

Vehicle “ground truth” Data Logger

- All the equipment inside a knapsack; easily portable; powered by batteries



For more information and documents related with the project, please use the addresses:

Homepage: <http://paloma.isr.uc.pt/~www/webdocs/ats.html>
Contact person: Dr. Jorge Dias
Email: jorge@isr.uc.pt

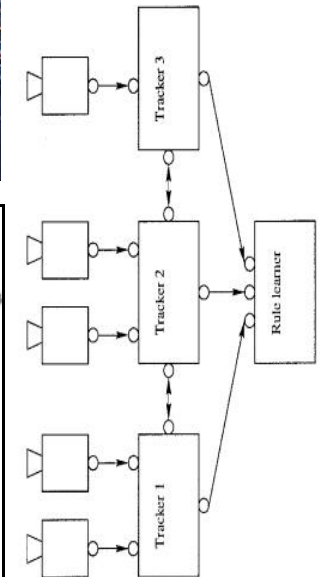
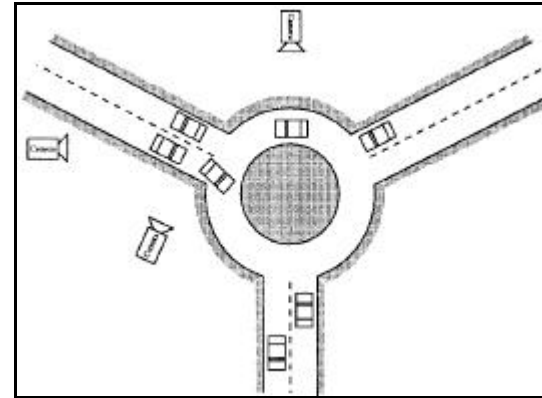
Mobile Robotics Laboratory
Institute of Systems and Robotics
Department of Electrical Engineering – Coimbra University
Pinhal de Marrocos · Polo II · 3030 COIMBRA · Portugal
Tel +351-39-796219 · Fax +351-39-406672



Institute of Systems and Robotics
ISR - Coimbra

Project: Advanced Traffic Surveillance

Area: *Surveillance & Land Technologies*



<http://paloma.isr.uc.pt/~www/webdocs/ats.html>

FCT Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA E DA TECNOLOGIA

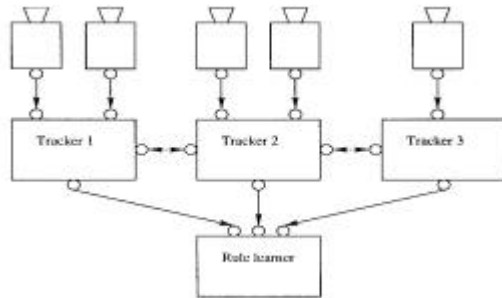
Main Goals

Surveillance:

- Build and automatic traffic surveillance system to:
 - learn by observation the rules drivers use to control their vehicles
 - assess a driver's performance
 - diagnose reasons for different driving performance
- Improving on the state of the art in traffic surveillance by:
 - detecting turn and brake signals
 - tracking using multiple cameras
 - tracking over a large area by recognizing each car as it moves from one camera's field of view to the next
 - tracking in poor weather
- Providing a significant challenge for the state of the art in car tracking by:
 - comparing the results of the tracking with an independently measured "ground truth"
 - using the tracking results as input to an independent computer program

Traffic Management and Monitoring

- Build and automatic traffic surveillance system to:
 - Management of Vehicles and Roads
 - Traffic Flux monitoring,
 - Analysis & Interpretation of tracking temporal series
 - Objects
 - Driver habits



Challenges:

- Tracking of objects in a cluttered and dynamic environment
- Explore different network topologies of visual sensors for tracking of mobile objects
- Analysis and Interpretation of temporal tracking sequences for interpretation (data association)
- Outdoor robotics (spin-off)
- Distributed tracking systems (network of trackers)
- Visual motion trackers (tested with ground truth data)

Vehicle "ground truth" Data Logger

- Computer based "ground truth" data logger with:
 - GPS receiver: time reference and absolute positioning
 - Inertial Measurement Unit: acceleration, angular rates, relative positioning (attitude)
 - Digital Compass: absolute heading reference
 - 3-axis Magnetometer: heading reference and attitude
 - Video cameras and framegrabber: B/W images
 - Microphone and headphones; voice control

