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Findlay Irvine

Rail Business

IQRF Conference
2018





Specialists in...

Skid Resistance for Airports,
Highways and Helidecks

Working with the Rail Network

Weather Monitoring for Roads

Engineering for the Defence
Sector



Network Rail



- **Condition Monitoring**
 - **Signalling**
 - **Power**
 - **Structures**
 - **Track**
 - **Civil Assets**

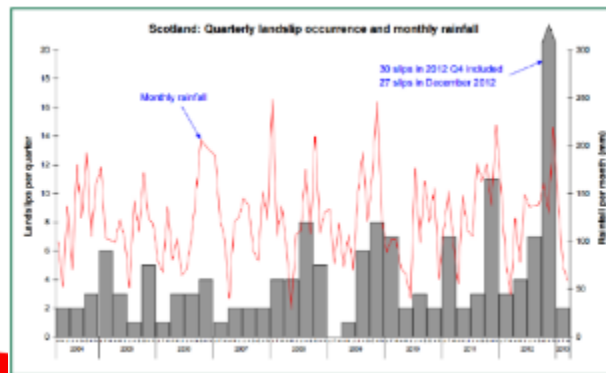


Earthworks Landslide Monitoring System



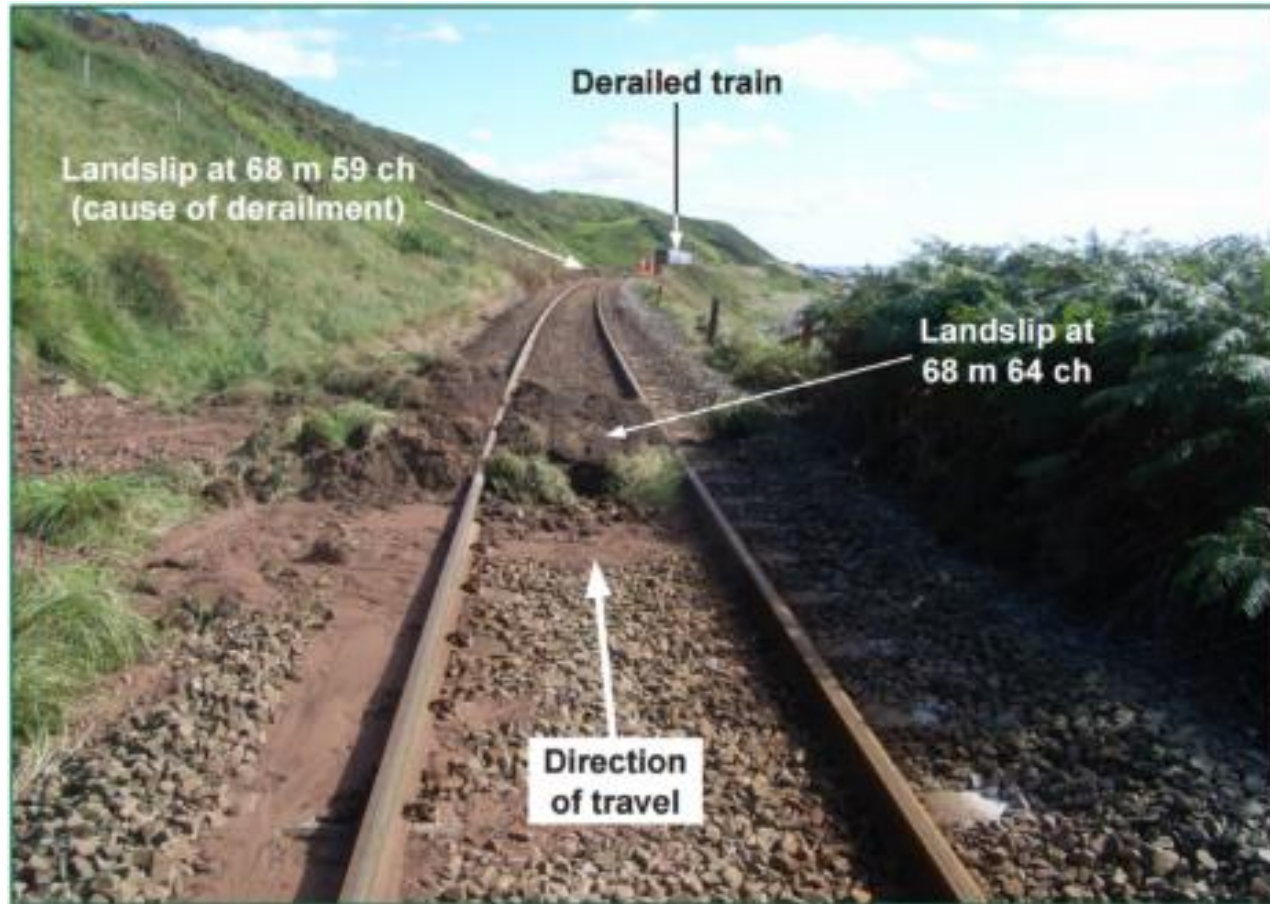


- Network Rail have been managing earthworks effectively for many years.
- However in 2012/2013 there was over 100% increase in failures.
- It was luck that there were no serious injuries due to derailments.





Network Rail- Earthworks



It was happening to what were thought less critical earthworks.



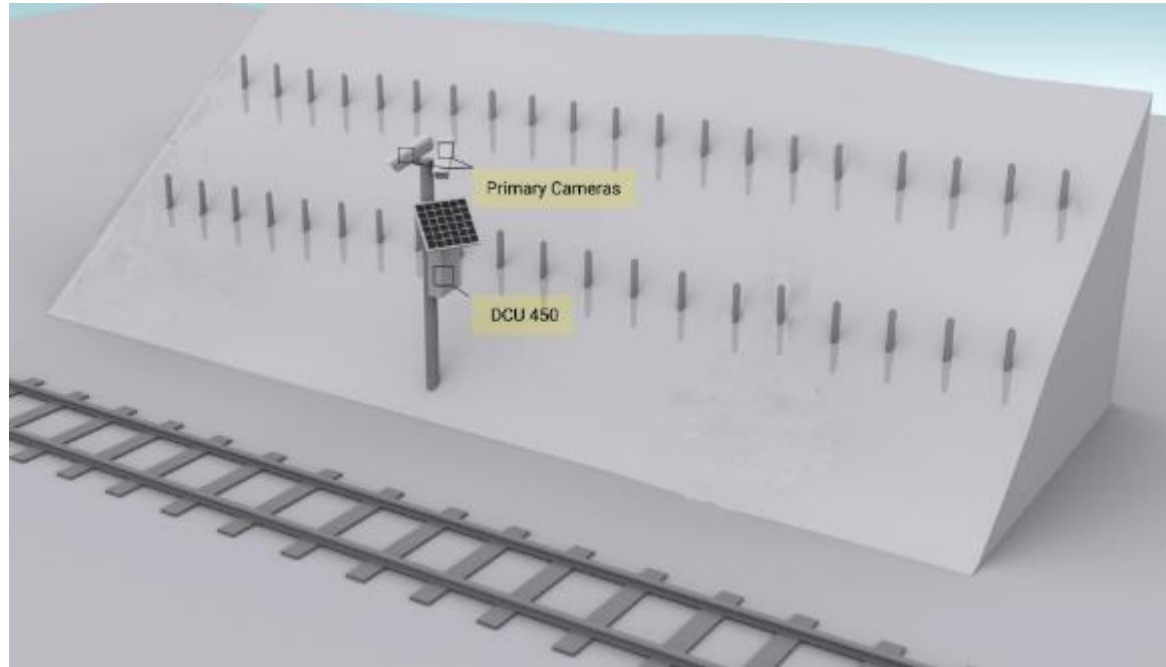
Still Happening



- **Network Rail wanted an automatic monitoring system which had to be:**
 - **Reliable**
 - **Robust**
 - **Solar/Battery**
 - **Wireless**
 - **Low Cost**
 - **Simple to install**
 - **Maintenance free**



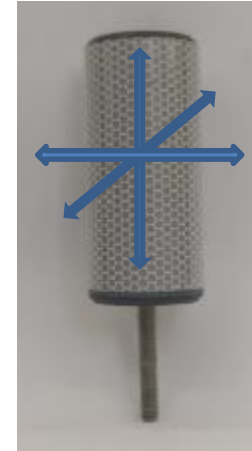
Network Rail- Earthworks



- **Solution**
 - **Wireless tilt sensor array**
 - **Solar powered logger**
 - **Day/Night Cameras**



- **Sensors**
 - **3 axis tilt sensor**
 - **Wireless**
 - **5 Year battery life**
 - **No calibration required**
 - **No alignment required**





- **Logger**
 - **Solar powered**
 - **Day/Night Camera**
 - **Covert IR**





Management System

The screenshot displays the 'Findlay Irvine Asset Monitoring' web application. The page title is 'Apperley Junction 202.1265D Site Details'. A navigation bar at the top includes links for 'HOME', 'HISTORY', 'CONTACT', 'CONFIGURATION', and 'ADMIN/LOG OFF'. A status message indicates that the site has returned to normal after an alarm. The main content area features a 'Sensors (40/40/40/40)' section with a grid of 40 green sensor status indicators. Below this is a 'Camera Images' section showing four live video feeds: '1 Low Mileage 2042.034 15.6136', '2 High Mileage 2042.034 15.6136', and two night-time views of the same locations. The interface also includes a sidebar with navigation icons and a bottom navigation bar with options like 'Home', 'Upload', 'Triggers', 'Events', 'Status', and 'Devices'.



Network Rail- Earthworks



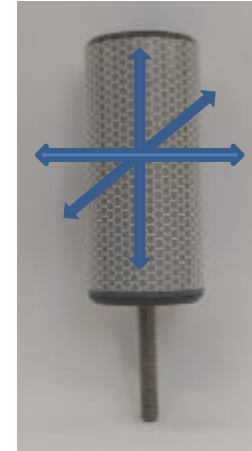


- **Pilot Project**
- **180 systems installed nationally**
- **40 currently live**
- **Remaining being commissioned**

- **Approx 7000 sensors installed**

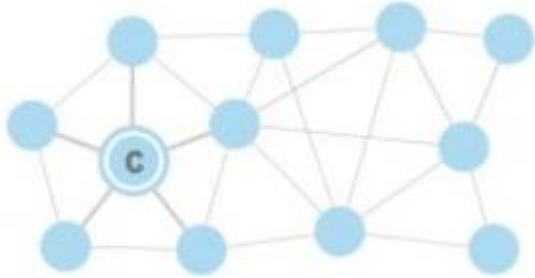


- **Sensors**
 - **Accelerometer**
 - **0.1 degree accuracy**
 - **Rotational movement**
 - **Not translation**
 - **Measure every 1 sec**
 - **5 Year battery life**





- **Sensors**
 - **Sensor**
 - **Mems Accelerometer**
 - **Phone Technology**



- **Started with Mesh**
- **Changed to star to save power**



Thanks For Listening
See us on stand for questions

