Status of Web Based Recording and Transmission at CERN

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Web Based Recording and Transmission at CERN

• Projects at CERN involved in this type of activity are:
  – Virtual Rooms Video-conferencing System (VRVS) (vrvs.cern.ch/)
  – LIVEfromCERN (livefromcern.web.cern.ch/livefromcern/antimatter/)
  – Web Lecture Archive Project (WLAP) webcast.cern.ch/Projects/WebLectureArchive/index.html
  – Web University – a joint Finish-CERN project webcast.cern.ch/Projects/WebUniversity/index.html

• Notice that the “w-word” is not present above
  – “Webcasting” is a much misused term. One definition is:
    • Using the Internet, and the World Wide Web in particular, to broadcast information, (e.g. streaming video).

• All the above projects can be considered as some form of webcasting except VRVS
  – VRVS uses full two-way transmission of information
Web-based Information Dissemination

• Activities are currently distributed across several divisions:
  – Human resources (HR) division
    • Mick Storr and his team
  – Information technology (IT) division
    • Responsible for servers and IT infrastructure
      – Christian Isnard and his team
  – Education and Technology Transfer (ETT) division
    • Responsible for (among other things) video recording of major CERN events which take place in main amphitheatre or council chamber.
      – DH group, Daniel Boileau and others.
Virtual Rooms Video-conferencing System

• VRVS is a Video conferencing system
  – Started, in 1997, as a joint CERN-Caltech project for large (LHC) collaborations
  – Fully interactive
  – Used by physicists to avoid having to come to CERN for meetings
  – “meetings at a distance”
  – VRVS is used to broadcast and archive many types of events apart from video conferences.

• At CERN, VRVS is the responsibility of IT division and the Caltech/CMS group
LIVEfromCERN

• Best explained as “webcasting as a show”.
  – A special studio is set up and, like a TV programme, has a studio audience, presenters and links from other parts of CERN
  – Started up thanks to collaboration with the Exploratorium in San Francisco
  – CERN carried out a 3 major webcasts on antimatter during 2000
  – Target audience is the general public and schools in particular
  – The techniques could be interesting for scientific seminars and lectures, as well as for outreach activities.

• LIVEfromCERN is still a pilot project, but the results in school classrooms through Europe are being analysed carefully to see how best to use this new (for CERN) way of using the web.

• Some parts of the LIVEfromCERN project team are in ETT others are in EP

• The project is seeking finance to continue in 2001
The Web University

- A Finnish initiative aimed clearly at “distance learning”
  - Aimed at school classes (high school or university)
  - Use CERN courses or lectures
  - Full interactivity - two way video & audio links
    - Classes can ask questions directly to the lectures

- Seems to be a popular idea in other member states, especially Slovakia and Italy
  - Gives access to well known, even Nobel Prize winning, lecturers.
  - The Web University project started in 1995 and has resulted in the broadcast of many hours of teaching material from CERN.
The Web Lecture Archive Project (WLAP) started as a collaboration between the University of Michigan and CERN.

- Main goal was to implement an electronic archival system for slide-based presentations accessible via the web.
- Digitized video is combined with, and synchronized to, the transparencies presented during the talk.
- Used for Workshops, presentations and especially for the Academic Training Courses and Summer Student Lectures.

The current project builds upon the work initiated by a pilot project carried out July-September, 1999, and sponsored by the National Science Foundation.
Web Lecture Archive Project

• The system is based on:
  – Software from RealNetworks.com (RealPlayer client on desktop)
    • A de facto standard for web-based video (with QuickTime)
  – Sync-O-Matic software, developed at Michigan, which allows the synchronization of
electronic slide presentations with audio/video recordings.
  – Available to anyone with a web browser (RealPlayer is freely downloadable)

• The WLAP project team have made many recordings
  – Summer Student lectures from 1999 & 2000
  – Academic Training Courses.
  – LHC Software courses, etc.

• Lectures are stored on a web server (webcast.cern.ch) which is managed and
  operated by IT Division.
  – There are some 400 web lectures available to be viewed “on-demand”
  – Typical duration is one hour
Web-based Information Dissemination - Present

• It has been agreed that from 2001, the responsibility for the WLAP project will pass to ETT division and the ETT-DH group in particular.
  – Effective from 1/3/2001
  – We are currently studying the implications on the other services in the ETT-DH group.

• Recordings will continue to be made using Sync-O-Matic where possible and stored on the webcast server.

• We are studying the logs both of the webserver and the RealServer
  – We need to get an idea of the usage of the service to justify future developments
Web-based Information Dissemination - Future

- WLAP & Web University projects will be run from ETT division
- We hope to integrate the recording of Academic Training lectures and other talks into the mainstream of ETT’s video activities.
  - This will require some changes in the way of working of the audio-visual team who will record the lectures.
- Recordings will initially be made using Sync-O-Matic but a full study of other technologies will be made, particularly SMIL.
Web-based Information Dissemination - Future

• We will make available an “audio-only” stream.
  – For lots of lectures the value is in the commentary and in the slides.
  – The added-value from seeing the speaker is often quite low
  – Will hopefully be useful to those countries (or individuals) with slow connections.

• We will also make the transparencies available for download
  – Separate files (PowerPoint if available, otherwise PDF pr PS) suitable for printing

• We plan to integrate the archived lectures into the CERN Document Server (CDS) and make them available via weblib.
  • This will mean that a search for “accelerators” will return books, preprints, photos and lectures about accelerators.
Web-based Information Dissemination - Problems

• An IT division recommendation suggests “stopping support for webcasting”
  – We take “webcasting” to mean RealVideo
  – We, ETT-DH, are currently in discussions with IT to see how we can take over
    • The webcast server
    • Support for the RealVideo software suite.
  – It is not clear that we have adequate resources – same problem as IT!
Web-based Information Dissemination - Problems

• Integrate lecture timetables into AgendaMaker
  • Will improve the capture of information about talks and remove duplication
  • Will allow us to get information automatically into the Library system & Bulletin

• Providing fully synchronized presentations on the web is very time consuming:
  – We have to reduce the time taken to produce a talk:
    • 1 hour of a video operator
    • 1 hour (in parallel) to capture timing information
    • Scanning of transparencies can take 2-3 minutes per transparency
      – There can be 40 – 50 per talk
    • Post processing: combining video, slides and synchronizing – 1.5-2 hours
Web-based Information Dissemination - Problems

• To make a good web-based lecture, we need the support of the lecturers.
  – We need guidelines for lecturers
    • If they are interested to be “on-the-web” they will have to do some work too
      – E.g. Egil Lillestol’s recent series about the LHC
    – The resources required for a collaborative lecturer are much less than those of an “old-fashioned” one.
      • We should encourage the use of PowerPoint, HTML or even MS Word
      • We should discourage use of hand-written transparencies
Web-based Information Dissemination - Problems

• Need feedback from you on usefulness of what we are offering
  – Are these web lectures interesting ?
  – If so, are they watchable – is the response on your desk-top acceptable ?

• What about the format. Is the effort to produce fully synchronized web lectures worth it ?
  – We could go back to video only
  – We could provide video plus slides but unsynchronized
  – Or you can have the “Full Monty”