



# Marine Cables Seminar

7 October 2010, London

Cable Protection and Lessons Learned in  
Telecoms

by

Doug Percy - Principal Consultant



**METOC**

WHERE ENGINEERING MEETS THE ENVIRONMENT

# Cable Protection Time Line

| Task           | Year 1 | Year 2 | Year 3 | Year 4 | Years 5 to 30? 5- 50? |
|----------------|--------|--------|--------|--------|-----------------------|
| Feasibility    |        |        |        |        |                       |
| Investigation  |        |        |        |        |                       |
| Contract award |        |        |        |        |                       |
| Installation   |        |        |        |        |                       |
| Operational    |        |        |        |        |                       |

Reliability over the life of a system depends on work carried out in the early years of a project



**METOC**

# Investigation

## Constraints study

- Existing infrastructure
- Dredging areas and dumping grounds
- Anchorages
- Wrecks
- Environmental Impact Assessments

## Cable route study

- Bathymetry
- Geology
- Cable landing selection
- Cable engineering and installation methodology
- Metocean
- Shipping and fishing



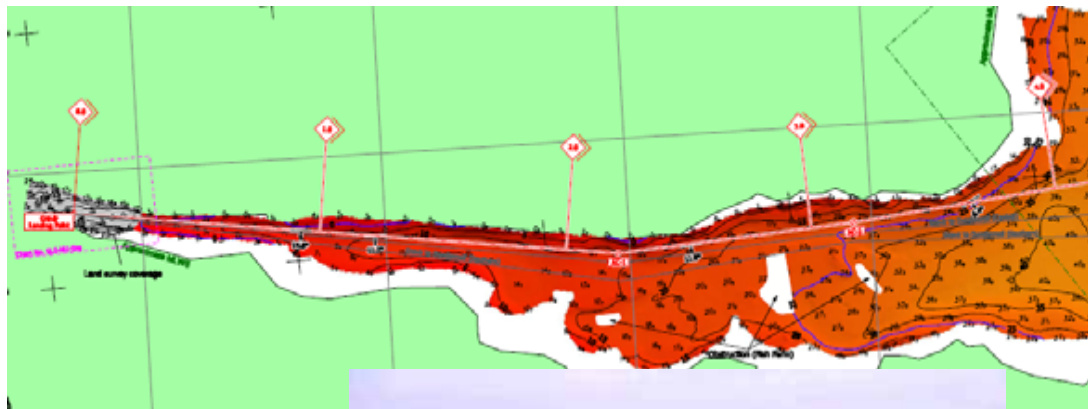
**METOC**

WHERE ENGINEERING MEETS THE ENVIRONMENT

# Investigation cont.

## Survey

- Survey specification
- Geotechnical sampling and analysis
- Client representation



## Burial risk analysis

- Identification of third party risks to cable
- Analysis of protection required to mitigate these risks
- Burial recommendations
- Additional protection requirements



**METOC**

# Contract Award

- Cable specification
- Installation techniques
- Burial criteria and KPI's
- Depth of burial vs. installation speed
- Risk sharing



# Installation

- Ship and burial equipment trials
- Key project staff experience
- Critical operations risk assessment
- Client representation
- Realistic plan of work



# Cable Awareness

## Pre-installation

- Cable awareness flyers
- National liaison
- Regional liaison

## Installation

- Notices and information bulletins
- Guard boats
- Fishing liaison officers

## Post-installation

- Admiralty charts
- Cable awareness charts (KISCA/UKCPC)
- Maintain regional liaison

[www.ukcpc.org.uk](http://www.ukcpc.org.uk)

[www.kisca.org.uk](http://www.kisca.org.uk)



**METOC**

# Operational Phase

- Regular surveys
- Targeted remedial burial works
- Other technical solutions
  - Rock placement
  - Mattressing
  - Articulated pipes
  - Grout bags



Image courtesy of Fugro

# Operational Phase cont.

- Lessons learnt
  - Rock placement (can disappear with out trace over the years)
  - Mattressing (gets dragged out of position)
  - Articulated pipes (corrodes spectacularly in wrong conditions)
  - Grout bags (can take months to install)



# Other tools in the box

- AIS based cable monitoring
- Radar based cable monitoring
- Crossing/proximity agreements



WHERE ENGINEERING MEETS THE ENVIRONMENT

**METOC**

# Joint Industry Initiatives

- Raising awareness of submarine cables as critical infrastructure for UK PLC
- Encouraging government agencies to recognise their responsibilities regarding the protection of submarine cables



**METOC**

WHERE ENGINEERING MEETS THE ENVIRONMENT

# Lessons Learnt

- Investment made during project planning and implementation pays dividends
- Work with suppliers and installers to gain best cable protection outcome
- Cable protection is an asset lifetime issue



**METOC**

WHERE ENGINEERING MEETS THE ENVIRONMENT

# And Finally

Measures should be appropriate:  
Government measures for dealing with errant fishermen

- Organise communal educational singing events
- Tow vessels away from cable route
- Burn boats of repeat offenders

