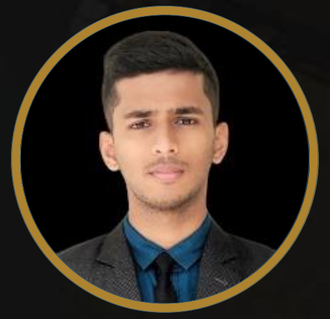
MEET THE TEAM

M A MOONTASIR ABTAHEE

MD SADI MOBASSIR

MD NUR ISLAM DHALI ARNOB

MAISHA JARIN



MD FARHAD MAHAMUD AZAD

JANNATUL FERDOUSH

USING CONSTELLATIONS OF NANOSATELLITES

TO IDENTIFY CORAL REEF CULDTIVABL E AREAS

ON THE SEAFLOOR

CORAL REEF

RAINFORESTS OF THE SEA

CRUCIAL INDICATOR

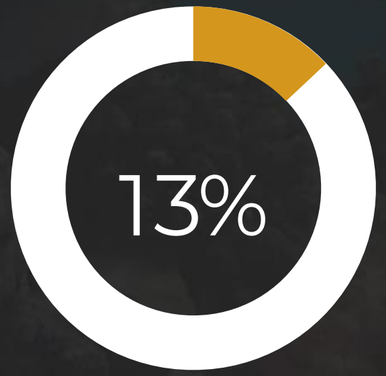
ENVIRONMENTAL PROTECTION

ECONOMIC SIGNIFICANCE

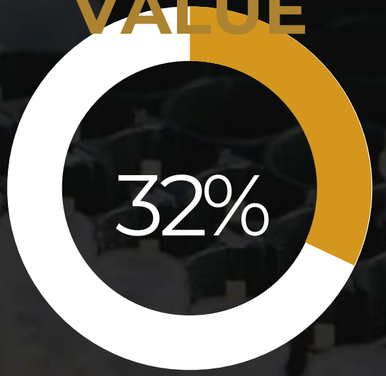
CONTRIBUTION TO THE GLOBAL CARBON CYCLE

26B TONS PER YEAR

PROVIDE DIRECT LIVELIHOOD WITHIN 100KM



MEDICINAL AND SCIENTIFIC VALUE



MISSION OBJECTIVES

TRACKING AND MONITORING

IDENTIFYING OPTIMAL ENVIRONMENTAL CONDITIONS

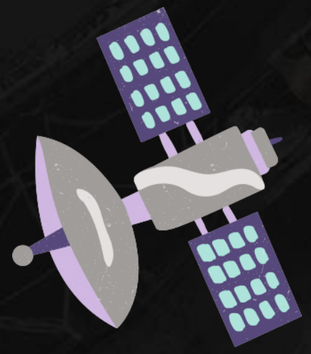
EXPLORING ALTERNATIVE HABITAT LOCATIONS

MICROCOLONY FUSION TECHNIQUES TO ENHANCE CORAL GROWTH IN SUITABLE SEABED AREAS.

STAKEHOLDERS AND SDGS

CONCEPT OF OPERATIONS

LAUNCH SEGMENT



SPACE SEGMENT

GROUND SEGMENT

CONCEPT OF OPERATIONS (GROUD SEGMENT)

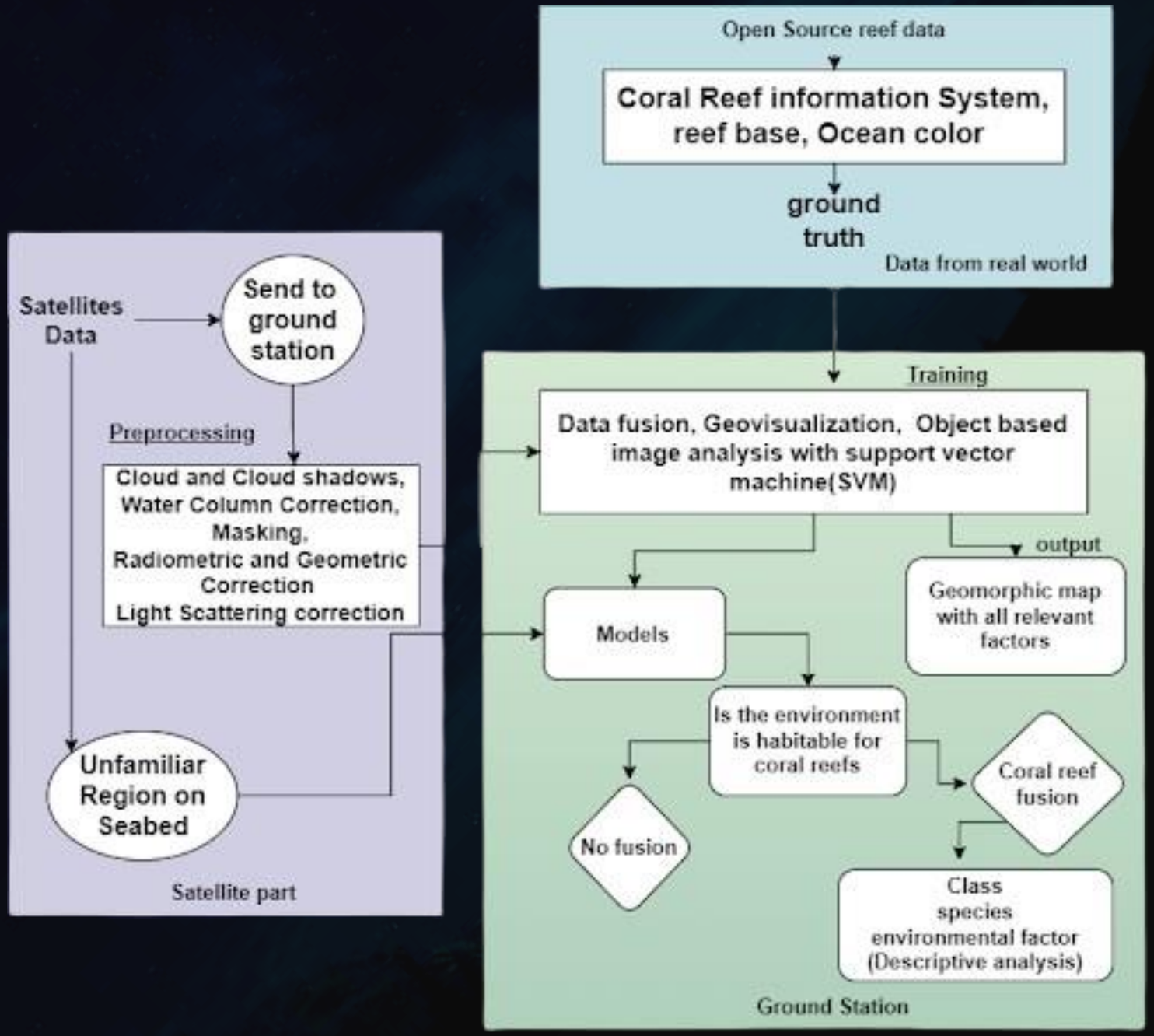


FIG : GROUND SEGMENT OPERATION

FORMATION OF CONSTELLATON

- ORBIT : SUN SYNCHRONUS
- A LINEAR FORMATION
- SWATH WIDTH : 55KM
- NANO SATELLITES COUNT : 14
- TEMPORAL DIMENTION: 5 DAYS
- ALTITUDE : 750-770 KM

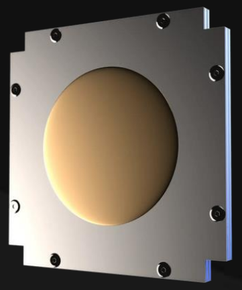
TECHNOLOGY BEHIND NANOSATELLITE

STRUCTURE

TRANSCEIVER

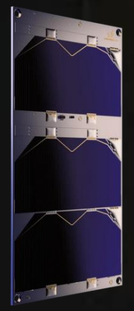
OBC

EPS

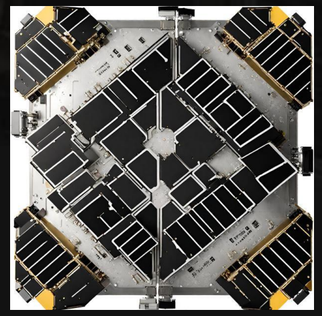


ANTENNA

CAMERA



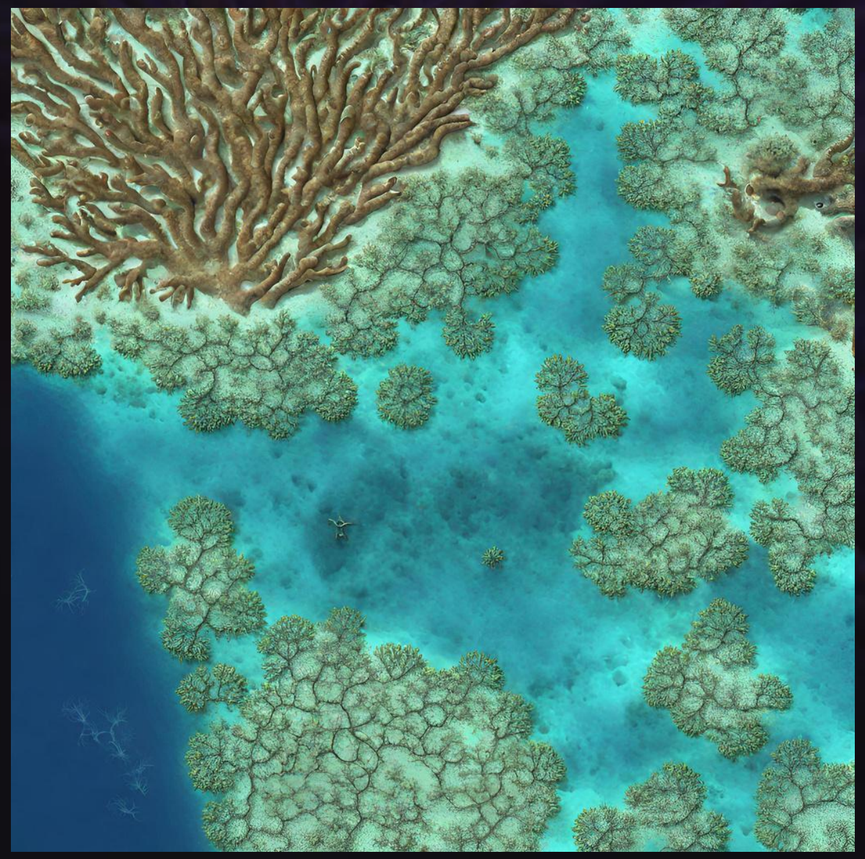
SOLAR PANELS



ADCS

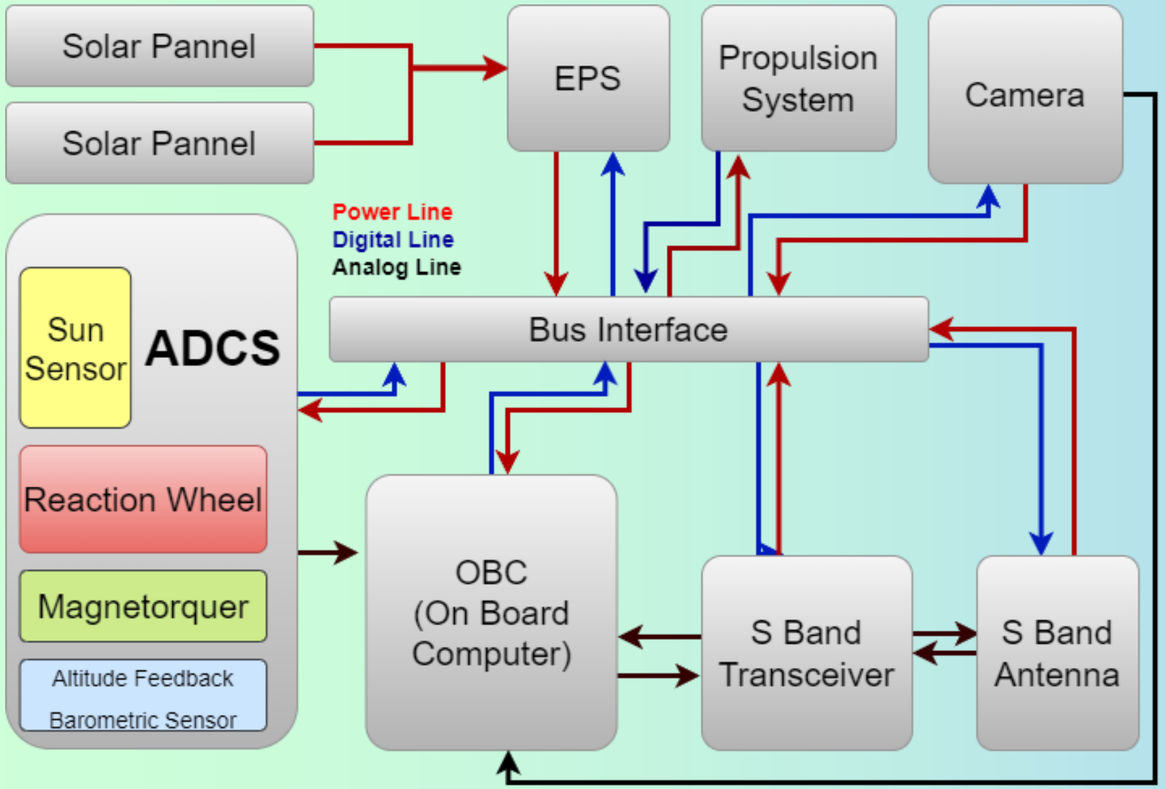
PROPULSION SYSTEM

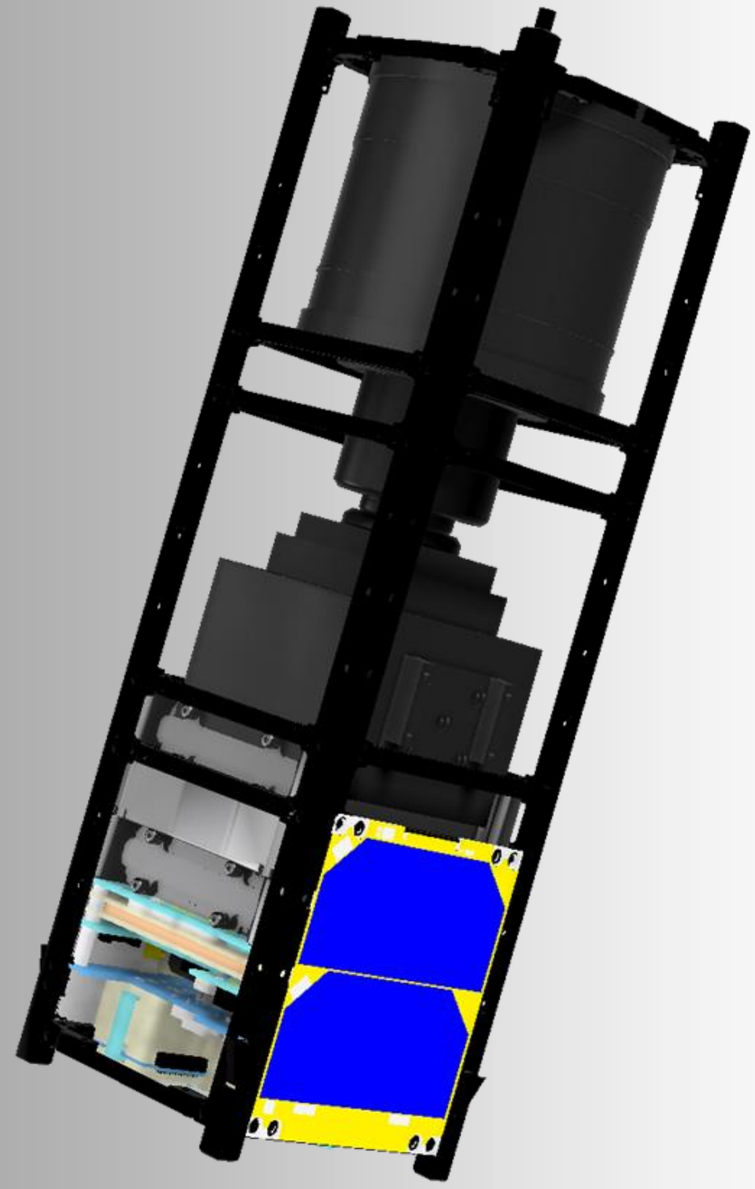
CORAL REAF MAPPING PROCESSING



- SEA SURFACE TEMPERATURE (SST)
- NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI)
- NORMALIZED DIFFERENCE WATER INDEX (NDWI)
- COASTAL AND AEROSOL DATA
- OCEAN WAVE MAPPING
- EVALUATION OF SEA LEVEL SOIL CONDITIONS.
- MAP CORAL REEF THROUGH IMAGE PROCESSING

ARCHITECTURE

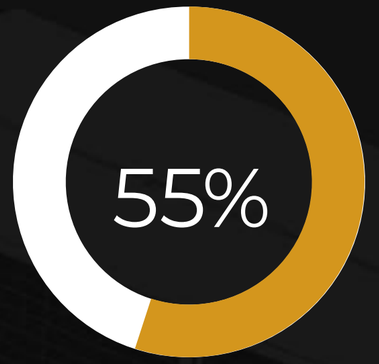




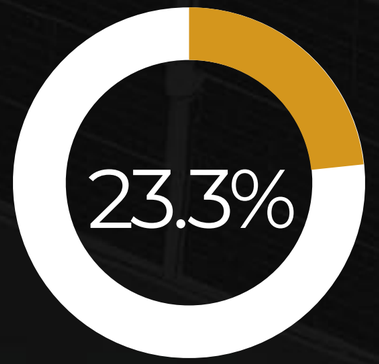
KEY PERFORMANCE PARAMETER

POWER GENERATED

MAXIMUM CONSUMPTION



AVERAGE POWER



KEY PERFORMANCE PARAMETER

AVERAGE POWER	**10.5 W**
BATTERY PACK	45 W
SOLAR PACK	1A @ 5V
POWER TRANSMISSION	33 dBm
FREE SPACE LOSS	166.62 dB
LINK BUDGET	347.97 dB
SPATIAL RESULATION	10 m
IMAGE SIZE	5.5 km2
SYSTEM LOSSES	1.6 dB
SPATIAL RESOLUTION (GSD) AT 500 KM	PAN 16 m, MS 32 m
DELTA V	100 m/s

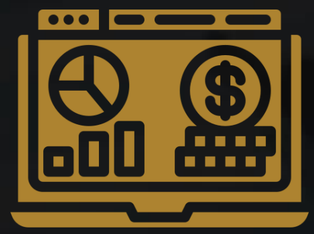
IMPLEMENTATION PLAN

BRIEFLY OUTLINE THE PURPOSE OF LAUNCHING A SATELLITE FOR TRACKING AND MONITORING CORAL REEFS.

HIGHLIGHT THE UTILIZATION OF REMOTE SENSING TO TRACK CHANGES IN CORAL REEF HEALTH.

ACTIVITY PLAN AND BUDGET

RISK MANAGEMENT



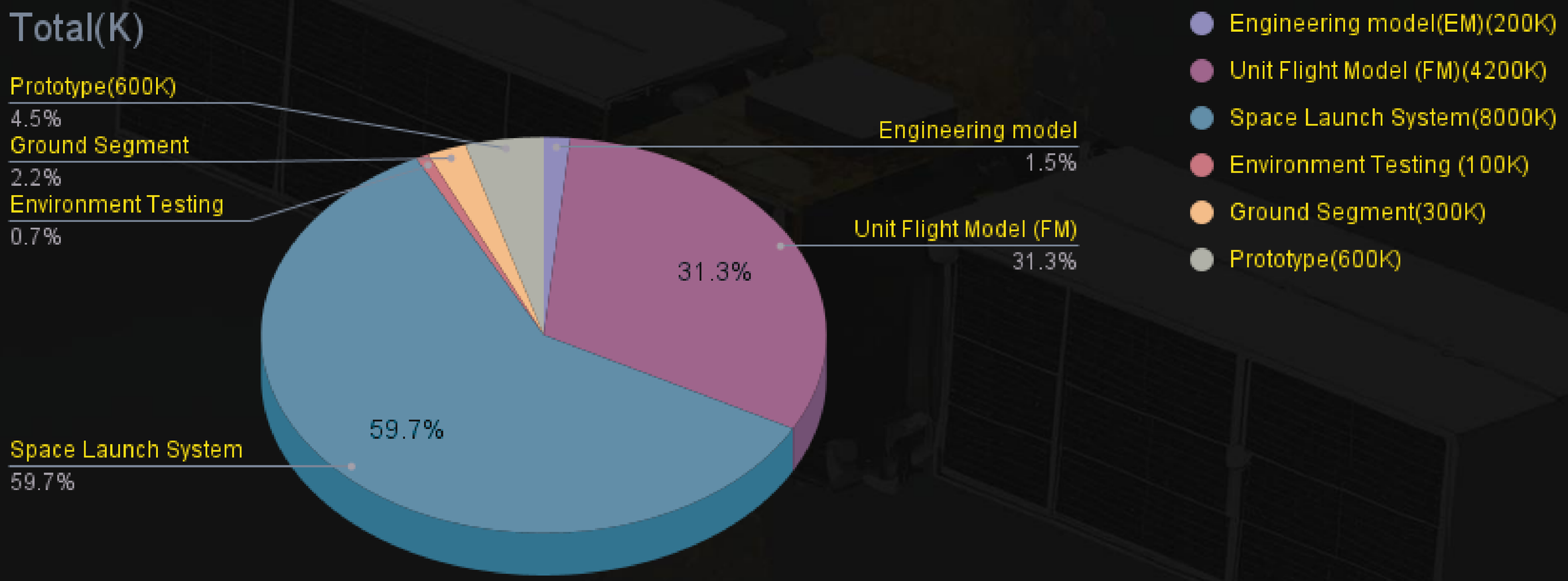
IMPLEMENTATION PLAN

APPROXIMATE BUDGET

PROCEDURE	COST(USD)	Total
ENGINEERING MODEL(EM)	200K*1	200K
UNIT FLIGHT MODEL (FM)	300K*14	4200K
SPACE LAUNCH SYSTEM	1600K*5	8000K
ENVIRONMENT TESTING	100K*1	100K
GROUND SEGMENT	100K*3	300K
PROTOTYPE	0.2M*3	0.6M
TOTAL		13.4 M

APPROXIMATE BUDGET

IMPLEMENTATION PLAN



RISK FACTOR PROBABLITY & IT'S SOLUATION

SOLAR PANEL DEPLOYMENT

RISK: INSUFFICIENT POWER GENERATION

PROBABILITY: MODERATE

SOLUTION: CONDUCT THOROUGH TESTING AND SIMULATIONS

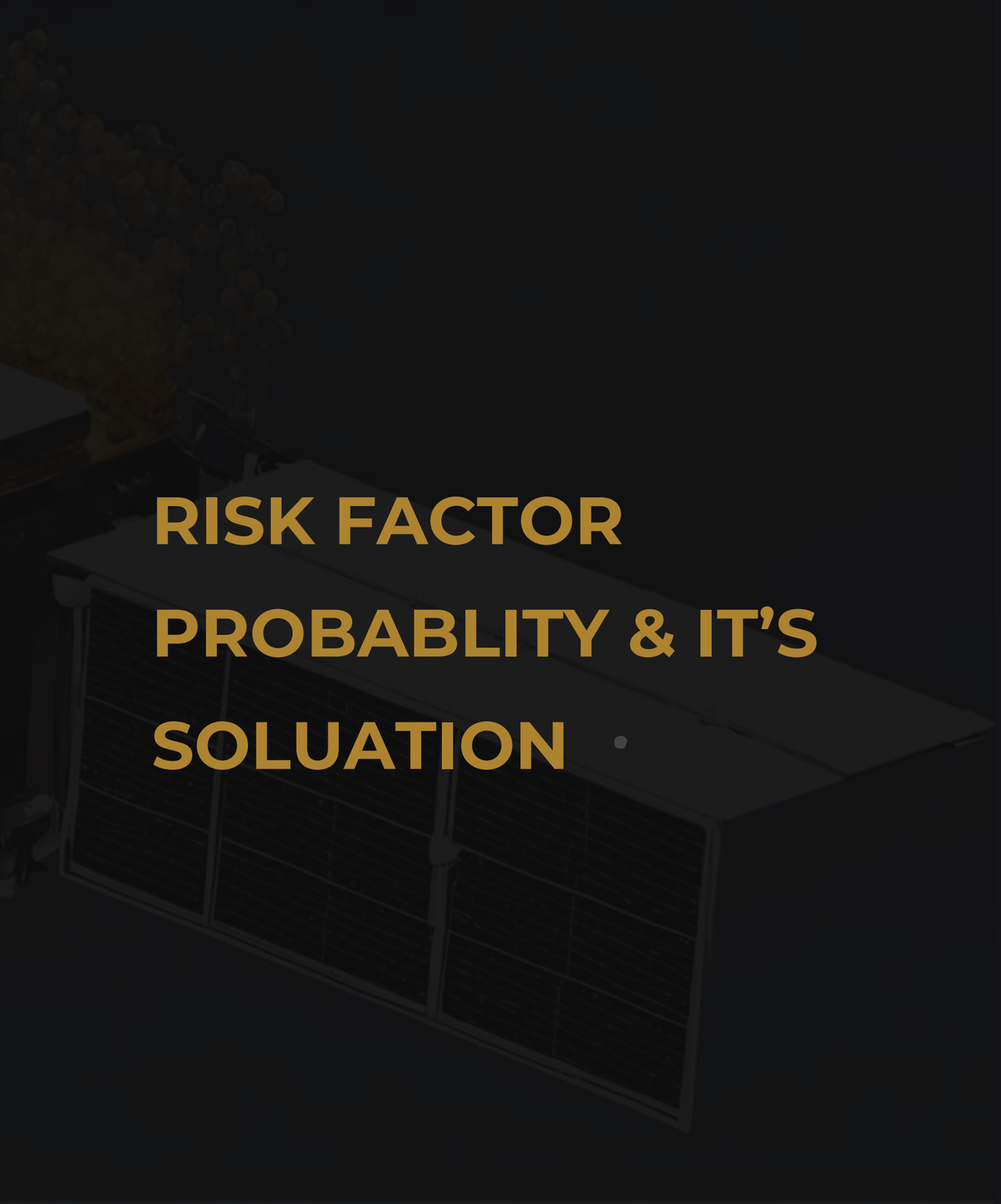
RISK FACTOR PROBABLITY & IT'S SOLUATION

CAMERA CALIBRATION FOR CLOUD AND TURBIDITY

RISK: POOR QUALITY OR UNUSABLE IMAGES

PROBABILITY: MODERATE

SOLUTION: IMPLEMENT ADVANCED CAMERA CALIBRATION ALGORITHMS



RISK FACTOR PROBABLITY & IT’S SOLUATION

DELAY OF LAUNCH OR LICENSE

RISK: MAY IMPACT THE MISSION TIMELINE

PROBABILITY: MODERATE

SOLUTION: INITIATE THE LICENSING PROCESS EARLY

PROJECT SCHEDULE

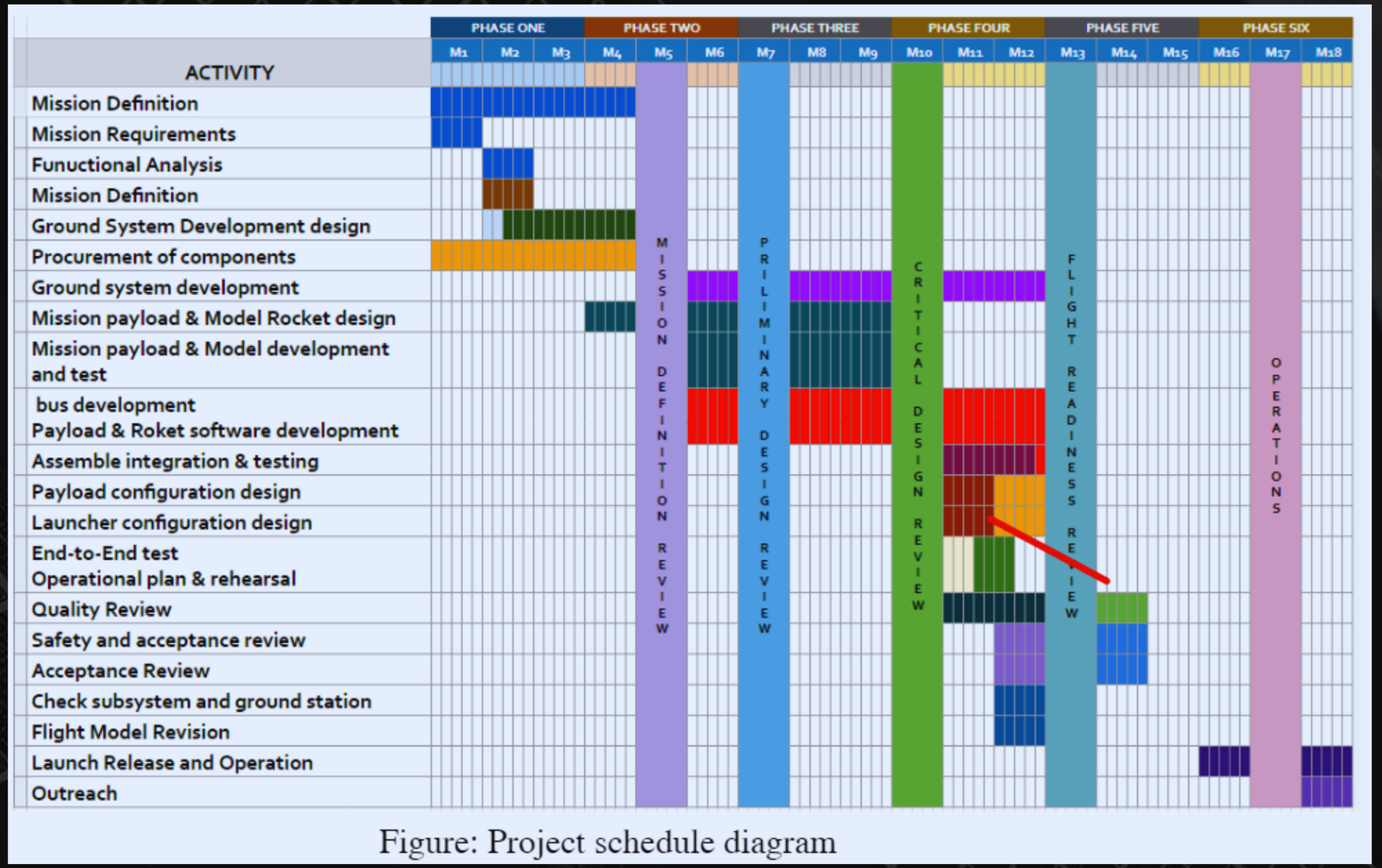


Figure: Project schedule diagram

CONCLUSION

COMPREHENSIVE UNDERSTANDING OF CORAL REEFS

INNOVATIVE TECHNOLOGY IMPLEMENTATION

INTEGRATION OF SUSTAINABILITY GOALS

RISK MITIGATION STRATEGIES

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THANK YOU

Q/A