



INTELLIGENT TRANSPORT SYSTEM FOR THE OPTIMIZATION OF INDOOR SHARED RESOURCES: ROUTES, COMMUNICATION CHANNELS AND SENSOR NETWORKS

TECHNOLOGY OFFER

Code

TRANSP_UAH_06

Application areas

- Information and Communication Technologies.
- Industrial Manufacture, Material and Transport Technologies



Type of collaboration

- License Agreement
- Services Agreement

Main researches

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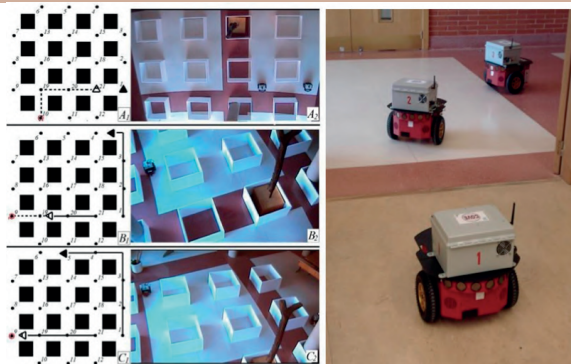
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ABSTRACT

GEINTRA is a research group from the Electronics Department of the University of Alcalá. The group offers solutions for route selection and digital control with adaptive sampling. It is a useful system for transport optimization and functionality of indoor mobile units.

The system has application for optimal routing techniques, with on-line adjustment along the path for the travel time optimization between two points. The solution avoids units' breakdown and waiting times in an industrial environment with multiple transport units and alternative routes.

The system also has application of remote control digital techniques with event-based sampling for indoor path tracking transport, both independently and in several units formation.

The solution uses the implementation of sensing and estimation techniques for information only when it is required to optimize the units transport, that allows to improve both energy consumption and computational cost for the sensory modules distribution.

The proposed system manages access to the shared communications network by multiple transport units and the sensors location distributed by the industrial environment, reducing the effects of channel delays and packets dropout.

ADVANTAGES AND INNOVATIONS

- The route optimization techniques represent an improvement in execution times and they can be adapted to any changes in the environment from a priori planned route solutions.
- Digital aperiodic sampling techniques, for motion control and the estimation of information from the sensor measurements, have a proven shared resources optimization compared to the classical solution of periodic sampling, such as the communication channel and the sensors network.
- With competitive advantages such as travel time optimization, selective use of the wireless communication channel and energy cost reduction for sensors distributed in the environment.