ECHORD++

The European Coordination Hub for Open Robotics Development

E++ Review Meeting Period 3

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PDTI – SIAR

Luxembourg / Feb. 14, 2017

Background / motivation

sewer **i**nspection **a**utonomous **r**obot

IDMind (IDM), PT
Universidad de Sevilla (USE), ES
Universidad Pablo de Olavide (UPO), ES

SIAR Goals:

- Robust IP67 robot frame

- increased power autonomy

- adaptable robot frame to accommodate different sewer sections

- robust and increased communication capabilities

- onboard autonomous navigation and inspection capabilities

- usability and cost effectiveness of the developed solution

Main Tasks: IDM (Coord.) - Platform development and Commercial exploitation; USE - Perception and communications; UPO - Navigation

Technical progress

Phase I: System Design (Jan – Jun 2016)

- Design and construction of a robot prototype for the experiments in the real scenario.

- Communications experiments; concept based on the disposal of signal repeaters
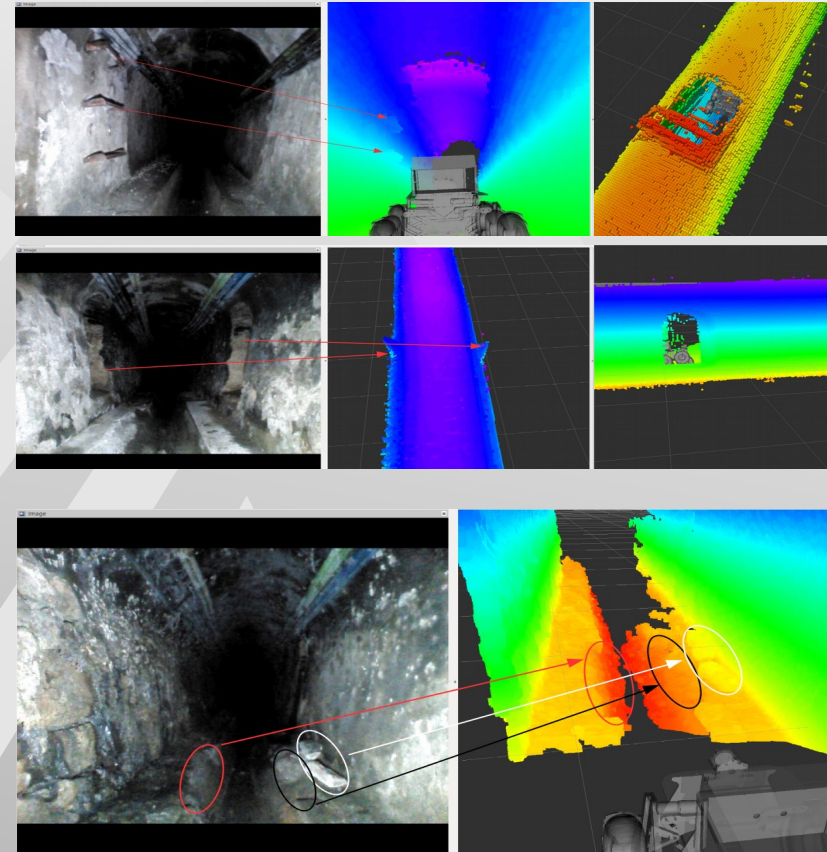
Technical progress

Phase I: System Design (Jan – Jun 2016)

Experiments with low-cost RGBD cameras regarding the robot navigation and perception:

- Location of sewer elements.

- Sewer serviceability and structural defects inspection elements location.

The different developments and experiments were reflected in the solution proposed in the "Detailed Robot Design" document (D28.1).

In the Final Evaluation and Selection (Jul 7 2016), demonstration of the potential of SIAR in terms of Mobility, Communications and Autonomy.
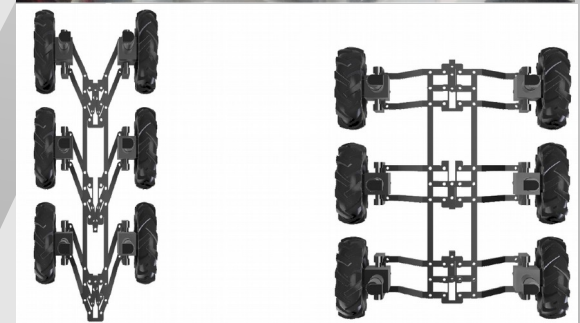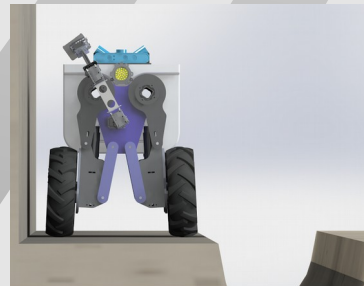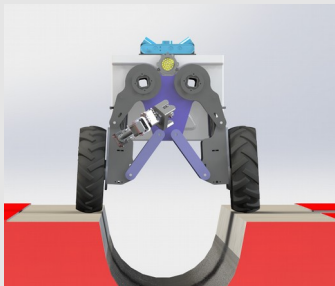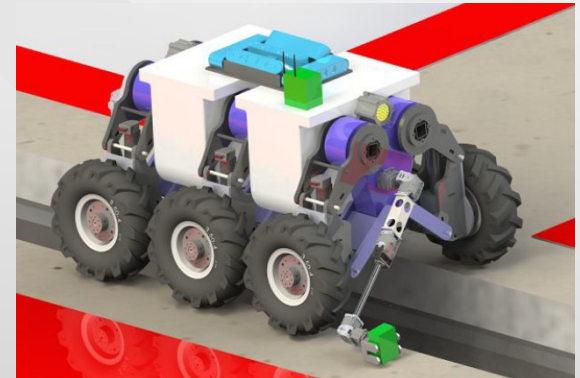
Demonstrator/ prototype

Phase II. Progress: 15 Sep 2016 – 31 Jan 2017

Development of the final repeater solution and a robotic arm solution to deploy and collect the repeater (500g).

Development of the 3D sensing system (includes 5 cameras).

Development of the Navigation Module: 3D analysis and reconstruction → Transversability analysis → Navigation module

Impact from participation in ECHORD++

IDM contacted the Department of Infrastructures and Sanitation from the Lisbon City Hall.

IDM is in contact with Vodafone PT. They have expressed their interest in the project and in testing wireless technologies.

May 25, 2016. Dissemination: Canal Sur documentary about SIAR

The presence in fairs has revealed a great interest in the solution.

Smart City Expo World Congress 2016, Barcelona, 15-17 Nov

Global Robot Expo 2017, Madrid, 2-4 Feb

Thank you.

Questions?