Department of Electronic & Electrical Engineering
BEng/MEng in EEE/EDS/EES/EME: 19.496/EM401 Individual Project

INTERIM REPORT

- A draft e-copy of the report (as pdf file and entitled "name_interim-report") must be submitted online via MyPlace by 12h00 on Friday 01 December 2023.
- The final e-copy must be submitted (and confirmed) by Friday 08 December at 12h00. (The draft submission from 01 December will be considered as the final submission after the deadline.) No submission will be permitted after 08 December.
- Formal written feedback will be provided after the project oral in January.

Student Name: Daniel Stebbings	Registration Number: 202118874	Supervisor: Louise Crockett
Project Title: Downlink System Design for the STRATHcube Satellite Mission		

Please read the following extract from the University of Strathclyde Regulations 5.4 and 5.6.

Declaration

A key part of project conduct and reporting is the requirement to compare current progress to that anticipated in any previous reporting stage and then highlight where changes have occurred, the reasons for the changes and the actions taken in response to such changes. As part of the interim report, students are required to reflect upon the progress of the project to date, reflect upon on the degree to which this progress has met expectations and intimate the impact that such changes have had on the planned project objectives and deliverables. Limited to this current page. Comments should be simple and clear. Not duplicate content from main body of interim report.

A. Project Objectives

The primary objective remains the creation of the downlink communication system for STRATHcube. However, due to difficulty in sourcing the TOTEM SDR in time for the project, development will be targeted towards creating an engineering model using development boards. This was foreseen during planning, and introduces only minor changes.

Additionally, the objectives stated in the Statement of Intent were quite skewed towards RTL development. After further research, more time will be required for data handling aspects such as scheduling.

B. Project Progress:

My plans for development were also quite skewed towards RTL, as such I underestimated the time required to complete research into all aspects of the system. After finding a detailed MATLAB example for DVB-S2 implementation my time was spent analysing the resource requirements, identifying potential tools and software required, and analysing system performance requirements culminating in a detailed plan for the system implementation. Overall, I'm satisfied with the volume of work I've been able complete and believe it is as expected in the Statement of Intent, albeit with a different weighting on tasks than expected.

C. Project Deliverables:

As the project target has changed from the TOTEM SDR to development boards, the final implemented system will require further development before it is ready for flight hardware, as manufacturer development files could not be sourced. Again, this was foreseen during the planning of the project and is not an issue. As all further resources are either freely available, or already owned by the university, no further change of project scope is foreseen.