JSC RFA - ADDITIONAL DATA REQUIREMENTS FOR CUBESATS AND OTHER SATELLITE SYSTEMS

The online system (FMDB) does not accommodate this data, so please provide it in a document or spreadsheet. This form is not a substitute for the FMDB application/request.

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| JSC RFA Number(s) | | | System name: JEM/J-SSOD | |
| Satellite Information | Satellite Name: DRAGONFLY | | | Printed Name (if confidential): |
| Organization operating the satellite: Kyushu Institute of Technology | | | | |
| Flight Information | Flight to ISS: | | | Deployment Flight: J-SSOD# |
| Deployer: J-SSOD | | | Deployment altitude (km) |
| Basic concept of operation | | | Deploy Cubesat(s) from JEM RMS/J-SSOD | |
| Initial communication sequence | | | 1. Deployment switches are closed. 2. Once released from the ISS J-SSOD, when all switches are released, OBC starts operation. 3. After release from ISS, EPS activates all power lines. 4. PIC microcomputer waits for 1860 seconds (31 minutes). 5. After 31 minutes, released from ISS, OBC makes DIO line high for the antenna deployment mechanism and heating up nichrome wire for the first antenna set deployment by the cutter circuit. 6. The burning will stop after 60 seconds (1 minute). 7. After 2400 seconds (40 minutes) from release from ISS, OBC makes DIO line high for the antenna deployment mechanism and heating up the nichrome wire for the second antenna set deployment by the cutter circuit. 8. The burning will stop after 60 seconds (1 minute). 9. OBC starts the process of generating CW data for beacon transmission by COM. | |
| Describe beacon signal, including frequency | | | The CW beacon is transmitted in amateur frequency 437.375 MHz. The CW transmission is halted once the satellite receives a valid uplink command, until the last packet of mission download is completed. CW transmission immediately resumes after the execution of mission download. | |
| Expected mission duration (months) | | | Assumed about 12 months | |
| Velocity at deployment (meters per second) | | | 1.1 – 1.7 m/sec (depends on a satellite mass) | |
| Time from deployment to radio activation (minutes) | | | 31 [min] | |
| Stop buzzer Point of Contact (POC) | | | Name : etsunaga.yudai294@mail.kyutech.jp | |
| For satellite phone only  Satellite phone link requires a JSC RFA. | | | □ Globalstar □ Iridium □ Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(provide system name) | |
| For amateur radio only | | | Provide IARU coordination letter. (Copy of IARU website is also acceptable) | |
| Ground station data | | | See next page for ground station data table. | |
| FOR U.S. FEDERAL GOVERNMENT PROJECTS UNDER NTIA AUTHORITY For DoD authority, such as Air Force Spectrum Management Office, provide information here. | | | | |
| NTIA Certification (“SPS”) Number | | | | Provide a copy of the Certification. |
| NTIA RFA Serial Number | | | | Provide a copy of the RFA. |
| Describe status of incomplete or in-work Certification and RFA work. | |  | | |
| FOR U.S. COMMERCIAL PROJECTS UNDER FCC AUTHORITY | | | | |
| FCC file number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | Provide the license or grant document. |
| Describe status of incomplete or in-work FCC filings. | |  | | |
| FOR NON-U.S. (INTERNATIONAL) SATELLITES | | | | |
| 1. Provide published API/A data (.pdf file), including IFIC number and notification number. API/C is not sufficient. 2. Provide regulatory approval from the local or national authority that has jurisdiction. (For only use of amateur radio frequency without IARU authorization) | | | | |

For each ground station, complete the table below.

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| **Ground Station Data** | | |
| Location Name | Kyushu Institute of Technology | |
| Latitude | 33.892486 | |
| Longitude | 130.8400862 | |
| Frequency (MHz) | 435.313 | |
| Transmit Power [W] | 50 | |
| Cable Loss [dB] (optional) | 3 | |
| Peak Antenna Gain [dBi] | 22 | |
| Modulation | GMSK | |
| Data Rate [mbps] | 4.8e-3 | |
| FEC type and coding rate | None | |
| Emission Designator | 8K50F1D | |
| Emission Bandwidth | 3 dB | 4.414kHz |
| 20 dB | 6.946kHz |
| 40 dB | 12.952kHz |
| 60 dB | 17.366kHz |

For use of amateur radio frequency without IARU authorization, complete the table below.

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| **Consent for Non-Interference Basis (NIB)** | | |
| Purpose of the satellite | | N/A |
| Reason for use of amateur radio frequency | | N/A |
| Reason for not coordinating to IARU | | N/A |
| The local or national authority that has jurisdiction. | | N/A |
| Consent for NIB agreement [Agree or Disagree] | | N/A |
| Agreement | This authorization is issued on a non-interference basis (NIB) due to the lack of successful IARU coordination. The ISS AM/ARISS project has indicated that there should be no issue to ISS HAM/ARISS due to the CubeSat. The CubeSat and its ground station are not expected to cause RF interference with any other ISS and VV communication systems. This RF clearance does not guarantee any future approval of RF clearance for these frequencies beyond the stated authorization period. In addition, the user may be required to coordinate with other ISS users, or to discontinue use of specific frequencies if any ISS user experiences intolerable interference.  On-orbit deployment of the CubeSat must comply with all flight rules imposed by the ISS Program. RF transmissions must comply with all applicable spectrum regulations, and all RF operating conditions imposed by JSC Spectrum Management as documented in the JSC RFA report.  Upon deployment from ISS, the operator of the CubeSat is solely responsible for ensuring satellite transmission and operations are compliant with international regulations governing radio frequency radiation from a satellite operating in space. Since the CubeSat does not have IARU coordination, the CubeSat should be operated on a non-interference basis (NIB). If the CubeSat causes any RF interference to other amateur users, the satellite operator should cease transmission immediately. | |