International Amateur Radio Union Region 1

Europe, Middle East, Africa and Northern Asia Founded 1950

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Since the last Conference in San Marino the following matters have been dealt with or considered.

New amateur satellite launches

During the next few months a large number of new satellites, which intend to use co-ordinated frequencies within the amateur satellite service, are expected to reach orbit.

The Indian VUSAT/HAMSAT is expected to be launched early this summer.

There are thirteen University cubesasts scheduled for a single launch from Baikonur – again early summer.

The ESA sponsored, student built, SSETI Express which will, hopefully carry an AMSAT U/S FM transponder, is now scheduled for a late summer launch and it will, in turn, “”launch” three cubesats of its own.

The IARU satcoord team has been very active over the past 18/24 months and has worked to ensure that any satellite project which is intending to use frequencies in the amateur satellite service is actually compliant with the requirements for such use.

Full details of all co-ordinated satellite projects can be found at http://www.amsat.org.uk/iaru/

Education Outreach

The RSGB GB4FUN vehicle has been very helpful in demonstrating amateur satellites during its presentations to schools and similar educational establishments. The operator reports that the satellite tracking displays and the ability to hear signals from space continues to be an exciting concept for children.

GB4FUN has also participated in a number of ARISS school contacts from the UK with the International Space Station and many many other such contacts have been made with schools all over Region 1 in the period under review.

The SSETI Express project mentioned above has also been a wonderful opportunity for amateur radio to be seen working with university teams building a complete 60kg spacecraft. All the communication system is amateur provided and we have also been able to mentor the teams with our knowledge of power and link budgets and all the other lessons learnt over the past almost 40 years of Oscar satellites.

In 2004 AMSAT-UK attended and exhibited the Space Technology Education Conference in Lausanne and in April this year AMSAT-UK and AMSAT-OZ will be supporting STEC2005 in Aarlborg. They will be exhibiting, providing live demonstrations and also two of the keynote speeches. This should help ensure the best possible chances for synergistic collaboration with these many enthusiastic teams in the future.

To further support the possibilities of using the ISS for demonstrations of amateur radio in space it is hoped that the European Columbus module, scheduled for launch to the ISS in 2006 will have a number of UHF/microwave amateur band patch antennas fitted. These are expected to have much better radiation characteristics than those presently available.

Galileo.

This new European global positioning satellite system is planned to have a significant output in the 23cms band and this may well effect the amateur satellite service in the **1260-270MHz** uplink allocation. More details of the system are given in another paper but we are recommending that satellite builders plan to use the lower part of this allocation where possible. It is interesting to note that some UK air traffic radars which use this part of the spectrum may be changing their operating frequencies over the next few months.

Other Interference matters.

The **145.80-146.00MHz** satellite band continues to suffer from major interference to uplinks from FM signals emanating from countries in the North East and the South east parts of the Region. The interfering signals appear to be mainly the users of very long range “cordless” telephones. They apparently transmit as much as 10 watts so are easily able to jam satellite uplinks. Oscar 51, which was launched last summer, has an uplink frequency of 145.92MHz and is regularly unusable as a result.

I had hoped to be able to work with the very active **IARUMS** team to feed reports of these matters back to the responsible authorities but I regret that, due to lack of time, I have not been able to fulfil this function. I know that it is a battle worth fighting so if there is someone else willing to take on this responsibility I would be very grateful.

On the **435-438MHz** satellite allocation the major interference to both uplinks and downlinks over recent years has been the Pave Paws OTH radar located on the North East coast of the UK. This radar is, of course, very powerful and is looking up towards space so its quasi random clicking sounds have caused major difficulties when receiving data signals on the ground and no doubt cause similar problems for uplinks and commands. The forthcoming SSETI Express satellite which uses 437MHz for uplink and

downlinks would be especially vulnerable in this respect as the two prime ground stations are not far from the North Sea.

It has recently been announced that a major upgrade has been completed and will be tested over the next few months. The radar is presently not operating so it remains to be seen whether the upgraded system will be better or worse for us.

On the higher bands the actual and potential risks of interference exist for the amateur satellite service as they do for terrestrial users. We already experience considerable interference from the users of wireless LANS and “video senders” in the **2400 –2410MHz** part of the satellite allocation which actually extends from 2400 –2450MHz.

Conclusion

It has been a busy but frustrating period since the last conference as the number of active satellites has been going down rather than increasing. It is hoped that the next few years will see that trend reversing and that more satellites being available will encourage more amateurs to make use of their unique facilities and challenges. Cooperation with other parties working in the same area will, I believe, be vital to give us the opportunity to obtain launch opportunities.

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