What are the railways/countries planning next?

12th UIC Workshop on Railway Noise & Vibrations, March 19th, 2019

Trygve Aasen, senior adviser, noise and vibration Technology, Infrastructure division
Overview

• Refining strategy for NOI TSI
• Improving environmental noise impact assessments
  − Revision of national noise guidelines
  − Revising/changing national noise prediction method
  − Improving mitigation measure toolbox for railways
Refining strategy for NOI TSI

• **Original strategy approved summer of 2017**
  - CBB estimated on all ‘quieter routes’ by 2027

• **Refined strategy to be approved spring of 2019**
  - CBB on all ‘quieter routes’ by 2032 (at the latest)
  - Stricter requirements for rail roughness
  - CBA for financing mechanisms, incentivizing retrofit
  - Support research on the use of CBB in severe winter conditions
    • UIC CBB-W
    • UIC CBB/Wheels
    • Cooperation with NSA NO & nordic freight operators
Improving environmental noise impact assessments

- Nordic calculation method
- Norwegian guideline t-1442
- Mitigation measures toolbox

Environmental Noise Impact assessment
Improving environmental noise impact assessments

**Calculations**
- Source
- Propagation
- Obstacles

**Toolbox**
- Trackside measures
- On-track measures

**Guideline**
- Recommended values
- Common sense approach
  - $L_{den} / L_{5AF}$
Revision of national noise guidelines

• Current version was primarily made for road noise
  - Practice rooted in fulfilling recommended limit values
  - Zoning plan requirements > common sense solutions
  - Rigid, limited room to opt for on-track mitigation measures

• National revision in 2019, aim:
  - Common sense approach for railways
  - Mitigation measure principle; avoid, reduce, abate
  - Include vibrations

❖ We should always strive for common sense solutions to remove or reduce annoyance, not just ‘blindly’ fulfill limit values
Revising/changing national noise prediction method

- **Joint Nordic cooperation**
  - Nordic workshop group aimed to facilitate for selection of national calculation models
  - CNOSSOS will be used for the END strategic noise mapping in 2022

- **Current calculation method for railways, Nord96**
  - No aerodynamic noise contribution
  - Overestimation at speeds > 120 mph for steep terrain
  - No correction for curve squeals
  - Insufficient noise emission data
Improving mitigation measure toolbox for railways

• Increase ease-of-use on-track noise mitigation and preventative maintenance measures by:
  − Classification of track quality correction factors
  − Mapping of singularities, bridges, switches and sharp curves
  − Revision of technical rulebook to ensure sensible on-track solutions
Thank you for your time.