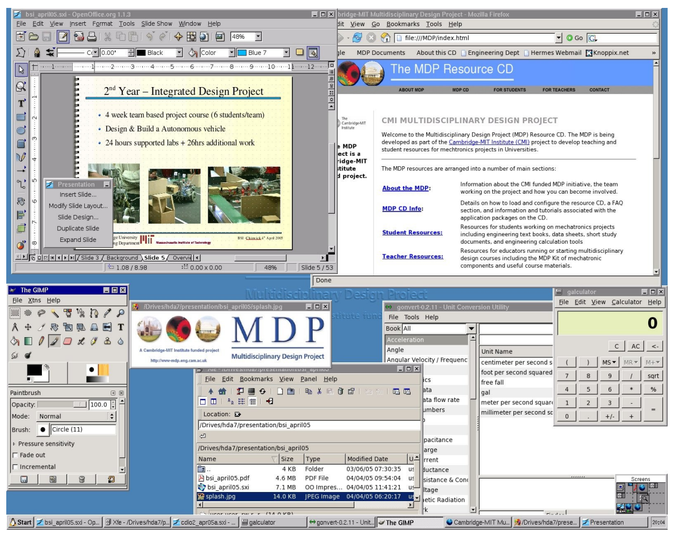
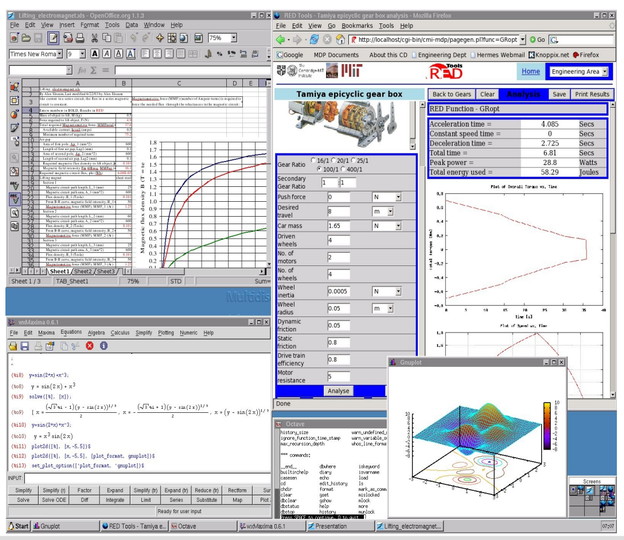
MDP Engineer's Desktop and Library Disk

- Customisable desktop environment for engineers based on an open source Linux distribution (Knoppix)
- All applications and teaching materials included are open source, while commercial packages and materials can be added locally with appropriate licensing
- Implementation Scenarios:
  - Bootable media (CD, DVD, USB drive, flash media, etc) allows for a controlled environment isolated from the computer's permanent operating system
  - Environment can be remotely loaded over a network to low cost workstations
  - Environment can be loaded as a "virtual machine" using QEMU, Microsoft Virtual PC or VMWare Workstation within existing Windows, Macintosh, or Linux environments
  - Teaching materials and some analysis tools can be made available over the internet



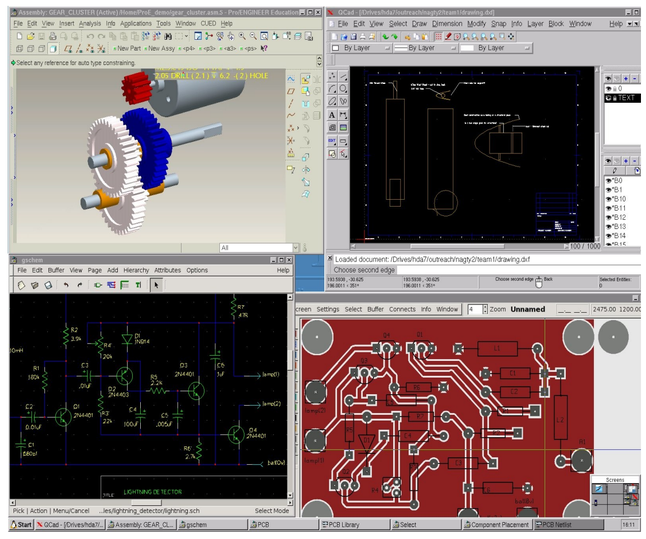
Desktop Applications:

- File Manager
- Web Tools
- Image Processing
- Open Office Suite
- Printing
- Office tools



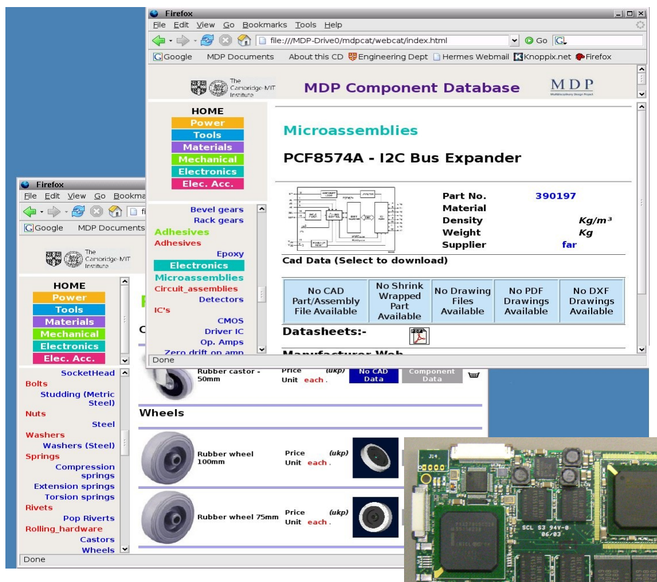
Analysis Tools:

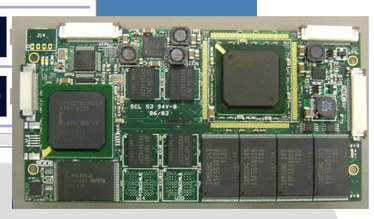
- Spreadsheet (Excel Compatibility)
- Octave (Matlab Compatibility)
- Spice
- Rapid Engineering Design Tool - on-line interactive design library



Engineering Design Tools:

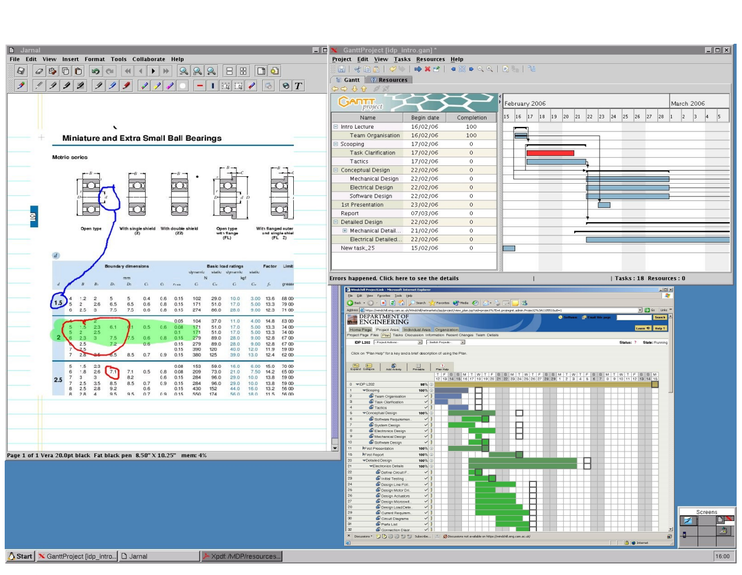
- Electronics CAD
- 2D and 3D Mechanical CAD
- Multiple programming languages (e.g. C/C++, Fortran, Octave, BASIC)
- Collaborative design (eg. Jarnal)
- Kit database and datasheets





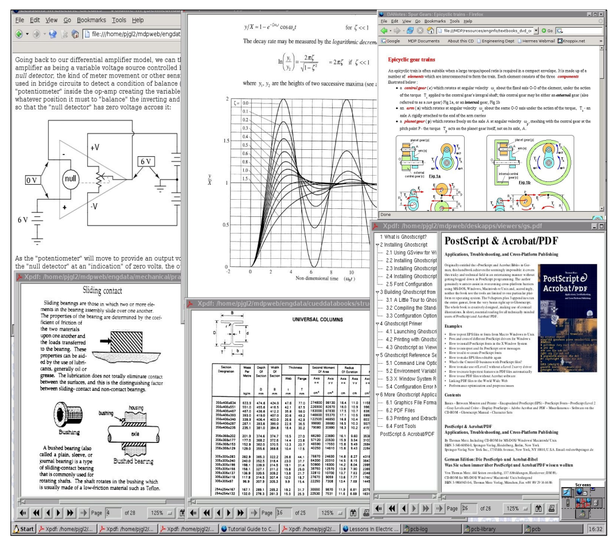
Hardware Kit

- Catalogue of components in web or PDF format (Includes cost, data sheets, CAD models, etc.)
- Standardized components for mechanical, electrical, and computational tasks
- Hardware & Software support for an Open Source Scalable microprocessor system



Project Management:

- Project Management Tools (MS Project compatibility)
- Gantt chart generation
- Enhanced Windchill ProjectLink software from PTC
- Web based project management package
- Team creation of CAD/ECAD models



Support Resources:

- Textbooks covering electronics, mechanical topics, design, etc.
- Manuals and tutorials for applications included on CD
- Course specific materials, including data sheets and lectures
- Design databooks and dictionary
- Textbooks and worksheets

A Cambridge-MIT Institute funded project
http://www-mdp.eng.cam.ac.uk

MDP
Multidisciplinary Design Project

CMI - Sponsored Teaching Projects at C.U.E.D.

Undergraduate Student Exchange

The student exchange scheme, now in its fifth year, offers undergraduates at Cambridge and MIT the opportunity to study at the other institution for a year. Through a regular process of feedback and evaluation, the students provide us with valuable insights into the strengths of the educational provision at both universities.

Undergraduate Research Opportunities Programme

Summer 2004 marked the second year of the Cambridge undergraduate research programme. Based on MIT's very successful UROP, which has run for thirty years, this scheme encourages students to step outside the classroom and engage in faculty research projects as a fully participating member of the team.

Pedagogical Methods

CMI-sponsored projects in the area of pedagogical cultures and methods aim to experiment with various systems and practices that can improve teaching and learning at Cambridge and MIT, and which can lead to models for improvement at other universities in the UK and elsewhere.

Teaching / Learning Engineering and Technology
Prof H Einstein, *MIT* - Prof R Britter, *University of Cambridge*

Automated Delivery of Computing Teaching
Prof T Lozano-Perez, *MIT* - Dr TW Drummond, *University of Cambridge*

Teaching the Fundamentals: A Study of Pedagogical Approaches
Prof W Seering, *MIT* - Prof R Britter, *University of Cambridge*

Transferable Skills

The lack of personal, interpersonal and pre-professional skills that every university graduate is assumed to possess is a major issue in

the US and the UK, particularly in Engineering graduates. CMI projects in this area take up the challenge of imparting transferable skill as anintegral part of the Engineering curriculum, not as a separate

process requiring additional resources.

Teaching & Learning of Professional Engineering Skills
Prof E Crawley, Prof D Sadoway, *MIT* - Dr D Cardwell, Dr W Clyne, Prof D Fray, *University of Cambridge*

Sudden Impact: Using Real-World Contexts and Hands-On Experience to Develop Transferable Engineering Skills.

Prof H Abelson, Prof E Grimson, Prof S Leeb, *MIT* - Dr P Long, Dr S Moore, Dr P Robinson, *University of Cambridge*

Curriculum Development

MIT and Cambridge have diverse but complementary strengths in their academic courses and support systems. CMI is helping to enhance these strengths, by sponsoring projects that transfer successful course materials and faculty expertise from Cambridge to MIT, and vice versa, or establish new courses to be taken at both.

MEMS Undergraduate Education: Materials design and processing for MMAs

Prof SM Spearing, Prof C Thompson, *MIT* - Dr JA Williams, Prof NA Fleck, Prof WI Milne, Dr DF Moore, *University of Cambridge*

Biological Engineering Curriculum Development

Prof L Griffith, Prof R Kamm, *MIT* - Prof K Glover, Dr K Johnstone, *University of Cambridge*

Multidisciplinary Design Project

Prof A Slocum, *MIT* - Dr P Long, *University of Cambridge*

Coursework-Lecture Integration

Prof D Hart, *MIT* - Dr H Hunt, *University of Cambridge*