

New Member Intro

Goonhilly Earth Station



Goonhilly Earth Station (GES) applied for membership in SpaceOps Committee at Large during the Marseille meeting in May 2017. GSE's membership was granted by the Executive Committee.

GES took the opportunity to explain their "Student-Outreach" activities, one of SpacOps' concerns as well.

Welcome to the SpaceOps Organization!

Goonhilly Summer School – Satellite Communications for Year 12 students

Dr Kat Hickey– Business Development and Training Manager at Goonhilly Earth Station Ltd

Satellite communications are a vital part of the space industry. Yet, this part of the sector is rarely ever on young people's radar, particularly when it comes to career trajectories. To fill this awareness gap, Goonhilly Earth Station Ltd (GES) runs an annual week-long summer school in all things satellite communications for students finishing Year 12 (typically 17 years old).

In 2017, twenty-four students arrived at Goonhilly Earth Station bright and early on a Monday morning in July. During initial introductions, it became clear that of the 16 boys and 7 girls, several were taking A-levels in physics, maths, chemistry, and other STEM subjects, and a few were considering pursuing space related studies like aerospace engineering. However, many didn't have any thoughts on where exactly such studies may lead as a career.

To kick off the experience, the students were divided into groups and got an exclusive tour of the Goonhilly's facilities and infrastructure. They were able to see some of the large satellite dishes in action, learned about the history of Goonhilly Earth Station, and got a peek into the communications facilities hosted on site.

The theoretical part of the week included lectures about the basics of satellite communications technology, maths and signal processing for communications, engineering principles, an overview of space related activities, and the business aspects of operating an earth station, among others. To complement the theory, the students were grouped into teams and worked on a hands-on project that enabled them to gain a solid understanding of the different hardware and software components of a personal computer and how they worked together. They also investigated and tested how the PCs can be used for satellite and space related applications.

In addition to subject specific knowledge around satellite technology and related topics, the project work allowed the students to practice their soft skills. Teamwork, verbal and written communication, and presentation skills will be integral for their careers, and

even the shyest pupils came out of their shells during the final presentation in front of parents and teachers.



A group of students presenting their project findings on the final day of the 2017 Goonhilly Summer School. (Photo: Paula Bolton, GES)

It was inspiring to see how well these teenagers got to know and respect each other very quickly, despite many of them having never met before. The project teams were engaged and efficient, and the enthusiasm with which they approached their projects was a true delight. Even during scheduled breaks they took every opportunity to dive back into their projects with their team mates.

The Summer School – in its third year – was oversubscribed, and for several students from Cornwall, the week was already part of their summer holidays. Choosing a week of learning over time at the beach speaks to the high level of motivation these young people bring to the table. Many of them left the week with a sense of pride, and the feeling that they had a better idea of the opportunities they might have in the space industry further down the road. This is particularly important for a mostly rural region like Cornwall, where many young people perceive a distinct lack of opportunities in highly skilled jobs. It showcases how important the provision of STEM related education and outreach can be, and such programmes will hopefully have a positive impact on pupils' career aspirations and the region's economy in the long term.



The 2017 Goonhilly Summer School students including teachers and Goonhilly staff in front of the iconic [Aerial 1](#) (Photo: Eddy Search, GES)

About Goonhilly Earth Station Ltd

Goonhilly Earth Station Ltd (GES) acquired the world-famous Goonhilly Satellite Station in 2014. It is an independent, privately-owned SME providing a complete range of satellite communications services and growing an ever wider range of space and data related services.

GES clients include some of the largest global satellite operators such as SES, Inmarsat, Eutelsat, Hughes, Hispasat, Intelsat and Planet Labs. Working alongside ESA, QinetiQ, BAE Systems and SSTL, GES is developing the world's first private Deep Space Communication system. GES also has close relationships with a wide range of leading universities including Oxford, Manchester, Leeds, Southampton, Durham, and Herts to enhance UK capabilities in radio astronomy.

Goonhilly is now an Enterprise Zone as part of the expanded Newquay Airport Aerohub Enterprise Zone. Goonhilly also hosts the Sat Apps Catapult South West Regional Centre of Excellence, and is part of the Spaceport Cornwall bid to the UK government.

The Goonhilly infrastructure including 2x100 Gbit/s dual and diverse internet connectivity and a wide range of antennas makes it an ideal partner for satellite and space related business.

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