

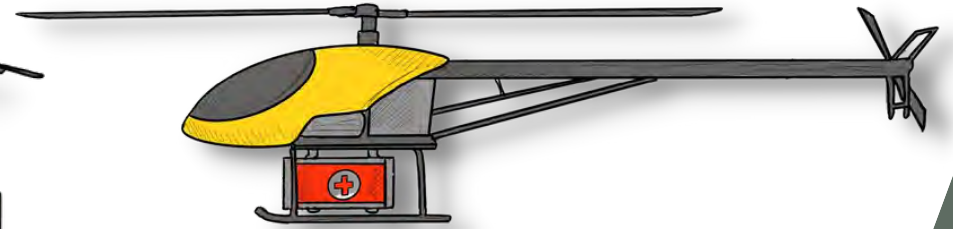
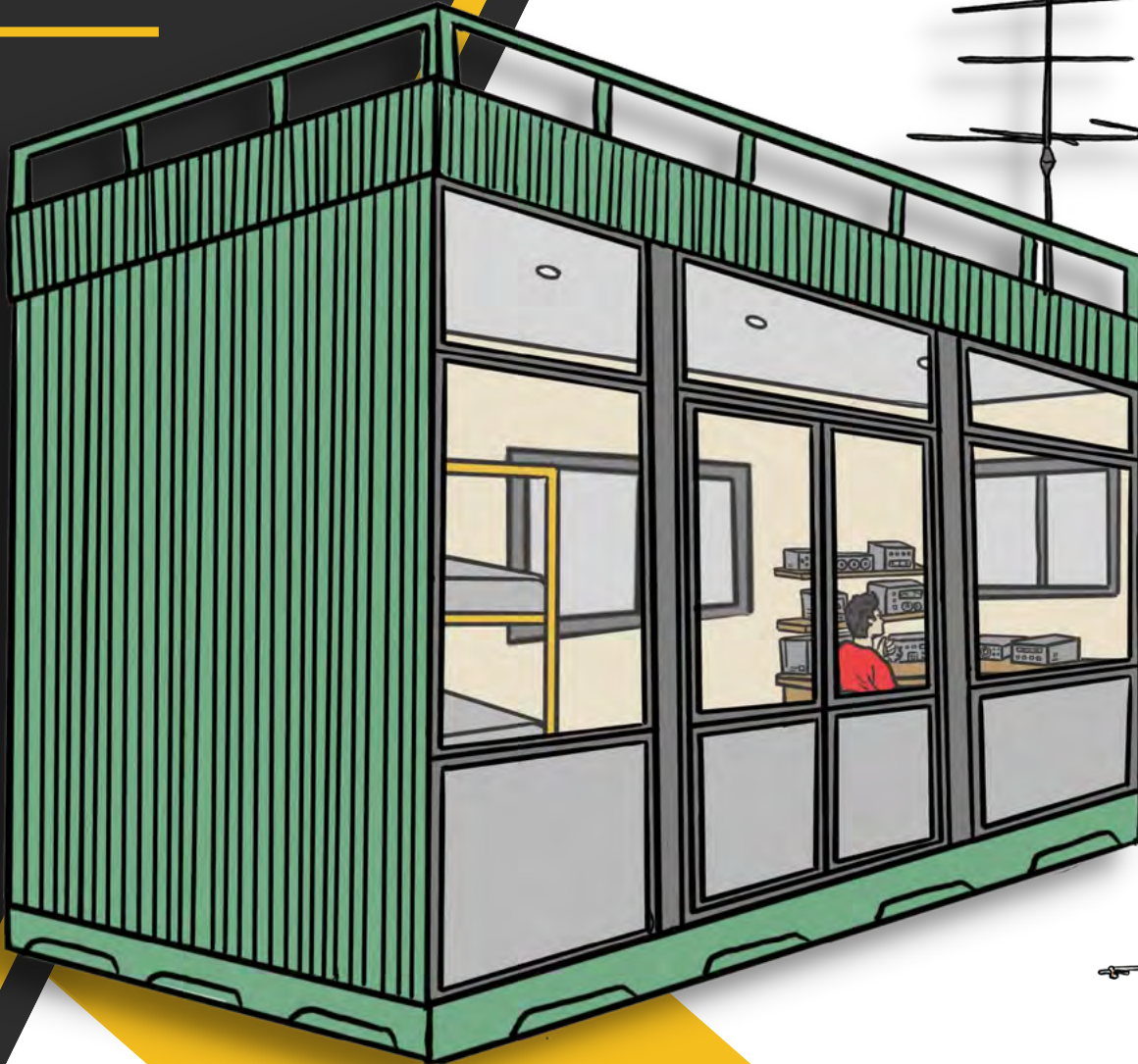


SEARCH

PHASE-I

SURVEILLANCE & EARLY ACTION RESCUE COMMUNICATION HUB

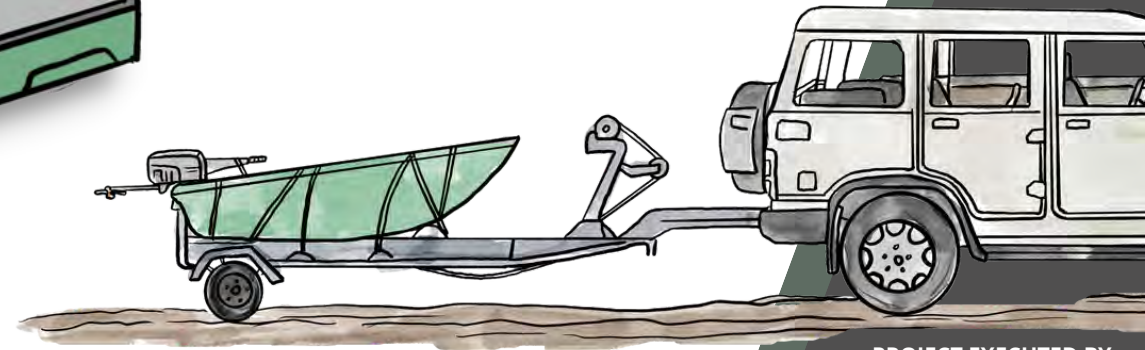
Because every life counts...



A TINY ACT OF GENEROSITY

DONATE

TO AID IN MAKING A NATIONAL IMPACT

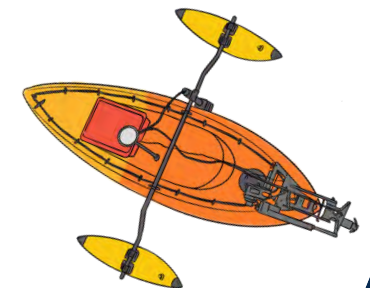
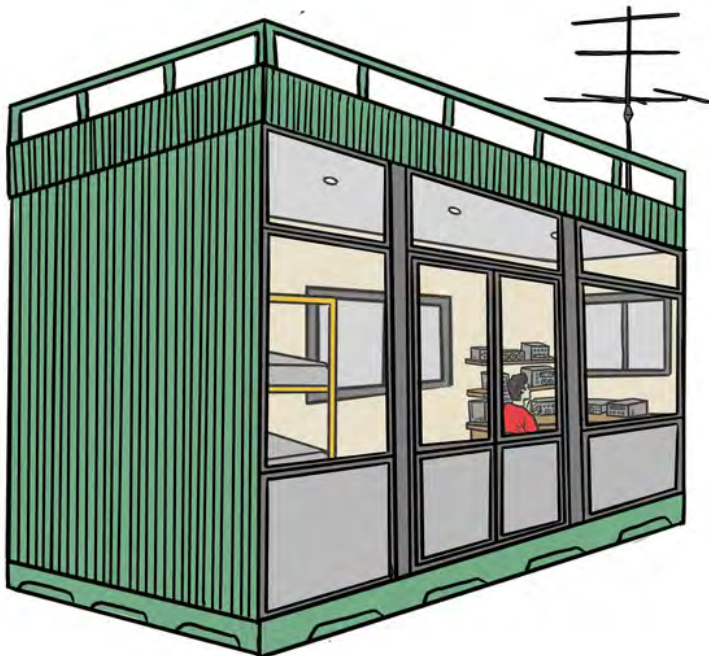


ABOUT SEARCH

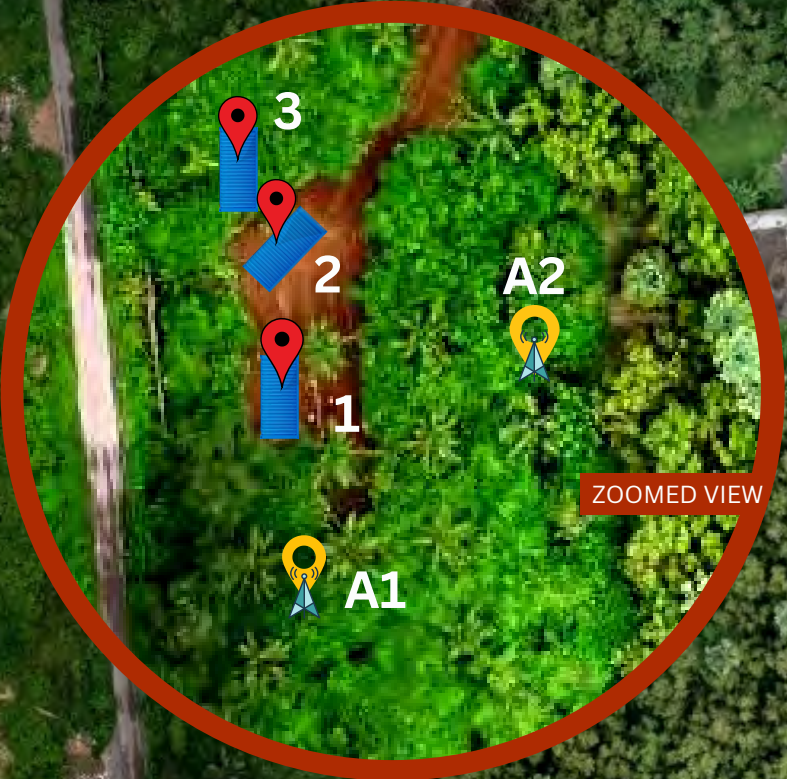
SURVEILLANCE & EARLY ACTION RESCUE COMMUNICATION HUB



In an effort to establish NITK as one of the forerunners in research, development, and teaching of technology for surveillance and rescue of national importance, we are proposing the first of its kind at an educational institutional level, SEARCH (Surveillance & Early Action Rescue Communication Hub), a 24*7 marine and shore surveillance station to initiate rescue action. This station will function as a rescue and communication hub in times of emergency, as well as a center for students and HAM / Amateur radio enthusiasts to explore and work on advanced technologies and methods in the field of communication and rescue operations. The hub will be equipped with autonomous aerial & marine vehicles for surveillance and rescue operations and UHF/VHF/HF radio stations which will enable communication in times of emergency/disaster with administration and rescue forces.



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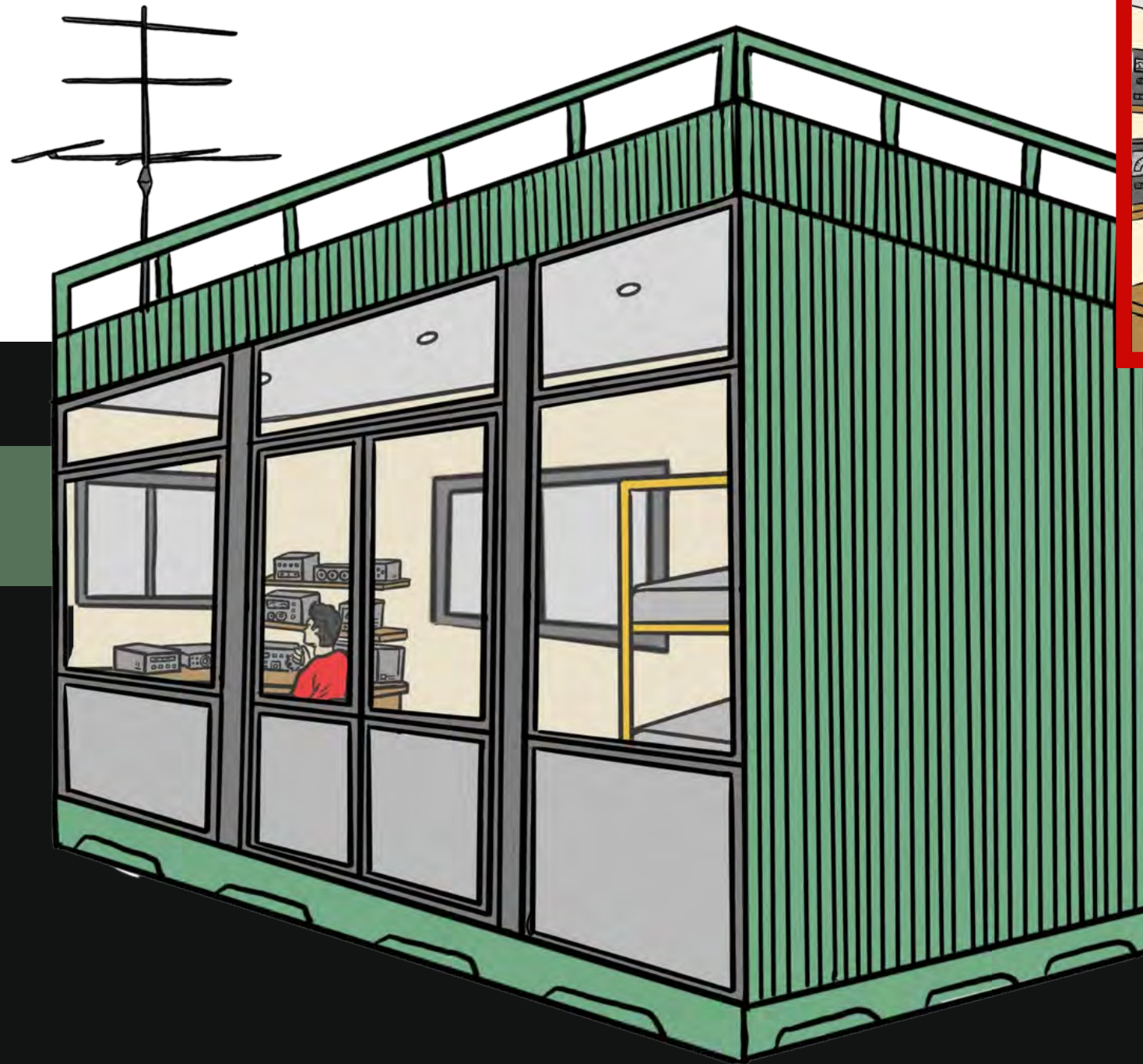


ZOOMED VIEW

PROPOSED PLAN FOR **SEARCH**

NITK BEACH

NITK BEACH ROAD

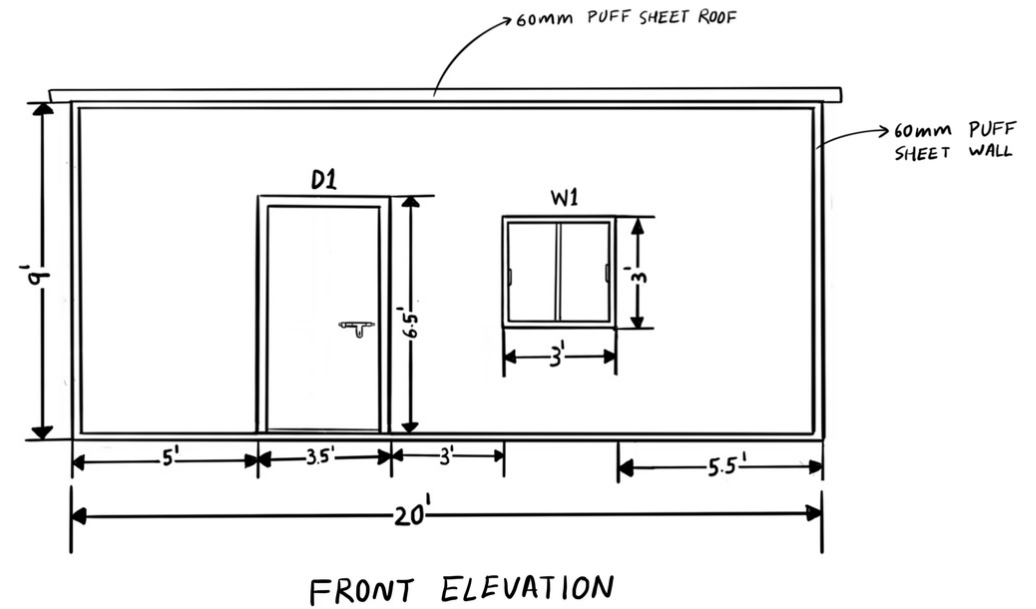
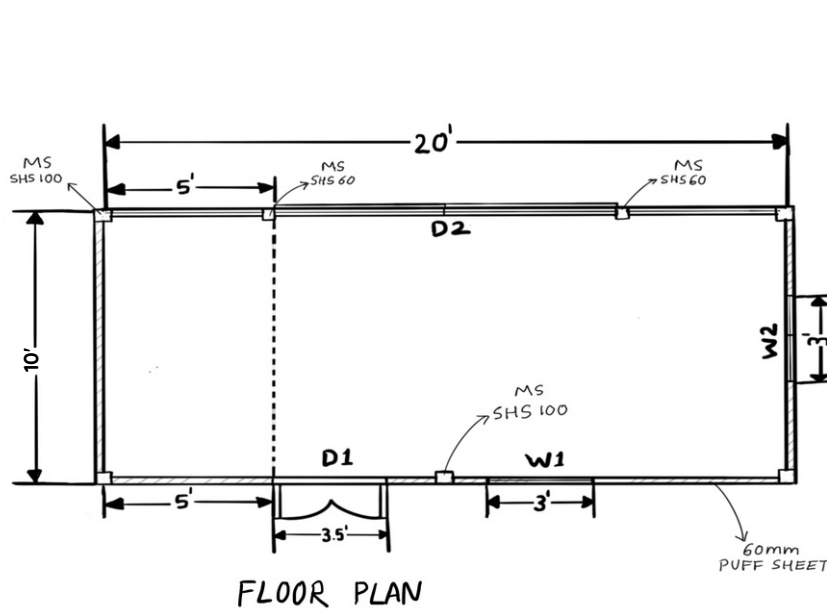
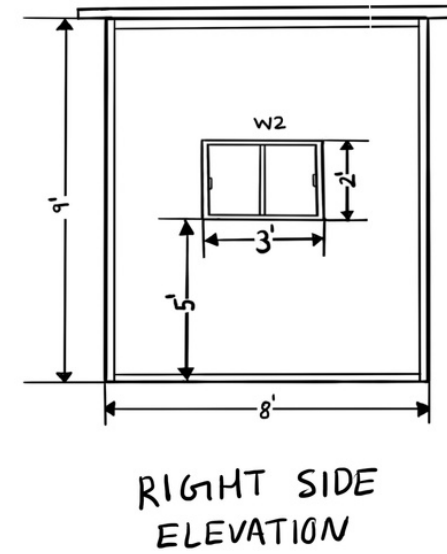
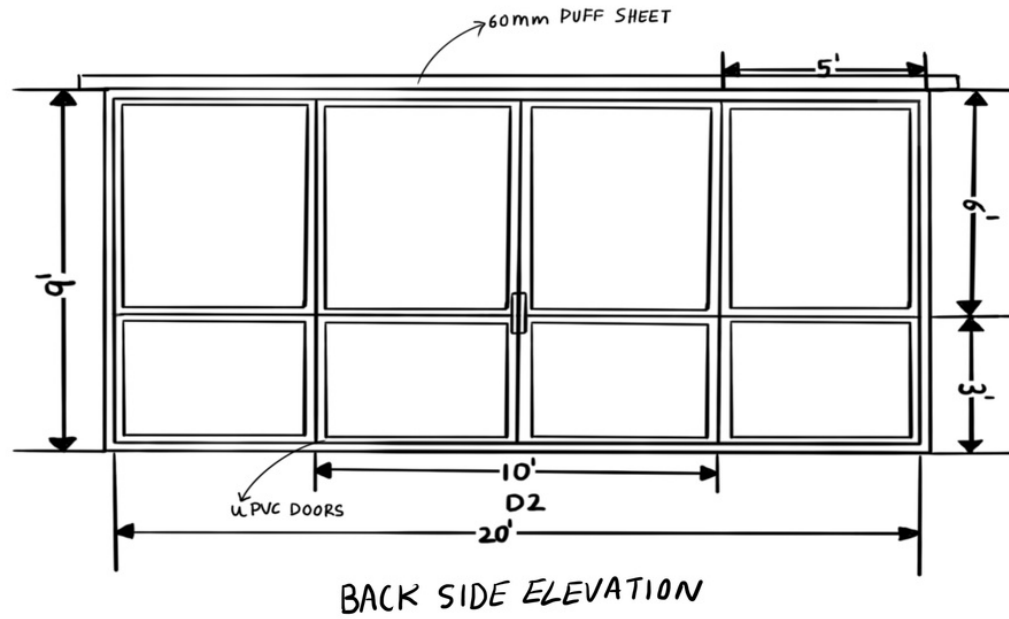


COMMUNICATION HUB ROLE IN DISASTER MANAGEMENT

Communication breakdown makes it difficult to organize rescue operations. Transmission of information is crucial immediately after a disaster, especially on the extent and severity of the damage, the number and categories of victims, and the needed relief effort.

A form of noncommercial two-way radio communication is employed in the SEARCH Communication HUB.

SCHEMATIC LAYOUT OF THE CONTAINER - I

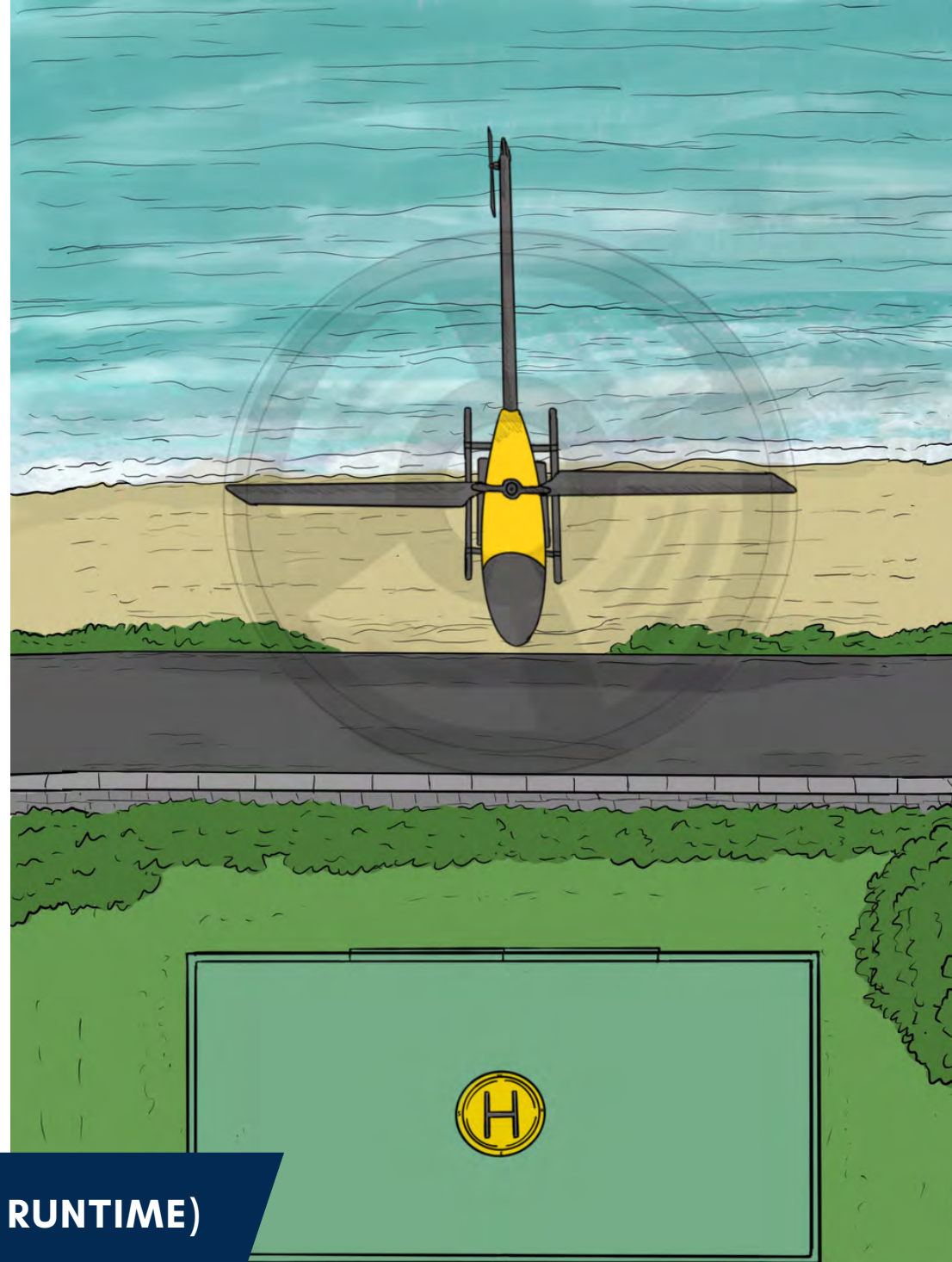




AUTONOMOUS UNMANNED AERIAL VEHICLE



Multiple multicopters / Vertical take-off & Landing (VTOL) UAV are coordinated using a distributed control system for search and rescue missions. The system is implemented in the Robot Operating System (ROS) and is capable of providing a real-time video stream (DAY & NIGHT) from a UAV to one or more base stations using a wireless communications infrastructure that supports a heterogeneous set of UAVs and camera sensors.

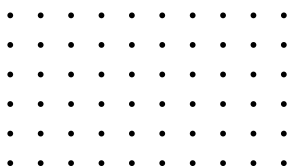
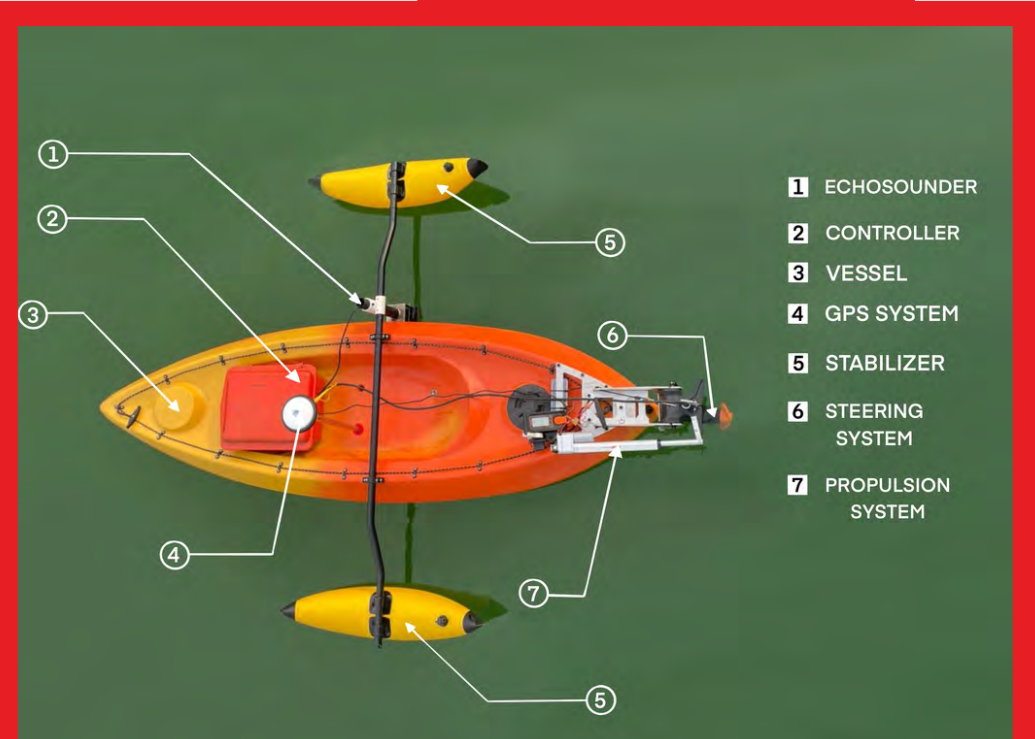


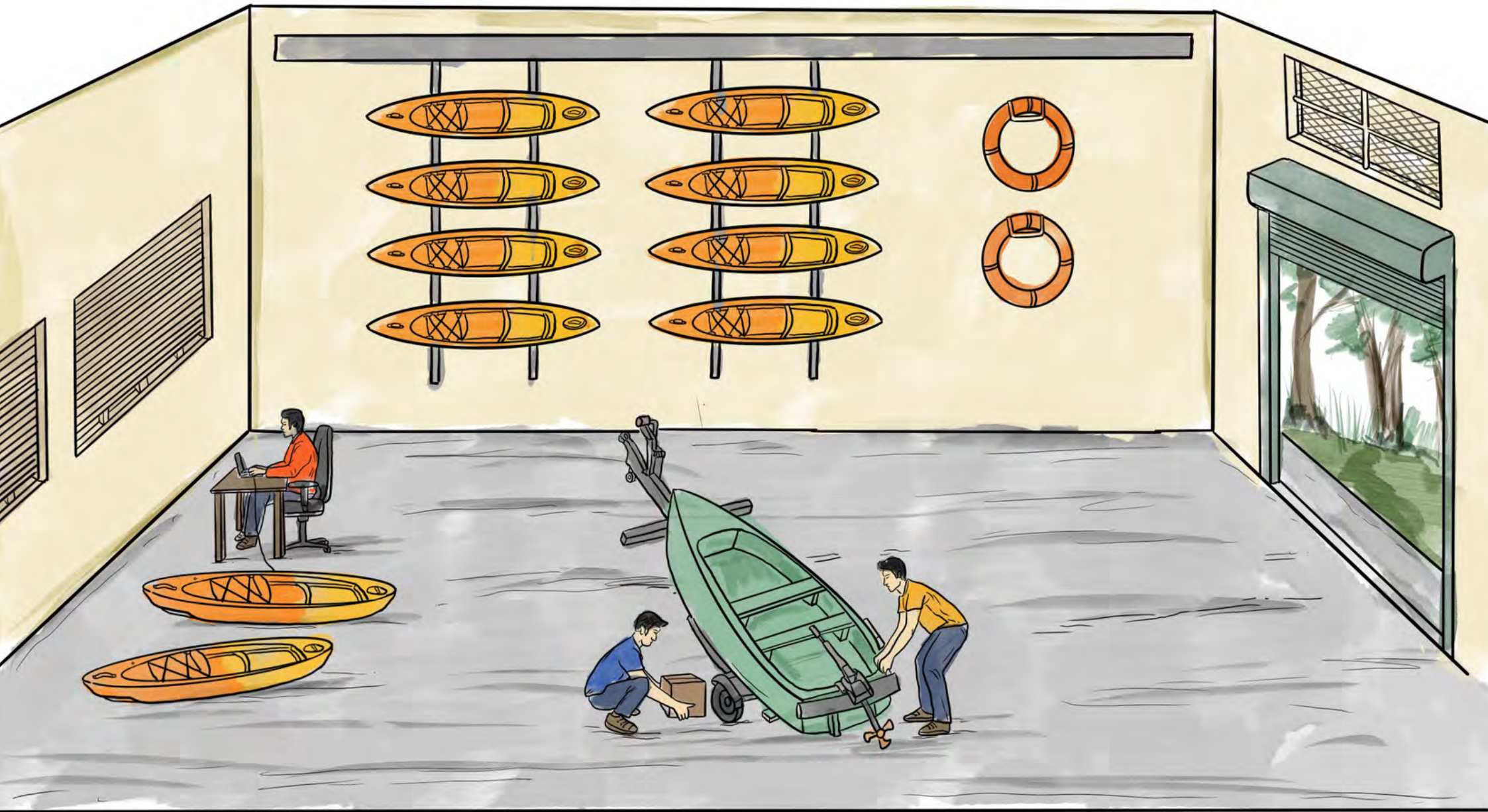
AUTONOMOUS AERIAL VEHICLE (DAY & NIGHT RUNTIME)

AUTONOMOUS MARINE VEHICLE/ VESSEL



Unmanned Marine vessel for particular mission, the risk of human drowning can be mitigated. By providing early buoyancy, victims can be kept afloat until assistance arrives. Unmanned rescue vessel has the potential to transport and deliver an inflatable life buoy/life saving equipment in order to provide early flotation and prevent submersion.





PORTABLE CABIN / CONTAINER SETUP FOR AUTONOMOUS MARINE VEHICLE/ VESSEL

ACTION COMMITTEE



Dr. Pruthviraj Umesh
SEARCH Project Head
Assistant Professor, WR&OE
NITK Surathkal



Prof. K.V. Gangadharan
CSD'S Coordinator
Professor, Mechanical Engineering
NITK Surathkal



Dr. Mohit P. Tahiliani
Wireless network Integrator
Asst. Professor, CS & Engineering
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Prof. Kiran G Shirlal
Coastal Engineering
Professor, WR&OE
NITK Surathkal



Prof. Shrikantha S. Rao
AI/ ML - Mechatronics
Professor, Mechanical Engineering
NITK Surathkal



Prof. Prasad Krishna
Director
NITK Surathkal



Prof. Vijay H. Desai
Dean AAIR
NITK Surathkal



A S Karanth
1970 Batch



Representative
NITK Alumni

STUDENTS CORE TEAM

Mr. Rajath C Kotekar, MTech (R), JRF
Mr. Rakshith Kotian, MTech (R), JRF
Mr. Nithin Manoharan, JRF
Mr. Manish ES, JRF
Mr. Latheesh Shetty, JRF
Mr. Thomas Alvin, JRF
Mr. Karthik Salian, Field Assistant
Mr. Karthik Shetty, JRF
Mr. Dixith Anchan, JRF
Mr. Dheeraj GK, Field Assistant

Mr. Shanker, JRF
Mr. Shamanth Gowda, JRF
Mr. Abdhul Shameer, JRF
Mr. Keith Christan Noronha, JRF
Mrs. Aishwarya Hegde, Phd., SRF
Mrs. Swathi Shetty, (PhD) SRF
Mr. Sandesh Bhaktha B, (Phd), SRF
Mr. Vishwas A S, MTech (R), JRF
Mrs. Shreshta, SRF
Mrs. Vismaya M Kumar, SRF

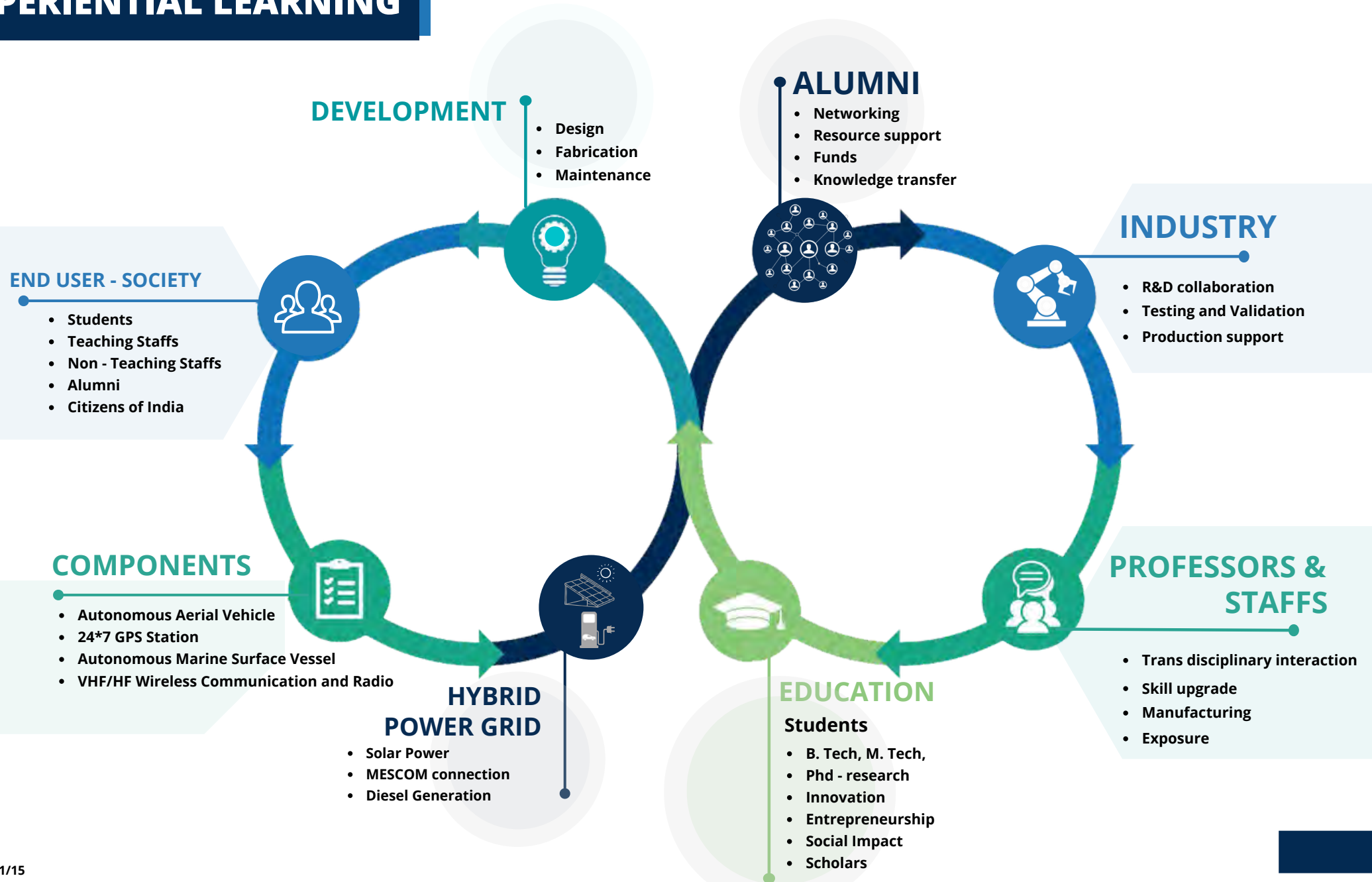
Mr. Sachin Shetty, Project Documenter
Mr. Sarvesh Naik, Project Documenter
Mr. Nikhil P Ail, Project Documenter
Mr. Abhinav A, Project Documenter
Mr. Shibi Manohar, Illustrator
Mr. Hemanth Nitesh Kumar, Technical Assistant
Ms. Nishika, Junior Assistant
Mrs. Lavanya K, Junior Assistant
Ms. Meghana , Junior Assistant
Mr. Abhijith P A, Project Manager

&

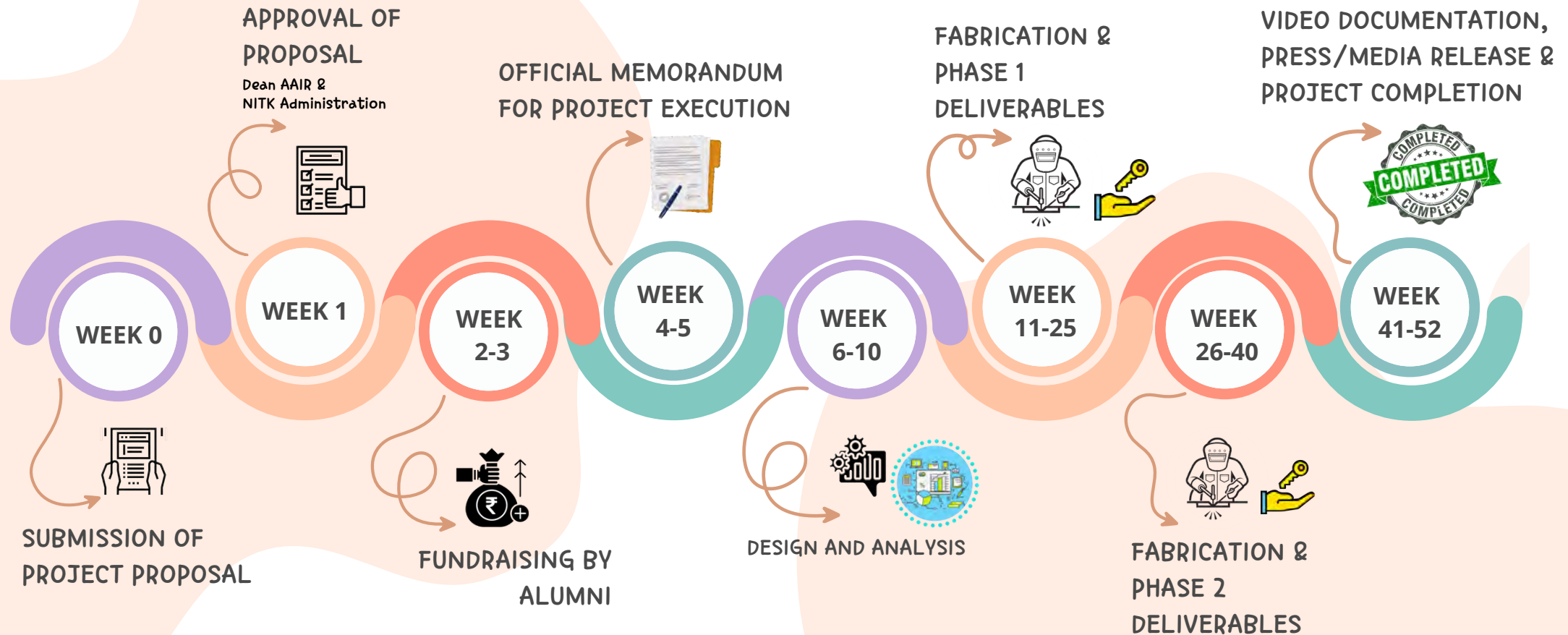
100+ B-Tech & M-Tech Students involved in design, development, & execution of SEARCH

SEARCH ECO SYSTEM

EXPERIENTIAL LEARNING



TIMELINE & ROADMAP



BUDGETARY REQUIREMENTS

DESIGN, FABRICATION, MAINTENANCE OF PORTABLE CABIN

Portable All Weather Containers with foundation & basic amenities, PCs, Display panels, CCTV, weather station, 365 days RTK GPS station, hardware Lab/ basic workshop setup, 24*7 Power Supply Unit (Diesel generator - 30kVA and Solar PV 10kW) chemical earthing, drinking water, Road Network & Drainage Network



₹ 37,85,000/-

HF/VHF RADIO COMMUNICATION SETUP WITH ANTENNAS

₹ 13,17,500/-

AUTONOMOUS AERIAL VEHICLE (DAY & NIGHT RUNTIME)

₹ 31,35,000/-

AUTONOMOUS MARINE VEHICLE/ VESSEL

₹ 18,13,500/-

Total : ₹ 1,00,51,000/-

AN EARNEST PLEA TO NITK ALUMNI

The success of any school can be measured by the contribution that the Alumni make to our national life. – John F. Kennedy

Alumni are the backbone of any educational institution's success, and it is in the alumni's generous hands to help the institute when the need arises. We at the Centre for System Design, NITK Surathkal, humbly request that all of you come forward and willingly support SEARCH (Surveillance & Early Action Rescue Communication Hub), our effort to be pioneers in active disaster management education for students. Your contributions will go a long way in making the institute first of it's kind to execute a project of this manner. Professors from the NITK fraternity and Alumni Association members will serve on the SEARCH project assessment committee, which will also include the contributors. Donors will have a voice in how the initiative progresses. We pledge to preserve transparency in all of our dealings, and the project's outcome will be shared on social media and YouTube.

SURVEILLANCE & EARLY ACTION RESCUE COMMUNICATION HUB

SEARCH

TO AID IN MAKING A NATIONAL IMPACT

Donation Transfer Details

Name of the Account Holder

NITK/KREC Endowment Fund

Account Number

37481178720

Name of the Bank

State Bank of India

Branch Surathkal, Mangalore

Address

Surathkal Branch, NITK Campus,
P.O.Srinivasanagar, Dakshina Kannada,
575025

IFSC Code

SBIN0002273

SPIN-OFF EFFECT



Provide students with challenging and holistic experience in design and development of industry grade equipments and in turn benefit both institution and society by providing a 24*7 hub in the coast of Surathkal further increasing the cause of 'Giving back to the Society'

IMPETUS TOWARDS INNOVATIVE RESEARCH



The initiative aims to collaborate and coordinate between different disciplines of engineering and industry to create a model on impact of resources of educational institute in areas of national interest



Stepping stone to develop scalable solutions for emergency task force and disaster management training in education

