

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.

Part A: Space to Earth Downlink Data

Satellite Transmitter Data

Transmit Frequency: 9600 MHz		
Satellite Name(s): Capella-3 (Whitney), Capella-4 (Whitney)		
Data Field	Data Answer	Description/Comments
Polarization (XAP)	XAP = H	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 = LIENAR POLARIZATION
Orientation (XAZ)	XAZ = NB	NB = NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN 48.2 dB, BEAMWIDTH 0.7 degrees, XAD = XAD01 48G001B	(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 SATELLITE ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG)
For Nongeostationary (Orbit Data)	INCLINATION ANGLE 97.5 degrees, APOGEE IN KILOMETERS 525 km, PERIGEE IN KILOMETERS 525 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 58, THE NUMBER OF SATELLITES IN THE SYSTEM 2,	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,98.0IN00510AP00510PE001.58H01NRTO 1, AND FOR SPACE-TO-SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT END IN R01, EXAMPLE, REM05

	ORB = 97.5IN00525AP00525PE001.58H01NRT0 1, 97.5IN00525AP00525PE001.58H01NRT0 2,	*ORB,72.9IN03209AP00655PE013.46H01NRR 01
Note: This frequency is used for the spacecraft radar Earth remote sensing payload, therefore no corresponding receive stations are listed.		

Transmit Frequency: 8027 MHz		
Satellite Name(s): Capella-3 (Whitney), Capella-4 (Whitney)		
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 = LIENAR POLARIZATION
Orientation (XAZ)	XAZ = NB	NB = NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN 5.6 dB, BEAMWIDTH 98 degrees, XAD = XAD02 05G098B	(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 SATELLITE ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG)
For Nongeostationary (Orbit Data)	INCLINATION ANGLE 97.5 degrees, APOGEE IN KILOMETERS 525 km, PERIGEE IN KILOMETERS 525 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 58, THE NUMBER OF SATELLITES IN THE SYSTEM 2, ORB = 97.5IN00525AP00525PE001.58H01NRT01, 97.5IN00525AP00525PE001.58H01NRT02,	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 END IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.46H01NRR01

Earth Station Data (Receiver 1)		
State (RSC)	RSC = Oregon	
City Name (RAL)	RAL = Boardman	
Latitude (DDMMSS)	Lat = 455116 N	
Longitude (DDDMMSS)	Lon = 1193755 W	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ01 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 101 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD01 38G002B000-360A00101H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 2)		
State (RSC)	RSC = Ohio	
City Name (RAL)	RAL = Kileville	
Latitude (DDMMSS)	Lat = 400603 N	
Longitude (DDDMMSS)	Lon = 0831151 W	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ02 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees,	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006

	THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 288 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD02 38G002B000-360A00288H003	
Earth Station Data (Receiver 3)		
State (RSC)	RSC = Ireland	
City Name (RAL)	RAL = Dublin	
Latitude (DDMMSS)	Lat = 532424 N	
Longitude (DDMMSS)	Lon = 0061328 W	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ03 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 53 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD03 38G002B000-360A00008H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 4)		
State (RSC)	RSC = Sweden	
City Name (RAL)	RAL = Vasteras	
Latitude (DDMMSS)	Lat = 593856 N	
Longitude (DDMMSS)	Lon = 0163504 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ04 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 39 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD04 38G002B000-360A00022H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 5)		
State (RSC)	RSC = South Africa	
City Name (RAL)	RAL = Cape Town	
Latitude (DDMMSS)	Lat = 340139 S	
Longitude (DDMMSS)	Lon = 0184307 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ05 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 10 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD05 38G002B000-360A00020H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 6)		
State (RSC)	RSC = Bahrain	
City Name (RAL)	RAL = Manama	
Latitude (DDMMSS)	Lat = 260305 N	

Longitude (DDMMSS)	Lon = 0503011 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ06 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 39 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD06 38G002B000-360A00065H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 7)		
State (RSC)	RSC = Australia	
City Name (RAL)	RAL = Sydney	
Latitude (DDMMSS)	Lat = 340212 S	
Longitude (DDMMSS)	Lon = 1504601 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ07 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 95 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD07 38G002B000-360A00022H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006

Earth Station Data (Receiver 8)		
State (RSC)	RSC = Norway	
City Name (RAL)	RAL = Svalbard	
Latitude (DDMMSS)	Lat = 781354 N	
Longitude (DDMMSS)	Lon = 0152238 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ08 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 450 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD08 38G002B000-360A00008H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 9)		
State (RSC)	RSC = Norway	
City Name (RAL)	RAL = Troll	
Latitude (DDMMSS)	Lat = 720041 S	
Longitude (DDMMSS)	Lon = 0023317 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ09 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees,	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006

	THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1371 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD09 38G002B000-360A01371H003	
Earth Station Data (Receiver 10)		
State (RSC)	RSC = Chile	
City Name (RAL)	RAL = Punta Arenas	
Latitude (DDMMSS)	Lat = 505606 S	
Longitude (DDMMSS)	Lon = 0725212 W	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ10 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 25 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD10 38G002B000-360A00024H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 11)		
State (RSC)	RSC = Greece	
City Name (RAL)	RAL = Tripoli	
Latitude (DDMMSS)	Lat = 375043 N	
Longitude (DDMMSS)	Lon = 0223724 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ11 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 278 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD11 38G002B000-360A00084H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 12)		
State (RSC)	RSC = New Zealand	
City Name (RAL)	RAL = Awarua	
Latitude (DDMMSS)	Lat = 463144 S	
Longitude (DDMMSS)	Lon = 1682248 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ12 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 13 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD12 38G002B000-360A00009H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 13)		
State (RSC)	RSC = South Africa	
City Name (RAL)	RAL = Hartebeesthoek	
Latitude (DDMMSS)	Lat = 255309 S	

Longitude (DDMMSS)	Lon = 0274220 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ13 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1562, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD13 38G002B000-360A01386H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006

Transmit Frequency: 8212.5 MHz		
Satellite Name(s): Capella-3 (Whitney), Capella-4 (Whitney)		
Data Field	Data Answer	Description/Comments
Polarization (XAP)	XAP = 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 = LIENAR POLARIZATION
Orientation (XAZ)	XAZ = NB	NB = NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN 20.6 dB, BEAMWIDTH 19.5 degrees, XAD = XAD03 20G019B	(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 SATELLITE ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG)

For Nongeostationary (Orbit Data)	INCLINATION ANGLE 97.5 degrees, APOGEE IN KILOMETERS 525 km, PERIGEE IN KILOMETERS 525 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 58, THE NUMBER OF SATELLITES IN THE SYSTEM 2, ORB = 97.5IN00525AP00525PE001.58H01NRT01, 97.5IN00525AP00525PE001.58H01NRT02,	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 END IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.46H01NRR01
Earth Station Data (Receiver 1)		
State (RSC)	RSC = Oregon	
City Name (RAL)	RAL = Boardman	
Latitude (DDMMSS)	Lat = 455116 N	
Longitude (DDMMSS)	Lon = 1193755 W	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ01 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 101 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD01 38G002B000-360A00101H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 2)		
State (RSC)	RSC = Ohio	
City Name (RAL)	RAL = Kilevile	
Latitude (DDMMSS)	Lat = 400603 N	

Longitude (DDMMSS)	Lon = 0831151 W	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ02 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 288 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD02 38G002B000-360A00288H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 3)		
State (RSC)	RSC = Ireland	
City Name (RAL)	RAL = Dublin	
Latitude (DDMMSS)	Lat = 532424 N	
Longitude (DDMMSS)	Lon = 0061328 W	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ03 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 53 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD03 38G002B000-360A00008H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006

Earth Station Data (Receiver 4)		
State (RSC)	RSC = Sweden	
City Name (RAL)	RAL = Vasteras	
Latitude (DDMMSS)	Lat = 593856 N	
Longitude (DDDMMSS)	Lon = 0163504 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ04 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 39 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD04 38G002B000-360A00022H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 5)		
State (RSC)	RSC = South Africa	
City Name (RAL)	RAL = Cape Town	
Latitude (DDMMSS)	Lat = 340139 S	
Longitude (DDDMMSS)	Lon = 0184307 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ05 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees,	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006

	THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 10 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD05 38G002B000-360A00020H003	
Earth Station Data (Receiver 6)		
State (RSC)	RSC = Bahrain	
City Name (RAL)	RAL = Manama	
Latitude (DDMMSS)	Lat = 260305 N	
Longitude (DDMMSS)	Lon = 0503011 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ06 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 39 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD06 38G002B000-360A00065H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 7)		
State (RSC)	RSC = Australia	
City Name (RAL)	RAL = Sydney	
Latitude (DDMMSS)	Lat = 340212 S	
Longitude (DDMMSS)	Lon = 1504601 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ07 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 95 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD07 38G002B000-360A00022H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 8)		
State (RSC)	RSC = Norway	
City Name (RAL)	RAL = Svalbard	
Latitude (DDMMSS)	Lat = 781354 N	
Longitude (DDMMSS)	Lon = 0152238 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ08 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 450 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD08 38G002B000-360A00008H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 9)		
State (RSC)	RSC = Norway	
City Name (RAL)	RAL = Troll	
Latitude (DDMMSS)	Lat = 720041 S	

Longitude (DDMMSS)	Lon = 0023317 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ09 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1371 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD09 38G002B000-360A01371H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 10)		
State (RSC)	RSC = Chile	
City Name (RAL)	RAL = Punta Arenas	
Latitude (DDMMSS)	Lat = 505606 S	
Longitude (DDMMSS)	Lon = 0725212 W	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ10 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 25 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD10 38G002B000-360A00024H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006

Earth Station Data (Receiver 11)		
State (RSC)	RSC = Greece	
City Name (RAL)	RAL = Tripoli	
Latitude (DDMMSS)	Lat = 375043 N	
Longitude (DDMMSS)	Lon = 0223724 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ11 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 278 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD11 38G002B000-360A00084H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006
Earth Station Data (Receiver 12)		
State (RSC)	RSC = New Zealand	
City Name (RAL)	RAL = Awarua	
Latitude (DDMMSS)	Lat = 463144 S	
Longitude (DDMMSS)	Lon = 1682248 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ12 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees,	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006

	THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 13 meters, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD12 38G002B000-360A00009H003	
Earth Station Data (Receiver 13)		
State (RSC)	RSC = South Africa	
City Name (RAL)	RAL = Hartebeesthoek	
Latitude (DDMMSS)	Lat = 255309 S	
Longitude (DDMMSS)	Lon = 0274220 E	
Antenna Polarization (RAP)	RAP = 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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ13 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimension (RAD)	ANTENNA GAIN 38.1 dB, BEAMWIDTH 2.0 degrees, AZIMUTH RANGE 0 – 360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1562, THE ANTENNA HEIGHT ABOUT TERRAIN IN METERS 3 meters, RAD13 38G002B000-360A01386H003	EXAMPLE ASSUMING NONGEOSTATIONARY RAD01 16G030B000-360A00357H006

Transmit Frequency: 1643.5 MHz		
Satellite Name(s): Capella-3 (Whitney), Capella-4 (Whitney)		
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 = LIENAR POLARIZATION

Orientation (XAZ)	XAZ = NB	NB = NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN 9.5 dB, BEAMWIDTH 60 degrees, XAD = XAD04 09G060B	(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 = R14 RLA 000000 N RLG 1433000 E R15 RLA 000000 N RLG 0642400 E R16 RLA 000000 N RLG 0980000 W R17 RLA 000000 N RLG 0244800 E NOTE: These are receive satellites for a space-to-space link.	IF ANY SATELLITE ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG)
For Nongeostationary (Orbit Data)	INCLINATION ANGLE 97.5 degrees, APOGEE IN KILOMETERS 525 km, PERIGEE IN KILOMETERS 525 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 58, THE NUMBER OF SATELLITES IN THE SYSTEM 2, ORB = 97.5IN00525AP00525PE001.58H01NRT01, 97.5IN00525AP00525PE001.58H01NRT02,	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 END IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.46H01NRR01
Satellite Receivers (Receiver 14-16)		
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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = EC	NB = NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (RAD)	ANTENNA GAIN 27.5 dB, BEAMWIDTH 17.4 degrees, RAD = RAD14 28G017B RAD15 28G017B RAD16 28G017B	(NTIA format (RAD), EXAMPLE, RAD01 16G030B)
Satellite Receivers (Receiver 17)		

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 = LIENAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = EC	NB = NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (RAD)	ANTENNA GAIN 27.5 dB, BEAMWIDTH 13.6 degrees, RAD = RAD17 28G014B	(NTIA format (RAD), EXAMPLE, RAD01 16G030B)

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

The proposed Capella system will also receive transmissions on the following frequencies. However, in each case, these transmissions will be received from third parties and therefore will be permitted by authorizations held by those parties. These receive-only frequencies are listed here for informational purposes only.

- 2035.3-2036.7 MHz — Earth to space.
- 1525 MHz-1559 — GEO to LEO (Inmarsat to Capella).