

# Italian Earthquakes 2016



DETAILED DAMAGE ASSESSMENT

IN UNPRECEDENTED CIRCUMSTANCES...



## The Event...

The 6.2 magnitude earthquake that shook central Italy on 24th August 2016 killed 300 people and left thousands more homeless. The region wasn't just devastated physically: the historical beauty and significance of the area took an emotional toll on Italians as well.

Unfortunately, the earthquake wasn't the last. The region was subjected to 45,000 aftershocks in the months following, along with four significant earthquakes in the space of four hours in January 2017.

The financial impact of these earthquakes was undeniable. Italy's estimated costs in the six months following the August earthquake were estimated at €23 billion from fallen revenues, losses to key industries and of course the effort to repair buildings, monuments, artworks and artefacts.

Direct damages were an estimated €4.5 billion; the historical losses, incalculable.

**“THE DEVASTATION IN CENTRAL ITALY  
ILLUSTRATED THE SIGNIFICANT LIMITATIONS  
OF TRADITIONAL DATA-GATHERING METHODS”**

Dave Fox, CEO, Geospatial Insight

## Our Clients' Needs:

Earthquakes operate on a unique time scale relative to other natural disasters: they typically offer no warning and their most severe impact occurs almost within moments.

For emergency services, rapid mobilisation in these situations can save those who are injured or trapped in rubble. For insurers, it provides the capability to mobilise resources and help survivors navigate the aftermath – and begin the process of rebuilding their lives.

Because of our highly adaptive technology and mission control experience, we can deliver an optimised programme for rapid response, analysis and assessment for any given event. Our process starts with assessing our client's needs, identifying the optimal data sources and analytics in support of those needs and determining the realities of

logistical and operational challenges on the ground. In this situation, our client requested damage assessments to individual properties on a well-known qualitative scale used for earthquakes. Given the hilly nature of the region and the historic architecture of the towns, drone operations were an obvious choice, as they could provide the agility and detail required to develop clear visual insight into damage while navigating narrow roads and hilly terrain.

However, there was an urgent need to reserve drone airspace for emergency services, who were conducting their own operations to locate possible survivors. As such, we presented an alternative plan and adapted our logistics and analytical models accordingly.

# Adapting to the Situation

Working with an Italian partner, we deployed an airplane equipped with a special camera that can capture footage in five directions simultaneously – straight down and in four directions at 450 angles. This is an excellent vantage point for assessing damage to structures, as it provides the detail needed to see even small cracks in walls and any shifting in foundations.

We expected to find gaps in our visual footage due to the medieval architecture that prevails in the region, so our team also directed our automated tools to scrape the Internet for any photographic images or other footage that could be used by our models to assess damage and provide detailed reports. This footage can be anything from a photo posted to social media by an individual to background scenery in live local news coverage.

Our system automatically pairs geolocated images with the footage we collect manually and delivered a precise 3D picture of each relevant building or region in the aftermath of the earthquake.



## A Detailed View...

Our service went further than detailed imagery. We took the foundation of our analytical tools and provided accurate damage scoring for each building based on a qualitative scale used for earthquakes. Our program assessed the visual data we collected through multiple means and delivered an assessment of whether a particular property experienced severe damage, moderate damage, minimal damage, etc.

Critically, we developed and delivered these results almost in real-time – even before the last survivors were rescued and the full cost of the earthquake itself was grasped by the public at large.

In other words, within days of the 24th August earthquake, our client was in possession of detailed information that could be used for claims assessment, loss estimations and liquidity management – without ever setting foot in central Italy's devastated terrain.



# The Geospatial Insight Advantage



The speed, accuracy, and “offsite” nature of our technology has incredible advantages for insurers: *using our Visual Intelligence service, an insurance company can initiate and carry out the claims process almost immediately, without any risk to human assessors or delays due to damaged infrastructure and support networks.*

Our operational skill goes together with our technological sophistication to help our clients get the information they need regardless of the logistical challenges presented by a particular situation.

As a result, our Visual Intelligence services provide insurers with the ability to:

- Predict the potential damage of a natural disaster
- Help identify which policyholders are likely to be affected and to what extent
- Readily develop estimates of potential claims sizes and total loss estimates
- Rapidly and accurately assess actual damage down to the property level
- Objectively and accurately verify claims

We deliver these competitive advantages for any severe weather event or natural disaster.

## You Might also be Interested in Some of our Other Case Studies



# About Geospatial Insight

Geospatial Insight is Europe's leading provider of independent research and alternative data derived from the analysis of satellite imagery and other aerial sources, combining this intelligence with a range of other data sources to provide in-depth market insight and business analytics to clients in the corporate, financial and insurance sectors.

Established in 2012 and headquartered in the UK, Geospatial Insight provides these unique intelligence services to clients around the world. Geospatial Insight is also a member of the European Association of Independent Research Providers (EuroIRP).

# Visual Intelligence for Insurance

Geospatial Insight is leveraging innovations in drone, satellite and aerial imagery and combining with big data capabilities to revolutionise the Insurance sector.

We enhance traditional insurance data collection and assessment methods by providing a new source of actionable information that is backed by visual evidence. This Visual Intelligence provides insurers, loss adjusters and brokers with improved capabilities to monitor, analyse and respond to risk.