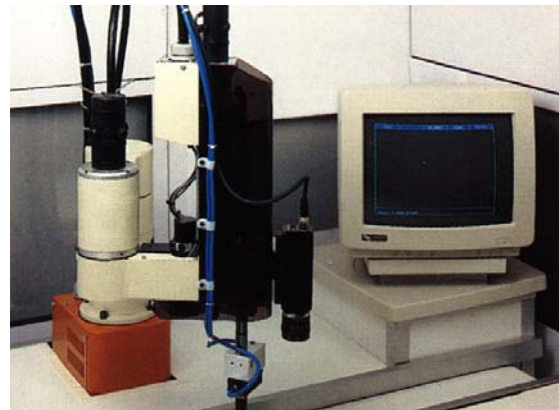


RoboCAL and *AccuTCP*

Software Solutions for Combining Machine Vision with Robotics

The *RoboCAL* software module is a camera calibration component ideally suited to robotics applications.

The camera may be static, mounted on the robot arm at any orientation, or even mounted on the quill or Theta axis of a robot/positioning system.



The calibration sequence simply involves providing the coordinates of a sample of points in both the image and robot (world) domains, as well as joint angles (SCARA robots) or Theta angle, if applicable. The module will then build an accurate transformation model of the system that can be used to map the location of any point in the image to the world/robot coordinates.

The *RoboCAL* module enables system developers to maximize performance and cost-effectiveness by choosing the optimum combination of robots and vision systems without worrying about the complex task of calibrating the cameras, especially with arm or quill-mounted cameras.

The *AccuTCP* software module can be used to accurately measure the Tool Center Point (TCP) of a robot or positioning system. This highly mathematical software takes in a sample of data that represents the location and angle of the tool in the robot/world domain and produces the tool offsets. The *AccuTCP* and *RoboCAL* modules can be used in tandem to accurately model the transformations required for precise pick-and-place robotics applications. Both modules can be used with any application that uses COM/DLL interface.