

OasisPlus: An End-to-End Earthquake Business Continuity Solution

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Abstract:

Buildings worldwide have been instrumented with seismic and structural health monitoring systems for the purpose of understanding structural response to damaging and potentially damaging earthquakes. These data are used to further our understanding of actual building dynamic behavior, ultimately leading to advancements in research and building codes. Over time, the cost-bearing stakeholders indirectly benefit from this work by owning and residing in safer structures. However, there is opportunity for a direct benefit from this type of monitoring. Recent advances in client-based information-driven services has led to a new application; earthquake business continuity. This paper presents earthquake business continuity solutions based on seismic and structural health monitoring, performance-based earthquake engineering (PBEE) principles, standard-of-care for post-earthquake safety assessments, and a communication platform.

Occupants in essential facilities such as hospitals, military installations, financial institutions, and ultra-tall buildings, cannot easily evacuate immediately after an earthquake or wait for detailed safety assessment to reoccupy and resume operations. These decisions are difficult, especially under state of distress, and can have dire consequences if made incorrectly or too slowly (e.g. panic related injuries, losses due to unnecessary downtime, etc.) Examples of avoidable financial loss and injury ultimately due to uninformed decision making are easily found in across areas of low and high seismicity.