

07 28 2021; 16:40:56PM Activity Log Started
07 28 2021; 16:51:25PM Processing Requirement 4.3-1: Return Status :
Not Run

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No Project Data Available
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End of Requirement 4.3-1 =====
07 28 2021; 16:51:26PM Processing Requirement 4.3-2: Return Status :
Passed

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No Project Data Available
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End of Requirement 4.3-2 =====
07 28 2021; 17:01:38PM Processing Requirement 4.5-1: Return Status :
Passed

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Run Data
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INPUT

Space Structure Name = LLITED
Space Structure Type = Payload
Perigee Altitude = 510.000 (km)
Apogee Altitude = 510.000 (km)
Inclination = 96.500 (deg)
RAAN = 0.000 (deg)
Argument of Perigee = 0.000 (deg)
Mean Anomaly = 0.000 (deg)
Final Area-To-Mass Ratio = 0.0236 (m²/kg)
Start Year = 2022.000 (yr)
Initial Mass = 1.968 (kg)
Final Mass = 1.968 (kg)
Duration = 1.000 (yr)
Station-Kept = False
Abandoned = True

OUTPUT

Collision Probability = 2.2791E-07
Returned Message: Normal Processing
Date Range Message: Normal Date Range
Status = Pass

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End of Requirement 4.5-1 =====

07 28 2021; 17:01:39PM Processing Requirement 4.6 Return Status :
Passed

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Project Data
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INPUT

Space Structure Name = LLITED
Space Structure Type = Payload

Perigee Altitude = 510.000000 (km)
Apogee Altitude = 510.000000 (km)
Inclination = 96.500000 (deg)
RAAN = 0.000000 (deg)
Argument of Perigee = 0.000000 (deg)
Mean Anomaly = 0.000000 (deg)
Area-To-Mass Ratio = 0.023630 (m²/kg)
Start Year = 2022.000000 (yr)
Initial Mass = 1.968000 (kg)
Final Mass = 1.968000 (kg)
Duration = 1.000000 (yr)
Station Kept = False
Abandoned = True
PMD Perigee Altitude = 483.721753 (km)
PMD Apogee Altitude = 511.086020 (km)
PMD Inclination = 96.532606 (deg)
PMD RAAN = 315.087043 (deg)
PMD Argument of Perigee = 67.653226 (deg)
PMD Mean Anomaly = 0.000000 (deg)

OUTPUT

Suggested Perigee Altitude = 483.721753 (km)
Suggested Apogee Altitude = 511.086020 (km)
Returned Error Message = Passes LEO reentry orbit criteria.

Released Year = 2024 (yr)
Requirement = 61
Compliance Status = Pass

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End of Requirement 4.6
07 28 2021; 17:01:45PM *****Processing Requirement 4.7-1
Return Status : Passed

*****INPUT****

Item Number = 1

name = LLITED
quantity = 1
parent = 0

materialID = 8
type = Box
Aero Mass = 1.968000
Thermal Mass = 1.968000
Diameter/Width = 0.117000
Length = 0.170200
Height = 0.115000

name = Full Body Frame
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 1.817000
Thermal Mass = 0.341000
Diameter/Width = 0.108000
Length = 0.170200
Height = 0.101000

name = +X/+Y Frame
quantity = 1
parent = 2
materialID = 8
type = Box
Aero Mass = 1.220000
Thermal Mass = 0.173000
Diameter/Width = 0.102300
Length = 0.340500
Height = 0.016700

name = Bus Electronics
quantity = 7
parent = 3
materialID = 23
type = Box
Aero Mass = 0.045000
Thermal Mass = 0.045000
Diameter/Width = 0.080000
Length = 0.080000
Height = 0.004000

name = Avionics Bracket
quantity = 1
parent = 3
materialID = 8
type = Box
Aero Mass = 0.025000
Thermal Mass = 0.025000
Diameter/Width = 0.080000
Length = 0.095000
Height = 0.080000

name = Reaction Wheels
quantity = 1

parent = 3
materialID = 8
type = Box
Aero Mass = 0.058000
Thermal Mass = 0.001000
Diameter/Width = 0.034000
Length = 0.051000
Height = 0.032000

name = Motor With Wheel
quantity = 3
parent = 6
materialID = -1
type = Cylinder
Aero Mass = 0.013000
Thermal Mass = 0.013000
Diameter/Width = 0.012000
Length = 0.042400

name = Base
quantity = 1
parent = 6
materialID = 8
type = Box
Aero Mass = 0.018000
Thermal Mass = 0.018000
Diameter/Width = 0.042800
Length = 0.096800
Height = 0.029200

name = Torque Rod
quantity = 3
parent = 3
materialID = -1
type = Cylinder
Aero Mass = 0.010000
Thermal Mass = 0.010000
Diameter/Width = 0.008000
Length = 0.078700

name = Battery
quantity = 4
parent = 3
materialID = 54
type = Cylinder
Aero Mass = 0.045000
Thermal Mass = 0.045000
Diameter/Width = 0.018000
Length = 0.065000

name = Wing Panel
quantity = 2
parent = 3
materialID = 23

type = Box
Aero Mass = 0.071000
Thermal Mass = 0.071000
Diameter/Width = 0.146000
Length = 0.164000
Height = 0.002000

name = Antenna
quantity = 3
parent = 3
materialID = 8
type = Box
Aero Mass = 0.015000
Thermal Mass = 0.015000
Diameter/Width = 0.038000
Length = 0.039000
Height = 0.005000

name = MFOV Star Tracker
quantity = 2
parent = 3
materialID = 8
type = Box
Aero Mass = 0.020000
Thermal Mass = 0.020000
Diameter/Width = 0.025000
Length = 0.035000
Height = 0.015000

name = Payload
quantity = 1
parent = 3
materialID = 8
type = Box
Aero Mass = 0.212000
Thermal Mass = 0.212000
Diameter/Width = 0.090000
Length = 0.092000
Height = 0.070000

name = -X/-Y Frame
quantity = 1
parent = 2
materialID = 8
type = Box
Aero Mass = 0.168000
Thermal Mass = 0.168000
Diameter/Width = 0.103000
Length = 0.340500
Height = 0.099000

name = Zenith Lid
quantity = 1
parent = 2

materialID = 8
type = Box
Aero Mass = 0.088000
Thermal Mass = 0.051000
Diameter/Width = 0.101000
Length = 0.106000
Height = 0.002300

name = PIP Sensor
quantity = 1
parent = 16
materialID = 8
type = Box
Aero Mass = 0.037000
Thermal Mass = 0.037000
Diameter/Width = 0.043000
Length = 0.076000
Height = 0.013000

name = Nadir Lid
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 0.150000
Thermal Mass = 0.060000
Diameter/Width = 0.101000
Length = 0.106000
Height = 0.012000

name = CTECS
quantity = 1
parent = 18
materialID = 40
type = Box
Aero Mass = 0.090000
Thermal Mass = 0.090000
Diameter/Width = 0.061000
Length = 0.061000
Height = 0.010000

*****OUTPUT****
Item Number = 1

name = LLITED
Demise Altitude = 77.995262
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Full Body Frame
Demise Altitude = 76.001450
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = +X/+Y Frame
Demise Altitude = 74.926201
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Bus Electronics
Demise Altitude = 73.916061
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Avionics Bracket
Demise Altitude = 74.614136
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Reaction Wheels
Demise Altitude = 74.898636
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Motor With Wheel
Demise Altitude = 71.890953
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Base
Demise Altitude = 74.479050
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Torque Rod
Demise Altitude = 73.188538
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Battery
Demise Altitude = 69.175072
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Wing Panel
Demise Altitude = 74.294250
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Antenna
Demise Altitude = 73.517960
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = MFOV Star Tracker
Demise Altitude = 73.127419
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Payload
Demise Altitude = 71.987320
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = -X/-Y Frame
Demise Altitude = 75.350967
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Zenith Lid
Demise Altitude = 74.921669
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = PIP Sensor
Demise Altitude = 73.187294
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Nadir Lid
Demise Altitude = 76.858757
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = CTECS
Demise Altitude = 71.722183
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

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07 28 2021; 17:01:46PM Project Data Saved To File

07 28 2021; 17:02:02PM Science and Engineering - Orbit Lifetime/Dwell Time

INPUT

Start Year = 2022.000000 (yr)
Perigee Altitude = 510.000000 (km)
Apogee Altitude = 510.000000 (km)
Inclination = 96.500000 (deg)
RAAN = 0.000000 (deg)
Argument of Perigee = 0.000000 (deg)
Area-To-Mass Ratio = 0.023630 (m²/kg)

OUTPUT

Orbital Lifetime from Startyr = 2.622861 (yr)
Time Spent in LEO during Lifetime = 2.622861 (yr)
Last year of Propagation = 2024 (yr)
Returned Error Message: Object reentered

07 28 2021; 17:02:10PM Science and Engineering - Orbit Lifetime/Dwell Time

INPUT

Start Year = 2022.000000 (yr)
Perigee Altitude = 510.000000 (km)
Apogee Altitude = 510.000000 (km)
Inclination = 96.500000 (deg)
RAAN = 0.000000 (deg)
Argument of Perigee = 0.000000 (deg)
Area-To-Mass Ratio = 0.040430 (m²/kg)

OUTPUT

Orbital Lifetime from Startyr = 1.916496 (yr)
Time Spent in LEO during Lifetime = 1.916496 (yr)
Last year of Propagation = 2023 (yr)
Returned Error Message: Object reentered

07 28 2021; 17:02:19PM Science and Engineering - Orbit Lifetime/Dwell Time

INPUT

Start Year = 2022.000000 (yr)
Perigee Altitude = 510.000000 (km)
Apogee Altitude = 510.000000 (km)
Inclination = 96.500000 (deg)
RAAN = 0.000000 (deg)
Argument of Perigee = 0.000000 (deg)
Area-To-Mass Ratio = 0.006837 (m²/kg)

OUTPUT

Orbital Lifetime from Startyr = 6.505133 (yr)

Time Spent in LEO during Lifetime = 6.505133 (yr)
Last year of Propagation = 2028 (yr)
Returned Error Message: Object reentered