APPLICATION FOR THE CONSENT TO CONDUCT MARINE SCIENTIFIC RESEARCH IN AREAS UNDER NATIONAL JURISDICTION OF THE UNITED KINGDOM

1. General information

1.1 **Cruise name and/or number:** Irish Sea *Nephrops* UWTV CV0625

1.2 **Sponsoring institution:**

Name: Marine Institute
Rinville
Oranmore
Galway
Ireland

Name of Chief Executive: Dr. Peter Heffernan

1.3 **Scientist in charge of the project:**

Name: Dr. Colm Lordan

Address:
Marine Institute
Rinville
Oranmore
Galway
Ireland

Telephone: 00 353 91 387200

Telefax: to be confirmed

1.4 **Scientist(s) from UNITED KINGDOM involved in the planning of the project**

Name(s): Dr. Richard Briggs
Address: Department of Agriculture and Rural Development,
Agriculture & Environmental Science Division,
Newforge Lane,
Belfast,
BT9 5PX.

1.5 **Submitting officer:**

Name and address: Caitriona Nic Aonghusa
Marine Institute

Rinville.
Oranmore.
Galway

Country: Ireland

Telephone: 00 353 91 387200

Telefax: to be confirmed

2. Description of project (Attach additional pages as necessary)

2.1 Nature of objectives of the project:

Since 2003 the Marine Institute have carried UWTV surveys of the Irish Sea *Nephrops* grounds in co-operation with the Department of Agriculture and Rural Development Northern Ireland. The results of the 2003 to 2005 surveys were used to describe the abundance, distribution and estimate the biomass of *Nephrops* in the Western Irish Sea. The 2006 survey will have similar objectives listed below.

Specific Objectives:

1. Technology and protocol transfer between Marine Institute (Ireland) and Department of Agriculture and Rural Development Northern Ireland.
2. To develop a fishery independent survey to produce a relative index for the *Nephrops* stock.
3. To develop a fishery independent survey to a biomass estimate for the *Nephrops* stock.
4. To map the Irish Sea *Nephrops* grounds.
5. To gather data on the abundance, distribution and patchiness of *Nephrops* burrows in the Irish Sea.
6. To collect secondary data on the seabed in the Irish Sea using benthic grabs and multibeam.
7. To satisfy the requirements of the Irish National programme under the 'Data collection regulation' EC Regulation 1543/2000.

2.2 Relevant previous or future research cruises:

The first three systematic UWTV surveys of the Western Irish Sea *Nephrops* grounds were completed during August/September 2003 to 2005. These surveys were carried out using the RV Celtic Voyager and Lough Foyle (2003 to 2004) and in 2005 the RV Croystes replaced the RV Lough Foyle. The survey involving scientists, equipment and protocols from both DARDNI (UK) and MI (Ireland) is partly funded by the EC as part of the UK and Irish National programmes under the 'Data collection regulation' EC Regulation 1543/2000 and will probably be continued in future years.

2.3 Previously published research data relating to the project:

Lordan, C., Doyle, J and Briggs R. 2004. Preliminary Results of the joint MI-DARDNI UWTV Survey on the Western Irish Sea *Nephrops* Grounds. Appendix III Working Document to the ICES Working Group on *Nephrops* Stocks. ICES CM 2004/ACFM:19 pp 322-337.

3. Methods and means to be used

3.1 Particulars of vessel

Name: Celtic Voyager
Nationality: Irish

Owner: Marine Institute

Overall length: 31m
Maximum draught: 3.8m
Net tonnage;
Propulsion: Wartsila UD25M5 (626 kW) ZF Marine Gearbox + Berg propeller Van der Giessen Wing Nozzle
Cruising speed: 10kn
Call sign:
Method and capability of communication – radio, satphone, gsm

Name of master: Denis rowan
Number of crew: 8
Number of scientists on board: 6

3.2 Aircraft or other craft to be used in the project: No

3.3 Particulars of methods and scientific instruments

Types of samples and data	Methods to be used	Instruments to be used
UWTV footage	Rapid visual counts	Sledge mounted camera
Sediment samples	Grab sampling	Day grab

3.4 Indicate whether harmful substances will be used: No

3.5 Indicate whether drilling will be carried out: No

3.6 Indicate whether explosives will be used No

4. Installations and equipment

Details of installations and equipment (dates of laying, servicing, recovery, exact locations and depth):

The sledge will deployed and towed on RV Celtic Voyagers port trawl drum using 10mm non-rotating transducer armoured cable. The amount of cable shot was quantified using a mechanical cable meter, which served as the towing block. The umbilical cable, which is non-load bearing, was paid out manually as the warp was shot. Every 10 m the umbilical was secured to the transducer cable using cable ties.

RV Celtic Voyager will making between 2-3 knots for shooting into the weather. Once in the water the camera lights were switched on and warp was paid out until the seabed came into view. Shortly before touch down the vessel was slowed back to 0.8-1.0 knots. A warp-depth ratio of around between 1.4:1 and 1.8:1 was used at most stations. Once stable on the bottom the sledge was towed at between 0.8-1.0 knots for around 10-14 minutes. During this time the sledge travels between 160-200m along the sea bed.

The sledge will be deployed at around 3.5 nautical mile intervals in regularly spaced grid over the survey area (see below). The starting point for this grid will be randomized. The depth range will be from 18-148 meters (average ~79 m).

5. Geographical areas

5.1 Indicate geographical areas in which the project is to be conducted (with reference in latitude and longitude):

The geographical area is the sand and mud patch in the western Irish Sea within the following way points.

Latitude North	Longitude West
54° 32.4	5° 16.8
54° 2.4	5° 46.2
54° 3.6	5° 57.0
53° 52.2	6° 13.2
53° 30.0	5° 52.8
53° 30.0	5° 27.6
53° 50.4	5° 0.6
54° 15.6	4° 46.2
54° 31.8	5° 3.6
54° 33.0	5° 16.8

5.2 Attach chart(s) at an appropriate scale showing the geographical areas of the intended work and, as far as practicable, the positions of intended stations, the tracks of survey lines, and the locations of installations and equipment.

The station positions will be similar to those surveyed during the 2003 to 2005 UWTV programmes and shown in Figure 1. The starting position of the grid in 2006 will be randomly selected.

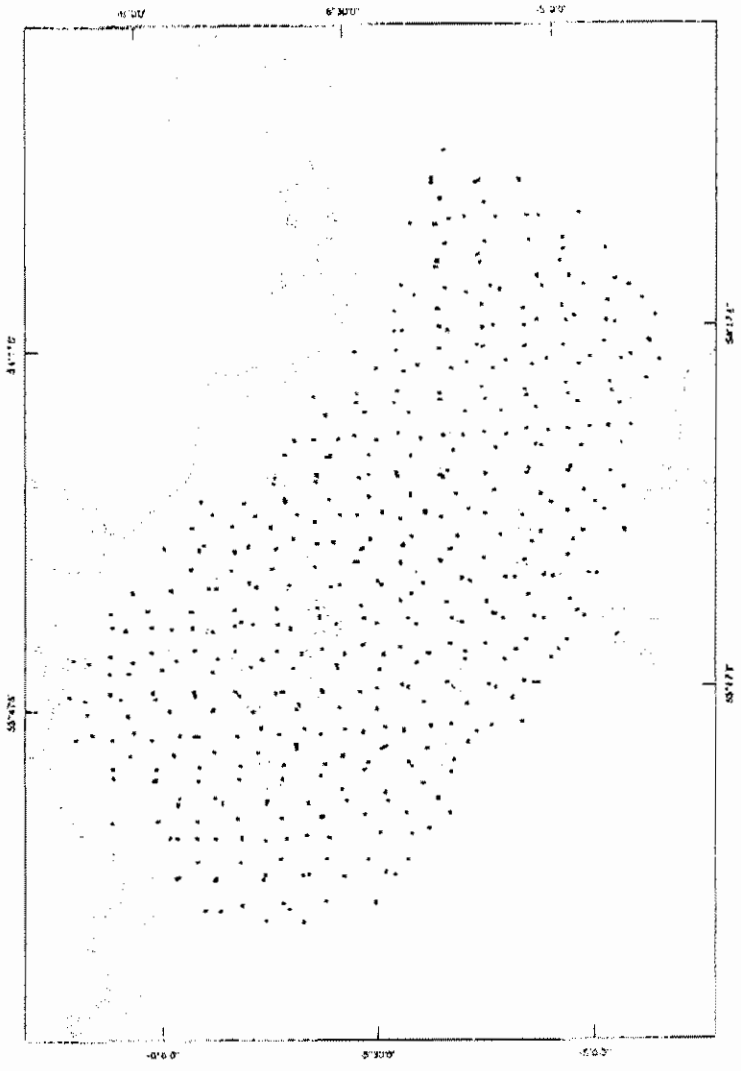

Figure 1: The Distribution of the UWTV Stations in Western Irish Sea *Nephrops* surveys 2003-2005.

6. **Dates** 29/08/2006-07/09/2006

6.1 Expected dates of first entry into final departure from research area of the research vessel:
29/08/2006-07/09/2006

6.2 Indicate if multiple entry is expected:
Yes (the survey area covers some of the Irish zone and UK zone) so multiple entry are expected.

7. **Port calls**

None expected or planned in UK ports. There may be port calls in Ireland depending on weather and progress of survey.

Dates and names of intended ports of calls in UNITED KINGDOM: None

7.2 Any special logistical at ports of call: None

7.3 Names/ Address / Telephone of shipping agent (if available)
None

8. Participation

8.1 Extent to which UNITED KINGDOM will be enable to participate to be represented in research project:

This joint survey will be carried out using the RVs Celtic Voyager and Croystes involving scientists, equipment and protocols from both DARDNI (UK) and MI (Ireland). It is expected that a scientist from DARDNI will be aboard RV Celtic Voyager during the Irish leg of the survey.

8.2 Proposed dates and ports for embarkation / disembarkation :

Dublin 29/08/2006- Dublin 07/09/2006

9. Access to data, samples and research results

9.1 Expected dates of submission to UNITED KINGDOM preliminary reports which should include the expected dates of submission of the final results:

07/08/2006 Preliminary survey report

9.2 Proposed means for access by UNITED KINGDOM to data and samples:

Survey data and results will be analyzed jointly be Scientists from DARDNI (UK) and MI (Ireland).

9.3 Proposed means to provide UNITED KINGDOM with assessment of data, samples and research results or provide assistance in their assessment or interpretation:

Data and results will shared freely between scientists from DARDNI (UK) and MI (Ireland).

9.4 Proposed means of making research results internationally available:

Report will be presented to the international scientific community through ICES working groups.

10. Scientific Equipment

COMPLETE THE FOLLOWING TABLE-
SEPARATE PAGE FOR EACH COSTAL STATE: United Kingdom

INDICATE YES OR NO

LIST SCIENTIFIC WORK BY FUNCTION Eg: MAGNETOMETRY: GRAVITY DIVING SEISMICS BATHYMETRY SEABED SAMPLING TRAWLING ECHO SOUNDING WATER SAMPLING U/W TV MOORED INSTRUMENTS TRAWLING ECHO SOUNDING WATER SAMPLING	Water column including sediment sampling of the Seabed	Fisheries research within fishing limits	Research concerning the natural resources of the continental shelf or its physical characteri-stics	DISTANCE FROM COAST		
				Within 12nms	Between 12-200nms	(Continental shelf work only) Beyond 200nm but within the continental margin
UnderWater Television SEABED SAMPLING	Yes	Yes	No	Yes	Yes	No

(On behalf of the Principle Scientist)

Dated ----------