



AMSAT-UK

Spectrum Forum Meeting – Saturday 20th June 2008

Spectrum Report – Amateur Satellite Service

Annual Colloquium

AMSAT-UK's 2008 Colloquium was held in July at the University of Surrey, Guildford, and again attracted the support of the [European Space Agency](#) (ESA). For the first time the 3 day event was webcast live to a worldwide audience and videos of the presentations have been made available on the BATC website. AMSAT-UK welcomes the support given to the event by the Radio Society of Great Britain (RSGB).

Antennas for the ISS Columbus Module

The European Columbus module was successfully launched at the end of 2007 and attached to the International Space Station. Amateur antennas for ATV operation on 1.26 and 2.4 GHz are fitted to the outside of the module. These antennas were paid for by donations from individuals and groups around the world including the RSGB. A list of donors can be seen at <http://www.ariss-eu.org/donations.htm>

The Amateur Radio on Columbus (ARCO) team meet next month in Belgium to discuss the hardware taking into account permitted power levels and thermal issues for the equipment. A 300kb 2.4 GHz digital video downlink is envisaged which would be an attractive asset for school contacts as well as random astronaut QSOs. Transponder operation would involve an uplink on 1.26 GHz.

Funding of The ZEL

During 2008 AMSAT-UK provided further funding to AMSAT-DL for the purpose of supporting the continued operation of the "Zentrales Entwicklungslabor for Elektronik", (Central Development Lab for Electronics, aka "The ZEL") used for the construction of the P3E satellite and P5A Mars Orbiter.

P3E SDX Linear Transponder

Members of AMSAT-UK built the 435 to 145 MHz linear (CW/SSB) transponder which will be used on the AMSAT-DL P3E satellite. This is likely to be the first Software Defined Transponder (SDX) to be launched into space. It's predecessor, STELLA, was first demonstrated at the 20th AMSAT-UK Colloquium in 2005. It clearly showed that SDX transponders overcome the inherent Dynamic Range problems that have beset conventional linear transponders. <http://www.uk.amsat.org/content/view/full/653/86/>

VEGA

AMSAT-UK put considerable work into a proposal to the European Space Agency (ESA) to place an Amateur Radio payload on the mass dummy on the maiden flight of the VEGA launcher.

Known as **iSTAR** (Integrated Suite for Teaching and Amateur Radio) it was planned to use the 29, 145, 437, 2400 and 5800 MHz Amateur Satellite Service allocations. Unfortunately despite the excellent work of those involved ESA did not go ahead with project.

AMSAT-UK is continuing to work closely with many parts of ESA to identify possible launch/flight opportunities and two proposals are currently being actively developed.

European Student Earth Orbiter (ESEO)

AMSAT-UK is providing a 435 to 2400 MHz linear transponder for this ESA project and is actively involved in the workshops with students from across Europe. The launch date is now not expected to be earlier than 2011.

GENSO

The aim of this ESA project is to automatically collect Digital Telemetry Data from Amateur Radio and Educational satellites and AMSAT-UK have been actively involved on it from the outset.

AMSAT-UK and European Space Agency (ESA) co-operation on GENSO
http://www.southgatearc.org/news/november2007/amsat_esa_genso_cooperation.htm

GENSO - Team F - Hardware Definition and Device Drivers
http://www.genso.org/index.php?option=com_content&task=view&id=26&Itemid=47

GENSO website
<http://www.genso.org/>

Regulatory Consultations

During the year [AMSAT-UK](#) worked closely with the [RSGB](#), [BATC](#), and [UK Microwave Group](#) in preparing responses to consultations to a number of consultations that impacted on our Microwave allocations.

PLT / BPL / Homeplug

AMSAT-UK notes with some concern the increasing use of the mains supply for broadband data communications in particular systems based on the Homeplug standard. The Amateur Satellite Service has a number of allocations between 7 and 30 MHz and is concerned about the level of interference these systems can cause to weak satellite signals. We are aware that Homeplug has notches in the Amateur HF bands, however, even with these interference can still be present.

Cavtat 08

AMSAT-UK fully supports the RSGB papers relating to the Amateur Satellite Service that are being presented to the IARU Region 1 conference in Cavtat.

The RSGB papers that reference the Amateur Satellite Service are:

- 144 MHz increased satellite service
- 3400 MHz amateur satellite allocation
- Microwave spectrum requirements
- A new vision for 23 cm
- Amateur satellites handbook chapter
- Microwave spectrum requirements
- VHF spectrum requirements

They include proposals for new Amateur Satellite allocations at

50 - 51 MHz
438 - 440 MHz
1240 - 1250 MHz
2300 - 2330 MHz
2390 - 2400 MHz
3400 - 3410 MHz
10360 - 10450 MHz

Upcoming Amateur Satellite Projects

There are many Amateur satellite projects under development, details can be seen at <http://www.amsat.org.uk/iaru/>

During October we hope that Amateur Slow Scan TV transmission will be made from the ISS when Richard Garriott W5KWQ visits the space station.

http://www.southgatearc.org/news/september2008/slow_scan_tv_from_iss.htm

SSTV transmissions were made for a short time in August 2006 and proved very popular. An article by David Worboys M0ZLB/KG4ZLB describing how to receive them using simple equipment can be seen at

<http://www.m0zlb.com/articles.htm>

Richard Garriott W5KWQ, developer of the Ultima computer game series, will be the sixth private space participant to travel to the ISS onboard a Russian Soyuz spacecraft. His mission is likely to generate widespread favourable media coverage for Amateur Radio.

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