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| **English only** |

United States of America

Working Document on NGSO Cost Recovery and draft revisions to Decision 482

# 1 Introduction

This contribution analyses Procedure B assigned to the Council Expert Group on Cost Recovery. The Attachment to this contribution contains a spreadsheet for the user to evaluate potential changes.

It is emphasized that this contribution is only applicable to NGSO cost recovery filings.

This document does not analyze Procedure C.

# 2 Discussion

The Council Expert Group on Decision 482 was formed with the purpose of further examining Procedures B and C described in Document C18/36, while taking into account considerations contained in Documents C18/36 (Addendum 1) and Revision 1, C18/75, C18/83 and C18/90 as well as contributions submitted to its (the Council Expert Group’s) meetings. The Council Expert Group’s primary focus is an examination of Procedure B on the cases of complex non-GSO satellite filings and to prepare a report containing recommendations about the possible revision of Decision 482 with regard to complex non-GSO satellite filings for submission to ITU Council 2019 for action.

##  2.1 Bureau Proposal for Procedure B

In Document C18/36, the Bureau proposed to modify the current Cost Recovery fee. Specifically, the Bureau’s proposed Procedure B increases the Cost Recovery fee of filings with more than a to-be-determined number of units (‘breakpoint’, currently proposed as [1 000] units, refer to new footnote e) in the Annex to Document C18/36) by charging a supplemental fee for each unit more than the breakpoint. Under this proposal, the proposed Cost Recovery fee will not change for filings with fewer units than the breakpoint ([1 000] units). For filings of 1 to 100 units, the Cost Recovery fee will be the start fee plus the number of units multiplied by the fee per unit. For filings with more than 100 units, but less than the breakpoint, the Cost Recovery fee will be the current flat fee. Filings with more units than the breakpoint ([1 000] units) will be charged the flat fee plus a supplemental fee for each unit more than the breakpoint. The supplemental fee per additional unit will be equal to the flat fee divided by the breakpoint ([1 000] units). This proposed Cost Recovery fee will increase with the number of units and there will be no upper bound to the fee.

##  2.2 Historical Data

In Revision 1 to Document C18/36 (Addendum 1), the Bureau provided statistics based on the 165 coordination requests of non-geostationary satellite systems received between 2007 and January 2018. The Bureau’s proposal for Procedure B, with the breakpoint set at 1 000, 10 000, and 50 000 units, would have affected the cost recovery fees for 47, 22, and 7, of these 165 non-GSO satellite systems, respectively.

The actual cumulative Cost Recovery fee charged by the Bureau for the 47 non-GSO systems having more than 1 000 units, from the previously identified set of 165 systems, was 1 002 860 CHF. Table 1 below summarizes the total projected Cost Recovery fee for all 47 of these filings under the Bureau’s proposal for Procedure B, as a function of the three different breakpoints.

Table 1 – Projected CR Under Bureau’s Proposal for Procedure B

|  |  |  |  |
| --- | --- | --- | --- |
| Breakpoint | Networks with # of units greater than breakpoint (out of 165 analyzed) | Projected CR of all 47 networks | Projected CR % Increase |
| 1 000 | 47 | 26 314 913 | 2524.0 |
| 10 000 | 22 | 2 951 103 | 194.3 |
| 50 000 | 7 | 1 230 769 | 22.7 |

Tables 1 and 2 show that most of the filings in the historical data have fewer than 10 000 units. Twenty five filings (i.e., 53.2% of the 47) have greater than 1 000 and fewer than 10 000 units. Thirty six filings (i.e., 76.6% of the 47) have greater than 1 000 and fewer than 15 000 units. In Table 2, note that the size of the “Range of Units” increases farther down the Table; this highlights that only a few filings are very large.

Table 2 – Analysis of Historical Data

|  |  |  |  |
| --- | --- | --- | --- |
| Range of Units | Number of Filings in given Range of Units | Running Sum of Number of Filings | Running Sum % of 47 |
|  < 1 000 | 0 | 0 | 0 |
|  1 000 – 2 000 | 4 | 4 | 8.5 |
|  2 000 – 3 000 | 4 | 8 | 17.0 |
|  3 000 – 4 000 | 9 | 17 | 36.2 |
|  4 000 – 5 000 | 2 | 19 | 40.4 |
|  5 000 – 7 500 | 2 | 21 | 44.7 |
|  7 500 – 10 000 | 4 | 25 | 53.2 |
|  10 000 – 12 500 | 8 | 33 | 70.2 |
|  12 000 – 15 000 | 3 | 36 | 76.6 |
|  15 000 – 25 000 | 2 | 38 | 80.9 |
|  25 000 – 50 000 | 2 | 40 | 85.1 |
|  50 000 – 100 000 | 3 | 43 | 91.5 |
|  100 000 – 200 000 | 3 | 46 | 97.9 |
|  200 000 – 250 000 | 1 | 47 | 100 |
| Note the size of the Range of Units rows are not equal. |

An interesting fact to note in the Bureau’s proposal for Procedure B is that the supplemental fee for each unit is inversely proportional to the value of the breakpoint. This is because the supplemental fee is the flat fee divided by the breakpoint. For a coordination with category C1, the flat fee is 20 560 CHF. With the breakpoint set to 1 000 units, the supplement fee for each unit is 20.56 CHF. However, with the breakpoint set to 10 000 units, the supplemental fee for each unit is 2.056 CHF. This reduction in the supplemental fee (plus the fact the fee will be collected on fewer units as the breakpoint increases) significantly reduces the cost recovery as the value of the breakpoint increases. For example, for a hypothetical 15 000 unit filing (C1 category), with a 1 000 unit breakpoint, the cost recovery is:

 (flat fee units 1 to 1 000) + ( (units 1 001 to 15 000) \* supplemental fee )

 20 560 + 14 000 \* 20.56 = 20 560 + 287 840 = 308 400

However, if the breakpoint is changed to 10 000 units, the cost recovery is much less:

 (flat fee units 1 to 10 000) + ( (units 10 001 to 15 000) \* supplemental fee )

 20 560 + 5 000 \* 2.056 = 20 560 + 10 280 = 30 840

Section 2.5 below discusses a potential methodology whereby the supplemental fee is proportional to the value of the breakpoint.

##  2.3 Example Filing Under the Bureau’s Proposal for Procedure B

Figure 1 shows the Cost Recover fee for an example 250 000 unit filing under the Bureau’s proposal for Procedure B, as a function of breakpoint. The filing is a Category C1 coordination.

Figure 1: CR of Example 250 000 Unit Filing

Figure 1 shows the impact of the large supplemental fee when the breakpoint is small. The projected cost recovery is very high when the breakpoint is small, and drops rapidly as the breakpoint increases. Setting the breakpoint near or after the ‘elbow’ of the curve would result in a significantly lower cost recovery.

##  2.4 United States Proposal to ITU Council 2018

In Document C18/90, the United States proposed a new mechanism to limit the Cost Recovery fee as the number of units becomes very large. The United States suggested implementation of this by a new second breakpoint (‘ceiling’) number of units, where filings with more units than this new second breakpoint number do not incur any further increases in their Cost Recovery fee.

The spreadsheet attached to this contribution shows the effect of this two-breakpoint methodology on the historical data. Upon entering values for the two breakpoints, given that the second breakpoint is greater than the first breakpoint, the spreadsheet calculates the number of filings affected by the first breakpoint, the number of filings excluded by the second breakpoint (i.e., number of filings with more units than the second breakpoint), the total revised Cost Recovery fee of all 47 networks in the historical data set, and the percentage increase relative to the actual Cost Recovery fee collected for the non-GSO systems analyzed (i.e. 1 002 860 CHF).

As an example, setting the first breakpoint to 7 500 units and the second breakpoint to 100 000 units provides a revised Cost Recovery fee of 3 042 459 CHF, corresponding to a 203% increase. (Compare: Under the Bureau’s proposal, a breakpoint of 7 500 units would provide a revised Cost Recovery fee of 3 765 187 CHF, a 275% increase.)

It is noted that the introduction of both breakpoints creates the situation where the Cost Recovery fee for filings with more units than the first breakpoint will be proportionally less on a per-unit basis compared to the Cost Recovery fee for filings with fewer units than the first breakpoint (i.e., in the flat fee range).

##  2.5 Further Consideration on Supplemental Unit Fee

As noted in Section 2.2, the supplemental fee for each unit is inversely proportional to the value of the breakpoint. However, by building upon the United States’ proposal for a new second breakpoint, the supplemental fee can be made proportional to the value of the breakpoint by setting the value of the supplemental fee equal to the flat fee divided by the quantity of the second breakpoint minus the first breakpoint. Initial calculations indicate using this alternative methodology will result in overall lower cost recovery compared to the Bureau’s proposal for Procedure B.

# 3 Conclusion

The United States notes this contribution focuses only on changing the formula for Cost Recovery. Similar as to what the United States stated in Document C18/90:

* The United States is of the view that Cost Recovery charges applicable to various types of non-GSO satellite systems should be transparent, reviewed with care, ensure a fair and appropriate sharing of associated processing costs, and reflect the actual and demonstrable costs by the Bureau to process the filings taking into account that the purpose of cost recovery is not revenue creation but purely recovery of actual cost.
* Any changes to Cost Recovery should take into account the actual time and other resources (e.g., computer time) spent by Bureau staff on processing filings.
* The United States understands there are capital investments associated with future improvements in the Bureau’s software and hardware resources, but believes such investments will improve the processing time of filings, especially of the larger systems.

The United States appreciates the historical data provided by the Bureau. This data allows better modeling of projected Cost Recovery fees based one or two breakpoints. However, this data does not provide additional insight into the Bureau’s actual costs of processing large non-GSO system filings. In particular, it has not been clearly shown how the number of units affects processing time. Without having more information on the actual cost of processing such filings, the United States believes proposals to change Decision 482 would be premature.

The United States suggests the Council Expert Group encourage the Bureau to provide information on the actual cost of processing large non-GSO system filings; and once provided, the Council Expert Group re-convene and consider further contributions from its membership.



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