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***Report on raising public participation and awareness***

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**Abstract:**

This report reviews the activities undertaken to raise the public awareness of High Altitude Platforms for communications. It lists the activities and the major references to CAPANINA to illustrate the effectiveness of the project's public awareness activities.

**Keyword list:** press releases, leaflets, presentations, citations, Google, HAPs

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## EXECUTIVE SUMMARY

One of the aims of the CAPANINA project is to inform the general public about High Altitude Platforms (HAPs) and their global communication possibilities.

In Annex 1 to the EU Contract, we stated...

Public interest in Broadband access will continue to grow as more applications become dependant upon the capacity the developing technologies offer. The medium term benefits that CAPANINA will offer, particularly to remote or travelling users will be very significant. To develop and maintain public awareness and to encourage participation, a number of activities are planned.

Press releases to “general” and “technical / niche” mediums will be produced to mark significant stages of the program. This technique can be very powerful in stimulating awareness but will be used carefully to ensure that false hopes are not generated. In addition to print media; Radio, TV, and Internet coverage of the activities will be sought.

The Public access CAPANINA web site will be used extensively to communicate to anyone visiting the site. In addition to providing information to a visitor it is planned to make the facility interactive to gain an understanding of the public’s views, interests, needs etc with respect to how HAP broadband delivery can benefit society.

A third approach to stimulate public awareness will build upon the existing standing of all the partners involved in CAPANINA. The mix of organisations, their sizes and market positions provide scope to communicate with the public at many levels. As mentioned above, we will be seeking publicity as one of the results from the proactive approach to HAP platform manufacturers (eg. Airships).

In addition to the identified specific “awareness” activities identified above, the ongoing technical publications and the final project exhibition will enhance general awareness.

This report lists the activities already undertaken to raise public participation and awareness as well as the events planned for 2006 which will be the final year of the project.

The number of visitors to the project’s web site has been most encouraging, following stimulation by Press Releases and Radio interviews. The 10,000+ citations registered by Google are a most encouraging evidence of interest in the technology.

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LIST OF ACRONYMS

<b>Acronym</b>	<b>Meaning</b>
CAPANINA	Communications from Aerial Platform Networks delivering Broadband Communications for All
HAPs	High Altitude Platforms
RF	Radio Frequency
FAQs	Frequently Asked Questions
EU	European Union
HAPCOS	High Altitude Platforms for Communications and Other Services
COST	COoperation in Science and Technical research

## 1. Introduction

The CAPANINA project has sought to promote the use of High Altitude Platforms (HAPs) in the stratosphere for both rural and urban communications. As well as investigating the potential applications and the business cases for this technology, it has also carried out research into the communication interconnections required and the existing standards which appertain. It has explored new antenna technologies for the designated frequency bands, for stationary access and for broadband data links to moving vehicles, especially high-speed trains.

But, just as the results of this research need to be proved by practical tests, such as flying a free-flight balloon in the stratosphere and checking that broadband high-speed communications can be achieved by both radio frequency (RF) and optical links to the ground, so the whole technology needs to be presented and explained to the general public to encourage interest and to nurture industrial exploitation. This report describes the dissemination activities undertaken during the project to promote communications from HAPs and it lists some of the many CAPANINA citations to demonstrate the interest shown in the concept.

An overview of the technology can be found at <http://www.capanina.org/overview.php>

Other technologies are described at <http://www.capanina.org/technologies.php>

18 Frequently Asked Questions are answered at <http://www.capanina.org/faqs.php>

A presentation is shown at <http://www.capanina.org/CAPANINA-Overview.pps>

and images, news articles and a discussion forum are available in the general interest area.

## 2. Activities Undertaken

The project deliberately undertook activities to catch the attention of the general public for whom this technology would be beneficial, both in rural and urban areas. Setting up a web site with special interest areas in conjunction with Press Releases and Radio/TV interviews attracted and informed many visitors and general enquirers.

As with all publicity exercises, the choice of a distinctive project name and an eye-catching Logo were important. The project name was derived from the Italian restaurant in Torino (La Capanina) where the project was conceived as well as relating to the title of the project. The name has the added value of being almost unique so that web search engines, such as Google, generate concise lists of references when asked.



The Logo is distinctive and clearly shows its EU connections.

### 2.1 Public web site

The CAPANINA web site, with both private and public sections, was launched early in the project. The style and content of the public section was continually assessed and the content improved to enable the project to be presented in a clearer manner. The easy-to-navigate home page directs a user to one of five sections.

In the public section of the web site there are three sections under the heading “Information for”

- General Interest
- Scientists and Engineers
- Business and Industry

and two sections under the heading “Information about”

- Research Programme
- Partners

The **General Interest** area starts with an overview of the technology and the CAPANINA project. A summary of existing communications technologies is also provided. Answers to some Frequently Asked Questions (FAQs) are addressed. The EU Funding schemes for projects in the broadband communications area are described and access is provided to lists of relevant projects to enable the reader become familiar with the on-going activities.

Access to News articles and Press releases is included (these are described more fully in the next section). A variety of relevant photographs of HAPs, stratospheric balloons and project posters are assembled in the Images section.

There is also a Discussion Forum where readers are encouraged to post comments or questions. Answers and alternative views can then also be supplied by anyone so that an interesting dialogue develops.

Both a presentation and a leaflet about the project can be downloaded from this section for free use and distribution.

The **Scientists and Engineers** section introduces some of the technical issues such as the availability of HAPs, their capacity compared with alternative terrestrial and satellite systems, and other non-communications based applications including remote sensing, navigation, and surveillance. The provision of low-cost broadband technology from HAPs, aimed at providing efficient ubiquitous coverage to users who may be marginalized by geography, distance from infrastructure, or those travelling inside high-speed public transport vehicles (e.g. trains) is discussed.

Its Research section describes the areas addressed in the CAPANINA project – to identify appropriate applications and services and associated business models that will help to deliver "Broadband for All"; to develop a system testbed that will allow nearer-term tests of broadband services/applications to fixed users, including: high-speed Internet, corporate communications and video-on-demand as well as an evaluation of free space optical technology for inter-HAP communications and to carry out longer-term, state-of-the-art research and innovation examining advanced mobile broadband access.

The major research activities in the CAPANINA project:-

- Broadband Applications, Services and Infrastructure
- Broadband Trials to Fixed Users from Aerial Platforms
- and Delivery of Broadband to High Speed Vehicles

are each given a separate sections.

Conferences, Events, Technical Publications and the Deliverables from the project are also listed so that Scientists and Engineers can find out more and perhaps collaborate in the activities.

The third area is aimed to inform **Business and Industry**. As Broadband becomes more commonplace, this section provides a business perspective, demonstrating the potential benefits of HAP communication and suggesting to whom the technology will be of interest.

It endeavours to answer questions such as “Why is there a need for the technology?” and “Who are the stake-holders?” It points out that clearly the "Man in the Street" will ultimately be the customer, but there are many layers to the business including Equipment Manufacturers, Service Providers and Content Providers.

As the project partners are keen to advance this technology, business and industry readers are encouraged to leave their names and area of interest so that they can be contacted when new opportunities arise.

The “Information About” columns provide descriptions of the six work packages in the CAPANINA **Research Programme** and give a short description of each of the **Partner** institutions involved, with a link to their own web site. The CAPANINA project involves 12 partners from across Europe and 2 from Japan.

## 2.2 *Press Releases*

Press releases have been produced at significant times in the CAPANINA project's development in order to draw the attention of the European (and even world-wide) public to the potential of stratospheric broadband. They have also been used to record notable achievements.

As soon as the public part of the web site was up and running, a press release was put out announcing the start of the project. The press release was titled "Broadband for All from High Altitude Platforms" and was issued on 19th January 2004. The full text can be viewed at <http://www.capanina.org/pressrelease.php>

A subsequent press release marked the successful experiments with a tethered balloon at Pershore, in Wiltshire (UK), which showed that it was possible to use mm-wave band (28/31GHz) and very high data-rate optical communication systems from aerial platforms. This was entitled "Broadband trials' high-flying success" and published on 31st January 2005. The full text can be viewed at <http://www.capanina.org/pressrelease.php>

The very exciting, successful stratospheric free-flight balloon trial, which demonstrated both RF and optical communications from an altitude of 25Km to the ground, was published in a third press release entitled "High altitude Broadband trials in Sweden" on 17th October 2005. The text of this can be read at:-  
<http://www.york.ac.uk/admin/presspr/pressreleases/capanina1005.htm>

All these press releases resulted in multiple citations (see section 3) and many enquiries from the press, radio and TV.

## 2.3 *News Articles*

There have been literally thousands of news articles referring to HAPs in general and to the CAPANINA project in particular. Many are referenced in Section 3 of this report where some 200 from more than 10,000 citations have been selected. Further lists have been included within the Activity Reports for the EU Commission and on the CAPANINA web site at <http://www.capanina.org/news.php> The reader is encouraged to type CAPANINA into Google and witness the response it provides.

## 2.4 *Radio/TV Interviews*

### **Dr David Grace interviewed on BBC Radio 4's "You and Yours" (9 February 2004)**

#### **BROADBAND**

Broadband Internet access could soon be two hundred times faster than current speeds. The CAPANINA Research Project, led by scientists in York, also aims to extend broadband access to rural communities and even moving trains thanks to High Altitude Platforms - airships or solar-powered gliders in the sky. Dr David Grace explains how they could work.

To listen to the broadcast, go to:

[http://www.bbc.co.uk/radio4/youandyours/ram/youandyours\\_20040209\\_2.ram](http://www.bbc.co.uk/radio4/youandyours/ram/youandyours_20040209_2.ram)

**Alan Gobbi interviewed on University of York (student) Radio (URY) – Scourcenight (Feb 04)**

Interest was shown in the launch of this new EU research grant which the University of York was coordinating, called CAPANINA. The HAPs technology was explained.

**Dr David Grace interviewed on BBC Radio World Service - Go Digital (26 July 2004)**

Growing interest in HAPs. This programme discusses the fascinating technology of HAPs. In particular it reviews the pros. and cons. of HAP technology with respect to terrestrial and satellite alternatives. It considers station keeping, delivery of communications services and HAP power capacity. Other HAP projects around the world are mentioned, in Atlanta and Japan. It reminds the listener that HAPs will be operating in the stratosphere, above aeroplanes, benign area of the atmosphere with predictable winds.

To listen to the broadcast, go to:-

[http://www.bbc.co.uk/news/n5ctrl/progs/04/go\\_digital/26jul.ram](http://www.bbc.co.uk/news/n5ctrl/progs/04/go_digital/26jul.ram)

(after about 8.30 minutes of the 30 minute programme)

**Dr. Joachim Horwath interviewed on Deutschlandfunk DLF - Forschung Aktuell (current research or research today) (4 January 2005 at 16.35 Uhr)**

The programme was called “Fliegende Relais-Stationen über Europa” and introduced the CAPANINA project, the concept of communications from High Altitude Platforms and mentioned the work being undertaken at DLR on optical communications.

For further information go to: <http://www.dradio.de/dlf/sendungen/forschak/336338/>

**Dr. Qin Xu of CSEM interviewed on "News of 19:00" by Swiss National TV (french region) in Neuchatel in 28 October 2005**

The launch of the stratospheric balloon in Sweden was shown and described whilst Dr. Xu and Jean-Michel Major explained the concept of HAPs for communications and the fact that their costs are much lower than for satellites. For further information go to: <http://www.tsr.ch>

**2.5 Publicity leaflet, posters, mugs and pens**

An A4 x 1/3rd folded promotional leaflet was produced and was disseminated at the IST event in June 2005. An updated version, including the highly successful free-flight stratospheric balloon trial in the summer of 2005, can be downloaded from:- <http://www.capanina.org/leaflet.php>

A general poster for the project was produced initially and then followed up with further posters specifically for the IST Mobile Summit in Dresden. A sample of these can be viewed or downloaded from:- <http://www.capanina.org/images/poster.png> and [http://www.capanina.org/images/capanina\\_diagram.png](http://www.capanina.org/images/capanina_diagram.png)

Mugs and pens were also produced to raise the profile of the project. The bulbous type of pen chosen was deliberately selected to resemble a helium-filled balloon HAP.



The CAPANINA mug



The CAPANINA pen

## 2.6 Events

### 2.6.1 IST Mobile 2005

To promote the concept of communications from HAPs, the CAPANINA project was exhibited at the IST Mobile Summit in Dresden between 20th and 22nd June. The exhibition stand featured an array of eye-catching posters portraying the project's activities, designed to appeal to the casual passer by and to the more serious scientific community. To complement the posters, a number of rolling PowerPoint presentations, featuring video footage of the first year trials and preparations for the second year trials, were displayed. The event stimulated substantial interest in HAPs and the approach that CAPANINA is adopting. It was an excellent dissemination opportunity to promote HAPs for communications and to discuss collaboration with visitors with a view to future exploitation of ideas emanating from the research activities and trials.

### 2.6.2 Paris Airshow 2005

Contraves Space (CSAG) exhibited the Optical Crosslink Demonstrator Hardware on their stand at the Paris Airshow in June 2005 and about 100 visitors showed interest in the equipment and its purpose. The visitors included a newspaper team for the French Ministry of Defence. Visitors were curious in what was feasible today. Feedback from several possible users suggested that they considered providing 155Mbps crosslink rate over 400km would be a big advantage over today's RF capabilities.

Also, Dr. Joachim Horwath of DLR gave a separate presentation at the Paris Airshow in June 2005 on the CAPANINA project and optical links, at the Unmanned Vehicle Europe Conference. His presentation fitted in well with other papers which pointed to the need for high-speed optical links. Significant discussion occurred on the possibility of installing such systems on fixed wing aerodynamic UAVs providing services for operational zones.

### 3. CAPANINA Citations

Date of Publication	Type	Name	Title	URL No.
2003-11-01	Press Release	UoY Dept Electronics CRG	The Capanina Project	<a href="http://www.elec.york.ac.uk/comms/CAPANINA.html">http://www.elec.york.ac.uk/comms/CAPANINA.html</a>
2003-12-05	News item	BECTA - Broadband News	Computer Weekly - Capanina	<a href="http://www.lists.becta.org.uk/pipermail/broadband-news/2003-December/000057.html">www.lists.becta.org.uk/pipermail/broadband-news/2003-December/000057.html</a> – 16k
2003-12-05	Article	Broadband News	The Capanina project aims to develop High Altitude Platforms (Haps) which can be kept practically stationary at a height of about 20km.	<a href="http://www.google.co.uk/search?q=Capanina&amp;hl=en&amp;lr=&amp;start=230&amp;sa=N">http://www.google.co.uk/search?q=Capanina&amp;hl=en&amp;lr=&amp;start=230&amp;sa=N</a>
2003-12-09	Article	Computer Weekly.com	High altitude aircraft could replace comms satellites to provide low-cost broadband	<a href="http://www.computerweekly.com/Articles/2003/12/09/198981/Highaltitudeaircraftcouldreplacecommsatellitestoprovidelow-costbroadband.htm">http://www.computerweekly.com/Articles/2003/12/09/198981/Highaltitudeaircraftcouldreplacecommsatellitestoprovidelow-costbroadband.htm</a>
2004-01-20	Article	Neowin.net	Airships to deliver broadband to rural areas	<a href="http://www.neowin.net/comments.php?id=16783&amp;category=main">www.neowin.net/comments.php?id=16783&amp;category=main</a> - 25k
2004-01-20	Article	Userbase	<u>Capanina ziet ze vliegen</u>	<a href="http://www.userbase.be/forum/viewtopic.php?t=2280&amp;start=0&amp;postdays=0&amp;postorder=asc&amp;highlight=">http://www.userbase.be/forum/viewtopic.php?t=2280&amp;start=0&amp;postdays=0&amp;postorder=asc&amp;highlight=</a>
2004-01-20	Article	CMP - Comms Design	Consortium plans airship-based net for broadband delivery	<a href="http://www.commsdesign.com/news/showArticle.jhtml?articleID=17500008">www.commsdesign.com/news/showArticle.jhtml?articleID=17500008</a> - 40k
2004-01-20	Article	Daily Wireless	Internet Blimps in UK	<a href="http://www.dailywireless.org/modules.php?name=News&amp;file=article&amp;sid=1967">http://www.dailywireless.org/modules.php?name=News&amp;file=article&amp;sid=1967</a>
2004-01-21	Article	Zdnet	Balloon goes up for rural broadband	<a href="http://news.zdnet.co.uk/0,39020330,39119220,00.htm">http://news.zdnet.co.uk/0,39020330,39119220,00.htm</a>
2004-01-21	Article	Helpisathand.gov.uk	Balloon to fly for broadband	<a href="http://www.helpisathand.gov.uk/news/technology/2004/jan/capanina/capanina-project.gif.html">www.helpisathand.gov.uk/news/technology/2004/jan/capanina/capanina-project.gif.html</a>
2004-01-21	Article	Zdnet	Breedband op hoog niveau	<a href="http://www.zdnet.nl/News.cfm?id=33368">www.zdnet.nl/News.cfm?id=33368</a> - 48k
2004-01-21	Article	Satellites.Co.Uk	Broadband Ballons	
2004-01-21	Comment	Trickery.net	Broadband from Hot Air	
2004-01-21	Article	Guardian Unlimitefd	Microlight plans to fill broadband gaps	<a href="http://technology.guardian.co.uk/online/news/0,12597,1127677,00.html">http://technology.guardian.co.uk/online/news/0,12597,1127677,00.html</a>
2004-01-21	Article	Digital-Lifestyles.info	Stratospheric Broadband Floated	<a href="http://www.igital-lifestyles.info/display_page.asp?section=distributi">www.igital-lifestyles.info/display_page.asp?section=distributi</a>

Date of Publication	Type	Name	Title	URL No.
				<a href="#">on&amp;id=967</a>
2004-01-21	Comment	Slashdot	UK Testing Wireless Broadband via Airships	<a href="http://hardware.slashdot.org/article.pl?sid=04/01/21/1342237&amp;mode=thread&amp;tid=126&amp;tid=137&amp;tid=193&amp;tid=95">http://hardware.slashdot.org/article.pl?sid=04/01/21/1342237&amp;mode=thread&amp;tid=126&amp;tid=137&amp;tid=193&amp;tid=95</a>
2004-01-21	Article	ISDN Server	V Evropě se chystá další Internet ze stratosféry	<a href="http://www.isdn.cz/clanek.php?cid=5481">http://www.isdn.cz/clanek.php?cid=5481</a>
2004-01-21	Article	Irish Eyes	WiMax	<a href="http://www.theregister.com/content/22/34992.html">http://www.theregister.com/content/22/34992.html</a>
2004-01-22	Article	Advanced Television	Broadband balloons	<a href="http://www.advanced-television.com/2004/news_archive_2004/january19_23.htm">http://www.advanced-television.com/2004/news_archive_2004/january19_23.htm</a>
2004-01-22	Article	The Engineer	Broadband from on high	
2004-01-22	Article	"wm.co.uk	Capanina rural broadband project underway	
2004-01-22	Article	Telekom Srpske On-Line	Летјелице доводе broadband Интернет до руралних насеља	<a href="http://www.teol.net/cms/view.php/3041.html">www.teol.net/cms/view.php/3041.html</a> - 26k
2004-01-23	Article	T-Portal Technologies	Brze Internet veze u Europi uz pomoć cepelina	<a href="http://www.htnet.hr/tehnologija/internet/fset.html">http://www.htnet.hr/tehnologija/internet/fset.html</a>
2004-01-23	Article	EETimesUK	Consortium plans airship-based net for broadband delivery	<a href="http://eetuk.com//tech/news/OEG20040123S0066">http://eetuk.com//tech/news/OEG20040123S0066</a>
2004-01-23	Article	Autolabs	Europa terá acesso à Internet, via dirigíveis	<a href="http://autolabs.midiatatica.org/modules/news/article.php%3Fstoryid%3D20&amp;prev=/search%3Fq%3Dcapanina%26start%3D200%26hl%3Den%26lr%3D%26sa%3DN">http://autolabs.midiatatica.org/modules/news/article.php%3Fstoryid%3D20&amp;prev=/search%3Fq%3Dcapanina%26start%3D200%26hl%3Den%26lr%3D%26sa%3DN</a>
2004-01-23	Article	IT World Canada	Wireless Web reaches for the sky	<a href="http://www.itworldcanada.com/Pages/Docbase/ViewArticle.aspx?ID=idgml-453a8101-de7c-4dfe-ae87-0e296864ff4e">http://www.itworldcanada.com/Pages/Docbase/ViewArticle.aspx?ID=idgml-453a8101-de7c-4dfe-ae87-0e296864ff4e</a>
2004-01-25	Article	Federation Chronicle	REAL LIFE NEWS: BROADBAND BY AIRSHIP	<a href="http://www.ibgames.com/fednews/040125/official08.html">http://www.ibgames.com/fednews/040125/official08.html</a>
2004-01-26	Article	EETIMES	Balloons will rise to deliver broadband	<a href="http://www.eet.com/issue/int/OEG20040123S0021">www.eet.com/issue/int/OEG20040123S0021</a>
2004-01-26	Article	tvCentrum	Balóny a bezpilotní letadla přinesou broadband	<a href="http://www.tvcentrum.sk/print.php?num=325">www.tvcentrum.sk/print.php?num=325</a>

Date of Publication	Type	Name	Title	URL No.
2004-01-26	Article	NyTeknik	Luftskepp tar bredband till glesbygden	<a href="http://www.nyteknik.se/pub/ipsart.asp?art_id=32514">www.nyteknik.se/pub/ipsart.asp?art_id=32514</a> - 51k
2004-01-27	Article	Auditsunlimited.co.uk	Balloon goes up for rural broadband	<a href="http://www.auditsunlimited.co.uk/archives/old/2004_01_01_archive.html">www.auditsunlimited.co.uk/archives/old/2004_01_01_archive.html</a> - 33k
2004-01-27	Article	eweek.com	Go Fly a Blimp	<a href="http://www.eweek.com/article2/0%2C1895%2C1468826%2C00.asp">http://www.eweek.com/article2/0%2C1895%2C1468826%2C00.asp</a>
2004-01-27	Article	Internet World	Snart bredband från himlen	<a href="http://internetworld.idg.se/ArticlePages/200401/27/20040127103642_IW850/20040127103642_IW850.dbp.asp">http://internetworld.idg.se/ArticlePages/200401/27/20040127103642_IW850/20040127103642_IW850.dbp.asp</a> - 105k
2004-01-27	Article	Michael Fabricant MP	The Future of Broadband in Britain	<a href="http://www.michael.fabricant.mp.co.uk/ith-0064.ihtml">www.michael.fabricant.mp.co.uk/ith-0064.ihtml</a>
2004-01-28	Article	Vnunet.com	Broadband reaches for the sky	<a href="http://www.vnunet.com/vnunet/news/2124204/broadband-reaches-sky">www.vnunet.com/vnunet/news/2124204/broadband-reaches-sky</a> - 51k
2004-01-28	Article	Shephard.Co.Uk - UVOnline	EU Supports Broadband Project	
2004-01-29	Article	NYTT om IT	Bredband till glesbygd – via luften	<a href="http://www.nyttomit.fpgroup.se/arkiv/nyttomit20040129.html">www.nyttomit.fpgroup.se/arkiv/nyttomit20040129.html</a> - 31k
2004-01-30	Article	III-Vs Review	Capanina works on HAP broadband	
2004-01-30	Article	NewsTrove.com	Other Capanina stories	
2004-01-30	Article	South African comment	Paget at conlog.co.za	
2004-01-30	Article	ENN electricnews.net	Whatever happened to broadband by blimp?	<a href="http://www.enn.ie/frontpage/news-9389099.html">www.enn.ie/frontpage/news-9389099.html</a>
2004-02-04	Article	Omni.it	Darius Mikšys: "Capanina" - internetas tarp žemės ir dangaus	<a href="http://www.omni.lt/index.php?base/z_146643">http://www.omni.lt/index.php?base/z_146643</a>
2004-02-08	Article	Veron.nl	PI4WNO Bulletin - Het Capanina-project bouwt voort op het onderzoek van EPFL	<a href="http://www.veron.nl/afdeling/woerden/bulls/040208wn.txt">www.veron.nl/afdeling/woerden/bulls/040208wn.txt</a> - 18k
2004-02-09	Newsletter	Minister for Innovation & Technologies	UK: New broadband project	<a href="http://www.innovazione.gov.it/eng/mit_informa/newsletter/newsletter71_eng.shtml">www.innovazione.gov.it/eng/mit_informa/newsletter/newsletter71_eng.shtml</a> - 24k
2004-02-11	Article	CORDIS	EU project to deliver broadband to remote communities via airships and aircraft	<a href="http://ica.cordis.lu/search/index.cfm?fuseaction=news.simpledocument&amp;N_RCN=21576&amp;CFID=8177983&amp;CFTOKEN=98860407">http://ica.cordis.lu/search/index.cfm?fuseaction=news.simpledocument&amp;N_RCN=21576&amp;CFID=8177983&amp;CFTOKEN=98860407</a>

Date of Publication	Type	Name	Title	URL No.
2004-02-12	Article	Innovations Report	European Union project is to manufacture broadband entrance in remote regions over airships and airplanes	<a href="http://www.innovations-report.de/html/berichte/kommunikation_medien/bericht-25752.html">www.innovations-report.de/html/berichte/kommunikation_medien/bericht-25752.html</a> - 50k
2004-02-22	Article	CLS Blog	Capanina: EU-based stratospheric broadband project	<a href="http://blogs.tamhsc.edu/blogs/CSL/archives/2004_01.html">http://blogs.tamhsc.edu/blogs/CSL/archives/2004_01.html</a>
2004-03-01	Article	CORDIS	Broadcast/Multicast Cluster (BMC)	<a href="http://www.cordis.europa.eu.int/ist/ct/proclu/c/broadcast.htm">www.cordis.europa.eu.int/ist/ct/proclu/c/broadcast.htm</a> - 15k
2004-03-01	Article	PC Magazine	Sneaking In the Back Door	<a href="http://www.findarticles.com/p/articles/mi_zdpcm/is_200403/ai_ziff121216">www.findarticles.com/p/articles/mi_zdpcm/is_200403/ai_ziff121216</a>
2004-03-14	Deliverable	TARGET-2004-03-14-WP2_2_E_1-RAP	PART 2.4.4: WIRELESS BROADBAND, subpart 4: APPLICATION TO HAPS	<a href="http://www.target-net.org">http://www.target-net.org</a>
2004-03-16	Feature Story	CT's Pipeline	Broadband by Blimp: Oh the Humanity?	<a href="http://www.ct-magazine.com/archives/pipeline/pipe031604.html">http://www.ct-magazine.com/archives/pipeline/pipe031604.html</a>
2004-03-18	Article	vnunet.com	A local cause for the Wi-Fi revolution	<a href="http://www.vnunet.com/actions/trackback/2043819">http://www.vnunet.com/actions/trackback/2043819</a>
2004-03-18	Article	PC Magazine	A local cause for the Wi-fi revolution	<a href="http://www.pcmag.co.uk/personal-computer-world/comment/2043819/statse.webtrendslive.com">www.pcmag.co.uk/personal-computer-world/comment/2043819/statse.webtrendslive.com</a> - 51k
2004-04-06	Article	PC Magazine	Inside Track	<a href="http://www.genesippc.com/files/PC%20Magazine%20-%20Apr-06-04.pdf">www.genesippc.com/files/PC%20Magazine%20-%20Apr-06-04.pdf</a>
2004-04-22	Article	Rol Ru News	В деревнях Интернет будут разбрасывать с воздушных шаров	<a href="http://www.rol.ru/news/it/internet/04/01/22_003.htm">http://www.rol.ru/news/it/internet/04/01/22_003.htm</a>
2004-04-24	Article	XTVworld.com	Lofty Wireless Platforms for High Speed Broadband	<a href="http://press.xtvworld.com/modules.php?name=News&amp;file=article&amp;sid=5043">http://press.xtvworld.com/modules.php?name=News&amp;file=article&amp;sid=5043</a>
2004-05-01	Reference	AIAA website	Optical Communication from HAPs - Overview of the Stratospheric Optical Payload Experiment (STROPEX)	<a href="http://pdf.aiaa.org/GetFileGoogle.cfm?gID=18245&amp;gTable=Paper">http://pdf.aiaa.org/GetFileGoogle.cfm?gID=18245&amp;gTable=Paper</a>
2004-05-05	Article	The Wireless Internet Institute	Connectivity model for the developing world builds on NSF Net's success (Part 2 of 2)	<a href="http://www.w2i.org/pages/oped/2004/0505.html">www.w2i.org/pages/oped/2004/0505.html</a>

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2004-05-19	Article	Dataweek	High altitude platforms to provide broadband for all	<a href="http://www.dataweek.co.za/news.asp?pkINewsId=14300&amp;pkIIssueId=409&amp;pkICategoryID=31">www.dataweek.co.za/news.asp?pkINewsId=14300&amp;pkIIssueId=409&amp;pkICategoryID=31</a>
2004-05-27	Article	LUPA	Širokopásmový přístup přes stratosféru	
2004-06-21	Article	Terra.com.mx	Airplanes and airships instead of satellites	<a href="http://www.terra.com.mx/articulos/historicos/general.asp?articuloId=136673-24k">www.terra.com.mx/articulos/historicos/general.asp?articuloId=136673-24k</a>
2004-06-21	Article	AFNET	And if Internet were transmitted by plane or airship?	<a href="http://www.afnet.fr/portail/news/03 techno/468 tech - 23k">www.afnet.fr/portail/news/03 techno/468 tech - 23k</a>
2004-07-01	Article	Team Picard.net	Stratospheric Broadband	<a href="http://www.teampicard.net/forum/latest-intelligence/8153-stratospheric-broadband.html - 43k">www.teampicard.net/forum/latest-intelligence/8153-stratospheric-broadband.html - 43k</a>
2004-07-13	Article	PC Inpact	Internet for all thanks to the airships and the balloons	<a href="http://www.pcinpact.com/actu/news/LInternet_pour_tous_grace_aux_dirigeables_et_aux_b.htm - 36k">www.pcinpact.com/actu/news/LInternet_pour_tous_grace_aux_dirigeables_et_aux_b.htm - 36k</a>
2004-07-15	Article	Indexel	Surfez en ballon dirigeable !	<a href="http://www.indexel.net/1_20_3808_/Surfez_en_ballon_dirigeable_.htm - 101k - 19 Mar 2006">www.indexel.net/1_20_3808_/Surfez_en_ballon_dirigeable_.htm - 101k - 19 Mar 2006</a>
2004-07-27	Article	Spectrum online	An Eye in the Sky	
2004-08-12	Weekly news item	NCVP Hotline	Solar-powered Aircraft / Airships	<a href="http://www.nrel.gov/ncpv/hotline/12_04_misc_week1.html - 41k">www.nrel.gov/ncpv/hotline/12_04_misc_week1.html - 41k</a>
2004-08-12	Reference	National Centre for Photovalaics	Solar-powered Aircraft / Airships	<a href="http://www.nrel.gov/ncpv/hotline/12_04_misc_week1.html - 41k">www.nrel.gov/ncpv/hotline/12_04_misc_week1.html - 41k</a>
2004-09-01	Thesis	hsse.fh-hagenberg.at	Tracking system for optical free space communication	<a href="http://www.hsse.fh-hagenberg.at/students/alumni/hse00003/hse00003da/ - 12k">www.hsse.fh-hagenberg.at/students/alumni/hse00003/hse00003da/ - 12k</a>
2004-10-14	Press Release	COPRAS	Capanina Project Perspective	<a href="http://www.w3.org/2004/copras/meetings/kickoff/041014_CAPANINA.pdf">http://www.w3.org/2004/copras/meetings/kickoff/041014_CAPANINA.pdf</a>
2004-11-09	Powerpoint	Israel 4G Consortium	The Race to 4G Mobile Cellular Systems	<a href="http://www.kenes.com/Telecom2004/ppt/Sofer_Eli.pps">www.kenes.com/Telecom2004/ppt/Sofer_Eli.pps</a>
2004-11-12	Article	Science Network WA	Is the future of the Internet solar-powered	<a href="http://www.sciencewa.net.au/science_archive.asp?pg=30&amp;NID=70">http://www.sciencewa.net.au/science_archive.asp?pg=30&amp;NID=70</a>
2004-11-19	Article	Pro-physik.de	Airships to the data communication	<a href="http://www.pro-physik.de/Phy/External/PhyH/1,,2-10-0-0-1-display_in_frame-0-0-00.html?recordId=5439&amp;table=NEWS">www.pro-physik.de/Phy/External/PhyH/1,,2-10-0-0-1-display_in_frame-0-0-00.html?recordId=5439&amp;table=NEWS</a>

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2004-12-02	Article	Economist.com	Not quite out of this world	<a href="http://www.economist.com/science/tq/displayStory.cfm?story_id=3423026">www.economist.com/science/tq/displayStory.cfm?story_id=3423026</a>
2004-12-08	Article	Network IT Week	Broadband takes to the skies	<a href="http://www.networkitweek.co.uk/vnunet/news/2126348/broadband-takes-skies">www.networkitweek.co.uk/vnunet/news/2126348/broadband-takes-skies</a> - 48k
2004-12-09	Article	ISP Review	Broadband Blimps Get Funding - €3.1m	<a href="http://www.ispreview.co.uk/cgi-bin/news/viewnews.cgi?id=EEpkVIVZAuNtwSBPOr">http://www.ispreview.co.uk/cgi-bin/news/viewnews.cgi?id=EEpkVIVZAuNtwSBPOr</a>
2004-12-09	Article	European Tech Wire	EU Invests 3.1 Million Euro in Capanina Broadband Project	<a href="http://www.europeantechwire.com/etw/2004/12/european_tech_w_5.html">www.europeantechwire.com/etw/2004/12/european_tech_w_5.html</a>
2004-12-09	Presentation	COPRAS	First Results of the Cooperation Platform for Research and Standards	<a href="http://www.w3.org/2004/copras/talks/041209_BB_Europe.pdf">http://www.w3.org/2004/copras/talks/041209_BB_Europe.pdf</a>
2004-12-23	Article	Innovations Report	Solar Power Aircraft will make Broadband Available to All	<a href="http://www.innovations-report.com/html/reports/information_technology/report-38241.html">http://www.innovations-report.com/html/reports/information_technology/report-38241.html</a>
2005-01-01	Article	Aktuelle Themen der Woche	EU-Projekt CAPANINA: Mobilfunkübertragung per Luftschiff ... Ein solches Projekt mit dem Namen „Capanina“ wird derzeit von EU gefördert.	<a href="http://www.ralf-woelfle.de/elektrosmog/2005/aktuell0501.htm">www.ralf-woelfle.de/elektrosmog/2005/aktuell0501.htm</a> - 28k
2005-01-04	Article	Deutschlandfunk	Flying relay stations over Europe	<a href="http://www.dradio.de/dlf/sendungen/forschak/336338/">www.dradio.de/dlf/sendungen/forschak/336338/</a>
2005-01-05	Paper	Telenor	Broadcast and multicast - a vision on their role in future broadband access networks	<a href="http://www.telenor.no/broadwan/publ/BMC_vision_final.doc">http://www.telenor.no/broadwan/publ/BMC_vision_final.doc</a>
2005-01-05	Article	Financial Times Deutschland	Projekt Capanina die Zukunft der mobilen Vernetzung sichern will. ... fördert Capanina bis Ende 2006 mit 3,1 Mio. €. „Wir liegen gut im Zeit- ...	<a href="http://www.jb-schnittstelle.de/arbeitspdf/Kristin_PorträtZastrau.pdf">www.jb-schnittstelle.de/arbeitspdf/Kristin_PorträtZastrau.pdf</a>
2005-01-10	Article	Auditsunlimited.co.uk	Broadband takes to the skies	<a href="http://www.auditsunlimited.co.uk/archives/2005_01_01_archive.shtml">www.auditsunlimited.co.uk/archives/2005_01_01_archive.shtml</a> - 44k
2005-01-10	Artice	Audits Unlimited	More power to your Ethernet	<a href="http://www.auditsunlimited.co.uk/archives/2005_01_01_archive.shtml">http://www.auditsunlimited.co.uk/archives/2005_01_01_archive.shtml</a>

Date of Publication	Type	Name	Title	URL No.
2005-01-13	Article	FGF Info Line - Technology	European Union project CAPANINA: Airships transfer data masses by lasers	<a href="http://www.fgf.de/aktuell/newshot/hotline_neu.php?id=146">www.fgf.de/aktuell/newshot/hotline_neu.php?id=146</a> - 21k
2005-01-23	Program	JSFWS Info	Japanese SPF Airship Project Progress	<a href="http://www.jsfws.info/spsw2005/text/program_en.html">http://www.jsfws.info/spsw2005/text/program_en.html</a>
2005-01-31	Press Release	University of York	Broadband trials' high-flying success	<a href="http://www.york.ac.uk/admin/presspr/pressreleases/broadbandtrials.htm">http://www.york.ac.uk/admin/presspr/pressreleases/broadbandtrials.htm</a>
2005-01-31	Article	DW-World.de	Дирижабли	<a href="http://www.dw-world.de/dw/article/0,2144,1694035,00.html">www.dw-world.de/dw/article/0,2144,1694035,00.html</a> - 48k
2005-02-01	Article	UK Business News	Home based business opportunities in rural areas increase	<a href="http://www.ukbusiness-news.co.uk/business-news/?story=0007701393">www.ukbusiness-news.co.uk/business-news/?story=0007701393</a>
2005-02-07	Paper	Wireless ICTP	The Role of Radiocommunications for Development	<a href="http://wireless.ictp.trieste.it/school_2005/lectures/struzak/Radiocomm_for_Development.ppt">http://wireless.ictp.trieste.it/school_2005/lectures/struzak/Radiocomm_for_Development.ppt</a>
2005-02-10	Article	BMWi	Project Capanina: Portable radio basis stations of the future can fly	<a href="http://www.bmw.de/BMWi/Navigation/Wirtschaft/Telekommunikation-und-Post/Mobilfunk/Newsletter/newsletter-archiv_did=58840,render=renderPrint.html">http://www.bmw.de/BMWi/Navigation/Wirtschaft/Telekommunikation-und-Post/Mobilfunk/Newsletter/newsletter-archiv_did=58840,render=renderPrint.html</a>
2005-03-15	Paper	COST	"High Altitude Platforms for Communications and other Services"	<a href="http://www.awi.vlaanderen.be/documenten/COST_297_020205.pdf">www.awi.vlaanderen.be/documenten/COST_297_020205.pdf</a>
2005-04-21	Article	CORDIS	Lofty wireless platforms for high speed broadband	<a href="http://www.istresults.cordis.lu/index.cfm/section/news/Type/Article/BrowsingType/Features/ID/75330">www.istresults.cordis.lu/index.cfm/section/news/Type/Article/BrowsingType/Features/ID/75330</a> - 61k
2005-04-24	Magazine article	Teltarif.de	Broadband of the Stratosphaeren ai	<a href="http://www.teltarif.de/arch/2005/kw16/s16907.html">www.teltarif.de/arch/2005/kw16/s16907.html</a>
2005-04-24	Article	XTVworld.com	fty Wireless Platforms for High Speed Broadband	<a href="http://press.xtvworld.com/modules.php?name=News&amp;file=article&amp;sid=5043">http://press.xtvworld.com/modules.php?name=News&amp;file=article&amp;sid=5043</a>
2005-04-26		ARAMIS	CAPANINA: Communications from aerial platform networks delivering broadband communications for all	<a href="http://www.aramis-research.ch/d/19065.html">www.aramis-research.ch/d/19065.html</a>
2005-05-01	Paper	IEE Signal Processing Letters	Coordinate Descent Iterations in Fast Affine Projection Algorithm	<a href="http://eprints.whiterose.ac.uk/archive/00000695/01/zakharovv3.pdf">http://eprints.whiterose.ac.uk/archive/00000695/01/zakharovv3.pdf</a>
2005-05-06	Article	Euro Tech News	Capanina	<a href="http://eurotechnews.blogspot.com/2005/05/capanina.html">http://eurotechnews.blogspot.com/2005/05/capanina.html</a>

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2005-05-10	Article	Digital-Lifestyles.info	Broadband is taking off everywhere, speeds are increasing and everybody's happy. Well almost. Broadband isn't available to all, especially those in more rural areas.	<a href="http://www.digital-lifestyles.info/display_page.asp?section=distribution&amp;id=2191">www.digital-lifestyles.info/display_page.asp?section=distribution&amp;id=2191</a>
2005-05-17	Article	Mercury s.a.p.	Security: Telecommunications that save lives	<a href="http://www.edicionesespeciales.elmercurio.com/.../index.asp?idnoticia=0117052005021X0040061&amp;idcuerpo=225">www.edicionesespeciales.elmercurio.com/.../index.asp?idnoticia=0117052005021X0040061&amp;idcuerpo=225</a> - 29k
2005-05-18	Feature Story	Electronics Weekly	Broadband takes to European skies	<a href="http://www.electronicweekly.com/Articles/2005/05/18/35051/BroadbandtakestoEuropeanskies.htm">www.electronicweekly.com/Articles/2005/05/18/35051/BroadbandtakestoEuropeanskies.htm</a>
2005-05-20	Abstract	LMU	Development and Implementation of a Pointing, Acquisition and Tracking System for Optical Free-Space Communication Systems on High Altitude Platforms.	<a href="http://www.pms.ifi.lmu.de/publikationen/idefixStatic/pms-description/DA_Bernhard.Epple.html">www.pms.ifi.lmu.de/publikationen/idefixStatic/pms-description/DA_Bernhard.Epple.html</a>
2005-05-23	Article	O1 Net	Les antennes relais atteignent la stratosphère	<a href="http://www.electronique.biz/outils/imprimer.php?article=278531">http://www.electronique.biz/outils/imprimer.php?article=278531</a>
2005-05-23	Article	01net	The antennas relay reach stratosphere	<a href="http://www.electronique.biz/article/278531.html">www.electronique.biz/article/278531.html</a> - 59k
2005-05-31	Article	Euro Tech News	Capanina	<a href="http://eurotechnews.blogspot.com/2005_05_01_eurotechnews_archive.html">http://eurotechnews.blogspot.com/2005_05_01_eurotechnews_archive.html</a>
2005-05-31	Article	Euro Tech News	Capanina	<a href="http://eurotechnews.blogspot.com/2005_05_01_eurotechnews_archive.html">http://eurotechnews.blogspot.com/2005_05_01_eurotechnews_archive.html</a>
2005-06-01	Article	BJHC.co.uk	Researchers demonstrate airship broadband	<a href="http://www.bjhc.co.uk/news/1/2005/n506007.htm">www.bjhc.co.uk/news/1/2005/n506007.htm</a> - 11k
2005-06-21	Paper	14 <sup>th</sup> IST Mobile & Wireless Communications Summit	A Flexible Communication System for High-Speed Broadband Wireless Access from High Altitude Platforms: a CAPANINA Candidate	<a href="http://www.mobilesummit2005.org/author_list.php?select=L">http://www.mobilesummit2005.org/author_list.php?select=L</a>
2005-06-29	Article	Stratocat	Data of the stratospheric globe sent the 29/6/2005	<a href="http://translate.google.com/translate?hl=en&amp;sl=es&amp;u=http://stratocat.com.ar/fichas/2005/KRN-20050629.htm">http://translate.google.com/translate?hl=en&amp;sl=es&amp;u=http://stratocat.com.ar/fichas/2005/KRN-20050629.htm</a>

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2005-08-01	Article	Emerald Group Publishing Ltd - Aircraft Engineering and Aerospace Technology	Solar power aircraft will make Broadband available to all	<a href="http://www.emeraldinsight.com/Insight/viewContentItem.do?contentType=NonArticle&amp;hdAction=Inkhtml&amp;contentId=1509992">http://www.emeraldinsight.com/Insight/viewContentItem.do?contentType=NonArticle&amp;hdAction=Inkhtml&amp;contentId=1509992</a>
2005-08-01	Article	Carlo Gavazzi Space - News	<u>TLC for HAPs: CAPANINA System Testbed ready to launch</u>	<a href="http://www.cgspace.it/News/Archives/Capanina%20ready_aug05.ht">www.cgspace.it/News/Archives/Capanina%20ready_aug05.ht</a>
2005-08-19	Article	Space ref.com	Tests of a new flying broadband system at Esrange	<a href="http://www.spaceref.com/news/viewpr.html?pid=17654">www.spaceref.com/news/viewpr.html?pid=17654</a>
2005-08-22	Article	dslreports.com - Broadband Reports.com	120Mbps From On High	<a href="http://www.dslreports.com/shownews/66674">http://www.dslreports.com/shownews/66674</a>
2005-08-22	Article	Technology News Daily	Capanina, Tests of a New Flying Broadband System	<a href="http://www.technologynewsdaily.com/node/1337">http://www.technologynewsdaily.com/node/1337</a>
2005-08-23	Article	Kiruna	Bredbands- ballonger för 50 miljoner	<a href="http://www.kiruna.cc/news/news_pres.php3?nr=800057708&amp;type=0">http://www.kiruna.cc/news/news_pres.php3?nr=800057708&amp;type=0</a>
2005-08-23	Article	Sat News Daily	New Flying Broadband System to be Tested at Esrange	<a href="http://www.satnews.com/stories2005/1216.htm">http://www.satnews.com/stories2005/1216.htm</a>
2005-08-26	Article	Terminal Informatika Mindennap	Internet léghajóról	<a href="http://www.terminal.hu/newsread.php?id=26201708055816">www.terminal.hu/newsread.php?id=26201708055816</a> - 74k
2005-08-30	Article	Com.it	Supersnabbt bredband via ballong	<a href="http://www.derigomedia.com/comit/arkiv/comit20050830.asp">www.derigomedia.com/comit/arkiv/comit20050830.asp</a> - 12k
2005-09-01	Article	Scienceticker.info	Airy data communication by lasers	<a href="http://www.scienceticker.info/news/EEkVVAEVEkEMgeylnk.shtml">www.scienceticker.info/news/EEkVVAEVEkEMgeylnk.shtml</a> - 13k
2005-09-01	Article	Carlo Gavazzi Space News	<u>Capanina telecommunication system successfully launched in the stratosphere</u>	<a href="http://www.cgspace.it/Activities/Stratospheric-PI/Capanina.html">http://www.cgspace.it/Activities/Stratospheric-PI/Capanina.html</a>
2005-09-02	Article	Inside-Handy	Next Generation: Laserstrahl überträgt Datenmengen auf die Erde	<a href="http://www.inside-handy.de/news/4067.html">www.inside-handy.de/news/4067.html</a> - 65k
2005-09-03	Article	Everground.net	<u>DLR transfers enormous data sets via laser beam</u>	<a href="http://www.everground.net/news/220.html">www.everground.net/news/220.html</a> - 44k
2005-09-06	Article	Index	Adatátvitel láthatatlan lézersugárral	<a href="http://www.index.hu/tech/hardver/sztra790/">www.index.hu/tech/hardver/sztra790/</a> - 31k
2005-09-07	Article	pda.lenta.ru	V Evropě se chystá další Internet ze stratosféry	<a href="http://www.pda.lenta.ru/news/2005/09/07/antenna/">www.pda.lenta.ru/news/2005/09/07/antenna/</a> - 5k

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2005-09-07	Article	PDA Lenta	Гибрид антенны и воздушного шара заменит спутники	<a href="http://pda.lenta.ru/news/2005/09/07/antenna/">http://pda.lenta.ru/news/2005/09/07/antenna/</a>
2005-09-23	Article	AFSR	TIC: EUROPEAN PROJECT CAPANINA	<a href="http://www.afsr.se/stsuede284.html">www.afsr.se/stsuede284.html</a>
2005-10-01	Paper	IEEE Wireless Communications	Integrating Users into the Wider Broadband Network via High Altitude Platforms	<a href="http://www.ieeeexplore.ieee.org/iel5/7742/32551/01522112.pdf?arnumber=1522112">www.ieeeexplore.ieee.org/iel5/7742/32551/01522112.pdf?arnumber=1522112</a>
2005-10-03	Article	IT Sweden	Broadband by Balloon Tested in Sweden	<a href="http://www.itsweden.com/main.aspx?id=13&amp;type=articles&amp;pageid=709">http://www.itsweden.com/main.aspx?id=13&amp;type=articles&amp;pageid=709</a>
2005-10-11	Message	isti.cnr.it	Ufficio Scientifico presso l'Ambasciata d'Italia a Stoccolma	<a href="http://www.isti.cnr.it/Events/RISeT/RisetDocs/tec_ottiche_bandalarga.pdf">www.isti.cnr.it/Events/RISeT/RisetDocs/tec_ottiche_bandalarga.pdf</a>
2005-10-18	Article	Innovations Report	High altitude Broadband trials in Sweden	<a href="http://www.innovations-report.com/html/reports/communication_media/report-50468.html">www.innovations-report.com/html/reports/communication_media/report-50468.html</a>
2005-10-19	Article	NewScientist.com	Balloon beams broadband internet from stratosphere	<a href="http://www.newscientist.com/article.ns?id=dn8177">http://www.newscientist.com/article.ns?id=dn8177</a>
2005-10-19	Article	Logical Eccentricity News	Balloon-Based Wireless Internet	<a href="http://www.ankconsulting.com/news/category/electronics/">www.ankconsulting.com/news/category/electronics/</a> - 23k
2005-10-19	Article	Science News	Broadband Internet from Stratosphere	<a href="http://www.hawaiistreets.com/sciencenews/ScienceNews.php?catid=30">www.hawaiistreets.com/sciencenews/ScienceNews.php?catid=30</a> - 26k
2005-10-19	Report	BBC News	Broadband net goes stratospheric	<a href="http://www.news.bbc.co.uk/1/hi/technology/4354446.stm">www.news.bbc.co.uk/1/hi/technology/4354446.stm</a>
2005-10-19	Press Release	Blogtelecom	Capanina: Internet from aerostatic	<a href="http://www.blogtelecom.com/index.php/2005/10/19/capanina-internet-desde-aerostaticos/">http://www.blogtelecom.com/index.php/2005/10/19/capanina-internet-desde-aerostaticos/</a>
2005-10-19	Article	World Changing website	HAPS	<a href="http://www.worldchanging.com/search/?page=18&amp;category=22&amp;author=&amp;keyword=&amp;month=&amp;search=Go">www.worldchanging.com/search/?page=18&amp;category=22&amp;author=&amp;keyword=&amp;month=&amp;search=Go</a> - 22k
2005-10-19	Article	La Repubblica	La banda larga arriva dai dirigibili esperimenti ok nella stratosfera	<a href="http://www.repubblica.it/2005/j/sezioni/scienza_e_tecnologia/broad/broad/broad.html">http://www.repubblica.it/2005/j/sezioni/scienza_e_tecnologia/broad/broad/broad.html</a>
2005-10-19	Article	The Engineer Online	High Altitude Broadband	<a href="http://www.e4engineering.com/Features/List.aspx?liArticleTypeID=4,18,19,20,21,7&amp;liChannelID=4&amp;nPage=2&amp;nPageGroup=1">http://www.e4engineering.com/Features/List.aspx?liArticleTypeID=4,18,19,20,21,7&amp;liChannelID=4&amp;nPage=2&amp;nPageGroup=1</a>

Date of Publication	Type	Name	Title	URL No.
2005-10-19	Article	IT & Digital York	High altitude Broadband trials in Sweden	<a href="http://www.sciencecityyork.org.uk/cgi-bin/item.cgi?id=982&amp;d=143&amp;h=24&amp;f=148">www.sciencecityyork.org.uk/cgi-bin/item.cgi?id=982&amp;d=143&amp;h=24&amp;f=148</a>
2005-10-19	Article	SLYCK	High Hopes for Broadband	<a href="http://www.slyck.com/news.php?story=958">www.slyck.com/news.php?story=958</a>
2005-10-19	Article	PC Pro	Scientists float balloon-based broadband	<a href="http://www.pcpro.co.uk/news/78763/scientists-float-balloonbased-broadband.html">www.pcpro.co.uk/news/78763/scientists-float-balloonbased-broadband.html</a>
2005-10-19	Article	Technology News Daily	Stratospheric broadband trials, CAPANINA	<a href="http://www.technologynewsdaily.com/node/1556">http://www.technologynewsdaily.com/node/1556</a>
2005-10-19	News Article	Newswireless.net	The balloon goes up to do "low-altitude satellite" Wireless Broadband as Capanina takes another step	<a href="http://www.newswireless.net/index.cfm/article/2471">http://www.newswireless.net/index.cfm/article/2471</a>
2005-10-20	Article	EU Business	Broadband by high altitude balloon: EU project	<a href="http://www.eubusiness.com/Telecoms/broadband.2005-10-20">http://www.eubusiness.com/Telecoms/broadband.2005-10-20</a>
2005-10-20		BREAD - FP6 Projects	CAPANINA successfully trials broadband by high altitude balloon CAPANINA has made a significant breakthrough in proving the viability	<a href="http://www.ist-bread.org/fp6_projects_news.asp">www.ist-bread.org/fp6_projects_news.asp</a>
2005-10-20	Article	Servizio F1RST	Communitarian plan experiments with succeeding the wide band through an aerostatic football to high quota	<a href="http://www.first.aster.it/news/show_news.php?ID=12582">www.first.aster.it/news/show_news.php?ID=12582</a> - 17k
2005-10-20	Article	CORDIS	EU project successfully trials broadband by high altitude balloon	<a href="http://www.ica.cordis.lu/search/index.cfm?fuseaction=news.simpledocument&amp;N_RCN=24636">www.ica.cordis.lu/search/index.cfm?fuseaction=news.simpledocument&amp;N_RCN=24636</a>
2005-10-20	Article	Netzikon.net	High Altitude Platform	<a href="http://www.netzikon.net/lexikon/h/high-altitude-platforms.html">www.netzikon.net/lexikon/h/high-altitude-platforms.html</a> - 4k
2005-10-21	Article	Mobile News & Information	Balloons beams broadband internet from stratosphere	<a href="http://www.mobileguru.co.uk/news/Mobile-News-2401.html">http://www.mobileguru.co.uk/news/Mobile-News-2401.html</a>
2005-10-21	Article	vnunet.com	Wi-Fi balloon delivers 4Mbps broadband	<a href="http://www.vnunet.com/vnunet/news/2144393/wi-balloon-delivers-broadband">www.vnunet.com/vnunet/news/2144393/wi-balloon-delivers-broadband</a>
2005-10-21	Article	Netstumbler.com	Wi-Fi balloon delivers 4Mbps broadband	<a href="http://www.netstumbler.com/2005/10/31/wi-fi-balloon-delivers-4mbps-broadband/">www.netstumbler.com/2005/10/31/wi-fi-balloon-delivers-4mbps-broadband/</a>
2005-10-21	Article	PC Magazine	Wi-Fi balloon delivers 4Mbps broadband	<a href="http://www.pcmag.co.uk/vnunet/news/2144393/wi-balloon-delivers-broadband">www.pcmag.co.uk/vnunet/news/2144393/wi-balloon-delivers-broadband</a> - 46k

Date of Publication	Type	Name	Title	URL No.
2005-10-21	Article	Computing	Wi-Fi balloon delivers 4Mbps broadband	<a href="http://www.computing.co.uk/vnunet/news/2144393/wi-balloon-delivers-broadband">http://www.computing.co.uk/vnunet/news/2144393/wi-balloon-delivers-broadband</a>
2005-10-23	Article	Funtime Franky	Capanina airships to deliver wireless and optical broadband	<a href="http://www.frankw.net/2005/capanina-airships-to-deliver-wireless-and-optical-broadband/">www.frankw.net/2005/capanina-airships-to-deliver-wireless-and-optical-broadband/</a>
2005-10-24	Article	Detikinet.com	Balon Wi-Fi... Balonnya Akses Nirkabel	<a href="http://www.detikinet.com/index.php/detik.read/tahun/2005/bulan/10/tgl/24/time/104928/idnews/467428/idkanal/329">www.detikinet.com/index.php/detik.read/tahun/2005/bulan/10/tgl/24/time/104928/idnews/467428/idkanal/329</a> - 19k
2005-10-24	Article	Minister for Innovation & Technologies	New stratospheric Internet	<a href="http://www.innovazione.gov.it/eng/mit_informa/news/2005/novita_ott2005_eng.shtml">www.innovazione.gov.it/eng/mit_informa/news/2005/novita_ott2005_eng.shtml</a> - 37k
2005-10-24	Reference	MIT	New stratospheric Internet	<a href="http://www.innovazione.gov.it/ricerca/risultati.asp?pagina=1">http://www.innovazione.gov.it/ricerca/risultati.asp?pagina=1</a>
2005-10-27	News Article	Now Public	Balloon beams broadband internet from stratosphere	<a href="http://www.nowpublic.com/node/21624">www.nowpublic.com/node/21624</a> - 18k
2005-10-28	Article	Actualite	High flow thanks to the stratospheric balloons	<a href="http://www.futura-sciences.com/news-haut-debit-grace-ballons-stratospheriques_7422.php">www.futura-sciences.com/news-haut-debit-grace-ballons-stratospheriques_7422.php</a> - 43k
2005-10-28	Article	xataka.com	Solan-2, el globo con Wi-Fi	<a href="http://www.xataka.com/archivos/2005/10/28-solan-2-el-globo-con-wi-fi.php">www.xataka.com/archivos/2005/10/28-solan-2-el-globo-con-wi-fi.php</a> - 47k
2005-10-29	Article	IT News	Воздушный шар может обеспечить высокоскоростной Интернет	<a href="http://www.itnews.com.ua/18956.html">www.itnews.com.ua/18956.html</a> - 29k
2005-10-30	Article	Generation NT	Projet Capanina, une alternative aux réseaux traditionnels?	<a href="http://www.generation-nt.com/actualites/9934/Le-haut-debit-par-relais-stratospheriques">http://www.generation-nt.com/actualites/9934/Le-haut-debit-par-relais-stratospheriques</a>
2005-10-31	Report	A-Bard	Broadband Broadcasting technologies for rural Europe	<a href="http://www.a-bard.org/Repository/A-BARD%20Broadcast%20Broadband%20technologies.pdf">www.a-bard.org/Repository/A-BARD%20Broadcast%20Broadband%20technologies.pdf</a>
2005-11-01	Article	Flight Global	Europe set to fly internet airship	<a href="http://www.flightglobal.com/Articles/2005/11/01/Navigation/177/202486/Europe+set+to+fly+internet+airship+.html">www.flightglobal.com/Articles/2005/11/01/Navigation/177/202486/Europe+set+to+fly+internet+airship+.html</a>
2005-11-01	On line bulletin	UK Research Office	The EC funded project CAPANINA has carried out successful tests in Sweden using air balloons.	<a href="http://www.ukro.ac.uk/public/rtd_insight/ei0511.doc">www.ukro.ac.uk/public/rtd_insight/ei0511.doc</a>
2005-11-02	Article	Epoch Times International - La Grande Epoque	High flow by means of a stratospheric balloon	<a href="http://www.french.epochtimes.com/news/5-10-25/2858.html">www.french.epochtimes.com/news/5-10-25/2858.html</a>

Date of Publication	Type	Name	Title	URL No.
2005-11-02	Article	Five Regions of the Future.com	Sky-high Wi-Fi	<a href="http://www.fiveregionsofthefuture.com/region/byCategory/open&amp;count=1&amp;restrictToCategory=Communications">www.fiveregionsofthefuture.com/region/byCategory/open&amp;count=1&amp;restrictToCategory=Communications</a> - 64k - 20 Mar 2006
2005-11-14	Article	Science & Technology Department French Embassy In UK	a network high stratospheric flow, 14-11-05	<a href="http://www.ambascience.co.uk/article.php3?id_article=565">www.ambascience.co.uk/article.php3?id_article=565</a> - 20k
2005-11-23	Article	Save.Information - Any Key Column	Безграничная сеть	<a href="http://www.save.information.ru/category/1">www.save.information.ru/category/1</a> - 84k
2005-12-01	Article	Look Smart	Public safety focus throws new spotlight on satellite	<a href="http://www.findarticles.com/p/articles/mi_m0PAT/is_2005_Dec/ai_n15998832">http://www.findarticles.com/p/articles/mi_m0PAT/is_2005_Dec/ai_n15998832</a>
2005-12-02	Paper	On the Wiener and Hammerstein Models for Power Amplifier Pre-distortion	<i>Asia-Pacific Microwave Conference.</i> Suzhou (China)	<a href="http://www.emfield.org/apmc2005/">http://www.emfield.org/apmc2005/</a> <a href="http://ieeexplore.ieee.org">http://ieeexplore.ieee.org</a>
2005-12-23	Article	pda.physorg.com	Solar Power Aircraft Will Make Broadband Available To All	<a href="http://www.pda.physorg.com/lofi-news-broadband-haps-project_2491.html">www.pda.physorg.com/lofi-news-broadband-haps-project_2491.html</a>
2006-01-11	Article	Science City York	The Robards report: Balloon goes up for quicker broadband	<a href="http://www.sciencecityyork.org.uk/item/1124/11/24/46">www.sciencecityyork.org.uk/item/1124/11/24/46</a>
2006-01-13	Article	NICT.go.jp	Wireless Innovation Systems Group	<a href="http://www2.nict.go.jp/mt/b181/english/index-e.html">http://www2.nict.go.jp/mt/b181/english/index-e.html</a> - 10k
2006-01-16	Article	BluWiki	CapaninaNMS	<a href="http://www.bluwiki.org/go/CapaninaNMS">http://www.bluwiki.org/go/CapaninaNMS</a>
2006-01-16	Report	QinetiQ Ltd	Ofcom Technology Watch	<a href="http://www.ofcom.org.uk/research/technology/techwatch/nl_2.pdf">http://www.ofcom.org.uk/research/technology/techwatch/nl_2.pdf</a>
2006-01-31	Article	Art Communications News	Il progetto realizzato dall'università di York e dall'azienda milanese "Carlo Gavazzi Space" è entrato nella sua prima fase sperimentale	<a href="http://www.artcommunications.it/NewsFull.asp?ID=1106">http://www.artcommunications.it/NewsFull.asp?ID=1106</a>
2006-01-31	Article	Art Communications News	The plan realized from the university of York and the from Milan company "Carlo Gavazzi Space" has entered in its first phase experiences them	<a href="http://www.artcommunications.it/NewsFull.asp?ID=1106">www.artcommunications.it/NewsFull.asp?ID=1106</a> - 18k

Date of Publication	Type	Name	Title	URL No.
2006-01-31	Paper	<i>Integrated Nonlinear Microwave and Millimetre-wave Circuits (INMMiC 2006)</i> Aveiro (Portugal)	A Methodology to Model and Pre-distortion Short-Term Memory Nonlinearities in Power Amplifiers	<a href="http://www.inmmic.org/">http://www.inmmic.org/</a>
2006-02-01	Paper	IEEE Communications Magazine	Integrated Services from High-Altitude Platforms: A Flexible Communications System	<a href="http://www.ieeeexplore.ieee.org/iel5/35/33538/01593555.pdf?arnumber=1593555">www.ieeeexplore.ieee.org/iel5/35/33538/01593555.pdf?arnumber=1593555</a>
2006-02-20		CORDIS - IST Project Fact Sheet	Communications from Aerial Platform Networks delivering Broadband Communications for All (CAPANINA)	<a href="http://icadc.cordis.lu/fep-cgi/srchidadb?ACTION=D&amp;CALLER=PROJ_IST&amp;QM_EP_RCN_A=71168">http://icadc.cordis.lu/fep-cgi/srchidadb?ACTION=D&amp;CALLER=PROJ_IST&amp;QM_EP_RCN_A=71168</a>
2006-03-01	Article	Fast Company	Wi-Fi in the Sky	<a href="http://www.fcke.fastcompany.com/fullfcke.html">www.fcke.fastcompany.com/fullfcke.html</a>
2006-03-17	Press Release	HAPCOS	COST 297	<a href="http://www.hapcos.org/">http://www.hapcos.org/</a>
2006-03-20	Article	ISDN Server	V Evropě se chystá další Internet ze stratosféry	<a href="http://www.isdn.cz/clanek.php?cid=5481">http://www.isdn.cz/clanek.php?cid=5481</a>
2006-03-21	Article	Infoconomy	Broadband in the sky	<a href="http://www.infoconomy.com/pages/information-age/group111275.adp">http://www.infoconomy.com/pages/information-age/group111275.adp</a>
2006-03-21	Article	ISDN Server	V Evropě se chystá další Internet ze stratosféry	<a href="http://www.isdn.cz/clanek.php?cid=5481">www.isdn.cz/clanek.php?cid=5481</a>
2006-03-21	Article	Frequentieland.nl	<u>Wegwijs in Frequentieland</u>	<a href="http://www.frequentieland.nl/overig/index.php?file=haps.htm">www.frequentieland.nl/overig/index.php?file=haps.htm</a>
2006-03-21	Article	IT World Canada	Wireless Web reaches for the sky	<a href="http://www.itworldcanada.com/a/Network-World/453a8101-de7c-4dfe-ae87-0e296864ff4e.html">http://www.itworldcanada.com/a/Network-World/453a8101-de7c-4dfe-ae87-0e296864ff4e.html</a>
2006-05-01	Conference Call	ASMS1	Advanced Satellite Mobile Systems (ASMS)	<a href="http://www.asms1.wss.bcentral.com/asms2006/biographies.htm">www.asms1.wss.bcentral.com/asms2006/biographies.htm</a> - 31k
	Article	Tiscali Europe	The Internet thanks to airships and aircraft A project with the profit of rural localities	<a href="http://www.europe.tiscali.fr/index.jsp?section=Etudier&amp;level=preview&amp;content=172971">www.europe.tiscali.fr/index.jsp?section=Etudier&amp;level=preview&amp;content=172971</a> - 23k
20/01/200?	Article	Impact Lab	Broadband Airships Deliver Internet to Rural Areas	<a href="http://www.impactlab.com/modules.php?name=News&amp;file=article&amp;sid=2866">www.impactlab.com/modules.php?name=News&amp;file=article&amp;sid=2866</a>
23/12/200?	Article	PDA.physorg.com	Solar Power Aircraft Will Make Broadband Available To All	<a href="http://pda.physorg.com/lofi-news-broadband-haps-project_2491.html">http://pda.physorg.com/lofi-news-broadband-haps-project_2491.html</a>

Date of Publication	Type	Name	Title	URL No.
	Article	P2Pnet	Broadband in the Sky	<a href="http://www.p2pnet.net/story/6651">www.p2pnet.net/story/6651</a>
	Article	SR International	Broadband via Balloons	<a href="http://www.sr.se/cgi-bin/International/nyhetssidor/artikel.asp?ProgramID=2054&amp;Nyheter=&amp;artikel=678266">http://www.sr.se/cgi-bin/International/nyhetssidor/artikel.asp?ProgramID=2054&amp;Nyheter=&amp;artikel=678266</a>
	Article	Swedish Space Corporation	Campaign information Capanina	<a href="http://www.ssc.se/default.asp?groupid=2004930134342164&amp;pageid=200561715624782">http://www.ssc.se/default.asp?groupid=2004930134342164&amp;pageid=200561715624782</a>
	Article	Swedish Space Corporation	Campaign information Opening flight Capanina	<a href="http://www.ssc.se/default.asp?groupid=2004930134342164&amp;pageid=20056107836378">http://www.ssc.se/default.asp?groupid=2004930134342164&amp;pageid=20056107836378</a>
	Article	Intekom d.o.o.	CAPANINA	<a href="http://www.intekom.si/project_capanina.stm">http://www.intekom.si/project_capanina.stm</a>
	List	EU IST Pro	Capanina	<a href="http://www.eu-ist.hu/eu-ist-pro/projektek/">http://www.eu-ist.hu/eu-ist-pro/projektek/</a>
	Article	IEE Review	Capanina	<a href="http://ieeexplore.ieee.org/iel5/2188/28625/01281265.pdf?arnumber=1281265">http://ieeexplore.ieee.org/iel5/2188/28625/01281265.pdf?arnumber=1281265</a>
	Article	EEVL	Capanina : Stratospheric Broadband Conference 2006	<a href="http://www.eevl.ac.uk/engineering/eng-browse-page.htm?action=Class+Browse&amp;browsestart=551&amp;leafdata=615-46k">www.eevl.ac.uk/engineering/eng-browse-page.htm?action=Class+Browse&amp;browsestart=551&amp;leafdata=615-46k</a>
	Slideshow	ESL.EE	Capanina Europe	<a href="http://esl.ee.sun.ac.za/workshops/2ndawms_present/Session3/SunSpace%20HAPS%20-%20H%20Steyn.pps">http://esl.ee.sun.ac.za/workshops/2ndawms_present/Session3/SunSpace%20HAPS%20-%20H%20Steyn.pps</a>
	Press Release	Helmholtz Gemeinschaft	European Union project CAPANINA: Airships transfer enormous data sets by laser beam	<a href="http://www.helmholtz.de/uebersichtsseiten/sonderformataktuelles.jsp?content_id=8455&amp;language=de&amp;pi=5-50k">www.helmholtz.de/uebersichtsseiten/sonderformataktuelles.jsp?content_id=8455&amp;language=de&amp;pi=5-50k</a>
	Article	Mast Sanity	GSM-R and alternative technologies	<a href="http://www.mastsanity.org/netrail/technologies.htm-16k">www.mastsanity.org/netrail/technologies.htm-16k</a>
	Paper	Wireless ICTP	The Role of Radiocommunications for Development	<a href="http://www.wireless.ictp.trieste.it/school_2005/lectures/truzak/Radiocomm_for_Development.pdf">www.wireless.ictp.trieste.it/school_2005/lectures/truzak/Radiocomm_for_Development.pdf</a>
	Special Report	NICT	Trends of research and development of optical space communications technology	<a href="http://www2.nict.go.jp/mt/b150/SJR/English/e-44/reporte2.pdf">http://www2.nict.go.jp/mt/b150/SJR/English/e-44/reporte2.pdf</a>

## **4. Outline of Ongoing Activities**

### **4.1 Events**

#### **4.1.1 IST Mobile and Wireless Communications Summit, 4<sup>th</sup> to 8<sup>th</sup> June 2006**

Having an exhibition booth at the IST Mobile and Wireless Summit in 2005 was judged so successful in stimulating interest, it has been decided to repeat the operation in Mykonos, Greece in the summer of 2006. The booth will again have posters and rolling displays about HAPs. There will be video from the stratospheric balloon trial to add to attract new interest.

#### **4.1.2 York HAP Week, 23<sup>rd</sup> to 27<sup>th</sup> October 2006**

##### *Promoting High Altitude Platforms and their Applications*

This event will round off the CAPANINA project although we are sure HAPs will continue to develop and flourish hereafter. The week will commence with the CAPANINA Final Exhibition where each research team will present their work and explain its contribution to HAP-based communication. Mid week, on the Wednesday, there will be a HAP Applications Symposium. This one-day symposium is targeted at opinion formers and will show the potential of HAPs to deliver a range of applications, presented by keynote speakers from their respective fields. The last two days of the week will be used for a HAPCOS workshop session (COST 297). It is a collaborative forum to undertake R&D for HAP communications and other services. Currently it has participants from 16 countries.

Further information can be found at:

<http://www.capanina.org/documents/York%20HAPWeek.pdf>

### **4.2 Leaflets in multiple languages**

Having put together an A4 x 1/3rd folded promotional leaflet to describe the project and HAP communications technology, it was proposed to offer versions in other popular languages. With a variety of native speakers, with excellent technical understanding in different languages, translations of the English text used in the version produced after the 2<sup>nd</sup> Year trials, were requested from the partners. The current English version is available on the CAPANINA web site for anyone to download. On receipt of the text in each alternative language, the Printing Unit at the University of York have been requested to re-layout the leaflet in PDF format, adjusting pictures, font size and margins accordingly. Each will then be uploaded on to the public section of the CAPANINA web site for anyone to download.

The intention is to encourage wider public dissemination of the stratospheric broadband goals using HAPs by speaking directly in the reader's natural language. It is also hoped that partners will print out the appropriate leaflet for local distribution and use the material in their presentations.

Translations are being produced in:-

French    Spanish    Italian    German    Slovenian    Greek and Chinese

We are also anticipating versions in Hungarian, Japanese and Thai

### **4.3 *Video CD***

As a result of the highly successful stratospheric free-flight balloon trial in 2005, significant, good-quality video footage was shot of the event. CAPANINA partners have already used selections of this video material for local promotional material. However, a need has been identified to provide a concise, silent 5-minute sequence for speakers to use in their future presentations. Presenters using this material, will provide the voice-over during the showing of the film according to the audience's need. This will provide further material for raising public awareness. The CD's will be duplicated and a number of copies provided for each partner to distribute to potential interested parties. It is intended that these will be available in the CAPANINA booth at the IST Mobile and Wireless Communications Summit in Myconos and at the York HAP Week.

## 5. Conclusion

With such an exciting technology and the potential social advantages, the media, reflecting the public fascination in the topic, has showed considerable interest. The many citations and the news articles illustrate this.

Diverse activities have been undertaken within the project to raise public participation and awareness in HAP communication technology whilst also concentrating on the background detailed research work to ensure claims can be verified and that the overall technological scheme is practical. We have been conscious of the need to avoid making exaggerated claims too soon for a technology that will materialise in the next 5 to 10 years. However, from the theoretical assessments and the practical tests carried out within the CAPANINA project, we have established technical feasibility and good business cases for a roll out of the technology as soon as the aerial vehicles are available. We have therefore not been accused of “hype”.

The sheer volume of citations registered by Google (>10,000) illustrate that our cost effective campaign to raise public awareness in the technology has been very successful and there is a healthy future for communications from HAPs alongside the current terrestrial and satellite systems.