Radar Performance Monitoring Recommendations

The following procedures can monitor the performance and age of the components within the Radar Scanner; these procedures can be performed from the RDOP.

- Monitor the Magnetron Current Levels over Time.
- Monitor the Total Time and Transmit Time of the Radar.
- Take Periodic Snapshots of the Radar Image and Compare over Time.
- Install a Performance Monitor and Periodically Check the Radar’s Response.

Monitor the Magnetron Current Levels over Time

The Magnetron Current is defined as current required to drive the Magnetron to a specific state. New Magnetrons will have a different ‘Mag. Current’ value for each Radar Mode (S1, S2, M1, M2 and L). As the Magnetron ages, these ‘Mag. Current’ values will begin to hit a limit. At some point the values for all Radar Modes will be nearly identical; this indicates that the Magnetron is performing at a sub-optimal level.

It is recommended that the ‘Mag. Current’ readings are taken and logged for each Radar Mode at periodic intervals. These values can be plotted over time to determine when the limit is being reached.
Monitor the Total Time and Transmit Time of the Radar

The Furuno Magnetrons are rated at 2,000 to 3,000 Transmit hours for optimal performance. The Total Time and Transmit Time of the Radar can be found in the ‘Tx/Rx’ Panel under the ‘Maintenance’ Panel in RDOP.

Periodically noting and recording these values will indicate when a new Magnetron should be ordered and replaced. Note: These values are subject to manual setting and resetting.

Take Periodic Snapshots of the Radar Image and Compare over Time

One can qualify the degradation of the Radar by comparing the Radar’s Image over time. Using the RDOP, one can take snapshots of the Radar Image; these can then be saved to a file for future comparison. Snapshots should be taken for each Radar Mode.

One would typically indentify specific stationary targets which could be used as reference points. Over time the stationary targets will begin to fade and tuning the radar will not rectify the issue. This may indicate a point where the Radar Magnetron should be replaced.

Install a Performance Monitor and Periodically Check the Radar’s Response

The Performance Monitor provides an effective means of verifying the overall performance of Radar. The Performance Monitor transmits a coded signal into the antenna for display on the RDOP. The range and number of arcs display on the Radar Image will indicate the performance of the system. The Performance Monitor Operators Manual will provide detailed instructions.