

# SchoolCast

DISTRIBUTE



## Content Distribution System for Schools

This satellite IP system bypasses the last mile Internet problem and provides the solution for broadband multicast data dissemination direct to schools. SchoolCast combines state-of-the-art technology and human procedures to support the management and the process of selection, validation, aggregation, scheduling and booking of the transmission of content, and furthermore the verification of the reception and access to the content on the client side.

### Background

The use of ICT in schools all over Europe is on the increase, albeit Internet access rates do not keep up. While the list of portal sites offering educational content is impressive, many portal managers report difficulties in actually encouraging teachers to actively use the material which is either produced or recommended on such sites. While several reasons are linked to broader issues to do with IT in education, poor access and a lack of awareness can be improved by SchoolCast.

### Application

SchoolCast is based on a client-server model where users have access to a common online management system. The system manager is responsible for the final selection of content to be multicast and the overall management of the system. Content publishers prepare and clear their own content for multicasting as well as log the use of their content in participating schools. Network managers schedule multicasting for the most suitable time. Schools check for recent multicasts and can request certain content to be pushed.



The SchoolCast server software provides a management application that gives access to all the different aspects required to manage the Content Delivery Service. The server mirrors the specified web sites, creates static snapshots, distributes the web site snapshots via multicast, collects log files from SchoolCast clients and prepare the log files according to the requirements of the content provider.

The SchoolCast client software receives web site snapshots via multicast, corrects transmission errors, stores received web site snapshots to the hard-disk, and allows transparent access to these sites by acting as HTTP proxy.

With regard to the initial target user group, the educational community, the system has proven its reliability and appeal to the stakeholders in a one year trial in Ireland that was funded by the European Space Agency. The service has been put to the test in a real life situation and was evaluated positively overall, this quotation from one of the teachers taking part in the trial is a good example of the feedback received: "The quality of access means that I can confidently allow a full class (24) to access the Internet. It has now become a teaching tool rather than an experiment or novelty."

### Features

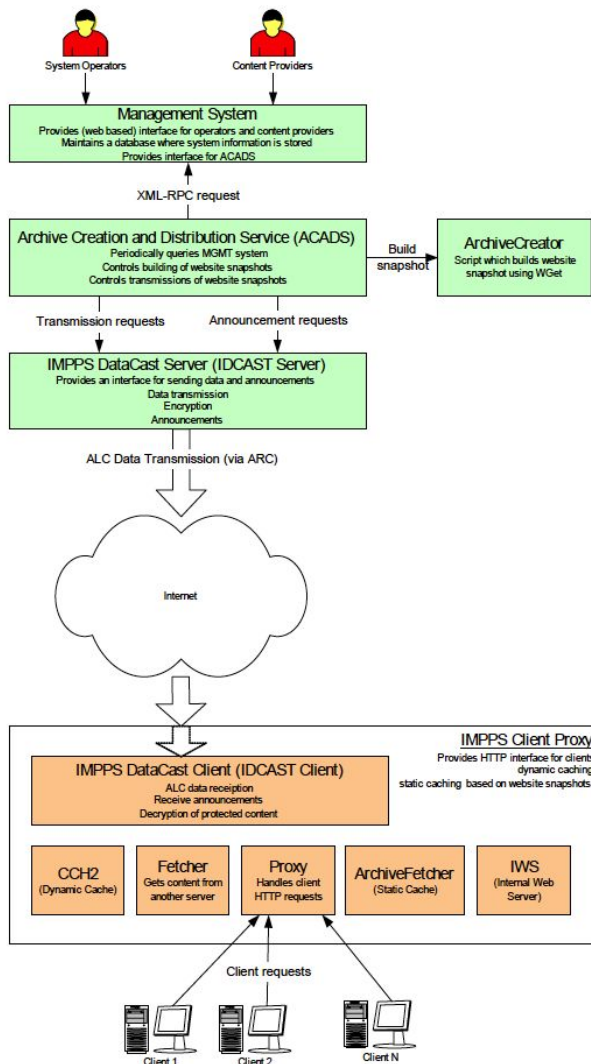
#### Server

- ▶ Web-based Management System
- ▶ Web-based log file analysis
- ▶ Process client log files available via FTP or HTTP for integration into external analysis systems
- ▶ Integrated Management Database
- ▶ Automated scheduling of
  - Creation of web-site snapshots
  - Archive creation
  - Multicast file delivery
- ▶ Configurable Scheduler for Multicast
- ▶ Supports multiple receiver groups (School Types)
- ▶ Supports SAP/SDP-based service announcements
- ▶ Access control system
- ▶ Content Encryption

#### Client

- ▶ HTTP/1.1 support including content compression, persistent connections and pipelining
- ▶ Integrated HTTP proxy cache
- ▶ Integrated Web-Frontend
- ▶ Can be integrated into virtually any existing PEP installation

## System Overview



## Specification

### SchoolCast Server

- ▶ 1 Unit 19" rack-mountable chassis
- ▶ 200 GByte storage for web-site snapshots and log-files
- ▶ 10/100 MBit Ethernet Interface (IEC 169-8) with RJ45 connector for Internet connectivity
- ▶ optional 10/100 MBit Ethernet Interface (IEC 169-8) with RJ45 connector to Satellite DVB Gateway/Encapsulator
- ▶ Supports outgoing data-rates from 1 kBit/s up to 50 MBit/s
- ▶ optional LCD status display in front panel
- ▶ Pre-installed and configured SchoolCast Server Software
- ▶ Full EMC compliant
- ▶ Power supply 100-240 V, 50-60 Hz, auto-sensing
- ▶ Operating temperature: 5 - 40 °C
- ▶ optionally available with integrated IP/DVB encapsulator with ASI transport stream interface (75 Ohm BNC connector)

### Client Software Requirements

- ▶ Operating System
  - Microsoft Windows 2000, 2003, XP, Vista, Win 7
  - Debian GNU/Linux 3.1 or newer
  - Fedora Core 2 or newer
  - FreeBSD 5.4, FreeBSD 6.0
  - other operating systems on request
- ▶ Hardware
  - x86 compatible processor with at least 800 MHz CPU
  - Main memory: at least 256 MB RAM (512 MB recommended)
  - Hard disk requirements: 15 MB plus space for received archives and log files (depends on configuration)

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