

CASE STUDY

Fatal earthquake hit the Chinese province of Sichuan in May 2008

Disaster management – How satellite communications and ND SatCom technology supported first responders

The disaster situation

A fatal earthquake with magnitude 8.0 hit the Chinese province of Sichuan on May 12, 2008, resulting in a destroyed infrastructure and thousands of dead and injured victims. When families from all over China tried to reach their relatives in the disaster region, almost no communication was possible. The dialogue between command centers and first responder troops for a coordinated approach to allocate resources and relief goods was hardly possible. China hit its peak in preparing for the Olympics, and the world was watching this severe crisis and waiting for video footage from the epicenter region.



Why communication via satellite?

Satellite-based communication makes first responders at a disaster site independent from any terrestrial telecommunications infrastructure. Generally, a satellite link is the only means to guarantee reliable communication under all circumstances. The earthquake in Sichuan caused widespread

destruction to the regional communications infrastructure, and knocked out almost all terrestrial and mobile phone systems.

As China is an earthquake-prone region, the Chinese Earthquake Administration Bureau had already contracted in 2007 a satellite-based VSAT network, which came into operation for the first time in May 2008. The nationwide network consists of 20 fixed stations, five vehicle stations and 16 Fly-Away stations covering Beijing and 19 Chinese provinces.



Disaster management:

SkyWAN®-based VSAT network

An emergency VSAT satellite communication network based on ND SatCom's SkyWAN® platform supported a coordinated relief effort between Chinese first responders in the command center in Dujiangyan not far from the earthquake's epicenter and the Earthquake Administration Bureau's command center in Beijing. Immediately after the earthquake occurred, the nationwide network was split into

two sub-networks: one for daily conventional data traffic and one dedicated to crisis communication with a hub station in Beijing; a fixed station in the Sichuan region and various vehicle-based stations and transportable Fly-Away antenna systems. One vehicle station from Kunming, the capital city of the adjacent Yunnan province, was driven closely to the earthquake's epicenter and began to set up satellite communications within the emergency network. Additional Fly-Away and vehicle stations from Shijiazhuang (Hebei province) joined the emergency network and began to support disaster recovery communication services.



Applications

A total of eleven fixed and mobile stations formed an emergency network, enabling one-way high quality video transmission, two-way video conferencing, VoIP, data communication, file transmission and internet access 24/7. Without any terrestrial facilities and only by means of the SkyWAN[®] satellite network, a large amount of images and videos of the earthquake area were transmitted from the disaster site to the Earthquake Administration Bureau in Beijing. Many video conferences were held, giving the central command unit a much better understanding of the disaster situation.



Satellite News Gathering for local TV station

During the first two weeks after the earthquake, ND SatCom Beijing provided the local TV channel, Sichuan Broadcasting Group (SBG), with an SNG uplink for on-site news coverage. SBG operates a smaller SNG fleet in Chengdu, Sichuan's capital with more than eleven million inhabitants. Thanks to ND SatCom and the provision of an additional *compactSNG* vehicle, Sichuan TV's broadcasting capacity was increased by 30% informing Sichuan's 87 million inhabitants on latest developments in the crisis region – almost the only source of information during several weeks after the earthquake.





SNG vehicle with ND SatCom SkyRAY Compact antenna subsystem

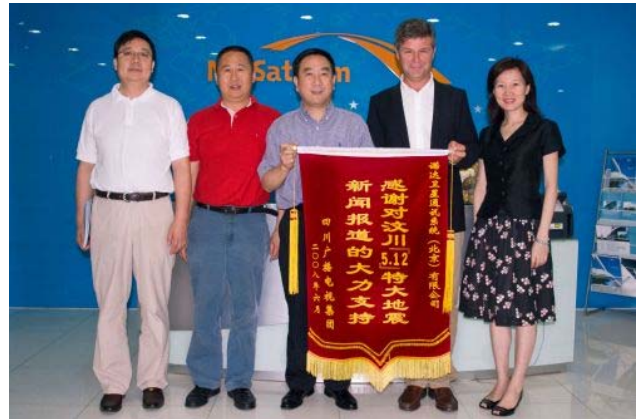


Conclusion

“Our SkyWAN® system and SNG uplink stations were running extremely well and continuously stable”, states Roland Schua, Managing Director of ND SatCom Beijing. “We were glad that our technology could ideally support emergency management in the field. However, we must not forget to express our deep admiration and gratitude to all first responders on-site in their various functions. Let us all hope for better times.”



ND SatCom supported the Chinese Earthquake Administration’s relief efforts and Sichuan Broadcasting Group’s transmission with several engineers in the earthquake region and in Beijing. “We are glad that all our colleagues returned safely from their assignments”, says Schua.



The Sichuan Broadcasting Group (SBG) thanks ND SatCom for their contribution to the news broadcasting during the earthquake

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