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| **U.S. Radiocommunications Sector**  **Fact Sheet** | |
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| **Purpose/Objective:**  This document identifies the problem of multiple audible alarms on ships having multiple installed VHF radios, caused whenever a digital selective calling (DSC) alert is received. | |
| **Abstract:**  ITU-R M.1080 will allow all secondary radios onboard a ship to be distinguished from the primary radio. This will allow secondary radios to include a configuration option permitting audible DSC all-ships distress and urgency alarms to be disabled without affecting the primary radio. This will resolve the problem of multiple audible alarms. | |

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| Source: Recommendation ITU-R M.1080-0  Subject: Use of MMSI 10th digit to disable DSC alarming | **Document: USWP5B34-xx** |
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| Working Document Toward a Preliminary Draft Revision of  Recommendation ITU-R M.1080-0  **Digital selective calling system enhancement for multiple equipment installations** | |
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1. **Introduction**

Ships often have multiple installations of DSC-equipped VHF radios on board, occasionally in locations other than the bridge, or in different portions of the bridge. When a distress alert or other all-ships distress or urgency call is received, all shipboard installations will audibly alarm simultaneously, and each installation will then need to be manually silenced[[1]](#footnote-1) individually. This multiple simultaneous audible alarming, requiring each radio’s alarm to be individually manually silenced, can be distracting, especially when the vessel is engaged in a difficult maneuver.

Ships often have multiple installations of DSC-equipped VHF radios on board, occasionally in locations other than the bridge, or in different portions of the bridge. When a distress alert or other all-ships distress or urgency call is received, all shipboard installations will audibly alarm simultaneously, and each installation will then need to be manually silenced[[2]](#footnote-2) individually. This multiple simultaneous audible alarming, requiring each radio’s alarm to be individually manually silenced, can be distracting, especially when the vessel is engaged in a difficult maneuver.

Some users overcome this problem simply by not entering own-ship MMSI into the ship secondary radio installations. The operator must then ignore the omnipresent displayed warnings that the unit will not transmit any DSC calls until own-ship’s MMSI is entered[[3]](#footnote-3).

Some manufacturers have overcome this problem by adding a DSC disable option to the radio’s configuration menu. Such an option is not explicitly allowed by ITU-R M.493-16, but it isn’t explicitly prohibited either. This would allow the operator to disable DSC on the primary ship’s radio as well, preventing the ship from receiving distress alerts or other urgent safety information.

1. **Proposed means for addressing audible alarms on multiple radio installations on board a single ship**

Recommendation ITU-R M.1080 *Digital selective calling system enhancement for multiple equipment installations* was adopted in 1994 to address and distinguish between multiple DSC radios installed on a single vessel. Its use has been optional and, to date, little used. However, ITU-R M.1080 would distinguish all secondary radios from the primary radio. It could allow users of radios designated as secondary to disable audible alarms without affecting the primary radio to solve the problem.

1. **Summary of changes**

Added a new *considering* g) to describe multiple radio installations and their alarms.

Added a new section 3 to describe how the 10th digit works with the audible alarms.

1. **Attachments**

The enclosed attachment contains the proposed changes to Recommendation ITU-R M.1080-0.

**ATTACHMENT**

WORKING DOCUMENT TOWARD A PRELIMINARY DRAFT REVISION OF RECOMMENDATION ITU-R M.1080

DIGITAL SELECTIVE CALLING SYSTEM ENHANCEMENT FOR MULTIPLE EQUIPMENT INSTALLATIONS

(1994-202X)

The ITU Radiocommunication Assembly,

*considering*

a) that Recommendation ITU-R M.493-5, § 5.2 has recommended that the X10 digit of the DSC address always be the figure 0 and is reserved for future use;

b) that a need has arisen for multiple DSC radios to be installed on a single vessel;

c) that various administrations only issue one MMSI according to Appendix 43 of the Radio Regulations to any vessel;

d) that if only a single MMSI is assigned to a vessel with multiple DSC radios a conflict results when radios with the same MMSI all respond simultaneously;

e) that the X10 digit in the DSC address be reserved for ship owners and installers to assign as required in accordance with this Recommendation for multiple installations on a vessel;

f) that the capability in § e) allows for an additional level of selective calling within the vessel itself which solves the problem stated in § d);

g) that the capability in § e) allows ships having multiple DSC radio installations to avoid all radios alarming whenever an all-ship distress or urgency message is received, and alarms on every radio having to be individually manually silenced;

h) that the optional capability in § e) can be implemented in a manner that will not derogate the normal functioning of other DSC operations or create incompatibilities with older DSC equipment where this capability is not employed,

*recommends*

**1.** that where there is a need for multiple installations of DSC equipment on a vessel, that they use equipment designed with an expanded address as defined in Annex 1.

ANNEX 1

# Technical characteristics of an enhancement of the digital selective calling system address for multiple radio equipment installations on the same vessel

**1** **General**

**1.1** All DSC sequences must utilize all technical characteristics as outlined in Recommendation ITU-R M.493 except as noted in this Annex.

**1.2** Implementation of the expanded address is optional. The content of the last address digit shall be the number 0 if this Recommendation is not implemented. In such cases, this equipment has three possible ways to treat calls received with X10 not equal to zero. These are:

* decode the tenth digit, ignoring that X10 has a non-zero value and acknowledge the call with the tenth digit set to the same non-zero value (this method will also comply with equipment designed in accordance with this Recommendation);
* ignore the tenth digit and acknowledge the call with the tenth digit set to zero, the expected value. It should be noted that in this case the acknowledgement is routed to the primary installation aboard the vessel;
* decode the tenth digit and since the tenth digit was expected to be set to zero, reject the call.

**2.** **Technical format of the enhanced address**

**2.1** In order to take advantage of this Recommendation, the X10 digit must be user programmable. The address of the DSC station shall be in accordance with § 5.2 of Recommendation ITU-R M.493 Annex 1 except for the following:

**2.1.1** That the X10 digit be user programmable and the manufacturer shall set this digit to zero as a default for shipment.

**2.1.2** That the X10 digit be used to differentiate various radio installations installed on the same vessel.

**2.1.3** That the X10 always be set to zero on the primary radio installation, i.e. the radio installed at the position from which the ship is normally navigated.

**2.1.4** That optionally, users can set the X10 to any number 1 to 9 for additional radio equipment installed on the same vessel for making routine calls. It should not be possible for the user to accidentally set the X10 digit to a non-zero value. This can be accomplished by prompts so that the user clearly understands that this action will change the tenth digit of the address.

3. **Audible alarms**

3.1 Radio equipment programmed with the X10 digit to any non-zero digit should disable audible DSC all-ships distress and urgency alarms and their associated automated procedure as described in Recommendation ITU-R M.493. Audible alarms from such calls individually addressed to an MMSI having X10 as a non-zero digit shall not be disabled

3.2 Radio equipment programmed with an MMSI with the X10 digit equal to zero shall not disable the audible DSC all-ships distress and urgency alarms and their associated automated procedure.

1. ITU-R M.493-16 Annex 1 §12.1 [↑](#footnote-ref-1)
2. ITU-R M.493-16 Annex 1 §12.1 [↑](#footnote-ref-2)
3. ITU-R M.493-16 Annex 1 §12.4, Annex 4 §3.1.1 [↑](#footnote-ref-3)