

Eurofleets 2



WP11 – Regional RVs guidelines and generic designs

Work deck installations associated to sea operations procedures and interoperability.

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Eurofleets 2

New operational steps towards an alliance of European research fleets

WP11 – Regional RVs guidelines and generic designs

The aim of this WP is to achieve a more **efficient** and comprehensive **European fleet** in the scope of RRV (Regional Research Vessels) in this context this WP will develop minimum requirement for accessible RV **enabling to interoperate multipurpose ships** equipment and procedures to the ability of a diverse systems and organizations.

EUROFLEETS is being a useful tool **making** (WP4), **a step forward towards INTEROPERABILITY** within the Research Vessels.

WP11 – Regional RVs guidelines and generic designs

Task 11.2 : Specifications and guidelines for Regional Research Vessels (M1-M36)
(Ifremer, IMR, TUBITAK, CNR-INSEAN, MI, TUT, CSIC, CNR-ISMAR, VLIZ, IEO)

The aim is to **develop guidelines and recommendations for design key points of a research vessel:**

Sub task 11.2.1 : Noise and vibration reduction

Sub task 11.2.2 : Bubble sweep down avoidance

Sub task 11.2.3 : Work deck installations associated to sea operations procedures and interoperability.

WP11 – Regional RVs guidelines and generic designs

Sub task 11.2.3 : Work deck installations

In addition to the work performed through the NA4 of EUROFLEETS1, the **aim** of this sub task is **to establish requirements for European equipment deployment** on basis of EUROFLEETS1 NA4 work and **operation and maintenance of future seafloor observatories, probes, sensors, buoys and other** instruments designed to be deployed, recovered and/or services from a research vessel, in order to make the equipment/ **operations service friendly at sea**. The requirements of **simplicity and security** are essential for its implementation and possible recovery from a research vessel in different weather conditions and sea state.

Key word : Future operations

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Also:

Task 11.3 : Innovative basic designs of Research Regional Vessels

(M12-M48) (CNR-INSEAN, Ifremer, GeoEcoMar, TUT, RBINS-MUMM, TUBITAK, CSIC, VLIZ, IEO, SHIP STUDIO)

Sub task 11.3.2: Generic basic designs and application

- * **General arrangement;**
- * **Hull shape;**
- * **Basis propulsion systems and options;**
- * **Basis work deck arrangement and options : the purpose of the ship;**
- * **Environmental footprint (using EUROFLEETS1 NA3 work).**

Key word : Purpose of the ship

WP11 TASK 11.2.3 – WORK DECK INSTALLATIONS

- Minimum number of equipment to be deployed**
Comprises details characteristics of numbers of equipment compatible on RRV decks
- Procedures and equipment operations on work deck**
Comprises generic & details actions involving fixed and exchangeable instruments from European RRV.
- Friendly and safety multidisciplinary sea operations**
Consists on relative simple and safety design to improve efficiency on deck.

Key word : Interoperability
with other existing or future vessels

WP11 TASK 11.2.3 – WORK DECK INSTALLATIONS

DEFINING A RRV

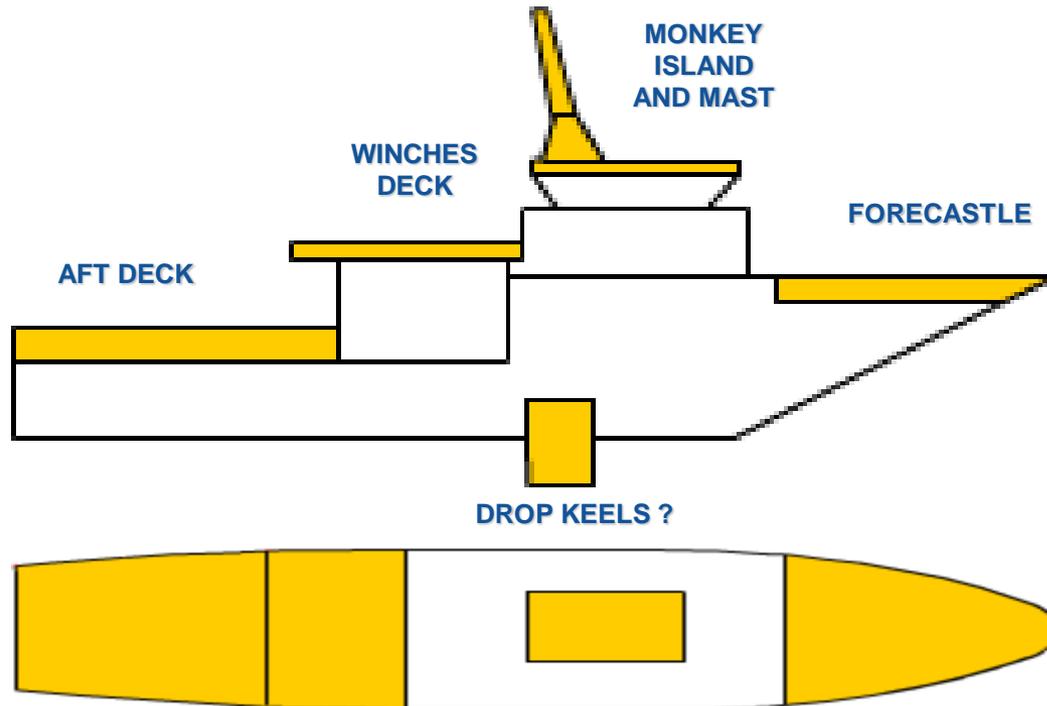
For a medium size vessel

interoperability + multipurpose = mobile equipment

Deck adapted with tie-down, container footprints, etc.

WP11 TASK 11.2.3 – WORK DECK INSTALLATIONS

DEFINING WORK DECK FOR A RRV



WP11 TASK 11.2.3 – WORK DECK INSTALLATIONS

1. DEFINING EQUIPMENT TO BE DEPLOYED

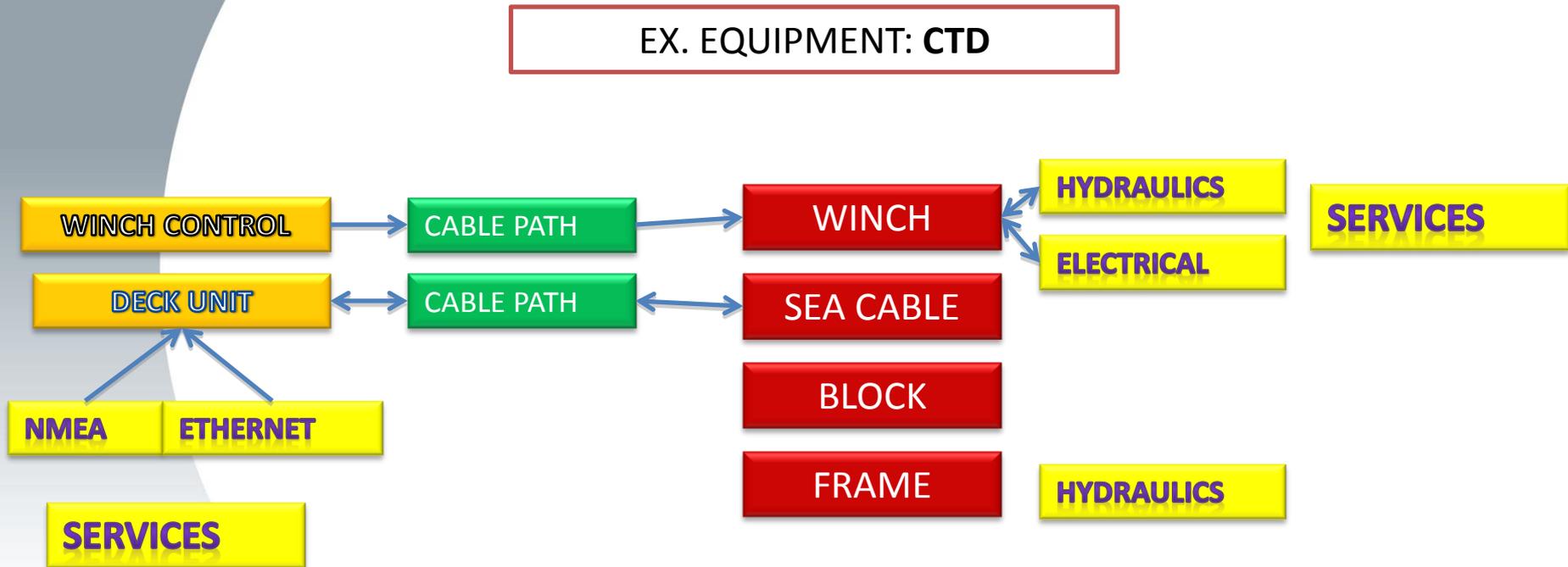
1. Deployed equipment

- 1.1 CTD and Rosette
- 1.2 Undulating CTD
- 1.3 Plankton nets
 - 1.3.1 Bongo net
 - 1.3.2 WP2
 - 1.3.3 PhytoPlankton nets
- 1.4 Electronic Plankton nets
 - 1.4.1 LHPR
 - 1.4.2 MOCNESS
 - 1.4.3 MULTINET
- 1.5 Neuston sledges
- 1.6 Benthic sledges
- 1.7 Coring
 - 1.7.1 Piston coring
 - 1.7.2 Gravity coring
 - 1.7.3 Multicoring
 - 1.7.4 Box coring
 - 1.7.5 Vibro coring
- 1.8 Dredging
- 1.9 Side Scan sonar
- 1.10 Magnetometers
- 1.11 Trawls
 - 1.11.1 Bottom trawls
 - 1.11.2 Pelagic trawls
 - 1.11.3 IKMT
- 1.12 Landers
- 1.13 OBS
- 1.14 Seismic
- 1.15 Radiometers
- 1.15 AUV
- 1.16 ROV
- 1.17 Buoys
- 1.18 Moorings
- 1.99 Services needed**

Dep. Equip. will define cables, winches, frames, needed, power supply...

WP11 TASK 11.2.3 – WORK DECK INSTALLATIONS

Equipment configuration analysis





WP11 TASK 11.2.3 – WORK DECK INSTALLATIONS

2. DEFINING SHIP and OPERATIONS CONDITIONS

- 2.1 On station
- 2.2 Towing/trawling
- 2.3 Underway
- 2.4 Mooring
- 2.5 ROV/AUV/SUBMARINE



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WP11 TASK 11.2.3 – WORK DECK INSTALLATIONS

1. DEFINING EQUIPMENT TO BE DEPLOYED

Device	Ship_conditions	Ship side	Cable	Cable 2	Cable diam	Winch	Deploy gear	Data	Services1	Services2	Depth	Weight max.	Cable length	Weight min.	Speed of trawl/Tow	DP
CTD	on station	starboard	Coax	Steel	10 mm		A Frame	FSK	NMEA							
SSS	towing, trawling	stern	Coax					Analog								
MOCNESS	towing, trawling	stern	Coax	Steel	14 mm		A Frame	m								
BONGO	towing, trawling	starboard	Traction		8 mm			No								
SVP	on station	starboard	Traction													
VP2	on station	starboard	Traction													
Benthic sledge	towing, trawling	stern	Traction													
Neuston sledge	towing, trawling	starboard	Traction													
Bottom trawl	towing, trawling	stern	Traction		22 mm		Aft	No								
Pelagic trawl	towing, trawling	stern	Traction		22 mm		Aft	No								
IKMT	towing, trawling	stern	Traction													
Streamer	towing, trawling	stern	Special													
Air guns	towing, trawling	stern	Special													
Agassizz drege	towing, trawling	stern	Traction													
Rock dredge	towing, trawling	stern	Traction													
Gravity corer	DP station	starboard	Traction													
Piston corer	DP station	starboard	Traction													
Multicorer	DP station	starboard	Traction													

WP11 TASK 11.2.3 – WORK DECK INSTALLATIONS

3. DEFINING DEPLOYMENT CONDITIONS

- 3.1 Range (depth) of operations
- 3.2 Load (SWL) of operations
- 3.3 Cable needed (coax, traction...)

Winch specifications

Cranes spec.

Frames spec.

WP11 TASK 11.2.3 – WORK DECK INSTALLATIONS

4. DEFINING RIGGING AND GEARS

4. Deck operations and gears

- 4.1 Frames
- 4.2 Cranes
- 4.3 Winches
- 4.4 Winches cables
 - 4.4.1 Electr.
 - 4.4.2 Traction
 - 4.4.3 Trawl
 - 4.4.4 Fiber optics
- 4.5 Compressors
- 4.6 Containers footprints
- 4.7 Other: Booms, capstan
- 4.99 Services needed**

WP11 TASK 11.2.3 – **WORK DECK INSTALLATIONS**

5. DEFINING SERVICES

5.1 Water (fresh, sea), cooling, etc.

5.2 Hydraulics

5.3 Electric lines. Power supply

5.4 Data lines

5.5 Cable and pipe path recommendations

5.6 Air Pressure

WP11 TASK 11.2.3 – WORK DECK INSTALLATIONS

6. DEFINING FACILITIES

6.1 Wet rooms/hangar for samples. Protected of weather and with enough services for scientific (basins, gantry cranes, cleaning areas etc)

6.2 Loading (Hold access) and storing facilities,

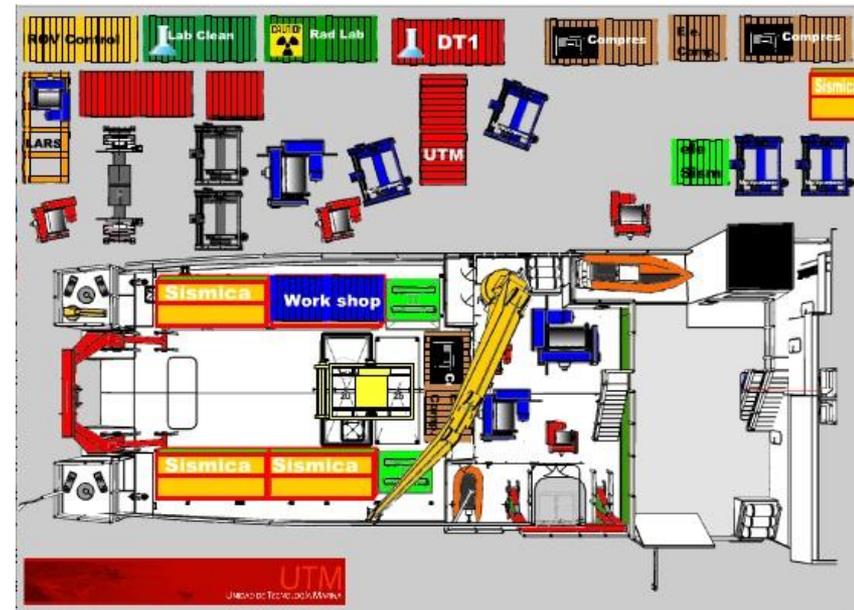
6.3 Store rooms , rigging, all accessories for deck operations

6.4 Operations Control (bridge , control room, ...)

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CERTIFICATIONS

- SAFETY RECOMMENDATIONS
- REGULATIONS
- GOOD PRACTICE



Task 11.3 : Innovative basic designs of Research Regional Vessels

EUROFLEET II		
Subtask 11.3.2		
Author :	Laurent Mermier, Ship-ST, +33 2 97 50 38 05 – laurent.mermier@ship-st.com	
Date :	41786	
Doc ref	SP752-TA01	
version	0	
Generic basic design of Regional Research Vessel		
Element of Ship Specifications		
Nb	Item	
1	Region of operation	
2	Duration of cruise	
3	Mission scenarii	Please provide an array with different scenarii (columns) and operated systems (lines), to define each scenario.
3.1	Offshore and coastal hydrography and oceanographic missions	specify % of time
3.2	Fishery survey	specify % of time
3.3	Seismic survey	specify % of time
3.4	Operating submarine systems	specify % of time
3.5	Other	specify % of time
3.6	Transit	specify % of time
3.7	Harbour	specify % of time
3.8	Multiple scenarii cruise	Please specify combinations of scenarii in a single cruise, if any
4 Main dimensions		
4.1	Lenght overall	Approx and/or specify limitations
4.2	Beam	Approx and/or specify limitations
4.3	Draft	Approx and/or specify limitations

5 People onboard		
5.1	Number of crew	Approx and/or specify limitations
5.2	Number of scientists	Approx and/or specify limitations
5.3	Number of passengers	Approx and/or specify limitations
6 Accomodation		
6.1	Single cabins	%
6.2	Double cabins	%
6.3	Quadruple cabins	%
6.4	Mess / lunch rooms	Please specify segregation of public, if any
6A Science and mission spaces		
6A.1	Science control room	Please specify approx target surface, etc
6A.2	Dry laboratories	Please specify number of labs, approx target surface, etc
6A.3	Wet laboratories	Please specify number of labs, approx target surface, etc
6A.4	Dry stores	Please specify approx target surface, etc
6A.5	Refrigerated stores	Please specify approx target surface, etc
7 Performances		
7.1	Transit speed	Approx and/or specify limitations
7.2	Noise and vibration performances	please specify standard
7.3	Bubble sweep performances	please specify standard
7.4	Dynamic positioning	please specify notation
7.5	Sea keeping	please specify max target sea state

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8 Propulsion		
8.1	Type	electrical or mechanical
8.2	Number of shaft lines	1 or 2 or not an issue
8.3	Number of gensets	2, 3, 4 or not an issue
9 Class		
9.1	mandatory notation	please specify notation
9.2	optional notation	please specify notation / not an issue
10 Equipment options		
10.1	Drop keel	mandatory/prefered/keep choice open
10.2	Gondola	mandatory/prefered/keep choice open
10.3	Blister	mandatory/prefered/keep choice open
10.4	Tube TVO	mandatory/prefered/keep choice open
10.5	Aft A frame	mandatory/prefered/keep choice open
10.6	Aft crane	mandatory/prefered/keep choice open
10.7	Modularity by ISO containers: equipments, labs, etc	Please specify if mandatory or prefered, functions to include in modularity, experiences, etc
10.8	Passive tank	mandatory/optional/not an issue
11 General arrangement		
11.1	To do!	please specify what to focus on, from your experience
11.2	Not to do!	please specify what is not working, from your experience
11.3	aft deck	please specify function, surface, ideas, etc
11.4	lateral deck	please specify function, surface, ideas, etc

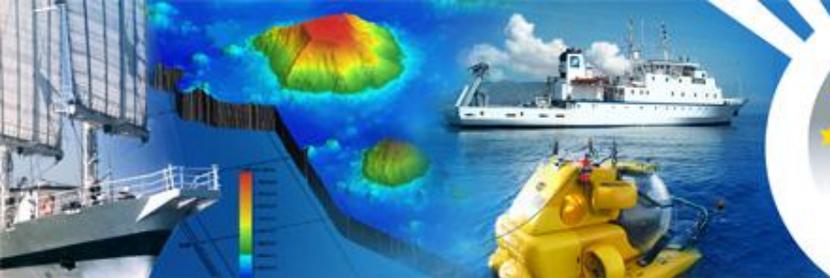
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Hydrography and oceanographic mission

Nb	Item	Answer	Comment
1	Acoustic equipment		please provide a list and/or approx total dimension of hull devices
2	Seismic devices		please provide characteristics
3	Handling equipment		
3.1	stern A-frame	Yes/no – function, characteristics	
3.2	lateral telescopic boom	Yes/no – function, characteristics	
3.3	oceanographic crane	Yes/no – function, characteristics	
3.4	hydrographic motorboat	Yes/no – function, characteristics	
3.5	Hydrology/CTD profiler A-frame	Yes/no – function, characteristics	
3.6	Coring device	Yes/no – function, characteristics	

Fishery survey

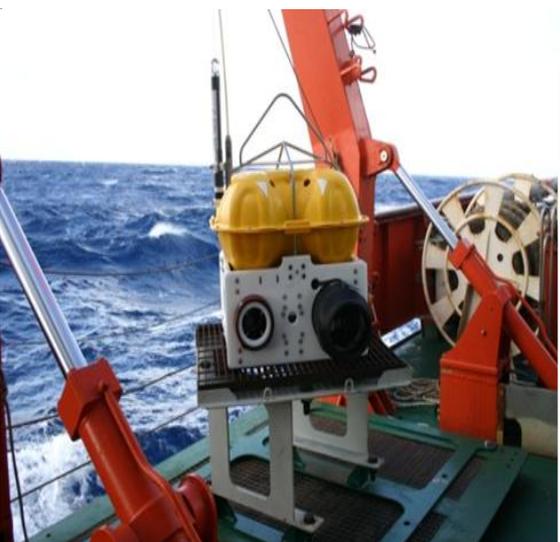
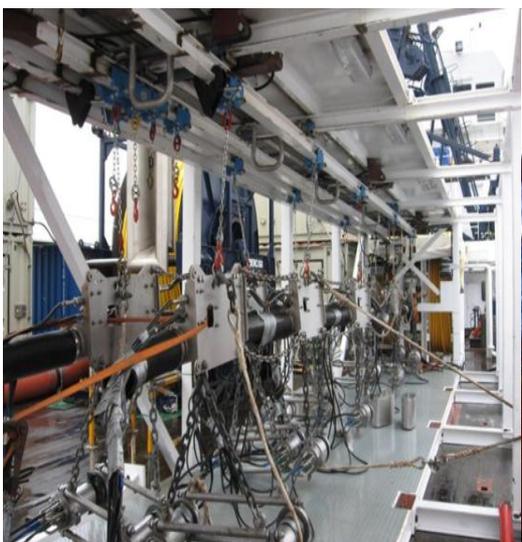
Nb	Item	Answer	Comment
1	Fishing equipment		
1.1	trawls	Number – characteristics	
1.2	traps	Number – characteristics	
1.3	longline	Number – characteristics	
2	Submarines		
2.1	AUV	Number – characteristics	
2.2	ROV	Number – characteristics	



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Thank for you attention



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