Subject	**ARSPEX WG Activity Report**		
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ARSPEX Working Group Report
Varna-Albena 2014

1. ARISS School Contacts

Since 2001, nearly 1 000 successful school contacts have been performed in 49 countries and in 5 continents, allowing thousands of students to share the excitement of a space talk. Moreover, tens of thousands of students, faculty, and parents have participated by planning and attending these events.

Teachers, parents, media and communities see, first hand, how Amateur Radio and crewmembers on ISS can energize youngsters' interest in science, technology and learning.

Due to the huge demand, the European waiting list has grown considerably. The backlog is such, that no new applications are momentarily accepted. Moreover, schools are invited to share the space talk with another school from the waiting list. This approach is welcomed by the schools as it favours exchanges between schools from different regions and different countries.

At the ARISS international meeting, ESA-ESTEC 2014, it was decided to improve the follow-up of the STEM (Science, Technology, Engineering, Mathematics) oriented educational program submitted by the participating schools.

2. HamTV on ISS

The European Space Agency signed a contract with manufacturer Kayser Italia for the development and manufacturing of a Digital Amateur Television transmitter on the Columbus module of the International Space Station.

This S-Band “Ham Video” transmitter has been commissioned in 2014. It uses one of the ARISS L/S-band antennas installed on the nadir of Columbus. The commissioning consisted of tests of both ARISS S-band antennas, the 4 Ham Video frequencies and the 2 Symbol rates. The commissioning was done in several steps, extending over a period of several weeks. During this period, the Ham Video transmitter was activated continuously, allowing ground stations to submit receiving reports. This information is most useful to determine appropriate locations for chained ground stations, needed for video enhanced ARISS school contacts.

A proposal is presently prepared for a permanent Slide Show, transmitted by the Ham Video transmitter from the International Space Station. Such a Slide Show

could be used for educational activities, increasing the promotion of amateur radio to the youth.

3. QB50

The QB50 cubesat project is progressing, supervised by the von Karman Institute for Fluid Dynamics (VKI) in Belgium. This CubeSat Project aims at launching 50 university built CubeSats in one bunch.

From the beginning of the project, ARSPEX chairman has asked VKI for at least one amateur radio CubeSat as a counterpart of the use of amateur radio frequencies for QB50 telemetry. Two CubeSats have been allocated to the amateur radio service. These CubeSats will be launched soon. One is being developed by AMSAT francophone. The second is made by AMSAT UK and AMSAT NL, under supervision of Graham Shirville, G3VZV. Both will be launched before the QB50 bunch.

The QB50 CubeSats will be registered by the Belgian regulatory authority. An amateur radio ground station is presently under construction at the von Karman Institute. Stefan Dombrowski, ON6TI, is in charge of this station.

4. OUFTI

Students of the University of Liège, Belgium have built an amateur CubeSat called OUFTI and featuring a D-STAR transponder.

The European Space Agency has selected OUFTI for a future launch. The UBA and AMSAT Belgium are supporting the OUFTI project.

5. FUNcube

AMSAT UK's FUNcube CubeSat was successfully launched November 2013 on a geosynchronous polar orbit. This educational satellite operates three passes in the morning and three passes in the evening.

On daylight passes, FUNcube transmits telemetry full power, i.e. 300 mW. This telemetry is easily received with a FUNcube dongle receiver and a modest VHF antenna. The intent is to provide schools access to direct satellite reception, allowing students to learn about space, satellite orbits and amateur radio.

On evening passes, FUNcube operates as a wideband amateur radio transponder. Telemetry power is then reduced to 30 mW.

The FUNcube project comprises extensive software support and an Internet "Warehouse" where telemetry data are stored and made accessible real time, as received by participating stations.

Congratulations to AMSAT UK for a splendid achievement.

6. European Interparliamentary Space Conference

2013, the Belgian Senate held Presidency over the European Interparliamentary Space Conference (EISC).

The UBA participated with a stand to the venue at the European Space Centre, Redu, Belgium.

The ARSPEX chairman participated in the Plenary Session in the Belgian Senate. The venue was intended to provide the opportunity to discuss and debate on the theme of students and their interest in space education. With a view to further the debate, young professionals and students from the EISC countries had been invited to share their experiences.

7. Special frequencies for student satellites

The ITU proposes to examine the possibility to reserve a spectrum segment for student satellites.

Presently, these CubeSats use amateur frequencies for their telecommunications, whereas, in some cases, no specific amateur radio activity is offered. IARU R1 is attentive to further developments.

8. ARSPEX Bulletins

In 2013, 50 ARISS-Europe News Bulletins were circulated to 2 045 subscribers.

Most News Bulletins were also posted on the IARU Region 1 website.

9. ARSPEX Working Group chairman

Gaston Bertels, ON4WF, now 87, does not wish to be a candidate for a further term of office.

Respectfully submitted

Gaston Bertels, ON4WF
ARSPEX WG chairman