

# CRUISE SUMMARY REPORT -ROSCOP

**ACME**

**CRUISE NAME** : ACME..... **IDENTIFIER** :(given by the data centre)  
**Ship Name** : Lodycke..... **Call Sign**:.....  
**Ship Type** : research ship  
**Scientific Coordinating body** : TNO

## Chiefs Scientist(s) :

**A) : P.A van Walree**

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**Laboratory** : TNO-FEL

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## Objectives:

The first ACME sea trials took place on the Westerschelde, in an early phase of the project. The initial idea of such early trials was to get a feeling for the difficulties one can expect with underwater communication in shipping lanes. As part of the trial an assessment of the performance of the standard modems (ORCA MATS 200) would be made. The results of the trial would guide in the further development of suitable signal processing schemes and necessary adaptations of the hardware, and would provide valuable experience for further sea trials.

This trial had a fourfold purpose, described in the Measurement Plan :

1. To determine characteristics of the environment in the Westerschelde shipping lane that influence the performance of an Underwater Acoustic Communication link (noise spectra, frequency shifts and spreading, time spreading).
2. To collect environmental data (sound speed profiles, bathymetry) for sound propagation modelling in the laboratory.
3. To determine the usability and limitations of the existing modems in the Westerschelde.
4. To transmit and record a set of new communication signals for laboratory analysis after the trial.

## Cruise Period

**Start** : June 11, 2002

**End** : June 22, 2002

**Port of Departure** : Hansweert

**Port of Return** : Hansweert

## SEA/OCEAN :

**Coded Region**: A14

**Local Name**: Westerschelde

## Geographical Limits

**North** : 51.46 N..... **South** : 51.4 N.....

**West** : 3.94 E..... **East** : 4.02 E.....

**Description of the field observations:**

- 1) Underwater acoustic communications
- 2) Sound speed profiles
- 3) Salinity & Temperature profiles
- 4) Salinity & Temperature fixed measurements
- 5) Pressure measurements
- 6) Bathymetry readings

**STATIONS LOCATION:** MEASUREMENT\_STATIONS.txt

**ROSCOP PARAMETER CODES**

CODE	PARAMETER	MEASUREMENT DESCRIPTION	Nb Obs..	Scientist
D90	Other physical oceanographic meas.	Communication signals	30	A
G73	Single-beam echosounding	Bathymetry	7	A
H10	CTD stations		70	A
H11	Subsurface meas. Underway (T,S)		2x2016	A
M06	Routine standard measurements	Temperature, Atmospheric pressure	70	A

**BIBLIOGRAPHICAL REFERENCES (DATA REPORTS):**

M.B van Gijzen, P.A van Walree, *Measurement plan for the first ACME trial*, May 2001.

M.B van Gijzen, P.A van Walree, *Logbook for acoustic experiments*, June 2001.

M.B van Gijzen, P.A van Walree, *Cruise report of the first ACME trial*, July 2001.

P.A van Walree, J. Janmaat, *Acoustic Data Format*, July 2002.

P.A van Walree, M.K. Robert, *Overview of environmental data of the 1<sup>st</sup> ACME trial for archiving*, March 2002.

M.K. Robert, *ACME: EDMED form*, March 2002.

J.M. Passerieux, *ACME – 1<sup>st</sup> Periodic Report*, February 2002, Ref. TUS SAS 01/S/EGS/NC/450 JMP.

## DISCIPLINES

Mark the main related discipline(s) codes

CODE	DISCIPLINES
BF	MARINE BIOLOGY & FISHERIES
HC	CHEMICAL OCEANOGRAPHY (Hydrology)
GG	GEOLOGY & GEOPHYSICS
MM	MARINE METEOROLOGY
HP	PHYSICAL OCEANOGRAPHY (Hydrology)
PC	POLLUTION & CONTAMINATION

## IOC MEDITERRANEAN REGIONS

(put a cross in front of the main area in which data were collected during the cruise)

A00	ATLANTIC OCEAN
A01	NORTH ATLANTIC OCEAN
A10	NORTHEAST ATLANTIC
A12	BAY OF BISCAY
A13	ENGLISH CHANNEL
A14	NORTH SEA
A15	GREENLAND SEA
A16	NORWEGIAN SEA
A17	BRISTOL CHANNEL
A18	WEST SCOTLAND COASTAL WATERS
A19	IRISH SEA
A21	BALTIC SEA
A22	GULF OF BOTHNIA
A23	GULF OF FINLAND
A24	GULF OF RIGA
A25	KATTEGAT SOUND AND BELTS
A26	SKAGGERAK
B10	NORTHWEST ATLANTIC
B34	NORTHWEST PASSAGE
B35	BAFFIN BAY
B36	DAVIS STRAIT
B37	LABRADOR SEA
B38	HUDSON BAY
B39	HUDSON STRAIT
B64	GULF OF ST. LAWRENCE
B65	BAY OF FUNDY
B86	GULF OF MEXICO
B87	CARIBBEAN SEA
C10	EQUATORIAL ATLANTIC OCEAN (10N-10S)
C14	GULF OF GUINEA
C20	SOUTHEAST ATLANTIC
C30	SOUTHWEST ATLANTIC
C31	RIO DE LA PLATA
C80	SOUTH ATLANTIC OCEAN
D00	MEDITERRANEAN SEA
D10	MED. WESTERN BASIN
D11	GIBRALTAR STRAIT
D12	ALBORAN SEA
D13	BALEARIC SEA
D14	LIGURIAN SEA
D15	TYRRHENIAN SEA
D17	SICILIA STRAIT
D30	MED., EASTERN BASIN
D31	IONIAN SEA
D32	ADRIATIC SEA
D33	AEGEAN SEA
D41	BLACK SEA
D42	SEA OF MARMARA
D43	SEA OF AZOV
DH3	LEVANTINE BASIN
T00	ANTARCTIC OCEAN
T11	ANTARCTIC OCEAN ATLANTIC SECTOR



## ROSCOP PARAMETER CODES

Fill in the ROSCOP information for the observations. Add the address of the scientist in charge of the data if not in p 1. **Units of number of observations are :**

- number of vertical profiles for CTD, bottle casts, profilers etc.. or net tracks
- number of currentmeters or sediment traps, sea level gauges etc .. for time series
- number of miles for continuous underway data
- number of days of observations for marine meteorology.

If not convenient, or number of observations > 9999 , write the exact unit in «measurement description» (column 3).

CODE	PARAMETER	MEASUREMENT DESCRIPTION	Nb Obs..	Scientist (p 1 letter)
B01	Primary Production			
B02	Phytoplankton pigments (eg chloroph			
B03	Seston			
B06	Dissolved organic matter (inc DOC)			
B07	Pelagic bacteria/micro-organisms			
B08	Phytoplankton			
B09	Zooplankton			
B10	Neuston			
B11	Nekton			
B13	Eggs & larvae			
B14	Pelagic fish			
B16	Benthic bacteria/micro-organisms			
B17	Phytobenthos			
B18	Zoobenthos			
B19	Demersal fish			
B20	Molluscs			
B21	Crustaceans			
B22	seaweed			
B25	Birds			
B26	Mammals & reptiles			
B28	Acoustic reflection on marine organ			
B37	Taggings			
B64	Gear research			
B65	Exploratory fishing			
B71	Particulate organic matter (inc POC			
B72	Biochemical meas. (eg,lipids,amino			
B73	Sediment traps			
B90	Other biological/fisheries meas.			
B90	Underwater photography			
D01	Current meters			
D03	Currents measured from ship drift			
D04	GEK			
D05	Surface drifters/drifting buoys			
D06	Neutrally buoyant floats			
D09	Sea level (incl. bottom p. IES)			
D71	Current profiler (eg ADCP)			
D72	Instrumented wave measurements			
D90	Other physical oceanographic meas.			
G01	Dredge			
G02	Grab			
G03	Core rock			
G04	Core soft bottom			

G08	Bottom photography			
G24	Long/short range side scan sonar			
G26	Seismic refraction			
G27	Gravity measurements			
G28	Magnetic measurements			
G71	In-situ seafloor meas./sampling			
G72	Geophysical meas. made at depth			
G73	Single-beam echosounding			
G74	Multi-beam echosounding			
G75	Single channel seismic reflection			
G76	Multichannel seismic reflection			
G90	Other geological/geophysical meas.			
H09	Water bottle stations			
H10	CTD stations			
H11	Subsurface meas. underway (T,S)			
H13	Bathythermograph			
H16	Transparency (eg transmissometer)			
H17	Optics (eg underwater light levels)			
H21	Oxygen			
H22	Phosphate			
H23	Total - P			
H24	Nitrate			
H25	Nitrite			
H26	Silicate			
H27	Alkalinity			
H28	pH			
H30	Trace elements			
H31	Radioactivity			
H32	Isotopes			
H33	Other dissolved gases			
H71	Surface meas. underway (T,S)			
H72	Thermistor chain			
H73	Geochemical tracers (eg freons)			
H74	Carbon dioxide			
H75	Total - N			
H76	Ammonia			
H90	Other chemical oceanographic meas.			
M01	Upper air observations			
M02	Incident radiation			
M03	Near surface meteorology			
M04	Sea ice			
M05	Occasional standard measurements			
M06	Routine standard measurements			
M71	Atmospheric chemistry			
M90	Other meteorological measurements			
P01	Suspended matter			
P02	Trace metals			
P03	Petroleum residues			
P04	Chlorinated hydrocarbons			
P05	Other dissolved substances			
P12	Bottom deposits			
P90	Other contaminant measurements			