

Tuesday, March 28th, 2000



Human-Computer Interface Design, Advanced Course

Course 216, 2 credits, second trimester 1999/2000

1. Return of Design Reports
2. Questions and Quiz
3. Usability Laboratories
4. A Tool for Video Analysis
5. Discussion of Proposed Empirical Studies
6. How to Use the Video Equipment
7. Case Study of Organizational Obstacles to Groupware Use

Course Web page: <http://www.cs.uni-sb.de/users/jameson/hcida/>

Usability Laboratories Typical Usability Labs: Photos (1)

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<http://www.primavera.com/products/ucd/usabilitt.htm>

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Typical Usability Labs: Photos (2)



<http://www.primavera.com/products/ucd/usabilitt.htm>

Typical Usability Labs: Photos (3)

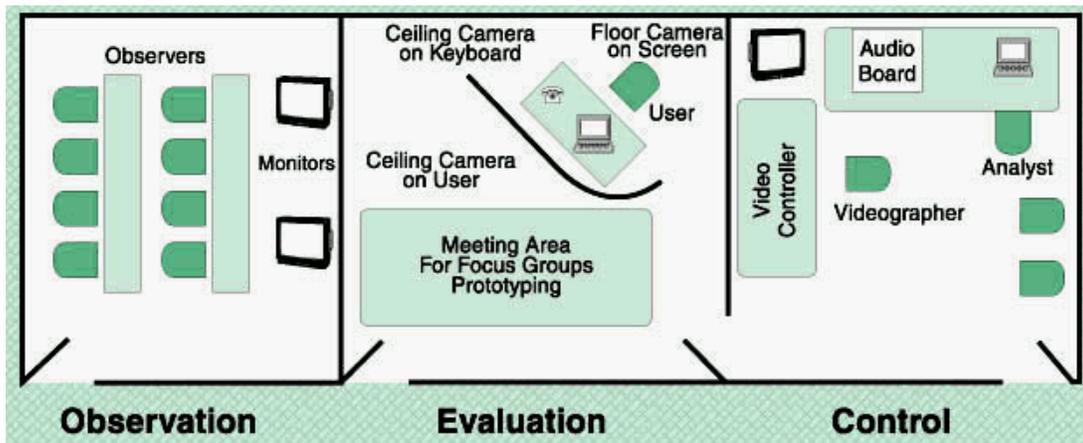
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Usability labs at Microsoft

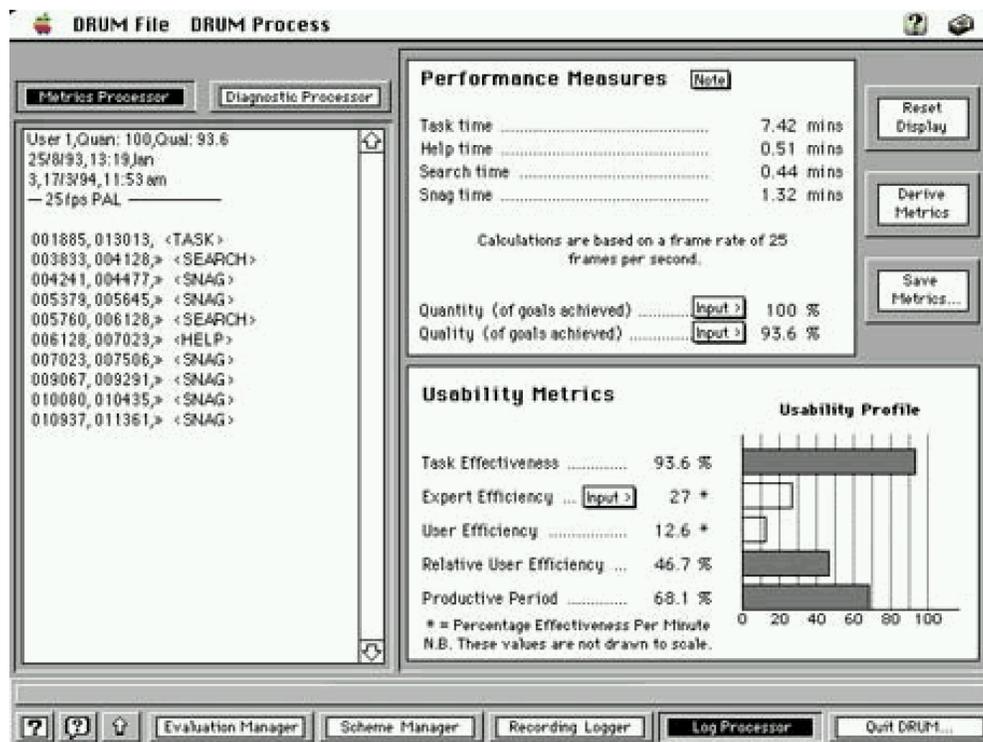


Typical Usability Labs: Layout



<http://www.ocic.org/ocic/new/n229/ulab2.htm>

The DRUM Tool for Video Analysis DRUM Example Screen



<http://prosoma.lu/cgi-bin/show.py?sid=53615&id=2311&page=result>

DRUM Brochure (1)

DRUM - Diagnostic Recorder for Usability Measurement

Usability Services

DRUM is a software tool which has been developed by close co-operation between Human Factors professionals and software engineers to provide a broad range of support for video-assisted observational studies. It has been in use in commercial organisations since 1992 and has been continuously improved in consultation with NPL's industrial and research clients.

DRUM directly supports the MUSiC Performance Measurement Method for usability evaluation. Evaluation sessions are recorded on video and subsequently analysed with the help of DRUM.

DRUM's role

DRUM provides support for the usability analyst throughout the process of observation-based usability evaluation. DRUM assists in many aspects of the analyst's work:

- management of data
- task analysis
- video control
- analysis of data

DRUM greatly speeds up the analysis of video recordings and automates some activities entirely, helps the analyst build up a time-stamped log of each evaluation session, and calculates performance measures and metrics.

DRUM delivers evaluation data in a format compatible with spreadsheets and statistical packages, for further analysis and graphical display.

DRUM also assists the generation and delivery of diagnostic feedback concerning usability defects to a product's designers.

Organising evaluations

The DRUM Evaluation Manager makes it easy to organise data from all stages of usability evaluation. It gives you quick and simple access to evaluation data about:

- users – the people being observed in an evaluation
- tasks – analytic schemes describing the tasks which users perform
- video recordings of evaluation sessions
- logs of user and system activities, created by DRUM
- measures – derived from analysing logged task performance (times, problems, etc.)
- usability metrics – calculated values for individual users and groups
- reports of evaluation findings

DRUM uses text files for data storage, allowing flexible compatibility with word processors, spreadsheets and statistics packages.

Information Systems Engineering

- Usability Services
- Techniques for High Integrity
- Scientific Software

DRUM Brochure (2)

Identifying significant events

You may wish to look out for many different kinds of event when studying a video record of an evaluation session. DRUM provides a basic set of event types to support the Performance Measurement Method. With the DRUM Scheme Manager you can define your own event types, and describe the tasks to be performed by users at up to five levels of detail. Each activity is represented on screen as an event button, with associated editable definition and comments.

Analysing video records

The DRUM Recording Logger helps you to build up a time-stamped log marking all the significant events observed on a video. Events are logged with respect to a timecode recorded on the videotape, enabling reliable and efficient access to any part of the video recording at any time. You can add comments to individual logged events.

DRUM gives fully responsive and error-preventative remote-control of the video recorder. As well as the usual video controls, DRUM includes a variable-speed shuttle, and offers automated location and playback of any logged event on the video.

Deriving measures and metrics

The DRUM Log Processor provides automated calculation from any log in the DRUM database of performance measures and performance-based usability metrics, including:

- task time
- snag, help and search times
- effectiveness
- efficiency
- relative efficiency
- productive period

Measures and metrics are presented in tabular and graphical displays. Results for individual users can be grouped, and exported to a spreadsheet or statistics package for further analysis.

Processing analyst-defined events

The DRUM Diagnostic Processor enables you to select any combination of events to generate tables of counts and durations, or comments. The selection mechanism offers great flexibility – allowing events to be selected by type or by time. In addition, any selected subset of the log can be saved as a new log for further processing. Selection

templates allow you to define selection criteria to be applied quickly on subsequent logs.

Usability of DRUM

DRUM has an easy to learn graphical user interface, a constantly accessible on-line help system offering context-sensitive and general help, and comprehensive documentation.

What you need to run DRUM – technical information

DRUM requires:

- Apple Macintosh running System 7 or 8
- At least 640 x 480 pixel monitor
- HyperCard 2.1 (or later), allocated at least 2.5 MB RAM

DRUM can at present drive the following video recorders:

- Sony U-Matic VO 7000 and 9000 series, with BKU 701 computer interface
- Sony UVW 1400 series
- Panasonic AG-7350 or AG-7355 with AG-IA232TC adaptor

Other products and services

Additional information leaflets are available for the following:

- Usability Engineering Services
- Usability Services Training Courses
- Usability Context Analysis
- Usability Benefits
- Usability Laboratory Facilities
- Regulations, Standards and Quality
- MUSiC Tools and Methods
- SUMI – Software Usability Measurement Inventory

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NPL Helpline 0181-943 6880
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Reading for Classes 12 and 13

Reading for Classes 12 and 13 (1)

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Chapter 11 - Evaluation Techniques

11.4 Evaluating the Design, p. 408

The methods discussed here differ from the ones that we are applying in that they don't require the participation of subjects
We will discuss these methods in Classes 12 and 13

11.5 Evaluating the Implementation, only pp. 419–426

Only the pages on statistical measures remain to be read
Since you will not be applying the statistical techniques in your own project, we will discuss them in Class 12 or Class 13
As with the earlier sections on formal models, the goal for this initial reading is to get an overview of basic concepts
In particular, don't worry now about the details concerning statistical concepts and formulas

11.6 Choosing an Evaluation Method, p. 436

11.7 Summary, p. 440

Reading for Classes 12 and 13 (2)

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Note on the Final Quiz

Since the reading for the next two classes is brief, the quiz in Class 13 will be based to a larger extent than usual on the material discussed in Classes 11 and 12 and in the slides discussed in these classes (including Slides 299–313, which were distributed in Class 10 but not discussed then)