

## PROGRAM PLAN FOR RIPS 2003

Project title: Detection and recognition of 3-D objects sampled by an overhead lidar system

### Project description:

The remote sensing system used in the JIGSAW program uses lidar to sample surfaces of 3-D objects obscured by foliage. The sensed 3-D object is represented by a collection of data points (data cloud). The RIPS 2002 projects explored and applied certain level set algorithms to segregate the 3-D object data from obscuration clutter data. The RIPS 2003 project will explore and investigate automatic target recognition (ATR) algorithms to identify the segregated object (against a collection of targets) in a time-evolving sequence of data set. This will involve a) a survey of ATR algorithms, b) identify one or more candidate methodologies or approaches, c) develop one or more ATR algorithms and implement the algorithm within the 3DID software and characterize the algorithm performance based on a set of data.

### Objective:

Develop, characterize and demonstrate an ATR algorithm to identify a target in a time-evolving data cloud.