New slab track design and bench testing for dense traffic and high speed
FFE (Madrid, Spain) – 21 September 2017

Pierre-Etienne GAUTIER
SP1 Leader

SYSTRA
Task 1.1.2 & Task 1.1.3

- New slab track concepts, generation, design, prototyping and testing

Diagram:

- **2014**
  - T 1.1.2: Preliminary workshops

- **2015**
  - T 1.1.2: Detailed design

- **2016**
  - T 1.1.2: Final design
  - T 1.1.3: Prototyping

- **2017**
  - T 1.1.3: Testing 3MB, Testing L-Track

Timeline:

- November
- March
- June
- September
Task 1.1.2

- New slab track concepts generation through collaborative workshops
Task 1.1.2

• New slab track concepts most promising selection

3MB

• RAMS oriented design
• All elements are precast
• Asphalt subgrade
• Easy parts replacement
• 2 stiffness levels
Task 1.1.2

- New slab track concepts most promising selection

L-Track

- LCC oriented design
- All precast elements
- Asphalt subgrade
- Continuously supported rail
## Task 1.1.2

- New slab track concepts detailed design

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• **New slab track concepts, generation and design**

  - 3MB Maintenance and Renewal costs

**Assumptions:**
- East European HSL (Phase 2) : 106 km
- Max speed : 320 kph
- Tonnage : 40 MT/year
- SNCF Maintenance procedures

![Cumulated maintenance costs per kilometer of double track [k€]](image-url)
Task 1.1.3

• New slab track concepts testing

List of tests for both concepts:
• Settling: 300,000 cycles
• Static test (vertical load to get vertical stiffness)
• Dynamic test (3 actuators per rail, vertical load ~ 10,000 cycles)
• Fatigue test (providing symmetrical inclination loading), according to Standard (3,000,000 axles in 1 month)
• Static test (vertical load to get vertical stiffness)
• Dynamic test (3 actuators per rail, vertical load ~ 10,000 cycles)
• Curve simulation test

CEDEX Track Box
Task 1.1.3

- 3MB Testing
Task 1.1.3

- L-Track Testing
Thank you for your kind attention

Pierre-Etienne GAUTIER

SP1 Leader

SYSTRA

pegautier@systra.com