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Marine technology — Marine environment impact assessment (MEIA) — General technical requirements

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Contents

Page

Foreword

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This document was prepared by Technical Committee ISO/TC 8 *Ships and marine technology*, Subcommittee SC 13, *Marine technology*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Deep-sea environments are faced with cumulative effects of many human activities, such as ocean acidification, waste deposition, oil exploitation, fishing, maritime transport, and potential seabed mining. Criteria to manage marine environmental conditions, including offshore and deep-sea areas, have been proposed by agencies of the United Nations. These suggested criteria include ecologically and biologically significant areas (EBSAs) by the Convention for Biological Diversity; vulnerable marine ecosystems (VMEs) by the Food and Agriculture Organization; and particularly sensitive sea areas (PSSAs) by the International Maritime Organization[1]. The Commission of the International Seabed Authority (ISA) has published recommendations for the guidance on environmental impact assessments (EIA) for seabed mining in the Area, for use by countries which have any deep-sea mining contracts and which recognize the primary importance of appropriate performance standards on the related environmental issues[2,3].

Since the mid-1990s, attention has been paid to potential environmental impacts caused by deep-sea mining. Developing protocols for EIA has been discussed in the meetings conducted by the scientific communities and ISA[4]. A practical issue to address is the development of a cost-effective operation for observation and monitoring in seabed mining sites[5,6].

Under these circumstances, this document gives a technical concept and requirements to conduct a practical marine EIA for exploration and exploitation of mineral resources and in situ monitoring of deep-sea mining sites.

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1 Scope

This document provides general technical guidance for the operation of marine environment impact assessments (MEIA) to assess the degree of impact of deep-sea activities of exploration and exploitation for mineral resources to the marine environment. It does not cover matters related to the legal framework for MEIA and deep-sea activities on energy resources.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
baseline data
data set used to assess the impacts of post-implementation of a deep-sea activity

3.2
habitat mapping
mapping of the marine habitat by data sets of observations and measures collected from the environment, providing a tool for ecological research and management of the conservation and sustainable use of marine resources

3.3
soundscape
marine acoustic environment consisting of natural sounds ranging between 1 Hz and 100 kHz, from animals, weather and waves, or of anthropogenic origin, that provides a baseline for acoustic ecology

4 General principles

Technical guidance is provided on MEIA for deep-sea mining, in order to conduct operations of deep-sea survey and monitoring with economic efficiency, and to keep the data quality on assessment. The MEIA described in this document provide guidance on the following:

— cost effective operation of deep-sea survey and monitoring;

— habitat mapping by baseline data,

— estimation of impacts from seabed mining;

— monitoring of measures for mitigation;

— post-mining monitoring.