

EARLY WARNING & DISASTER MANAGEMENT

Single Suite Software for Early Warning and Disaster Management

CONTACT

Address

#21/1-1, Nawab Towers,
Cunningham Road,
Bengaluru, Karnataka - 560052

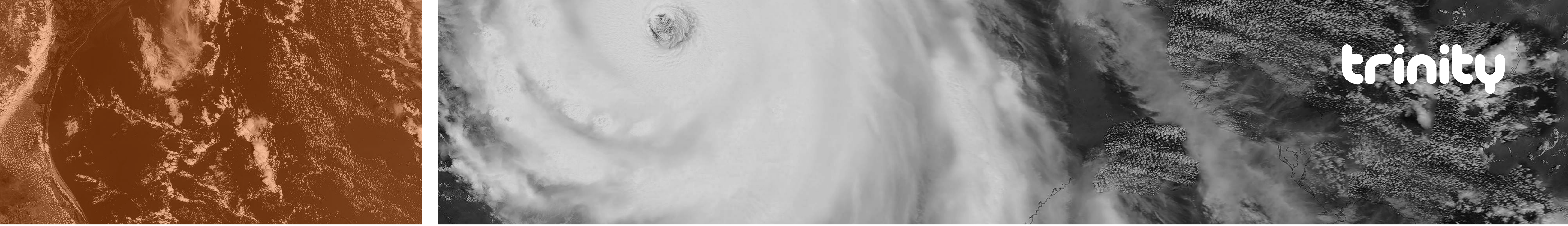
Phone | Online

Phone No.:

+91 8042 060 604

Website:

www.trinitymobility.com/



THE PROBLEM

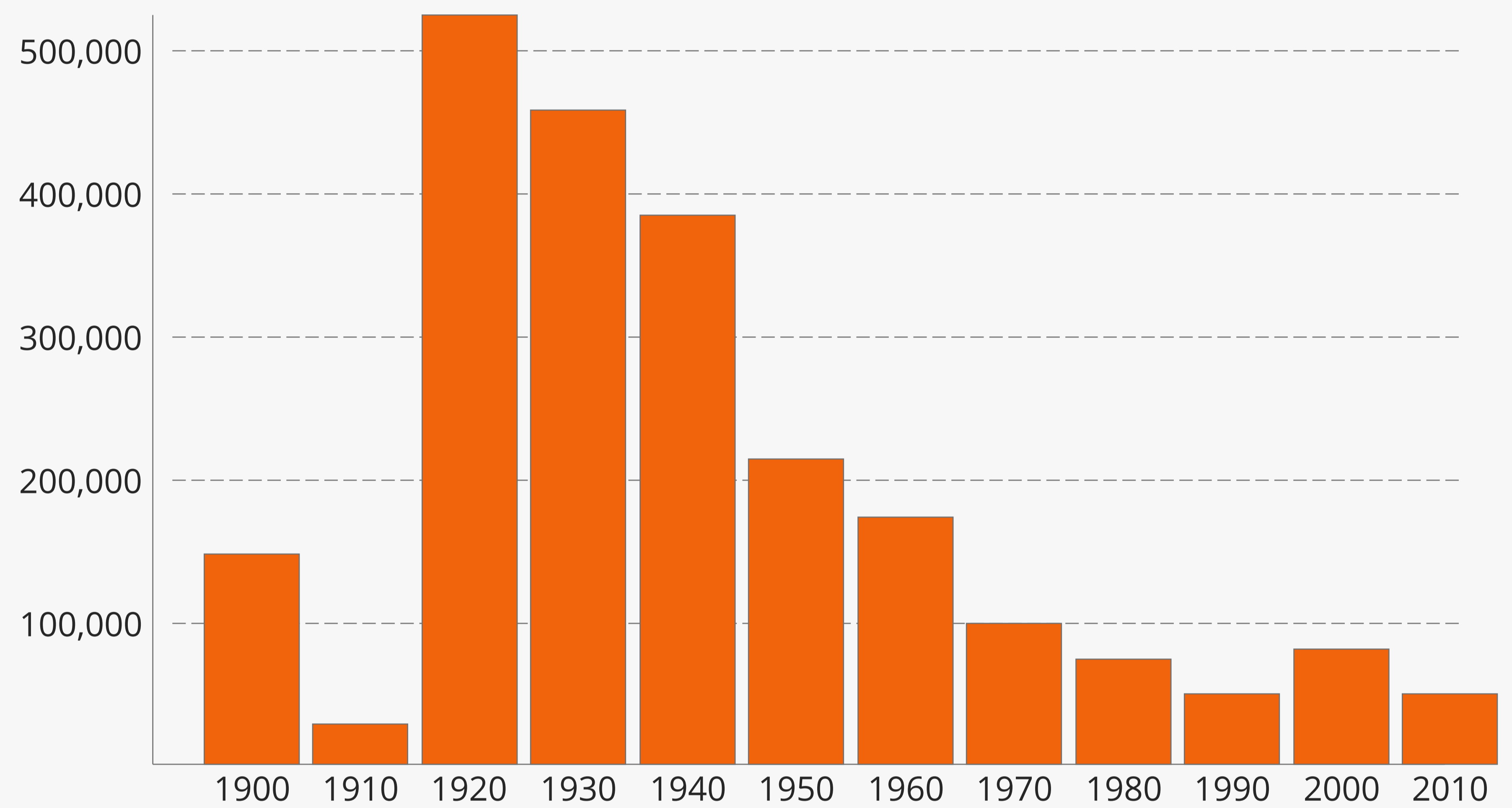
The exponential rise in the total number of natural disasters due to climate change has become inevitable. Along with the ever-growing population clustering & urban expansion in vulnerable zones, the environmental degradation has become worsened particularly in the densely populated areas.

As a result, the emergency management agencies must increase their planning capacity and response agility to minimise the impact in their communities. An estimated 90% of the recorded major disasters were caused by natural hazards from 1995 to 2020 were linked to climate and weather which include floods, storms, heatwaves, and droughts.

Decadal average: Number of deaths from disasters

Disaster include all geophysical, meteorological and climate events including earthquakes, volcanic activity, landslides, drought, wildfires, storms and flooding. Decadal figures are measured as the annual average over the subsequent 10 year period.

Source: Our world I Data based on EM-DAT, CRED/UCLouvain, Brussels, Belgium - www.emdat.be



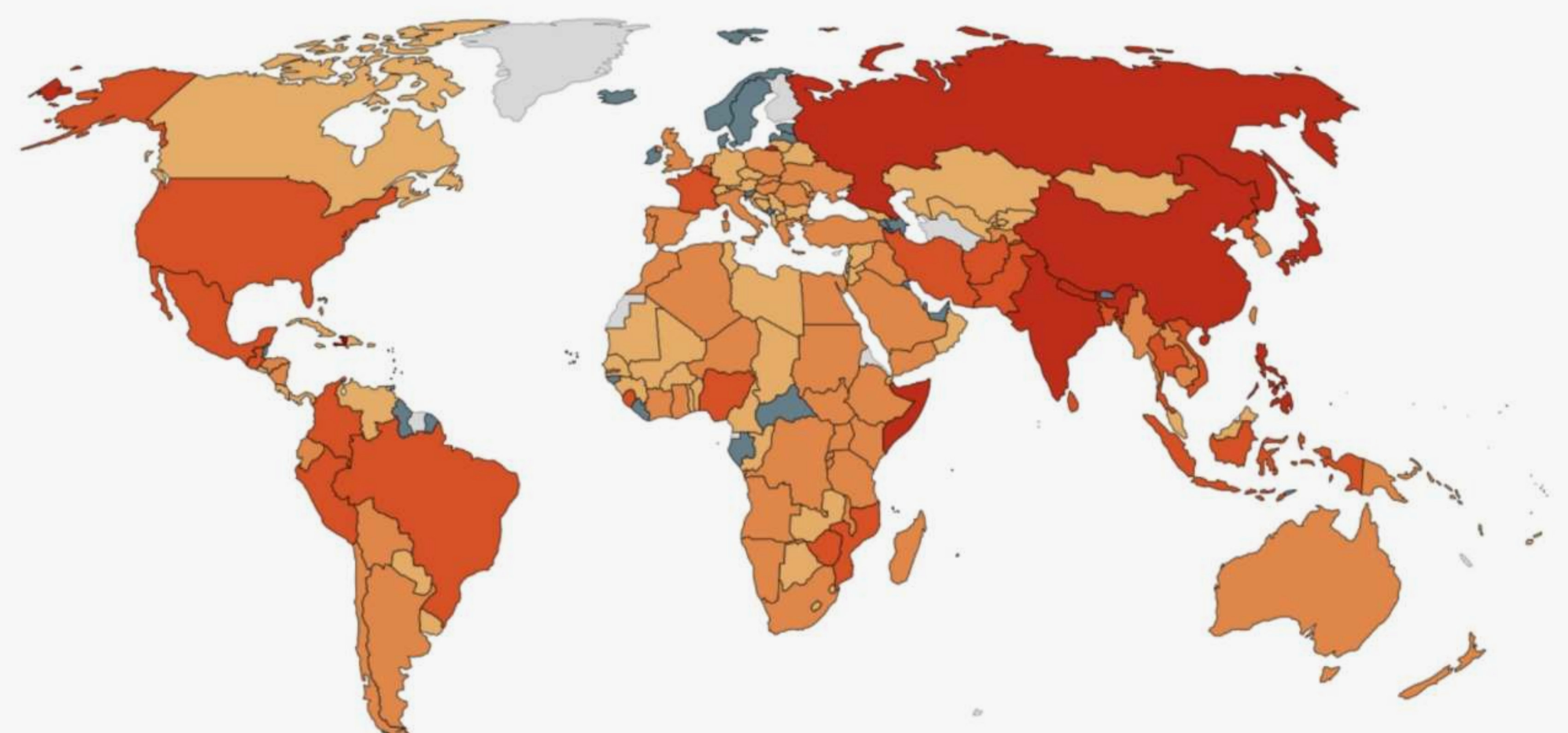
THE OUTSET

A fundamental pre-condition for minimizing the impact of a national level disaster is the availability of a well-functioning and a robust Early Warning System. An EWS that delivers accurate and reliable warning in real-time to authorities, operational disaster managers and citizens at risk to reduce the impact of impending disaster. Such systems must rely on commitment, collaboration, coordination, and information sharing across multiple levels (local, national, regional & international) & amongst different stakeholders.

Decadal average: Number of deaths from disasters, 2010

Disaster include all geophysical, meteorological and climate events including earthquakes, volcanic activity, landslides, drought, wildfires, storms and flooding. Decadal figures are measured as the annual average over the subsequent 10 year period.

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OUR SOLUTION

Trinity offers a holistic and a specialized approach to help solve these problems, meet unique goals, and achieve desired outcomes through its **Early Warning & Disaster Management Software Suite**.

Trinity's Early Warning and Disaster Management Software Suite is an advanced solution that integrates all the functions that are carried out during a disaster for city/state administrators and decision-makers to plan and execute suitable responses intelligently & efficiently.

Trinity's EWDM digital platform serves as a foundation for disaster management authorities to build **Integrated Command and Control Centres** that provides a 360-degree situational awareness lifecycle covering **Preparedness, Response, Recovery, and Mitigation**.

Disaster Risk Management Lifecycle



The Solution is an industry-standard-based Commercial-of-the-shelf product and adheres to the industry standards for its interoperability, data representation exchange, aggregation, virtualization, and flexibility.

SOLUTION STACK AND KEY OUTCOMES

Three Layers of Smartness

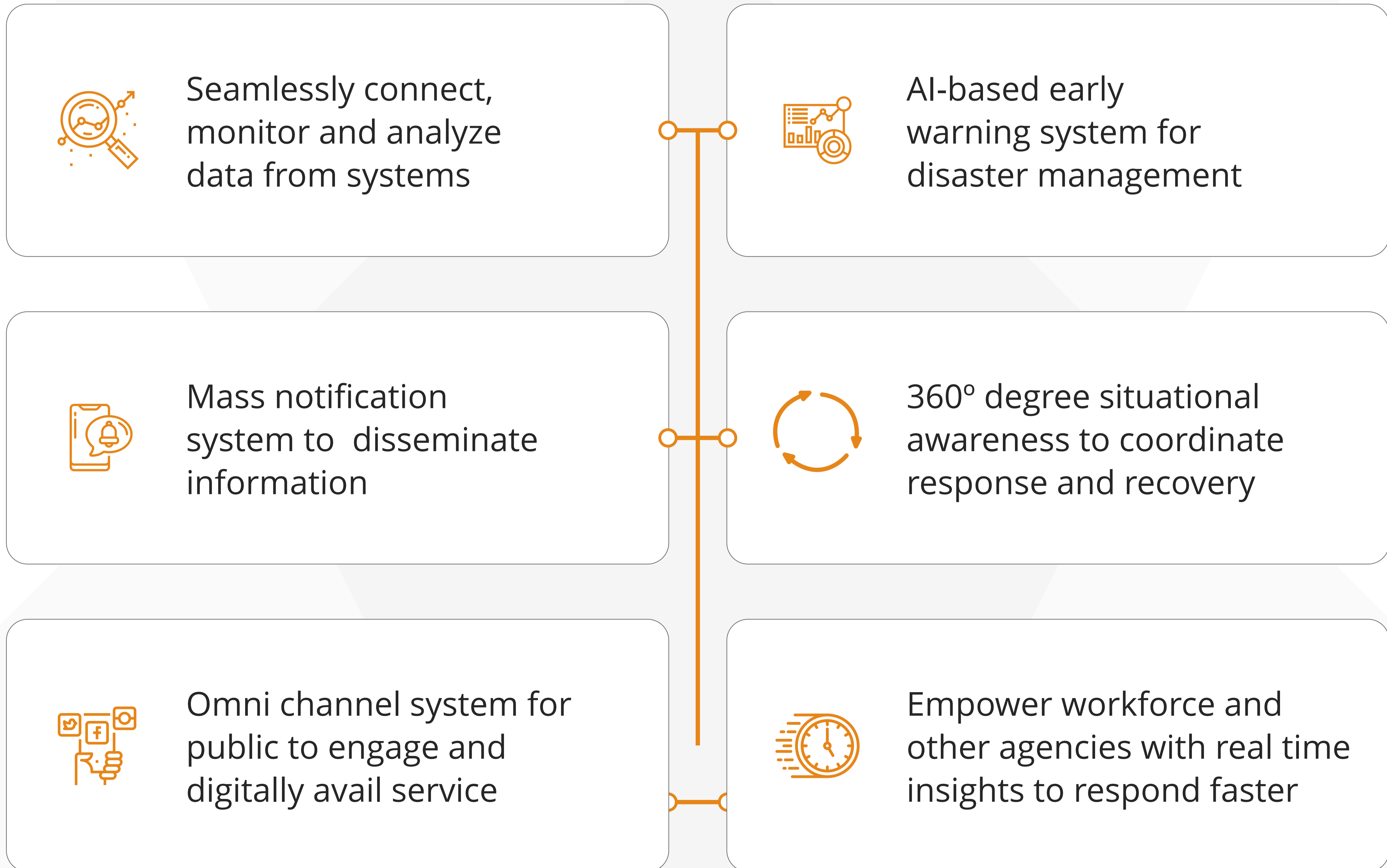
Persona



Applications



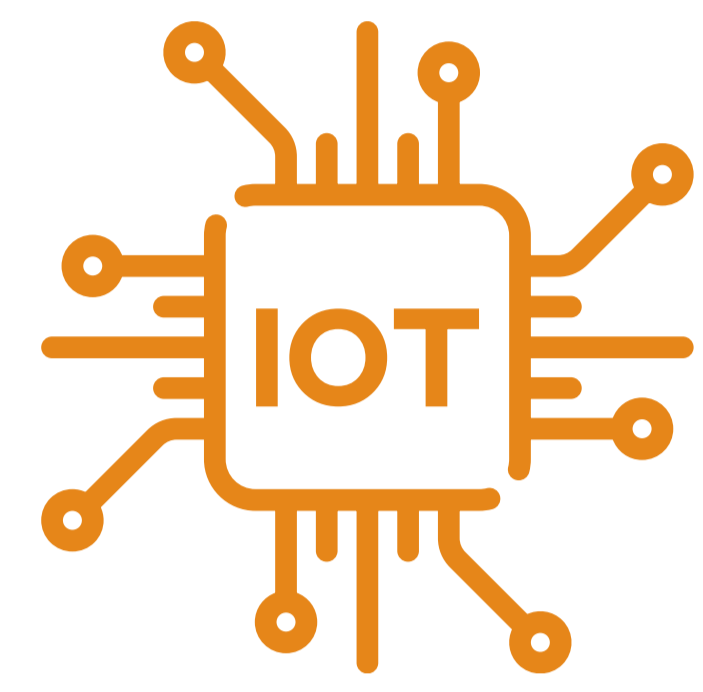
Platform



CORE PRODUCTS

trinityIoT - IoT and AI platform

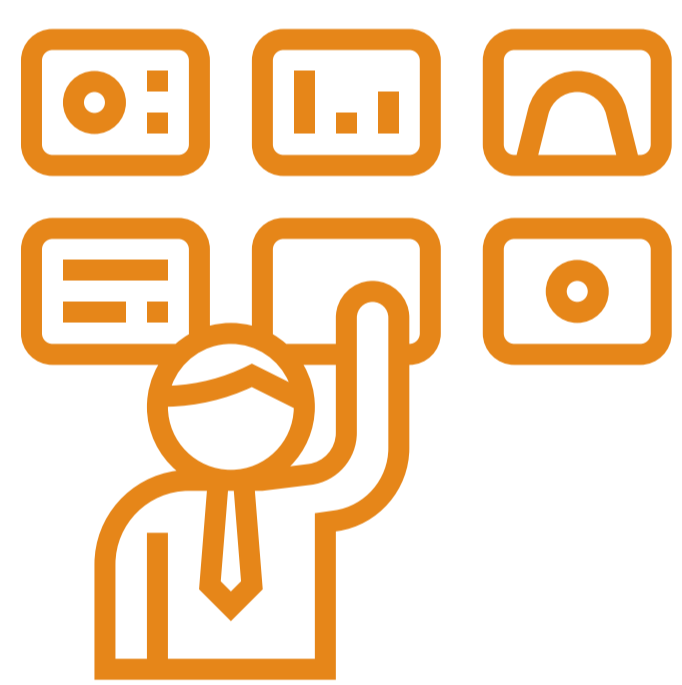
trinityIoT - The trinityIoT is an IoT and AI-based digital platform that enables data integration from multiple sensors and application systems, process data for complex events, store data for further consumption by northbound applications and provide advanced data analytics through built-in BI & AI Engine.



trinityICCC

Integrated Command & Control Center Platform

Early Warning System



Early Warning - The Early Warning module can be implemented as a chain of information communication systems which comprises of sensors, event detection, and decision subsystems for early identification of hazards. Thus, providing considerable time for the response mechanism to prepare for the adversity and hence minimize its impact.

Command and Control Center - The Application system provides a 360° situational awareness of all operations from the multi-layered sensor systems. A city-wide Disaster Management Operation Center enables operational efficiency for the authorities involved in disaster related activities.

Mass Notification - In the course of pre, during & post-disaster stages, Trinity's application assists the Command & Control Center for informing citizens & authorities simultaneously, with warning alerts using location & visual intelligence in the form of Mass notification.

CORE PRODUCTS



trinity^{ICCC} Situation Management

Integrated Command & Control Center Platform

trinity^{ICCC} Situation Management – The Situation Management application provides a 360° view of the situation lifecycle covering Preparedness, Response, Recovery, and Mitigation. The Operators can reduce the response time during natural disasters such as earthquakes, storms, urban flooding and other geological processes.

trinity^{MOBILE} - Workforce Management

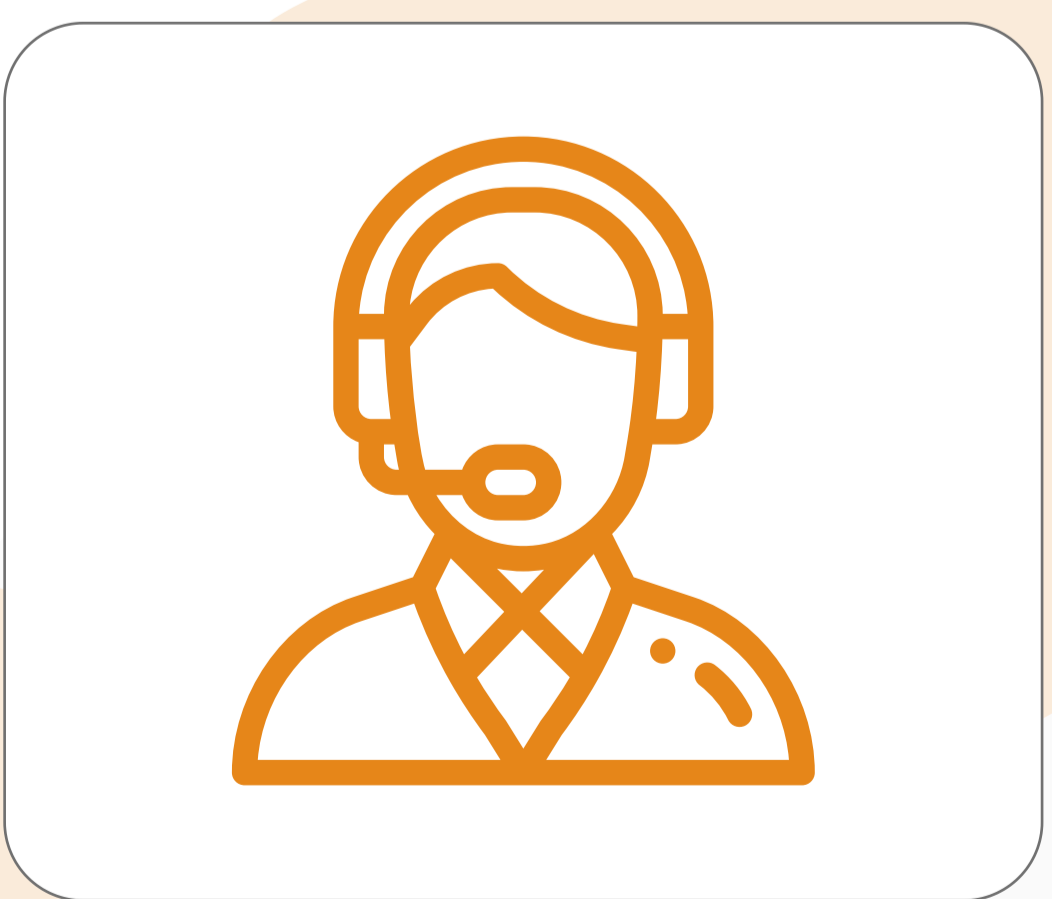
Mobile Workforce Management System

A Mobile Workforce - Integrated with trinityIoT Platform and other Applications, so that high functional Mobile Apps can be built and deployed seamlessly. It is based on Mobile Back End as a Service (mBaaS) architecture that combines the capabilities of the Mobile Enterprise Application Platform (MEAP), Cross Development Framework, Mobile Workforce Management System, and Mobile Apps to deliver a seamless solution during all the stages of the disaster. Workforce Damage Assessment will help the departments to collect the damage surveys after the disaster. This will help the stakeholders to track the number of surveys collected by workforce.



trinity^{RESPOND}

Computer Aided Dispatch (CAD) Software



It provides an end-to-end solution for Disaster Emergency Operations. It is tightly integrated and provides an in-built advanced GIS functionality for Location Intelligence-based workflows. Other sub-systems like unified communication & location detection system is seamlessly integrated to provide a rich set of functionalities. Various user personas such as Call Taker, Dispatcher, Supervisor, and Feedback Operators are supported through the CAD application.

BENEFITS



Reducing Casualties & Asset Losses

Early Warning Systems help in minimising economic losses and mitigate the number of injuries & deaths from a disaster; thereby saving lives & properties.



Data Management & Risk Assessment

Collating disaster risk knowledge based on systematic collection of data and disaster risk assessments.



Hazard Monitoring and Forecasting

Detection, Monitoring, Analysis, and Forecasting of hazards and assessment of collateral damage.



Preparedness & Mass Notification

Quick dissemination and communication, by an official source for providing a timely, accurate, and actionable warning. Maintain preparedness at all levels to respond to the received warnings.



Multilevel Co-ordination

These interrelated components need coordination within and across sectors at multiple levels that also includes a feedback mechanism for continuous improvement.

“ We learn from every natural disaster. Whether it’s a fire or a flood, we learn something from it so we can respond to the next one better.”

~ Malcolm Turnbull

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