



Survey of the Uses of Software and Hardware for Multimedia Applications in UK Higher Education

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Part of the JISC New Technologies Initiative

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1. INTRODUCTION

1.1 Background

The growth in use of multimedia within the UK Higher Education sector has accelerated in recent years, and looks set for continued expansion in the future. However, this expansion has not followed any coherent structure and consequently a wide variety of hardware and software is currently used for multimedia applications, with little or no co-ordination between institutions in terms of cross-platform compatibility.

The Support Initiative for Multimedia Applications (SIMA) is funded under the New Technologies Initiative (NTI) from the Joint Systems Committee of the HEFCs. It aims to provide a single focus of information in the area of multimedia and will link in with other projects and initiatives for UK Higher Education and will dovetail with the current activities of the Advisory Group on Computer Graphics (AGOCG).

This survey was commissioned by SIMA to establish the range of hardware and software currently in use for multimedia applications in UK Higher Education.

1.2 Scope

The restricted timescale available for this survey prevented full coverage of all multimedia activities within UK Higher Education. Consequently it was decided to limit the coverage of the survey to those projects funded by various HEFC initiatives, specifically the Teaching and Learning Technology Programme (TLTP), the Information Technology Training Initiative (ITTI), multimedia projects funded by the NTI, and other projects commissioned by SIMA.

The survey concentrated on the hardware and software in current use by projects for development and delivery of multimedia applications. The survey also aimed to determine the importance to projects of standards, both *de jure* and industry/*de facto*.

Responses from projects which did not involve multimedia are identified separately within this report. The full list of projects covered by the survey, including those which did not respond, can be found in Section 3.

1.3 Distribution and returns

The questionnaire was distributed by electronic mail to all projects offering an e-mail address. A copy of the questionnaire was faxed to the three projects which did not have e-mail access. The survey questionnaire and covering letter can be found in Section 2.

The following shows the breakdown of the number of projects covered by the survey by funding body, and the number of responses in each case.

Funding Body	Sent out	Returned	Return Rate
ITTI	22	9	40.9%
NTI	11	9	81.8%
SIMA	10	4	40.0%
TLTP	76	28	36.8%
Total	119	50	42.0%

All responses were edited into a standard format before being analysed. Reference numbers of TLTP and NTI funded projects were supplied by the relevant bodies, whereas those for ITTI and SIMA only relate to this report for reference purposes.

The primary grouping of results within the report is by project funding body, with a secondary overall grouping where considered necessary.

In general, all comments have been repeated verbatim, although in a small number of cases editing was required because of the length of the original response.

2. SURVEY QUESTIONNAIRE

SIMA Multimedia Survey

Dear <name>,

I am contacting you in your role as the designated contact for <project name>, as part of a survey of multimedia in UK Higher Education.

This survey is being carried out on behalf of the Support Initiative for Multimedia Applications (SIMA) to establish the range of software and hardware currently in use for multimedia within UK Higher Education.

The survey results will be used to establish a central reference directory of multimedia projects which will be maintained by the SIMA Multimedia Support Officer, Sue Cunningham. The directory will also be available via the Advisory Group on Computer Graphics (AGOCCG) World Wide Web page.

I would appreciate it if you could complete and return the survey by the 31st July 1994 at the latest.

Yours sincerely,
John Murdoch

SIMA Multimedia Survey

Section 1: General Information

Project title:
Project Leader:
Organisation:
Department:
Funding Body:
e-mail address:
URL:
Main use of multimedia
(research tool/research into multimedia/developing for teaching/teaching):

Section 2: Development System

Hardware platform:
Specification:
Operating System:
Multimedia Authoring software being used:
Programming languages being used:
Other relevant software packages being used:
Previous in-house software developments being used:
Standards used (image/sound/video/compression):
How important is the use of standards to the project?:

Section 3: Delivery System

Hardware platform:
Specification:
Operating System:
Storage medium (hard disk/server/optical/CD-ROM):

Section 4: Specialised Equipment used

Image capture (scanner/digitiser/video capture/Photo CD/etc.):

Video capture:

Audio capture:

Videophone/Videoconferencing:

OCR:

Section 5: Networking

Is the system designed for delivery over a network?

If so, what type? (LAN/JANET/SuperJANET/ISDN/etc.):

Section 6: Training Materials and Documentation

Is any specific material being used? (please specify):

Is any specific material being prepared (please specify):

Are you prepared to make this material available? (free or at cost):

Section 7: Other Information

Are the staff involved IT specialists, subject specialists who have retrained, or a mixture of both?

Please give a brief description of the project:

Please comment on your experiences and opinions of the hardware and software that you are using in your project:

Would you be willing to write a short article about your project for inclusion in a SIMA newsletter?

Thank you for your co-operation.

3. RESPONSES AND PROJECTS SURVEYED

3.1 ITTI projects

3.1.1 Multimedia

Reference No. : ITTI06
Title : Graphics and Visualisation Training Courses (Gravigs)
Project Leaders : Terry Hewitt, Toby Howard
Organisation : The University of Manchester
Department : Computer Graphics Unit
e-mail : gravigs@mcc.ac.uk
URL: <http://info.mcc.ac.uk/CGU/ITTI/gravigs.html>
Main use of multimedia : developing teaching materials
Brief description : <http://info.mcc.ac.uk/CGU/ITTI/gravigs.html>

Reference No. : ITTI09
Title : CAL Authoring Provision: Standards, Environments & Training
Project Leaders : Dr Peter Davies
Organisation : University of Nottingham
Department : Bio-Informatics Research Group, Department of Life Science
e-mail : plzpmcd@pln1.life.nottingham.ac.uk (Peter Davies)
URL:
Main use of multimedia : Research into multimedia
Brief description : To produce toolkits and guidelines for multimedia courseware development.

Reference No. : ITTI13
Title : Educational Technology Service
Project Leaders : Dr Adrian Longstaffe
Organisation : University of Bristol
Department : Education
e-mail : ets@bris.ac.uk
URL: www.ets.bris.ac.uk (online from Sept. 94ish)
Main use of multimedia : developing teaching materials
Brief description : Supporting and promoting the use of technology in teaching and learning at the University of Bristol.

Reference No. : ITTI16
Title : UNIX Documentation in Hypertext, numerous funded hypertext projects
Project Leaders : Prof. P J Brown
Organisation : Univ. of Kent At Canterbury
Department : Computing Lab.
e-mail : pjb@ukc.ac.uk
URL:
Main use of multimedia : developing teaching materials
Brief description :

Reference No. : ITTI17
Title : UNIXhelp for Users
Project Leaders : Bob McGonigle
Organisation : Edinburgh University
Department : Computing Services
e-mail : Bob.McGonigle@ed.ac.uk
URL: http://www.ucs.ed.ac.uk/Unixhelp/TOP_.html
Main use of multimedia : developing teaching materials/teaching
Brief description : Provides hypertext of useful information for new users of UNIX over the Internet.

Non-multimedia

Reference No. : ITTI02
Title : Relational Database Management Systems : Self-teaching Materials especially for INGRES and ORACLE
Project Leaders : Dr Lorna Weatherill
Organisation : University of Newcastle
Department : Computing Laboratory
e-mail : l.m.weatherill@newcastle.ac.uk

Reference No. : ITTI05
Title : Finite Element Training Materials
Project Leaders : Mr William Swindells
Organisation : Manchester Computer Centre
Department : UMIST Support Unit
e-mail : w.swindells@umist.ac.uk

Reference No. : ITTI19
Title : ITTI Support Services
Project Leaders : Dr Patricia Partington
Organisation : CVCP/USDU
Department :
e-mail : cvcp.usdtu@pa.shef.ac.uk

Reference No. : ITTI22
Title : X Windows Training
Project Leaders : Bob McGonigle
Organisation : Edinburgh University
Department : Computing Services
e-mail : Bob.McGonigle@ed.ac.uk

3.2 NTI projects

3.2.1 Multimedia

Reference No. : NTSC35
Title : EMMA - Enhancing Multicast for Multimedia Applications
Project Leaders : Dr. Jon Crowcroft
Organisation : UCL
Department : Computer Science
e-mail : J.Crowcroft@cs.ucl.ac.uk
URL: <http://www.cs.ucl.ac.uk/index.html>
Main use of multimedia : research tool
Brief description : Multimedia communications is one of the key technologies for the future, and can bring substantial benefits to the HE community. However, the current multicast has to be enhanced before we can make wide area multimedia communications available for regular use. The purpose of this research is to enhance the multicast software in terms of scaling, resource management and regulation of use, and then to bring wide area multimedia communications to the HE community. We intend to set up the UK-MBONE among HE institutions, and to provide system and application software, and technical support.

Reference No. : NTSC40
Title : Networked Delivery of Multimedia Resources
Project Leaders : Dr Jane Williams
Organisation : Bristol University
Department : ETS
e-mail : J.Williams@bris.ac.uk
URL: www.ets.bris.ac.uk
Main use of multimedia : developing teaching material
Brief description : The project aims to create a central multimedia information store, available to all higher education establishments. The initial phase of the project will create a digital image archive using the 20,000 medical, dental and veterinary images which form the Bristol Biomedical Videodisc. This archive will be accessible by the World Wide Web. As a first step, copyright clearance is currently being sought for the use of these images. Programs for the automated digitisation of images from the videodisc and to convert the captured images to a required resolution, colour depth and format are being developed.

Reference No. : NTSC42
Title : Multimedia Handbook for Engineering Design
Project Leaders : Chris McMahon
Organisation : University of Bristol with University of Bath & University of the West of England
Department : Mechanical Engineering
e-mail : chris.mcmahon@bristol.ac.uk
URL:
Main use of multimedia : developing teaching materials
Brief description : To develop an engineering design handbook to include standard components, materials, design guides and good practice information. The handbook is being authored using Review, an in-house multimedia/hypermedia windows application. Review allows entities to be indexed using arbitrary collections of attribute name-value pairs of various data types. Each entity may consist of an operating system file together with a hypertext frame, and links may be established between frames either directly or through search for entities that match a given set-theoretic combination of attributes (using an SQL-based query language).

Reference No. : NTSC42a
Title : The Automotive Knowledge Support System
Project Leaders : Jon Sims Williams
Organisation : Bristol University
Department : Engineering Maths (jointly with Mechanical Eng.)
e-mail : jon.sims.williams@bristol.ac.uk
URL:
Main use of multimedia : Research into hypermedia/multimedia
Brief description : We've developed a user oriented environment for viewing and interrogating a wide range of dissimilar data items from multiple sources via a unified interface. The resulting system - Review - uses a combination of hypertext and novel database techniques to provide very flexible data structures which can be browsed or searched interactively.

Reference No. : NTSC48
Title : Multimedia Database of Dental Images
Project Leaders : Mr Alan Griffiths / Mr Ray Winstanley
Organisation : University of Sheffield
Department : Department of Information Studies & Department of Restorative Dentistry
e-mail : A.Griffiths@Sheffield.ac.uk
URL:
Main use of multimedia : Developing teaching materials
Brief description : Aims: - To create an open access image library of dental images
- To link images to explanatory text in a multimedia database
- To overlay the multimedia database with structured courses
- To provide a core of images for other projects
- To be able to access the images from JANET
The construction of a multimedia database of Dental images which will be used as a national teaching resource.

Reference No. : NTSC63
Title : The Homer Project
Project Leaders : Joel Greenberg
Organisation : The Open University
Department : Academic Computing Service
e-mail : J.Greenberg@open.ac.uk
URL:
Main use of multimedia : Research into multimedia
Brief description : The project is based on the teaching materials from the University course A295 Homer: Poetry and Society. This course was conceived as a highly integrated course in which video, audio and print would work together in a complimentary way. The project hopes to establish that multimedia enhances the freedom with which students can move around the course material. It intends to develop a specific part of the course into a multimedia presentation and developmentally test the multimedia material with around 20 students in 1994, who have already studied the material in 1993, in the traditional way.

Reference No. : NTSC97
Title : 3D Graphics Workstation for Medical Databases
Project Leaders : Dr AD Linney
Organisation : University College London
Department : Medical Physics Department
e-mail : alf@medphys.ucl.ac.uk
URL:
Main use of multimedia : developing teaching material
Brief description : The project will extend a 3D graphics medical imaging system by adding a multimedia front end. This will allow structured access to voxel medical data sets. We also intend to produce a networked medical moving image resource.

Reference No. : NTSC146
Title : A Super JANET shared Image Resource for Synchronous Applications (SIRSA)
Project Leaders : R.J. Hynds; Project manager R. Beckwith
Organisation : Imperial College of Science, Technology and Medicine
Department : Centre for Computing Services
e-mail : R.Hynds@ic.ac.uk R.Beckwith@ic.ac.uk
URL:
Main use of multimedia : Developing teaching materials
Brief description : The purpose is to provide a teaching resource of images, sound and video clips for on-line teaching. Initially it will be tested on campus, then other Centres will be able to input their own material and access the server over Super JANET.

Reference No. : NTSC232
Title : Multimedia Medi-CAL
Project Leaders : Dr N.M. Hamilton
Organisation : University of Aberdeen
Department : Medical Faculty CAL Unit
e-mail : mil013@abdn.ac.uk
URL:
Main use of multimedia : Teaching
Brief description : Use of interactive multimedia to elucidate stages of Child Development. More information available in our own newsletter, Medi-CAL

Reference No. : NTSC242
Title : Integrated Resources for HE: The Linguists' Workbench
Project Leaders : Dr. Judy Delin (Leader), Mr. Patrick Allen (Manager), Mr. James Lothian (Software Developer)
Organisation : The University of Stirling
Department : English Studies
e-mail : J.L.Delin@stir.ac.uk
URL:
Main use of multimedia : Developing for teaching
Brief description : We aim to provide an integrated toolkit of software for teaching and learning linguistics. Some of this software will be integrated to form a basic language exploration kit, other items will be stand-alone. The idea is for teachers to be able to construct pathways through the system for specific sessions, and for students to have access not only to individual tools for language analysis but to means of chaining them together. Access to other kinds of media --- particularly on-line linguistic corpora -- is being looked into.

3.3 SIMA projects

3.3.1 Multimedia

- Reference No. :** SIMA01
Title : Video Conferencing on UNIX Systems to support Help Desk and Advisory Services
Project Leaders : Dr. Steve Morgan
Organisation : University of Liverpool
Department : Computing Services
e-mail : J.S.Morgan@liverpool.ac.uk
URL:
Main use of multimedia : research into videoconferencing
Brief description : Investigation of use of videoconferencing to support Helpdesk and advisory services between remote locations.
- Reference No. :** SIMA03
Title : Desktop Video Conferencing on Apple Macs
Project Leaders : Sean Clark
Organisation : Design Research Centre
Department : School Art and Design, Derby University
e-mail : S.M.Clark@lut.ac.uk
URL: <http://dougal.derby.ac.uk/DRC-home.html>
Main use of multimedia : research into multimedia
Brief description : We have set up a six node video conferencing system at Derby University and are currently evaluating it in terms of usability and network impact. We have also carried out a survey or appropriate research literature.
- Reference No. :** SIMA05
Title : Report and Guidelines on Image Capture : 2
Project Leaders : Dr Simon Heath
Organisation : University of Aberdeen
Department : Centre for CBL in Land Use and Environmental Sciences
e-mail : clues@aberdeen.ac.uk
URL:
Main use of multimedia : research
Brief description : The aim of the project is to evaluate a range of hardware and associated software options for the capture of images, and to draw up guidelines on system specification and image capture for developers of multimedia applications in higher education
- Reference No. :** SIMA08
Title : INSURRECT (Interactive Surgical Teaching between Remote Centres)
Project Leaders : University College London - Audio Visual Dept.
Organisation : University College London - Audio Visual Dept
Department : Audio Visual Dept
e-mail : piers@livenet.ac.uk piers@cs.ucl.ac.uk
URL: <http://av.avc.ucl.ac.uk>
Main use of multimedia : developing teaching materials
Brief description : We are running interactive video over the SuperJANET ATM pilot to provide links into operating theatres and for multisite lectures (ie a lecture given in one site will be received at a number of the other sites). The project involves six major teaching Universities (Manchester, Newcastle, Cambridge, Bristol, Edinburgh, and London). We are using the WWW for off-line courseware - in the prototyping stage at the moment. It is aimed at Medical undergraduate students.

3.4 TLTP projects

3.4.1 Multimedia

Reference No. : TLTP01
Title : Teaching with Independent Learning Technologies
Project Leaders : Dr Gordon Doughty
Organisation : University of Glasgow
Department : 20 different departments
e-mail : g.doughty@elec.gla.ac.uk
URL:
Main use of multimedia : formative and summative evaluation of teaching with multimedia and changing institutional structures
Brief description : TILT aims to improve the goal-action-feedback-revise learning cycle for students. In doing this, TILT contributes to the learning cycle of the whole organisation.

Reference No. : TLTP03
Title : Hypertext Campus Project
Project Leaders : Wilma Strang
Organisation : University of Kent
Department : Hypertext Support Unit
e-mail : W.Strang@ukc.ac.uk H.Khan@ukc.ac.uk
URL:
Main use of multimedia : development of teaching and learning materials
Brief description : The Hypertext Campus Project started on October 1st 1992 to encourage the pervasive use of hypertext through all disciplines across the campus. To this end a Hypertext Support Unit was established to provide a centralised unit of expertise and development. The HSU provides workshops, documentation and general consultancy on multimedia to both staff and students. The project is supported at the highest level and staff with ideas for implementation of multimedia teaching and learning applications are provided with staff development support and replacement teaching time. The HSU works closely with staff to develop their ideas so that the application benefits from a mixture of IT and subject expertise. The HSU also provides workshops and seminars for other higher education institutions.

Reference No. : TLTP05
Title : Cross Discipline Implementation of CAL into Mainstream Teaching
Project Leaders : Professor A. Dodson
Organisation : University of Nottingham
Department :
e-mail : iszahd@evn1.nott.ac.uk cczwood@nottingham.ac.uk
URL:
Main use of multimedia : developing teaching materials
Brief description : The University has divided the project into three separate years internally. Each year a set of projects is supported by the CAL support officers. The ideal is at least one project in each faculty. These projects last for one academic year and should be available for delivery the following academic year. Priority is given to cross discipline projects e.g. introductory statistics. A second priority has been an attempt to transfer authoring skills into the academic community.

Reference No. : TLTP13
Title : STEPS (Statistical Education through Problem Solving) TLTP
Project Leaders : Dr Adrian Bowman
Organisation : Glasgow University
Department : Statistics
e-mail : adrian@stats.gla.ac.uk
URL:
Main use of multimedia : developing teaching materials
Brief description : The STEPS Consortium was set up to design, implement and disseminate foundation level computer-based materials in statistics for students of Geography, Biology, Business and Psychology. By the end of the project, each application area will have produced some 12 - 15 problem modules (circa 24 - 30 teaching hours)

Reference No. : TLTP15
Title : CBL modules for the Remedial Teaching of Mathematics to Scientists and Engineers.
Contacts : Dr. Sui Cheng, Dr Phillip Kent
Organisation : University of Leeds, Imperial College London
Department : Applied Mathematical Studies
e-mail : sui@amsta.leeds.ac.uk, p.kent@ic.ac.uk
URL:
Main use of multimedia : Developing teaching materials and for teaching
Brief description : The aim of our project is to produce a suite of fully interactive, multimedia modules covering the basic mathematical topics required for 1st year undergraduate science and engineering courses. These self- tutoring modules will help to alleviate problems caused by increased student intakes, lowering standards of mathematics among the students and the increasingly diverse content covered by A-level (or equivalent) syllabuses.

Reference No. : TLTP19
Title : TLTP - Engineering Consortium
Project Leaders : Dr A R Johnson
Organisation : University of Sheffield et al
Department : Mechanical and Process Engineering
e-mail : A.R.Johnson@sheffield.ac.uk
URL:
Main use of multimedia : Developing for teaching
Brief description : Preparation of CAL teaching modules for engineering degree courses

Reference No. : TLTP22
Title : Software Teaching of Modular Physics
Project Leaders : Dr R A Bacon
Organisation : University of Surrey
Department : Physics
e-mail : r.a.bacon@ph.surrey.ac.uk
URL:
Main use of multimedia : developing for teaching
Brief description : This project is concerned with the generation of computer based teaching material that can be used on a variety of standard hardware platforms. The two physics subject areas being targeted are i) waves and vibrations and ii) the treatment of measurement uncertainty.

Reference No. : TLTP23
Title : Bio-diversity Consortium (TLTP, Phase 1)
Project Leaders : Dr Peter Davies
Organisation : University of Nottingham
Department : Bio-Informatics Research Group, Department of Life Science
e-mail : plzpmcd@pln1.life.nottingham.ac.uk (Peter Davies)
URL:
Main use of multimedia : Developing teaching materials
Brief description : To produce multimedia courseware and related learning support materials for first year students of the biological sciences

Reference No. : TLTP24
Title : BioNet - Changing the pattern of teaching in Biology
Project Leaders : Dr Andrew Booth
Organisation : University of Leeds
Department : Biochemistry & Molecular Biology
URL: <http://www.leeds.ac.uk/bionet.html>
e-mail : a.g.booth@leeds.ac.uk
Main use of multimedia : teaching
Brief description : To incorporate IT-based teaching into our mainstream TIMETABLED courses. To produce the institutional change necessary for this to occur. To train a cadre of academics who can author, re-author and maintain IT-based courseware without the need for specialist programmers.

Reference No. : TLTP30
Title : PsyCLE: Psychology Computer-based Learning Environment
Project Leaders : Dr Jean McKendree
Organisation : University of York
Department : Department of Psychology
e-mail : JM25@york.ac.uk
URL: <http://ctipsych.york.ac.uk/CTIPsych.html>
Main use of multimedia : developing teaching materials
Brief description : PsyCLE is a three year project to develop software teaching resources for Introductory Psychology. It is part of the TLTP programme. PsyCLE is scheduled to finish in December 1995.

Reference No. : TLTP32
Title : Fully Evaluated Problem based Practical and Tutorial Courseware for Life Science Students
Project Leaders : Dr M.J.George
Organisation : Queen Mary and Westfield College
Department : Physiology
e-mail : M.J.George@qmw.ac.uk
URL:
Main use of multimedia : teaching
Brief description : Practicals with tutorial support

Reference No. : TLTP34
Title : TLTP Archaeology Consortium
Project Leaders : Dr Ewan Campbell
Organisation : University of Glasgow
Department : Dept of Archaeology
e-mail : tltparch@dish.gla.ac.uk
URL: <http://www.brad.ac.uk/acad/archsci/homepage.html>
Main use of multimedia : developing teaching materials
Brief description : Development of a range of hypermedia CAL modules for undergraduate archaeology teaching.

Reference No. : TLTP36
Title : TELL Consortium
Project Leaders : Director: Professor Graham Chesters
Organisation : CTI Centre for Modern Languages
Department : University of Hull
e-mail : CTI.Lang@hull.ac.uk
URL:
Main use of multimedia : developing teaching materials
Brief description : This programme, which covers a wide range of academic disciplines, aims to produce computer-based materials of high quality which will enhance the efficiency and quality of UK higher education teaching and learning. The primary focus of the consortium's activities is on the widely-perceived need for a languages for all policy, catering both for specialist language students and for non-specialist students, learners with special needs, and professional updaters. Within this policy, the consortium aims to integrate the use of technology into current teaching and learning of the major European languages, and to develop methodologies which will be transportable to other languages.

Reference No. : TLTP39
Title : Approaches to Quantitative and Basic Skills Teaching in Geography
Project Leaders : Dr. Geoff Thomas
Organisation : University of Liverpool
Department : Geography
e-mail : alisonpb@liv.ac.uk thoma@liv.ac.uk
URL:
Main use of multimedia : research tool
Brief description : The project as its main goal is producing geographical methods exercises for first year geographers using MINITAB and SPSS. The multimedia approaches of the project are minor goals and include evaluating the use of computer based assessment with large classes and writing guides to introduce a range of examples of computer based geographical applications.

Reference No. : TLTP41
Title : MENTOR (Multimedia Educational New Technology for Operational Research)
Project Leaders : Dr Val Belton and Dr Mark Elder
Organisation : University of Strathclyde
Department : Department of Management Science
e-mail : mentor@strath.ac.uk
URL: <http://www.strath.ac.uk/Departments/MgtSci/mentor.html>
Main use of multimedia : developing teaching materials
Brief description : The Mentor Project is a 3 year Teaching and Learning Technology Project (backed by the Committee of Professors in Operational Research) whose aim is to produce 17 computer based modules in a variety of commonly taught Operational Research subjects. The modules contain hypertext, still/interactive graphics, animations, video and technique software integrated in a complete learning environment. The project is based in the Department of Management Science at the University of Strathclyde and involves universities throughout the UK.

Reference No. : TLTP43
Title : QUTAL
Project Leaders : F McBride
Organisation : The Queens University of Belfast
Department : Institute of Computer Based Learning
e-mail : R.Thompson@QUB.AC.UK
URL:
Main use of multimedia : teaching material
Brief description : We are involved in producing 200 hours of courseware for 12 different departments across the University. The courseware ranges from hypermedia based material to models and simulations.

Reference No. : TLTP48
Title : Human Tutor Emulating Software
Project Leaders : Professor Greg Wilkinson-Riddle, Ashok Patel
Organisation : DeMontford University
Department : Department of Accounting and Finance,Leicester Business School
e-mail : apatel@dmu.ac.uk
URL:
Main use of multimedia : Developing software and research into the potential of multimedia applications
Brief description : The project is unique in providing a Human Tutor Emulation in teaching of multi-variate, applied and numerical skills. Though the applications being developed pertain to Accounting, the approach has significance for all areas of engineering. The software has the knowledge of all inter-relationships involved in a specific domain and is capable of intelligent and graded feedback including direction to an intermediate stage where necessary, just as a human tutor would guide a student.

Reference No. : TLTP57
Title : Computer Aided Technology & Engineering Education Consortium
Project Leaders : Mr. J. M. Bailey
Organisation : CATEEC Lead Site:UMIST
Department : Textiles
e-mail : Jonathan.Fisher@umist.ac.uk
URL:
Main use of multimedia : Assist teaching of laboratory sessions
Brief description : Developing teaching package aimed at 1st year Undergraduates in mechanical engineering and textiles to augment laboratory sessions

Reference No. : TLTP58
Title : Geotechnical engineering computer aided learning : GeoCAL
Project Leaders : Dr L R Davison
Organisation : UWE, Bristol
Department : Faculty of the Built Environment
e-mail : lr-davis@uwe
URL:
Main use of multimedia : (1) developing for teaching (2) teaching
Brief description :

Reference No. : TLTP60
Title : Interactive Teaching of Surgery to Remote Centres (INSURRECT)
Project Leaders : Prof. M Hobsley and Dr D G Jameson
Organisation : Dept of Surgery and AudioVisual Centre
Department :
e-mail : g.jameson@ucl.ac.uk
URL:
Main use of Multimedia: 1. developing teaching material
a) Multimedia resource on SuperJANET network ATM video network
b) WWW
2. teaching
Brief description : This project seeks to harness advanced telecommunications technology to the teaching and learning in surgery, an area of higher education where visual information is critical to the learning process. This proposal is the natural extension of TE01 (Teaching Project No.1) in the SuperJANET Demonstrator Programme. The programme will involve students undergoing surgical training in a collaborative programme using interactive video teaching and learning techniques over the new high speed data network SuperJANET.

Reference No. : TLTP71
Title : The Development of CAL Course Material for the Teaching of Corrosion in Engineering
Project Leaders : Dr R.A. Cottis
Organisation : UMIST
Department : Corrosion and Protection Centre
e-mail : R.A.Cottis@umist.ac.uk
URL:
Main use of multimedia : developing teaching materials
Brief description : The project is concerned with the provision of material to support the teaching of corrosion control to engineering undergraduates. It is based on the use of case studies, with students being given access to a 'hidden' set of modules on corrosion theory when they need it. It is hoped that this will show the relevance of the theory to practice very clearly, and help to maintain motivation.

Reference No. : TLTP72
Title : Caring Professions (but about to change)
Project Leaders : Howard Nattrass (day to day run by Bryan Glastonbury of Southampton University)
Organisation : Bournemouth University
Department : Institute of Health and Community Services
e-mail : Bryan@soton.ac.uk
URL:
Main use of multimedia : courseware development
Brief description : Output will be a number of quite small CAL modules, integrated with other teaching learning approaches, in the areas of inter-personal skills and research methods. We have to target courseware at basic training programmes for nurses and social workers.

Reference No. : TLTP73
Title : eLABorate (Computer Simulations For Teaching Practical Design and Data Handling)
Project Leaders : Dr C. J. Garratt
Organisation : University of York
Department : Chemistry
e-mail : project secretary : Sue Holmes sjh13@york.ac.uk
project co-ordinator : John Garratt cjb2@york.ac.uk
project mailing list : tltp-elaborate@mailbase.ac.uk
Main use of multimedia : Developing teaching materials.
Brief description : The eLABorate project aims to produce computer simulations of laboratory experiments in Chemistry and Biochemistry. Their use should enable students to gain experience in the design, planning and interpretation of a serious investigation which would, if done in a real lab, take too long, be too expensive or dangerous or be unlikely to give interpretable results.

Reference No. : TLTP75
Title : CLIVE - Computer-based learning In Veterinary Education
Project Leaders : Dr Andrew D Short
Organisation : The University of Edinburgh
Department : Preclinical Veterinary Sciences
e-mail : adshort@ed.ac.uk
URL:
Main use of multimedia : developing teaching materials
Brief description : The project will make Computer-based Learning (CBL) an established and expanding feature of veterinary education in all the sub-disciplines of veterinary science in the 6 UK veterinary schools. This will be achieved by template production, authoring, training and dissemination within the consortium and between this and other related consortia.

Reference No. : TLTP76
Title : pharma-CAL-ogy
Project Leaders : Ian Hughes (director)
Organisation : University of Leeds
Department : Pharmacology
e-mail : pha6ieh@south-01.novell.leeds.ac.uk
URL:
Main use of multimedia : developing teaching materials
Brief description : To implement existing and develop new CAL materials for use in the teaching of pharmacology.

3.4.2 Non-multimedia

Reference No. : TLTP11
Title : Project ALTER: Assessment of Learning through Technology, Efficiency and Rigour.
Project Leaders : Co-directors: Dr George Brown, Mr John Partington
Organisation : We are part of a small consortium, including USDU, Universities of Leeds and Kent and NEAB.
Department : Universities' Staff Development Unit - an agency of the CVCP
e-mail : J.Bull@sheffield.ac.uk
URL:
Main use of multimedia : none.
Brief description : The project is looking at ways in which staff time devoted to assessment can be reduced, whilst maintaining quality, through the use of technology and other methods, such as peer and self assessment.

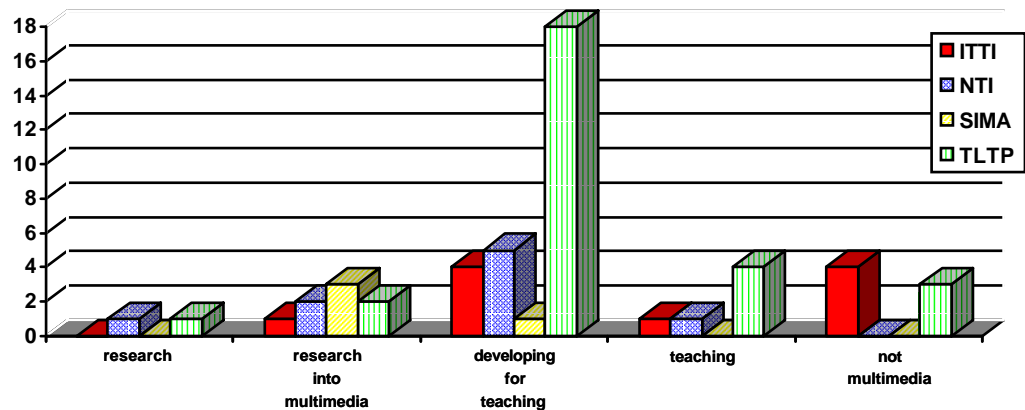
Reference No. : TLTP14
Title : Courseware to Support the Teaching of Programming
Project Leaders : Neil Gutteridge
Organisation : University of Nottingham
Department : Department of Computer Science
e-mail : nhg@cs.nott.ac.uk
URL:
Main use of multimedia : none.
Brief description :

Reference No. : TLTP17
Title : Co-ordinated Development and Evaluation of Courseware for Basic Mathematical Skills in the North-east
Project Leaders : Dr J Appleby
Organisation : University of Newcastle upon Tyne
Department : Department of Engineering Mathematics
e-mail : john.appleby@newcastle.ac.uk
URL:
Main use of multimedia : none.
Brief Description:

4 SURVEY RESULTS: ANALYSIS BY FUNDING BODY

4.1 Use of Multimedia

Funding Body	ITTI	NTI	SIMA	TLTP	Overall
research tool	0	1	0	1	2
research into multimedia	1	2	3	2	8
developing for teaching	4	5	1	18	28
teaching	1	1	0	4	6
not multimedia	4	0	0	3	7



Use of Multimedia

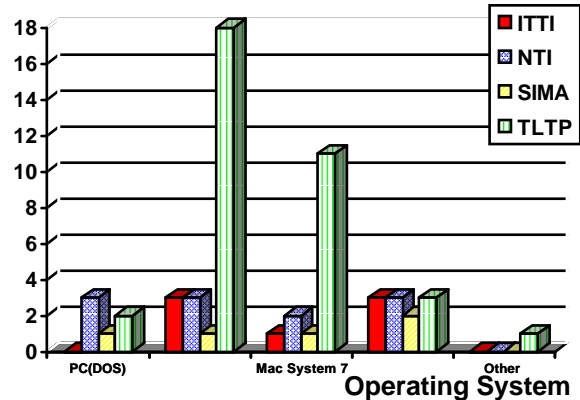
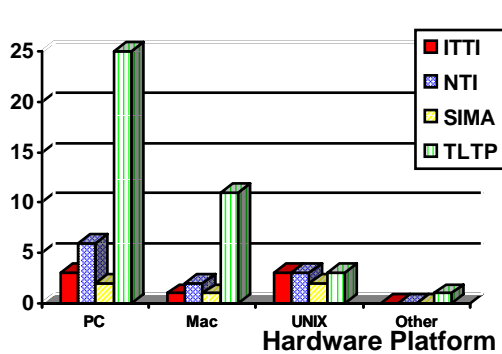
4.2 Development System

Hardware Platform:

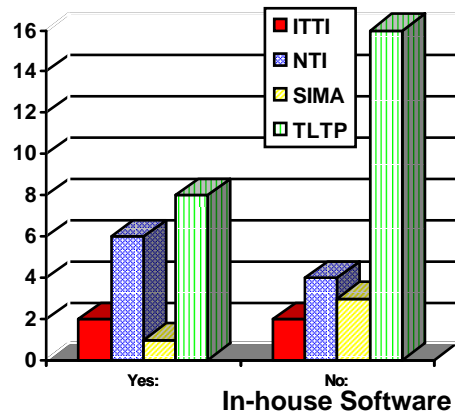
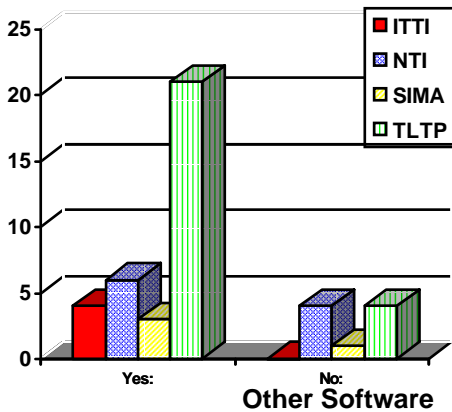
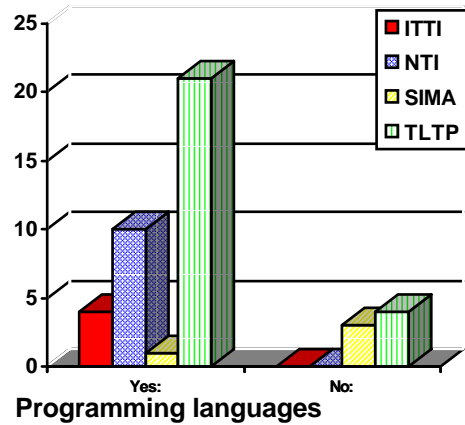
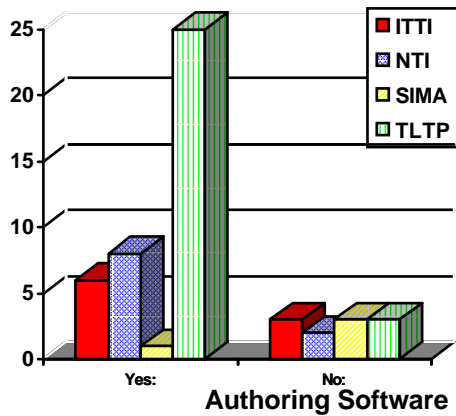
Funding Body	ITTI	NTI	SIMA	TLTP	Overall
PC	3	6	2	25	36
Mac	1	2	1	11	15
UNIX	3	3	2	3	11
Other	0	0	0	1	1

Operating System

Funding Body	ITTI	NTI	SIMA	TLTP	Overall
PC(DOS)	0	3	1	2	6
PC(Windows)	3	3	1	24	31
Mac System 7	1	2	1	11	15
UNIX	3	3	2	3	11
Other	0	0	0	1	1

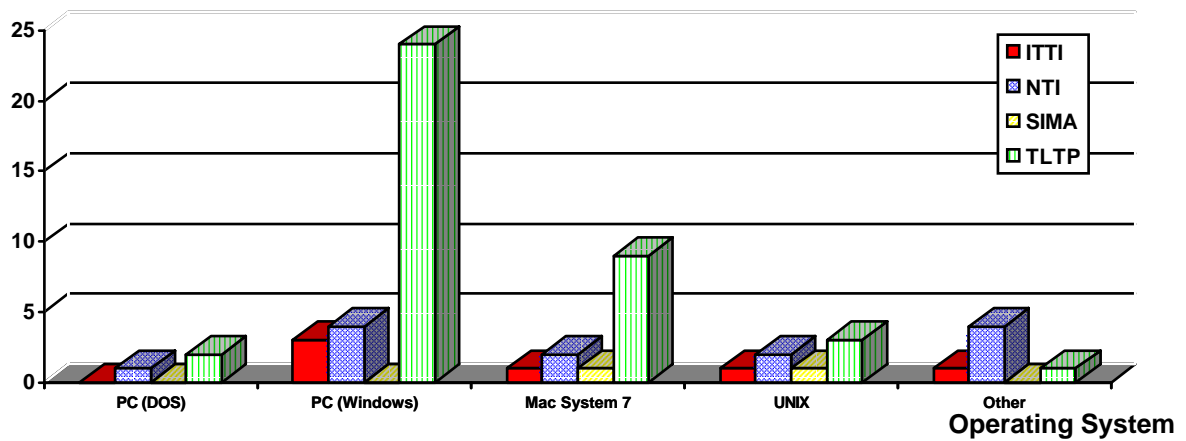
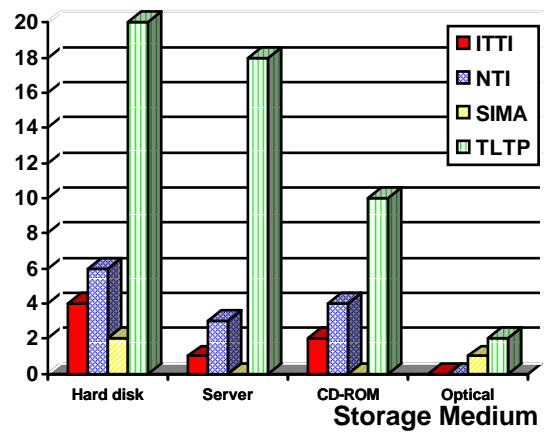
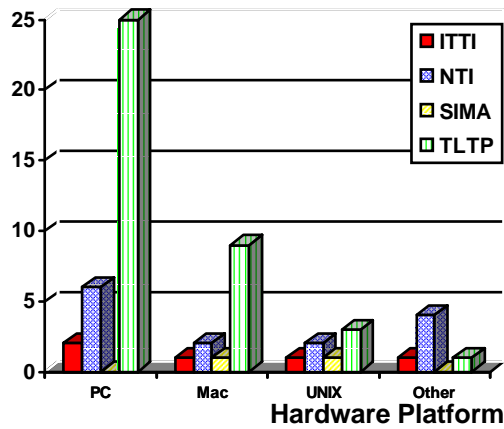


Funding Body	ITTI	NTI	SIMA	TLTP	Overall
Is Multimedia Authoring software being used:					
Yes:	6	8	1	25	40
No:	3	2	3	3	11
Are any programming languages being used:					
Yes:	4	10	1	21	36
No:	0	0	3	4	7
Are any other relevant software packages being used:					
Yes:	4	6	3	21	34
No:	0	4	1	4	9
Are any previous in-house software developments being used:					
Yes:	2	6	1	8	17
No:	2	4	3	16	25



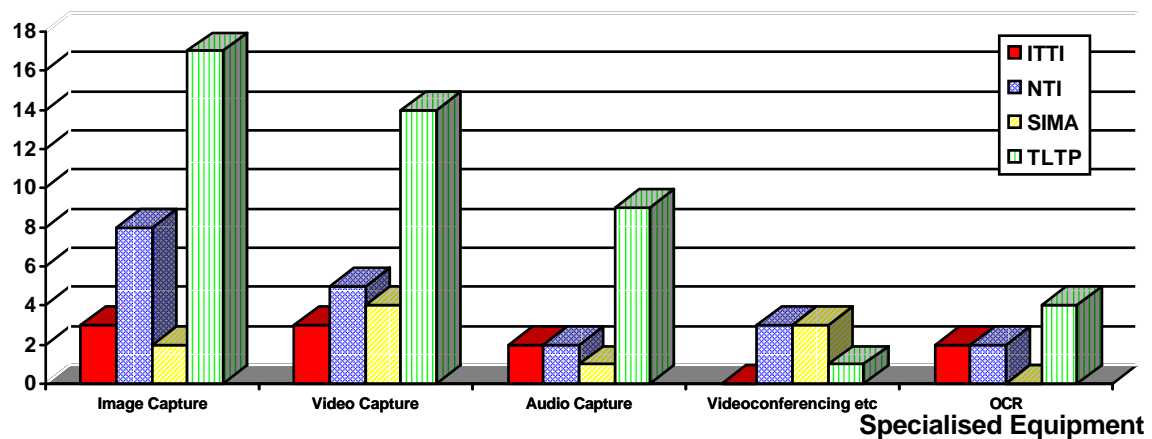
4.3 Delivery System

Funding Body	ITTI	NTI	SIMA	TLTP	Overall
Hardware Platform					
PC	2	6	0	25	33
Mac	1	2	1	9	13
UNIX	1	2	1	3	7
Other	1	4	0	1	6
Operating System					
PC (DOS)	0	1	0	2	3
PC (Windows)	3	4	0	24	31
Mac System 7	1	2	1	9	13
UNIX	1	2	1	3	7
Other	1	4	0	1	6
Storage Medium					
Hard disk	4	6	2	20	32
Server	1	3	0	18	22
CD-ROM	2	4	0	10	16
Optical	0	0	1	2	3



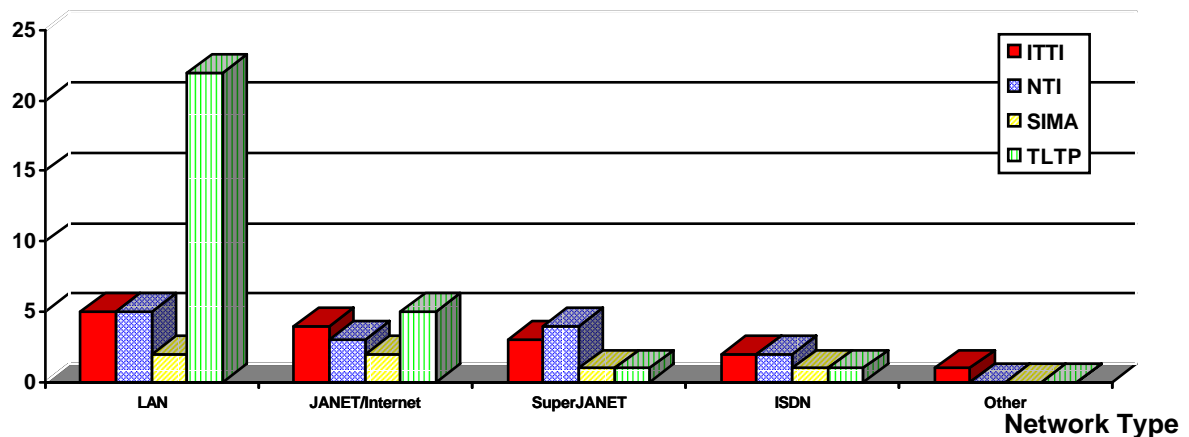
4.4 Specialised Equipment

Funding Body	ITTI	NTI	SIMA	TLTP	Overall
Image Capture	3	8	2	17	30
Video Capture	3	5	4	14	26
Audio Capture	2	2	1	9	14
Videoconferencing etc.	0	3	3	1	7
OCR	2	2	0	4	8



4.5 Networking

Funding Body	ITTI	NTI	SIMA	TLTP	Overall
Is the system designed for delivery over a network					
Yes	5	8	3	23	39
No	0	2	1	2	5
If so, what type?					
LAN	5	5	2	22	34
JANET/Internet	4	3	2	5	14
SuperJANET	3	4	1	1	9
ISDN	2	2	1	1	6
Other	1	0	0	0	1

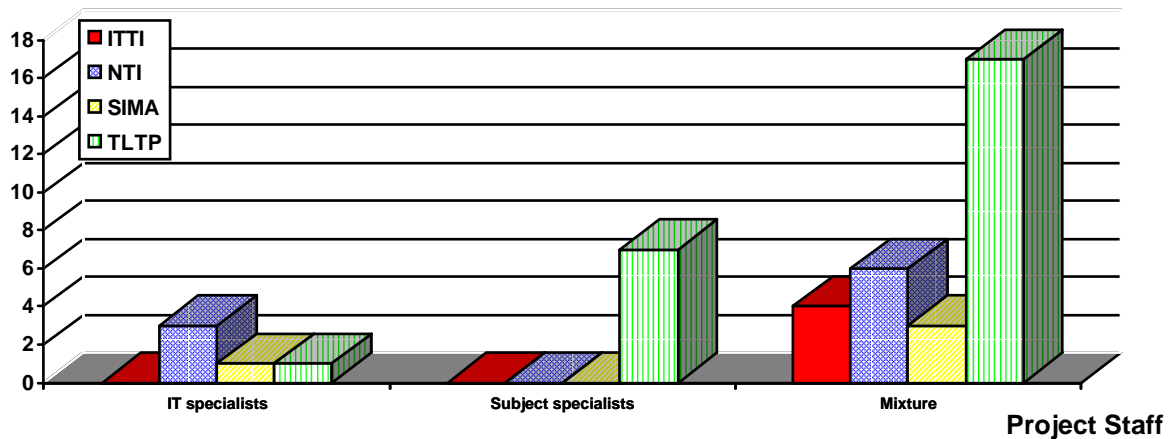


4.6 Training Materials and Documentation

Funding Body	ITTI	NTI	SIMA	TLTP	Overall
Is any specific training material being used in the project?					
Yes	2	3	1	12	18
No	2	6	3	13	24
Is any specific training material or documentation being prepared?					
Yes	5	7	3	21	36
No	0	3	1	4	8
Are you prepared to make this material available?					
Yes (free)	1	2	4	6	13
Yes (at cost)	4	4	0	15	23
No	0	2	0	5	7

4.7 Project Staff

Funding Body	ITTI	NTI	SIMA	TLTP	Overall
Are the staff involved:					
IT specialists	0	3	1	1	5
Subject specialists	0	0	0	7	7
Mixture	4	6	3	17	30



5 HARDWARE SPECIFICATION

5.1 Development Systems

5.1.1 ITTI

PC

486, Windows capable, Windows 3.1

486DX2-66, 8MB RAM, 340MB hard disk, VL-Bus, SVGA, 16 bit accelerated graphics card, 16 bit sound card, dual speed CD-ROM, Windows for Workgroups 3.11; Novell 3.12

Mac

Quadra 660AV, System 7.1

UNIX

HP735 workstations (75mhz PA-RISC processor, 64MB RAM, 2GB local disk, AFS filing system, CRX-24Z or CRX-48Z accelerated 3D 24bit graphics cards, CD-ROM, DAT, V-LAN controlled framebuffer for stop-frame video animation), UNIX

Sun SPARC 2, Sun OS

5.1.2 NTI

PC

486SX, MS-DOS

486DX, 12MB RAM min, SVGA, EISA, SCSI, 1GB hard disk, Windows 3.1

486DX2-66, MS-DOS

486DX2-66, 8MB RAM, SVGA, Windows 3.1

Mac

Quadra 650, 16MB RAM, 160MB hard disk, CD-ROM , System 7

UNIX

Sun SPARC, Solaris

Sun SPARC 10/51, 64MB RAM, 5GB hard disk, Solaris (also SGI Indy, DEC Alpha, HP Snake)

Other

Digital Video Interactive Information Server (dual processor Alpha, 10GB RAID disk, FDDI network connection), OSF/1

Transputer (INMOS T900 modules)

5.1.3 SIMA

PC

486DX-40, MS-DOS 6.0

486DX2-66, 350MB hard disk, 17" monitor, Windows 3.11

Mac

LC475, System 7

UNIX

Sun IPC SPARC, SunOS 4.1.3

Sun IPX workstation, SunOS

Sun ZX workstation, Solaris

5.1.4 TLTP

PC

any, Windows

386+, 4MB RAM, Windows 3.1

486, Windows

486DX, 8MB RAM, SoundBlaster, 100MB Hard disk, SVGA, Windows 3.1

486DX50+, 16MB RAM, min 1MB SVGA graphics card, CD-ROM drive, Windows 3.1

486DX266 SVGA MPC compliant

486DX2-66 8MB RAM, 340MB hard disk, VL-Bus, SVGA, 16 bit accelerated graphics card, 16 bit sound card, dual speed CD-ROM, Windows for Workgroups 3.11

486DX2-66, PCI, Windows 3.1

Mac

any, System 7.x

LCII, System 7

IIvx, System 7.1

660 Centris, System 7

Quadra 660AV, System 7.1

UNIX

Sun, UNIX/Motif

Sun SPARC, Solaris

Other

NeXT, NeXTSTEP

5.2 Maximum and Minimum Development Specification

5.2.1 ITTI

PC (minimum)

486, Windows capable, Windows 3.1

PC (maximum)

486DX2-66, 8MB RAM, 340MB hard disk, VL-Bus, SVGA, 16 bit accelerated graphics card, 16 bit sound card, dual speed CD-ROM, Windows for Workgroups 3.11

Mac (minimum)

Mac IIvx, System 7.1

Mac (maximum)

Mac Quadra 660AV, System 7.1

UNIX

Sun SPARC2, Sun OS

5.2.2 NTI

PC (minimum)

486SX, MS-DOS

PC (maximum)

486DX2-66, 12MB RAM, SVGA, EISA, SCSI, 1GB hard disk, Windows 3.1

Mac

Quadra 650, 16MB RAM, 160MB hard disk, CD-ROM, System 7

UNIX

Sun SPARC10/51, 64MB RAM, 5GB hard disk, Solaris

Other

Digital Video Interactive Information Server (dual processor Alpha, 10GB RAID disk, FDDI network connection), OSF/1

Transputer (INMOS T900 modules)

5.2.3 SIMA

PC (minimum)

486DX-40, MS-DOS 6.0

PC (maximum)

486DX2-66, 350MB hard disk, 17" monitor, Windows 3.11

Mac

LC475, System 7

UNIX

Sun IPX workstation, SunOS

Sun ZX workstation, Solaris

5.2.4 TLTP

PC (minimum)

386+, 4MB RAM, Windows 3.1

PC (maximum)

486DX2-66 16MB RAM, 340MB hard disk, VL-Bus, SVGA, 16 bit accelerated graphics card, 16 bit sound card, dual speed CD-ROM, Windows for Workgroups 3.11

Mac (minimum)

LCII, System 7.1

Mac (maximum)

Mac Quadra 660AV, System 7.1

UNIX

Sun SPARC, Solaris

Other

NeXT, NeXTSTEP

5.3 Delivery Systems

5.3.1 ITTI

PC

486, Windows capable, CD-ROM, Windows 3.1

486DX-33, 8MB RAM, 210MB hard disk, VL-Bus, SVGA, 16 bit accelerated graphics card, 16 bit sound card, dual speed CD-ROM, Windows for Workgroups 3.11

486DX2-66, 8MB RAM, 340MB hard disk, VL-Bus, SVGA, 16 bit accelerated graphics card, 16 bit sound card, dual speed CD-ROM, Windows for Workgroups 3.11

Mac

LC475, 8MB RAM, 220MB hard disk, 16bit video RAM, external CD-ROM, System 7.1

Ilvx, System 7.1

Quadra 610, System 7.1

UNIX

HP/Sun/DEC workstations (24bit graphics card;PHIGS), UNIX

5.3.2 NTI

PC

386SX, 4MB RAM, Windows 3.1

486SX, 16 bit sound card, dual speed CD-ROM drive 256 colour SVGA display, Intel ActionMedia card, MS-DOS

486DX, 8MB RAM, SVGA, ethernet, Windows 3.1

Mac

16MB RAM, 160MB hard disk, CD-ROM, System 7

UNIX

Sun SPARC 10/51, 64MB RAM, 5GB hard disk, Solaris

Other

any WWW client

Digital Video Interactive Information Server (dual processor Alpha, 10GB RAID disk, FDDI network connection), OSF/1

5.3.1 SIMA

PC

-

Mac

LC475, System 7

UNIX

Sun IPC SPARC, 24MB RAM, 1.5GB hard disk, SunOS 4.1.3

5.3.4 TLTP

PC

386SX, 4MB RAM, CD-ROM drive, sound card, MS-DOS 3

386SX 25+ 4MB memory, SVGA 640 480, 100MB HD

386DX +, 4MB RAM, SoundBlaster Pro, SVGA, 100MB+ hard disk, CD-ROM drive, Windows 3.1

386+, MS-DOS

386+, Windows

386+, 4MB RAM, Windows 3.1

486+, Windows

486SX, 4MB+ RAM, 1MB SVGA card, hard disk, mouse, network card, Windows

486DX, 8MB RAM, SoundBlaster, 100MB hard disk, SVGA, Windows 3.1

486DX33, 8MB RAM, Windows 3.1

486DX-33 8MB RAM, 210MB hard disk, VL-Bus, SVGA, 16 bit accelerated graphics card, 16 bit sound card, dual speed CD-ROM, Windows for Workgroups 3.11

486DX2-66 8MB RAM, 340 MB hard disk, VL-Bus, SVGA, 16 bit accelerated graphics card, 16 bit sound card, dual speed CD-ROM, Windows for Workgroups 3.11

486DX2-66, 16MB RAM, local bus, diskless, networked, Windows 3.1

Mac

any, System 7.x

LCII, System 7

LCII, 8MB RAM, colour monitor, 80MB+ hard disk, HyperCard II, CD-ROM drive, System 7

LC475, 8MB RAM, 220MB hard disk, 16 bit video RAM, external CD-ROM, System 7.1

IIvx, System 8.1

Quadra 610, System 7.1

UNIX

any UNIX box with Motif

Sun SPARC, Solaris

Other

NeXT, NeXTSTEP

5.4 Maximum and Minimum Delivery Specification

5.4.1 ITTI

PC (minimum)

486, Windows capable, CD-ROM, Windows 3.1

PC (maximum)

486DX2-66, 8MB RAM, 340MB hard disk, VL-Bus, SVGA, 16 bit accelerated graphics card, 16 bit sound card, dual speed CD-ROM, Windows for Workgroups 3.11

Mac (minimum)

LC475, 8MB RAM, 220MB hard disk, 16bit video RAM, external CD-ROM, System 7.1

Mac (maximum)

Quadra 610, System 7.1

UNIX

HP/Sun/DEC workstations (24bit graphics card;PHIGS), UNIX

5.4.2 NTI

PC (minimum)

386SX, 4MB RAM, Windows 3.1

PC (maximum)

486DX, 8MB RAM, SVGA, ethernet, Windows 3.1

Mac

16MB RAM, 160MB hard disk, CD-ROM, System 7

UNIX

Sun SPARC 10/51, 64MB RAM, 5GB hard disk, Solaris

Other

any WWW client

Digital Video Interactive Information Server (dual processor Alpha, 10GB RAID disk, FDDI network connection), OSF/1

5.4.3 SIMA

Mac

LC475, System 7

UNIX

Sun IPC SPARC, 24MB RAM, 1.5GB hard disk, SunOS 4.1.3

5.4.4 TLTP

PC (minimum)

386SX, 4MB RAM, CD-ROM drive, sound card, MS-DOS 3

PC (maximum)

486DX2-66, 16MB RAM, local bus, diskless, networked, Windows 3.1

Mac (minimum)

any, System 7.x

Mac (maximum)

Quadra 610, System 7.1

UNIX

any UNIX box with Motif

Sun SPARC, Solaris

Other

NeXT, NeXTSTEP

6 SOFTWARE

6.1 Multimedia authoring software

6.1.1 ITTI

Authorware Professional
AVS
Framemaker 3
Guide
HTML
Macromind Director
NCSA httpd
PHIGS
Toolbook
Webmaker
XV

6.1.2 NTI

HTML
Kodak PhotoCD Developers Kit
Microsoft Viewer
Mosaic
Object DB
Questionmark Designer for Windows
Toolbook
+ in-house systems

6.1.3 SIMA

Microsoft Word
TkWWW

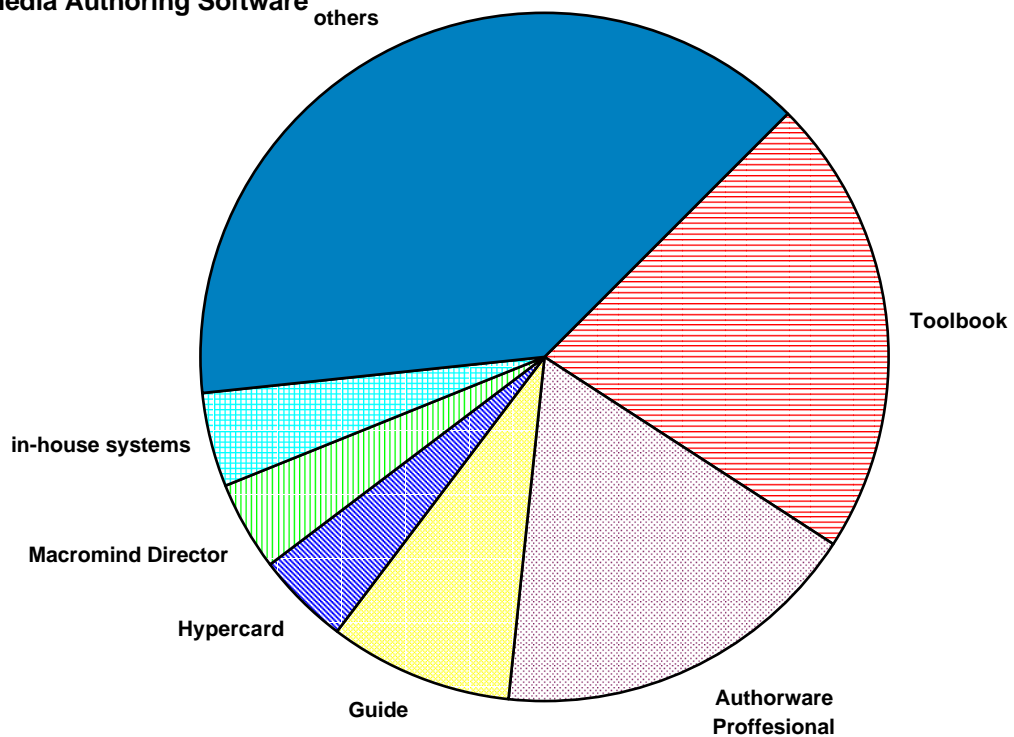
6.1.4 TLTP

Authorware Pro
Guide
HyperCard
Hyperhelper
HyperSense
IRIS (Electric Brain Company)
LearnOR (in-house system)
Macromind Director
Metacard
Microcosm
Microsoft Multimedia Viewer
Microsoft Word
Questionmark
Windows Help System
Toolbook
+ in-house systems

6.1.5 Overall

Authorware Pro
AVS
Framemaker 3
Guide
HTML
HyperCard
Hyperhelper
HyperSense
IRIS (Electric Brain Company)
Kodak PhotoCD Developers Kit
LearnOR (in-house system)
Macromind Director
Metacard
Microcosm
Microsoft Multimedia Viewer
Microsoft Word
NCSA httpd
NCSA Mosaic
Object DB
PHIGS
QuestionMark Designer for Windows
TkWWW
Toolbook
Webmaker
Windows Help System
XV
+in-house systems

Multimedia Authoring Software



6.2 Programming languages

6.2.1 ITTI

C
Fortran M
Perl
Tcl
Turbo C++
Visual Basic

6.2.2 NTI

C
C++
Hypertalk
Lisp
Microsoft Visual C++
OCCAM
Openscript
Perl
Prolog
UNIX shell script
Visual Basic

6.2.3 SIM A

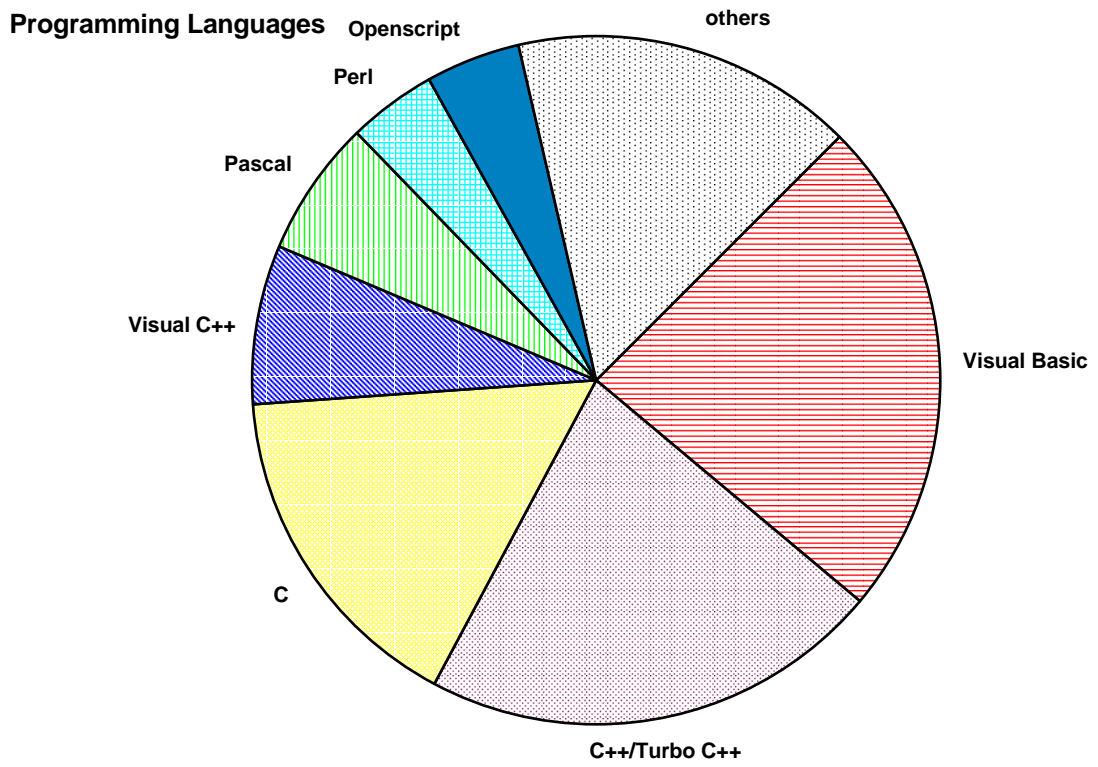
C
shell scripts

6.2.4 TLTP

C
C++
Logixx
Mathematica
Openscript
PDC Prolog
Spike2 script
Turbo C++
Turbo Pascal
Visual Basic
Visual C++

6.2.5 Overall

C
C++
Fortran 77
Hypertalk
Lisp
Logixx
Mathematica
OCCAM
Openscript
Perl
Prolog
Spike2 script
Tcl
Turbo C++
Turbo Pascal
UNIX shell script
Visual Basic
Visual C++



6.3 Other software

6.3.1 ITTI

httpd
Mosaic
Motif
Paintshop Pro
Photoshop
Superbase
WAIS
X11R5

6.3.2 NTI

Diaquest imaging software
HTML tools
Hypercard
Paintshop Pro
Photoshop
Video for Windows

6.3.3 SIMA

CUSeeMe
ES-F2F
Photoshop
ShowMe

6.3.4 TLTP

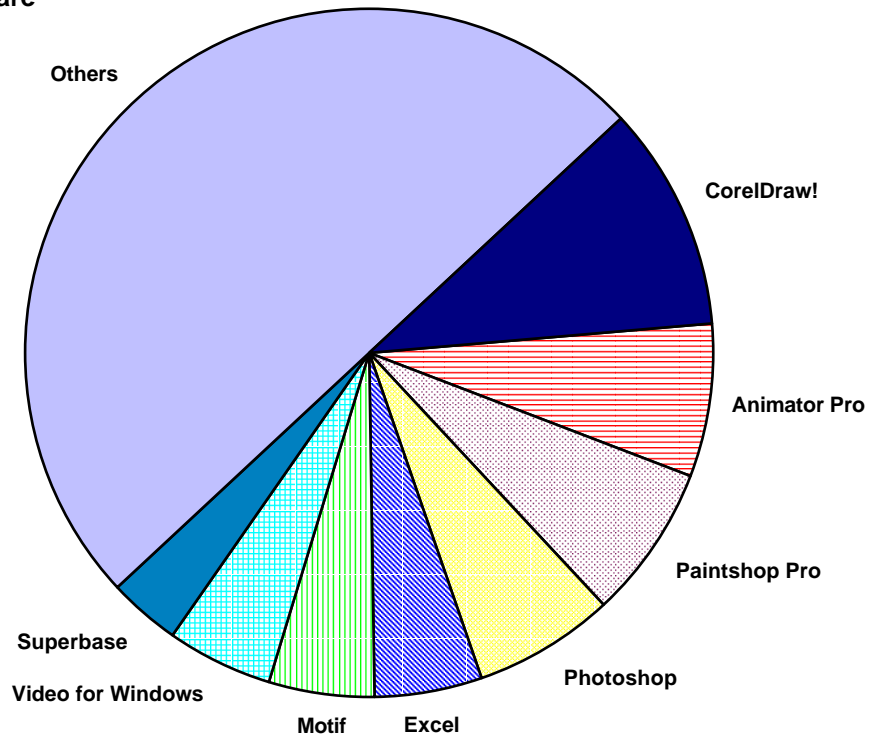
After Effects
Animator Pro
ClarisWorks
CorelDRAW!
Debabeliser
Doc-to-Help
Excel
Illustrator
Infini-D
Mathematica
Mathtype
MINITAB
Morph
Motif
Paintbrush
Paintshop Pro
Painter
Photoshop
Powerpoint
Premiere
SDAAI
Spike2 for Windows/Mac
Superbase
3D Studio
UIL
Video for Windows
Windows development kit
XLISPSTAT

6.3.5 Overall

After Effects
 Animator Pro
 ClarisWorks
 CorelDRAW!
 CUSeeMe
 Debabeliser
 Diaquest imaging software
 Doc-to-Help
 ES-F2F
 Excel
 HTML tools
 httpd
 Hypercard
 Illustrator
 Infini-D
 Mathematica
 Mathtype
 MINITAB
 Morph

Mosaic
 Motif
 Paintbrush
 Paintshop Pro
 Painter
 Photoshop
 Powerpoint
 Premiere
 SDAAI
 ShowMe
 Spike2 for Windows/Mac
 Superbase
 3D Studio
 UIL
 Video for Windows
 WAIS
 Windows development kit
 XLISPSTAT
 X11R5

Other Software



7. SPECIALISED EQUIPMENT

7.1 Image capture

7.1.1 ITTI

Canon CLC copier (as scanner)
CD writer
Kodak DCS 200 Pro digital camera
Screen Machine II
Targaboard
Videodisc WORM
Videologic Captivator

7.1.2 NTI

Canon Ion
HP Scanjet IIcx
Intel Smart Video Recorder
Kingfisher capture card (Mac)
Kodak PhotoCD
Nuvista capture card
Screen Machine
Targa +32 image capture card

7.1.3 SIMA

HP Scanjet IIcx
JVC 1 chip rostrum camera
JVC 3 chip rostrum camera
Kodak Photo CD
Logitech ScanMan
Screen Machine II
Videologic Captivator
Video Pix

7.1.4 TLTP

Apple One scanner
Cannon Ion camera
HP Scanjet
Kodak PhotoCD
Logitech scanners
Microtek slide scanner
Screen Machine II
Videologic Captivator
+ assorted unspecified scanners

7.1.5 Overall

Apple One scanner
Canon CLC copier (as scanner)
Canon Ion
CD writer
HP Scanjet IIc
HP Scanjet IIcx
Intel Smart Video Recorder
JVC 1 chip rostrum camera
JVC 3 chip rostrum camera
Kingfisher capture card (Mac)
Kodak DCS 200 Pro digital camera
Kodak PhotoCD
Logitech ScanMan
Microtek slide scanner
Nuvista capture card
Screen Machine II
Targa +32 image capture card
Videodisc WORM
Videologic Captivator
Video Pix
+ assorted unspecified scanners

7.2 Video capture

7.2.1 ITTI

Screen Machine II

Targa board

Videologic Captivator

Video for Windows

V-LAN controlled system capturing from VHS/S-VHS/optical disk video systems

7.2.2 NTI

Canon Ion

Harlequin capture card (Mac)

Intel ActionMedia card

Intel Smart Video Recorder

Parallax

Screen Machine

Sun Video card

Video Pix

7.2.3 SIMA

Frame capture from Hi8 camcorder tape

Sun Video

SuperMac VideoSpigot card

7.2.4 TLTP

Mac A/V

Screen Machine II

Video for Windows

Videologic Captivator

+ assorted unspecified video camera, camcorders, etc.

7.2.5 Overall

Canon Ion

Frame capture from Hi8 camcorder tape

Harlequin capture card (Mac)

Intel ActionMedia card

Intel Smart Video Recorder

Mac A/V

Parallax

Screen Machine II

Sun Video

SuperMac VideoSpigot card

Targa board

Videologic Captivator

Video for Windows

Video Pix

V-LAN controlled system capturing from VHS/S-VHS/optical disk video systems

+ assorted unspecified video cameras, camcorders, etc.

7.3 Audio capture

7.3.1 ITTI

SoundBlaster 16

7.3.2 NTI

SoundBlaster Pro

SoundBlaster 16

7.3.3 SIMA

Mac audio

Sun Audio

7.3.4 TLTP

Mac audio

Orchid sound board

SoundBlaster 16

7.3.5 Overall

Mac audio

Orchid sound board

SoundBlaster Pro

SoundBlaster 16

Sun Audio

7.4 Videophone/videoconferencing

7.4.1 ITTI

-

7.4.2 NTI

BT VC7000

Fujitsu desktop conferencing software

MICE videoconferencing tools

7.4.3 SIMA

CUSeeMe

ES-F2F

GPT s.261 CODEC

Sun Video camera

7.4.4 TLTP

BITFIELD codecs

BT VC7000

BT VC8000

H.261

Multiband ASCEND aggregator

7.4.5 Overall

BITFIELD codecs

BT VC7000

BT VC8000

CUSeeMe

ES-F2F

Fujitsu desktop conferencing software

GPT s.261 CODEC

H.261

MICE videoconferencing tools

Multiband ASCEND aggregator

Sun Video camera

7.5 OCR

7.5.1 ITTI

OmniPage Pro
WordScan Plus

7.5.2 NTI

WordScan

7.5.3 SIMA

-

7.5.4 TLTP

OmniPage
WordScan Plus

7.5.5 Overall

OmniPage Pro
WordScan Plus

8. COMMENTS: HARDWARE AND SOFTWARE

The reference code given after each comment refers to the project reference number in the main project listing in Section 3.

8.1 ITTI projects

Generally well integrated and works well. (06)

All have their limitations. The de-standardisation of the IBM PC is a nightmare as far as multimedia is concerned. Read our Guidelines! (09)

It's getting there (13)

Excellent and definitely better than a PC/Windows. (17)

Getting good screen dumps for inclusion in material is extraordinarily time-consuming. (22)

8.2 NTI projects

Needs a lot more development before being fielded in the non-IT community. (35)

The implementation of this type of application is reasonably straightforward. Authoring tools all have limitations and require computer professionals to be involved for maximum efficiency. (63)

Mosaic is likely to be a useful multimedia navigating tool for this application. (97)

Intel Smart Video Recorder has problems with PAL capture. (232)

We find that the Mac is fine to work with, if a little reticent in allowing you to find out what it is doing (our previous experience is with UNIX, which is not as nice for the user but nicer for the programmer since its diagnostics are much more accessible). Most of our problems arise from the linguistics software: sources not available, incompatibilities between versions of the programming languages that support them, and *particularly* lack of documentation. We have also found Hypercard lacking in functionality, although it has nice features for constructing interfaces quickly. (242)

8.3 SIMA projects

Sun IPX workstations are underpowered for video decompression. ShowMe software initially looks good, but it is early days. (01)

The Mac is an ideal platform for video conferencing. Both hardware and software are easily obtainable.

However, saying this, I have had software compatibility problems on one Mac platform - a Mac LC. (03)

You'll have to read the report! (05)

We are still setting up the video links, and have had problems with the audio (there are echo problems).

WWW has its drawbacks and interactive programming is not straightforward. (08)

8.4 TLTP projects

The project has to use what is available now, and adjust our needs to use what is there. Some of it is fine, but others annoy and we want the next version.(01)

When developing applications on a high spec. machine, one has to continually be aware of the recipients of the application. They are unlikely to have a high end machine, this must be taken into account during development, for example accessing large graphic files must be minimised, and the inclusion of sound and video must take into consideration the resources of the target audience. The major issue regarding software is to find out about runtime versions for your development software and any royalties that will have to be paid. This is an important issue for distribution of your application.(03)

We have generally been satisfied with the choice of software and hardware we have made. Increasing sophistication of authors and availability of things like digital video mean we are pushing the specification of the machines to the limit. The software has proved relatively easy for the academic authors to learn but we suspect the ones we have met have been keen and fairly computer literate already. It is questionable how far the authoring skills will penetrate the academic community. (05)

The project uses PCs and Macs at our lead site and have had no problems or particular experiences.(11)

It appears reasonably well suited for the purposes of producing material as described above. (13)

Toolbook is an excellent authoring package for MS windows. It is very easy to learn and gives you access to windows' functionality. We have already decided to upgrade to the multimedia version 3.0.

Mathematica is one of the best, if not the best, symbolic algebra system on the market. It also has a powerful programming language which allows quite complex algorithms to be coded in just a few lines. (15)

Windows is flaky. (22)

All have their limitations; the de-standardisation of the IBM PC is a nightmare as far as multimedia is concerned. (23)

We use whatever is available. We do not seek to purchase special multimedia equipment. (24)

The hardware is not a problem. Authoring software is a problem. Some specialised ones like Authorware are too restrictive in what the end product can do and is very expensive. Some like HyperCard and Toolbook are flexible but slow and single platform. We moved to Director because of its power and its cross-platform promise, but it is difficult to learn. (30)

Software: no one product does everything we want, but producing our own would be prohibitive in cost and not in line with our aim of making products easily locally adaptable. Hence we have had to trim the conceptions to fit the software capabilities. Hardware: Lack of standards and card incompatibilities is a problem with PC-based systems, particularly as far as delivery is concerned. (34)

Too early to comment. (36)

Our main experience of the hardware used in the project is that delivery on student network systems is difficult. Software experience is mainly that you need to be an expert in every program you use (or have an expert available) in order to write good material. (39)

The software development systems for each platform are quite good although we are on the look out for a multiplatform development kit that supports C++ FULLY. (43)

We are quite happy with the PC compatible hardware as this is the commercial platform our students are most likely to use in their jobs. We haven't had any significant problems in using our chosen hardware and software platforms, especially as we do not have any intermediary authoring software which might make our work easy but also enforce some limitations. We can't get excited about the multimedia platform because there is hardly any installed base of multimedia computers in the Business School computer Labs, across the country. The process of upgrading the 8086 and 80286 PCs to 80386 and Windows platform has just begun in many institutions. In our opinion, it will be quite some time before multimedia computers are introduced in these labs and therefore we will not make multimedia an integral feature of the software. On the other hand, basic spec. PCs are becoming affordable by students and about 20% of our students already have an access to a basic spec. PC outside the institution's labs and library. (48)

Video is poor but rest of hardware and software adequate for the job. (57)

The software appears to do what we need very effectively, and we have not yet experienced major problems or limitations. The hardware is adequate, although the video and graphics capability is more limited than would be ideal, and the system is rather slow when switching to a new module. (71)

No problems with hardware, except for the continual pressure it places on the size of hard disks. All our development machines have 16meg of RAM, and this has been fine. We toyed with developing using 17 inch monitors, but felt that we had to work at the screen standard our users would have. We have compromised on 15 inch flat screens. Our subject area has a high need for text and video materials, and a lowish need for graphics. None of the authoring systems are ideal, but so far Guide has been most useful. We are soon to try out the new version of Toolbook (72)

Debugging Windows programs is considerably trickier than non-Windows software.

ToolBook makes it very easy to produce good-looking software quickly, but the files tend to be large and run very slowly. A mixture of ToolBook with carefully-crafted DLLs seems to be the best way. (73)

Acceptable. (75)

OK. (76)

9 STANDARDS

The reference code given after each comment refers to the project reference number in the main project listing in Section 3.

9.1 ITTI projects

Standards used:

image: BMP, FIF, GIF, PICT, TIFF
sound: 8-bit Mu-Law, WAV
video : AVI, MPEG, Quicktime
compression: Indeo, MPEG, Quicktime, TIFF(LZW), Video 1
other: HTML

Comments on the importance of standards:

Very. ISO, CCITT, Internet RFC and 'industry' standards are all used as appropriate. (06)

Very important. We have produced a standards guidelines for multimedia developers in HE called "New Frontiers of Learning: Vol. 1 - Delivery, Production & Provision". (09)

VERY. (17)

9.2 NTI projects

Standards used:

image: BMP, CGM, DXF, GIF, PhotoCD, TGA
sound:
video: H.261, Indeo, MPEG
compression: fractal, JPEG
other: HTML

Comments on the importance of standards:

Very. (35)

Very. (40)

Not too important as image formats are easily converted from one format to another. (40)

Not very. (42)

Not really - the system seems to make use of external data in whatever format is supplied. (42a)

Essential for project longevity. (48)

Not very important at this stage. (63)

Standards are important to the project. (97)

Very important. (146)

VERY. Use standard front-end design. Hardware standards marginally important - so long as exchangeable data possible. (232)

We do need a means for a variety of applications to communicate with one another, but are currently looking into ways of doing this. (242)

9.3 SIMA projects

Standards used:

image: GIF, TGA

sound:

video: H.261, MPEG

compression:

Comments on the importance of standards:

Not that important, although the use of video compression standards (e.g. H.261) will be discussed in the project report. (03)

We are tending to use WWW so there are inherent standards there, though we can use conversion utilities. The video standards are dictated by what systems are available for our use. (08)

9.4 TLTP projects

Standards used:

image: BMP, FIF, GIF, PICT, PIX, TIFF

sound: MIDI, SoundBlaster Pro, WAV

video: AVI, H261, H.320, MPEG, Quicktime

compression: fractal, Indeo, JPEG, MPEG, Quicktime, Video 1

Comments on the importance of standards:

They seem rather mythical - so many are determined by forces beyond our control. The project evolves strategies to cope with ever-changing standards. (01)

We try and use industry standards as far as possible to ensure portability of any applications developed. (03)

Have not set a standard for compression. Have looked at fractal compression but are unhappy with their licence demands. We are trying to develop a standard look to the packages to make it easier for the students to change between packages without a new learning curve. This is more a house style rather than a standard. The authoring packages dictate which standard formats can be imported and manipulated. (05)

Not important at present. (15)

Essential. (19)

Very. (22)

Very important. Our group has been developing a courseware delivery shell and has been responsible for producing standards guidelines under the auspices of the ITTI Initiative. (23)

We do not seek to impose standards. The ONLY thing that is important is that courseware gets written AND USED. The idea that British academics can set or impose standards is a fiction. Standards are set by folks like Mr Gates. As long as the material can be re-authored easily, that is all that matters. (24)

Somewhat. (30)

Wherever possible industry standards are being adhered to. (32)

Very - we have devolved development sites throughout the UK so there must be compatibility. (34)

We are hoping ultimately to have all software written for SoundBlaster Pro. (36)

Not very at this stage. (39)

Support for standards is critical as we expect many of the resources for our courseware to be produced by 3rd party packages. (43)

Not relevant as we are not currently producing multimedia applications - their importance can't be currently assessed. (48)

Standards of all types vital as project is located at several sites. (57)

Quite. (58)

Standards are vital to obtain compatibility. (60)

Not very. (71)

Not desperately; the end product (the simulation) is the important part. Simulations are developed at one site only, and tested at the others. (73)

Very little. (75)

Internally within the project we have agreed standards. (76)

9.5 List of standards

image:	BMP, CGM, DXF, FIF, GIF, PICT, PIX PhotoCD, TGA, TIFF
sound:	8-bit Mu-Law, MIDI, SoundBlaster Pro, WAV
video:	AVI, H.261, H.320, Indeo, MPEG, Quicktime
compression:	fractal, Indeo, JPEG, MPEG, Quicktime, TIFF(LZW), Video 1
other:	HTML

APPENDIX 1: FURTHER INFORMATION

The information in this report will be maintained and updated by the SIMA Multimedia Support Officer, Sue Cunningham (sue.cunningham@mcc.ac.uk), based at the Manchester Computing Centre.

Additional information on projects funded by the ITTI can be obtained from:

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Further information on the use of multimedia by TLTP projects will be available in a forthcoming report from the CTISS. For more information, contact:

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