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| From: ENAV Committee | ARM6-3.3.3 (ENAV-20-14.1.20) |
| To: ENG/ARM/VTS Committees | 15 March 2017 |

LIAISON NOTE

On Use of Racons in Busy Harbours

# Introduction

There has been anecdotal evidence that racons can perform poorly in busy harbours. A study was done to determine the cause(s) of the apparent poor performance.

# Study on Racons in Busy Harbours

The study (ENAV20-13.11 On Racons in Busy Harbours) identified two major causes for poor performance. The first cause is a physical limitation in that there are more pulses than racons have time to respond to and has no practical solution at this time.

The second cause identified is that there are many radars that operate at the same frequencies, which causes the racons to reject many pulses for response (please see side lobe suppression discussion in ENAV20-13.11). As radar manufacturers convert their production to newer technology solid-state radars (NT radars; please see IALA Recommendation eNAV-146 Strategy for Maintaining Racon Service Capability); radars could potentially operate using fewer and more precisely defined frequencies than older radars. This would cause further reduction of racon performance in busy harbours. A proposed solution to this problem is for the radar manufacturers to spread their frequency usage uniformly over the entire band.

This effect could also occur in areas outside busy harbours, should two or more radars with the same frequency interrogate a nearby racon.

# Action requested

The ENG, ARM and VTS committees are requested to:

1. Please note the results described in ENAV20-13.11.
2. Please note the potential reduction in performance of racons as described above.
3. Please note that the ENAV committee is liaising with CIRM to work towards a solution.