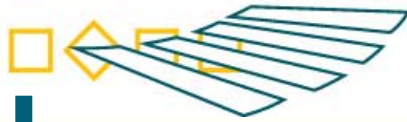


IPG Railways

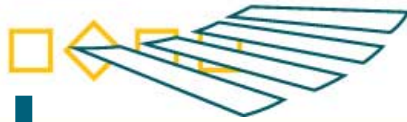
Jan Willem Lammers – ProRail
Coordinator IPG railways

- Goals and background
- Results so far
- Budget and future



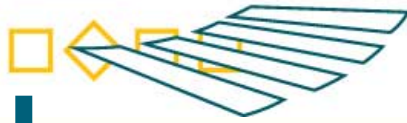
Goals of IPG Railways

- Period of 2001 - 2007
- Development of innovative and cost effective sound abatement measures
- Developing of instruments and methods for the management of capacity including environmental aspects
- Budget 2004 – 2007: appr. € 28.5 million



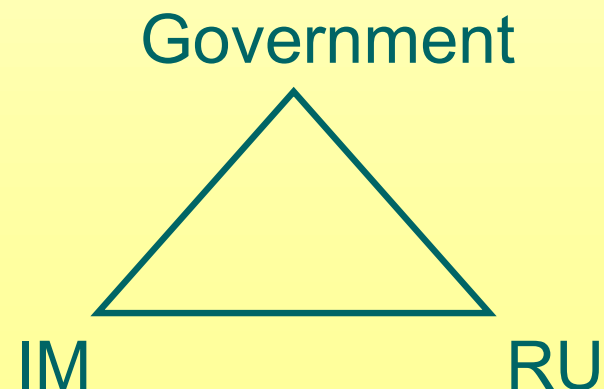
Situation of Dutch railways

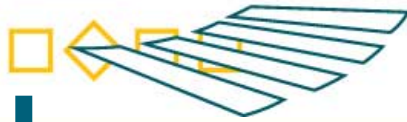
- Separation of infrastructure management and railway undertakings is completed
- Noise is and will be a constraint in network capacity
- Sound barriers have diverse problems:
 - Barrier-effects in both urban and rural areas
 - High costs
 - Noise measures on account of growth of transport have to be funded by track access charges, this will result in a high cost increase



Cooperation within railway sector

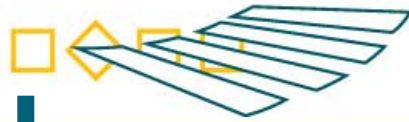
- Started in 2004
- ProRail organizes the cooperation (inframanager)
- Projects are done by both RU's and IM
- Projects to be consulted with railway undertakings (RU's)
- Execution and finances of a project are managed bilateral between Ministry of Transport and projectmanager





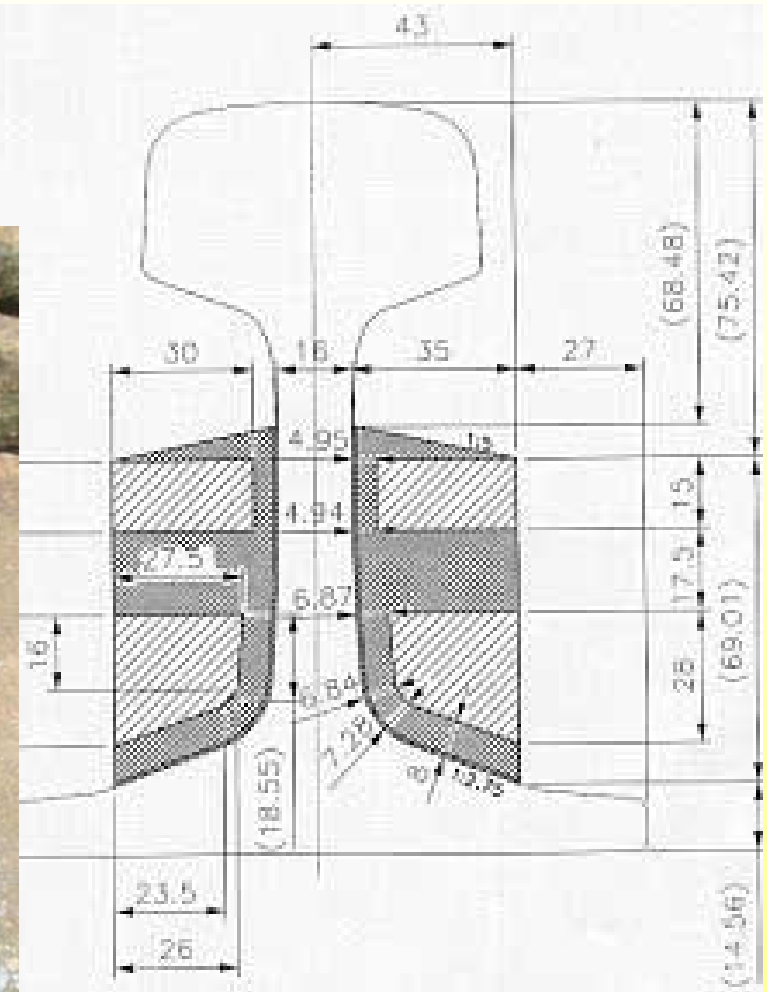
Results so far

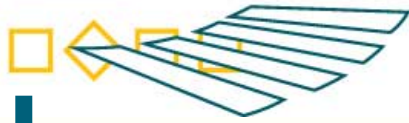
- Raildamper (project is nearly finished)
 - Reduction 3 dB(A)
- Acoustical grinding (nearly finished)
 - Reduction 2 dB(A)
- Retrofit freight wagons (test is in execution)
 - Reduction 5 – 8 dB(A)
- Retrofit passenger trains (test is in execution)
 - Reduction 5 – 8 dB(A)
- Innovative shunting yard (follow up in preperation)
 - Diverse effects
- Knowledge centre (in preperation)
 - No direct noise reduction expected



Raildamper

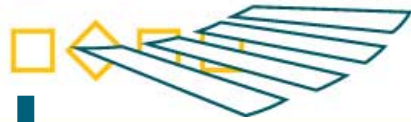
- Quiet-stone
- Corus tuned railway damper





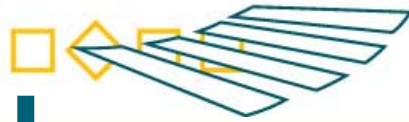
Raildamper

- Acoustical results Corus raildamper are good:
 - 3 dB(A) in average situation
 - 2,5 dB(A) in situation with very smooth rail
 - 6 dB(A) in situation with corrugated rail
- ProRail has the technical specification for rail dampers
- Corus rail damper is approved, the damper can be used on Dutch railways
- Lifetime will be the same as the rails



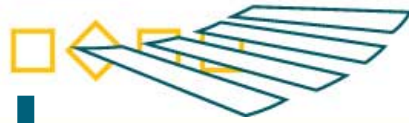
Raildamper - Cost effectiveness

- 3 dB(A) reduction can save appr. 1 meter noise barrier height, this equals to € 600 / meter for 30 years
- for the first experiment costs were € 600 / meter for two track line
- in special situations (high buildings, barriers on two sides, existing barriers too low) the savings are higher
- market development can decrease prices by 30 – 70%



Acoustical grinding – Cost effectiveness

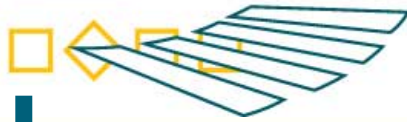
- 2 dB(A) reduction can save 0,5 meter noise barrier height, this equals to € 300/meter for 30 years
- costs for acoustical grinding amount to € 100/meter for two-track railway line for 30 years
- in special situations (high buildings, barriers on two sides, existing barriers too low) the savings are higher
- in general cheap compared to barriers



Acoustical grinding - Remaining issues:

- grinding quality must improve (specification in terms of roughness for grinding companies Speno and Schwebbau)
- system for monitoring
- little or no effect using cast iron braked rolling stock

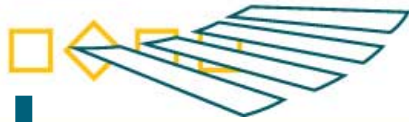




Near future

Projects to be started:

- Knowledge centre, including the establishment of an international validating board
- Innovative shunting yard (3 projects)
- Experimenting with new technical solutions
- Monitoring of sound emissions
- Stimulation of implementation:
 - test sites for projects (both rolling stock and infrastructure), and/or
 - a financial construction for implementing the retrofit of noisy rolling stock



Contact?

www.innovatieprogrammagemageluid.nl

www.fluistertrein.nl

(sites are also available in English)

or

JanWillem.Lammers@ProRail.nl