

Relief after Earthquake damage

Success story © RapidEye 2013

Summary

On February 27th, 2010 a heavy 8.8-magnitude earthquake hit the area of Concepcion, Chile. Relief organizations were in need of the most recent and reliable earth observation data and change detection analysis. With its constellation of five earth observation satellites, Rapideye used its own before and after imagery of the city of Concepcion to detect changes of the affected areas only a few hours after the earthquake hit the area. Rapideye's change detection analysis for the affected areas in the vicinity of Concepcion shows clear vegetation changes in rural areas, oceanic disturbances, flooding in urban areas and can be used to support the humanitarian aid community in their efforts.

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Project Background

Natural disasters such as earthquakes, landslides, floods, fires and storms have increased in frequency and intensity over recent years. Extensive risk management is increasingly important in order to better prepare for the impact of disasters before they occur and to provide more efficient emergency response. Fast data acquisition and extraction of relevant information on the extent and impact of earthquakes are important issues for mapping civil catastrophes today.

Issues & Needs

On February 27th, 2010 a heavy 8.8-magnitude earthquake struck the vicinity of Concepcion, Chile at 3:34 a.m. local time. The area of Concepcion was hit the hardest and was the most affected area in the region hit by the quake. Immediately after the news had spread to Europe, RapidEye imaged the area next to the epicenter of the earthquake, which covered a total area of 13,125 km². RapidEye used its own before and after imagery of the city to record the changes that were caused by the earthquake. RapidEye delivered these images to relief organizations who were in need of the most current and reliable Earth Observation information when trying to assess where the greatest efforts should be concentrated or to evaluate the full extent of a disaster.

Solution

RapidEye's change detection analysis clearly shows the affected areas in a high level of detail. They are based on images taken around one month before the earthquake (January 22nd, 2010) and images taken on Saturday, February 27th at around 11:00 a.m. local time, only hours after the earthquake hit the area at 3:34 a.m..

By owning and operating a unique constellation of five Earth Observation satellites, RapidEye can provide high-resolution satellite imagery to crisis management authorities within 12-48 hours and have it delivered where and when it is needed. The RapidEye system has the capability to revisit an area daily if necessary, which accommodates frequent monitoring intervals and provides the most up-to-date information on environmental changes. With this capability, RapidEye can supply satellite imagery and analysis before and after an emergency event.

Results & Perspectives

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RapidEye made these and other images of the region of Concepcion available at no cost to governmental and non-governmental organizations and institutions. These images have been able to assist in rescue and recovery efforts as well as for prioritizing clean-up and reconstruction activities. Additionally, imagery layers over the earthquake area in Chile have been made available for viewing on GoogleEarth. Rapideye made a set of satellite images of the affected region in Chile available to governmental and non-governmental relief organizations and institutions.

Related Info

More information: [RapidEye](#)