



# QUAKELOGIC

AI-POWERED EARTHQUAKE RISK MANAGEMENT SOLUTIONS

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## PROBLEM

After a quake, organizations may face pressing challenges including whether to utilize or evacuate structures, restore interrupted operations and repair damaged facilities or equipment. Accurate information is needed to make rapid and informed decisions. Early assessment of the structural integrity not only saves lives, but also minimizes downtime.



## SOLUTION

QuakeLogic is the only company offering Artificial Intelligence (AI)-powered earthquake risk management solutions to prevent and reduce human and economic losses seen during and after earthquakes. After an event, our platform performs structural assessments, and sends rapid notifications with the level of shaking intensity and whether structural integrity was compromised.



Only the QuakeLogic's cutting-edge technology gives the most critical information on structure's performance rapidly after shaking to prioritize post-quake inspections and prevent unnecessary evacuations and interruptions to ongoing operations.



## BENEFITS OF OUR TUNNEL STRUCTURAL HEALTH MONITORING

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- **Integrated solutions** Complete solutions using accelerometers, tiltmeters, potentiometers, strain gauges, fiber-optic and vibrating wire sensors.
- **Dashboard** Web application for real-time gauges, notifications, reports, and data.
- **Ensure the integrity of the structure & safety of the users** Detect early performance degradation to limit the risk and effects of potential disasters. Our monitoring systems are designed to collect reliable data from every type of tunnel.
- **Extend the lifetime of aging tunnels** Monitor tunnels accurately to determine the current condition to increase safety margins without any intervention on the structure.
- **Reliable monitoring during construction** Provides convergence monitoring, which ensures tracking of deformations under construction and during its lifespan.
- **Immediate assessment of tunnel safety after a major event** Monitor damage or failure caused by catastrophic events such as fires, earthquakes, explosions or floods. This allows engineers and consultants to make rapid and informed structural assessments.

# SMART & SAFE TUNNELS

We create smart & safer tunnels by combining cloud-computing and artificial intelligence (AI) with advanced sensor technologies.

 **QUAKELOGIC**  
Earthquake Risk Management Solutions



## SYSTEM FEATURES

- Real-time Continuous Waveform Analysis
- Web Application (Dashboard)
- Cloud or On-site Monitoring
- Listening Earthquakes for Triggering
- Threshold Triggering
- Text & WhatsApp Notifications
- API (Application Program Interface)
- Multi-level Reporting
- Condition Monitoring
- State-of-health Monitoring
- Platform Works with Various Sensors:
  - Accelerometers
  - Potentiometers
  - Tiltmeters
  - Piezometers
  - Strain Gauges
  - Thermocouples
  - Weather Stations
- Ambient Data Collection
- Real-time Motion Capture & Image Processing



## COMPUTATIONAL FEATURES

- Artificial Intelligence & Machine Learning
- Real-time Drift Computation
- Modal Analysis (FDD & SVD)
- Acceleration & Disp. Response Spectra
- Horizontal-to-vertical Spectral Ratios
- Spectrograms
- Frequency Response Analysis
- Coherence, Cross Spectrum Phase & Cross Correlation
- Fourier Amplitude Spectra
- Power Spectral Density
- P-phase & S-phase Picking
- Polarization
- Intensity Measures:
  - PGA & PGV, Arias Intensity, CAV,
  - RMS Acceleration, Duration Interval
  - Cumulative Arias Intensity
- Custom Fragility Function Integration
- USGS-PRISM Processing (COSMOS)

” Proper monitoring, surveillance and maintenance can provide early detection and intervention—Emergency Response



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## LOCATIONS

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Sarzana, Italy

QuakeLogic Turkey  
Ankara, Turkey

QuakeLogic Puerto Rico  
San Juan, Puerto Rico

