Intelligent Maintenance for Railway Systems

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Ir. LINUS ANDOR MULANA SIJABAT, IPM, FIRSE.
DIRECTOR OF OPERATION I
PT Len Industri (Persero)
OUTLINE

Problems of Railway Track
Solution for The Problems
Intelligent Maintenance
Problems of Railway Track

Current Problems

**Sagging Track**
Need to check the mainlines periodically with measuring train

**Landslide**
A landslide does not wait for the measuring train to come

**Shifting Track**
A shift of track needs immediate action
Problems of Railway Track
Current Solution

Measuring Train Is Not The Solution

- Need time to deploy
- No operation during deployment
- Cannot detect sudden incident such as landslide
Solution for The Problems
Better Solution

Turning every train into a measuring train

Build database of every operational track

And we will:
• notice every change in the track
• expand the knowledge of the track
Solution for The Problems
Collaboration for Artificial Intelligence (AI)

KH-1 – Sensor for Artificial Intelligence
Intelligent Maintenance
How It Works

KH-1 monitors the track during train operation, creating unique fingerprint of every track.

Artificial Intelligence (AI) system collects track information from everywhere and:
- learning all of track data
- real time monitoring
- early detection of problem
Intelligent Maintenance
Artificial Intelligence System

Any train ride with KH-1 are visible and all of the measurements being made can be seen.

If the measured graphic is different from the fingerprint, AI system will recognize it and remind the operator to do proper maintenance.

Advantage of using AI in track maintenance:
• Not dependent on personnel
• Consistency of quality
• Can be duplicated easily
Intelligent maintenance with KH-1 can be integrated with existing OCC.
Thank You