

Toulon South Tunnel: site noise monitoring TOULON - FRANCE

Real-time monitoring of the site impact on urban environment

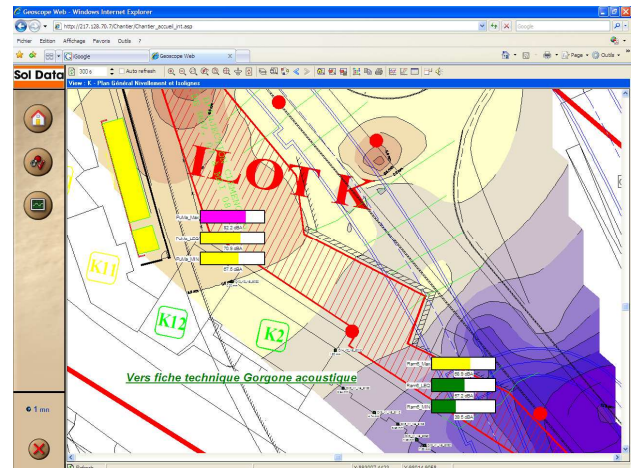
The construction of a second highway tunnel under the city of Toulon was launched in December 2006 and is expected to be finished in 2011. It includes three large building sites with noisy drilling and cutting machines, close to a highway. The nearby constructions are mainly residential buildings.

The site has a very high background noise, and only a few more decibels are allowed compared with the initial noise level. The automatic noise monitoring is based on the implementation of 3 real-time Gorgone Acoustics stations.

The collected measurements are Leq, Lmax and Lmin for each 30 minute period, 24 hours a day, with Class 1 measurement equipments. The stations function permanently in worksite conditions, so they must be protected against each possible event: rain, sun, dust and vibrations. The device will have to keep a Class 1 measurement quality during the whole period.

The hardware installation was made by technicians from SolData and started by defining the position of each microphone. A well positioned microphone enables us to measure the noise level perceived by the neighbours or to determine the emission source with precision.

In Toulon, the monitoring system has been configured to measure emissions related to the building activity, that's why the microphones are located within the site perimeter.



Real-time visualisation of noise levels



General view of the site (block K)



The measurement units have an integrated alarm function. If the values measured exceed the alarm level, the unit sends emails or SMS to the qualified staff, activates a flashing light or a siren on the site.

The client can get to the data either through a Geoscope web interface allowing an online access to the data, updated every 30 minutes, or through regular reports sent every week and including the digital data and graphs.

The data transmission and remote control are made through a WiFi network functioning throughout the whole project for SolData to monitor the deformations caused by the excavations.

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| CLIENT | DDE DU VAR |
| CONTRACTOR | BOUYGUES TP |
| PROJECT DURATION | 2006 –2011 |
| IMPORT | 50 K€ |
| Works carried out: | |
| <ul style="list-style-type: none"> • Study and implementation of 3 noise level measurement points • Real-time data collection and automated treatment • Noise reports and graphic representations of the results | |