

# **Miniature Submarine**

**Team Name:** TEAM DELPHI

**Team Leader:** Imran Ali Namazi

**Member:** K P Subramaniam

**Member:** Gobind Jot Singh

**Member:** Vivek S

**Faculty Mentor:** S Kedarnath

## **School Name:**

**K C G College of Technology**  
(Affiliated to 'Anna University', Chennai, India)

Karapakkam, Chennai, India

*project description submitted for the "Windows Embedded Student Challenge", Feb 2005*

## **Introduction**

Our submarine is intended to be a versatile ROV (wire controlled), capable of tasks such as de-mining (without endangering crew) as well as geological survey which includes sample taking and underwater mapping in places too small for a conventional submarine. As an advance scout vehicle, ultraquiet, with sensitive sonar it would give its Mother Submarine an edge in underwater tactics.

## **Need for Miniaturisation**

Full Size Submarines cost upwards of a Billion Dollars. Their comprehensive technology is sometimes complicated even for tech-savvy people. Development of miniature replicas at more affordable costs would enhance a great many fields.

## **Possible Use**

Apart from use in conjunction with Mother Submarines, these 'Minis' could be used for:

- De-mining Operations (No crew + Inexpensive)
- Geological Survey (Samples + Topography)
- Oceanographic Study (Volcanic Activity)
- Underwater S&R (Search and Rescue)
- Assist Foundation Structure (building of Oil Rigs)
- Exploration & Mapping (Underwater caves and mines)
- Archaeological (Bullion recovery)
- Underwater Nature Study (No ecologic disturbance)

## **Our Plans**

We wish to build a basic Windows enabled control system for such a miniature submarine. It would be able to control its movements based on feedback from it. Hardware on board would include a GPS module, a Camera and Sonar, all integrating with the software in a seamless way that would try to facilitate the tasking of our model to some of the applications aforementioned.

Design is for a 2' "Mini" built from PVC. Control is by on-board electronics built around an 8051 microcontroller that receives instruction from the eBox-II after proper assimilation of information made available to the User/Software. Wire guidance (often provided as a failsafe anchor) will be incorporated as well. We are just beginning to scratch the tip of the iceberg but will try to implement as much as we can over the course of the competition.