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Railway noise in the common noise assessment methods Cnossos_EU

Introduction

Paul de Vos

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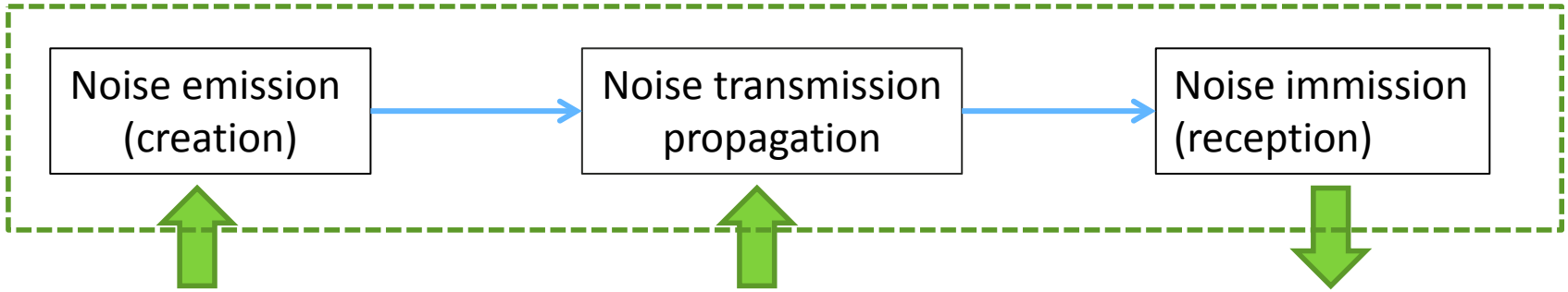
EU Directive on Environmental Noise

- Noise mapping and action planning (every 5 years)
- Competent authority is Member State
- Common approach, e.g. prediction method
  - Voluntary implementation as National Method (for planning procedures)
- For railways:
  - Dutch method 1996 from 2007 – 2017
  - National method provided it was equivalent
  - From 2018: New Annex II: Cnossos-EU

Prediction method and model

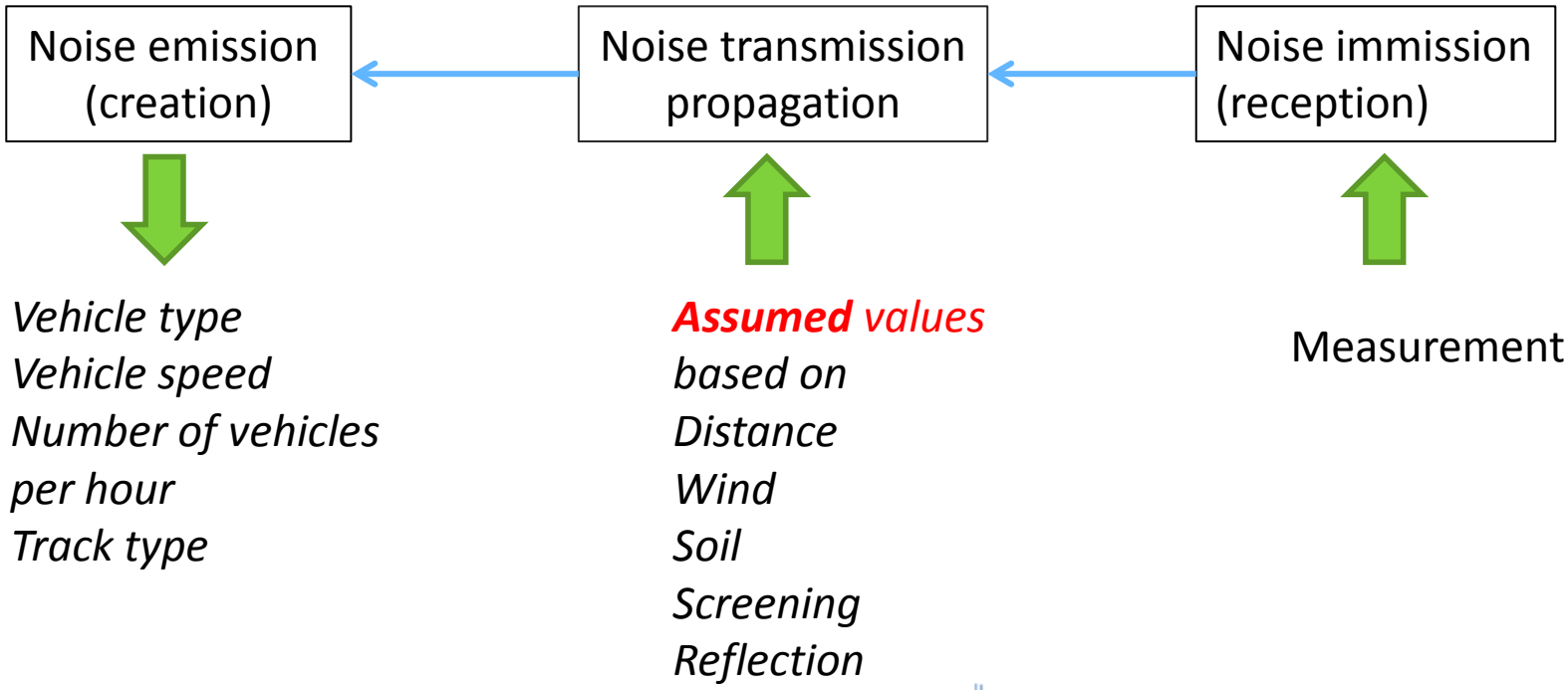


Vehicle type
Vehicle speed
Number of vehicles per hour
Track type

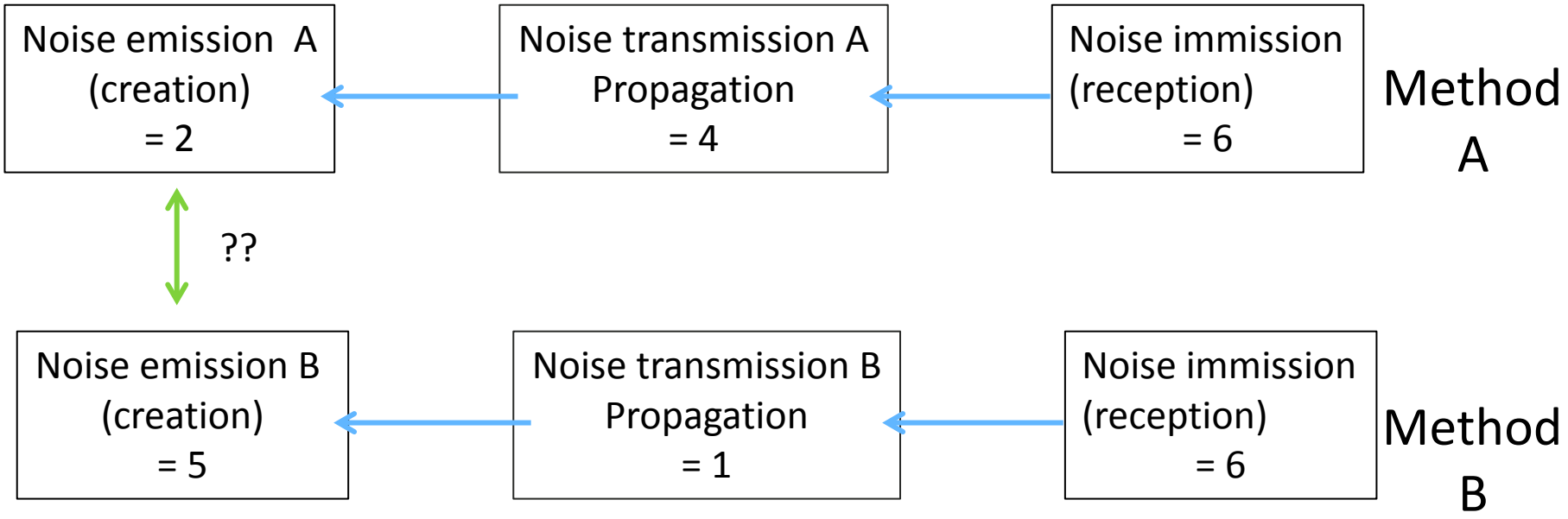
Distance
Wind
Soil
Screening
Reflection

L_{den}
L_{night}

Development of a method



Different methods, different values



It is all about the definition of the source terms !

Quality Framework (2015/996)

Accuracy of input values

All input values affecting the emission level of a source shall be determined with at least the accuracy corresponding to an uncertainty of ± 2dB(A) in the emission level of the source (leaving all other parameters unchanged).

Use of default values

In the application of the method, the input data shall reflect the actual usage. In general there shall be no reliance on default input values or assumptions. Default input values and assumptions are accepted if the collection of real data is associated with disproportionately high costs.

Quality of the software used for the calculations

Software used to perform the calculations shall prove compliance with the methods herewith described by means of certification of results against test cases.

Candidate critical parameters

- Rail roughness (location dependent)
- Squealing curves (location dependent)
- Switches and turnouts (joints)
- Steel bridges
- …

Cnossos Network

- Share experience
- Develop common strategies
- Exchange data
- …