities do you envisage?

34. Is there any particular image database software you would like to use or be investigated/evaluated further?

35. How do most users archive their images/data in the long term? On what medium?

36. How do users transfer very large images/files across the network?

37. Do users want to be able to share images with others? What kinds of sharing and access policies do you envisage?

38. Would you like a centralized database with secure access across the NANO nodes or only within each NANO node?

39. What useful value-add services could be provided e.g., annotation services? Watermarking? Image segmentation?

Finally

- nominate which items are mandatory, highly desirable, desirable, optional, unnecessary (M, HD, D, O, U)
- nominate which items are high priority, medium priority, low priority (HP, MP, LP)
- any other items on a wish list