

Paper for Consideration by the S-101 Working Group

Generic S-101 Portrayal of RADAR

Submitted by:	SPAWAR Atlantic
Executive Summary:	Proposes a change to align the S-101 portrayal of RADAR with S-100 portrayal rules
Related Documents:	S-100/S-101 Specification
Related Projects:	IHO S-100/S-101 Test Bed Project

Introduction / Background

During the development of the S-100 testbed it has been observed that the S-101 specification and its associated portrayal catalogue require S-101 specific processing of the portrayal draw instructions when a RADAR overlay is enabled. This paper proposes a change to the S-101 portrayal catalogue which will enable a generic (S-100 conformant) method of displaying S-101 data along with a RADAR overlay.

Analysis / Discussion

The portrayal described in S-100 Part 9 includes two mechanisms for controlling the priority of displayed objects: Display Planes, and Drawing Priority. Prior to rendering, S-100 applications must first sort the drawing instructions output by the portrayal into separate containers, one for each display plane. Then the contents of each container are sorted by drawing priority. Each container is then rendered to the display, one after another.

S-101 implements this mechanism in its current portrayal catalogue, provided that the application has knowledge of whether RADAR is on or off. If the RADAR is on, the application will work correctly if it sorts the drawing instructions following the S-100 rules. If the RADAR is off, S-101 instructs the application to ignore the display plane, and treat all output drawing instructions as if they were in the same display plane.

The product-specific portrayal of RADAR in S-101 sets a bad precedent, and is unnecessary. The S-101 portrayal rules for RADAR have been carried forward from S-52, however RADAR can be portrayed within S-101 in an S-100 conformant manner.

We recommend that an S-101 portrayal context parameter "RADAR_OVERLAY" be added, which can be set to "true" (on) or "false" (off). The S-101 portrayal rules can examine this parameter, and when RADAR_OVERLAY is "false" the rules can output draw instructions which use a single display plane. When RADAR_OVERLAY is set to "true" the rules can output draw instructions which use multiple (over/under RADAR) display planes.

Using the RADAR_OVERLAY context parameter, the application can now always sort the draw instructions the same way: first by display planes; then by drawing priority within each display plane. This is consistent with S-100.

Recommendations

1. Add a RADAR_OVERLAY portrayal context parameter to the S-101 portrayal catalogue and modify the portrayal rules to use it as described herein.
2. Remove special RADAR processing rules (e.g. C2.8.2) from S-101

Action Required of S-101 WG

The S-101 working group is invited to:

- a. note the paper
- b. discuss the recommendations
- c. take action on the recommendations