

HYPERNEX



FINAL meeting

WP 4 Transferability and roadmap beyond HYPERNEX

23 February 2022

HYPERNEX: Ignition the European Hyperloop Ecosystem S2R-OC-IPX-01-2020:
Innovation in guided transport Ref: 101015145

WP 4 Objective

WP 4 is responsible of mapping the existing synergies between Hyperloop and existing transport modes.

This WP will also describe the needs in terms of standardization and regulation that hyperloop systems may be required to meet trying to take advantage of the existing programmes. Here, the synergies and opportunities within Shift2Rail programmes and other joint undertakings.



WP 4 Structure

The document is organized in three main parts:

- Transferability under S2R roadmap, focused on identify the synergies of this research with railways in the frame of S2R, enhancing those areas where investigation activities can be beneficial for both parties.
- Transferability and cross fertilization to non-guided modes, describing the synergies with other areas and programs, including non-railway modes.
- Standardization and regulation, focused on the applicability of current regulatory practices in Europe to hyperloop certification scheme. This analysis includes the roles for Assessment and Notified Bodies, the applicability and roadmap for standardization of hyperloop.

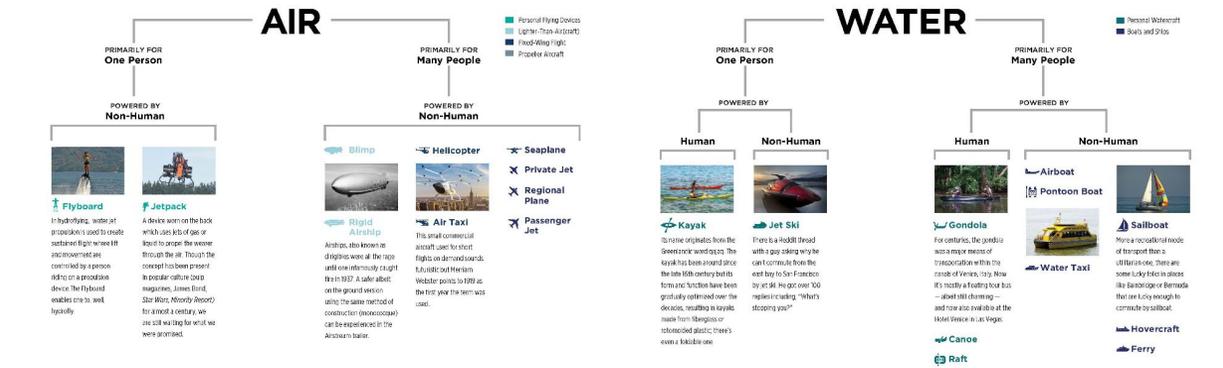
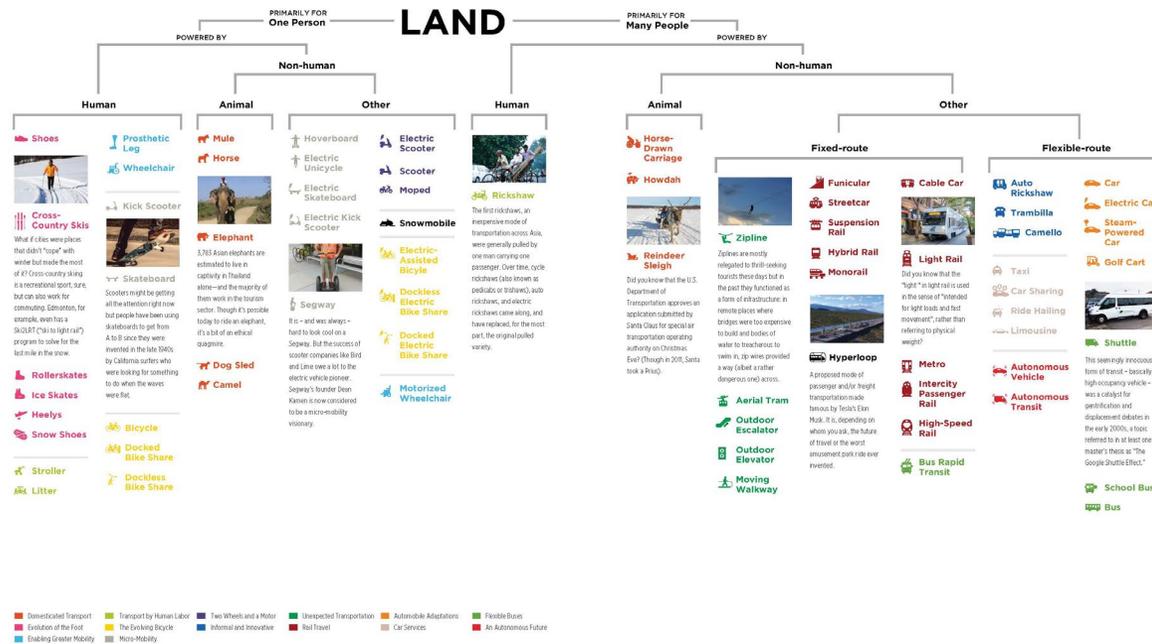


WP 4 Structure

- Transportation modes taxonomy & Value chain
 - Guided transport
 - Non-guided transport
 - Standardization & Regulation
- Current & Future trends
Programs
Synergies & Cross-fertilization
- Regulatory practices
AsBos & NoBos
Standardization opportunities



WP 4: Transportation modes taxonomy & Value chain



WP 4: Transportation modes taxonomy & Value chain

Operational features of transportation modes

- Speed, capacity, energy consumption, automation grade

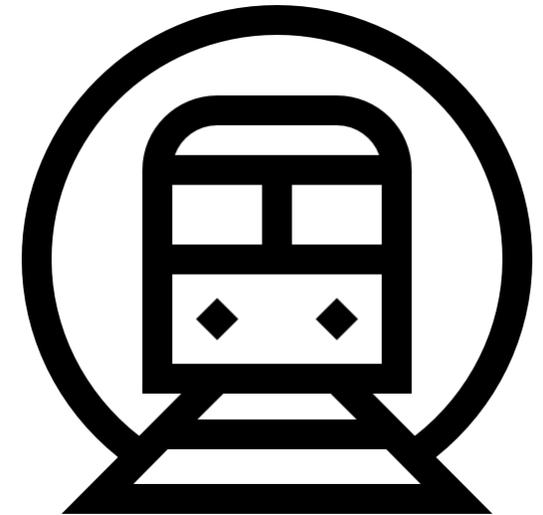
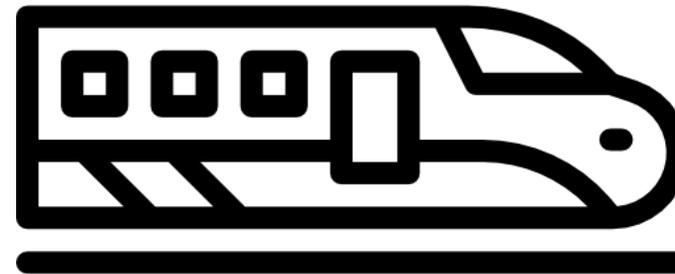
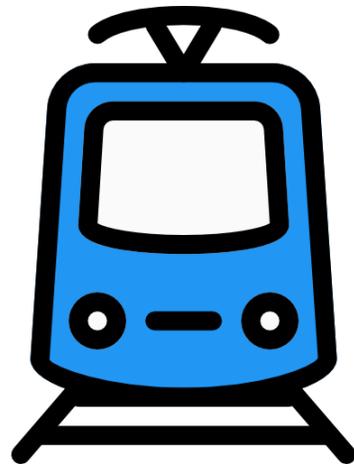
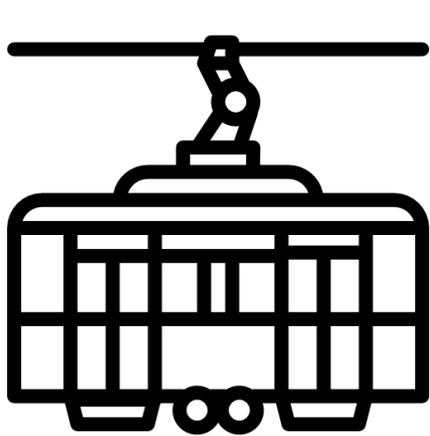
Classification

- Support, concepts, propulsion, guidance, propulsion, braking...

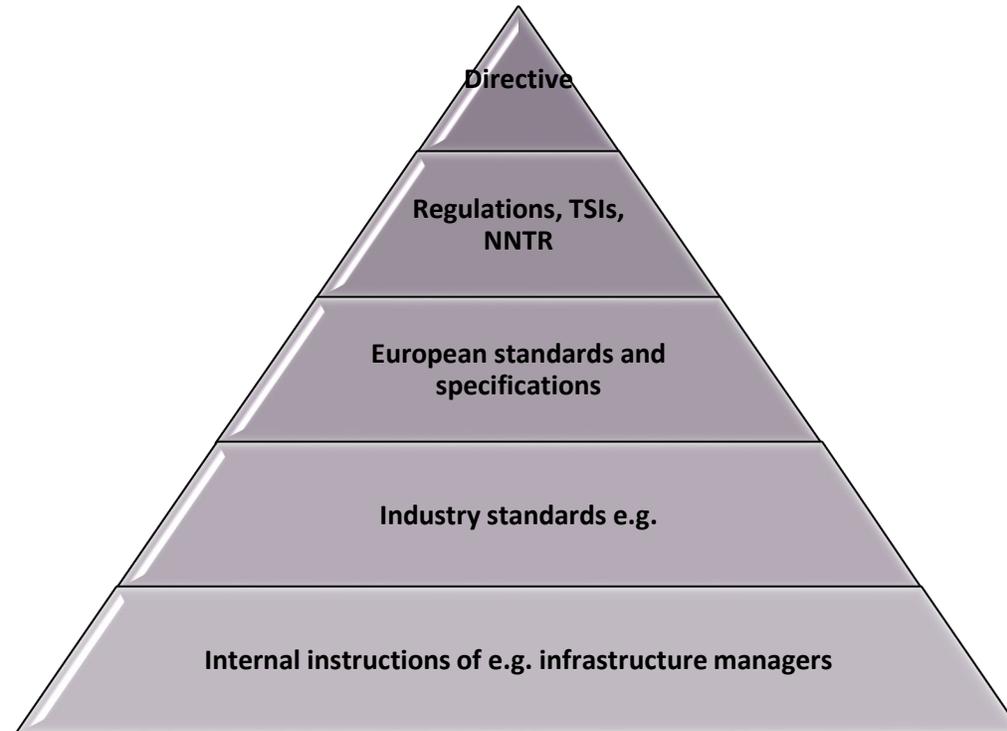
Circular economy



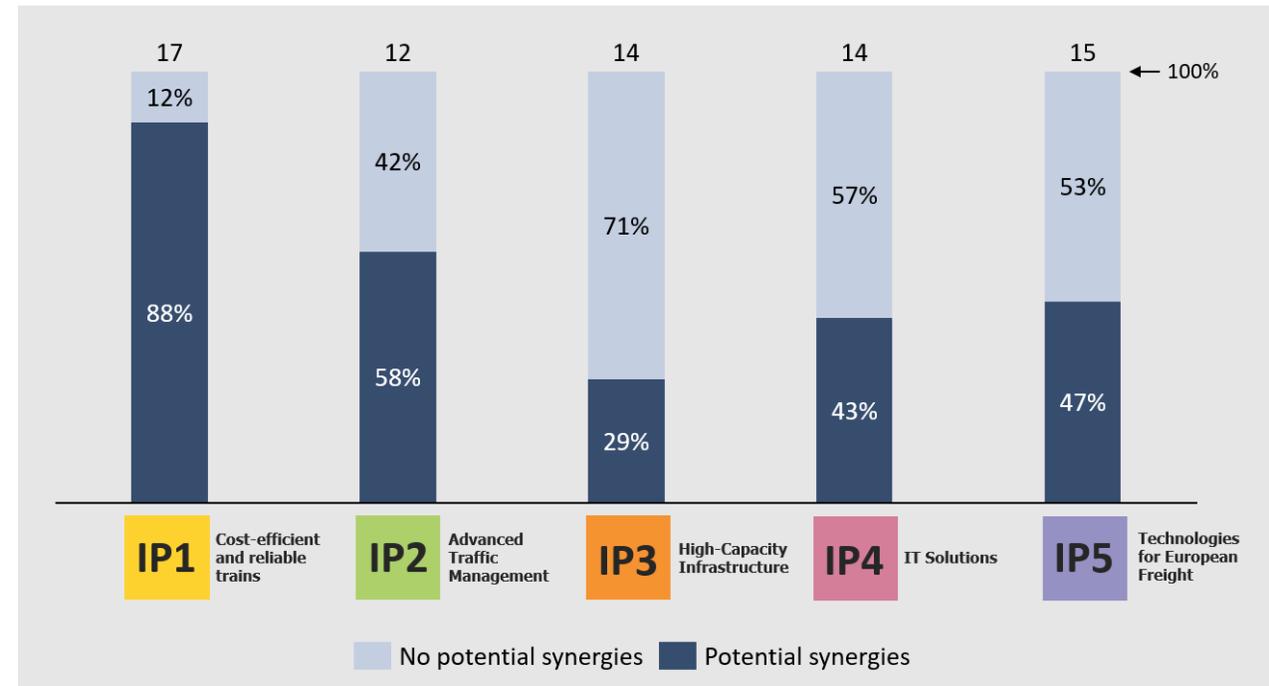
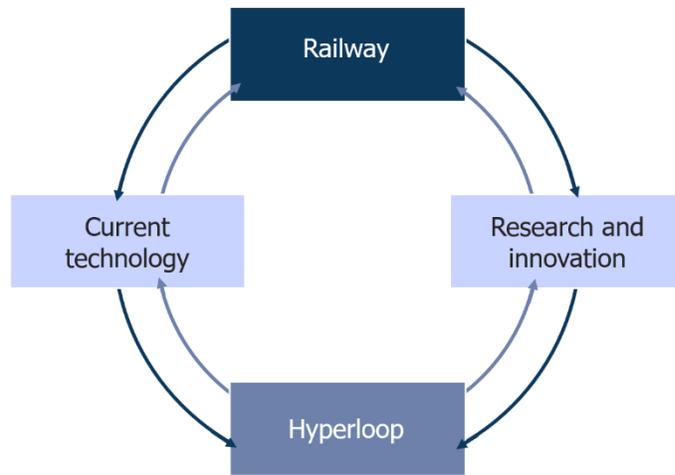
WP 4: Current and future trends for guided transport



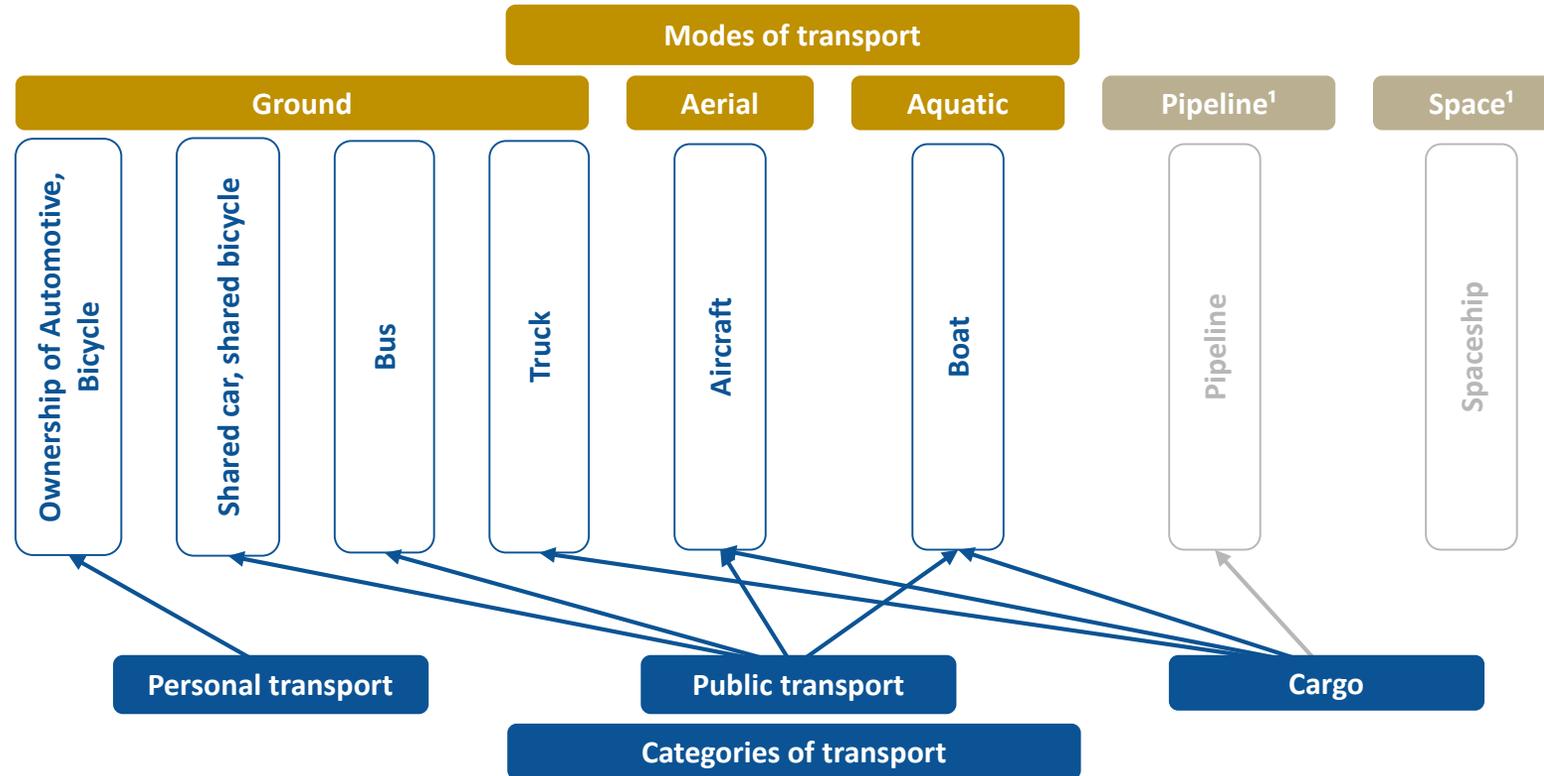
WP 4: Current and future trends: Hyperloop framework



WP 4: S2R frame & Synergies with hyperloop



WP 4: Non-guided transport synergies with hyperloop



¹ Mode not considered in the modal shift study but in the cross-fertilization study.

WP 4: Non-guided transport synergies with hyperloop

— Prism: Categories

- Economical/Environmental/Business cross fertilization
- Cross fertilization of knowledge

— Prism: level of study

- Enterprise level
- National level
- International level



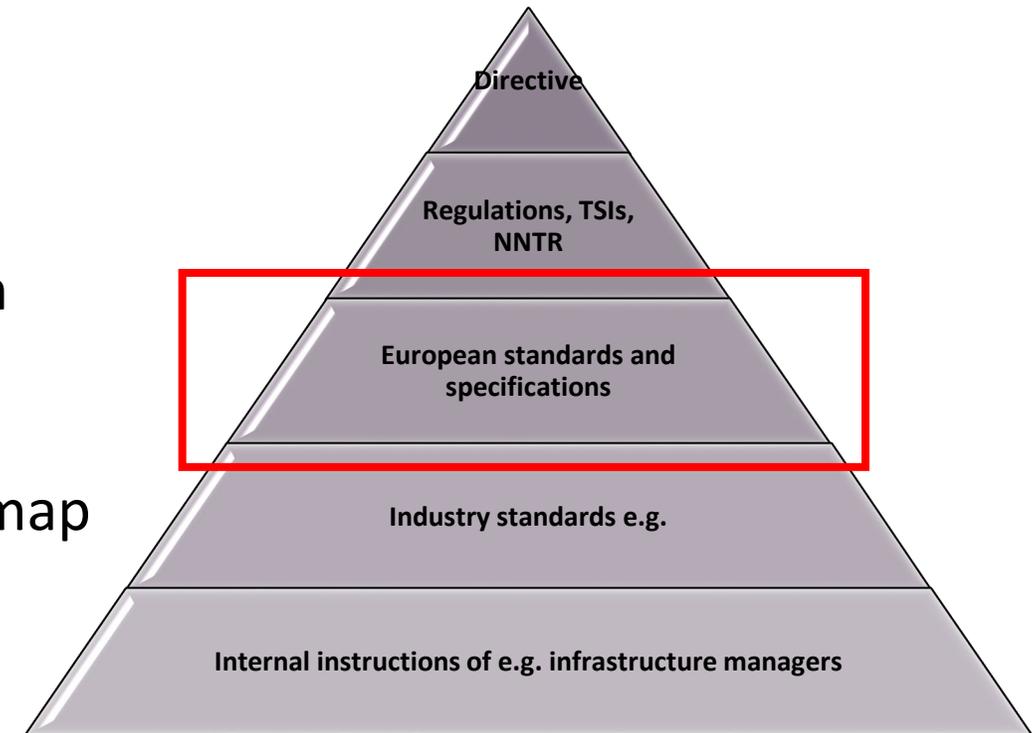
WP 4: Standardization & Regulation

Benefits of standardization

Standards & Regulation → The New Approach

Conformity assessment → AsBo & NoBo

Hyperloop approach → Standardization roadmap



WP 4: Standardization & Regulation

CEN/CLC/JTC 20 Work programme

Project reference	Status	Initial Date	Current Stage	Next Stage	Forecasted voting date
prCEN/CLC/TR XXX (WI=JT020002) Standards Inventory and Roadmap	Under Drafting	2021-04-07	2021-04-07	2021-10-07	
prEN XXX (WI=JT020001) Hyperloop Transport Services	Under Drafting	2021-04-07	2021-04-07	2021-08-04	2023-01-18
prEN XXX (WI=JT020004) Hyperloop systems. General requirements	Preliminary		2021-02-22		
prEN XXX (WI=JT020003) Hyperloop Systems Aspects - Reference Architecture	Under Drafting	2021-04-07	2021-04-07	2021-08-04	2023-11-08
prEN XXX (WI=JT020005) Hyperloop vocabulary definitions	Preliminary		2021-02-22		



WP 4 Conclusions

- New transport mode to cover specific necessities
 - Opportunities
 - Open points
 - Regulation
 - Standardization roadmap
- Societal & Political agendas
 - Synergies + Cross-fertilization with all existing transport modes
 - Further development and benefit from existing funding programmes
 - In time
 - Take profit of existing catalogue + Development of specific necessities



HYPERNEX



This project has received funding from the Shift2Rail Joint Undertaking (JU) under grant agreement No 101015145. The JU receives support from the European Union's Horizon 2020 research and innovation programme and the Shift2Rail JU members other than the Union