



- Published 4 times a year
- Averages between 36 and 52 pages (exceptional!)
- Still traditionally printed 4 colour litho
- 8 pages of colourrest is black and white
- PDF version for cyber members – full colour throughout

### Q-TV 251 - 5pring 2016

# The Principia Mission Give us a wave Tim!

Working with the UK Space Agency, ARISS (Amateur Radio on the International Space Station) developed a programme enobling a number of schools to speak directly to Tim Peake, the first british ESA astronaut to visit the station, during the duration of his stay.

This enables live interaction between pupils and Tim and has already furned out to be one of the highlights of the Phrincips STEM outreach programme. The presurvaged schools contacts are taking place between Junuary and May 2016 and subserts are taking place between Junuary and May 2016 and subserts are taken part a number of questions directly to the attronaut using amateur radio VHF and UHF radio equipment specially installed at the school for the occusion.

For Tim Peake's mission, the ARISS team of Iconsed UK, Radio Amatteurs, led by Cizzam Mongam MONITL also planned a world first by receiving like video from the ISS during the contact. Using the Hami'l Y transmitter, which has recently been commissioned on board the ISS, Tim will be the first astronaut to use this equipment during a two way schools contact.

As well as bulling a which based money system, which is installed at the school on the day of the constat, the team are utilizing Coophily Earth Station in Cornwall for receive the 2.4 GPz Ham? V transmissors from the 50 with a 1.8 meter dish learned to the project by Sateller Cataput. The dah a almost in the Inadow of the 29 meter dish "Arthur" but in 1982 to receive the first transminist television signals from the Teistur-1 spacerals. See CQ-TV250 for more details of the Coophily also.

#### The VHF and UHF amateur Radio station

The team provide a direct voice contact for up to the pupils at each of the selected schools with Tam Poale on the SS-We are using a VFF (1-VFF team) and the control of the selected school containing of a Kenwood 155000, preumps, power amplifies to get to 160 visuals and viff & UFF becaming on a computer controlled elevation/azervals rotation – mounted and visual visual visuals and viff & UFF becaming on a computer controlled elevation/azervals rotation – mounted and push to talk invited are regied at the forch of the stage for the students to operant. All the students controlling the gitt tale the foundation examine all visuals are some or already hold sciences.

with john GFACO providing the muscle po-



Frank Heritage - MOAEU

#### Live video reception at the school and at Goonhilly Earth station:

Our secondary aim is the reception of rist time video of it The inside the Suing the S band Health V transmissions. These are received directly at the school and also by using a system it Goothilly. The Joil receive system uses a 1.2 metre verticel mounted dish and Tutboure software a 1.2 metre verticel mounted dish and Tutboure software developed by FiGDZP to receive the DVPS- signal and the output from the system is find across an internal IP network to the main video production delestops.



The Coronilly signal is task haulet to the school over a dedicated VPN network and displayed when the boal signal in not available. The signal from the DATV receivers at both locations is necessful by a pair of Rapitory IP computers in the AV rack and there IPAPD output is de into the ATEM Television Studio. There are welchams on all the servish that can be mentioned us in the half so provide that confidence that they are pointing in the right, direction!



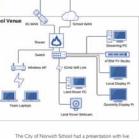
The digital receiver output from both the Goorhilly and the local receivers, along with dish cams and an ISS tracking map is available at

We have a redundancy system in place in case of reception failure of the audio for the contact with SOR receivers located at the station of Graham G3VZV and from PA3VEG in the Netherlands at Delft. This station has proved useful as it toles the signal from the ISS late.



Video presentation and live webcas

The schools produce a presentation leading up to the contact, showcasing the work done in the school and occasionally featuring a guest presenter or speaker.



The City of Norwich School had a presentation with live experiments from Mark Thompson - of Sky at Night fame, and a presentation by weatherman and radio annature Jim Bacon, G3YLA. These presentations, along with the video from the SS are displayed on a large screen for all to see. This is also controlled from the AV production device.

We are additionally providing a live webcast of the event with two cameras in the noom and the presentations mixed to a streaming server. This includes live audio and wideo of the contact, a real time tracking map and other



Page 15

14 age 14

Q-TV Slides indd 2





- File Formats:
  - Word
  - Open Office
  - · Plain text
  - PDF (if necessary)
- Please DO NOT send Microsoft Publisher
- Separate Photos from Text file – highest resolution possible please
- Please reference your photos in your text

# Open Broadcaster Software with DATV Express

Much has changed since I wrote about using EEppag to generate a DVB-S transport stems for DATV Express. Most notably Charles GAGUO, the DATV Express software subhos now incorporated the EEppage encoding process into DATV Express program. This now takes as as its input the yAMS, for orbital pilotechlow virtual video and aution devices. For myself I have been researching and using alternatives to yAMS, in part because I will restrict the program and couldn't afford a full licer but mostly because I have found that one program in particular is much better at colour keying than yAMS. That program is Copen Broadsacter's fostware or OSSC.

OBS is described on their web site at obsproject com as "Fee and open source software video and live streaming." I have long subscribed to the open source model if software, in general, although there is a lot of unfinished software out there, there are quamerus open source approaches which offer comparable for better functionality to

commercial software and are continually refined and updated by an enthusiastic community for benefit of the community.

Empage is a good example of a very powerful piece of open source software albeit with a steep learning curve. OBS, in my view, is rapidly becoming another essential piece of open source software in the fello of the video production and streaming.

#### What does OBS offer?

Borne out of the deair to stream gameplay for viewing online using services like YouTube, Twitch and others; at its core OSS offers a simple way to capture live windows or destoys and generate a suitable stream for sending to a Flash Media Server for more recently Adobe Media Server for wides streaming service. A variety of input devices are supported, filters including obstaga, and colour keying are provided, "unlimited" senes and sources (limited only by your computer capacity) and a flexible bujud architecture, which, adds, shipsag, like video playback and onscreen text from a variety of sources. The GPU is used to do the hard work leaving plently of resource for running games or in our case DATV Express software. OSS comes in two versions at present: OSS 1 (or Classic) was developed for Windows with a separate developement \*OSS Multiplatform" (record) renamed OSS Studio) being developed for Windows, Mac and Linux platforms. The classic version offers a basic capture and stream foul, which, is optimized to be lightweight and very efficient at what it does, a superior like #QKs setun as transitions, a preview window and multiple outputs.

## Why did I start using OBS?

I first came across OBS when I was trying to achieve a good colour key using white and suffering all sorts of fringing and fluttering around the edge of my keyed mage. OBS offered better control over the keying, particularly the availability of edge filtering and blending to reduce finging effects. Never versions of JAMX have improved the colour keying and now offer similar performance with careful setup.







666 For Tim Peake's mission, the ARISS team of licensed UK Radio-Amateurs, led-by-Ciaran-Morgan-M0XTD, also-孠 planned a world first by receiving live video from the ISS during the contact. Using the HamTV transmitter which has recently been commissioned on board the ISS.Tim-will be the first astronaut to use this equipment during a twoway-schools-contact. As-well-as-building-a-vehicle-based-receive-system, which is installed at the school on the day of the contact, the teamare utilising Goonhilly Earth Station in Cornwall to receive the 2.4 GHz HamTV transmissions from the ISS with a 3.8

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school for the occasion¶

The Goonhilly signal is back hauled a-dedicated VPN-network-and-display

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- Heidelberg B2 4 colour Speedmaster
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