



**Bandweaver**



**monitored | secured | safe**



## COMPANY PROFILE

Bandweaver has been providing advanced fiber optic monitoring sensors and integrated technologies for our customers since 2002.

Our technology portfolio covers a wide range of sensors including Distributed Temperature Sensors (DTS) and Distributed Acoustic Sensors (DAS) and integrated smart intelligent software solutions.

Our systems are used to monitor, secure and keep personnel and critical assets safe in the following industries:

- › Fire & Security
- › Power & Utilities
- › Pipeline & Process
- › Oil & Gas



**MORE THAN  
1,200 SYSTEMS  
INSTALLED**



**GREATER THAN  
10,000 KM  
INSTALLED**





## MISSION STATEMENT

Bandweaver's vision is to be the first choice for integrated distributed fiber optic sensing solutions, by delivering reliable, innovative, client-centric and value added products and services, via our dedicated and talented team of people.

## GLOBAL PRESENCE

Bandweaver has more than 300 personnel with a global customer base across six continents. We have offices, facilities and support facilities in four of these.

In addition we have a network of global partners to manage and support large scale projects wherever you may be.

**INSTALLATIONS  
ACROSS SIX  
CONTINENTS**





## PRODUCTION AND MANUFACTURING FACILITY

Our production and manufacturing facility is a state of the art, 10,000 square meter facility situated over four floors complete with Class 100 cleanroom.

In order to closely manage quality and reliability and to drive forward innovation, Bandweaver is a vertically integrated manufacturer with complete control over all component manufacture.

Our production capabilities span from the individual optical component manufacture (high precision lasers and filters) through to instrumentation assembly and system integration.

## QUALITY AND RELIABILITY

Bandweaver is ISO 9001 certified and undergoes a rigorous continuous improvement program and tests all of its products to leading international standards.

In addition to our industrial monitoring customers, Bandweaver is also a leading international supplier into the telecoms industry which has some of the most stringent quality and reliability requirements.

Bandweaver has extensive in-house environmental testing facilities and also utilizes leading 3<sup>rd</sup> party testing houses for independent verification and approvals.







## RESEARCH, DEVELOPMENT AND INNOVATION

Bandweaver strives to continuously innovate and develop solutions to improve safety and efficiency for our customers assets and personnel.

We have more than 30 dedicated R&D engineers worldwide, with extensive experience from both prestigious blue-chip companies and dynamic start-ups. Our teams are centered in two main hubs in Shanghai and Ottawa and form global partnerships with key customers, partner companies and academic institutions to push the boundaries of monitoring solutions.

## SERVICE AND SUPPORT

Bandweaver has an extensive team of engineering, admin and logistical support personnel to ensure the success throughout all stages of your project. This includes:

- › Front End Engineering Design (FEED)
- › Project management
- › System installation and commissioning
- › Product training
- › Support and maintenance for independent verification and approvals



**RAPID TECHNOLOGY  
DEVELOPMENT  
PROCESS**

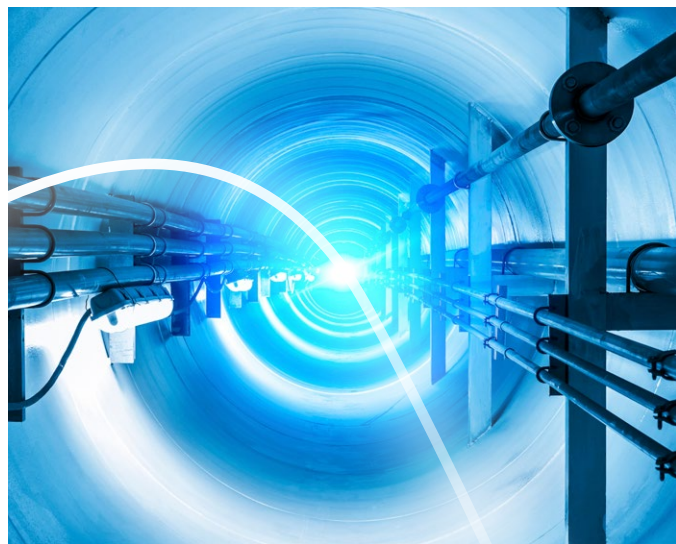


**118  
PATENTS**



**18 SOFTWARE  
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## APPLICATION

# POWER & UTILITIES

Bandweaver has worked together with customers and partners for more than 10 years to develop condition monitoring solutions for the intelligent grid.

When used alongside a proactive maintenance approach, our state of the art sensing systems and intelligent software provide the operator with the right information at the right time to make decisions that help you to reduce planned and unplanned maintenance, to avoid catastrophic failure and to effectively manage your risk.

### **Applications areas include**

- › HVAC and HVDC underground transmission power cables
- › Joint/splice manhole security
- › Overhead power lines utilizing OPGW (Optical Groundwire ) and OPPC (Optical Path Phase Conductors)
- › Cable tunnels and cable bridges
- › Subsea cables, offshore substations and wind farms
- › Substation Perimeter Intrusion Detection Systems (PIDS)
- › Generating station perimeter protection
- › Substation and transformer cables







## APPLICATION

# FIRE & SECURITY

Bandweaver's range of fiber optic monitoring systems are designed specifically to enhance the safety and security of your critical infrastructure and personnel.

Our instrumentation includes both linear heat detection technology based on Distributed Temperature Sensing (DTS) and also Distributed Acoustic Sensing (DAS) systems which can provide Third Party Interference (TPI) prevention and Perimeter Intrusion Detection Systems (PIDS).

This state of the art instrumentation combined with our smart software and services provide you with the right information at the right time.

Whether your asset is in a remote location or a busy inner city, Bandweaver's solutions enable swift decision making and help you to minimize damage, avoid catastrophic failure and to reduce financial, environmental and reputational risk.

### **Applications areas include**

- › **Transport**
  - › Airport – linear heat detection and perimeter security (PIDS)
  - › Tunnels – linear heat detection
  - › Road
  - › Rail and metro
  - › Parking garages
- › **Power**
  - › Cable trays and tunnels – linear heat and access
  - › Transformers and switch gear – linear heat
  - › Substation – perimeter
- › **Petrochemical**
  - › Refinery and storage tanks – perimeter security (PIDS)
  - › Offshore platforms – heat
- › **Warehousing and storage**
- › **Mining and minerals – conveyor belt**





## APPLICATION

# PIPELINE & PROCESS

It is increasingly critical to keep process and pipeline assets and personnel secure. Whether this is to prevent risk of terrorism, reduce risk of environmental pollution or to maximize uptime (through smart maintenance programs), Bandweaver has solutions to help make your assets and personnel even more secure.

Our instrumentation includes both condition monitoring and leak detection systems based on Distributed Temperature Sensing (DTS) and also Distributed Acoustic Sensing (DAS) systems which can provide Third Party Interference (TPI) prevention and Perimeter Intrusion Detection Systems (PIDS).

This state of the art instrumentation combined with our smart software and services provide you with the right information at the right time.

Whether it is a remote long distance pipeline with limited security, an inner city pipe at risk of accidental damage from 3<sup>rd</sup> party construction or a process facility with condition monitoring requirements, Bandweaver's unique and versatile range of systems can provide you with a solution.

### **Applications areas include**

- › Third Party Intrusion (TPI) detection (intentional sabotage, unintentional digging or drilling in vicinity)
- › Perimeter Intrusion Detection System (PIDS)
- › Pipeline Inspection Gauge (PIG) tracking
- › Condition monitoring of pipe and valves
- › Seismic and landfall detection
- › Pipeline leak detection both for liquid (hydrocarbon, water, chemical) and gas
- › LNG terminal and pipeline security and integrity
- › Vessel integrity (leak detection, skin monitoring)





## APPLICATION

# OIL & GAS

Bandweaver's versatile range of fiber optic sensing solutions provide valuable information at all points along the wellbore to help you with critical decision making to improve the integrity and efficiency of your wells.

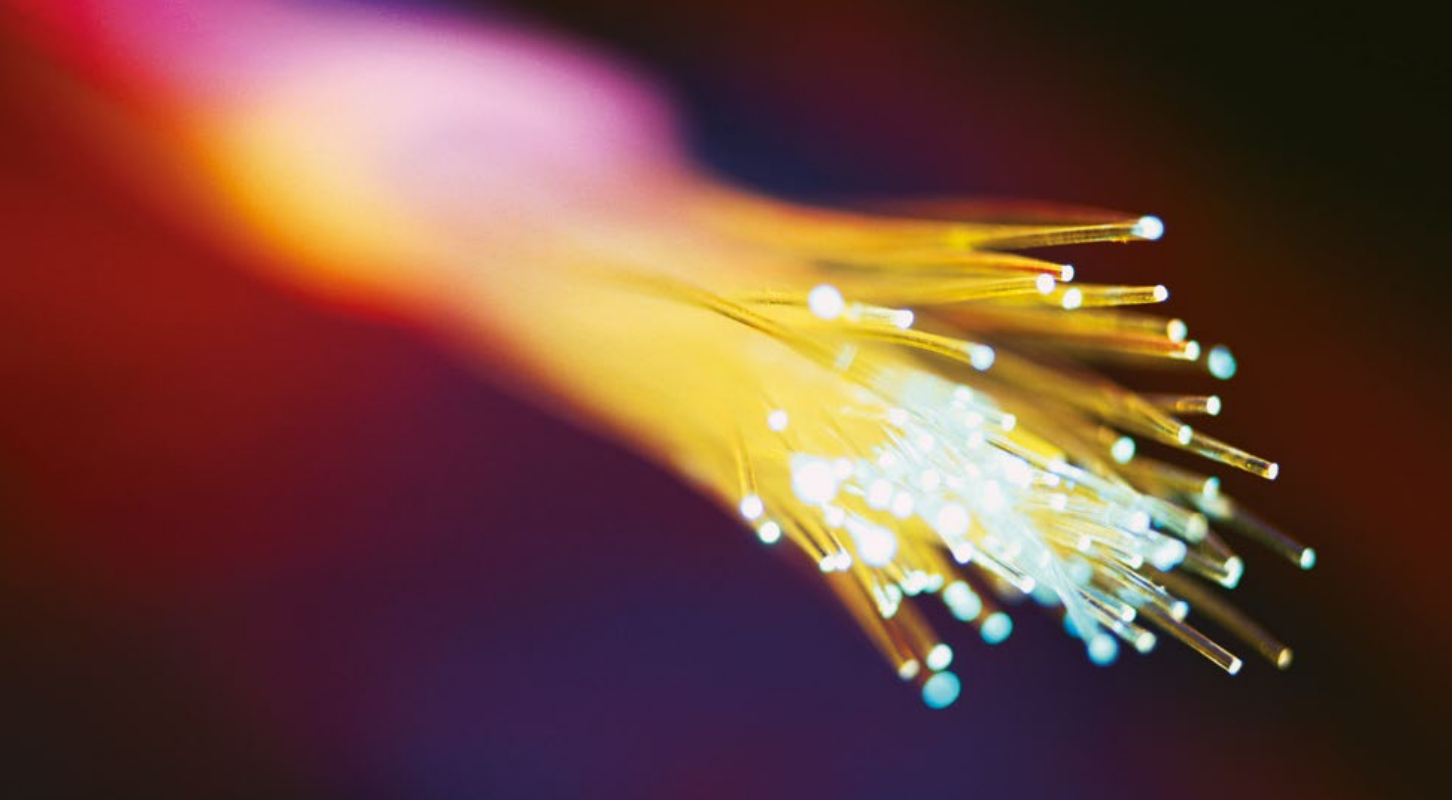
Bandweaver's technology includes Distributed Temperature Sensors (DTS), Distributed Acoustic Sensors (DAS) and Fiber Bragg Grating (FBG) solutions.

Through our network of partners we are able to offer a full service solution. This includes both the interpretation software to turn data into valuable information along with the cables and in-well components designed to operate in the harshest of conditions.

This enables you to better understand all areas of the wellbore and reservoir and to optimize both short-term production and to aid in long term well and field planning.

### **Applications areas include**

- › **Production**
  - › Reservoir characterization
  - › Zone allocation
  - › Steam breakthrough
  - › Gas breakthrough
- › **Well integrity**
  - › Sand monitoring
  - › Gas lift optimization
- › **Hydraulic fracturing**
  - › Fracturing efficiency
  - › Fluid placement
  - › Ball seating
- › **Abandonment and decommissioning**
  - › Leak detection and location
- › **Vertical seismic profiling**



## TECHNOLOGY

Bandweaver is proud to have one of the most advanced and comprehensive range of fiber optic monitoring systems available on the market today. This includes proprietary Distributed Temperature Sensors (DTS) and Distributed Acoustic sensors (DAS), Fiber Bragg Grating (FBG) sensors and intelligent video (Vivid). We are also able to integrate a range of third party sensors into monitoring systems using our smart software algorithms and interfaces.

### DISTRIBUTED TEMPERATURE SENSOR (DTS)



With the Access, FireLaser and T-Laser DTS systems Bandweaver offers three DTS platforms that enables us to configure the overall system precisely to your system specifications. The design of the DTS has steadily evolved and improved since their inception in 2002, with a strong emphasis on simplicity of use, ease of installation and reliability.

### DISTRIBUTED ACOUSTIC SENSOR (DAS)



With a 100km sensing range, the Horizon DAS100 Distributed Acoustic Sensor (DAS) is one of the longest range DAS systems available on the market today. Bandweaver has invested more than 20 man years to developing this leading edge technology, utilizing the latest developments in optical sensing and incorporating advanced algorithms and machine learning techniques to ensure that we have unique event classification with the highest detection rate and lowest level of nuisance alarms in the industry.



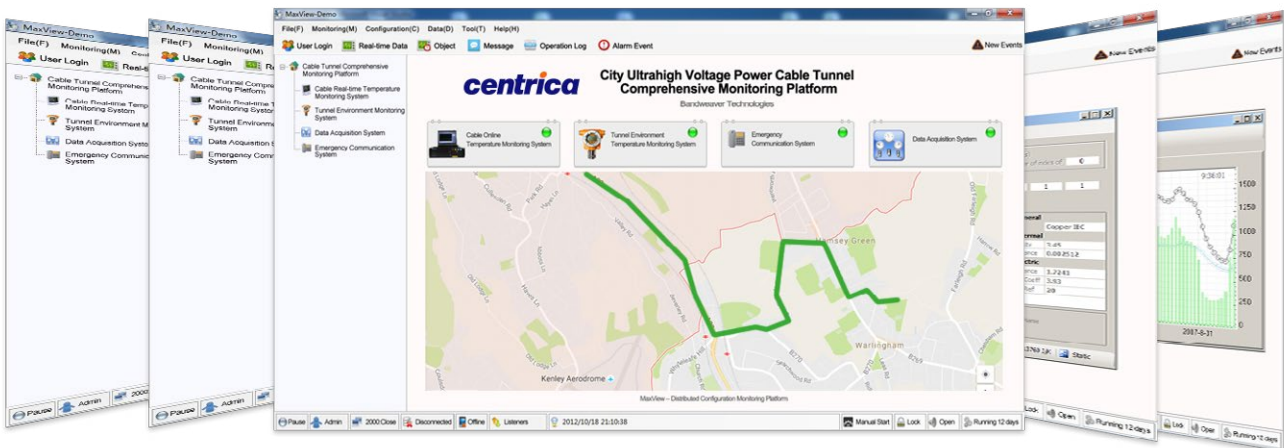


## SMART SOFTWARE SOLUTIONS TO HELP YOU INTELLIGENTLY MANAGE YOUR RISK

Bandweaver has worked closely with customers, partner companies and academic institutions to develop a range of industry specific smart software solutions.

These solutions range from specific algorithms with embedded intelligence (e.g. RTRR cable rating and Horizon event classification algorithms) to full system software platforms (e.g. Maxview) which are able to integrate multiple sensing types and data feeds (e.g. 3<sup>rd</sup> party DTS & DAS, video feeds, alarms and PLC) from multiple sites/locations and output to the communication protocol or format of your choice (e.g. SCADA, OPC and WITSML).

We continue to seek partners to collaborate with so please contact us if you have a query.





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