Data Format

The data description format (Table 1), was developed by the employees of the Ocean Climate Laboratory of the National Oceanographic Data Center NOAA jointly with the colleagues from Murmansk Marine Biological Institute. This is the basis for the proposed approach to data formalization. The format has a block structure. It consists of three blocks: **STATION, HEADERS,** and **DETAILS. STATION** block contains information about the place and time of data collection. **HEADERS** block contains meteorological data and information about the measurements' methods and instruments. **DETAILS** block contains temperature, salinity and other parameters' data.

When formalizing and formatting historical data it is necessary, sometimes, to restore stations' coordinates. Sometimes they are presented in the cruise reports in terms of local geographical names (for example: a pier of Akhtari, nowadays town of Primorsko-Akhtarsk). This is typical of the Barents Sea as many expeditions of the end of the IXX$_{th}$ century and first half of the XX$_{th}$ century were carried out relatively close to the shore, and it was very easy for a navigator to determine the vessel's location in terms of coastline contours or a settlement's situation.

Inaccuracy definition of a vessel's location is an important part of the data quality in general. The presence of key words **COORD DETERM DESCRIPTION** in the **HEADERS** block indicates the fact of coordinate restoration (Table 2). If these key words are absent then the vessel's location coordinates were determined by instrumental methods.

Table 1. Data format. Sample 1

STATION										
LAT DEG	LAT MIN	LAT SEC	LAT HEM	LON DEG	LON MIN	LON SEC	LON HEM	MONTH	DAY	YEAR
46	36	6	N	35	23	5	E	6	13	2004
HEADERS										
TIME	9	30		GMT						
BOTTOM DEPTH	9.9	m								
TS PROBE	CTD									
WIND DIRECTION	se	compass								
WIND SPEED	9	m/sec								
CLOUD AMOUNT	4	code10								
CLOUD TYPE	st	wmo0500								
WAVE TYPE	1	code								
WAVE DIRECTION	se	compass								
WAVE HEIGHT	1	m								
TRANSPARENCY	0.6	m								
DETAILS	DEPTH	TEMP	SAL							
UNITS	m	C								
DECIMAL PLACES	1	2	3							
	0.5	18.43	10.078							
	1.0	18.43	10.078							
	…	…	…							
	9.0	18.24	10.104							
	9.5	18.24	10.104							

Table 2. Data format. Sample 2

STATION	46									
LAT DEG	LAT MIN	LAT SEC	LAT HEM	LON DEG	LON MIN	LON SEC	LON HEM	MONTH	DAY	YEAR
47	5	22	N	37	34	17	E	11	13	1922
HEADERS										
TIME	0	40		GMT						
BOTTOM DEPTH	2.2	m								
COORD DETERM	DESCRIPTION									
DETAILS	DEPTH	TEMP	SAL							
UNITS	m	C								
DECIMAL PLACES	1	2	2							
	0	5.8	3.71							
	2	6.2	3.78							