



19 July 2006

To: All SmarTek Systems Sensor Vendors and Installers  
From: Greg Pieper, SmarTek Systems, Inc.

Subject: Mounting Geometry for SAS-1 Passive Acoustic Sensor.

1. It is recommended that all installations of the SAS-1 Acoustic Sensor employ the articulated mounting arrangement illustrated page 5, Figure 4 of Section E of the SAS-1 Installation manual. This arrangement calls for the sensor mounting tube to be raised at one end so the tube is angled at least 10 to 15 degrees from the horizontal, and had been previously recommended specifically for overhead sign bridge applications or near other structures where reverberation from passing vehicles would increase background noise and reflections.
2. Based on performance enhancements observed by changing the mounting angle of the SAS-1 acoustic sensor, it is recommended the installer aim the sensor detection zone slightly down road from the supporting structure in all cases. It is recommended that all current and future sites, if possible, be modified such that the angle of the sensor axis is above the horizontal by 10 to 15 degrees. This effectively moves that detection zone down- or up-road such that most of the sounds arriving at the sensor are direct path emissions from passing vehicles. Reception of echoes from barrier surfaces parallel to the lanes of travel are significantly reduced when the sensor is mounted in the manner illustrated below.

