BROCHURE

TOTAL TRACKMONITORING

Rockfall Monitoring

24/7 Hazard Protection

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Rockfall Monitoring by L.B. Foster is a revolutionary system that monitors and protects the right of way and rolling stock in rockfall prone areas.

Rockfall Monitoring uses high resolution LiDAR scanners to precisely determine rock size and position, providing the ability to alert rail operators of hazardous conditions. Once activated, the system can control nearby signals, alert maintainers of the track condition and initiate a customer response. Rockfall Monitoring has been proven in the toughest conditions to reliably detect obstacles and alert rail traffic of potential obstructions.

- Real time continuous obstruction monitoring
- Advanced detection algorithms
- Safety critical with full sensor redundancy
- Greatly reduced maintenance and false positive rate compared to slide fences
- Promotes greater safety by eliminating dangerous inspections and repair work
- Relay outputs for simple signal integration

System Features

- Ruggedized LiDAR housing
- Redundant overlapping scan fields
- Transient object elimination
- Safety critical hardware
- Detected rock position and size
- Log of event regularity
- Optional live view camera system

Total Track Monitoring by L.B. Foster features sophisticated data management software. Event data resulting from rockfall events are captured, stored, and analyzed, providing detailed intelligence on event regularity and severity. This allows system operators to build a detailed event profile and identify actions to prevent or offset future events.

Rockfall Monitoring brings cutting edge technology to rail operations through hazardous terrain. The underlying technology, LiDAR is leveraged to not only detect that a rock has fallen, but also whether it remains an obstacle on track, how large it is, and where it lies in the rockfall susceptible zone. Compared to a traditional slide fence, Rockfall Monitoring greatly reduces delays from rockfall related events, as only rocks that pose a hazard to train traffic, will cause an obstructed track indication.

Rockfall Monitoring is comprised of a series of LiDAR sensors, placed approximately 90 feet apart down the track. This separation gives overlapping and redundant LiDAR scan coverage over the scan area, increasing the safety level of the system. Through software, a detection zone is defined, typically 6 feet from the track center in either direction. Rockfall that lands within this detection zone will trigger an alarm. Additional detection algorithms are used to identify obstacles such as wildlife that enter this zone. These objects will be identified as a non-hazardous and will not generate an obstruction alarm. When a rock does trigger a rockfall alarm, clearing the alarm is as simple as removing the obstacle from the scan zone. Once clear, the system will return to a normal state.

Rockfall Monitoring requires a control system, typically enclosed in a signal house. This control system processes the incoming LiDAR data onsite, and subsequently controls a set of relays to indicate “Clear” and “Obstructed” track conditions. Additionally, when provided with a network connection, Rockfall Monitoring will automatically take pictures of any alarm event with an integrated PTZ camera system. These images will be packaged with any alarm notification, to precisely display the condition that caused an alarm.

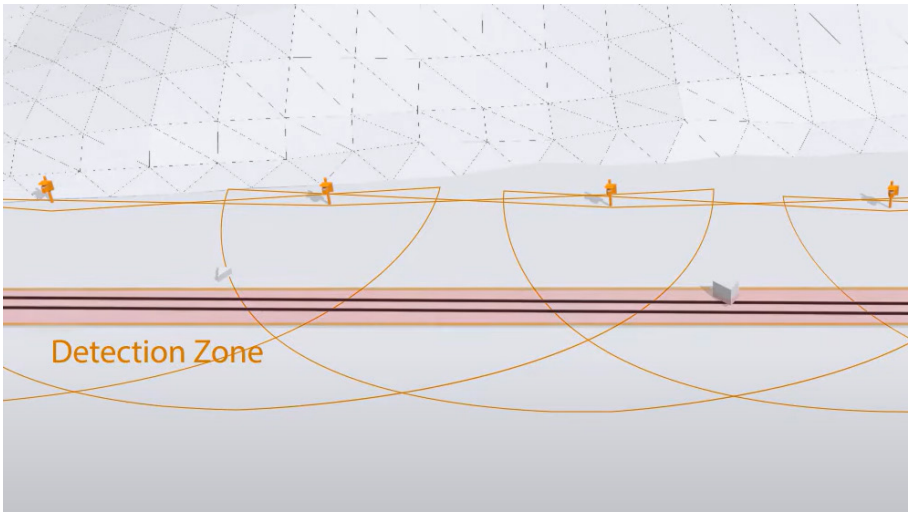

Figure above illustrates typical layout for rockfall monitoring

System Specifications

- LiDAR shall be placed no more than 90 feet apart, through the entirety of the monitoring area to ensure redundant spacing
- LiDAR scan window to be mounted 24 inches above top of tie
- Control Panel must be no more than 3,000 feet from LiDAR equipment
- Direct inbound power required
  - LiDAR Draw
    - 25 W
  - Junction Box Draw (1 needed per 8 LiDAR)
    - 20 W
  - Control Panel Draw
    - 150 W
- System Control Rack Size
  - 24”W X 36”H X 24”D

L.B. Foster

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