



**Fiber Optic Sensing  
Association**  
Connect and Protect

# FOSA OVERVIEW 2025



# What is FOSA?



## FOSA Members - Thought Leaders Shaping an Industry

A non-profit industry association formed in 2017 in Washington D.C.

All things Distributed Fiber Optic Sensing (DFOS)

Raising Awareness - DFOS

- Technology Webinars

- Advancing Public Policy

- Education Webinars

- Speaking Engagements

- Promotion of FOSA Members

Global membership - open to those who invent, develop, make, install, support and use distributed/quasi-distributed fiber optic sensors

Hands-on, share your voice - members organize, manage, and collaborate regularly

FOSA Members



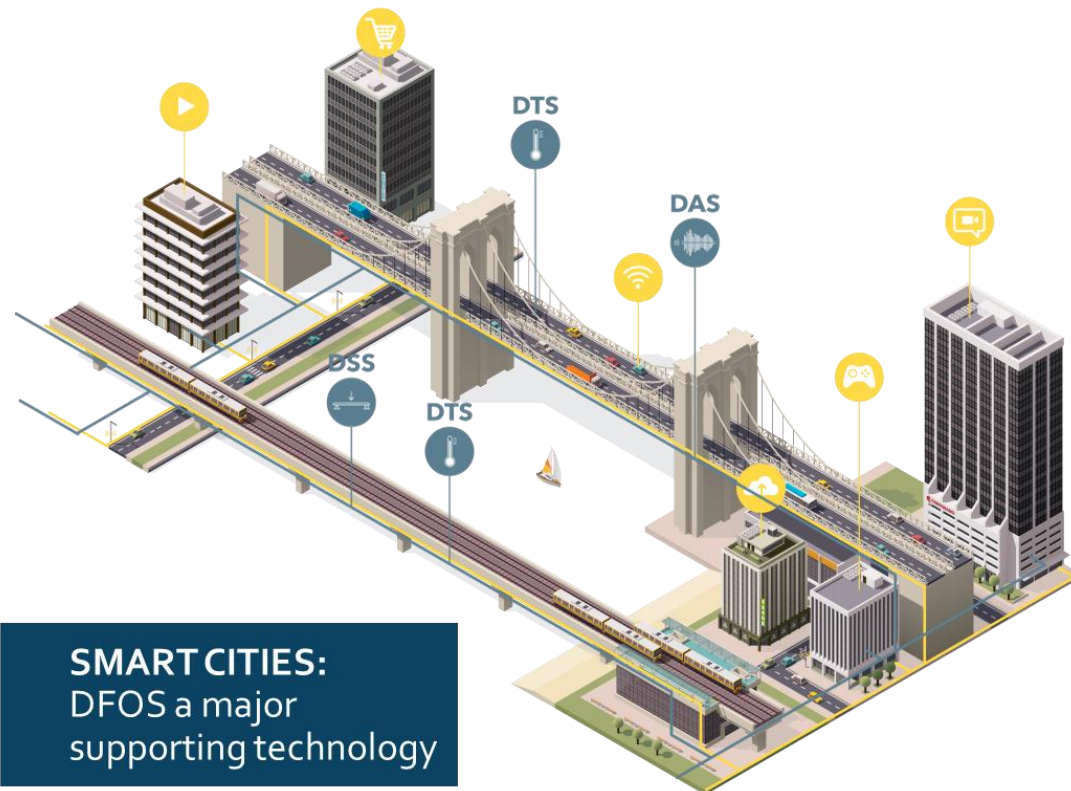
Consultant Members



# The Next Big Thing for our Infrastructure...



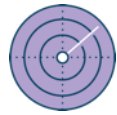
- The big innovation push for FTTH and Internet of Things continues
- The next big thing - Smart Infrastructure that includes Distributed Fiber Optic Sensing (DFOS)
- It converts dark telecom fiber around cities into an array of sensors



DFOS use cases to support Smart Cities:

- **Highways** – real time traffic monitoring (DAS)
- **Rail** – Train tracking, Metro Security (DAS)
- **Utilities** – sewer integrity, power cable fault detection, pipeline monitoring (DAS)
- **Facilities** – perimeter security (DAS)
- **Structures** – buildings, bridges and tunnel integrity (DSS)
- **Fire detection** – tunnels (DTS)

# Sensing Applications



DAS



DTS



DSS

Pipeline Condition Monitoring	Pipeline Heat Trace Monitoring	Third Party Intrusion/ Security	Geo-Technics	Transport Monitoring	Oil & Gas In-Well Monitoring	Industrial Process Monitoring	Structural Health Monitoring	Cable Monitoring
Leak Intrusion/Security Pig Tracking Hot Tap/Valve Detection		Perimeter Security Activity Detection Tunneling Detection	Seismic Rock Fall Land Slide	Train Tracking Traffic Flow Track/Rolling Stock Condition Rock Fall	Seismic Fracking Flow Profiling	Conveyor Belt	Vibration Monitoring	Locating Damage Prevention Fault Finding TPI (Anchoring) Cable Conditions
Leak Soil Erosion Trace Heating Power Monitoring	Pipeline Heat Tracing		Geothermal Dam/Dyke (Leak) Environmental Research	Fire Detection	Temperature Fracking SAGD Flow	Safety (Temp) Plant-Maintenance Process- Optimization Conveyor Belt	Dam/Dyke (Leak)	Load Management Fault Finding Cable Conditions Transformer/Swit ching Gears
Landslide Pipeline Deformation Subsidence		Tunneling Detection	Landslide Dam/Dyke	Train Tracking Track Condition Landslide	Casing Strain Bore Holes Deformation Ground Deformation	Hoop Strain Pipe Deformation	Deformation Dam/Dyke Building/ Bridges/Piles/ Walls	Curvature/ Elongation (Cable Laying and Operation)

# Emerging Market Applications



## Utility

Uses: Operational insight, damage prevention, security, preventative maintenance, mapping

Benefits: Safety, resilience, third party interference minimization, operational expenses



## Transportation

Uses: Traffic monitoring, situational awareness, rural insight, security, fire safety, structural monitoring

Benefits: Low latency ground truth data, enhance ITS portfolio, operational and capital expenses



## Telecom

Uses: Damage prevention, network monitoring, security, preventative maintenance, mapping

Benefits: Network uptime and faster repair, security, monetization

**Many Vertical Markets Can Benefit from Distributed Fiber Optic Sensing**

# FOSA Mid-Year Meeting

June

Austin, TX 2023

TU Graz, Austria 2024

UC Berkeley, 2025

Prysmian, Milano IT, 2026



# FOSA Mid-Year Meeting

June 3-4

UC Berkeley, CA 2025



**Berkeley**  
CENTER FOR  
Smart Infrastructure



## 2025 Confirmed Speakers

- **Dr. Kenichi Soga, University of California at Berkeley**
- **Dr. Yuxin Wu, Lawrence Berkeley National Laboratory (LBNL)**  
"Fiber Optic Sensing for Reliable Energy Systems"
- **David Jang, Caltrans**
- **David Katzev, East Bay Utility District's (EBMUD)**
- **Michael Boone, Pacific Gas & Electric**  
"Fiber Optic Monitoring at PG&E - An Owner's Perspective"
- **Dr. Biondo Biondi, Stanford University**  
"Large-scale wavefield imaging under cities with fiber-optic seismology"
- **Dr. Werner Lienhart, Institute of Engineering Geodesy and Measurement Systems  
Graz University of Technology, Host of the 2024 FOSA mid-year member meeting**  
"The role of fiber optic sensing in the context of Structural Health Monitoring"
- **Brad Lipovsky, The University of Washington**  
"The Fiber Sensing Revolution"
- **Jonathan Ajo-Franklin, Rice University**





# FOSA Annual Meeting

December

Washington, DC

- Visits on Capitol Hill
- Congressional Awards
- Antitrust Refresher
- Networking
- Group Dinner
- Guest Speakers
- Year in Review
- Year Ahead/Gathering Members Voices
- FOSA Awards
- FOSA Board Elections
- Transition – Outgoing to Incoming Board
- FOSA Leadership Elections

# FOSA Committees: TOC

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## FOSA Technology Outreach Committee (TOC)

- Chair: Gayla Arrindell, Corning
- Vice Chair: Dan Langen, Luna

## Raising awareness of DFOS

- Commercial elevation of FOSA member technologies

## Placing content from TC

- Sharing new and existing content created by the TC

## Organizing Speaking Engagements

- Targeted Markets
- High-level positioning on behalf of FOSA members

# FOSA Resources – Raising DFOS Awareness with Freely Available Tools



Technology Primers – one pagers on DFOS, DTS, DAS, DSS, DSTS, etc.



Installation Considerations – best practices/recommendations



FOSA YouTube Channel – archive – 60+ webinars and growing



Monthly FOSA-hosted webinars



FOSA Newsletter “The Monitor” – best monthly DFOS news resource around

For those in: Rail, Pipelines, Third-Party Intrusion, Telecom, Traffic, Homeland Security, Smart Grid, Water Safety, Smart Cities, etc.

# Electronic Media

- **FOSA Newsletter** member news also gets posted to the FOSA Website News tab
- **Webinar** presentations
- **LinkedIn** <https://www.linkedin.com/company/fiber-optic-sensing-association/> Please follow/like/share/FOSA content to help build our network



# Bridge Monitoring with Distributed Fiber Optic Sensing

Werner Lienhart, Lisa Strasser

## FOSA Webinars

Benefit of FOSA Premier Membership

Presented, recorded, and captured on  
FOSA's YouTube Channel

60+ Videos in library – all things DFOS

Average over 1,000 views each

FOSA on YouTube – [subscribe here](#)



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<https://fiberopticsensing.org>