# RIMA
# ROBOTICS FOR INSPECTION AND MAINTENANCE
# Info & Matchmaking Day

**Nano-INNOV : 8 Avenue de la Vauve - 91120 PALAISEAU**

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# Scope of the Presentation

1. Who and How is organised the « Fédération des Industries Ferroviaires » / FIF
2. Identification of RIMA Challenges for FIF
3. FIF challenges to fit RIMA
4. SWOT for the approach to RIMA

# WHO IS FIF…

- *More than 300 Members of the French Railway sector*
- *5 « clusters » or associations of the Rail Sector(AIF, NEOPOLIA, MECATEAM RAILCLUSTER, MIPYRAIL, VOIES FERREES DE FRANCE)*
- *A total annual turnover of around 4 Bn€ (domestic and outside France) with a work force of about 30 000 employees in France*
- *5 main activities :*
  - ✓ Rolling Stock (RS) Manufacturers,
  - ✓ Equipement Manufacturers for the RS,
  - ✓ Signalling,
  - ✓ Infrastructure,
  - ✓ Digital Technologies
- *Connection with a constant growing worldwide Rail market & actors*

# IDENTIFICATION OF RIMA CHALLLENGES FOR FIF

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|---|---|
| **Challenge 5 : Tranport Hub** | **Safety & Security of transport infrastructure**<br>**Detection of anomalies**<br>**Robotized inspection, repair and maintenance**<br>**Communication between two elements of the railway infrastructure** |
| **Challenge 6 : Road, Rail and Civil infrastructure**<br>**Sub Challenge 6.1 : Increase efficiency in the I&M acivities of civil infrastucture** | **Improve Night working under harsh weather conditions**<br>**Robots to detect defects of infrastructures (rails, tunnels, etc.).**<br>**Robotic solutions for approaching unreachable places** |
| **Sub Challenge 6.2 : Reduce risk for workers during I&M activities on civil infrastructures** | Remote aerial robots for workers' safety<br>Safety approved devices for workers |

# IDENTIFICATION OF ACTORS AND PROJECTS IN THE PIPE 1/2

- Actors : SNCF Réseau, SNCF Mobilités, FIF members of the Digital sector
- Some Projects/ Sprints in the pipe

- Robots to inspect the air ducts of the train and to collect dust for bio analysis

- Drones to I&M the train caternary and civil works of the electrifying network

- Sprint 2.3/4 : – Monitoring maintenance tool defects for track maintenance

- Sprint 3.1 : Geolocalizing maintenance tools & work spots with movement detection

- Sprint3.2 : Alert of flooding risk of the rail track and infrastructure

# IDENTIFICATION OF ACTORS AND PROJECTS IN THE PIPE 2/2

- Sprint 4.1 : Real time barrier position at the rail level crossing
- Sprint 4.2 : Detection of train passing over rail switching
- Future sprint : Geolocalization of catenary pole
- Future sprint : Prediction of rupture of catenary
- Future sprint : Safety protection of isolated infrastructure workers

# SWOT OF THE APPROACH TO RIMA

| | |
|---|---|
| ***Strength***<br>▪ Recognized real expertise of France for rail activities<br>▪ Railways, worldwide transport system with interesting growth<br>▪ Real need to cut down the maintenance cost in rail sector | ***Weakness***<br>▪ SMEs in France are not prepared to file for innovation fund<br>▪ SMEs, not familair with « English » language<br>▪ No real « Patriotisme Economique » in France |
| ***Opportunities***<br>▪ Railways, opened to the Digital era<br>▪ RIMA challenges fit to rail needs | ***Threat***<br>▪ Time frame to respond to RIMA is short<br>▪ High & worldwide competition in rail sector |

fédération des industries ferroviaires
"Les voies du progrès"

# Thank You for your attention

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