

Introduction

Kepler Communications Inc. (“Kepler”) supports the motion overall for Ofcom to recoup the costs associated with the work involved in processing satellite filings, as proposed in the Satellite Filings Cost Recovery consultation (referred to herein as “the Consultation”).

Kepler has sourced the development of its first two prototype satellites within the UK and has, in partnership with the UK Satellite Applications Catapult, also established an agreement to develop its third and final prototype satellite within the UK¹. Kepler’s investment in the UK’s vibrant space sector has proven to be extremely valuable, and the health of this sector remains an important priority for the success of Kepler’s operations.

General Comments

Kepler is building a constellation of CubeSat satellites with the intent on keeping development costs as low as possible. Kepler wishes to highlight that it does not necessarily have the same level of capital flexibility that is assumed of operators of large NGSO constellations and yet will still qualify for the highest charging tier proposed in the new legislation. As a small business with limited resources, the introduction of the new filing fees as presented by the Consultation would introduce a noteworthy increase in regulatory spending within Kepler’s budget. However, Kepler understands the justification for the increase in associated costs and simply wishes to communicate this circumstance. Kepler belongs to a growing class of start-up operators that are attempting to deliver innovative satellite services on a fraction of the budget of traditional satellite operators. The expected growth in this sector is substantial² and Ofcom should, in accordance with its goal to grow the UK space industry³, do whatever it can to promote the health of these operators and their respective projects.

Ofcom acknowledged in the Consultation that a specific charging approach was considered for small satellites, in light of their reduced scale and complexity⁴. The case of a small, uncoordinated CubeSat filing is discussed as an example of a project of this type, and under the proposed charging architecture need only allocate a small portion of their budget (on the order of 4%) towards satellite fees. This figure appears reasonable at first glance, but fails to account for other often mandatory regulatory spending made externally to Ofcom. In the case of many CubeSat start-ups, the reality is that Ofcom’s new charges will be made on top of a multitude of other regulatory fees, including for ITU submissions, space licensure, earth station licensure, spectrum allocations, and foreign market access. Start-ups appear to be caught precariously between having the limited funds of small university-made experimental CubeSat projects (which generate little economic value) and the revenue potential of substantial commercial satellite networks. Kepler wishes to reiterate that this point be considered by Ofcom during the evaluation of the proposed cost recovery proceeding.

¹ AAC Clyde was responsible for the construction of Satellites 1 and 2, and has also been contracted for the production of the third and final prototype.

² <https://spacenews.com/small-satellites-are-at-the-center-of-a-space-industry-transformation/>

³ See *the Consultation*, paragraph 3.4.

⁴ See *the Consultation*, paragraph 5.27.

Responses

Question 1: Do you agree we have identified the most relevant cost drivers to take account of in our charging approach?

Yes, we believe these drivers have been identified accurately.

Question 2: Are there any other factors you consider we should take account of in our charging approach? Please explain why in your response.

It should be noted that the size and complexity of the filing may very well have a material impact on the overall filing cost. For example, consider the following two NGSO systems:

- a single polar NGSO Earth observation satellite. Needs to coordinate with one or two administrations during its lifetime for TT&C stations and data downlinks.
- NGSO broadband constellation consisting of thousands of satellites and multiple user terminal architectures. Requires coordination with dozens of administrations.

The latter filing would undoubtedly require more effort for both its initial review and its associated correspondences throughout its lifetime, yet the cost of the annual management of each network is the same. In effect, small networks would subsidize the work required to manage large, complicated filings. This would also effectively incentivize operators to submit exaggerated filings that encompass multiple networks or orbital options within them, increasing the complexity and effort of Ofcom's review, rather than submitting several smaller filings of more moderate complexity.

Question 3: What comments, if any, do you have on our charging options 1-4?

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Question 4: What other charging options, if any, do you believe we should consider?

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Question 5: Do you agree that our preferred charging option, option 3, is the best way to meet our objectives? If no, please state your preferred charging option and explain why.

Yes. Kepler agrees that of the four options, option 3 most appropriately meets Ofcom's stated objectives. With that said, Kepler believes its concerns discussed within this document should be addressed before enforcing any changes to the fee structure.

Question 6: Do you have any comments on our proposed charging approach (as set out above)?

Regarding the preferred option 3, Kepler believes that it is, to some extent, unsatisfying that operator fees are dependent upon the arbitrary volume of requests received by the office in a given (previous) year. This implies that a portion of the costing is effectively determined by chance – i.e. how many other operators decide to submit filings in the same period. Ideally, charges should be based on what a filing is worth in resources required to process it; the price should not effectively be subject to the 'market'.

Question 7: Do you have any comments on our proposals for implementing our charging approach?

No, we believe the proposed implementation schedule is useful and appropriate.

Question 8: Do you have any other comments on matters arising from this consultation?

1. Based on filing volumes and weighted effort per activity during the 2017/2018 period, the cost of the submission of a new filing of any type was approximately £1800. We note that the document (i.e. Table 6) does not differentiate between the effort required to process the submission of an API versus a CR/C, notification, or modification, and thus we assume that the amount of effort to process these submissions is approximately the same. Considering the ITU's cost recovery for an API (which accounts for just its submission, as no management is required afterward) is 570 CHF (approx. £431), it is unclear why the cost of a submission/modification to Ofcom is as high as £1800. Perhaps more appropriately, could Ofcom clarify the effort involved in this task and how it justifies that weighted portion of annual costs?
2. Could Ofcom clarify the factors involved in determining the effort weighting as listed in Table 5?
3. Ofcom acknowledges that "the space sector forms an important part of the UK economy, and [notes] the Government's objectives to grow the sector, with a target to achieve 10% of the global market by 2030". However, the implementation of the cost recovery proposal introduces a new barrier for operators. Satellite filing fees on the order of £50,000, especially when combined with ITU and other regulatory fees, can threaten the success of small space enterprises, including start-ups with limited access to funds. The introduction of variable or random yearly fees also creates undue risk in a business model, inevitably leading to a reduction in investor confidence. These costs would act to inhibit the growth of the UK space sector and work against the Government's targets for global market share.
4. There is no consideration of the economic benefits of the space sector on the UK economy and how this could indirectly contribute to the costs of the satellite filings. With an appropriate weighting, this factor could be used to justify the offset of some of the office's fixed costs, such as Ofcom's membership to the ITU, the attendance of international meetings, and the review of the biweekly BR IFICs⁵.
5. If operators are required to equally share the costs of Ofcom's ITU membership, does this guarantee that all operators – both large and small – will receive equal representation when the UK is making spectrum policy decisions (e.g. at WP7 and WP4A)?

⁵ As discussed in Section 3 and Annex 6 of *the Consultation*.