

# Tele-education projects by ES

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The satellite is a very effective means to transfer educational content and a faster solution when compared to terrestrial networks. Satellite communications can distribute large amounts of data over a wide geographical area. Since the late 1980s, ESA has been active in promoting activities in satellite communications with industry and user groups to bridge the distance between teachers and learners. The internet shows how Information and Communication Technology (ICT) can become an integral part of the educational world. Satellite communications continue to play an important role in enabling the widespread use of ICT for education.

ESA's Telecom Applications programme encourages, hosts and partially finances tele-education projects in order to develop and promote the use of satellite communications.

## **Distribution of educational content via satellite: from the TV to the IP World**

Distance education via satellite is not a new concept; for many years satellite TV broadcasting has been used to distribute educational content in the same way as the distribution of commercial satellite TV channels. The utilisation of a TV broadcasting channel via satellite for education is often hampered by the cost, which means that only if the community of users is very large the system can reach some form of sustainability. In the last years, with the rise of IP (Internet Protocol), an alternative set of technologies has become available. In particular, the possibility to distribute IP-based content via

satellite in broadcast and multicast mode using low-cost equipment at the reception sites, associated with new highly efficient video encoding techniques, has opened a breadth of new opportunities to tele-education via satellite.

## **Espresso for Schools:**

Espresso for Schools is one of the first projects hosted in ESA Telecom Applications. Launched in 1998 and concluded in late 1999, the pilot project of "Espresso for Schools" has developed a structured solution for providing educational multimedia content to British primary schools.

The architecture of the system is straightforward: every week, new educational content prepared at "Espresso" by a team of teachers and editors or gathered from a set of selected educational sites on the internet, is assembled in a portal organised according to the British curricula, and it is transmitted via satellite to the schools using a package delivery service provided by AstraNet. In each school, the "Espresso" content is received by a satellite TV dish and stored on the dedicated server. This way, video-rich educational material can be accessed without delay even when a broadband internet connection is not available.

Teachers have very little time to find educational resources suitable for activities in the classroom, and "Espresso" provides a tool to use ICT technologies without forcing the teacher to become an internet or multimedia expert. Espresso also provides a news section covering recent news topics.



More than 1750 schools in the UK use Espresso.

# A Telecom Applications



The Espresso for Schools website.

Pupils and teachers have enthusiastically accepted the whole concept of Espresso. Since its start in 1998, “Espresso” has become a fully commercial initiative, which is now adopted by more than 1750 schools and used daily by over 400,000 pupils in the UK. For more information about “Espresso for Schools” go to: <http://telecom.esa.int/espresso>

## 6. SchoolSat, the Satellite Goes to School

Access of primary and secondary schools to broadband internet is one of the key priorities in the EU political agenda. However, many rural areas are still excluded from broadband access to the internet. In order to provide a solution to this problem, the SchoolSat project used a two-way satellite system to connect ten schools in rural Ireland during a

service pilot phase in 2002-2003. The first part of the pilot phase has shown that the rate of internet use of the school is drastically influenced by the teachers’ motivation, experience and expectation, and not only by the availability of broadband access or by the ratio PC/pupils.

The project was partially financed by ESA under the ARTES 3 Multimedia Programme with the Belgian company @IT as prime contractor and the Irish Organisations WebSat, National Centre for Technology in Education NCTE and DCE.

More information on the SchoolSat project can be found on the website:

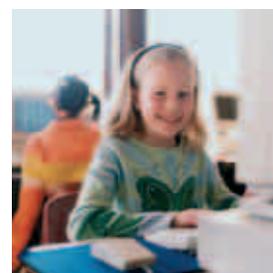
<http://telecom.esa.int/schoolsat>

## 5. SkyNurse: an Interactive Educational Platform for Professional Training

Among the different opportunities for professional education, the SkyNurse project, lead by the Italian research organisation Padova Ricerche in cooperation with Italian companies Telbios, Eukrasia and Didae, develops a tele-education platform which will be used in a pilot service phase to train 180 professional nurses in Romania in intensive qualification courses. After their examinations, the selected nurses will travel to Italy for the final part of the course and might eventually be recruited by Italian healthcare institutions.



Carndonagh Community School in Ireland SchoolSat is a trial service providing fast access to the Internet for schools in rural Ireland using leading-edge satellite technology developed by Web-Sat in Dublin and supported by the Telecommunications department of the European Space Agency.



Satellite technology can reach schools in rural areas.

Project Name [Prime Contractor - Countries Involved]	Key Subject	Web Link
Espresso for Schools [Espresso Productions – UK]	Multimedia educational resources via satellite for Primary Schools	<a href="http://telecom.esa.int/espresso">http://telecom.esa.int/espresso</a>
MODUS [SSI – I]	Distance University course over SkyPlexNet	<a href="http://telecom.esa.int/modus">http://telecom.esa.int/modus</a>
TRAPEZE [EFECOT – B]	Two-way satellite education network for children of travelling families	<a href="http://telecom.esa.int/trapeze">http://telecom.esa.int/trapeze</a>
HAMLET [Consortio Nettuno – I]	Intelligent portal for flexible learning environment via satellite	<a href="http://telecom.esa.int/hamlet">http://telecom.esa.int/hamlet</a>
SchoolSat [@IT – B, IRL]	Connectivity for Rural Schools via two-way satellite network	<a href="http://telecom.esa.int/schoolsat">http://telecom.esa.int/schoolsat</a>
SkyNurse [Padova Ricerche – I]	Training of Romanian Nursing Staff via Satellite	<a href="http://telecom.esa.int/skynurse">http://telecom.esa.int/skynurse</a>

Some of the tele-education projects in the ESA Telecom Programme.