Twinning LL Karlsruhe

This project has received funding from the European Union’s Horizon Europe research and innovation programme under grant agreement No. 101069782

URBANE - Overview

URBANE: Upscaling Innovative Green Urban Logistic Solutions Through Multi-Actor Collaboration and PI-Inspired Last Mile Delivery

Involved Cities:

- Lighthouse Living Labs: Helsinki, Bologna, Valladolid, Thessaloniki
- Twinning Living Labs: Barcelona, Karlsruhe
- Follower Cities: Aarhus, Antwerp, Mechelen, La Rochelle, Prag, Ravenna

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LL Karlsruhe: Main role in the project

Main role in URBANE:

- **Implementing intermodal solutions** combining AMRs (robot) with rail-based (TramTrains) parcels movement in Karlsruhe
- **Demonstrate adaptation of innovations** in new contexts in Wave 2 LLs, Reuse Models and proven practices

Stakeholders:

- **Automotive Engineering**: Coodination of KA TLL, surveys during demonstration
- **City of Karlsruhe**: Providing specific city information, political support
- **AVG**: Providing access to tram and infrastructure (tram stop)
- **SEW**: Providing AMR for demonstration

SymbolFoto: Norman P. Krauß

Twining with Helsinki: Use of AMR in Last Mile

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Use Cases

- **UC1: Internal Transport**
  - Transport between tram depots of mail and (small) tools
  - AMR only needed in secured environment
  - 1-1 delivery
- **UC2: ShopToCostumer**
  - (Small) businesses to customers
  - Small businesses delivering to a city quarter
  - n-m delivery
- **UC3: Feeding the Needing**
  - Meals on wheels
  - From central kitchen to end-costumers
  - 1-n delivery

Use Cases are specific to Karlsruhe

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Delivery through autonomous mobile robot & Tram-Train, common to all Use Cases

AMR arrives at the origin and the parcels are being loaded onto the AMR

AMR drives to the nearest train station and waits for the train to arrive

AMR enters the train and covers the main part of the delivery route by riding the train

AMR leaves the train and proceeds to the last delivery segment

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Robot in Tram, Demo on 6 March 2025

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Thank you!

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