Using "Rubber Duck" Antennas with Vesper AIS systems

Users often report that when using small "rubber duck" style antennas, they experience poor reception or transmit range.

These types of antennas are designed to be as tiny as possible (often only 200mm or so) and are sometimes used as emergency or dinghy antennas. They usually don't have much bandwidth (remember AIS is at the extreme upper end of the VHF marine band) and some are rated at -2dB gain. That means that they will lose nearly 1/2 the signal strength. And finally, some only work when they are mounted on a large metal ground plane.

It is urged that users consider an antenna that is better suited for use with AIS transponders. Things to look for are 1/2 wave, +3dB gain (more is not necessarily better), omni-directional and these will tend to be at least 1m (3') long. It doesn't necessarily need to be AIS-tuned, but that will result in the best performance. But if it isn't AIS-tuned, check the manufacturer's VSWR curve or bandwidth figures. Ideally, it should be less than 2:1 at 162 MHz.

Even if the vessel doesn't have a "rubber duck" but the antenna is old or of unknown origin, consider replacing it. They deteriorate in the sun and weather and some are prone to getting water into them.

The performance of the AIS system is only as good as the weakest link. If the vessel has Vesper Marine AIS, it already has the most sensitive and highest quality AIS there is. But it can't overcome a low performing antenna system. The recommendation is to always use the best quality cables, connectors and antennas possible.