

Conference Series on European Hyperloop Technology  
with a focus session on  
The Development of Large-Scale Research Infrastructure

Q&A:

Technological Development in Large Scale Research Infrastructures

Dr. Ralf Effenberger - INTIS GmbH

1. Q: Who is owning and operating the Lathen test track right now?

A: The owner is IABG mbH and the operator is INTIS GmbH

2. Q: How exactly is the adoption of the Lathen track as a Hyperloop test facility planned?

A: Our recommendation: to start with validation of track/tube elements to be developed, meeting all mechanical and thermal HL requirements (testing first without vacuum, later with vacuum). First phase: e.g., up to 3 different tube constructions (different materials, manufacturing methods, etc.) to be tested (5 tubes of each construction on TVE pylons). Stakeholders to define mechanical interfaces (tube – vehicle) for propulsion, guidance, levitation and braking sub-systems in parallel. Second phase: up to 6km of tubes on TVE-pylons (using tube construction with most suitable performances, including representative structures of the sub-systems and vehicle representative mockup integrated) to be tested. Third phase: All pylons to be equipped with tubes continue testing with mockup or vehicle (as soon as available).

3. Q: Would it be possible to install the HL tube on top of the concrete Maglev track?

A: The tubes can be installed on the existing pylons.

4. Q: How did the test track get power? Did it have its own power generation?

A: 2 Power stations with motor inverters, each 30 MVA, connected to the 110-kV grid for powering the long stator motor; for Hyperloop the power supply strategy would have to be revised, e.g., more “de-centralized” approach, with power stations e.g., every 10km. Power feeding to decentral inverters at 20kV (AC), motor segment switching units not required anymore, many other advantages...

5. Q: Why do you assume EMS and not EDS for hyperloop?

A: According to our expectation EDS will introduce much higher loss than EMS at travel speeds foreseen for Hyperloop.

6. Q: Will the power supply system from Transrapid be reused for Hyperloop?

A: Existing power stations can be reused; motor inverters are obsolete; service is not possible anymore. Nowadays technology provides much better converter solutions compared to what was available about 30 years ago. See also answer to question 4.