**HSSC 12-05.3C**

## Paper for consideration by HSSC12

## Architectural Display of S-100 related products

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| ***Submitted by:*** | NIPWG |
| ***Executive Summary:*** | Overarching presentation of the relations between various S-100 based products |
| ***Related Documents:*** | HSSC10-05.3A Rev5, HSSC 11-05.3D |
| ***Related Projects:*** | NIL |

## Introduction / Background

At HSSC10 and HSSC11 NIPWG presented an architectural display of S-100 based products. HSSC appreciated the intention behind that presentation and invited NIPWG to develop that further. The version attached to this document presents the status and raises questions which need further discussions and considerations, see Annex A.

## Analysis/Discussion

General:

The initially introduced terms “Front-of-bridge/ECDIS” and “Back-of-Bridge/ECS” lead to misunderstanding and disharmony between the terms used by IMO and IHO. Therefore, the IMO compliant terms “Route Monitoring” and “Route Planning” replace the terms “Front-of-bridge/ECDIS” and “Back-of-Bridge/ECS”.

An adequate and harmonised product specification description is essential to assign product specification to “Route Monitoring” and “Route Planning” use correctly.

Taking into account the IHO submission to NCSR7 and the Assembly paper PRO2.1 it can is expected that S-101 will be the only IHO product specification that is mandated by IMO. That produces a disharmony between what S-98 (Interoperability Spec) describes and what the official IHO position is.

However, the diagram reflects the current position of the HSSC working groups. The presentation of the architecture will be changed if new developments justify it.

The product specifications are separated into those relevant for the Route Planning mode and those relevant for Route Monitoring mode. The mariner may select different S-98 interoperability levels.

The presentation of the WMO/JCOMM product specification is intended as these are relevant either for route planning or/and for route monitoring. Some of the product specifications were developed at the very early S-100 time when GML and portrayal were not implemented. Efforts are ongoing to make these product specifications compliant to the latest S-100 edition. Once done, these product specifications could be assigned to one or both of the Route Planning or Route Monitoring boxes.

Based on the said IHO submission to NCSR7, future ECDIS should be hybrid and work with S-57 and S-100 based data together. The both ECDIS boxes reflect this request.

Data quality indicators:

Data quality indicators should only apply to products under the remit of IHO. Other communities might define their own data quality indicators or may adapt the IHO approach.

S-124 (WWNWS) which has IMO and IHO involvement does not follow the IHO data quality instructions as they cannot assess the quality of the source data. What they can ensure is that the source data will be provided in a way that is in-line with the IHO data quality instructions.

Portrayal requirements:

Independent of how much IHO is eager to define portrayal and portrayal instructions, relevant IMO guideline should be considered. Investigations should seek clarity whether the IMO considered the applicability of their guidelines to radio based database provision according to SOLAS Chapter V Reg 2. The response will be the driver of further work on portrayal.

Alternative approach for any route planning use can limit the IHO workload (see Annex B).

“Route Monitoring” product specifications:

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| S-101 | Fundamental basis for route monitoring and route planning mode. Will a future version of S-101 cover the S-103 scope and make S-103 superfluous? |
| S-102 | The depth information can deteriorate/improve the S-101 information. That could have effects on spatial operations such as the determination of the “Safety contour line”. |
| S-104 | The water level information can deteriorate/improve the S-101 information. The current edition provides only information on predicted data and no real-time data. |
| S-111 | Surface current information overlay the S-101 information. |
| S-124 | The data overlay S-101 data. A certain level of transparency of the portrayal is requested.  The process on vessels is that the data are assessed and then a digested form of the content is transferred into the voyage plan for use route monitoring if required.  Simply using data on route monitoring may facilitate clutter on the monitoring screen. |
| S-129 | The data overlay S-101 data. A certain level of transparency of the portrayal is requested.  The information will be pre-processed ashore and the presentation of go-areas or no-go-areas will managed on board. |

“Route Planning” product specifications:

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| S-122 | Route planning use. A portrayal of all information would clutter the screen. Certain S-101 restricted areas (regulatory of navigational) could be duplicated in some of the product specifications but should not replace S-101 information.  This information can be considered as relevant for voyage and route planning purposes. |
| S-123 |
| S-125 |
| S-126 |
| S-127 |
| S-411 (Sea Ice Information) | The current development status does not justify a use neither route monitoring nor route planning. If maturity evolves the route planning use of S-411 and S-412 is most likely. The weather is rather a long term development and nothing happens immediately.  S-411 could also be used route monitoring as this is information could be relevant for route monitoring. |
| S-412 (Weather Overlay) |
| S-413 (Weather and Wave Conditions) |
| S-414 (Weather and Wave Observations) |

Catalogue product specification:

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| S-128 | This product could be used by PSC (Port State Control) Officers to crosscheck the currentness of the data aboard. |

Product Specifications with no responsible HSSC WGs:

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| S-103 (Subsurface Navigation) | The questions here are:   * to which HSSC WG should this be assigned to? * should this be moved to the route monitoring part? * which kind of information should be covered; for military submarines or/and to such things as remotely-operated vehicles and underwater drones used in the scientific/civilian sector? |

Product Specification to be used in GIS only:

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| S-121 (Limits and Boundaries) |  |

## Justification and Impacts

A clear desciption of the archirectural infrastructure of S-100 based product specifications under the remit of IHO is essential for the stearing of the product specifications development.

## Recommendations

Provision of appropriate descriptions of prodcut specifcations purpose is essential and should be initiated as soon as possible. The architectural display and the S-100 Strategy Implementation should be kept harmonised.

## Action required of HSSC12

The HSSC12 is invited to:

1. note this paper,
2. discuss the presentation and act appropriately.

Annex A:



Annex B

