

Paper for Consideration by NIPWG

[Portrayal of MPA features]

Submitted by:	SNPWG
Executive Summary:	SNPWG is requesting a portrayal spec for MPA features
Related Documents:	TSMAD24/DIPWG4 08.4A rev1
Related Projects:	S-100, S-122

Introduction / Background

The SNPWG/NIPWG is developing the S-122 (Marine Protected Area) Product Specification. One part of the Product Specification is the definition of the feature's portrayal.

The S-122 Product Specification is for data in GML so that it will be possible to portray it in ECDIS systems that can accept GML or it can be portrayed in a GML viewer. Test data has been prepared in accordance with this product specification.

A paper was provided to TSMAD24/DIPWG4 discussing the request of suitable shades of green to depict MPAs.

Analysis / Discussion

The attached papers CSPCWG11-08.12A and CSPCWG11-08.12B were provided to the recent NCWG meeting which took place in Rostock in April 2015.

The NCWG meeting was informed on the portrayal development history and which deliverables the NIPWG anticipated from the NCWG.

It has been worked out that the development of the portrayal specification should not rely only on the NCWG. Rather, it was decided that the S100WG and the S101SubWG should also be involved. The reason is that S100 test bed ECDIS systems should exist to test the different colour variances and their influences on the ENC information before making any commitments on the colours and symbols to be used.

The meeting decided to invite the NIPWG to apply at the HSSC7 meeting the initiation of a project team on the development of the MPA portrayal specification.

The project team should consist of members of the S100WG, the NCWG and the NIPWG. Terms of References and a work plan have to be developed beforehand.

Conclusions

The involvement of the S100WG seems to be reasonable. The risk of negative effects on the portrayal of the ENC features caused by the MPA portrayal should not be underestimated.

A project team which would be initiated by the HSSC may have the power and credibility to provide a portrayal solution within an acceptable time frame.

Justification and Impacts

It was anticipated that the first MPA Product Specification draft would be available in spring 2016. This target line seems to be too ambitious for the time being.

However, the missing portrayal section should not hinder us continuing the development of the other Product Specification parts.

The HSSC7 should be informed on the MPA Product Specification delivery delay.

Recommendations

The NIPWG should start to develop the ToR and the Work plan for the intended project team.

The NIPWG should support the project team by nominating a representative.

Action Required of NIPWG

The NIPWG is invited to:

- a. note this paper and the attached CSPCWG/NCWG papers,
- b. support the project team idea,
- c. develop the ToR and the work Plan for the Project Team,

- d. nominate a NIPWG rep to the project team (if established).

Paper for Consideration by CSPCWG/NCWG

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Executive Summary:	SNPWG is requesting a portrayal spec for MPA features
Related Documents:	TSMAD24/DIPWG4 08.4A rev1
Related Projects:	S-100, S-122

Introduction / Background

The SNPWG (to be replaced by NIPWG in June 2015) is currently drafting a product specification for Marine Protected Areas (MPA) (S-122). This specification is for data in GML so that it will be possible to portray it in ECDIS systems that can accept GML or it can be portrayed in a GML viewer. Test data has been prepared in accordance with this product specification.

The MPA Product Specification depends on GML and thus, the next S-100 edition, which supports GML, is a prerequisite for the development.

A paper was provided to TSMAD24/DIPWG4 discussing the request of suitable shades of green to depict MPAs.

Analysis / Discussion

The progress of the development of the MPA product specification depends inter alia on the provision of the portrayal instructions of MPA features.

The portrayal section of the MPA Product Specification has not yet been started. A detailed proposal is provided as follows below:

When the MPA layer is selected:

- 1) As a minimum, MPA boundaries should be displayed. The attribute categoryOfRestrictedArea (CATREA in S-57) on the MPA would control whether the boundary will be a pecked line or a T-line. If the attribute is not present the boundary would be pecked. The policy for boundary depiction should follow the principles in S-4.
 - If a categoryOfRestrictedArea is defined with the MPA the boundary line should be a T-line.
 - If no categoryOfRestrictedArea is defined with the MPA, the boundary line should be pecked.
- 2) A fill should be available but should be switched off in a default view. The fill should be faint; just sufficient to notice. This fill could be turned on when a "Highlight" button in a pick report is selected.
- 3) There should be a centre area/screen label of "MPA". It is recognised that MPAs overlap with each other and with other area objects in several regions of the world. Existing deconfliction rules should apply to prevent centre labels overlapping.
- 4) The name of the MPA would not be displayed but would be discoverable in a PICREP.
- 5) The colour of all portrayals on the chart display to do with MPAs should be green. It is recognised that MPA boundaries will follow as well as cross coastlines, so a shade, which is distinct from inter tidal green, is required. The advice of CSPCWG/NCWG should specify exactly which shade of green should be used for all purposes.

Conclusions

The further progress of the MPA product specification development highly depends on the completion of the portrayal section. The next S-100 Edition is likely to be adopted by the member states in 2015 and the maritime community is waiting for products based on S-100. An inappropriate delay in the delivery of the MPA Product Specification would be challenging to justify.

Recommendations

The SNPWG is proposing the following order of the necessarily requested deliverables.

- 1) CSPCWG/NCWG provides advice which specific colour and colour variances should be used for the MPA portrayal.
- 2) NIPWG (as the replacement of the SNPWG) drafts the portrayal section of the MPA product Specification.

- 3) CSPCWG/NCWG checks the draft and provides feedback.
- 4) Once the portrayal section draft is stable and agreed between NIPWG and CSPCWG/NCWG, the portrayal section of the Product Specification will be completed.

Justification and Impacts

The MPA Product Specification is a stand-alone product using ENC context feature and thus, ENC features would not be used in two instances ENC and MPA.

It is proposed that the CSPCWG/NCWG delivers the specific colour and colour variances of the MPA instances portrayal at the latest by the end of September 2015. That would allow some iterative steps before the next milestone. The completion of the MPA Product Specification's portrayal section is scheduled to the NIPWG2 meeting which is scheduled for spring 2016.

Action Required of CSPCWG/NCWG

The CSPCWG/NCWG is invited to:

- a. provide the MPA portrayal specific colour and colour variances,
- b. thereafter check the drafted MPA ProdSpec portrayal section,
- c. support NIPWG (as the replacement of the SNPWG) in finalising the MPA ProdSpec's portrayal section.

Paper for Consideration by NCWG (CSPCWP) and NIPWG (SNPWG) workgroups

Study of Possible Green Colours Available for MPA Purposes

Submitted by:	Hannu Peiponen / Furuno Finland
Executive Summary:	This paper is a study paper
Related Documents:	CSPCWG11-08.12A Portrayal of MPA
Related Projects:	NIPWG (SNPWG) Development of S-122 Product Specification for Marine Protected Areas

Introduction / Background (by Colby Harmon)

1. Based on SNPWG paper CSPCWG11-08.12A and previous requests to DIPWG for assistance, Colby Harmon, former DIPWG chair, requested assistance from Mr. Hannu Peiponen of Furuno Finland, who has provided colour pallet support to DIPWG and TSMAD in the past. Mr. Peiponen has provided this paper to help define colour coordinates for Marine Protected Areas.
2. In the past Furuno Finland has for example proposed alternative colours for use by mariner symbols and these proposed colours have been agreed by DIPWG.
3. We have been requested to propose CIE values in the three (day, dusk, night) pallets for a separate green outline and a fill colour (A total of six shades.) A SNPWG paper has requested a shade, "which is distinct from inter-tidal green" and that the fill, "should be faint; just sufficient to notice."
4. Further we have been informed that the colours will undoubtedly undergo further testing by SNPWG and also in the S-100 testbed, so that IHO is not necessarily looking for a final perfect solution at this time, just something to get testing started.

Analysis/Discussion

5. Request for colours is green which is distinguishable from inter-tidal (colour token DEPIT). This study has included also all other already defined green or greenish colours (colour tokens CHGRN, LITGN, ARPAT, RADHI, RADLO and MARCY plus a check with colour associated with water depth (colour tokens DEPSC, DEPDW, DEPMD, DEPMS, DEPVS)
6. Request for colours was for all palettes. For the time being this study has been limited to DAY palette only. Finding good colours is human resource consuming and we have decided not study DUSK or NIGHT before the related IHO workgroup has sorted out their mind how to use the colour for DAY.
7. In general finding new colour tokens which are distinguishable is a great challenge as the S-52 has already so many assigned colours. This study has tried to find two new basic colour coordinates: one for outline and another for colour fill. Then the colour for fill has been expanded to be a series of 6 shades of the same basic fill colour.
8. Our technical implementation recommendation for the request "should be faint, just sufficient to notice" is to use transparency as available in the S-52 presentation library model. For example use of 75% transparency for fill area will make the MPA fill colour very faint over the charted area.
9. The maker of this study has no other knowledge that the generic request to find distinguishable colours. This is making difficult to have any final judgment especially for series of shades. The related IHO workgroup should make up their mind about use cases and symbols shapes. If the use cases are known then there could be possibilities to further continue this kind of study.
10. The table in the annex has colours both as CIE and RGB. The normative one will be the CIE colour. The RGB values are given for a specific LCD monitor model named in the annex. Although the hue of the colour would probably be different with another monitor, the maker of this study is of the opinion that the RGB values are usable for evaluation purposes, if the facility to get calibrated RGB values from the CIE colours is not available in the evaluation platform.

Conclusions

10. This is a possible start for evaluation suitable symbology for MPA purposes.

Recommendations

11. This proposal is offered without any obligation to use any information from this proposal.

Justification and Impacts

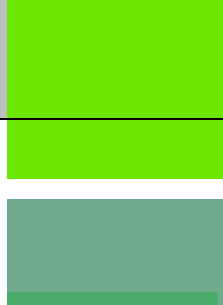




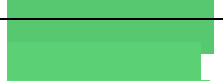

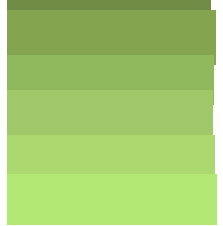
12. Obviously this paper offers a possibility to start evaluation.

Action required of related IHO workgroup

The related IHO workgroup is invited to:

- a) Discuss the issue presented in this paper.

Annex – Current shades of green assigned in S-52 for DAY and new proposals for MPA

Token	Example	CIE [x,y,L]	Resulting RGB for a Furuno MU231 monitor [red, green, blue]	Notes
CHGRN LITGN		0.31, 0.56, 60.0	108,232,0	Used as fill colour for AtoNs and as sector colour for lights Surrounded always by at least 1 pixel rim to protect from mixing with other object using same or close colour
DEPIT		0.26, 0.36, 35.0	112,172,140	Inter-tidal area
ARPAT		0.26, 0.42, 30.0	76, 172, 108	Radar tracked targets and AIS targets
RADLO . . . RADHI		0.31, 0.56, 20.0 . . . 0.31, 0.56, 60.0	36, 88, 0 44, 104, 0 48, 108, 0 52, 116, 0 56, 124, 0 60, 132, 0 64, 140, 0 68, 144, 0 72, 156, 0 76, 164, 0 80, 172, 0 84, 180, 0 92, 192, 0 96, 208, 0 108, 232, 0	Radar echo from weakest echo to strongest echo. CIE c,y stays while L is changing. NOTE: Any mixing with CHGRN/LITGN is avoided as symbols using CHGRN/LITGN always include at least 1 pixel rim with other colour
MARCY		0.20, 0.355, 20.0	0, 114, 116	Alternative colour for mariner symbol use, for example alternative to ARPAT
		0.27, 0.45, 9.0	44, 108, 56	Proposal Borderline of MPA
		0.27, 0.45, 45.0 0.27, 0.45, 50.0 0.27, 0.45, 55.0 0.27, 0.45, 60.0 0.27, 0.45, 65.0 0.27, 0.45, 70.0	88, 200, 112 91, 208, 116 94, 216, 120 97, 224, 124 100, 236, 128 104, 244, 136	Proposal, alternative 1 Fill colour of MPA NOTE: Cannot make brighter (too close to max). Cannot make darker (will become indistinguishable from already defined colors)
		0.33, 0.45, 20.0 0.33, 0.45, 30.0 0.33, 0.45, 40.0 0.33, 0.45, 50.0 0.33, 0.45, 60.0 0.33, 0.45, 70.0	112, 140, 68 132, 164, 80 144, 184, 92 160, 200, 104 172, 216, 112 180, 232, 116	Proposal, alternative 2 Fill colour of MPA