

IAF SPACE OPERATIONS SYMPOSIUM (B6)
Ground Operations - Systems and Solutions (1)

Author: Mr. Steven Gillies
Clyde Space Ltd., United Kingdom, steven.gillies@aac-clydespace.com

CLYDE SPACE: GROUND STATION

Abstract

Clyde Space operate their own ground station as part of their satellite operations. The Clyde Space: Ground Station app (CS:GS) allows booking of time on the ground station and automates the execution of booked contacts. It is composed of three main elements; the booking system with REST API, CS:Radio and CS:Rotator.

The booking API allows users to book contacts on any available antennas. If no antennas are available then it reports the conflict to the user and denies the request.

CS:Radio is an API built around GNU Radio that allows for remote control of a GNU Radio instance. It also performs the doppler compensation for orbital contacts.

CS:Rotator controls the antenna pointing in order to track satellites as they pass. CS:Rotator comes with a web app to view the rotator tracking and status, including the currently tracked object, if applicable. The app also allows for manual control of the rotator, which is useful during calibration.

It is built using freely available backend systems. It is deployable to the cloud and has been designed to be scalable.