

# RAILWAY BUSINESS UNIT



Experts in testing and modelling complex mechanical systems committed to the development and operation of more reliable, durable, quiet and comfortable technologies.

[www.vibratec.fr](http://www.vibratec.fr)

VIBRATEC ASIA PACIFIC

# ABOUT VIBRATEC GROUP



Established since 1986

Companies of SITES Group:

- VibraTec
- VibraTec Asia Pacific
- MicrodB
- VibraTeam

Expert in the testing and modeling of complex mechanical systems.

In the following fields:

- Vibration
- Acoustics
- Fatigue / Reliability

## A multi-sector experience



Railway



Energy



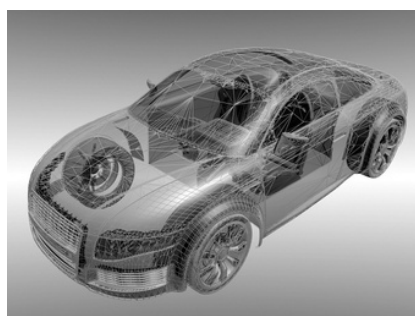
Industry



Marine & Defense



Aerospace



Automotive



# RAILWAY BUSINESS UNIT



VIBRATEC IS PRESENT AT ALL STAGES OF PRODUCT DEVELOPMENT:  
ROLLING STOCK AND INFRASTRUCTURE

- 5 yrs



## DESIGN

- Feasibility
- Specifications
- Design assistance
- Optimization
- Testing & validation

## COMMISSIONING

Reception & acceptance:  
*-Acoustic and vibration*

Diagnostics & expertise:  
*-Mechanical failures*  
*-Complaints from residents*  
*-Derailment*

Recommendations & solutions

Year  
0s



## OPERATION

- Maintenance optimization
- Diagnostics & expertise
- Asset management
- Life extension support



+ 30 yrs

# RAILWAY SYSTEM APPROACH



A DEDICATED TEAM WITH INDUSTRY EXPERTISE SERVING THE ENTIRE RAILWAY SYSTEM



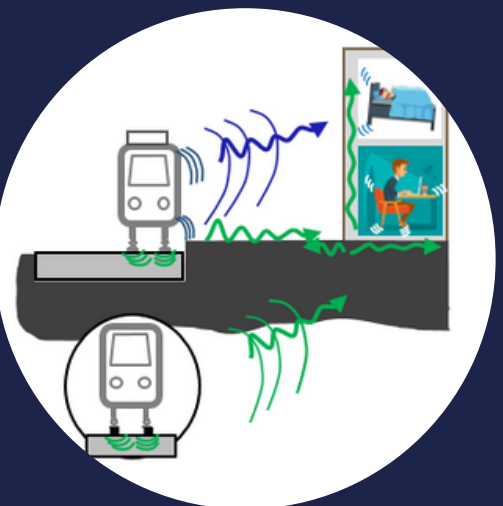
## WHEEL - RAIL INTERACTION

- Contact force identification
- Wear and fatigue of rolling surface, wheels and rails



## INFRASTRUCTURE & ROLLING STOCK

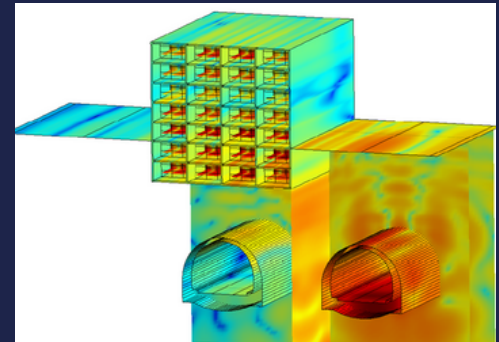
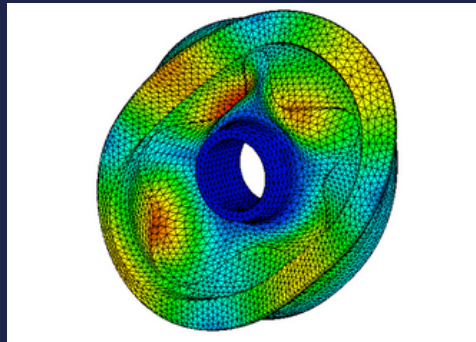
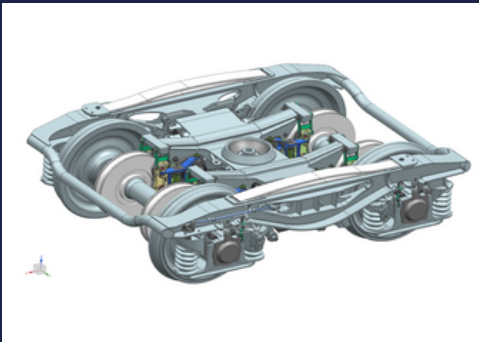
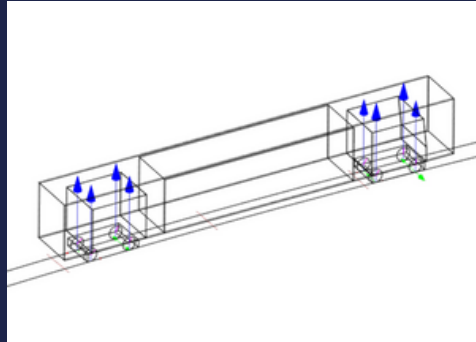
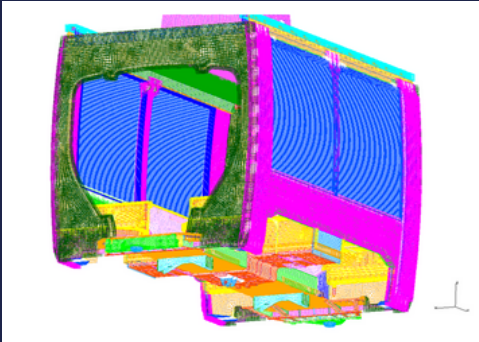
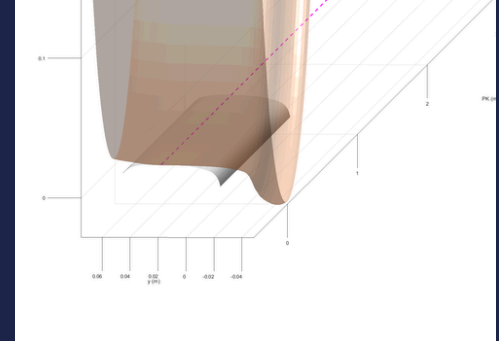
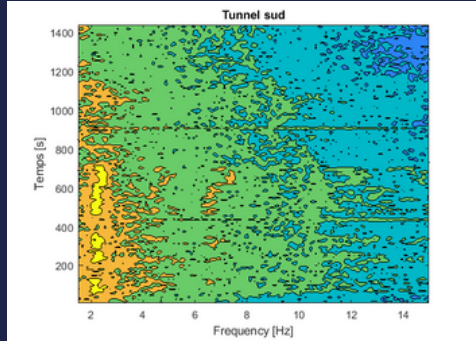
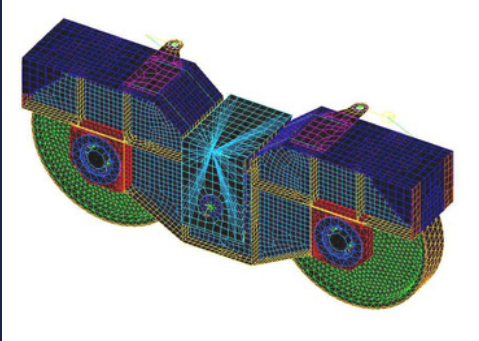
- Railway dynamics: stability, derailment, mechanical loading
- Design & optimisation
- Asset management: Service life and reliability



## ENVIRONMENTAL IMPACT

- Vibration and noise propagation in the vicinity of transport lines
- Transmission in buildings
- Defining track laying

# MODELING COMPONENTS / SYSTEMS / ASSEMBLIES

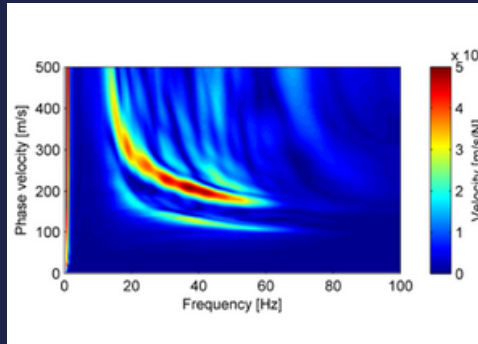


- Mechanical response computation (FEM)
- Rail / wheel wear
- Rail / wheel contact
- Electrical - Mechanical
- Ground vibration - Track laying
- Acoustic radiation
- Interior acoustics

- Railway dynamics
- Rolling noise - Squealing
- Aeroacoustics
- Mechanical design
- Gears & Bearings
- Signal processing
- Software development
- Excitations sources / efforts / coupling



# TESTING COMPONENTS / SYSTEMS / ASSEMBLIES



- Acoustic testing
- Experimental Modal Analysis
- Components validation / Testing severity
- Rolling tests
- Ground vibration tests
- Endurance tests
- Vibration diagnosis
- Acoustic diagnosis
- Specific instrumentation
- Roughness measurements
- Test bench design
- Monitoring
- Signal processing
- Software / hardware development
- Excitations sources / efforts / coupling

# OUR TRUSTED PARTNERS



ALSTOM

MMC-GAMUDA 

 RATP Dev

SBS Transit

Société  
du Grand  
Paris 

EURO  
TUNNEL

MIVB STIB  
.brussels 

KEOLIS

COLAS RAIL 

SIEMENS

SNCF

@ egis

 TSO

 中国中车  
CRRC

 transdev  
the mobility company

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# GET IN TOUCH



## Farhana Yusree

Business Development Engineer

+6017 930 7688

farhana.yusree@vibratec.my

## Alif Jamalludin

Business Development Manager

+6012 683 8089

alif.jamalludin@vibratec.my



A-15-13 Menara UOA Bangsar, 5 Jalan Bangsar Utama 1,  
59000 Kuala Lumpur, Malaysia

[www.vibratec.fr](http://www.vibratec.fr)

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