telegrafia®

Tsunami early warning system

Strong earthquakes and subsequent colossal tsunami tidal waves pose a massive risk to many islands and coastal areas and can cause devastating disasters, leading to health and life hazards, and significant property losses. A tsunami can strike anytime and anywhere, and it can reach the coast within very few minutes of the beginning of an earthquake. Therefore, it is this time that can be used to save lives and mitigate property damage using a modern monitoring, warning, and notification system.

Warning System
Medium

Acoustic Coverage
Exterior

GET TIME TO ESCAPE TO SAFETY

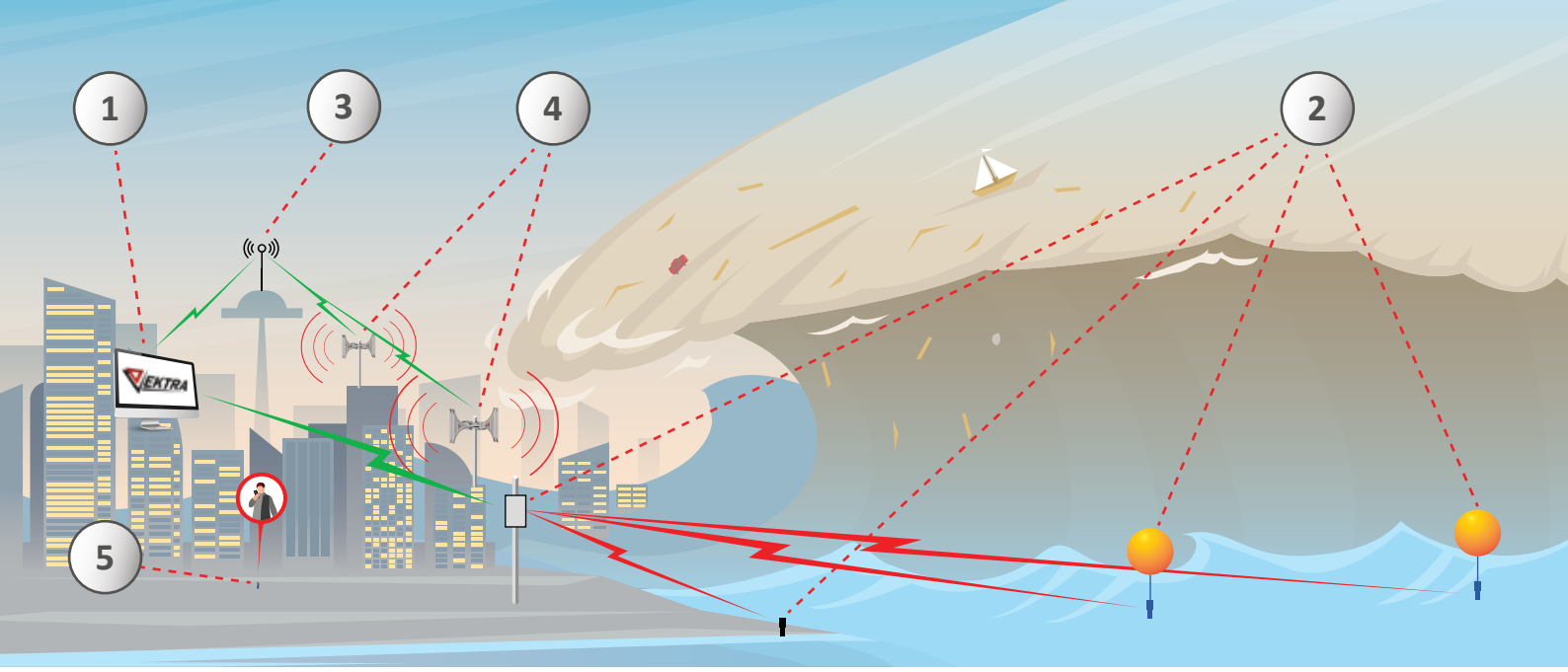
Description of the tsunami warning system solution

Telegrafia's tsunami early warning system is designed as a state-of-the-art siren system covering vast inhabited coastal areas. It is connected to the existing underwater earthquake, weather, and sea-level monitoring systems. It is equipped with the Vektra® software applications (SCADA, Warning, and Notification) for the individual system elements:

- **A monitoring system**, monitoring seismic waves passing through the earth's crust after an underwater earthquake.
- **A siren warning system**, covering the coastal area that can be hit by a tsunami with a warning signal.
- **A notification system**, informing the first responders (responsible persons) by voice or text about the occurrence of an emergency.

Advantages of the solution

- **Coverage of a large area** with a penetrating acoustic warning signal
- **Automated control of other SCADA devices**, such as turning off the gas supply, based on the outputs from the monitoring system
- **Automatic activation** of warnings and notifications
- **Smooth evacuation process control** thanks to the excellent intelligibility of the spoken word
- **Smart operation** thanks to **silent** siren **tests**, remote self-diagnostics, and the system connectivity to third-party systems
- **Full independence** in the event of a power failure



1 The control centre

The control centre, equipped with Vektra® software applications

- **Collects, analyses, and evaluates data** obtained from sensors and ocean buoys.
- **Automatically activates warnings and notifications** when critical values are exceeded
- **Guarantees strict security** thanks to 100% backup of the entire technology

2 Monitoring system

The existing **monitoring system** consists of a system of sensors and a network of ocean buoys to detect an underwater earthquake and a subsequent tsunami. The sensors can be connected to a **Pavian** siren or monitoring station, and then transfer the acquired data to the control centre.

3 Communications infrastructure

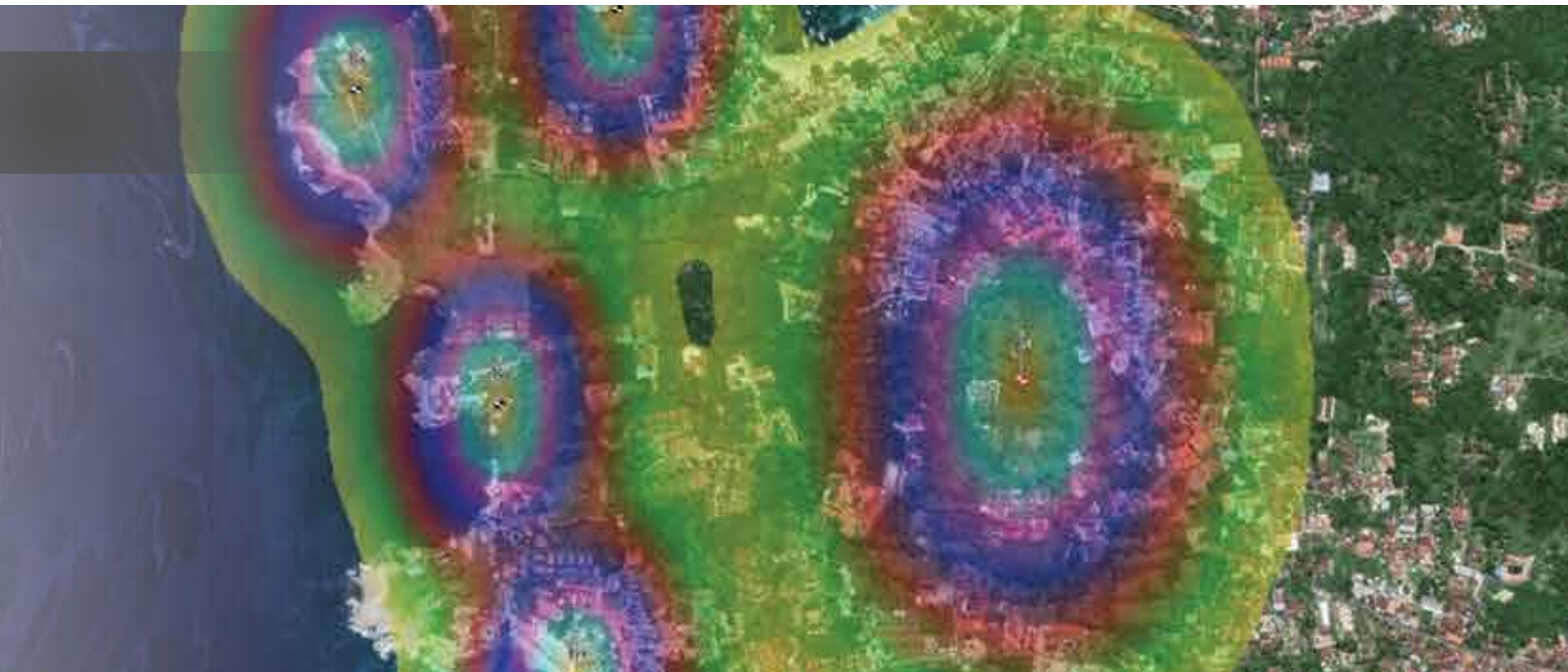
Communications infrastructure provides communications between the control centre and other warning, monitoring, and notification systems. Simultaneously, it allows the interconnection of these systems with third-party systems.

4 Pavian electronic sirens

The **Pavian electronic sirens** cover large coastal areas with a warning signal, while they are also well intelligible when reproducing the spoken word. They issue an acoustic warning before the disaster strikes, and after it has passed, voice messages can be used to coordinate the affected population and help with rescue operations. Each siren can be activated individually or as part of a group and controlled locally or from a control centre. With solar power supply, the Pavian electronic sirens need no external power source.

5 Notified persons

All responsible persons and emergency units are informed of an emergency by telephone or through SMS and are summoned to work and rescue operations.



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