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

**General comments**

a. **Azzurra and AB5** do not believe that Ofcom should be charging satellite operators in the UK for the work undertaken on the management of satellite filings, as directed by and performed for HMG. Instead, we believe that Ofcom should recover such cost, via HMG, through the gross value-add benefits to the UK economy derived from the space sector incurred through taxation, export sales, increased foreign direct investment and employment. The UK space sector is today worth in the order of about £14 billion per year in total income with a direct gross value add of $5.1bn and contributing over $250bn to the wider UK GDP. Ofcom and HMG should be able to justify cost recovery through this mean. We propose that Ofcom consults on this point with HMG so as to finds a different mean of recovering its (honourable) costs. We believe that this Ofcom cost recovery on the UK space sector is in a way a double tax, one that may push away potential future foreign and national investment on the UK space sector.

b. However, if Ofcom will not consider the above approach, then Azzurra and AB5 are responding to this consultation with particular emphasis to ITU satellite filings of NGSO and small satellite systems. In particular, we aim to discuss here the filings that are deployed in low Earth orbit (LEO) and which are by definition of non-GSO nature.

i. **Filings of Uncoordinated Satellite Systems**

   Many of these filings are often filed on a non-coordinated basis (under Article 9.1 section IA) and are for short lived missions of between 1 to 3 years at most. Their business plan is often very tight and limited (e.g., as low as 10’s of thousands of sterling pounds) and may be developed for experimental purposes or of very low commercial value.

   We are thus concerned that Ofcom does not provide specific details in the consultation document which justifies the relatively high fees for such filings (see specifically Table 5 and 7 of the consultation document).

   We urge Ofcom to consider additional drivers, specifically (1) the business plan and (2) the relative ITU cost recovery charges for such filings vis-à-vis CR/C coordinated filings.

   We believe that for such filings Ofcom work is very limited and should just either exempt such filings from any cost recovery charge, or at the most consider a simple one-off fee proportionate to what the ITU charges (one off 570 CHF per filing).

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3  Ibid.
ii. Coordinated NGSO satellite filings

We also are concerned that Ofcom is unfairly mis-representing the impact that coordinated NGSO satellite systems and their filings have on Ofcom space team. We believe that NGSO and GSO coordinated systems accrue the same/or similar efforts by Ofcom and thus we believe that Ofcom should not differentiate in the charging for these filings.

Specific comments

a. Uncoordinated satellite filing

- Azzurra and AB5 consulting believe that the pricing model for cost recovery of non-coordinated filings is extremely high and Ofcom should either consider to not charge such missions or have a proportionate and fair pricing charge, possibly proportionate to what the ITU is charging, i.e. 570 CHF\(^4\) (equivalent to about £450).

- Based on the above general comments, Azzurra and AB5 asks Ofcom to consider three additional drivers for such non-coordinated filings to the one proposed by Ofcom (Type of filing activity, Filing coordination requirement or not, Filing period), i.e.:
  
  o Business value of the project/mission;
  o Charges made by the ITU for such filings, compared to filings made for coordinated networks\(^5\);
  o UK Space Growth agenda, which aims at attracting foreign direct investment from foreign operators in investing in the UK, thus aiming to grow the UK economy, creating jobs and benefiting UK citizens and consumers through creating business and economic value for the UK.

Mainly because the proposed charge model for such filings, See Table 7, is too high and will impact the business plan of the small satellite systems, such as cubesats and missions of less than 100 kg size (micro, nano and pico satellites) and experimental satellites (which often are not commercial missions and thus with very tight budget). Such charges may scare off potential space operators in the UK from filings through the UK administration.

- With regard to these additional drivers we provide the following comments that should justify our views of a much reduced cost recovery charge for such filings:

  o **Business value**: small missions such as cubesats require satellite filings often based on a non-coordinated basis and often these are for short lived missions, even though a new mission could always be deployed under the same notification. Such missions will have project values that may differ of course, but that are far less expensive, e.g., between £10k to £200k, than standard GSO and NGSO constellation of much larger satellites (requiring investments greater than £200 million).

As such the cost recovery charge of such filings as a very large impact on the mission and should be voided or reduced to the minimum amount possible.

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\(^{4}\) Ibid.
\(^{5}\) Ibid.
ITU cost recovery charges: We know that for such (non-coordinated) missions the ITU charges 570 CHF as a one-off fee. This is equivalent to about £450. Also, no other charges apply (e.g., modifications, notifications, BIU).

While the other satellite filings are charged at fees of about 25,000 CHF (or greater depending on each case; see footnote 1). This is equivalent to £20,000.

When we compare 570 CHF to 25,000 CHF, this is a ratio of 1 to 44.

Ofcom is instead proposing certain charges provided in Table 7 (of the Ofcom consultation document) for the non-coordinated filings which through an example calculation provided in Figure 5 (of the consultation document), it shows that uncoordinated APIs will accrues a cost recovery fee of about £13,100 over a period of 5 years. As a comparison, a GSO filing, which requires a lot of management transactions by Ofcom each year, through the example in Figure 6, will accrue a cost recovery fee of about £35,300.

This means that with the proposed and favoured Ofcom cost recover fee model the uncoordinated filing would accrues about 1/3rd the cost recovery fees of a GSO filings; while for the ITU such ration is 1 to 44.

This specific comparison shows clearly that the cost recovery fees of uncoordinated filings are disproportionate and unfair.

We thus urge Ofcom to reconsider the treatment of cost recovery for uncoordinated satellite filings because the proposed way forward is unfair and disproportionate to say the least. Furthermore, we propose that either that all the fees be waived (i.e., accrue a cost of zero), or have a nominal charging fee proportionate to what the ITU charges (i.e., £450) or lower indeed.

- We also express our concern that the proposed analysis of the costs for such filings has not been provided in the details and it is not clearly expressed in the document as to why Ofcom has taken very high “effort weighting”, e.g., “1” when for GSO is “3” and NGSO is “4.5”, as given in Table 5 of the consultation document.

We believe that either the effort weighting factor (See Table 5 of your document) for non-coordinated API filings “1” is extremely high, or conversely the one for GSO and NGSO is extremely low. As such, we urge Ofcom to provide a clear and transparent analysis as to why this is the case; and then have an open debate with the industry to discuss if what Ofcom have proposed is fair and proportionate towards these type of filings.

b. Coordinated NGSO satellite filing

We urge Ofcom to reconsider its views and its proposal and to not charge NGSO satellite filings more than those charging for GSOs.

For such filings, as explained in the generic section above we don’t believe that Ofcom can charge higher fees to NGSO satellite filings for coordinated frequency allocations, and this is based on
the fact that often, the NGSO satellite filings may require none, or same/similar, or less coordination work than that done for GSO systems. For examples in bands where Article 22 limits apply no coordination work is required and thus reducing the burden on Ofcom and the operator by requesting or attending yearly bilateral coordination meetings. Furthermore, NGSO operators (as possibly also GSO operator) perform specific operator-to-operator coordination meetings without the presence of Ofcom, thus no extra impact on Ofcom for such coordination.

As such we do not agree with Ofcom statements in the document, such as:

(1) footnote 19 referring to the ITU’s need to increase its fees for NGSO satellite filings; and,

(2) Section 1.20, “on average a NGSO filing takes approximately 50% more effort to manage annually than a GSO filing”.

The consequence of such unjustified belief results in fees suggested in Table 7 of the consultation document which are 50% more for NGSO systems than GSO. We believe that this is unfair as it is certainly based on a misunderstanding by Ofcom.

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

1. Ofcom should not be charging stakeholder for satellite filings

In general, we believe that Ofcom should not be charging for satellite filings and should recover its yearly costs through government subsidies, just because satellite operators in the UK, either national or international, invest in the UK a substantial amount and the UK government recovers a large amount of taxes (e.g., corporation taxes, income taxes, VATs).

Before the charging regime is put into place, Ofcom should consult with Department of International Trade (DIT), and report to the stakeholders, to assess the impact this charging regime, if any, may have on foreign direct investment.

However, if Ofcom does not agree with this, we provide the following comments.

2. Our comments on other factors to be considered
   a. Filings for Uncoordinated Satellites

As highlighted in our Response 1 above, we have highlighted that Ofcom may have not clearly explained and justified as to why satellite filings of uncoordinated satellites must accrue a disproportionate cost recovery fees, as given in the examples in Figures 5 and 6.

We have highlighted in such response that Ofcom should also consider additional cost drives and we are also highlighting the factors that influence these, i.e.:

- Mission business value
- ITU cost recovery fees
- UK Space Growth Agenda and attracting foreign direct investment
The reasons as to why Ofcom should consider these additional factors has been provided in Response 1 above.

b. Filings for coordinated NGSO satellite systems

We have explained in the above response to Question 1, our view that NGSO satellite filings should not be charged differently than GSO filings as we believe that the amount of work by Ofcom to manage NGSO filings should be the same or less as that of GSO.

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

a. Ofcom should not be charging stakeholder for satellite filings

In general, we believe that Ofcom should not be charging for satellite filings and should recover its yearly costs through government subsidies, just because satellite operators in the UK, either national or international, invest in the UK a substantial amount and the UK government recovers a large amount of taxes (e.g., corporation taxes, income taxes, VATs).

Before the charging regime is put into place, Ofcom should consult with Department of International Trade (DIT), and report to the stakeholders, to assess the impact this charging regime, if any, may have on foreign direct investment.

However, if Ofcom does not agree with this, we provide the following comments.

b. Our comments on Options 1-4

We understand that Ofcom has proposed 4 options in its cost recovery for UK satellite filings.

a. Comments for filings of uncoordinated Systems

With regard to the proposed Option 3, which is Ofcom preferred option, we comment, as given also in our response in 1 and 2, that this option (and other equivalent options in 1 to 4) is extremely disproportionate and unfair for those satellite missions that require an uncoordinated filing.

We have proposed in response 1 and 2 that Ofcom should waive cost recovery charges for uncoordinated filings, or at most have a one-off (single) application fee/charge proportionate to the ITU cost recovery fee of 570 CHF, or lower (possibly of about £200 GBP, as equivalent to light touch licensing charges in some satellite bands).

b. Comments for filings of uncoordinated Systems

We have provided our comments in response to 1 and 2 above, stating that the NGSO satellite filings should not be charged differently than GSO satellite filings.
4. **Question 4: What other charging options, if any, do you believe we should consider?**

1. **Ofcom should not be charging stakeholder for satellite filings**

   In general, we believe that Ofcom should not be charging for satellite filings and should recover its yearly costs through government subsidies, just because satellite operators in the UK, either national or international, invest in the UK a substantial amount and the UK government recovers a large amount of taxes (e.g., corporation taxes, income taxes, VATs).

   Before the charging regime is put into place, Ofcom should consult with Department of International Trade (DIT), and report to the stakeholders, to assess the impact this charging regime, if any, may have on foreign direct investment.

   However, if Ofcom does not agree with this, we provide the following comments.

2. **Our comments on Other Charging Options**

   a. We have proposed in the above responses that filings of uncoordinated satellites (e.g., Article 9 Section IA) should not be charged by Ofcom, or at most have a single application filing fees proportionate to the ITU charges of 570 CHF, or lower (e.g., £200 as for light touch licensing in certain satellite bands). No additional charges (such as yearly charges) should be asked.

   b. We have also provided our comments in response to 1 and 2 above, stating that the NGSO satellite filings should not be charged differently than GSO satellite filings.

5. **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.**

1. **Ofcom should not be charging stakeholder for satellite filings**

   In general, we believe that Ofcom should not be charging for satellite filings and should recover its yearly costs through government subsidies, just because satellite operators in the UK, either national or international, invest in the UK a substantial amount and the UK government recovers a large amount of taxes (e.g., corporation taxes, income taxes, VATs).

   Before the charging regime is put into place, Ofcom should consult with Department of International Trade (DIT), and report to the stakeholders, to assess the impact this charging regime, if any, may have on foreign direct investment.

   However, if Ofcom does not agree with this, we provide the following comments.

2. **Our comments on Ofcom’s preferred charging option**

   a. We do not agree with some of the charges Ofcom is proposing, e.g.:

   - Disproportionate charges for uncoordinated satellites, we suggest that these should be waived, or be a one-off fee proportionate to the ITU fees of 570 CHF (or less, such as £200, equal to the licensing fee in certain light touch frequency bands).
- Disproportionate charge to NGSO filings, 50% higher than GSO filings, Ofcom should charge the same as there is no apparent reason to the extra work Ofcom does on NGSO filings.

b. We agree (unless cost if recovered through government grants) that an approach that recovers yearly costs is appropriate to both have Ofcom recover its actual cost yearly and reduce the burden on satellite operator (with respect to a large one-off sum).

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

1. **Ofcom should not be charging stakeholder for satellite filings**

   In general, we believe that Ofcom should not be charging for satellite filings and should recover its yearly costs through government subsidies, just because satellite operators in the UK, either national or international, invest in the UK a substantial amount and the UK government recovers a large amount of taxes (e.g., corporation taxes, income taxes, VATs).

   Before the charging regime is put into place, Ofcom should consult with Department of International Trade (DIT), and report to the stakeholders, to assess the impact this charging regime, if any, may have on foreign direct investment.

   However, if Ofcom does not agree with this, we provide the following comments.

2. **Our comments on the proposed charging approach**

   a. **Filings of Uncoordinated satellites**

      We believe that the charging regime is disproportionate and unfair for uncoordinated satellite filings (ie, those related to Article 9 section IA).

      Such charging regimes, as well as the option 1, 2 and 4, do not take into account of other cost drivers and factors that could be used to consider lowering fees for certain satellite filings such as those of uncoordinated systems.

      We have given reasons and solutions in the responses of the above questions.

      We propose that for filings of those systems that are uncoordinated (or are of very low commercial value, or are experimental in nature) should have the cost recovery fees waives, or in the worst case have a one-off application fee proportionate to the fee that the ITU charges of 570 CHF (or lower such as £200, similar to light touch licensing fees paid by satellite operators in certain frequency bands).

   b. **Filings of coordinated NGSO satellites**

      We also believe that it is unfair for NGSO satellite filings to accrue a charge different than that of GSO filings. We do not believe that the NGSO satellite systems create any additional work for Ofcom than that performed for GSO filings. As such we do not agree with the fee model for NGSO filings, in as such that it should be the same as that of GSO filings.

7. Question 7: Do you have any comments on our proposals for implementing our charging approach?
1. **Ofcom should not be charging stakeholder for satellite filings**

In general, we believe that Ofcom should not be charging for satellite filings and should recover its yearly costs through government subsidies, just because satellite operators in the UK, either national or international, invest in the UK a substantial amount and the UK government recovers a large amount of taxes (e.g., corporation taxes, income taxes, VATs).

Before the charging regime is put into place, Ofcom should consult with Department of International Trade (DIT), and report to the stakeholders, to assess the impact this charging regime, if any, may have on foreign direct investment.

However, if Ofcom does not agree with this, we provide the following comments.

2. **Our comments on the proposed implementation approach**

With regards to this question we propose that Ofcom postpones the charging mechanism and fees associated to cost recovery of satellite filings to new filings submitted after the publication of the Ofcom Statement, or, to makes accounting matters simpler, in the next financial year 2019-2020.

Also, we have proposed the following in terms of charging for uncoordinated filings and coordinated NGSO filings:

- We propose that for filings of those systems that are uncoordinated (or are of very low commercial value, or are experimental in nature) should have the cost recovery fees waived, or in the worst case have a one-off application fee proportionate to the fee that the ITU charges of 570 CHF (or lower such as £200, similar to light touch licensing fees paid by satellite operators in certain frequency bands);

- We propose that for NGSO filings their cost recovery charges should be equal to that of the GSO filings.

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

Azzurra and AB5 do not believe that Ofcom should be charging satellite operators in the UK for the work undertaken on the management of satellite filings, as directed by and performed for HMG. Instead we believe that Ofcom should recover such cost, via HMG, through the gross value-add benefits to the UK economy derived from the space sector incurred through taxation, export sales, increased foreign direct investment and employment. The UK space sector is today worth in the order of about £14 billion per year in total income with a direct gross value add of $5.1bn and contributing over $250bn to the wider UK GDP. Ofcom and HMG should be able to justify cost recovery through this mean.

We believe that this Ofcom cost recovery on the UK space sector is in a way a double tax, one that may push away potential future foreign and national investment on the UK space sector. As such, we propose that Ofcom consults on this point with HMG so as to finds a different mean of recovering its (honourable) costs.

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7 See Supra 1.