

# MEASURING WITH FIBER OPTIC TECHNOLOGY

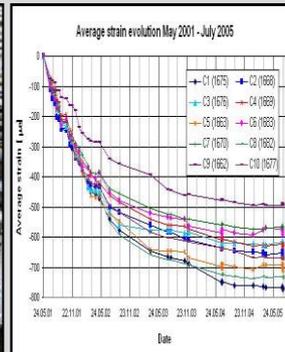
## MEASURING WITH LIGHT

- High accuracy
- No drift
- Immune to electromagnetic induction
- Insensitive to humidity, water, vibration
- Passive system, no moving parts
- Very small size
- Minimum cabling
- Extremely durable.



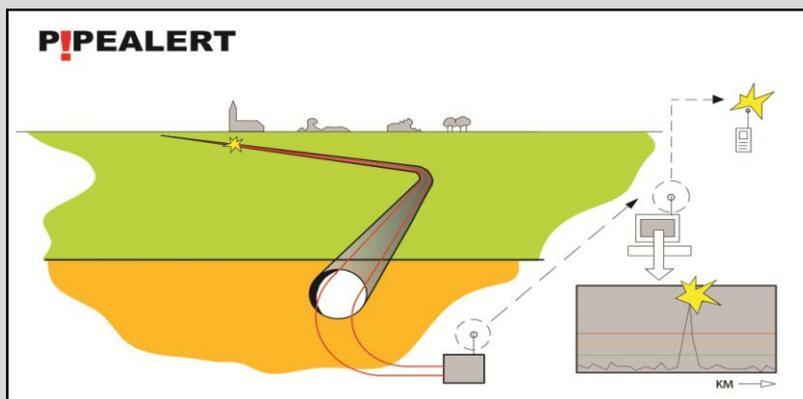
## STRUCTURAL MONITORING

The sensors can be embedded in concrete or be mounted on an existing structure. Measurement of deformation, displacement, strain, stress and temperature. Applications a.o. reinforced concrete structures, steel structures, pile foundations, diaphragm walls, grout anchors and sheet piling. Also for dynamic measurements.



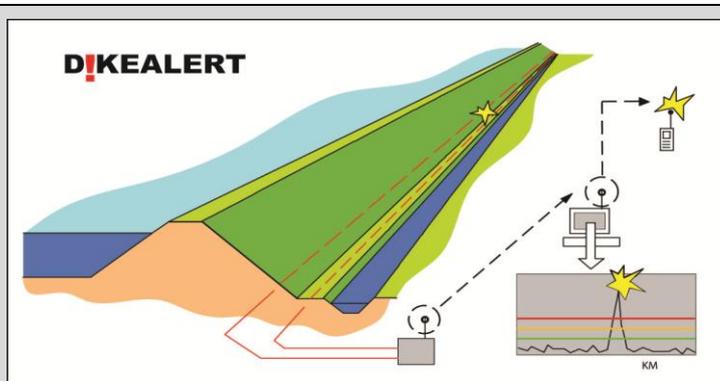
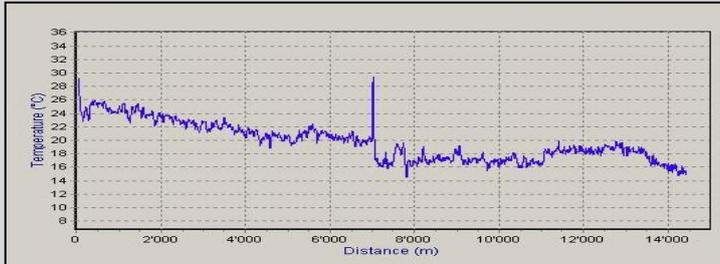
## DISTRIBUTED STRAIN MEASUREMENT.

Monitoring tens of kilometers with one single fiber and one single reading unit. The untreated fiber acts as sensor. One reading every 1,00m. So a 25km long fiber represents 25.000 sensors! Especially applied for monitoring deformation of long pipe lines, monitoring soil stability and detecting soil erosion behind quay-walls.



## DTS-DISTRIBUTED TEMPERATURE SENSING

Also here the untreated fiber is the actual sensor. Spatial resolution of 1,00m over distances up to 50km with 0,1°C temperature accuracy. Applications: leakage detection of liquid- and gas pipe lines, high voltage lines, sewers, geothermal monitoring, offshore.

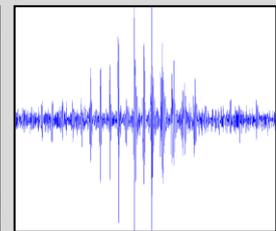
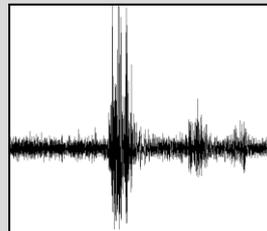


## DIKEALERT

Real-time surveillance system for long dikes and levees. Acts as an early warning system that monitors every meter of a dike and that warns the dike owner sufficiently in advance for an impending weak spot. The sensing system can consist of single fiber cables or fibers integrated in geotextile.

## DISTRIBUTED-ACOUSTIC SENSING: *Listening with optical fiber!*

A unique technology that detects and identifies acoustic activity. Every activity produces a characteristic "foot print" that is recognized and identified by the reading unit. Is applied for perimeter protection, railways (copper theft!) and leakage detection of pipe lines. Possibly existing (telecom) fiber cables can often be used for this purpose.



## INVENTEC

Is specialized in advanced measuring and monitoring techniques for civil / structural applications, geotechnical applications, piping, sewers and energy. We provide a complete package including system engineering, installation, start-up and (if so desired) data management.



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