

Safety Tips to Avoid Lightning Strikes



Project Title Real-Time Lightning 3D Imaging and Forecasting Project for Sustainable and Reliable Supply of Energy and Storm Disaster Early Warning (RTL-3D)

Project Period 11 June 2023 - 10 June 2028

Project Area Between Kuala Lumpur and Melaka, Malaysia (To be extended to Johor.)

Project Purpose Real-time Lightning 3D Imaging and nowcasting are achieved as social implementation product.

UNITEN Showroom
Level 4, Library, UNITEN
Jalan IKRAM-UNITEN ,
Kajang, Malaysia, 43000

UTeM Showroom
Coming soon.

Project Main Office
Centre of Technology for Disaster Risk Reduction (CDR)
Fakulti Teknologi dan Kejuruteraan Elektronik dan Komputer (FTKEK)
Universiti Teknikal Malaysia Melaka (UTeM)
Jl. Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, MALAYSIA

Protect from LIGHTNING STRIKES



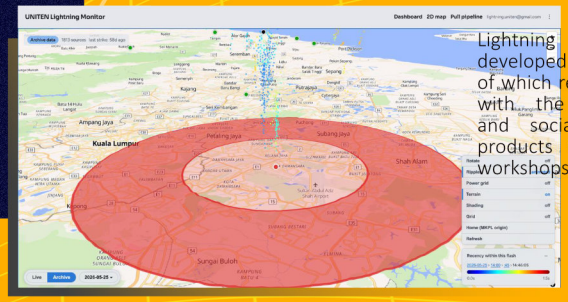
ALERT SYSTEM

MALAYSIA: Lightning Hotspot

- Lightning occurs 180-260 days per year (Kuala Lumpur).
- Lightning casualities are over 20 per year.
- Over RM250 Million / 10 billion JPY lost annually.

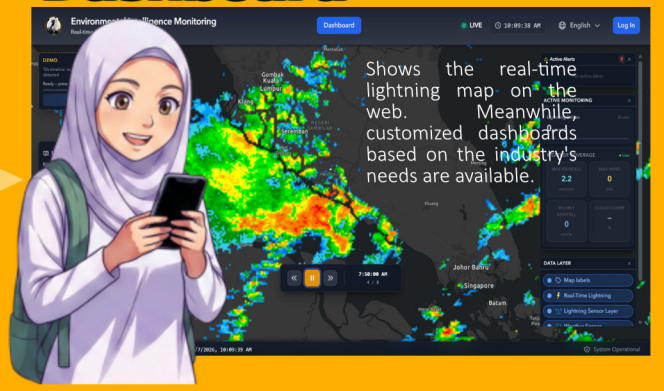
Nowcasting & Alert System

STRIKE POINT in 10 minutes



Lightning nowcasting is developed with alert system, of which results are delivered with the countermeasures and social implementation products through seminars, workshops, and symposiums.

Dashboard



Shows the real-time lightning map on the web. Meanwhile, customized dashboards based on the industry's needs are available.

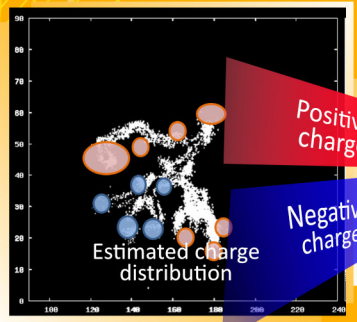
FIRST in MALAYSIA

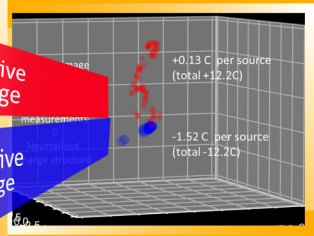
Rocket Triggered Lightning (RTL)



The first RTL in Malaysia was achieved by the project 3 May 2026, UTeM RTL Site in Melaka. RTL is a technique in which a small rocket pulls up a grounded wire beneath a thundercloud to artificially trigger a lightning strike. It is used for advancing scientific understanding of lightning mechanisms.

Real Time 3D Model





Thunderclouds

The model can estimate the charge distribution inside thunderclouds, i.e. how electricity is distributed. It is validated with real lightning strikes obtained through a transmission tower or Rocke Triggered Lightning which intentionally forces a lightning bolt to strike a specific spot on the ground.

Auto Power Switch



Changes the power source between commercial and back up power upon receiving the signal from the Alert Sytem.

Observation Network



The network, which consists of an array of sensors, has been continuously providing the observation data since 2025. It covers the area between Kuala Lumpur and Melaka. An extension of the coverage area to Johor is underway.



LF Sensor



Captured by a High Speed Camera

Award Winning Technology

8 paper awards

MyHVnet2024, APL2025, RFM2025, PIERS2025, ICIMR2025, SAEJ

Alarm Device

Issues alarm with siren and light when a lightning strike is predicted.

