



Protection of undersea pipelines and cables in navigable areas

Terms of Reference

1 Background

With the development of offshore wind farms, the provision of greater connectivity in telecommunications, the provision and interconnection of electricity supplies and the linking of pipeline utilities, there is a growing number of shallow water installations of cables and pipes in and around the approaches to ports. Many of these installations lie within heavily trafficked marine channels and port approaches and an updated understanding of protective measures is required to inform harbour authorities, designers, consultants and service owners as to the best methodology to protect such installations in a cost effective and efficient manner.

2 Objectives

The objectives of the proposed Working Group (WG) are to gather existing technical information on cable and pipeline protective systems, and to develop guidelines for the performance criteria for cable and pipeline protection and for the procedures for designing cable and pipeline protection. The WG should also consider methods for evaluating and managing risks from shipping to undersea cables and pipelines. The evaluation and management of risks to shipping from cables and pipelines should also be considered.

The requirements of national authorities vary significantly between countries, but the objective of the Working Group (WG) is to develop logical design guidelines rather than to repackage conflicting requirements and recommendations from existing national and international standards. Similarly the different permission processes in various countries are not considered to be part of this report.

3 Existing documents to be reviewed

Current knowledge as evidenced by other organisations such as representative international and national bodies for telecommunications, electricity production and supply, water management and supply, oil and gas industries, renewable energy industries, and Classification Societies, needs to be reviewed. Regulators and specialist undersea contractors and consultants should be asked to provide relevant documentation. Existing PIANC WG reports should be studied to seek reference to channel clearances .

4 Scope

It is proposed that the report should provide recommendations for assessing performance criteria for protection systems, and provide recommended procedures for designing cable and pipeline protection. Where relevant it should identify good practice relevant to undersea cables and pipelines in navigable areas with respect both to the planning and design of

permanent works as well as their installation processes. It may refer to relevant national or international standards where they exist.

It should contain information about marking temporary works during construction and maintenance processes, as well as any marking of permanent works. Exclusion zones during and after construction should be considered, including advice on what activities should be excluded (e.g. navigation, anchoring, fishing). Safety distances and clearances from other marine structures, navigation channels, and navigation buoys, should also be considered.

The information contained within the report will not be definitive due to the many varying services, installation techniques, geological and metocean conditions, environmental conditions and constraints that are likely to be found on a worldwide basis. However the report should contain enough information to allow informed decisions on planning, design and construction to be made.

5 Intended product

The report will provide recommendations for the design of protection systems for cables and pipelines in navigable areas.

An examination of the factors influencing the choice of installation should be included thereby providing a framework for considering the design and operational requirements for any proposed installation or for any retrofitting of protection where increased standards are required either by the utility owner or the harbour authority or because of changing physical conditions including changing climate.

The report may refer to relevant national and international standards but it is not intended to be a catalogue of existing design and construction requirements.

6 Working Group membership

Membership of the WG should include representatives from stakeholders and target users such as designers and contractors, dredging companies, harbour authorities, utility owners, and organisations representing commercial and recreational navigation (including fishing), and regulators. The range of expertise should cover at least practical design and construction knowledge in terms of geology, tidal range, operations and construction and maintenance. Representation from the International Harbour Masters Association (IHMA) should be included.

7 Relevance to Countries in Transition

The report will be of value in protecting the interests of countries in transition, and will assist decision makers such as harbour authorities in the commissioning and installation of utility services.