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Author: Ms. Libby Hoban
Clyde Space Ltd., United Kingdom

Mr. Andrew Strain
Clyde Space Ltd., United Kingdom
Mr. Allan Cannon
Clyde Space Ltd, United Kingdom

APPLYING A RAPID DEVELOPMENT APPROACH TO SATELLITE DEVELOPMENT ENABLING
CUSTOMERS TO MEET THEIR MARKET REQUIREMENTS

Abstract

What were once considered a university project or tool for de-risking a larger project, nanosatellites have become increasingly capable, incorporating some of today's most cutting-edge technology, from software defined radios to quantum payloads. This high paced revolution in nanosatellite technology has been made possible by applying processes and techniques from both traditional space and other industries, such as automotive and medical.

The revolution in space based applications is being heralded as New Space and is, in part, being led by companies such as AAC-Clyde Space who have applied over a decade of experience into the design, manufacture, and test of reliable low cost and technically capable nanosatellite platforms. AAC-Clyde Space now provides full turnkey solutions to their customers, from mission design to spacecraft operations, with a focus on constellations.

For the time being, traditional spacecraft can outperform a nanosatellite in terms of data throughput or image resolution. However, by launching and arranging a constellation of nanosatellites, it is now possible to provide a similar performance or offer complimentary data while achieving significantly lower latency; no longer will the image on Google Maps be weeks if not months out of date.

All this is made possible by applying robust and comprehensive mission design techniques, based on expert knowledge of both nanosatellite platforms and their payloads, and cutting-edge manufacturing techniques and technology.

Borrowing from other industries such as defence where rapid development methodologies are commonplace AAC-Clyde Space have adopted this approach to drive down the design and development lifecycle, offering previously infeasible or financially prohibitive solutions.

AAC-Clyde Space implements a key focus on design for manufacture and design for test to achieve consistent and repeatable build time and again. Quick assembly of standardised platforms is achieved through rapid system integration and development accomplished through the utilisation of a mix of our standardised off-the-shelf products and interfacing modules. By reusing highly integrated designs and systems we can offer a high level of reliability, heritage and system knowledge across many missions.

Recent examples where AAC-Clyde Space have successfully delivered customer projects from contract negotiation to on orbit delivery in months, whilst maintaining the quality required by commercial customers, will be presented.