

## IMSIS Dissertation Feedback & Mark Sheet

|                                  |  |                  |
|----------------------------------|--|------------------|
| <b>Student Matriculation No.</b> | Glasgow 2677876 Trento 233428                                  | Charles 90101642 |
| <b>Dissertation Title</b>        | Quantum-Based Technologies for Secure Satellite Communications |                  |

|                          |  |  |
|--------------------------|--|--|
|                          |  |  |
| <b>Word Count:</b> 21993 |  |  |

### JOINT GRADING (subject to agreement of the external examiner and approval at Joint Exam Board)

|                                   |
|-----------------------------------|
| <b>Final Agreed Mark.</b> C1 [14] |
|-----------------------------------|

### DISSERTATION FEEDBACK

| Assessment Criteria  | Rating       |
|--|--------------|
| <b>A. Structure and Development of Answer</b>  |              |
| This refers to your organisational skills and ability to construct an argument in a coherent and original manner |              |
| • <i>Originality of topic</i>  | Very Good    |
| • <i>Coherent set of research questions and/or hypothesis identified</i>   | Good         |
| • <i>Appropriate methodology and evidence of effective organisation of work</i>                                  | Satisfactory |
| • <i>Logically structured argument and flow of ideas reflecting research questions</i>                           | Good         |
| • <i>Application of theory and/or concepts</i>   | Good         |
| <b>B. Use of Source Material</b>   |              |
| This refers to your skills to select and use relevant information and data in a correct manner                   |              |
| • <i>Evidence of reading and review of published literature</i>  | Very Good    |
| • <i>Selection of relevant primary and/or secondary evidence to support argument</i>                             | Good         |
| • <i>Critical analysis and evaluation of evidence</i>  | Good         |
| • <i>Accuracy of factual data</i>  | Good         |
| <b>C. Academic Style</b>   |              |
| This refers to your ability to write in a formal academic manner   |              |
| • <i>Appropriate formal and clear writing style</i>  | Excellent    |
| • <i>Accurate spelling, grammar and punctuation</i>  | Excellent    |
| • <i>Consistent and accurate referencing (including complete bibliography)</i>                                   | Excellent    |
| • <i>Is the dissertation free from plagiarism?</i>   | Yes          |
| • <i>Evidence of ethics approval included (if required based on methodology)</i>                                 | Yes          |
| • <i>Appropriate word count</i>  | Yes          |

## IMSISS Dissertation Feedback & Mark Sheet

### ADDITIONAL WRITTEN COMMENTS

#### **Reviewer 1**

This thesis explores how the integration of quantum technologies enhance the security of satellite communications, thus bolstering the EU's space security and defence strategy. The topic is relevant to the aims of the IMSISS programme and highly original. The thesis builds upon scholarly debates in International Relations (IR) - specifically security and strategic studies - that explore the role of space technologies and infrastructures in global politics. Especially in the literature review chapter, the student demonstrates that he is able to navigate these debates and understand their theoretical premises. Through the empirical material and discussion presented in the analytical chapters, the student attempts to make a contribution to these debates, which revolves around the potential impact of quantum technologies on EU space policy.

Notwithstanding these qualities, I want to raise some points of critique that the student may want to take into consideration in future research:

(1) The literature review is well written and demonstrates the capacity of the student to understand the main stakes in the scholarly debates that revolve around the militarisation and weaponisation of space. However, it would be much better to divide the literature review into subsections, each one focusing on one specific theme that emerges in the literature. As this section appears now, it is too extensive and difficult to follow. At the same time, it would be good to include some statements that hint to the contributions that this thesis seeks to make. Finally, I would appreciate at least some engagement with the wider literature on the role of new technologies (not just satellites) in International Relations (see e.g., McCarthy, 2018; Hoijsink and Leese, 2019)

(2) The discussion in the Research Design section makes sense, and the student demonstrates that he understands the difference between interpretivism and positivism. However, I failed to understand how this discussion is relevant to this thesis. For a research design section, I would like to see how the research was planned and organised (instead of reading about the differences between interpretivism and positivism). Similarly, the methodological section appears rather limited. It is great that the student managed to conduct some fieldwork during the internship period. But it would be good to know more about how this was done, for what purposes, what it involved, and so on.

(3) The Chapter entitled "The European Union's Approach to Space" is very informative but at the same time too descriptive. Instead of unpacking the EU's approach to space - the logics, rationalities and interests that inform it - the student has selected to briefly describe a series of different space projects and systems.

(4) Overall, the analytical chapters of the thesis tend to be rather technical. While this is inevitable as the thesis explores a rather technical topic, it would be good to zoom out from technicalities and consider how these matter in the context of the EU's space policy. Interesting discussions about the militarisation of space that appeared in the literature review could continue in the analytical chapters.

#### **Reviewer 2**

The thesis develops a very important and up-to-date topic. While the discussions about space security, despite what's implied in the introduction, have been ongoing for several decades, their connection to the issue of quantum communication is very new. Applying this to the European

### **IMSIS Dissertation Feedback & Mark Sheet**

space programme is also very relevant given the recent, and well-described, developments. However, the thesis would benefit from a stronger analytical segment. Currently, it reads more like a description of technical measures and institutional analysis, rather than a full-fledged work in the field of (space) security. Also, the structure of the chapter dealing with space security in general could have been better thought-through and more focused on the issue of communications which should be the core of the thesis.