

MARITIME SAFETY COMMITTEE
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Agenda item 6

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GOAL BASED NEW SHIP CONSTRUCTION STANDARDS

Development of the Interim guidelines for goal-based standards – safety level approach

Submitted by IACS

SUMMARY

Executive summary: This document provides proposals to revise paragraphs 13 and 14 of the draft Interim guidelines for goal-based standards – safety level approach (MSC 98/WP.7)

Strategic direction, if applicable: 2

Output: 2.17

Action to be taken: Paragraph 10

Related documents: MSC 90/28, MSC 90/WP.7/Add.1; MSC 96/WP.8; MSC 98/6/5, MSC 98/WP.7 and MSC 98/23

Chronology of the development of the Interim guidelines for development and application of IMO Goal-based standards Safety Level Approach (SLA)

1 MSC 90 established a Working Group on Goal-based Standards and Formal Safety Assessment (GBS/FSA) and, inter alia, tasked it to consider the proposal for the further development of the safety-level approach that had been submitted in document MSC 90/5/2. The Working Group agreed, inter alia, on the following elements for the framework of GBS-SLA, as discussed in document MSC 90/WP.7/Add.1:

- .1 assessing the safety level;
- .2 acceptability of the safety level; and
- .3 whether to amend relevant requirements using risk-based methodologies.

These elements were subsequently noted and endorsed by the Committee (MSC 90/28, paragraph 5.17). The Committee also endorsed a work plan for the development of the Interim guidelines for the GBS-SLA (MSC 90/28, paragraph 5.18).

2 Based upon the above elements as endorsed at MSC 90, the Interim guidelines have been further discussed and developed at subsequent meetings of the Committee.

3 There have been concerns expressed throughout the development of the Interim guidelines regarding the availability of data and the complexity of the assessments required for the development of rules using the GBS-SLA (MSC 90/28, paragraph 5.7; MSC 94/21, paragraph 5.10; and MSC 95/22, paragraph 5.5). In particular, general apprehension has been expressed regarding the complexity of the process in section 14 of the draft Interim guidelines. The need has been expressed for simplification of the process for rule making within the Interim guidelines (section 14).

4 Towards this end, Germany submitted a proposal to MSC 98 (MSC 98/6/5) providing a different approach for section 14 of the draft Interim guidelines. In considering the proposed new section 14, the Committee, having noted the strong support for the proposal in the annex to document MSC 98/6/5, endorsed the Group's recommendation to keep both the existing and the proposed section 14 in square brackets within the draft Interim guidelines. In this context, the Committee invited Member States and international organizations to submit concrete GBS-SLA examples as well as comments on both options for section 14, with a view to further developing the draft Interim guidelines at MSC 99 (MSC 98/23, paragraphs 12.15 and 12.16).

Discussion

5 The text in the latest draft of the Interim guidelines (MSC 98/WP.7, annex 3) for section 14, while providing a philosophy for the rulemaking process using GBS-SLA, possibly falls short in terms of tangibility and measurability of the efforts involved. The flow chart in figure 1 of the draft Interim guidelines and the text description could be improved in respect to their consistency. On the other hand, the text in document MSC 98/6/5 contains descriptions of the process which are too generic, prone to differing application and may not provide a unique and reproducible output.

6 However, both of the proposals for section 14 agree on the fundamental basis of GBS-SLA, i.e. hazard identification, hazard screening and development of a risk model and assessment of risk control options or mitigating measures.

7 It is noted that the Formal Safety Assessment (FSA) Guidelines (MSC.MEPC.2/Circ.12/Rev.1) already describe the various stages needed to be taken to develop rules that consider assessment of the risk involved. It is also noted that section 13 of the present draft Interim guidelines for GBS-SLA recognize the utility and relevance of the FSA process to the rule-making process. FSA is a well-defined and rational process which has already demonstrated its utility in developing justifiable and robust rules at IMO, e.g. Risk Control Options (RCOs) for bulk carriers, mandating ECDIS, enhancing damage stability provisions etc. IACS notes that the process described in section 14 may be conducted in an objective and robust manner by utilizing the FSA methodology as prescribed in the IMO FSA Guidelines. The objective of GBS-SLA may be appropriately accomplished by the application of the relevant steps in the FSA Guidelines in order to ensure an unambiguous and reproducible GBS-SLA output that supports the IMO rule-making process.

8 In order to address the concerns that have previously been expressed (see paragraph 4 above) and considering the calls for simplification of the GBS-SLA process, it is the intent of this document to explain how the FSA process can serve the desired purpose of GBS-SLA.

Proposal

9 Consequently, it is proposed to amalgamate sections 13 and 14 of the existing draft Interim guidelines into a single section (section 13). The proposal for the amalgamated section is provided in the annex. The proposed text in the annex is developed to support both the:

- .1 development of new rules and regulations based on GBS-SLA; and
- .2 amendments of existing rules and regulations based on GBS-SLA.

Action requested of the Committee

10 The Committee is requested to consider the foregoing and, in particular, the proposal in paragraph 9 above, and take action as appropriate.

ANNEX

PROPOSAL FOR A NEW SECTION AMALGAMATING SECTIONS 13 AND 14 OF THE DRAFT INTERIM GUIDELINES FOR DEVELOPMENT AND APPLICATION OF IMO GOAL-BASED STANDARDS SAFETY-LEVEL APPROACH

13 Application of the safety-level approach to the IMO rule-making process using IMO FSA Guidelines

The application of the safety-level approach to the IMO rule-making process is described in table 1 with the corresponding linkage to the applicable FSA steps. This approach can be utilized for:

- .1 the development of new regulations using the GBS-SLA framework;
- .2 the reformulation of the existing regulations in the GBS-SLA framework; and
- .3 the revision of an existing regulation which has been developed using the GBS-SLA framework.

Table 1

Stage	Description	FSA step(s)/ references within the FSA Guidelines	Output for GBS SLA
1	Decide the scope for the new regulation/review/update the scope for existing regulations.	Paragraph 4	Preamble for Tiers 1 and 2
2	For development of new regulations, identify and prioritize hazards For reformulation/revision of existing regulations in accordance with the framework of GBS-SLA <ul style="list-style-type: none"> • Identify and prioritize hazards (if this step was performed earlier, then it may be skipped). • Update the hazard list (applicable for revision of existing regulation developed in GBS-SLA framework). 	Step 1	Basis for Tiers 1 and 2
3	Estimate the current safety level(s)	Step 2	Basis for Tiers 1 and 2
4	Decide the goals and safety level(s) to be used for the development of new regulations.	Safety level (s) to be specified by the Committee based upon the societal acceptance and/or consideration of the current safety levels from Stage 3	Tier 1 Goals Basis for Tier 3

Stage	Description	FSA step(s)/ references within the FSA Guidelines	Output for GBS SLA
5	1 Perform FSA using risk acceptance criteria based upon safety levels fixed in Stage 4. This is to derive the feasible risk control options (RCO). 2 Formulate the Functional requirements with their expected performances using the derived RCO.	Steps 2,3,4,5	Tier 2 FRs Tier 3 Verification
6	Develop rules/regulations based upon the functional requirements and the expected performances derived in Stage 5.		Tier 4 Rules/Regulations