

# Case Study

## Structural Health Monitoring

### Vàm Cống Bridge

#### Vietnam



In Cooperation With  
GeoSIG Partner



## Background

The six-lane Vàm Cống Bridge was opened in May 2019. As well as improving the traffic network, it was expected to reduce cargo transportation time by up to three hours in the Mekong Delta region, a key agricultural production area that supplies 80 percent of Vietnam's rice exports. The Vàm Cống Bridge runs 2.97 km along the Hau River in southern Vietnam, linking Lap Vo District in Dong Thap Province and Thot Not District in Can Tho City. Its cable-stayed bridge section is 870 m. It is the second-longest cable-stayed steel bridge in Vietnam, and allows travel at a maximum speed of 80 km/h. The bridge took five years to complete.

## Challenge

At the Vàm Cống Bridge's opening ceremony in May 2019, Minister of Transport Nguyen Van The said the bridge was a vital link in the Ho Chi Minh Highway. At that time, Vietnam's population was more than 96,400,000.

As part of a busy traffic network and with ships and boats travelling under the bridge as part of a cargo transportation network, the bridge would be in constant use by a large number of people. It would have the usual weather and usage strains as well. So safety of users and maintenance of the bridge were concerns.

## Solution

Such a high profile project required a company with extensive background in this area. Our Partner in South Korea, EJtech, focuses on top-level civil engineering, measurement, surveying, assessment and instrument sales. They have been successfully implementing solutions for their clients since they were founded in 1994, and they have extensive experience in bridge monitoring projects.

EJtech's monitoring system oversees the displacement of all pylons and girders, the real-time displacement of the bridge and analyses the status of the expansion joint function. During the construction of the bridge, they installed 2 x GeoSIG AC-23 accelerometers, as well as anemometers, air thermometers, thermometers, strain gauges, intelligent cameras, water level cameras and cable accelerometers. After construction, they installed a monitoring system for bridge maintenance: a GeoSIG GMSplus seismometer and 5 x AC-23 accelerometers, GNSS, a rain gauge, joint meters, tie-down load cells, strain gauges and multi-dimensional shape sensors. The structural integrity of the bridge is monitored continuously, along with weather conditions that might affect usability of the bridge and the safety of motorists.

Another solution using GeoSIG instruments and a capable Partner effectively showing that quality and reliability can also be cost-effective.

## Product links

[AC-2x accelerometer](#)

[GMSplus seismic recorder](#)



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The Mekong Delta is a key agricultural production area in Vietnam, producing 80% of the nation's rice exports.