EXHIBIT A

TURION SPACE CORP. TECHNICAL ANNEX FOR DROID.001 SATELLITE

TABLE OF CONTENTS

I. SCOPE AND PURPOSE

This exhibit contains additional information regarding the DROID.001 non-geostationary orbit ("NGSO") satellite required by the FCC Part 25 rules that cannot be entered into the Schedule S online submission system.

II. GENERAL DESCRIPTION

A. SPACECRAFT OVERVIEW

DROID.001 will be supplied by NanoAvionics and is based on its MP42 microsatellite platform. The satellite will –

- measure 84.7 x 43.8 x 40.7 centimeters, with the solar panels deployed, and weigh 32 kg (wet mass).
- use an Attitude Determination and Control System ("ADCS") with an inertial measurement unit, star trackers, sun sensors, magnetorquers, reaction wheels, and global positioning system receiver and can achieve pointing accuracy of .02 degrees.[1]
- have a propulsion system for the purpose of orbit maintenance.
- carry one camera as its payload to image orbital assets for HEO Robotics.

DROID.001 will have one S-band transceiver for telemetry, tracking, and command ("TT&C"), one S-band transceiver for TT&C and payload data, and one X-band transmitter for payload data. The spacecraft will operate in the frequencies listed below.

[1] Reception of the GPS L1 (center frequency of 1575.42 MHz) and L2 (center frequency of 1227.60 MHz) signals is with pre-existing signals that have not been altered to provide service to Droid.001.

Table 1 Operational Frequencies

Data Type	Link Direction	Spectrum Range (MHz)
TT&C	Earth-to-space	2025-2110
TT&C and payload	space-to-Earth (only outside the United States)	2200-2290
Payload	space-to-Earth	8025-8400

B. ORBITAL INFORMATION

DROID.001 is designed to operate in low Earth orbit ("LEO"). Turion Space has manifested DROID.001 on a SpaceX Falcon 9 Transporter mission in April 2023 via Exolaunch as the launch broker. DROID.001 will deploy between 525-575 km altitude at 97.5 deg inclination. After deployment, DROID.001 will maneuver to its destination orbit (550 km altitude at 97.5 deg inclination) using its on-board propulsion system. The expected orbital parameters are listed in the table below.

Table 2 Expected Orbital Parameters

	Value	Accuracy
Inclination Angle (Degree)	97.5	+/- 0.1
Apogee (km)	550	+/- 25 km
Perigee (km)	550	+/- 25 km
LTDN	14:00	+/- 60 minutes

C. GROUND SEGMENT

Turion Space will monitor and control all aspects of the DROID.001 mission through its Mission Operations Center ("MOC") in Irvine, California. Turion Space will utilize one ground station service provider to communicate with DROID.001. Antenna details and locations appear in section XII.

III. FREQUENCY PLAN

A. S-BAND

The following tables list the uplink and downlink S-band channels planned for DROID.001. These channels are not finalized, given coordination remains pending, and define representative uplink and downlink S-band channels. This information is also provided in the accompanying Schedule S but is included here for completeness.

Table 3 S-Band Uplink Frequency Plan

Channel ID	Bandwidth (MHz)	Center Frequency (MHz)	Polarization
R311	0.2	2047.0	R
R312	0.2	2049.0	R
R313	0.2	2053.0	R
R314	0.2	2055.0	R
R315	0.2	2074.5	R
R316	0.2	2076.5	R
R411	0.2	2047.0	R
R412	0.2	2049.0	R
R413	0.2	2053.0	R
R414	0.2	2055.0	R
R415	0.2	2074.5	R
R416	0.2	2076.5	R
R421	0.4	2047.0	R
R422	0.4	2049.0	R
R423	0.4	2053.0	R
R424	0.4	2055.0	R
R425	0.4	2074.5	R
R426	0.4	2076.5	R
R431	0.8	2047.0	R
R432	0.8	2049.0	R
R433	0.8	2053.0	R
R434	0.8	2055.0	R
R435	0.8	2074.5	R
R436	0.8	2076.5	R
R441	1.6	2047.0	R
R442	1.6	2049.0	R
R443	1.6	2053.0	R
R444	1.6	2055.0	R

R445	1.6	2074.5	R
R446	1.6	2076.5	R

Turion Space plans to coordinate two unique uplink channels for DROID.001. Pending coordination with both NTIA and other domestic and international commercial operators, the channels will be selected.

Table 4 S-Band Downlink Frequency Plan

Channel ID	Bandwidth (MHz)	Center Frequency (MHz)	Polarization
R311	1.0	2210.0	R
R312	1.0	2220.0	R
R313	1.0	2230.0	R
R314	1.0	2260.0	R
R315	1.0	2270.0	R
R316	1.0	2280.0	R
R411	1.0	2210.0	R
R412	1.0	2220.0	R
R413	1.0	2230.0	R
R414	1.0	2260.0	R
R415	1.0	2270.0	R
R416	1.0	2280.0	R
R421	2.0	2210.0	R
R422	2.0	2220.0	R
R423	2.0	2230.0	R
R424	2.0	2260.0	R
R425	2.0	2270.0	R
R426	2.0	2280.0	R
R431	5.0	2210.0	R
R432	5.0	2220.0	R
R433	5.0	2230.0	R
R434	5.0	2260.0	R
R435	5.0	2270.5	R
R436	5.0	2280.5	R

Turion Space plans to coordinate two unique downlink channels outside the United States for Droid.001. Pending coordination with both NTIA and other domestic and international commercial operators, the channels will be selected.

B. X-BAND

The following table lists the downlink X-band channels planned for DROID.001. This information is also provided in the accompanying Schedule S but is included here for completeness.

Table 5 X-Band Downlink Frequency Plan

Channel ID	Bandwidth (MHz)	Center Frequency (MHz)	Polarization
XT11	50.0	8112.5	R
XT12	50.0	8162.5	R
XT13	50.0	8212.5	R
XT14	50.0	8262.5	R
XT21	20.0	8112.5	R
XT22	20.0	8162.5	R
XT23	20.0	8212.5	R
XT24	20.0	8262.5	R
XT31	10.0	8112.5	R
XT32	10.0	8162.5	R
XT33	10.0	8212.5	R
XT34	10.0	8262.5	R

Turion Space plans to coordinate one unique X-band downlink channel for DROID.001. Pending coordination with both NTIA and other domestic and international commercial operators, the channels will be selected.

IV. FREQUENCY TOLERANCE

The frequency tolerance requirements of section 25.202(e) will be met.

V. OUT OF BAND EMISSIONS

The out-of-band emission limits of section 25.202(f)(1), (2), and (3) will be met.

VI. FREQUENCY REUSE

DROID.001 does not operate in any frequency bands where section 25.210(f) frequency reuse requirements apply.

VII. CESSATION OF EMISSIONS

All downlink transmissions can be turned on and off by ground station telecommand, thereby achieving cessation of emissions from the satellite, as required by section 25.207. All DROID.001 transmissions will be initiated by ground command and not scheduled. DROID.001 will always be listening for commands from the ground and transmit only when a transmit command is received. This “fail safe” mechanism assures that DROID.001 does not regularly or constantly transmit in a scenario where a command to cease transmission cannot be received.

VIII. SPECTRUM SHARING ANALYSIS

A. S-BAND

Interference between DROID.001 and other systems is unlikely in the 2025-2110 MHz and 2200-2290 MHz bands. In this spectrum, space research service and space operation service systems normally communicate only in short periods of time while visible from the dedicated earth stations or satellites (typically less than 10 minutes for a single pass). For interference to occur, either another operator’s satellite would have to travel through the antenna beam of DROID.001’s serving earth station or the DROID.001 satellite would have to pass through the antenna beam of the other operator’s serving earth station and both systems would need to transmit at the same time on overlapping frequencies. In such a very unlikely event, interference avoidance is possible by coordinating the communications so that they do not occur simultaneously. Turion Space commits to such coordination.

Other factors permit shared use of this spectrum. Turion Space will employ one satellite when communicating with no greater than seven earth stations distributed across various latitudes inside and outside the United States. The satellite will host software defined radios and small bandwidths for operational and coordination flexibility and propulsion for phasing and offsetting of contacts over time.

B. X-BAND

DROID.001 plans to use X-band space-Earth spectrum (8025-8400 MHz) on a non-interference, non-protected basis for space operations service. As explained below, Turion Space will satisfy in-band power flux-density ("PFD") limits, adjacent-band power spectral density ("PSD") limits, and internationally endorsed design guidelines applicable to existing EESS systems operating in the band. Furthermore, Turion Space submits interference analysis to demonstrate harmful interference would not occur.

Co-channel PFD at Earth's surface. See section IX.

Co-channel PFD at GSO arc. International Teleceommunication Union ("ITU") Radio Regulations No. 22.5 specifies that in the 8025- 8400 MHz band the maximum PFD produced at the GSO by any EESS space station shall not exceed -174 dbW/m^2/4 kHz. The calculation below shows that the PFD produced by the transmission from DROID.001 would not exceed that limit even in the worst hypothetical case. Using the worst case (highest potential altitude) orbit of 575 km, the minimum distance to the geostationary orbit would be 35,211 km. At this orbital distance, for an antenna pointed toward the GSO arc having a maximum EIRP of 20 dBW in a 20-megahertz bandwidth, the maximum PFD at the GSO would be approximately -180.1 dBW/m^2/4 kHz.[2]

Adjacent-channel PSD at deep space ground receiver. ITU-R Recommendation SA-1157 specifies a maximum allowable interference PSD level of -255.1 dB(W/m^2*Hz) to protect ground receivers in the deep-space research band operating in the 8400-8450 MHz frequencies. Turion

[2] This operation mode is atypical because the NGSO antenna will point toward earth in normal operation.

Space uses baseband digital filtering, hardware radio frequency filtering, and frequency-guardband separation to meet this limit.

Interference analysis. This section demonstrates how the DROID.001 space vehicle will avoid causing harmful levels of interference to authorized co-frequency non-federal spectrum users. To make this showing, Turion Space relies upon the protection criteria defined in ITU-R SA.1027-6 (reproduced below in Figure 1). This ITU recommendation defines both long-term and short-term protection criteria.

- The *long-term protection criterion* limits the interfering signal power to -167 dBW/10 MHz for no more than 20% of the time. Turion Space satisfies this requirement. Because a single LEO spacecraft is the potential interferer, it is physically incapable of causing interference to any given gateway earth station (referred to as GW ES in this section) site 20% of the time.
- The *short-term protection criterion* limits the interfering signal power to -133 dBW/10 MHz for no more than 0.0025% of the time. This analysis focuses on the short-term protection criterion because it reflects the protection criterion that a single LEO interferer could potentially exceed.
    - For US GW ES sites, Turion Space would not need to observe any avoidance angle to satisfy the protection criterion.
    - For non-US GW ES sites, however, Turion Space intends to avoid all authorized NGSO users of the X-band spectrum whenever they are within 3 degrees of an inline interference event until Turion Space completes protection criterion analysis of the non-US GW ES sites. As the simulation results demonstrate, when a 3-degree

avoidance angle is applied, the maximum interference power stays 2-3dB below the maximum interference level allowed.

Frequency band (MHz)	Interfering signal power (dBW) in the reference bandwidth to be exceeded no more than 20% of the time		Interfering signal power (dBW) in the reference bandwidth to be exceeded no more than *p*% of the time	
	Interfering signal path		Interfering signal path	
8 025-8 400	–167 dBW per 10 MHz	–150 dBW per 10 MHz	–133 dBW per 10 MHz $p = 0.0025$	–133 dBW per 10 MHz $p = 0.0050$

Figure 1 X-band EESS Protection Criteria - ITU-R SA.1027-6

Simulation Description

Turion Space's U.S. GW ES sites selected for simulation are listed below.

Simulated GW ES Sites

- Hawaii 158.0902W, 21.33681N
- Ohio 83.19571W, 40.10078N[3]
- Oregon 119.63198W, 45.85458N

Each site assumes a receive antenna gain of 55.2 dBi and a system noise temperature of 200K. The emissions from the DROID.001 space station assumes 3.0 dBW of RF power, spread over 50 megahertz with a peak antenna gain of 17 dBi.

Based on a review of relevant GW ES and space station filings from the FCC IBFS database, Turion Space identified the following list of systems that operate co-frequency at the same GW ES sites as Turion Space. To be conservative, Turion Space assumed all systems operate co-frequency with full spectrum overlap. Because DROID.001 only uses 50 megahertz of the 375

[3] Turion Space includes this earth station for analysis comprehensiveness but does not seek authority for this earth station. See section XII for all requested earth station locations.

megahertz available in the 8025-8400 MHz band and its software-defined radio permits frequency agility to avoid frequency overlap, this assumption is very conservative for the purposes of this simulation. During operations, Turion Space will account for spectrum overlap such that only co-frequency operational situations will be addressed.

Authorized Co-Frequency NGSO Systems at the Same GW ES Sites as Turion Space

- BlackSky (16 satellites)[4]
- Planet Flock (200 satellites)[5]
- Planet SkySat (21 satellites)[6]
- Maxar WorldView (3 satellites)[7]
- Maxar Legion (12 satellites)[8]
- Capella (7 satellites)[9]

Turion Space also identified that Hawkeye 360 holds authority to operate 80 co-frequency satellites with a GW ES in Oahu, Hawaii[10] and R2 Space holds authority to operate a single co-

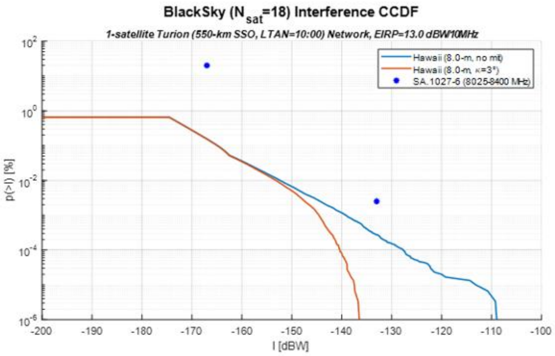
[4] Stamp Grant, BlackSky Global LLC, IBFS File No. SAT-MOD-20190802-00070 (granted May 27, 2020).
[5] Stamp Grant, Planet Labs Inc., IBFS File No. SAT-MOD-20200615-00076, Condition 7 (granted Mar. 18, 2021).
[6] Stamp Grant, Planet Labs Inc., IBFS File No. SAT-MOD-20191217-00148 (granted Mar. 6, 2020).
[7] Stamp Grant, DG Consents Sub. Inc. (Maxar), IBFS File No. SAT-MOD-20180918-00073 (granted June 13, 2019).
[8] *Id.*
[9] Stamp Grant, Capella Space Corp., IBFS File No. SAT-LOA-20200914-00108 (granted Dec. 17, 2020) (three satellites authorized); Stamp Grant, Capella Space Corp., IBFS File No. SAT-MOD-20210512-00067 (granted June 15, 2021) (two satellites authorized); Stamp Grant, Capella Space Corp., IBFS File No. SAT-LOA-20210824-00109 (granted Dec. 15, 2021) (two satellites authorized).
[10] Stamp Grant, HawkEye 360, Inc., SAT-MOD-20210114-00010 (granted May 25, 2021); Letter from Dr. Michael C. Mineiro, VP Legal, Regulatory and Government Affairs, Hawkeye 360, to Merissa Velez, Chief, Policy Branch, International Bureau, FCC, IBFS File Nos. SAT-LOA-20190102-00001, SAT-MOD-20210114-00010, at App'x B (filed Jan. 18, 2022).

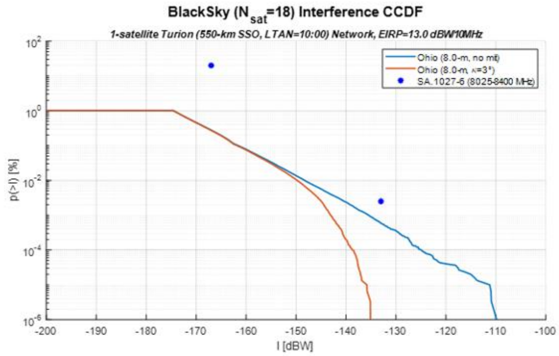
frequency spacecraft with a GW ES in Brewster, WA.[11] While the actual operations of the DROID.001 spacecraft will account for these additional co-frequency systems near Turion Space's simulated GW ES sites, this simulation omits these sites because the co-located GW ES scenario typically results in the worst-case interference statistics. In other words, if the simulation results demonstrate that the Turion Space operations can protect the links of co-frequency, co-located NGSO systems, then Turion Space can also protect co-frequency operations that are not collocated.

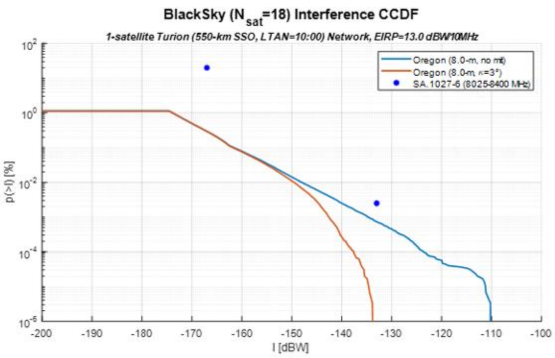
Simulation Results

Turion Space conducted simulations for each of the systems listed above at each of the GW ES sites listed above and compared the results with the defined protection criteria. Each simulation considers both the case where Turion Space exercises no mitigation to avoid in-line interference events and cases where Turion Space suppresses DROID.001's emissions any time an in-line interference event occurs within 3 degrees. Based on the results from these simulations, Turion Space would not need to make any accommodations to avoid inline interference events with these co-frequency systems and the protection criteria would be met.

[11] Stamp Grant, R2 Space, Inc., IBFS File No. SAT-LOA-20200511-00042 (granted Dec. 18, 2020).





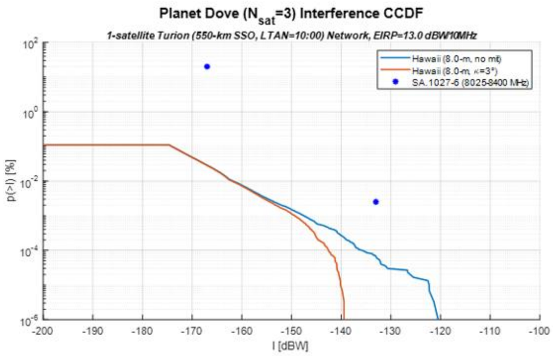


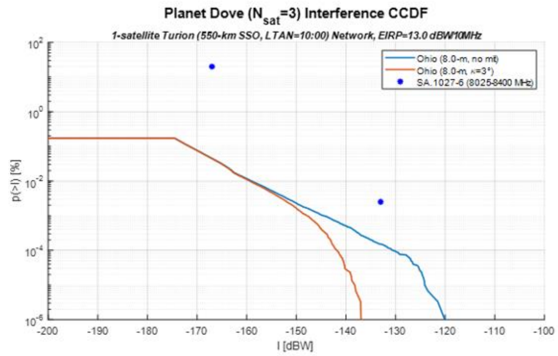
blacksky (N=18) results

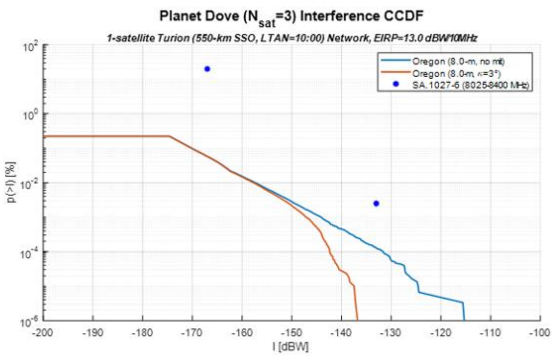
Turion access (min/day)

κ	Hawaii	Ohio	Oregon
0	26.09	32.22	35.78
3	26.06	32.17	35.72

Figure 2 X-band Spectrum Sharing Simulation - BlackSky





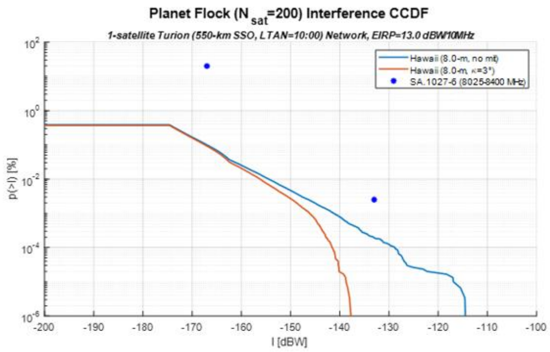


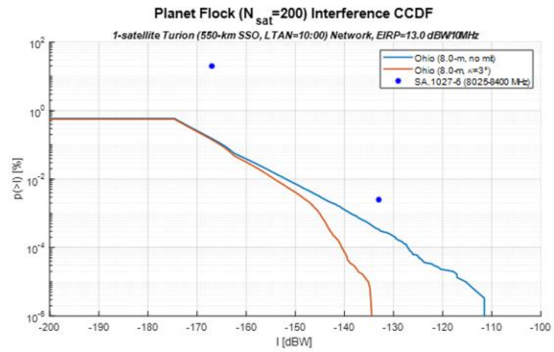
planet dove (N=3) results

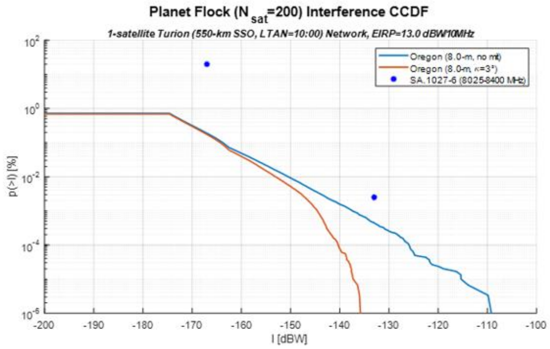
Turion access (min/day)

κ	Hawaii	Ohio	Oregon
0	26.07	32.2	35.76
3	26.07	32.19	35.75

Figure 3 X-band Spectrum Sharing Simulation - Planet Dove





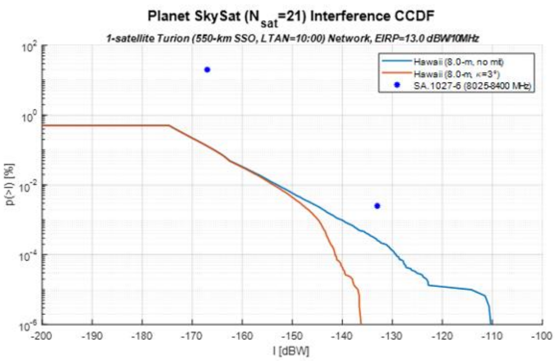


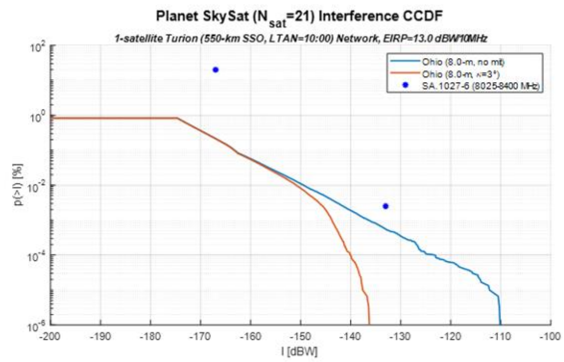
planet flock (N=200) results

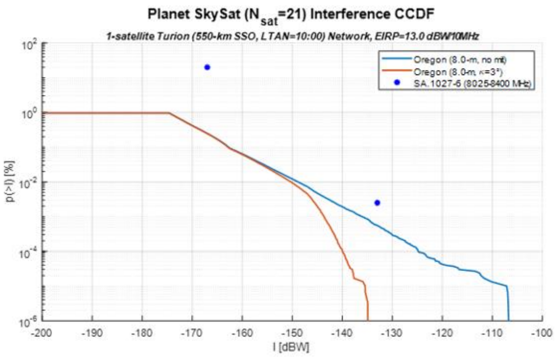
Turion access (min/day)

κ	Hawaii	Ohio	Oregon
0	26.09	32.23	35.69
3	25.86	31.87	35.24

Figure 4 X-band Spectrum Sharing Simulation - Planet Flock





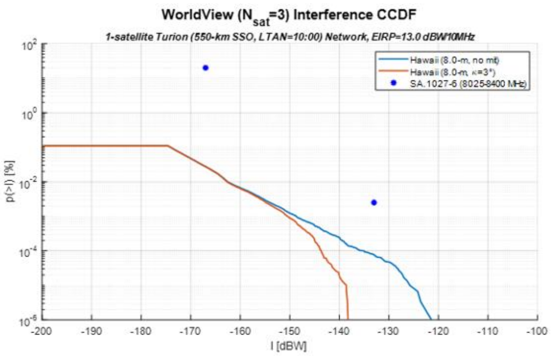


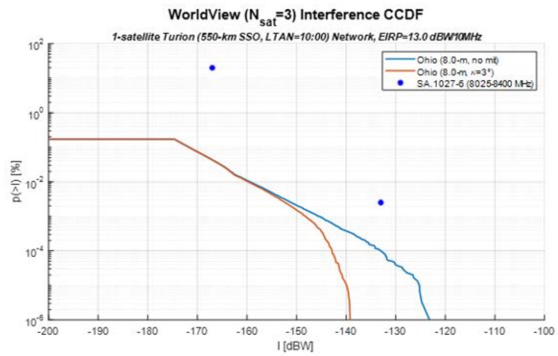
planet skysat (N=21) results

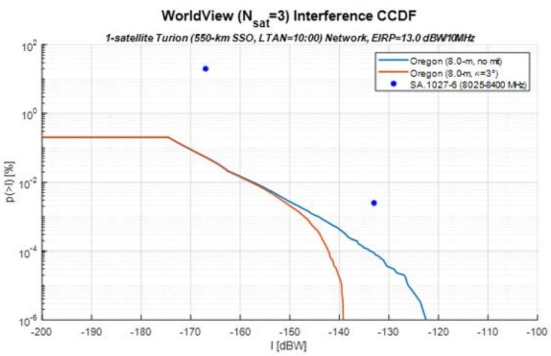
Turion access (min/day)

κ	Hawaii	Ohio	Oregon
0	26.11	32.2	35.69
3	26.09	32.15	35.64

Figure 5 X-band Spectrum Sharing Simulation - Planet SkySat





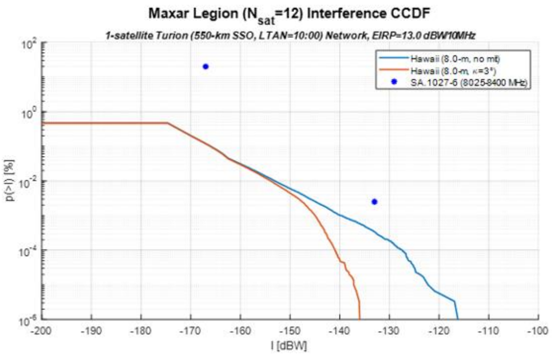


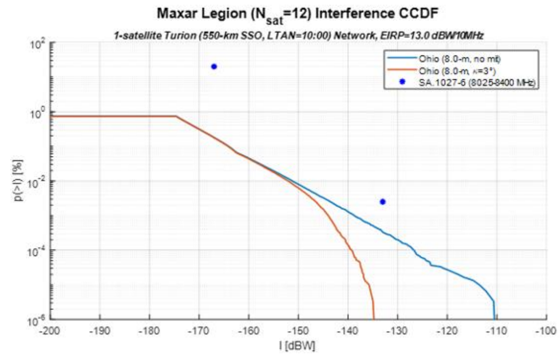
WorldView (N=3) results

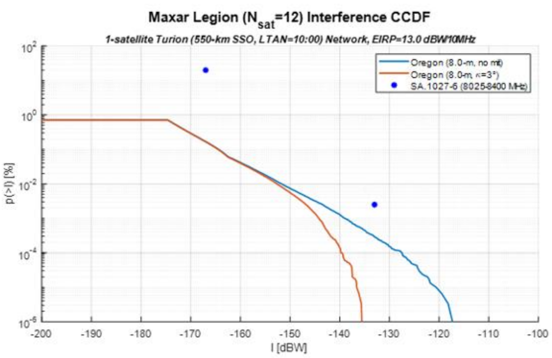
Turion access (min/day)

κ	Hawaii	Ohio	Oregon
0	26.05	32.22	35.78
3	26.04	32.22	35.77

Figure 6 X-band Spectrum Sharing Simulation - Maxar WorldView





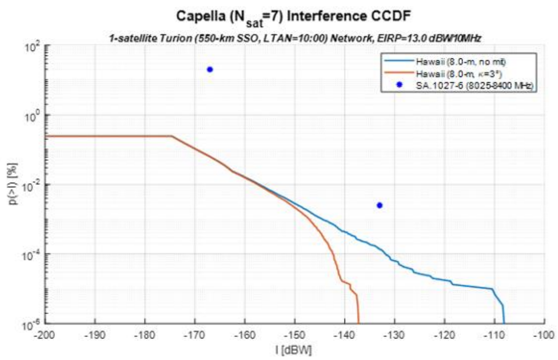


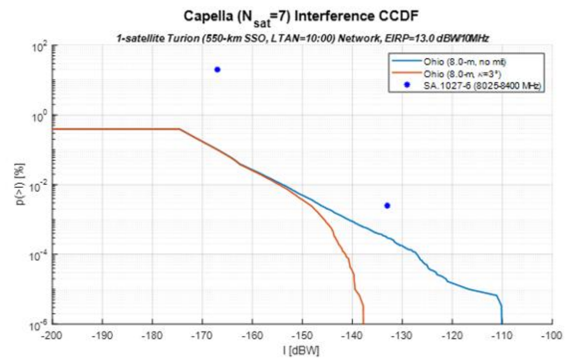
maxar legion (N=12) results

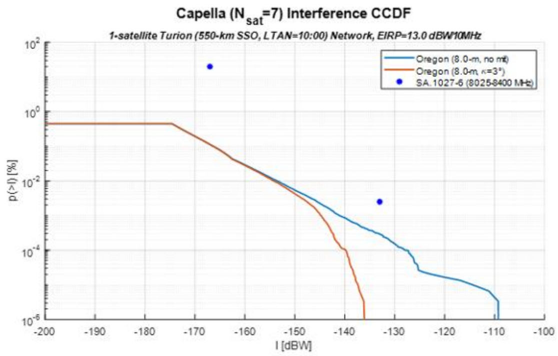
Turion access (min/day)

κ	Hawaii	Ohio	Oregon
0	26.11	32.21	35.75
3	26.08	32.18	35.71

Figure 7 X-band Spectrum Sharing Simulation - Maxar Legion







capella (N=7) results

Turion access (min/day)

κ	Hawaii	Ohio	Oregon
0	26.09	32.26	35.75
3	26.08	32.24	35.73

Figure 8 X-band Spectrum Sharing Simulation - Capella

Conclusions

The X-band spectrum sharing simulations show that Turion Space's DROID.001 could operate uninhibited and still meet the protection criteria for all authorized NGSO users of the X-band spectrum.

- *Long-term criterion.* Turion Space can never exceed the long-term protection criterion with a single LEO spacecraft because it is not within RF line of sight of any location on Earth 20% of the time.
- *Short-term criterion.* For US GW ES sites, Turion Space would not need to observe any avoidance angle to satisfy the protection criterion. For non-US GW ES sites, however, Turion Space intends to avoid all authorized NGSO users of the X-band spectrum whenever they are within 3 degrees of an inline interference event until Turion Space

completes protection criterion analysis of the non-US GW ES sites. As the simulation results demonstrate, when a 3-degree avoidance angle is applied, the maximum interference power stays 2-3dB below the maximum interference level allowed by the protection criteria. By maintaining a 3-degree avoidance angle during operations, one can extrapolate these simulation results to any GW ES location supporting any number of NGSO satellites and spacecraft and never exceed the protection criteria. Therefore, as the location of the GW ES is changed or more NGSO systems are supported by the GW ES, the only change that would result is variation in the fraction of time that various interference levels are experienced.

Further, the avoidance of inline interference events with all these systems combined only results in ~ 1-2% reduction in access opportunities for the DROID.001 downlink.

Next Steps

Although this analysis covers only Turion Space's X-band GW ES sites inside the United States, the favorable conclusions remain the same for all Turion Space X-band GW ES sites outside the United States when Turion Space applies the 3-degree inline interference avoidance angle. Turion Space has already determined that approximately 200 NGSO X-band systems have notified at the ITU. Turion Space will analyze each of these notifications using the associated ITU SNS data to assess which NGSO systems have both spectrum and service area overlap and implement the 3-degree avoidance angle as necessary.

IX. PFD ANALYSIS

A. S-BAND

The Commission's rules do not specify a PFD limit in the 2200-2290 MHz band. However, there are PFD limits specified in ITU Radio Regulations No. 21.16.

The maximum PFD levels for the DROID.001 transmissions were calculated for the 2200-2290 MHz band. The results are provided in Schedule S and demonstrate that the downlink PFD levels of the Droid.001 carriers do not exceed the ITU limits. Figure 9 and Figure 10 below illustrate the results of this PFD analysis for the SRS-3 and SRS-4 S-band downlinks respectively. This PFD analysis assumes maximum EIRP in any pointing direction (to account for cases where 3-axis stabilization is temporarily interrupted due either to a fault or to support satellite body steering).

Figure 9 SRS-3 S-Band Downlink PFD Analysis

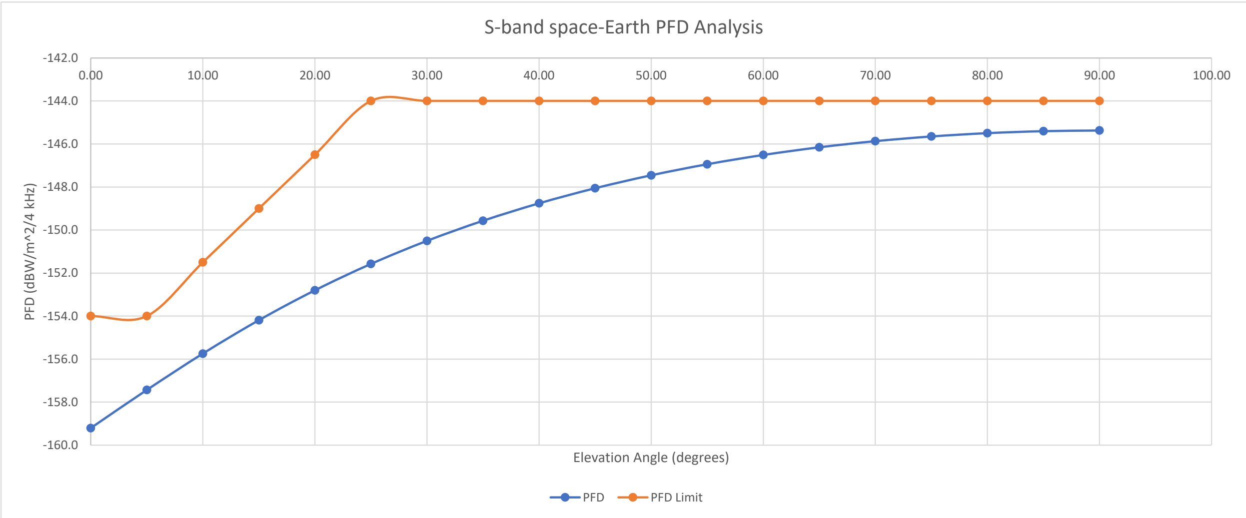
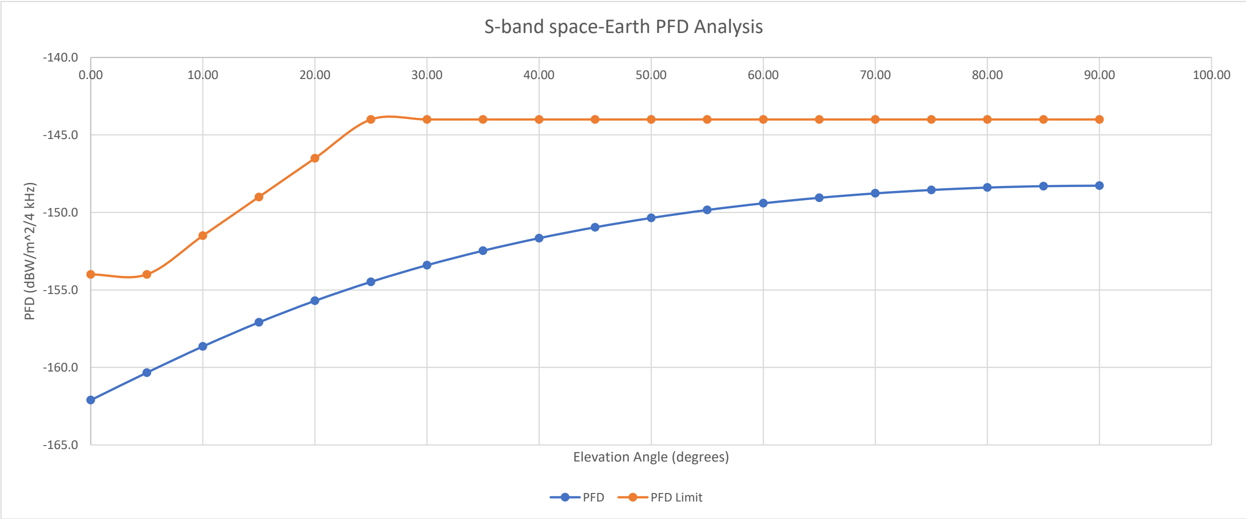


Figure 10 SRS-4 S-Band Downlink PFD Analysis

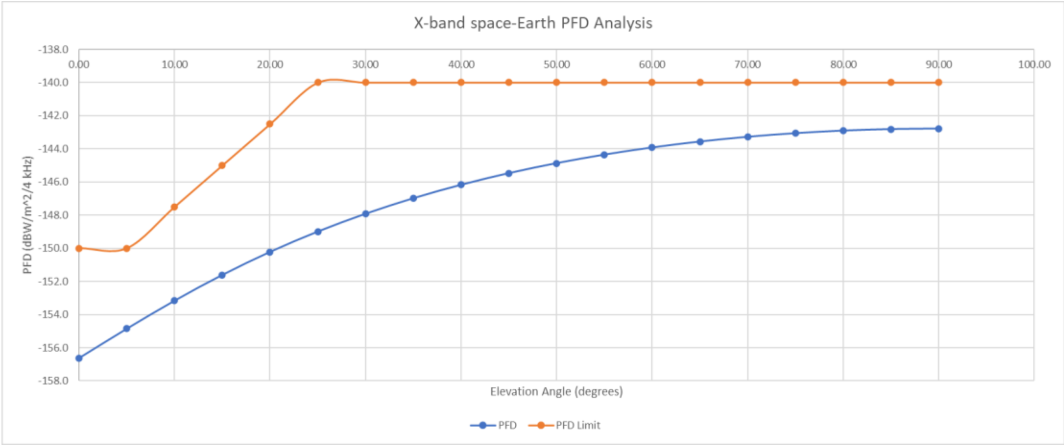


B. X-BAND

The Commission's rules do not specify a PFD limit in the 8025-8400 MHz band. However, there are PFD limits specified in ITU Radio Regulations No. 21.16.

The maximum PFD levels for the DROID.001 transmissions were calculated for the 8025-8400 MHz band. The results are provided in Schedule S and demonstrate that the downlink PFD levels of the DROID.001 carriers do not exceed the ITU limits. Figure 11 below illustrates the results of this PFD analysis for the X-band downlink. This PFD analysis assumes maximum EIRP in any pointing direction (to account for cases where satellite body steering and 3-axis stabilization are temporarily interrupted).

Figure 11 X-band Downlink PFD Analysis



X. LINK BUDGETS

Link analysis for DROID.001 was conducted for representative carriers in the S-band uplink, S-band downlink, and X-band downlink bands communicating with earth station antennas 5.4 meters in diameter. The results show sufficient operational margin for all links down to a minimum elevation angle of 10 degrees.

XI. SATELLITE ANTENNAS

The S-band uplink and downlink share a common patch antenna that can operate in full-duplex mode. Each S-band transceiver will be connected to a separate, identical patch antenna with receive and transmit patterns, as illustrated in Figure 12 and Figure 13, respectively, below.

The X-band downlink antenna is a Nadir facing 4x4 patch array that provides a peak gain of 17 dBi and a ~20° half-power beamwidth. An antenna pattern for the X-band transmit antenna is illustrated in Figure 14 below.

Figure 12 S-band Uplink TT&C 0° - Antenna Pattern

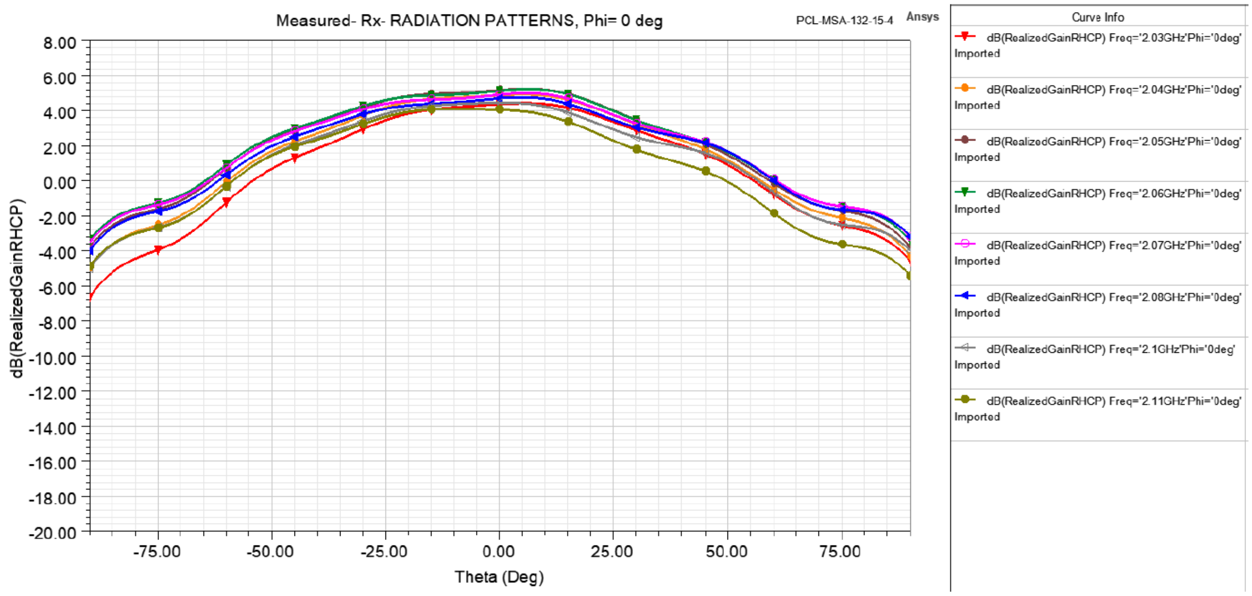


Figure 13 S-band Downlink TT&C and Mission Data 0° - Antenna Pattern

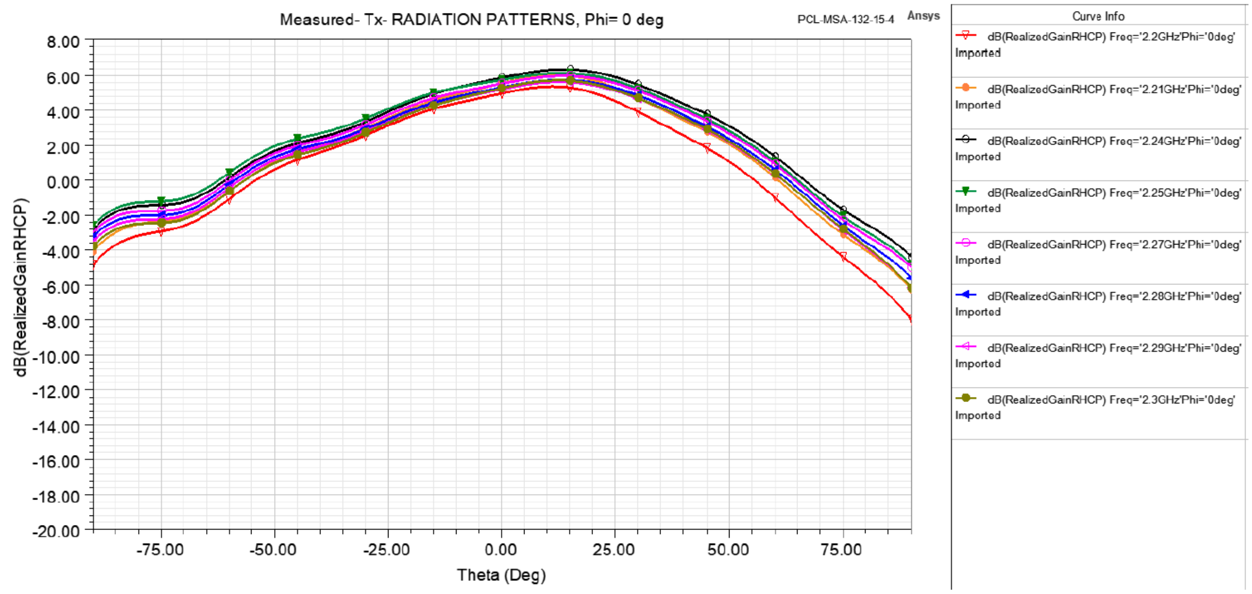
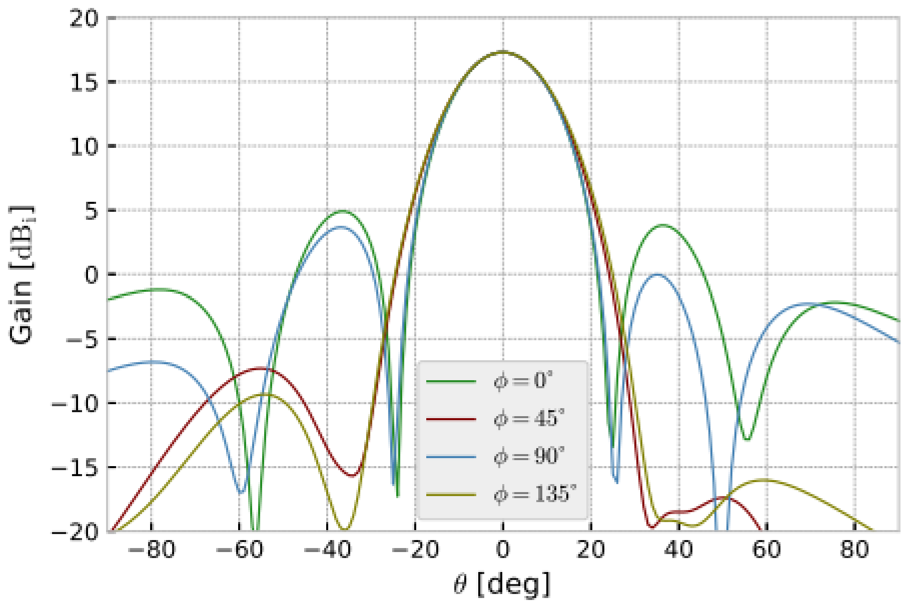


Figure 14 X-band Downlink Mission Data - Antenna Pattern



XII. EARTH STATIONS

The characteristics of the DROID.001 ground station network are listed in the tables below.

Table 6 Ground Station Antenna Characteristics

Antenna ID	Reflector Size (m)	Downlink Band (MHz)	G/T (dB/K)	Polarization	Uplink Band (MHz)	EIRP (dBW)
1(S)	5.4	2200-2290	16	LHCP/RHCP	2025-2110	53
1(X)	5.4	8025-8400	30.5	LHCP/RHCP	N/A	N/A

Table 7 Earth Stations Supporting Droid.001

Type	Ground Station Location	Ground Station Coordinates
S band (uplink) X band (downlink)	Portland, Oregon	45°51'16"N, 119°37'55"W
S band (uplink) X band (downlink)	Kapolei, Hawaii	21°20'13"N, 158°05'25"W
S band (uplink, downlink) X band (downlink)	Zallaq, Bahrain	26°03'05"N, 50°30'11"E
S band (uplink, downlink) X band (downlink)	Dublin, Ireland	53°24'24"N, 6°13'28"W
S band (uplink, downlink) X band (downlink)	Cape Town, South Africa	34°01'39"S, 18°43'07"E
S band (uplink, downlink) X band (downlink)	Seoul, South Korea	36°44'27"N, 127°01'03"E

S band (uplink, downlink)	Punta Arenas, Chile	52°56'28"S, 70°58'59"W

XIII. ORBITAL DEBRIS RISK MITIGATION PLAN

Turion Space has completed an orbital debris assessment report ("ODAR") for DROID.001. See Exhibit B.

A. SPACECRAFT HARDWARE DESIGN

Turion Space confirms that DROID.001 will not undergo any planned release of debris during its normal operations. In addition, all separation and deployment mechanisms, and any other potential source of debris, will be retained by the spacecraft. Turion Space has also assessed the probability of DROID.001 becoming a source of debris by collision with small debris or meteoroids of less than one centimeter in diameter that could cause loss of control and prevent post-mission disposal. Turion Space used the National Aeronautics and Space Administration ("NASA") Debris Assessment Software ("DAS") v3.2.1 and is compliant with every NASA standard. The probability of damage from a small object at the worst-case altitude of 575 km is 0.0092544, below the 0.01 threshold in NASA-STD-8719.14C and recently adopted FCC rules in section 25.114.[12] Furthermore, use of DROID.001's on-board propulsion system will actively reduce the probability of collision with other known objects. Turion Space has taken steps to limit the effects of such collisions through shielding, the placement of components, and the use of redundant systems.

B. MINIMIZING ACCIDENTAL EXPLOSIONS

Turion Space is designing its spacecraft in a manner that limits the probability of accidental explosion. Turion Space has assessed the possibility of accidental explosions

[12] The worst-case scenario occurs when DROID.001 is delivered to a 575 km circular orbit and remains in its stowed configuration due to a hardware malfunction.

during and after completion of mission operations through failure mode verification analysis. As part of the satellite manufacturing process, Turion Space has taken steps to ensure that debris generation will not result from the conversion of energy sources onboard DROID.001 into energy that fragments the satellite. All sources of stored energy onboard the spacecraft will have been depleted or safely contained when no longer required for mission operations or post-mission disposal.

C. SAFE FLIGHT PROFILES

Turion Space has assessed and limited the probability of DROID.001 becoming a source of debris by collisions with large debris or other operational spacecraft. Turion Space will work closely with its launch provider to ensure that the satellite is deployed in such a way to minimize the potential for in-plane collision. DAS shows that collision with a large object at the worst-case altitude of 575 km is 0.0000042417, much below the 0.001 threshold in NASA-STD-8719.14C and recently adopted FCC rules in section 25.114.[13]

Turion Space will engage with any operators of nearby constellations and other space stations to ensure safe and coordinated space operations. Turion Space will also provide all relevant agencies with any information they need to assess risks and ensure safe flight profiles, as well as contact information for Turion Space personnel at its MOC.

XIV. POST-MISSION DISPOSAL

Turion Space will dispose of DROID.001 less than six years after launch through atmospheric reentry. In particular, 4.5 years after launch, DROID.001 will execute a post-mission disposal ("PMD") maneuver to move DROID.001 from a 550 km circular orbit to a 350 km circular orbit. DROID.001 will enter the Earth's atmosphere 0.334 years after

[13] The worst-case scenario occurs when DROID.001 is delivered to a 575 km circular orbit and remains in its stowed configuration due to a hardware malfunction.

completion of the PMD maneuver and 5.66 years after launch. In the case where some leftover propellant is available at the end of nominal mission lifetime, propulsion can be used to further decrease the duration of atmospheric re-entry and avoid potential collisions. In the worst-case scenario where DROID.001 is delivered to a 575 km circular orbit and remains in its stowed configuration due to a hardware malfunction, it will reenter in approximately 15.054 years.

Turion Space has conducted the preliminary reentry risk analysis using DAS. DROID.001 was modeled to a level of fidelity that included 41 major components. As modeled, DAS indicates that DROID.001 will burn up during uncontrolled re-entry with no material surviving to reach the Earth’s surface. Accordingly, the risk of human casualty on the ground from DROID.001 re-entering the atmosphere is 0, below the 1:10,000 threshold in NASA-STD-8719.14C and recently adopted FCC rules in section 25.114.

CERTIFICATION OF PERSON RESPONSIBLE FOR PREPARING ENGINEERING INFORMATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this application, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this application and that it is complete and accurate to the best of my knowledge and belief.

/s/

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David C Morse, Ph.D.
Avaliant, LLC
Bellevue, WA USA
(425) 246-3080