



RoboCup Rescue
Robot League Competition
Padua, Italy
July 4-11, 2003
IUTMICROBOT TDP

PARTICIPANT INFORMATION SHEET

TEAM NAME: IUTMicrobot	ORGANIZATION: ECERC of IUT
CONTACT NAME: Hamid MirmohammadSadeghi	COUNTRY: IRAN
TOTAL NUMBER OF TEAM PERSONNEL: 5	EMAIL: Sadegi_m@cc.iut.ac.ir
ROBOT NAMES: ECERC1 & ECERC2	TELEPHONE: +98 311 391 2480
WIRELESS FREQUENCIES (PER ROBOT): 2.4G , 900M	FAX NUMBER: +98 311 391 2481

PRE-REGISTERED REGISTERED ARRIVED ON SITE COMPETITION READY

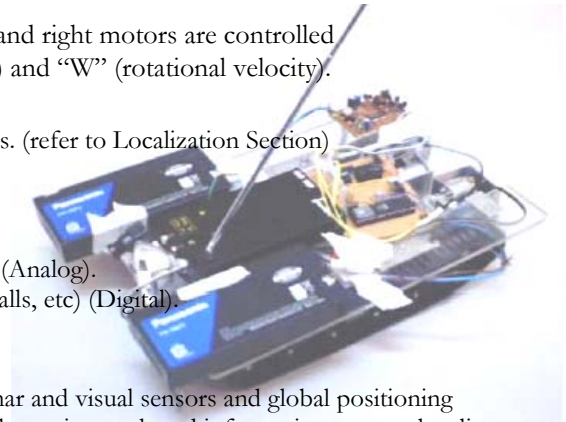
team description (with embedded pictures): **IUTMicrobot Tdp(with embedded pic.) is attached**

Locomotion: Movement system is composed of parallel wheels. Left and right motors are controlled separately. In this method we can easily control both “V” (linear velocity) and “W” (rotational velocity).

Sensors for Navigation: For Navigation we use Sonar and visual sensors. (refer to Localization Section)

Sensors for Victim Identification:

- Visual data is provided by CCD cameras (Analog).
- Audible data is provided by a simple microphone and additional amplifier (Analog).
- The Sonar sensors are used to distinct different objects (victim, rubbles, walls, etc) (Digital).
- Presence of Co₂ is checked using proper sensor.



Sensors for Localization: There are two localization methods using sonar and visual sensors and global positioning system. By means of some calculations to change systems (r,è) to (x, y, z) and merging gathered information, we can localize both robot and victims situations.

- Positioning the robot in pitch surrounding by Ultrasonic Transceivers and relative coordination of objects.
- Absolute coordination of robot by global positioning.

Control Scheme: The Control Scheme is Partial Autonomy. Some processes, calculation and measurements are done by means of the software, such as feedbacks, checking Borjak situation, Gas presence, positioning and localization, heat-measuring, etc. Further more, the Operator checks out the results, and performs any exchange in controlling, if it is needed.

Communication: Environment's data (Video / Audio / Sensors outputs) are sent to Server (Digital and Analog). Then Server sends some Digital commands to robot to move. Our Transceivers work on 2.4 GHz and 900 MHz.

Map generation / printing: A map including walls, rubbles, path and victims' situations will be created by means of some simple matrix calculations, done by software. It can be printed on paper. Also, The operator may corrects any mistake, if it is needed.