# Earthquake Warning System for Metro Rail

## Introduction

Earthquake Warning System (EqWS) is a network of seismic sensing nodes (SSN) consisting of seismic sensors, communication, processors. EqWS consists of SSNs installed at different locations of Metro Network. These nodes generate signals due to seismic events/ earthquake occurring in the region. A central control provides alert signal based on the responses of all the Nodes.

## Applications

- EqWS developed may be utilized to safeguard installations such asRefineries, Nuclear establishments, Power Plants, Airports, Hospitals etc. by stopping/initiating the emergency facilities as per requirement.
- The technological solutions to handle such situations are site-specific and need to be devised locally. Porting of available global solutions would not meet the requirement which largely need customization.
- Earthquake warning system is the solution provided herein to activate the appropriate actions for safety.

## Features

- EqWS is a network of seismic sensing nodes (SSN) installed at different locations of Metro Network.
- These nodes generate warning signal to capture various earthquakes occurring in the region.
- EqWS system with several SSN placed at sensitive locations.
- Comprises geographically distributed plurality of SSN communicating to a central control using internet of things (IoT).
- IoT based warning initiation and warning dissemination modules.
- Warning dissemination modules inform client firstly about impending earthquake and further at exceeding each intensity level set by client
- Dedicated Warning dissemination modules are configured to alert in audio, visual and textual form.

## Status

- Deployed in field at Delhi Metro.

- The technology is proven for one metro rail and is ready for deployment to other metro rails, nuclear plants etc. with site specific customization.
- Variations used for defence applications for classification of heavy vehicles as well as detection of wild animals for wild life department.

## Earthquake Early Warning System Nodes Installed at DMRC