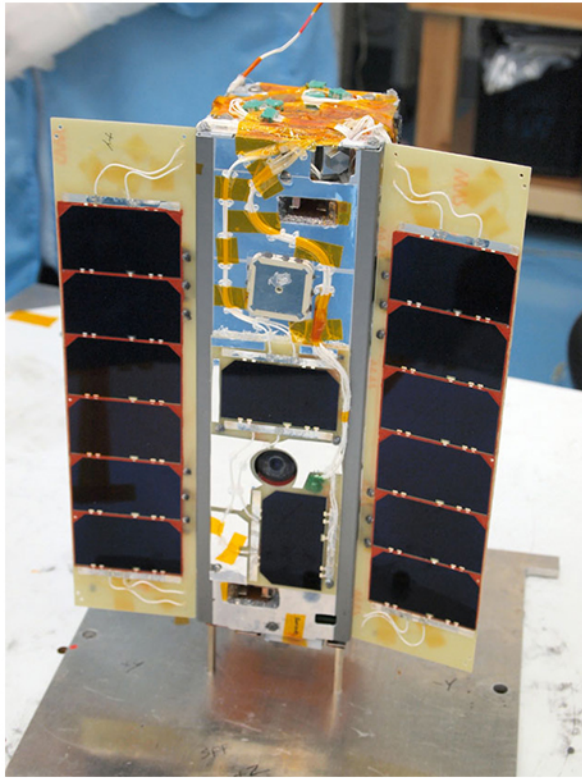


STRaND-1



STRaND-1 (Surrey Training, Research and Nanosatellite Demonstrator 1) is a "3U" CubeSat developed by Surrey University's Surrey Space Centre (SSC) and Surrey Satellite Technology Ltd (SSTL). The 4.3 kg (9.5 lb) nanosatellite was launched into orbit on board a PSLV Rocket from India on February 25, 2013, becoming the world's first smartphone satellite in space.

STRaND-1 will also be the first UK CubeSat launched and has been developed by talented space engineers and researchers at Surrey with the majority of the design and developmental work being carried out in their spare time. The build and test phase of the project has been completed in just three months.

STRaND-1 is operated by two computers: one is classic CubeSat computer and second is a Google Nexus One smartphone with an Android operating system.

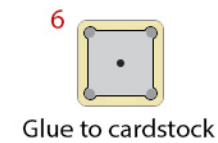
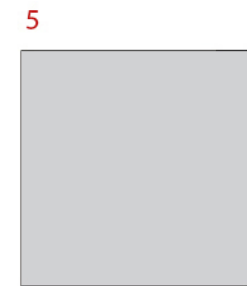
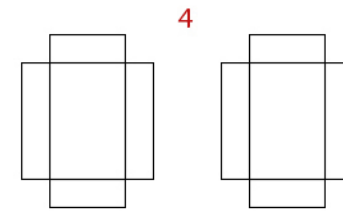
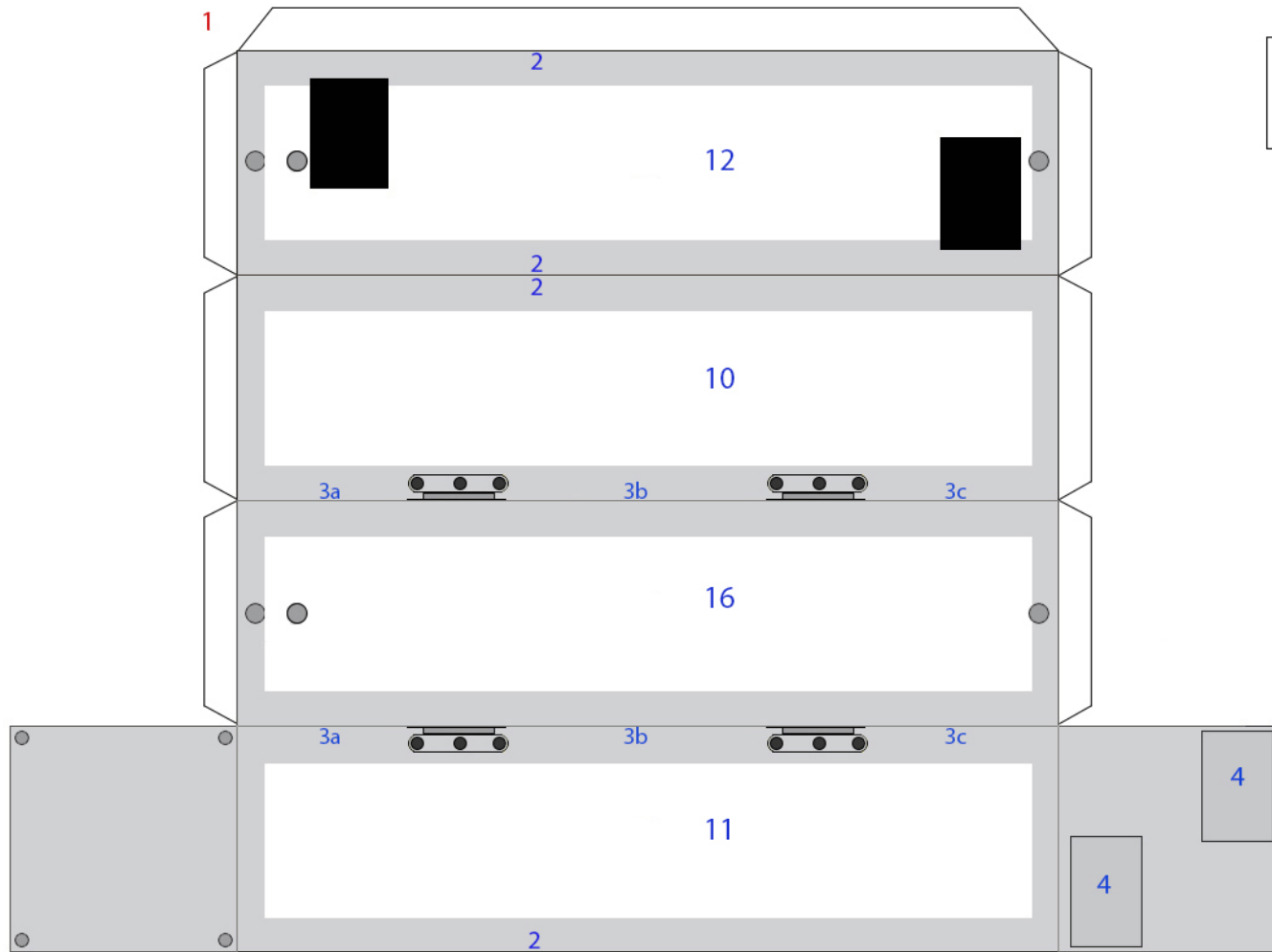
Being the first smartphone satellite in orbit is just one of many 'firsts' that STRaND-1 is hoping to achieve. It will also fly innovative new technologies such as a 'WARP DRiVE' (Water Alcohol Resistojet Propulsion Deorbit Re-entry Velocity Experiment) and electric Pulsed Plasma Thrusters (PPTs); both 'firsts' to fly on a nanosatellite. It is also flying a 3D printed part – believed to be the first to fly in space!

The smartphone was intended to provide cameras, accelerometers and high-performance computer processors - almost everything except solar panels and propulsion. During the first phase of the mission STRaND-1 was intended to use a number of experimental apps to collect data, while a new high-speed Linux-based CubeSat computer developed by SSC takes care of the satellite. During phase two the STRaND team intended to switch the satellite's in-orbit operations to the smartphone, thereby testing the capabilities of a number of standard smartphone components in a space environment. There was a public contest in August 2011 to create "space apps" to run on the phone. The winning entries included an app for magnetic field measurements, satellite telemetry display, an Earth imaging application called 360 App, as well as one app which is purported to allow users to see people scream in space. However, the smartphone on board STRaND-1 was not used to control the satellite before it unexpectedly turned off in March 2013 (Phase two was not turned on at this time).

The spacecraft returned to operational status on 23 July 2013 at which time SSC and SSTL continued their plans for its operation and control.

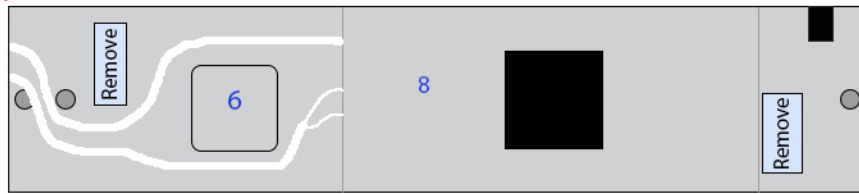


STRaND-1



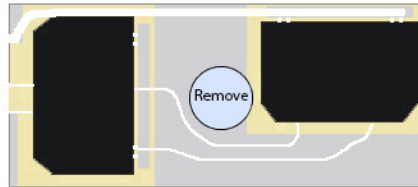
STRaND-1

7



Cut out light blue areas

8



9



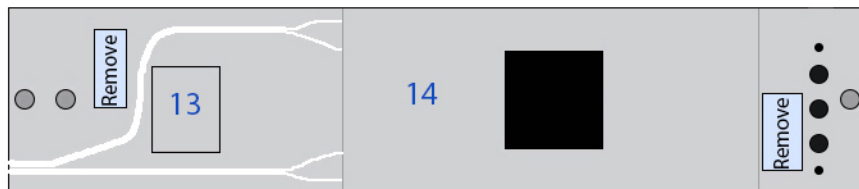
10



11

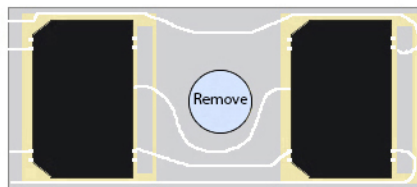


12



Cut out light blue areas

14



15



13
Glue to
cardstock

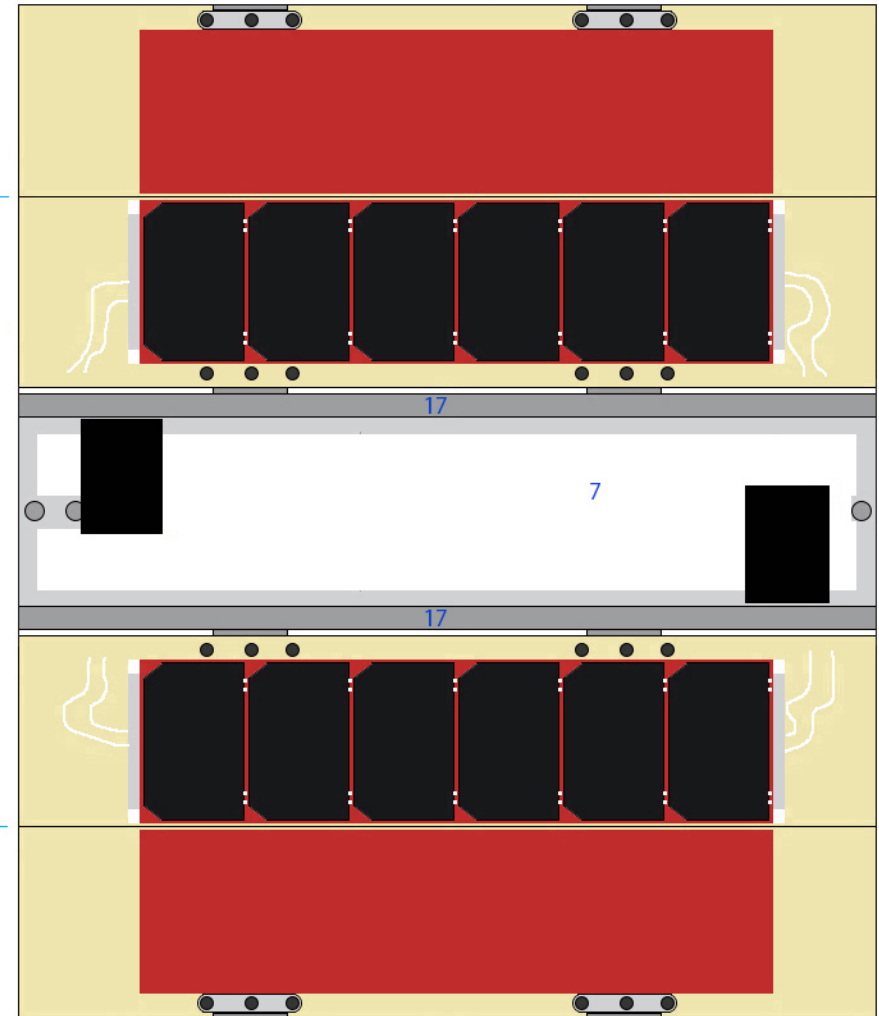
Zach's



PaperSat Designs
Spacecraft paper Models

16

Score-fold at the blue lines for graphics on both sides.



17

