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| **Radiocommunication Study Groups** |  |
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| **21 October 2021** |
| **English only** |
| Egypt (Arab Republic of), Saudi Arabia (Kingdom of) | |
| PROPOSED TOPIC to be considered under wrc-23 agenda item 7 | |
| Use of a space station to bring frequency assignments to geostationary-satellite networks at different orbital locations into use | |

During the current study cycle, ITU-R Working Party 4A has considered contributions addressing the use of one space station to bring into use multiple satellite networks at several different orbital locations in the geostationary arc (Documents [4A/99](https://www.itu.int/md/R19-WP4A-C-0099/en), [4A/291](https://www.itu.int/md/R19-WP4A-C-0291/en)). In addition, the Bureau submitted Document [4A/281](https://www.itu.int/md/R19-WP4A-C-0281/en) to provide statistics regarding the data submitted by administrations under Resolution **40 (Rev.WRC-19)**, including the last orbital location where the space station was used to bring into use (BIU) (or resume the use of) frequency assignments, the satellite network(s) with which the frequency assignments were associated, and the date on which the space station was no longer maintained at the orbital location. This information allows us to review the application of the BIU procedures.

Analysis of BIU data

The data provided to the BR, shown in Document [4A/281](https://www.itu.int/md/R19-WP4A-C-0281/en), highlights some very interesting patterns:

1. Around 71% of networks were BIU’d with a satellite that had not been used elsewhere – that is, a new satellite was launched and brought-into-use a single slot;
2. Approximately 29% of networks were BIU’d with a satellite that had been relocated from a previous operational slot. Of these, 17% were satellites that had been moved only once; 12% were moved twice or more;
3. A small percentage – 6% – were moved three or more times to BIU a slot.

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| Number of positions at which the satellite was used previously | Percentage |
| 0 | 70.98% |
| 1 | 17.19% |
| 2 | 5.52% |
| 3 | 3.63% |
| 4 | 0.95% |
| 5 | 0.47% |
| 6 | 0.79% |
| 7 | 0.16% |
| 8 | 0.16% |
| 9 | 0.16% |

Whilst it is likely that a satellite would be moved for operational reasons once or twice in its lifetime, it seems unlikely that an operational satellite would be moved nine times. The expenditure of valuable fuel, and the limited period in which the satellite remains on station, do not appear consistent with sustainable operations.

The purpose of the Radio Regulations is to ensure a predictable and equitable access to spectrum and orbital resources. Various changes made by past World Radiocommunication Conferences to Articles **9**, **11** and Resolutions of the Radio Regulations have attempted to maintain these principles. However, increased access to space and demand for communications creates incentives to “game” the rules, as we have seen before. If loopholes are left open, pressure will increase on the limited and valuable spectrum resources.

Proposal to limit misuse of BIU procedures

It is noted from the information provided by the BR that 88% of BIU notices were made using satellites that had been launched directly into the orbital slot, or had been moved once from a previous operational slot. Only a small proportion are moved on multiple occasions, but it is recognised that satellite operators may have operational reasons to move satellites more than once. The Regulations should not unnecessarily impede those movements, but must balance operational flexibility with consistent enforcement of the principle of equitable access.

RR No. **11.44B** requires that a satellite be deployed and maintained at the notified orbital position for a minimum continuous period of 90 days before BIU is accepted, a period which was the subject of significant debate before its adoption at WRC-12. Increasing this minimum period when a satellite is used to BIU multiple slots may deter such activity but not prevent it in cases where such movement is critical (for example to restore links to a failed satellite). The following is proposed as a possible sliding scale:

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| Number of positions at which the satellite was used previously | Minimum period for BIU (days) |
| 0 | 90 |
| 1 | 90 |
| 2 | 180 |
| 3 | 180 |
| 4 or more positions | 360 |

This approach does not impact the vast majority of BIU notifications. It places an increasing disincentive to the use of a satellite for multiple BIUs, but does not restrict an operator from taking such action where operational needs require it.

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