



The European Coordination Hub for Open Robotics Development

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## E++ Review Meeting Period 3

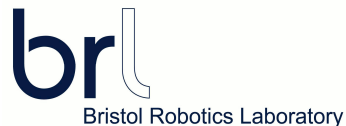
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## Background / Motivation



The proposed experiment aims to **develop and implement navigation software** for delivery robots in an industrial environment. The experiment focuses on the future framework for smelter plant, aiming to integrate fully **autonomous unmanned vehicles** in an industrial process.

Each unmanned vehicle has its own route plan, which encompasses the loading zone, the delivery area and the path. The robot shall navigate indoors and outdoors.

Many unmanned vehicles can operate simultaneously inside the smelter and have to cope with additional elements such as manned vehicles, obstacles, and pedestrians.

# Importance/necessity of public funding

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The proposed experiment is a unique opportunity because:

- The TRL of each sub-system is relatively high (TRL-5-7), but the difficulty lies in integration to achieve a first of its kind operational system in a realistic environment.
- The end-user RTA has a willingness to introduce robots to make deliveries in its smelters if the experiment is successful.
- For ECA Robotics, it will represent a significant opportunity to capitalize on and introduce its knowhow and solutions for the industrial sector.

The proposed experiment was unlocked by public funding because :

- It has allowed this development to happen in Europe for the **primary benefit** of the **European Industry**
- It is requiring joint effort between 2 external partners.
- Even if automation is a key driver for the future, RTA CAPEX strategy is focusing on core business investments.
- It is **significantly decreasing the project risk** taking into account that this is a breakthrough R&D project for both partners.

## Current status / expected end status

Task No.	Task title	Lead Participant (short name)	Start month	End month
T1	Use cases, assessment methodologies and test plan	RTA	M0	M3
T2	System Specification	ECA	M3	M6

**T1** was **delivered** as expected and on time

The current task is defining and managing the system specifications for the experiment. Specifications will be generated from the use cases studies (Task1).

The following items are defined in this Task:

- Functional Analysis and General Architecture.
- Security & Safety requirements.
- Refinement of architecture with a breakdown into components and interfaces design.
- Specification of RTA prototype adaptation.

We are **in line** with the **ultimate goal** to test live equipment for **M18**

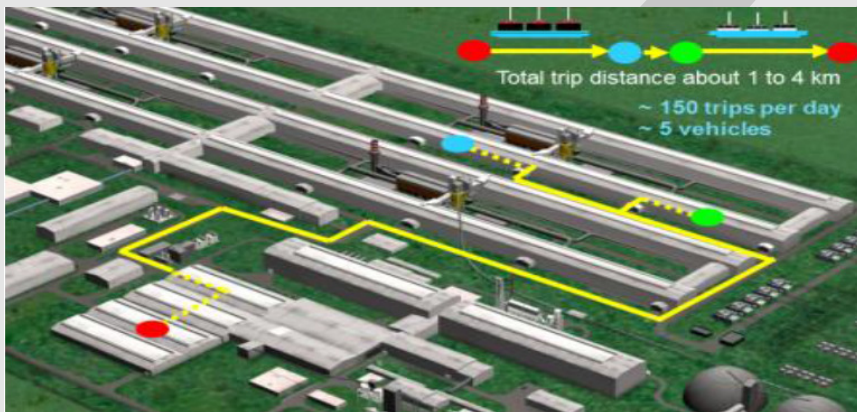
# Commercialization plan

ECA will be entitled to propose this solution to the whole **heavy and process industries**.

We developed business cases for each RTA sites. Key elements CAPEX, OPEX and SAVINGS were evaluated.

The business cases have been evaluated with OOM cost figures :

- 5 RTA sites identified as deployment sites (30 to 40 vehicles within 10 years)
- **RTA Dunkerque smelter in France as a key site**





# Thank you.

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