RIMA
ROBOTICS FOR INSPECTION AND MAINTENANCE
Info & Matchmaking Day

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

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Setha NET, Technical Adviser - FIF

60 rue Anatole France, 92300 Levallois Perret
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
| Challenge 5: Transport Hub | Safety & Security of transport infrastructure  
Detection of anomalies  
Robotized inspection, repair and maintenance  
Communication between two elements of the railway infrastructure |
|---------------------------|--------------------------------------------------------------------------------------------------|
| Challenge 6: Road, Rail and Civil infrastructure | Improve Night working under harsh weather conditions  
Robots to detect defects of infrastructures (rails, tunnels, etc.).  
Robotic solutions for approaching unreachable places |
| Sub Challenge 6.1: Increase efficiency in the I&M activities of civil infrastructure |  |
| Sub Challenge 6.2: Reduce risk for workers during I&M activities on civil infrastructures | Remote aerial robots for workers’ safety  
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 catenary 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
  - Sprint 3.2: 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

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<tr>
<th><strong>Strength</strong></th>
<th><strong>Weakness</strong></th>
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<tr>
<td>- Recognized real expertise of France for rail activities</td>
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<td>- Railways, worldwide transport system with interesting growth</td>
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<td>- Real need to cut down the maintenance cost in rail sector</td>
<td>- SMEs in France are not prepared to file for innovation fund</td>
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<td>- SMEs, not familiar with « English » language</td>
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<td>- No real « Patriotisme Economique » in France</td>
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<th><strong>Opportunities</strong></th>
<th><strong>Threat</strong></th>
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<td>- Railways, opened to the Digital era</td>
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<td>- RIMA challenges fit to rail needs</td>
<td>- Time frame to respond to RIMA is short</td>
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<td>- High &amp; worldwide competition in rail sector</td>
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Thank You for your attention
snet@fif.asso.fr

*FIF, 60 rue Anatole France, 92300 Levallois Perret*

www.industrie-ferroviaire.com