

Editorial

In signing a licensing agreement with TÜV, OSMOS is embarking upon a decisive step in its development. Although already engaged to provide surveillance for several structures in Germany, today sees this partnership opening up bright prospects for one of the very largest markets in the European Union.

Aging of infrastructure and industrial equipment is a common denominator throughout all developed countries, but this is compounded by a factor specific to Germany: the consequences of reunification. In point of fact, the majority of all structures in the new federal states in the eastern part of Germany need to be made to conform to the norms of safety. This situation represents safety monitoring in the most complete sense of the term.

Eighteen months after launching the partnership with JGC, OSMOS is stepping up its international development, not only in Europe but on the American continent as well. Under appointment by the City of New York, since last October it has been providing surveillance for two buildings located within the vicinity of the destroyed World Trade Center.



OSMOS is now on hand in New York as well.

Interview

OSMOS joins forces with TÜV, German leader in technical monitoring

In August 2001, OSMOS entered into an exclusive partnership with TÜV, Germany's no. 1 in technical monitoring, for use of the OSMOS license in Germany.

A special department bringing together some 20 commercial engineers has just been created within the group. „TÜV-OSMOS Bauwerksdiagnose“, the TÜV-OSMOS team for structural diagnostics, is to draw upon the logistics system of TÜV throughout the various German federal states. The German objective: to manage 200 safety monitoring projects in 2002, and more than 2000 by 2006.

Question put to Dr. Oppermann, the Managing Director of TÜV



■ *What is the significance of this arrangement for TÜV?*

It is undisputed that TÜV has been a prime agent in technical monitoring for more than 130 years, yet it has not been represented in the structural diagnostics field. This alliance with OSMOS will enable us to develop constant monitoring on a large scale for the clients of TÜV.

Question put to Joachim Roloff, manager of the TÜV-OSMOS department

■ *Why was OSMOS chosen?*

The final decision was made only after a very concerted review. What were the deciding factors? The reliability and performance of OSMOS technology which is the only firm today capable of ensuring round-the-clock structural monitoring and which offers an unrivalled price-performance ratio – along with some reputable references.



**TÜV Rheinland/
Berlin-Brandenburg**

■ *In your opinion, what is the major advantage for your clients?*

For the manager of a structure, being able to know a building's state of health at all times is of great importance. In an age in which cost optimization has become a major issue, preventive maintenance enables a manager to put off renovation work until such time as actually required. As such, monitoring is an invaluable decision-making tool.

→ www.bauwerksdiagnose.com

TÜV in brief

Founded in 1872, today it is Germany's no. 1 in technical monitoring and one of the leaders in the field world-wide. Uniting 83 companies (43 of them abroad) and 8,000 staff, TÜV enjoys a world-wide presence. Of € 630 million in turnover in 2001, 25% is generated beyond German borders.

→ www.tuv.com

First application of the long-range extensometer, "EX-Large"

Bridge of Féternes

In 1999, the regional council for Haute-Savoie decided to put the Féternes out of commission and to modify the route of its B road 902. Work began on a new bridge and a traffic tunnel. The Bridge of Féternes, however, must remain in service until these new structures are opened, in June 2003.

Located on the right banks of the Dranse, where the current is particularly strong, one of the buttresses supporting the roadway on the bridge is at risk of becoming undermined. Yet with traffic including construction equipment, the bridge must be able to support increased loads in the months to come.

The structure was placed under surveillance by OSMOS as of October 2001. Two "EX-Large" were installed to monitor the behavior of the weakened buttress. This marks the first time this new development by OSMOS has been used in the field.

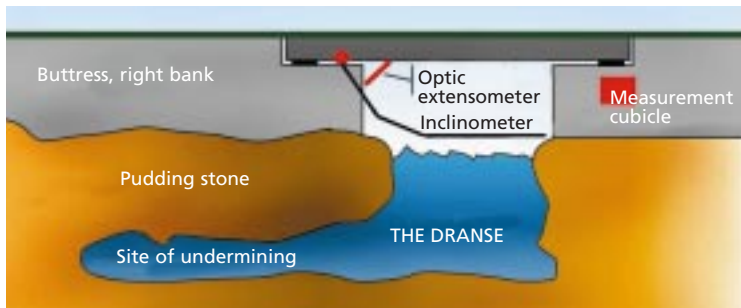
This sensor, particularly advisable when the deformity in question exceeds a centimeter,

measures the sagging of the buttress relative to the bridge's roadway. A bi-directional inclinometer measures the degree of inclination involved.

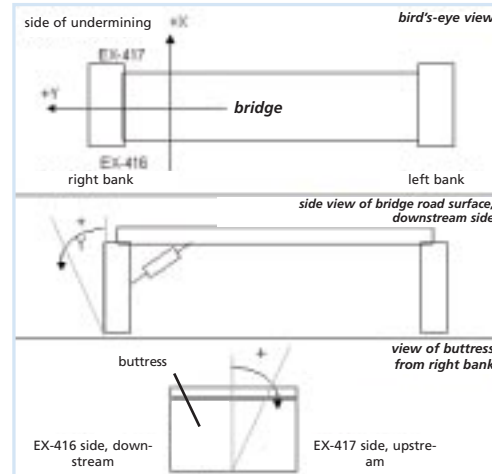
The system simultaneously provides reporting on static influences, thanks to minute-by-minute sampling, and dynamic influences, using 10 Hz sampling. Continuous comparison is made between the values measured and pre-programmed thresholds.



Installation of the two EX-Large devices



Locations where detectors are mounted



OSMOS places the Lycée Van Gogh in Aubergenville under surveillance

In the wake of the severe storm of December 1999, the expansion joint between the two buildings of the Lycée Van Gogh in Aubergenville slackened abnormally, giving rise to fears of the notorious restricted access to the building.

OSMOS, commissioned to place the structure under surveillance, installed an optic extensometer there.

Significant dynamic amplitudes were recorded in February, in March, in October

and in November 2000, during strong gusts of wind.

The diagnosis drawn up by OSMOS: movements in the joint are probably due to a weakening in the building's load-bearing structures. OSMOS recommended a study of the soil.



Joint monitoring via extensometer



Dynamic deformation trend due to high winds

Investment postponed and safety guaranteed

Musée d'Orsay

In late 1999, OSMOS was entrusted with monitoring of six girders supporting the slab constituting the square of the Musée d'Orsay. This structure, dating back to 1853, was suspected of not being stable enough. The question was, are repairs necessary in the immediate future?

Six fiber-optic cables were put in place in December 1999. It was not until March 2001, however, that the value recorded for one of the girders revealed a dramatic acceleration in the rate of deformity, crossing over the alert threshold.

OSMOS then recommended a structural jacking operation.

Applying a load of 84.9 tons to the girder enabled reduction of the deformity by half, a deformity which had exceeded 426 microns over a period of two years. The prime factor? The most likely hypothesis is a movement in the structure's cramping soil, causing the foundation platform to rise slightly.

The jacks, subjected to a force of around 40 tons, will remain in place for six months, until the level has returned to the zero point.

Thanks to monitoring by OSMOS, the Musée d'Orsay will be able to postpone a major investment for one year, limiting work actually carried out to the levels required while at the same time guaranteeing museum visitors' safety.



Musée d'Orsay



Hydraulic hoisting supports to shore up sagging



Optic cable on steel beam dating to 1853

Water damage in the Tour Atlantique at La Défense

OSMOS sets up the diagnostics

When construction work began on a new building near the Tour Atlantique, the GFF Group asked OSMOS to install sensors there, for preventive purposes.

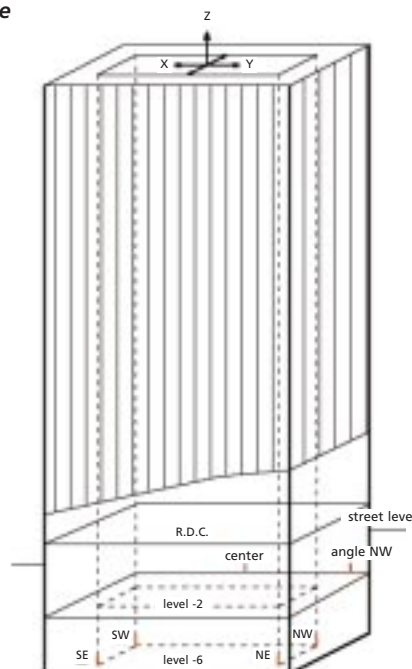
Over the course of two years, monitoring there revealed nothing out of the ordinary.

In June 2001, major water damage occurred in the basement of the Tour Atlantique. Although initial suspicion was directed at the adjoining construction site, it had to be confirmed.

The monitoring by OSMOS enabled quick determination that it was in fact the construction of the foundations of the adjacent building, Tour PB6, which were to blame for this rise in water levels.

The fiber optic cable shortens when compressed. Of the six such cables with which the Tour Atlantique was fitted, only those in place on the side of the construction site registered this compression.

Irrevocable proof provided to GFF, thereby saving it the cost of endless speculation by experts.



Tour Atlantique at La Défense



X-Trigger

OSMOS now also developing the preventive market, too!

After 3 years in development, thanks to a revolutionary concept, at mid-year OSMOS will be able to service the preventive market as well.

The new sensor, "X-Trigger", functions as a threshold indicator in all possible civil-engineering situations, as well as in hydraulic and mining-engineering situations. At user's option, the "X-Trigger" can, depending upon complexity and budget, be switched to different operating modes. Permanent, sleeping and prepared modes are just three of the modes available.

As with all the other components which have made OSMOS the market leader in monitoring, during development of the "X-Trigger" great emphasis was placed on:

- precision: +/- 0.01 mm over against the pre-set threshold value
- sturdiness
- great longevity, in excess of 20 years
- flexibility of use
- ease of handling
- economy

In "permanent mode", a binary decision, once triggered, can be reported and transmitted in real-time. Here, the radiolocation of the trigger site occurs through fiber optic technology at a distance of up to 8 km. After the trigger has been set off, a new threshold value can be activated. The threshold values can be calibrated in 6 tiers ranging between

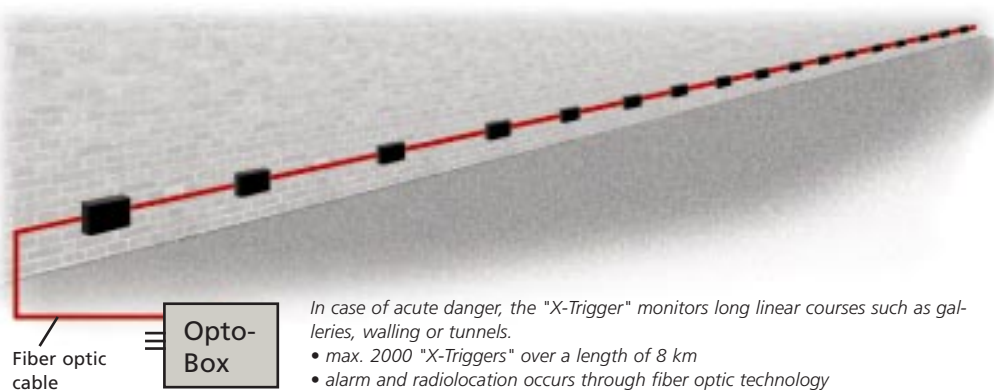
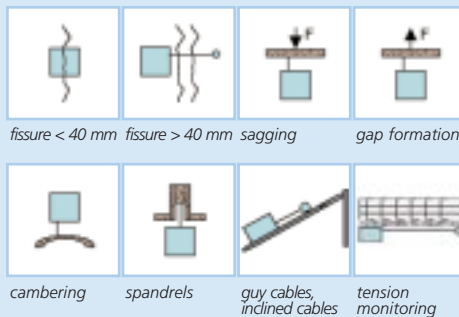
0.25 and 4 mm and, at the user's option, made to respond to tensile or compressive strain and immobility.

In "sleeping mode", all of these properties (characteristics) can be serviced periodically. If the sensor remains accessible after it is installed, whenever the trigger is set off this can also be visually confirmed by service staff (visual check).

"Prepared modus" provides for very economical monitoring. In this case, only visual checks are done.

OSMOS delivers the sensor ex works, completely pre-set according to customer specification. Installing the sensor does not require expert staff.

Applications:



In case of acute danger, the "X-Trigger" monitors long linear courses such as galleries, walling or tunnels.

- max. 2000 "X-Triggers" over a length of 8 km
- alarm and radiolocation occurs through fiber optic technology

OSMOS is decentralizing its strengths



In early March 2002, **Thomas Schauneweg** (39) took over management of sales and marketing at OSMOS GmbH, a wholly owned subsidiary of

OSMOS SA. In his new capacity as Sales and Marketing Director, Mr. Schauneweg has international responsibility for the business expansion of the OSMOS Group. One of his areas of emphasis in this regard is the search for additional licensees and the support of those already in place. Prior to this post, he served for many years as Senior Sales Manager at NEC Electronics Germany.

Jean Borel (46) is an asset to the OSMOS team in Lyons, where he will contribute his expertise on the implementation of financial proposals. He supports as an indoor worker every issues of distribution.



Among the most recent OSMOS building sites are the Justice Ministry, the Cathédrale de La Souterraine (Creuse) and the Pont ASF bridge over the Drôme.

The lord mayor of the city cologne, **Fritz Schramma**, visited the German Aerospace Center (DLR) on April 5, 2002. Mr. Schramma convinced himself about the capability of the new developed OSMOS FO-Sensors. The introduced scope of services is meeting great interest.



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OSMOS News is a publication of the OSMOS group.

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