What are the railways/countries planning next?

Banedanmark/Denmark
Roughness measurements in Banedanmark (BDK) – implications for efficient environmental noise reduction

• A mobile method for estimation of rail roughness level on a large scale, suitable for countrywide surveys
• Data provides useful data for track maintenance both in terms of environmental noise and rail quality
• Data is stored in BDK’s track measurement database
• BDK has conducted a statistical analysis to see how roughness levels correlate to other types of rail control measurements
• BDK has developed a tool to rank track sections according to e.g. rail quality, traffic and population density to most effectively out from a socioeconomic perspective to reduce the amount of environmental noise from the track and to document the effect of noise reduction measures
Roughness measurements in BDK – implications for efficient track maintenance

• BDK has used the data on a case by case basis to:
  • identify previously undiscovered rail defects, including ones in an early stage of development
  • identify zones with bad rail surface quality
  • identify bad quality welds and isolation joints
  • plan, prioritize and assess the quality of large-scale maintenance works such as grinding and milling
  • complement and validate the information provided by other track measurement methods.

• Peaks in the roughness data shows to correlate well with the presence of defects, welds and isolation joints, and its magnitude seems to reflect the severity of the problem
Roughness measurements in BDK – implications for efficient track maintenance

• Likewise, high roughness levels over large lengths correlate with bad rail surface (including, but not limited to, corrugation), bad quality of maintenance (grinding and milling in particular) or a large time elapse since the last maintenance intervention.

• BDK has given the measurements a significant role in planning the large-scale maintenance operations of grinding and milling.

• Future plans include ranking the quality of switches and crossings based on their surface roughness profile.
Unreported rail defects
Roughness measurements in BDK – EU noise mapping END

I eksemplet her fra Bredballe viser de nye målinger at der 37 % flere boliger end hidtil antaget, der er støjbelastede

De nye målinger gør at Banedanmark kan planlægge, prioritere og dokumentere indsatseren mod nabostøj langt mere effektivt end før