RoboCupRescue

Robot League Competition

Padua, Italy

July 4-11, 2003

PARTICIPANT INFORMATION SHEET

TEAM NAME: Keystone Rescue	ORGANIZATION: University of Manitoba
CONTACT NAME: Jacky Baltes	COUNTRY: Canada
TOTAL NUMBER OF TEAM PERSONNEL: 3	EMAIL: Jacky@cs.umanitoba.ca
ROBOT NAMES: Guide Doc, KFB1, Hummer	TELEPHONE: +1 (204) 474-8838
WIRELESS FREQUENCIES (PER ROBOT): 801.22	FAX NUMBER: +1 (204) 474-7609

☐ PRE-REGISTERED ☐ REGISTERED ☐ ARRIVED ON SITE ☐ COMPETITION READY

PLEASE DISCUSS YOUR APPROACH TOWARD KEY DESIGN CHARACTERISTICS (WITH EMBEDDED PICTURES):

Locomotion: [**wheeled**, tracked, legged, specify other]
Explain basic design, add pictures: Wheeled robots, based on toy cars.

Sensors for navigation: [tactile, acoustic, sonar, infrared, **visual**, specify other]
Explain how you use them: Ego-motion estimation from optical flow.

Sensors for victim identification: [tactile, acoustic, sonar, infrared, **visual**, chemical, other]
Explain how you use them: Skin color predicate with simple shape recognition

Sensors for localization: [tactile, sonar, infrared, **visual**, encoder, ladar, specify other]
Explain how you use them: Ego-motion estimation using optical flow

Control scheme: [**teleoperation**, partial autonomy, **full autonomy**]
Explain expected operators, what they do, and what/when tasks are autonomous:
New for this year, teleoperated guide robot plus fully autonomous searchers

Communications: [each particular frequency, spread spectrum range]
Explain exact frequencies, information content, and bandwidth for each robot:
801.11 Wireless Ethernet from guide robot to operator. No communication between the searchers and the guide robot/operator.

Map generation/printing: [operator/drawn, computed/drawn, computed/printed] Explain how you track arena features, mark victims, and provide maps to the judge:

A map is currently hand drawn by the operator for the motion of the guide vehicle. After having reached the areana, the searchers will start their fully autonomous operations. They create a topological map based on the observation of the environment.

Therefore, the maps on the searchers are not accessible until they have been retrieved from the arena. We are aware of the fact that this is not helpful in improving our score. Nevertheless, the idea is to focus on the hard problems in fully autonomous operation.