

RESXPRESS+

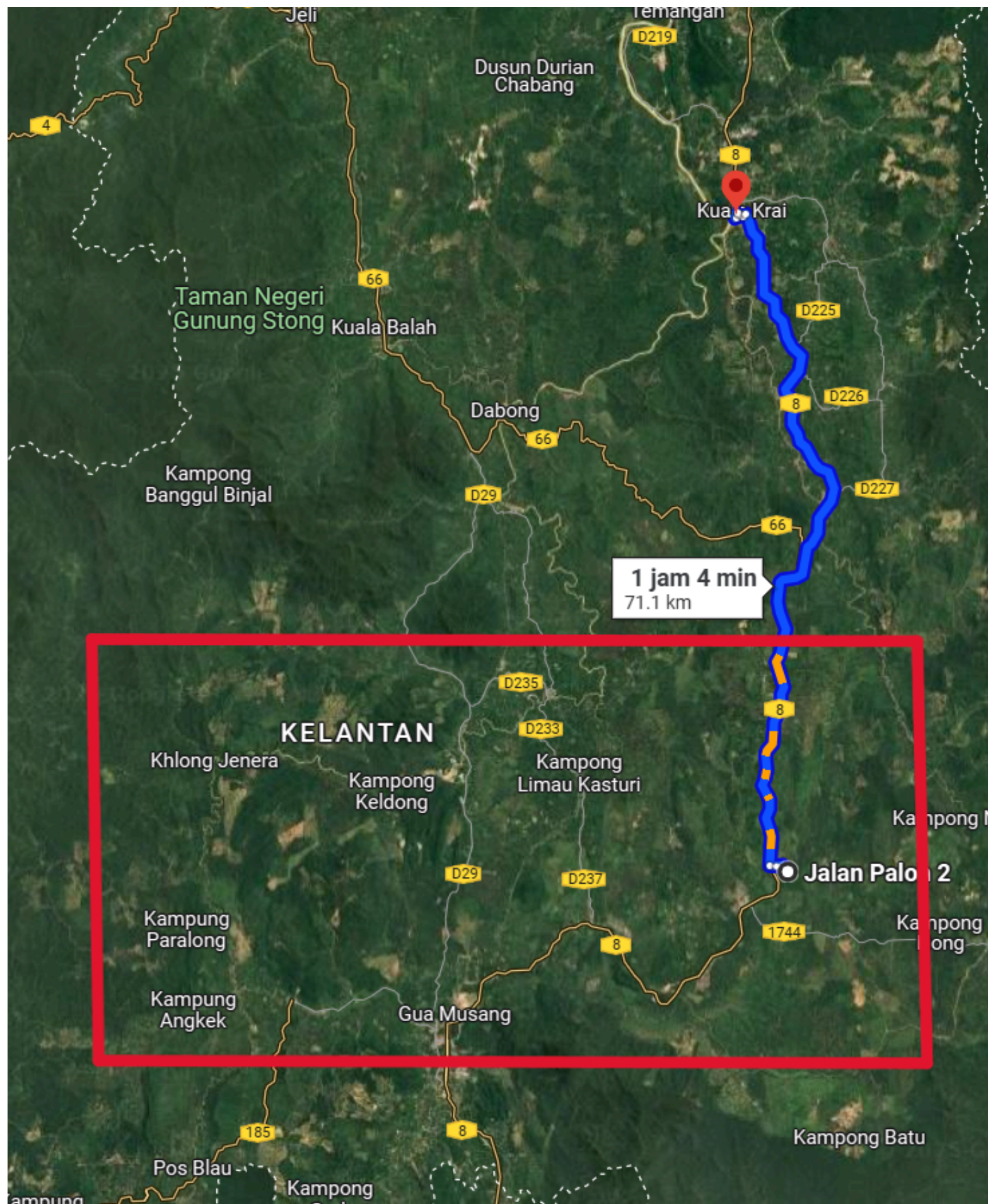
AN EMERGENCY RESPONSE MECHANISM WITH SMART MOBILITY
FOR PRE-HOSPITAL CARE SERVICE ON RURAL AREAS

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OVERVIEW OF THE THEME

In Malaysia, particularly in rural areas like Gua Musang, Kelantan, access to emergency medical services is highly limited. Many villages are located far from hospitals, and poor road conditions further delay response times. The lack of proper ambulance services leads to severe consequences.

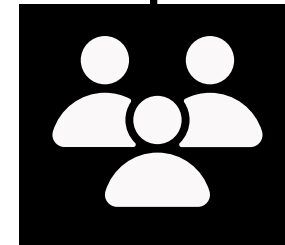


GUA MUSANG, KELANTAN



ISSUE ON MY PLACE

- Poor road infrastructure
- Lack of well-equipped ambulances
- Limited healthcare facilities
- Ambulances in my country cannot be hit by floods.



IMPACT ON SOCIETY

- The impact when families struggle with medical emergencies without appropriate transportation.
- Delayed medical response
- Lack of medical equipment in ambulances can lead to more serious illnesses





WHY THIS THEME ?

This project was selected to address the urgent need for innovative technology-driven solutions to improve medical facilities in Gua Musang, Kelantan. By introducing the RESXPRESS+, a vehicle equipped with complete medical technology and capable of navigating through a variety of terrains such as damaged or flooded roads.



**POOR ROAD CONDITIONS**

PERSONAL EXPERIENCE

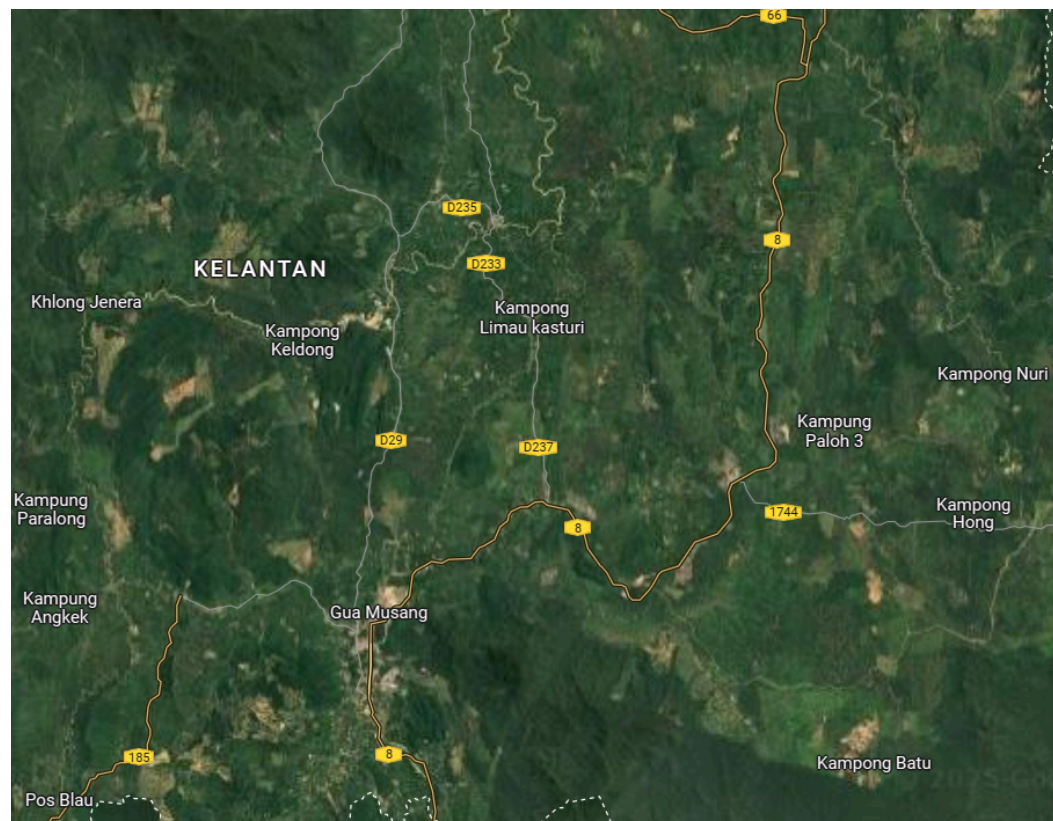
Incident Observed

- Saw an ambulance struggling to navigate damaged roads and floodwaters.
- Elderly patient (~80s) in critical condition needed urgent medical attention.
- Ambulance was delayed due to impassable roads.

Lack of Proper Medical Equipment

- Hospital could not provide immediate treatment due to the ambulance's limited medical technology.
- Delay in care worsened the patient's condition.

**AMBULANCE LACK PROPER
MEDICAL EQUIPMENT****PATIENT CRITICAL CONDITION****FLOODWATERS**



Location Rural Areas



Existing Vehicle



People in Rural Area

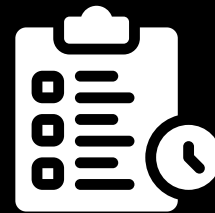
RESEARCH AND HYPOTHESIS

The lack of efficient emergency response in rural Malaysia such as **Gua Musang, Kelantan** is due to *poor road infrastructure, limited ambulance availability, and inadequate medical equipment*. Research shows that rural hospitals are extremely remote, exacerbated by communication barriers and natural disasters such as floods. This issue has existed for decades but has become more critical with the increasing rural population. If not addressed, it will lead to higher patient rates, healthcare inequities, and economic burdens. Addressing this challenge requires innovative mobility solutions such as **RESXPRESS+**.



CAUSES OF THE ISSUE

- Poor road infrastructure
- Lack of well-equipped ambulances
- Limited healthcare facilities
- Ambulances in my country cannot be hit by floods.



WHEN DID THE ISSUE ARISE?

- Existing problem for decades, worsened by population growth in rural areas.
- COVID-19 pandemic exposed weaknesses in rural emergency response.

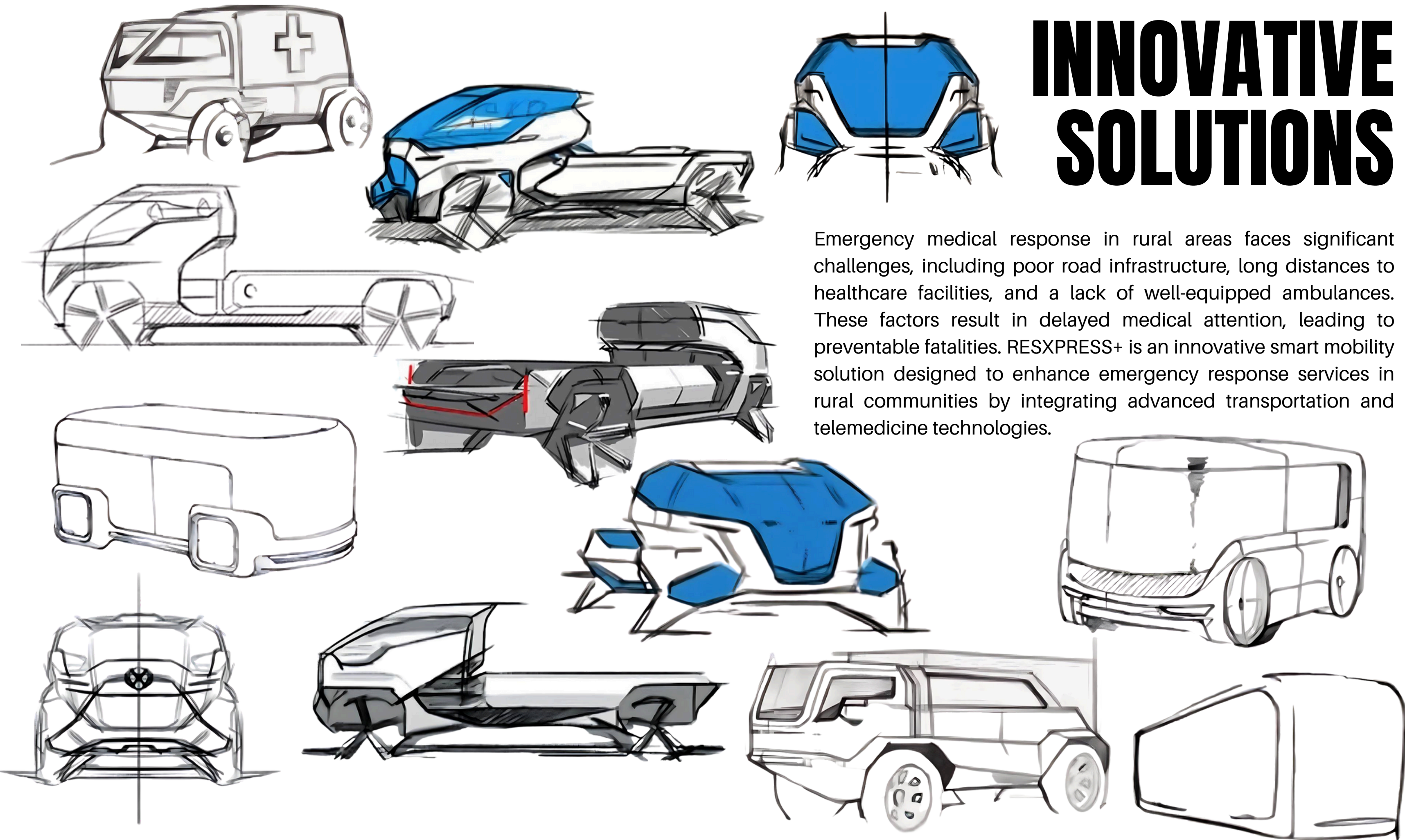


CONSEQUENCES IF THE ISSUE CONTINUES

- **High Mortality Rates** more preventable deaths due to delayed medical treatment.
- **Increased Healthcare Inequality** rural communities will continue to lack proper emergency care.
- **Economic Impact** families may face higher medical expenses and lost income due to inadequate emergency care.

INNOVATIVE SOLUTIONS

Emergency medical response in rural areas faces significant challenges, including poor road infrastructure, long distances to healthcare facilities, and a lack of well-equipped ambulances. These factors result in delayed medical attention, leading to preventable fatalities. RESXPRESS+ is an innovative smart mobility solution designed to enhance emergency response services in rural communities by integrating advanced transportation and telemedicine technologies.





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EXTERIOR DESIGN



RESXPRESS+

SPECIFICATION

Vehicle Type : Compact Off-Road Ambulance

Dimensions : Approx. 5.4m (L) × 2.0m (W) × 2.2m (H)

Seating Capacity : Driver + 2 Medical + 2 Patient

Powertrain : Hybrid (Electric + Engine + Solar) for low emissions & longer range

Battery & Range :50 kWh battery + fuel tankl, 300-400 km range

Terrain Capability : 4x4 drivetrain

Max Speed : 100 km/h (optimized for rural road conditions)

Medical Equipment : Modular emergency medical unit with essential pre-hospital care tools

Connectivity : 5G-enabled telemedicine system for remote consultation

FEATURE

Advanced Medical Support

- **Built-in Oxygen Supply & Defibrillator** For immediate life-saving interventions.
- **Foldable Stretcher System** For easy patient loading/unloading.
- **Remote Patient Monitoring** Wearable devices transmit real-time vitals to hospitals.

Sustainable & Energy Efficient

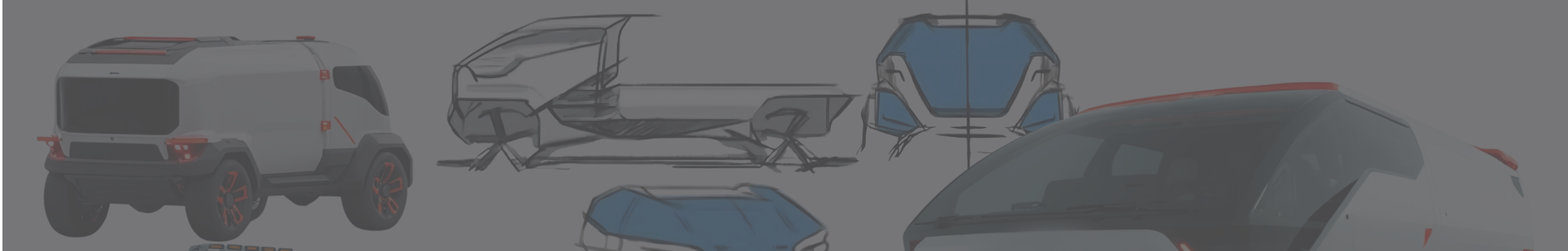
- **Solar-Assisted Charging** Roof-mounted solar panels to extend battery life.

Ergonomic & Safe Design

- **Shock-Absorbing Seats** Reduces impact during off-road travel.
- **Dual-Mode Suspension** Automatically adjusts based on terrain (smooth roads vs. rocky trails).
- **Compact Design** Small footprint to navigate narrow rural paths.

FUNCTIONALITY

- **Off-Grid Operability** runs on hybrid energy sources to ensure functionality even in areas with no charging stations.
- **Telemedicine & Smart Connectivity** Allows paramedics to consult with doctors remotely via integrated cameras and medical sensors.
- **Self-Sufficient Power** Solar panels and regenerative braking help extend battery life.



THANK YOU!

*"CREATIVE PRODUCTS ARE A FORM OF INNOVATION
AND IDEAS EXPRESSED BY ARTISTS"*

-Alexander Aronowitz-

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