

*North Sea – Mediterranean RFC  
Rail Advisory Group*

*Anti Noise Policies*

*May 24<sup>th</sup> , 2016*



Co-financed by the European Union  
Connecting Europe Facility

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# Agenda

1. Objectives of the TSI
2. *European Panorama*
3. *Main points on which we should pay attention*

# 1. *Main objectives of the TSI and regulation*

- By 2022, the share of the population exposed to noise exceeding 60 dB, measured as daily exposure, should be reduced by 50%;
- By 2022, the share of the population exposed to noise exceeding 70 dB measured as night exposure, should be reduced by 50%;
- Rail freight competitiveness should not be reduced;
- Noise triggered obstacles to interoperability and to the functioning of the external market should be avoided.

# 1. *Main objectives of the TSI and regulation*

## Act on noise sources

- More specifically, the problem is identified with the braking technology used (especially **the cast iron brake blocks**), which affects the wheels' surface and increases the roughness of the rail, resulting in more rolling noise.
- It is costly to change **the brakes**, and because the silent brakes, made of composite materials (K and LL-brake blocks), wear out quicker and thereby result in higher maintenance and operating costs.
- Another source of rolling noise is **rough tracks**. Specific track maintenance in order to reduce noise emissions, is costly.

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## 2. *European Panorama : Switzerland*

- More than 65 % of the freight traffic is a transit traffic.
- Huge investments in rail infrastructure to shift freight from road to rail (taxes also).
- A specific law was voted in March 2000: the objective is to reduce at least 2/3 of the population exposed to rail noise (1,854 billion CHF allocated).
- 280 km anti noise wall were built and 90 % of the wagons registered in Switzerland were equipped with braking blocks K. The replacement was entirely financed by public authorities (between 410 and 490 M€).
- The objective is almost reached but the walls built are not high enough to protect highest habitations floors and 50 % of foreign wagons running are not compliant with the STI.

## 2. *European Panorama : Switzerland*

- Then, a new law was voted in November 2003 with 300 CHF million:
  - Mandatory TSI compliance for all wagons in 2020, but a possibility to postpone this to 2022 is foreseen in the law. According to the authorities, this mandatory compliance in 2020 shouldn't be a problem as the part of foreign wagons compliant is continuously growing (67 % for German, 20% for French in 2014).
  - Rail grinding program and acoustic absorption installations (40 million CHF)
  - R&D support for silent rail equipment
  - Punctual measures for noise protection / reduction : metallic bridges, other walls, etc.
- Since 2000, SBB *Infra* applies a differentiated pricing with a bonus for the TSI compliant wagons : 0,01 CHF /axle /km. Since 2013, it has been doubled (0,02 CHF / Axle /km).

## 2. *European Panorama : Netherlands*

- As in Switzerland, for Netherlands, the noise reduction is a national priority. A regulation applies since July 2012: a limit for noise level was defined by line and rail network section.
- Regarding the traffic growth, some of these limits will be overtaken in 2017/2018 if nothing is done on rolling stock side.
- According to the authorities, actions on rolling stock are 3 or 4 times cheaper than investing on infrastructure.
- Currently almost 30 % of the wagons are TSI compliant. The objective is to have 80 % by 2020.



## 2. *European Panorama : Netherlands*

- In 2009, a differentiated tarification was applied but it the objectives have not been reached:
  - the composite brake blocks K were the only authorized ones and they were expensive.
  - 90 % of the freight traffic is an international traffic and the distance run in the Netherlands are too short.
- In 2012, it has been decided to give a bonus of 0,04 € /wagon /km but only if all the train (all wagons) is compliant to the STI.

## 2. *European Panorama : Germany*

- In Germany, the rail noise became early a very important political stake :
  - the traffic grew up more than 40% between 2002 et 2012
  - The situation is particularly sensitive in the Rhine Valley since the passengers high speed line (Cologne / Frankfurt) is operational.
- The authorities launched a federal program in 1999 with 827 M€ invested from 1999 to 2013 to build 1411 km of anti noise walls (the need was estimated to 3690 km), but:
  - the walls are less effective in a valley configuration
  - people don't accept such walls in the landscape

## 2. *European Panorama : Germany*

- Then the German authorities decided in 2008 to complete this approach with actions on rolling stock : “Silent Rhine” project. The objective was to change 5000 wagons brake blocks with subsidies (50% of the cost) for owners. The result was disappointing as only 1500 wagons were equipped and the project was stopped in 2012 :
  - The subsidies rate 50 % (maximum allowed by EU regulation for public subsidies) is too weak
  - The operators didn't want to invest the other 50 %.
- a double subsidies system in 2012 :
  - 50 % subsidies for iron cast braking blocks replacement by braking blocks LL. Maximim budget allocated : 152 M€ for 8 years.
  - Malus for the noisy wagons financing the bonus for the compliant wagons.

## 2. *European Panorama : Germany*

- Germany government signed in the 2013 coalition agreement :
  - Noise rail reduction (50 % by 2020)
  - Malus / Bonus Tarification
  - Objective : equip the 90,000 freight wagons by 2020
- Germany wants and is asking support for :
  - noise rail reduction (50 % reduction by 2020)
  - banning all freight wagons that are not STI compliant (Sweden and Netherlands supporting)
  - applying restrictions on freight night traffic by 2020 if the objectives are not reached

## 2. *European Panorama : France*

- France hasn't defined a regulation as tough as Switzerland or as Germany
- This is for economical reasons, due to the important number of old wagons (in 2014, only 3% of freight wagons are younger than 2009)
- **France may duplicate Switzerland model** with a different timeline:
  - ban non compliant wagons on 2025 or 2030 depending on the age of the wagons
  - Mandatory retrofit when the wagon goes for repair (every 50 000 km)
  - Apply a bonus/malus Tarification policy

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### 3. *Main points on which we should pay attention*

- The **regulation is getting tougher and tougher** :
  - Some countries could definitely ban non compliant wagons in 2020; example: CH, GER, NED, etc.
  - Or ban non compliant wagons from night traffic
  - 2020 seems to be a critical deadline
- Be aware of **existing subsidies possibilities** :
  - Incentives
  - Malus getting higher and higher
  - Subsidies for composite brake blocks
- The trend is to **act on Rolling stock more than infrastructure** as it is less costly from the public authorities side. (mainly composite brake blocks K and LL)

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