

# Managing Sediment Mobility Risk - ABPmer's SMART Approach



## About

Changes in the depth of local seabed sediments can result from natural processes and/or anthropogenic activities and remain a primary concern for project design and in developing monitoring and maintenance plans.

At present, approaches used to predict changes in seabed sediment depth are limited by the availability, accuracy and interpretation of disparate geological, geophysical, bathymetric and metocean information. This can make project design and site selection problematic and add further risks and costs to activities and assets once operational.

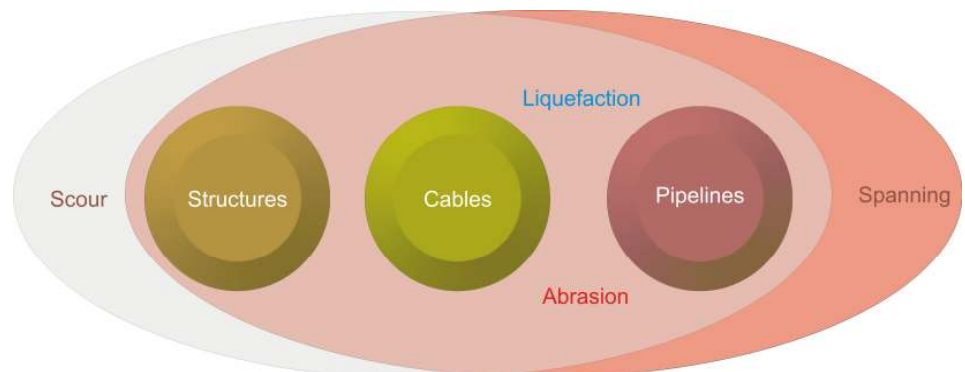
With the increasing scale of development within our seas, there is a pressing need for better tools to manage sediment mobility risks associated with such developments through the project life cycle.

## SMART

The ABPmer Seabed Mobility and Risk Tool (**SMART**) is designed to meet the needs of a wide range of offshore developers and operators by providing solutions to the various seabed mobility issues that currently impact on efficient project design and execution and pose additional risks to operations and assets.

It is underpinned by advanced numerical modelling and a deep understanding of the physical processes that can give rise to mobilisation of the seabed.

Fundamentally it provides a range of standard and bespoke approaches to predict the present and expected future behaviour of the sea bed and is backed by ABPmer expertise and experience.



This information can be used to assess the likely impacts on operations and assets caused by physical changes in local and far-field seabed conditions, and to identify and advise on ways to minimise and control the risks.

> **SMART** is an innovative and flexible tool designed by ABPmer to meet the needs of a wide range of offshore developers and operators exposed to risks posed by mobile sediments and bedforms such as sand waves and sand banks on the seabed.

> **SMART** provides solutions to a wide range of issues associated with seabed instabilities that currently impact on efficient project design and execution and pose a risk to operations and assets.

> **SMART** is underpinned by advanced numerical modelling and a deep understanding of the physical processes that can result in changes to the seabed environment.

## Further Information

Please phone Jon Williams, ABPmer : 02380 711880



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## The role of SMART in different marine activities

Sector	SMART role
Aggregate extraction	Provision of tools to assess environmental impacts, changes in seabed stability and recovery rates.
Dredge spoil disposal	Accurate assessment of dredge sediment mobility, contamination potential and final deposition sites.
Fisheries and aquaculture	Provision of improved understanding of the demersal fisheries environment, storm impacts and the fate of aquaculture waste.
Marine conservation and cultural heritage	Improved scientific understanding of physical seabed dynamics to assist planning, surveying, site management and prioritisation of marine conservation or heritage preservation actions.
Marine Military	Desktop tools to advise on potential munition burial/de-burial areas, hazards and risks to operations attributable to sediment properties in nearshore and estuarine environments.
Navigation safety and maintenance	Science-driven guidance and risk assessment for scour, siltation, channel migration and anchorage stability.
Offshore renewables, oil/gas and cables	Site-specific desktop tools for EIA/ES, operations planning and asset management.
Planning/Regulation	Provision of geospatial data on sediment mobility to underpin Marine Spatial Planning processes and license applications.

## What could ABPmer's SMART Service do for you?

### SMART offers:

>a range of standard and bespoke approaches to predict present day and future behaviour of the sea bed;

>a capacity to address all spatial and temporal scales of concern;

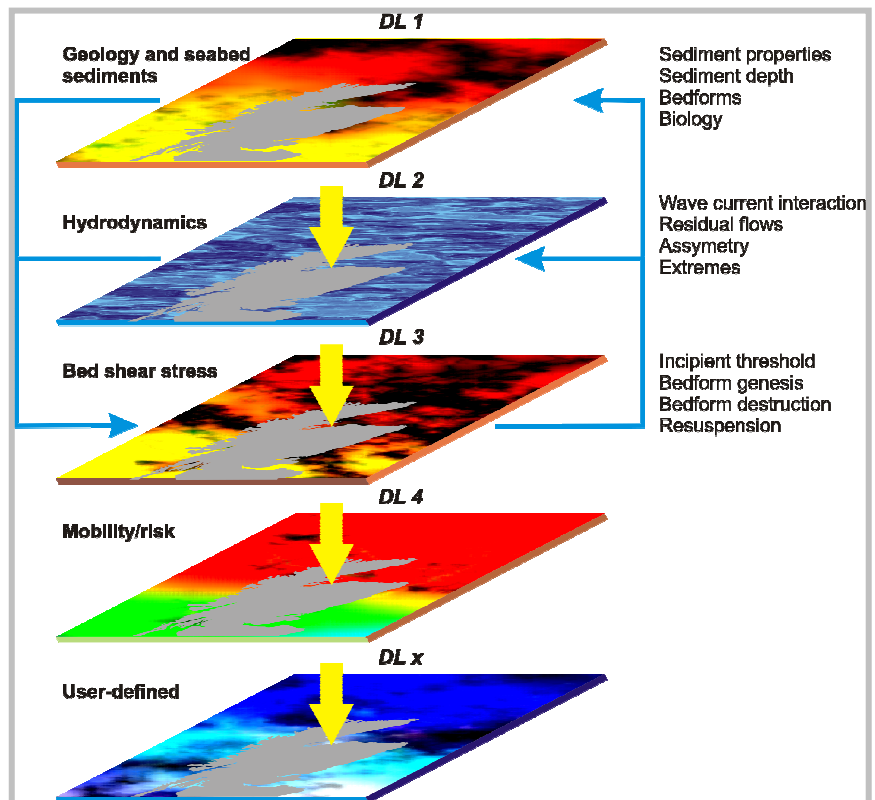
>information on the speed of movement or on temporal changes in rates of seabed evolution;

>intelligent connections between existing data sources;

>state of the art equations and modelling approaches;

>assistance with site selection, project development, construction, operation and decommissioning; and

>user friendly applications in Windows to allow investigation of risks posed by seabed mobility using user defined scenarios.



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