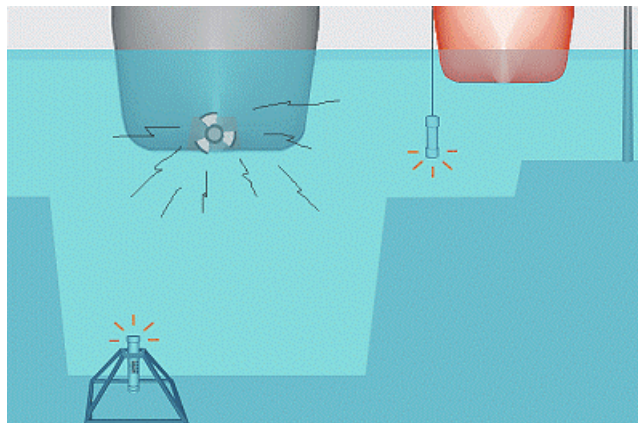


**Overview of environmental
data of the 1st ACME sea trials
for archiving.**



**First ACME Westerschelde trials
June 11-22, 2001**

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TNO-FEL

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1. Introduction

This document describes the contents of the cd rom *1st ACME trial: environmental data*. It contains data collected onboard Lodycke prior to and during the trial, and data from the Rijkswaterstaat ZEGE measurement network. The data are offered in the form of ascii files¹. Tables indicating time and position of a measurement are provided where possible.

Note that whenever possible, the geographical coordinates are given in the latitude and longitude notation, and in the X, Y notation (“RijksDriehoek” coordinates, with Paris –Auxerre- at the origin). However, sometimes, only the X,Y notation is given. This is the default Rijkswaterstaat notation. The positions are listed with an accuracy of 1 m, but actual positions may differ from the given values by a few tens of meters. For more detailed information on the trial, refer to the cd rom *ACME volume 1: Trial 2001 environmental data*. It contains more detailed information on the trial, as well as all the raw (environmental) data files collected and the validated data in .mat files. It also contains pictures of the trials and sound speed profiles graphs.

2. Word documents

DIRECTORY \DOC

This directory contains documents that are relevant to the first ACME sea trials and which describe the collected data: the Measurement Plan, the Cruise Report, a list of the archived data files, a description of the acoustic data format, the EDMED form, the cruise summary report, and the document you are currently reading.

3. Sound Speed Profiles

DIRECTORY \SSP

Table 3-2 lists the validated (i.e. with outliers removed) sound speed profiles, which were taken during the trials. There are 70 ascii files, each containing the variables described hereafter in Table 3-1.

Table 3-1 Description of the variables archived in the sspxx.txt files

Name	Size	Unit	Accuracy	min	max
Depth	10x1	m	-	-	-
Salinity	10x1	PSU	0.05	14.84	22.92
Sound speed	10x1	m.s ⁻¹	0.1	1490.8	1500.3
Temperature	10x1	Celsius degree	0.1	14.5	17.72

¹ raw data, .mat files and figures can be found on the cd rom ACME volume 1: Trial 2001 environmental data.

Table 3-2 Time and position of sound speed profiles.

profile	date	time	X	Y	Latitude	Longitude
SSP01	13-06-2001	08:14	57215	384931	3 58 54.717 E	51 26 44.872 N
SSP02	13-06-2001	08:36	57004	385012	3 58 43.713 E	51 26 47.361 N
SSP03	13-06-2001	09:50	57008	385031	3 58 43.901 E	51 26 47.978 N
SSP04	13-06-2001	10:41	57007	385033	3 58 43.847 E	51 26 48.042 N
SSP05	13-06-2001	11:50	56697	385029	3 58 27.802 E	51 26 47.719 N
SSP06	13-06-2001	13:01	56692	385026	3 58 27.546 E	51 26 47.619 N
SSP07	13-06-2001	13:49	56699	385029	3 58 27.906 E	51 26 47.720 N
SSP08	14-06-2001	08:01	57132	384997	3 58 50.354 E	51 26 46.956 N
SSP09	14-06-2001	09:05	56678	385014	3 58 26.834 E	51 26 47.222 N
SSP10	14-06-2001	10:03	56672	385035	3 58 26.502 E	51 26 47.897 N
SSP11	14-06-2001	10:50	56673	385041	3 58 26.548 E	51 26 48.092 N
SSP12	14-06-2001	11:30	56192	385042	3 58 1.645 E	51 26 47.822 N
SSP13	14-06-2001	12:28	56188	385038	3 58 1.442 E	51 26 47.690 N
SSP14	14-06-2001	13:47	56192	385042	3 58 1.645 E	51 26 47.822 N
SSP15	14-06-2001	14:16	55166	385052	3 57 8.520 E	51 26 47.495 N
SSP16	14-06-2001	15:19	55170	385051	3 57 8.728 E	51 26 47.466 N
SSP17	15-06-2001	08:03	57949	385247	3 59 32.402 E	51 26 55.551 N
SSP18	15-06-2001	08:46	57945	385244	3 59 32.198 E	51 26 55.452 N
SSP19	15-06-2001	09:25	57952	385260	3 59 32.545 E	51 26 55.973 N
SSP20	15-06-2001	09:58	57535	385511	3 59 10.706 E	51 27 3.835 N
SSP21	15-06-2001	10:48	57493	385523	3 59 8.519 E	51 27 4.197 N
SSP22	15-06-2001	11:36	57491	385535	3 59 8.404 E	51 27 4.584 N
SSP23	15-06-2001	12:02	56674	386034	3 58 25.603 E	51 27 20.216 N
SSP24	15-06-2001	12:18	56672	386032	3 58 25.501 E	51 27 20.150 N
SSP25	15-06-2001	12:43	56672	386032	3 58 25.501 E	51 27 20.150 N
SSP26	15-06-2001	13:13	56672	386032	3 58 25.501 E	51 27 20.150 N
SSP27	15-06-2001	13:47	56676	386035	3 58 25.705 E	51 27 20.250 N
SSP28	18-06-2001	06:51	58327	384132	3 59 53.073 E	51 26 19.714 N
SSP29	18-06-2001	07:11	58319	384968	3 59 51.834 E	51 26 46.754 N
SSP30	18-06-2001	07:54	58321	384967	3 59 51.938 E	51 26 46.723 N
SSP31	18-06-2001	08:29	58324	384968	3 59 52.093 E	51 26 46.757 N
SSP32	18-06-2001	09:14	58329	384971	3 59 52.348 E	51 26 46.857 N
SSP33	18-06-2001	09:52	58326	384970	3 59 52.194 E	51 26 46.823 N
SSP34	18-06-2001	10:37	58324	384969	3 59 52.092 E	51 26 46.789 N
SSP35	18-06-2001	11:56	58362	383530	3 59 55.478 E	51 26 0.261 N
SSP36	18-06-2001	12:25	58366	383532	3 59 55.683 E	51 26 0.328 N
SSP37	18-06-2001	13:15	58364	383532	3 59 55.579 E	51 26 0.326 N
SSP38	18-06-2001	13:16	58364	383533	3 59 55.578 E	51 26 0.359 N
SSP39	18-06-2001	13:17	58366	383533	3 59 55.682 E	51 26 0.360 N

SSP40	18-06-2001	13:57	58306	383547	3 59 52.563 E	51 26 0.776 N
SSP41	18-06-2001	14:28	58118	383596	3 59 42.784 E	51 26 2.245 N
SSP42	18-06-2001	15:09	58123	383585	3 59 43.054 E	51 26 1.892 N
SSP43	18-06-2001	15:40	58139	383581	3 59 43.886 E	51 26 1.773 N
SSP44	18-06-2001	16:26	58134	383579	3 59 43.629 E	51 26 1.705 N
SSP45	18-06-2001	17:06	58372	383603	3 59 55.923 E	51 26 2.628 N
SSP46	18-06-2001	17:45	58374	383648	3 59 55.982 E	51 26 4.085 N
SSP47	19-06-2001	11:12	57309	384326	3 59 0.186 E	51 26 25.359 N
SSP48	19-06-2001	11:27	56009	381840	3 57 55.404 E	51 25 4.122 N
SSP49	19-06-2001	11:49	54821	379614	3 56 56.212 E	51 23 51.357 N
SSP50	19-06-2001	12:29	54827	379621	3 56 56.516 E	51 23 51.587 N
SSP51	19-06-2001	13:22	54818	379620	3 56 56.051 E	51 23 51.549 N
SSP52	19-06-2001	13:55	54804	379572	3 56 55.376 E	51 23 49.987 N
SSP53	19-06-2001	14:25	54778	379573	3 56 54.031 E	51 23 50.003 N
SSP54	19-06-2001	14:28	54778	379573	3 56 54.031 E	51 23 50.003 N
SSP55	19-06-2001	15:02	54780	379565	3 56 54.142 E	51 23 49.746 N
SSP56	20-06-2001	07:41	57409	383695	3 59 5.991 E	51 26 5.008 N
SSP57	20-06-2001	07:54	58300	385022	3 59 50.797 E	51 26 48.489 N
SSP58	20-06-2001	08:30	58303	385027	3 59 50.947 E	51 26 48.653 N
SSP59	20-06-2001	09:02	58314	385021	3 59 51.523 E	51 26 48.465 N
SSP60	20-06-2001	09:31	58325	385011	3 59 52.102 E	51 26 48.149 N
SSP61	20-06-2001	10:06	58329	385007	3 59 52.313 E	51 26 48.022 N
SSP62	20-06-2001	10:35	58329	384990	3 59 52.330 E	51 26 47.472 N
SSP63	20-06-2001	10:50	58330	384990	3 59 52.382 E	51 26 47.472 N
SSP64	20-06-2001	11:02	58325	384982	3 59 52.131 E	51 26 47.211 N
SSP65	20-06-2001	11:47	55323	381063	3 57 20.702 E	51 24 38.551 N
SSP66	20-06-2001	12:17	55336	381112	3 57 21.325 E	51 24 40.145 N
SSP67	20-06-2001	12:43	55823	382581	3 57 45.032 E	51 25 27.976 N
SSP68	20-06-2001	13:22	55846	382594	3 57 46.209 E	51 25 28.411 N
SSP69	20-06-2001	13:55	55844	382588	3 57 46.112 E	51 25 28.215 N
SSP70	20-06-2001	14:18	57410	383753	3 59 5.985 E	51 26 6.885 N

4. Weather report

A few atmospheric conditions were logged in parallel with the sound speed profiles. Table 4-1 describes the atmospheric variables recorded: the air temperature, air pressure, wind speed, and the wind direction. The data are contained within the ascii file atmospheric_data.txt. The entry X is used when data are not available or not reliable.

Table 4-1 Description of the variables archived in the atmospheric_data.txt

Name	Size	Unit	Accuracy	min	max
Temperature	70x1	Celsius degree	0.1	12.3	21.7
Pressure	70x1	hPa	1	1007	1024
Wind speed	70x1	m.s ⁻¹	0.1	0.0	9.7
Wind direction	70x1	degrees	1	14	348

The ascii file also contains the date and time of each measurement.

5. Bathymetry

DIRECTORY \BATHYMETRY

The bathymetry was determined along four predefined tracks and two additional tracks decided upon during the trial. Track 5 defined in the Measurement Plan was not used and therefore the bathymetry was not measured. The original data files are stored in \bathymetry\raw and \bathymetry\mat of the cd rom ACME volume 1. The ascii files may still contain an occasional outlier. They contain:

Table 5-1 Description of the variables archived in the ascii files trackx.txt

Name	Size	Unit	Accuracy	min	max
x	-	m	1	-	-
y	-	m	1	-	-
depth	-	m	0.01	4.75	32.68

where x and y are “RijksDriehoek” coordinates, with Paris (Auxerre) at the origin. The depth is corrected for the tide, i.e. it is relative to NAP (Normal Amsterdam Level).

Figure 5.1 is a map of the trials area. The bathymetry tracks are indicated by coloured lines. The illustrations following Figure 5.1 visualize the bathymetries of all tracks with corresponding colours. In these illustrations the position of the remote, bottom-deployed modem is indicated with a square marker. Moorings of the Lodycke are also shown: the array contains the “surface” modem (round marker, designation ‘m’) and the two B&K hydrophones (diamonds, designations ‘h1’ and ‘h2’). Note that the actual depth depends on the tide and that the array, which is strictly vertical in the plots, may have been tilted by the current.

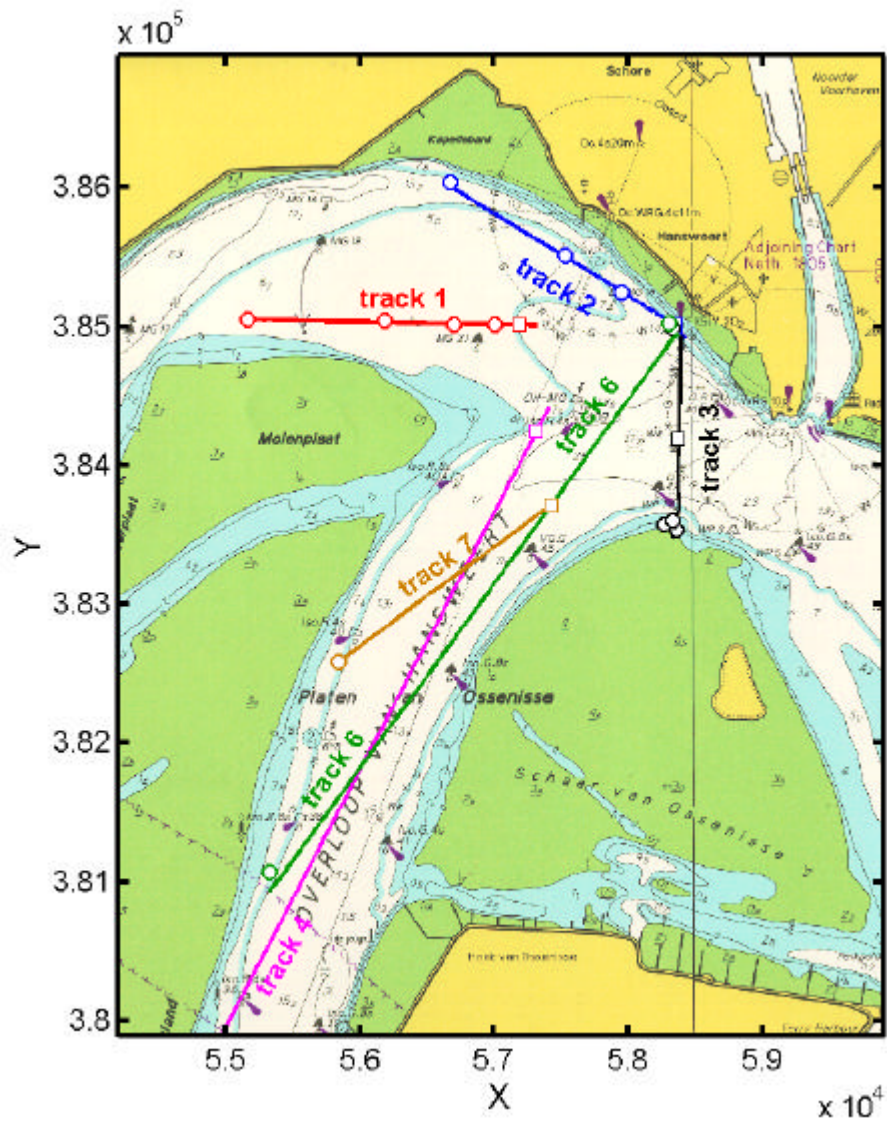
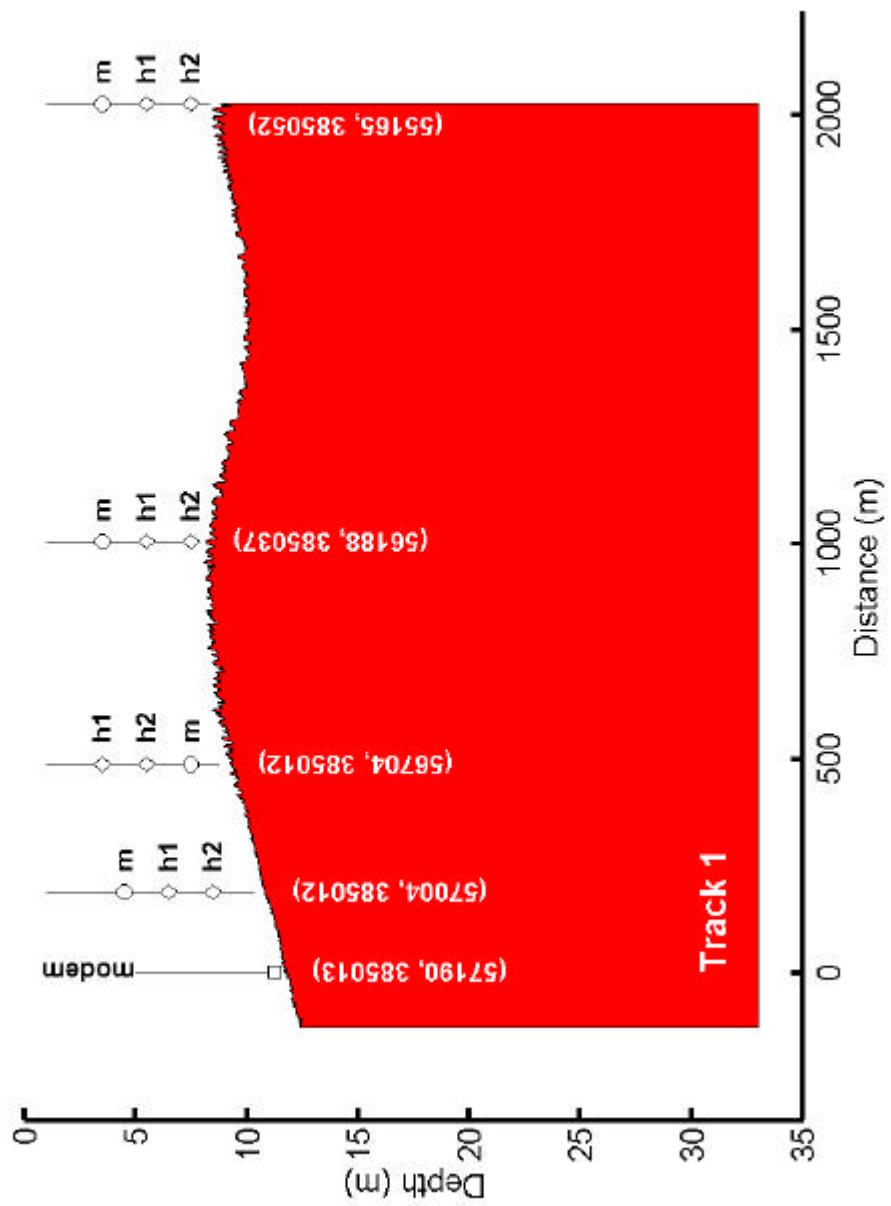
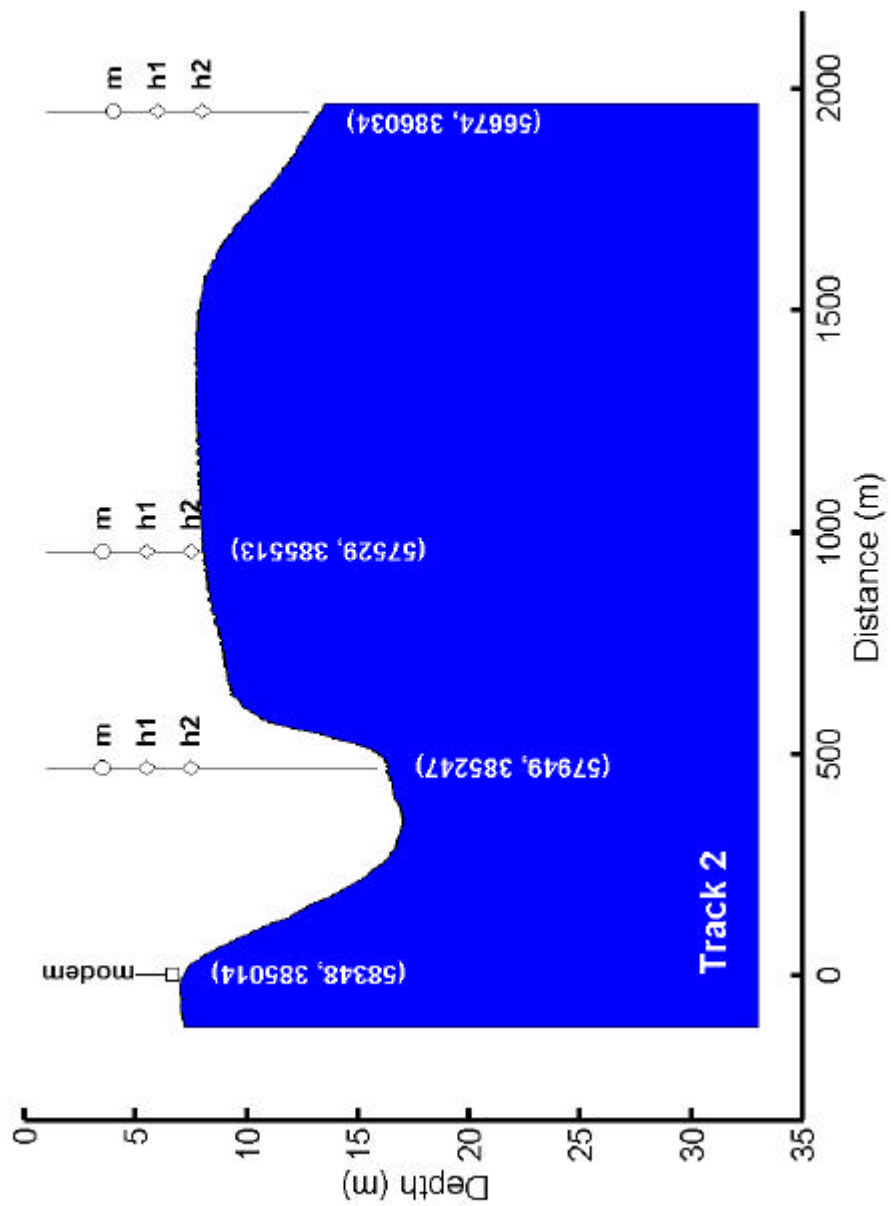
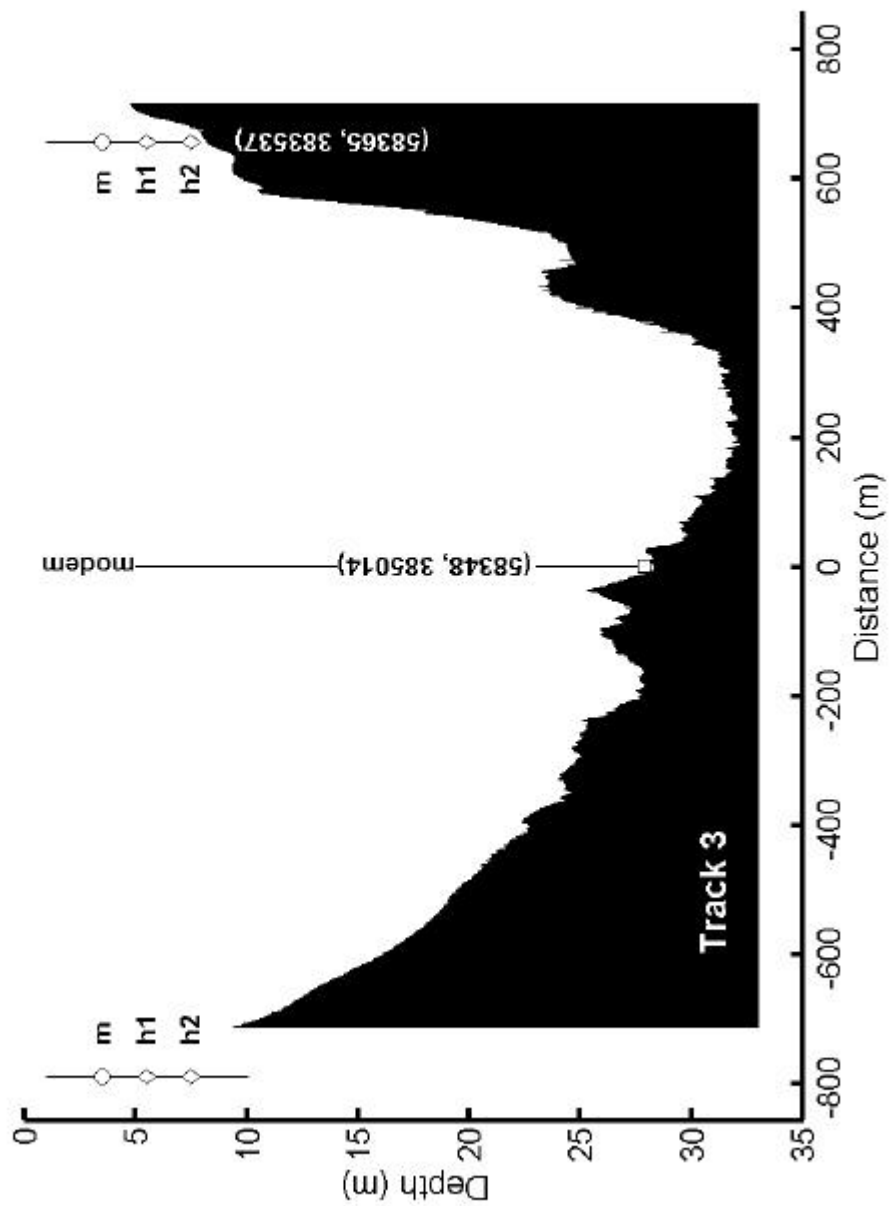
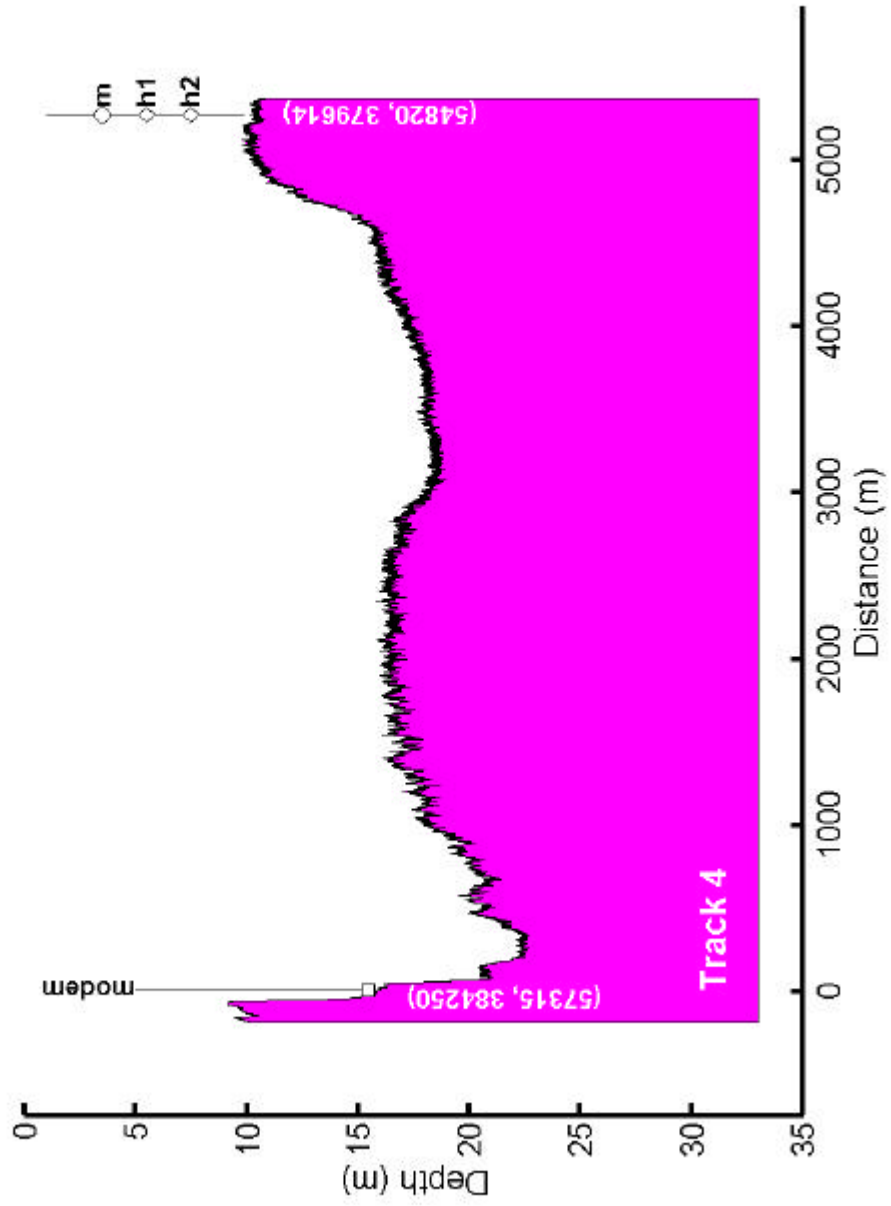


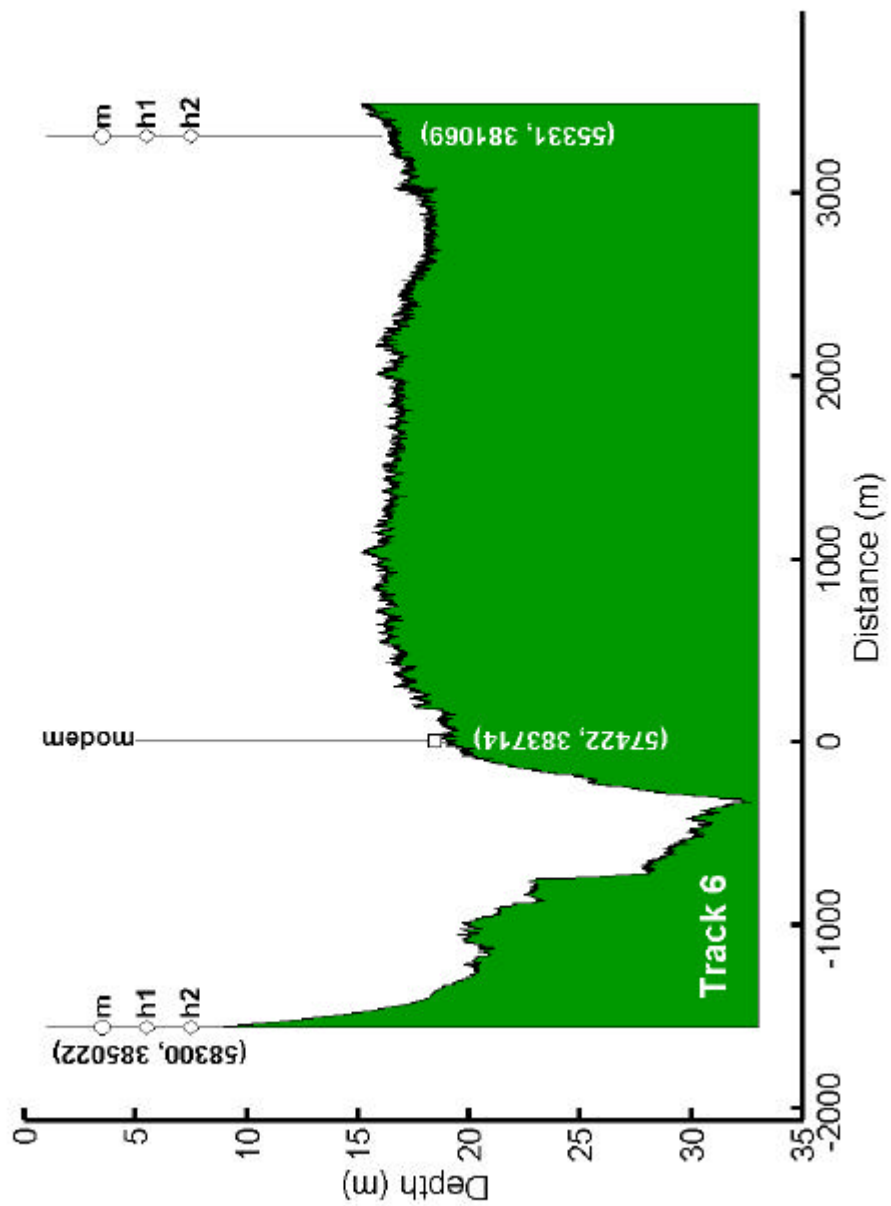
Figure 5.1 Map of the trial area. The bathymetry tracks are indicated with coloured lines. Locations of the bottom-mounted modem are indicated with square markers, deployments of the surface modem with round markers.

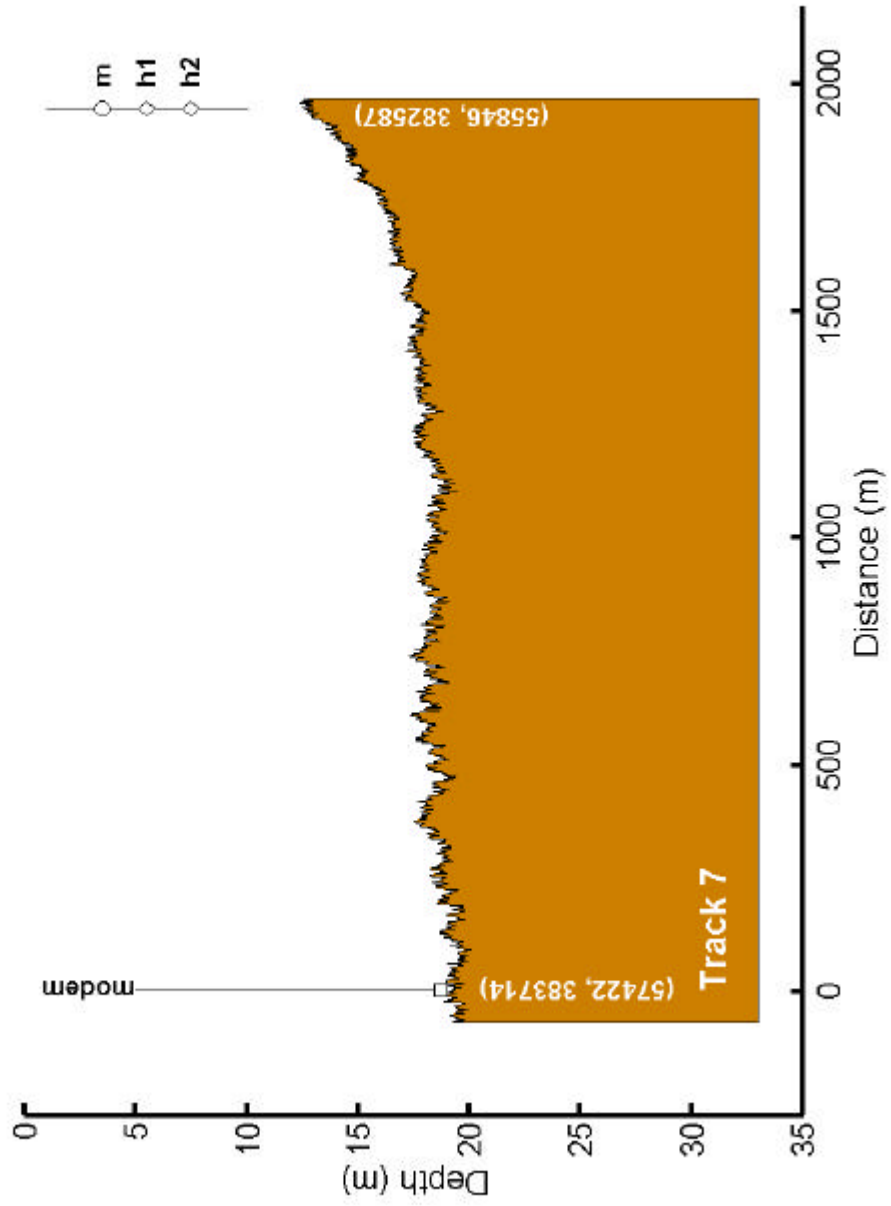












6. ZEGE

DIRECTORY \ZEGE

The measurement network ZEGE (Zeeuwse Getijdewateren, 'Zeeland tidal waters') continuously monitors a number of environmental data. The code OVHA denotes measurement pole "Overloop Hansweert" (51° 24' 22.4 N, 3° 57' 58.4). The following data were retrieved from the ZEGE data base for the period 11-24 June 2001. (Time in MET.)

The directory \zege\ holds 2 ascii files containing salinity and temperature measurements, as well as the date and time.

For instance:

Table 6-1 Description of the variables archived in the ascii files

Name	Size	Unit	Accuracy	min	max
Temperature	2016x1	Celsius degree	0.1	15.8	18.6
Salinity	2016x1	PSU	0.001	15.602	21.331
date	2016x1	d-m-y	-	-	-
time	2016x1	MET	-	-	-