Capacitance sensor is a foot above the rest  
Wednesday 26 February 1997 00:00  
Capacitance sensor is a foot above the rest

Sensatech has developed the world's first capacitance sensor that measures to an  
accuracy of 0.1mm. The Brighton-based firm has designed sensor arrays which can measure the three dimensional profile of objects with an accuracy of 0.1 femto farads. "There is nothing on the market like this," said Tom Bach, Sensatech's founder.

The sensor technology has already been adopted by a shoe retailer which in  
conjunction with Sensatech has developed a foot gauge. It uses up to 1,800 sensors to determine the size and shape of the foot. "This is an extremely special sensor," said Paul Broughton, an electronics consultant for the shoe retailer. "To achieve such accuracy is almost impossible." A foot gauge prototype already exists and the product is expected to hit the high-street shops later this year. The foot gauges will  
initially be manufactured by Sensatech. Sensatech's sensor uses capacitance to measure the electric field around an object. Each sensor in a matrix senses its surroundings in all directions. Once charged and discharged, and depending on whether there is an object present or not, the measured voltage differences  
are used to determine the distance to that object. For a regular-shaped object such as a block, the pattern of the sensors' capacitance will be regular. An irregular shaped object, such as a foot, will result in an irregular capacitance pattern. Applying statistical methods to these patterns determines the dimensions of the foot. Other envisaged uses for the sensor array technology include medical, automotive and industrial applications.