FIRESCUE

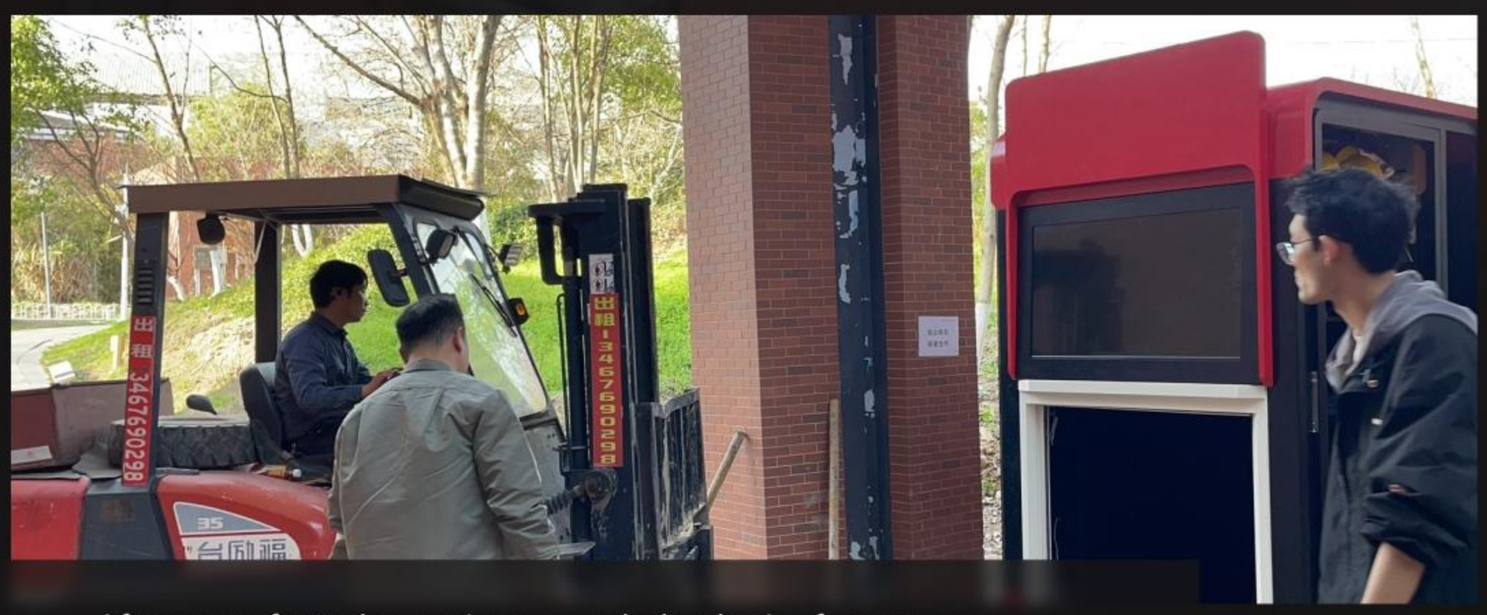
MANUFACTURING

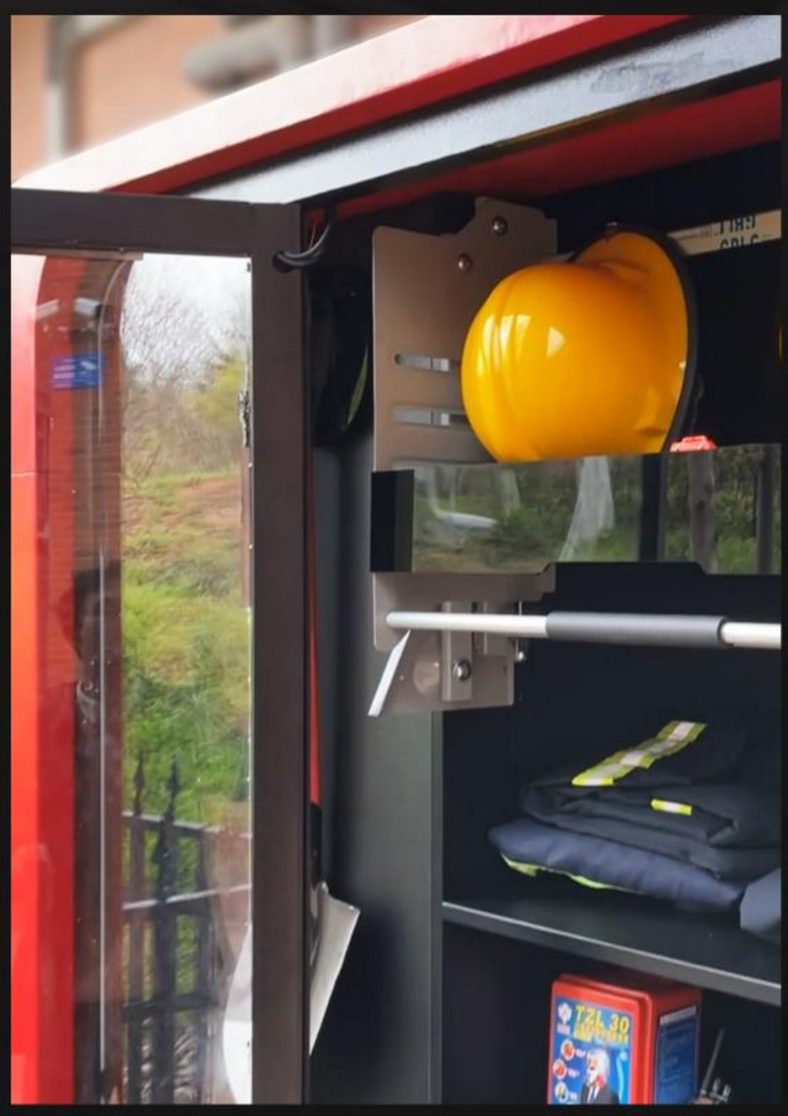
MAIN FRAME TECHNOLOGY

- The main frame is made entirely of stainless steel plates.
- The **production process** involves laser cutting for material reduction, CNC bending, and welding to form.
- **Reinforcement ribs** are added to the inside of the lower base for reinforcement.
- **Positioning posts** are made at both ends of the middle column, and positioning holes are left in the upper and lower bases.
- **The upper and lower bases** are connected to the column with bolts.

SIDE DOOR FRAME CRAFT

- Both the main frame and door frame of the side are made of stainless steel plates processed by **laser cutting.**
- The back is reinforced with **square tubes** and welded into shape through a welding process.
- A single piece of semi-transparent black tempered glass covers the small door frame for a **sleek and modern appearance.**





- After manufacturing and spray-painting in the factory, we **transported** the product to the school laboratory with a forklift for detail processing.
- We created the **internal structure** using wood and paneling and installed the corresponding sensors and wiring.
- Finally, we placed the **envisioned firefighting device** and corresponding **drones** and backend **system**.
- We **tested** the effectiveness of the operation to ensure its functionality.

EXPLOSION DIAGRAM & CONSTRUCTION PROGRESS

FIRESCUE

COMMUNITY SMART SLIM FIRE EMERGENCY STATION

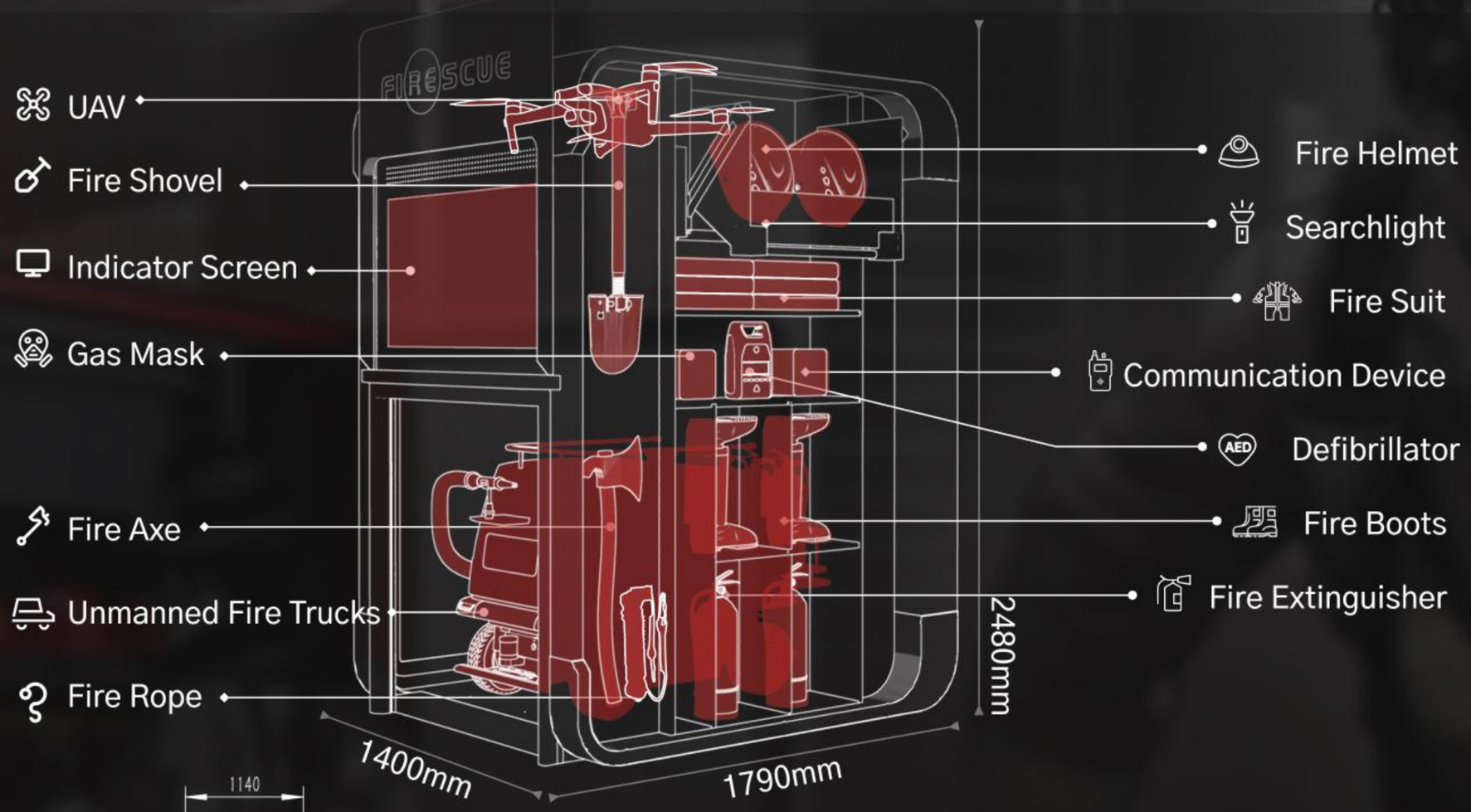
The project investigates fire monitoring, early warning, prevention, and control technologies, developing an Intelligent Small Fire Emergency Station. Adaptable to various environments, emergency needs, and personnel skill levels, it shortens construction time.

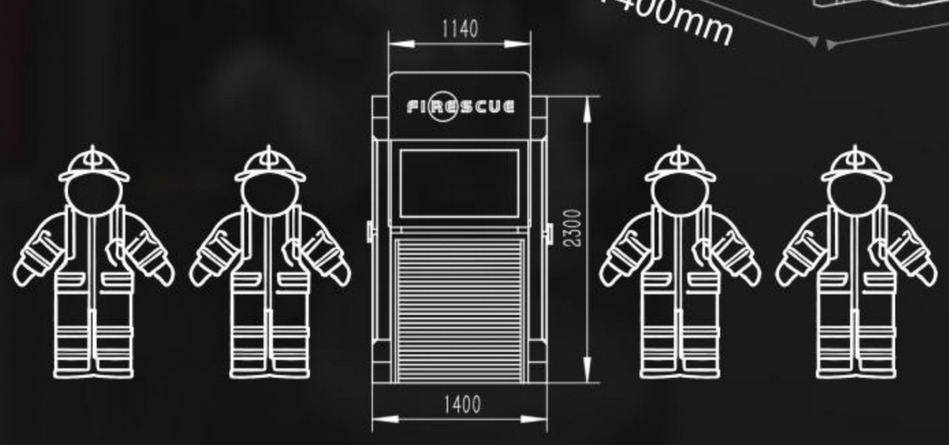
It accurately senses equipment status during rescue, provides automatic maintenance warnings, self-checks for faults, and assesses rescue capabilities. Suitable for firefighters, trained volunteers, and residents with basic fire training.

SLIM **QUICKLY EQUIP 4 FIREFIGHTERS** **SMART** **WELL-EQUIPPED**

EXTINGUISH THE FIRE IN TIME

SPACE LAYOUT





It's Equipped For

4 People With Essential Gear.

This equipment empowers teams of firefighters, volunteers, and trained residents to efficiently address emergencies, enhancing community safety.

BACKEND SYSTEM

LAUNCH RESCUE MISSIONS

PROPAGANDA

EQUIPMENT MANAGEMENT

INTELLIGENT FIRE DETECTION

UAV PATROL

The interface prioritizes simplicity and user-friendliness. It covers operation and maintenance, featuring four main modules: **drone inspection, equipment monitoring, emergency rescue, and promotion management.** This streamlined interface ensures efficient emergency response and management.

BACKGROUND

CURRENT PROBLEM

Currently, **The Firefighting And Emergency Response System** is confronted with challenges like delayed response times, an uneven distribution of rescue facilities, and a wide variety of complex disaster situations. To enhance the efficiency of firefighting and rescue operations, as well as to increase the capacity to handle various types of disasters, it is crucial to resolve these issues.

Delayed Response Time

In the Grenfell Tower fire, communication and coordination issues led to delayed response, causing more casualties. Addressing delays is crucial for saving lives and minimizing fire damage.

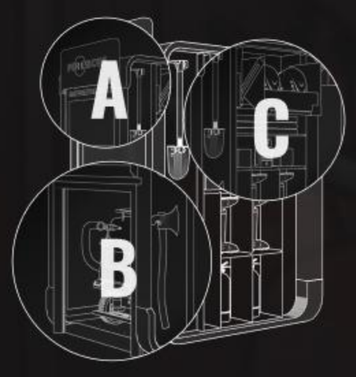
Uneven Distribution Of Rescue Facilities

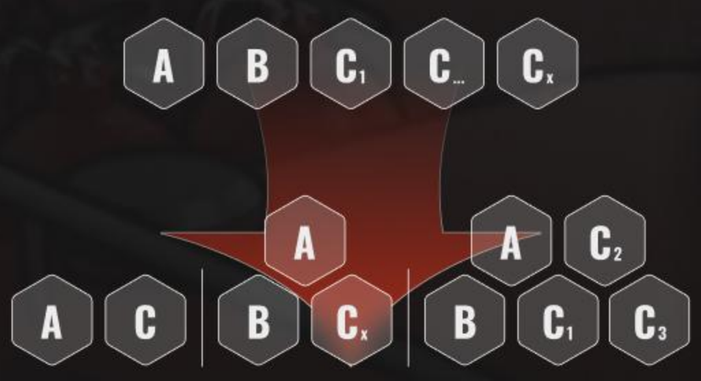
During the 2019-2020 Australian bushfires, remote communities were more vulnerable due to the lack of nearby firefighting resources. Equitable distribution of facilities is vital for an effective response across regions.

Complex And Diverse Disaster Situations

Community fires can present unique challenges due to the proximity of homes, limited access points, and potential evacuation issues. The 2018 Camp Fire in California demonstrated the unique challenges of community fires.

SOLUTION





Modular Intelligent Small Fire Emergency Stations can be flexibly assembled based on the environment, emergency needs of the community and organizations, as well as the knowledge and skill levels of different managers.

FIXED, RESOURCE-INTENSIVE
LONGER CONSTRUCTION

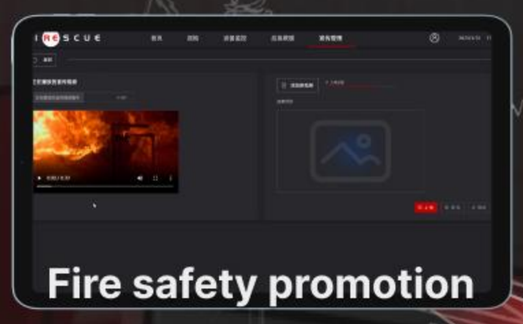
FLEXIBLE, EFFICIENT
RAPID DEPLOYMENT

This approach shortens the construction cycle of small emergency stations and enhances their operational efficiency.

FIRESCUE

COMMUNITY SMART SLIM FIRE EMERGENCY STATION

FIRESCUE STORYBOARD



Fire safety promotion on large screen.

FIRE PROMOTION

- Surveillance personnel can also change the displayed information through the back end.

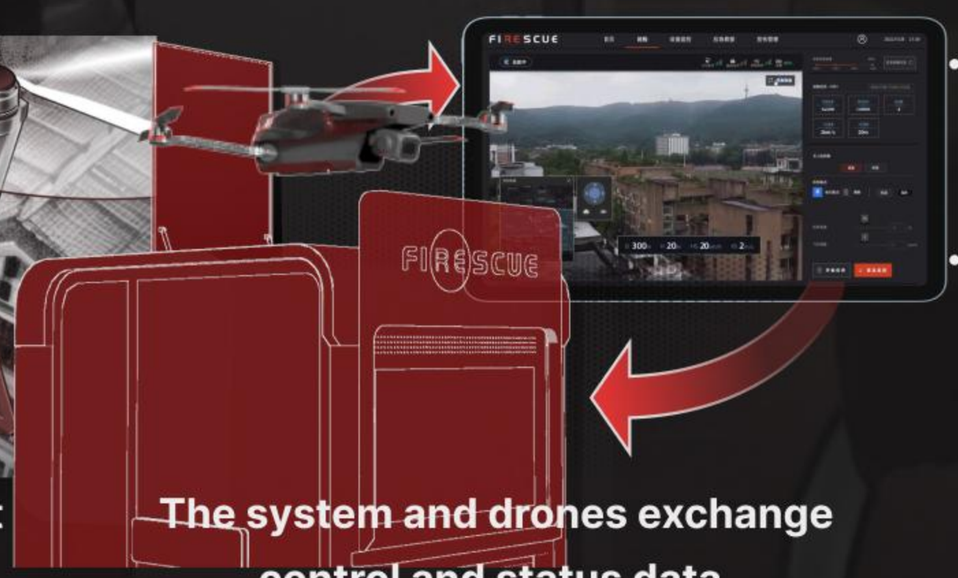
Sensors monitor equipment.

Station self-checks and sends data.

System alerts prompt maintenance by engineers.

EQUIPMENT SELF-TEST

Drone patrols enable prompt fire detection.



The system and drones exchange control and status data.

- drones in the Intelligent Small Fire Emergency Station autonomously perform scheduled patrols.
- They relay real-time data and status to the station, which forwards it to the backend system for analysis.

ROUTINE CHECKE

System directs station and alerts firefighters

Firefighters use station equipment to extinguish fire.

EMERGENCY RESCUE

Nearest Intelligent Station assists

and quickly equip four firefighters