NTIA Space record data form

NTIA requires the following data for space related experiments using government shared spectrum. For each transmit frequency, please provide the data for both ends of the transmit-receive link. Use Part A to describe the satellite to ground information. Part B is for all ground to space transmit links.

Polylingual Experimental Terminal (PExT) is a non-geostationary satellite that will be in LEO conducting a flight demonstration of inter-satellite relay capabilities with existing satellites in LEO, MEO, and GEO. The bus by York Space Systems is equipped with communication system to facilitate TT&C communication with the ground station. For completeness, Part C was added to include PExT's inter-satellite relay transmitter. The transmitters at the other end of the inter-satellite links are existing equipment for separate fixed-satellite systems that are coordinated to support this experiment, therefore will not be defined in this data form.

Part A: Space to Earth Downlink Data:

Satellite Transmitter Data

Transmit Frequency: 2257.5 MHz		
Satellite Name: PExT		
Data Field	**Data Answer**	**Description/Comments**
Polarization (XAP)	XAP = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Orientation (XAZ)	XAZ = EC	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN = 6.11 dBi BEAMWIDTH = 136˚ XAD = XAD01 06G	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type =Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.40, THE NUMBER OF SATELLITES IN THE SYSTEM = 1,	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.58H01NRT01, AND FOR SPACE-TO-SPACE

	ORB = 97.5IN00515AP00515PE001.40H01NRT01 ORB = 97.5IN00515AP00515PE001.40H01NRR01	COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.46H01NRR01
Earth Station Data (Receiver)		
State/Country (RSC)	RSC = G	
City Name (RAL)	RAL = DUNDEE SCOTLAND	
Latitude (DDMMSS)	Lat = 562360 N	
Longitude (DDDMMSS)	Lon = 0031012 W	
Antenna Polarization (RAP)	RAP = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = V10	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, VOO TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN_____36.2_____, BEAMWIDTH_____2.6_____, AZIMUTHAL RANGE___0-360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS_____115_____, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS_____1.5_____ RAD = 36G003B000-360A00115H00002K	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A0035H006
FCC notes: 1. Use S-Note S575.		

Part B: Ground Stations, Earth to Space link data:

Earth Station Transmitter Data

Transmit Frequency: 2037.5 MHz		
Data Field	**Data Answer**	**Description/Comments**
State/Country (XSC)	XSC = G	
City Name (XAL)	XAL = DUNDEE SCOTLAND	
Latitude (DDMMSS)	Lat = 562360 N	
Longitude (DDDMMSS)	Lon = 0031012 W	

Antenna Polarization (XAP)	XAP = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ = V10	THE EARTH STATION Transmitter ANTENNA AZIMUTH (XAZ), THE MINIMUM ANGLE OF ELEVATION, VOO TO V90, EXAMPLE, XAZ01 V00
Antenna Dimensions (XAD)	ANTENNA GAIN_____36.2_____, BEAMWIDTH_____2.6_____, AZIMUTHAL RANGE___0-360_____, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS_____115_____, THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS_____1.5_____ XAD = 36G003B000-360A00115H00002K	EXAMPLE ASSUMING NONGEOSTATIONARY, XAD01 16G030B000-360A0035H006
Satellite Receive Specification		
Polarization (RAP)	RAP = R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Azimuth (RAZ)	RAZ = EC	STATION RECEIVER ANTENNA AZIMUTH (XAZ), THE MINIMUM ANGLE OF ELEVEATION, V00 TO V90, EXAMPLE, RAZ01 V00
Dimension (RAD)	ANTENNA GAIN = 6.11 dBi BEAMWIDTH = 136˚ RAD = RAD01 06G	(NTIA format (RAD), EXAMPLE, RAD01 16G030B)
Type of satellite (State = SP) (City = G/No)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.40, THE NUMBER OF SATELLITES IN THE SYSTEM = 1, ORB = 97.5IN00515AP00515PE001.40H01NRT01 ORB = 97.5IN00515AP00515PE001.40H01NRR01	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.58H01NRT01, AND FOR SPACE-TO-SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.46H01NRR01

Part C: Space to Space link data:

Satellite Transmitter Data		
Transmit Frequency: 26.374 GHz, 28.3 GHz, 28.35 GHz, 29.25 GHz, 29.75 GHz, 30.5 GHz		
Satellite Name: PExT		
Data Field	**Data Answer**	**Description/Comments**
Polarization (SAP)	SAP = T	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Orientation (XAZ)	XAZ = NB	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN = 44.2 dBW BEAMWIDTH = 1.1˚ (3-dB beamwidth) XAD = XAD01 44G001B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type =Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.40, THE NUMBER OF SATELLITES IN THE SYSTEM = 1, ORB = 97.5IN00515AP00515PE001.40H01NRT01 ORB = 97.5IN00515AP00515PE001.40H01NRR01	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.58H01NRT01, AND FOR SPACE-TO-SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.46H01NRR01
Space Station Data (Receiver)		
Polarization (SAP)	SAP = T	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = Various	THE EARTH STATION Transmitter ANTENNA AZIMUTH (XAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, XAZ01 V00
Dimensions (RAD)	ANTENNA GAIN = 44.2 dBW BEAMWIDTH = 1.1˚ (3-dB beamwidth)	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006

	XAD = XAD01 44G001B	
Type of satellite (State = SP) City = G/No	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude = N/A	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE = 97.5, APOGEE IN KILOMETERS = 515, PERIGEE IN KILOMETERS = 515, ORBITAL PERIOD IN HOURS = 1 AND FRACTIONS OF HOURS IN DECIMAL = 0.40, THE NUMBER OF SATELLITES IN THE SYSTEM = 1, ORB = 97.5IN00515AP00515PE001.40H01NRT01 ORB = 97.5IN00515AP00515PE001.40H01NRR01	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.58H01NRT01, AND FOR SPACE-TO-SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.46H01NRR01
FCC notes: 1. Use S-Note S575.		