

Eurofleets+
Research Infrastructure (RI) management workshop

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Session 3 – Cruise Execution

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Cruise execution

- Responsibilities
- Information
- VSAT
- Data handling
- Health, Safety and Environment committee
- Risk assessment and management
- Leadership
- Work and rest regulations
- Alcohol and other substances
- Code of conduct
- End of cruise tasks



Responsibilities

- The distribution of responsibilities between crew and science party can differ between different size vessels and different RV operators
- On oceangoing vessels (Global or Ocean) it is usually the crew (deck hands) and dedicated instrument technicians that handle deployment and recovery of towed or lowered over the side equipment while the scientists and/or scientific technicians handle the collected samples.
- On smaller vessels (Regional or Coastal) it is in some cases necessary for the science party to support the crew in deployment and recovery of sampling equipment in addition to take care of the collected samples due to small crew size.
- Data collection, processing and storage is often a joint effort between instrument technicians and scientists/scientific technicians.
- On board laboratories are usually the sole responsibility of the science party since the crew usually do not have the necessary competence with regards to use of lab equipment, chemicals and gas used in a lab, and the associated health and safety regulations and procedures.



Information

- Safety briefing by the crew.
- Cruise leader information to all about the cruise.
- Cruise leader's instructions to cruise personnel such as appointed HSE-responsible and chemical manager, division in to work shifts, routines for the cruise duties etc).
- Daily meeting/talk with the captain about today's and/or tomorrow's planned tasks, changes due to weather forecasts, technical problems etc.



VSAT – Rules for use of internet on board – IMR example

- This must be done on shore or at home, before and after a cruise:
 - Computers supported by IMR must be disconnected from IMR-network (via VPN or in the office) to avoid automatic synchronization with Outlook, updates to Windows, anti-virus programs and all other programs installed on the computer that require regular updates.
 - Computers not supported by IMR must be connected to Internet on shore to update Windows, anti-virus programs and all other programs installed on the computer that require regular updates and synchronize its email program.
 - Disconnect all network stations connected to servers on shore (shown under «This PC»).
 - At the end of the cruise; disconnect network stations connected to servers on board.
- We encourage everyone to use <https://webmail.hi.no> to check email.
- Do not use such as Skype, FaceTime, Spotify, Netflix, tv/radio etc, Dropbox etc.
- Do not update programs when connected to the vessel's network, e.g Adobe, Firefox, Java, etc.
- It is forbidden to set up private connection points (WiFi) on board .
- Remember to close Internet Explorer, Firefox, Chrome etc when you are not using it



Data handling – Folder structure

- ACOUSTIC
 - BIOLOGY
 - CRUISE_DOCUMENTS
 - CRUISE_LOG
 - EXPERIMENTS
 - GEOLOGY_AND_GEOPHYSICS
 - ICE
 - METEOROLOGY
 - NANSIS
 - OBSERVATION_PLATFORM
 - PHYSICS
 - POLLUTION
13. SUB_BOTTOM_PROFILERS
- 1. SBP300
 - 1. SBP300_PROCESSED
 - 2. SBP300_RAWDATA
 - 3. SBP300_SCREEN_DUMP
 - 2. TOPAS_18
 - 1. TOPAS_18_PROCESSED
 - 2. TOPAS_18_RAWDATA
 - 3. TOPAS_18_SCREEN_DUMP
 - 3. TOPAS_40
 - 1. TOPAS_40_PROCESSED
 - 2. TOPAS_40_RAWDATA
 - 3. TOPAS_40_SCREEN_DUMP



Cruise logger



Survey logger

Toktlogger v1.1-rc1 Cruise #Suppe Reports Settings

Admin 49% 2019-03-07 09:37:42 UTC English

Settings

Default settings

Port list

NMEA data mapping

Activity Main Groups

Activity types

Sequences

Activity types

- [Agassis trål](#) Bunnredskap
- [Akustisk lander](#) Lander
- [Akustisk transekt](#) Akustikk
- [Annen stasjon \(R\)](#) Annet
- [Annen stasjon \(S-S\)](#) Annet
- [Bomtrål](#) Bunnredskap
- [Bunntål](#) Trål
- [CTD](#) CTD
- [CTD med vannhenter](#) CTD
- [Geologi](#) Geologi
- [Grabb](#) Bunnredskap
- [Håv](#) Plankton redskap
- [Kurs forandring](#) Annet
- [Mik](#) Plankton redskap
- [Multicorer](#) Bunnredskap
- [Multinett](#) Plankton redskap
- [Multisampler](#) Plankton redskap
- [Pelagisk trål](#) Trål
- [På kurslinje](#) Annet
- [ROV](#) ROV
- [Sjøpattedyr observasjon](#) Sjøpattedyr
- [Sjøtest av trål](#) Trål
- [Slede](#) Bunnredskap
- [Snu på registreringer](#) Annet
- [TS probe](#) Akustikk
- [Tauet farkost](#) Tauet farkost
- [Toktdagbok](#) Annet
- [Vannhenter](#) CTD

Templates

- [Bunntål ferdig utfyllt](#) Bunntål
- [CTD med 2 x vannhenter](#) CTD

Create template



Demersal trawl station example

Toktlogger v1.1-rc1 Cruise #Suppe Reports Settings Admin 49% 2019-03-07 09:49:18 UTC English

Bunntål ferdig utfylt Bunntål, Trål

| | | | | | | | |
|-----|------------------|--|---------------------|---------------------|--------|---------------|---|
| ↑ ↓ | ✍ Max depth | <input checked="" type="radio"/> Auto <input type="radio"/> Man | depth ▾ | Maximum ▾ | 657.65 | maxDepth ▾ | ✕ |
| ↑ ↓ | ✍ Min depth | <input checked="" type="radio"/> Auto <input type="radio"/> Man | depth ▾ | Minimum ▾ | 657.65 | minDepth ▾ | ✕ |
| ↑ ↓ | ✍ Antall | | 1 | | | gearQuanti ▾ | ✕ |
| ↑ ↓ | ✍ Kode (SPD) | | 5832 | | | gearCode ▾ | ✕ |
| ↑ ↓ | ✍ Wirelengde | | -- Desired value -- | | | wireLength ▾ | ✕ |
| ↑ ↓ | ✍ Redskapsnummer | | 75 | | | gearNumbe ▾ | ✕ |
| ↑ ↓ | ✍ Serienummer | | trawlSerialNumber ▾ | -- Desired value -- | ↺ | serialNumb ▾ | ✕ |
| ↑ ↓ | ✍ Åpning | <input checked="" type="radio"/> Auto <input type="radio"/> Man | trawlopenin ▾ | Median ▾ | 1.94 | trawlOpenir ▾ | ✕ |

Save Add field ▾ Undo field removal



Example of a template pre-filled with SPD code and gear/instrument number.

CTD station example

Toktlogger v1.1-rc1 Cruise #Suppe Reports Settings Cruiseleader 49% 2019-03-06 13:31:18 UTC English


New activity ▾ SS 3 CTD med vannhenter 4 09:35 ID 14

3 h 55 m 52 s Stop

Bunntål ferdig utfyllt Bunntål CTD med 2 x vannhenter CTD

- Agassis trål
- Akustisk lander
- Akustisk transekt
- Annen stasjon (R)
- Annen stasjon (S-S)
- Bomtrål**
- Bunntål
- CTD
- CTD med vannhenter
- Geologi
- Grabb
- Håv
- Kurs forandring
- Mik
- Multicorer
- Multinett
- Multisampler
- Pelagisk trål
- På kurslinje
- ROV
- Sjøpattedyr observasjon
- Sjetest av trål
- Slede
- Snu på registreringer
- TS probe
- Tauet farkost
- Toktdagbok
- Vannhenter

Show all



| | |
|-----------------|-----------------|
| Sea temperature | 6 °C |
| Wind direction | North west |
| Wind speed | Moderate breeze |
| Speed | 10 kn |
| Boat direction | North west |
| Latitude | 59° 43' 42" N |
| Longitude | 5° 48' 38" E |
| Depth | 311 m |

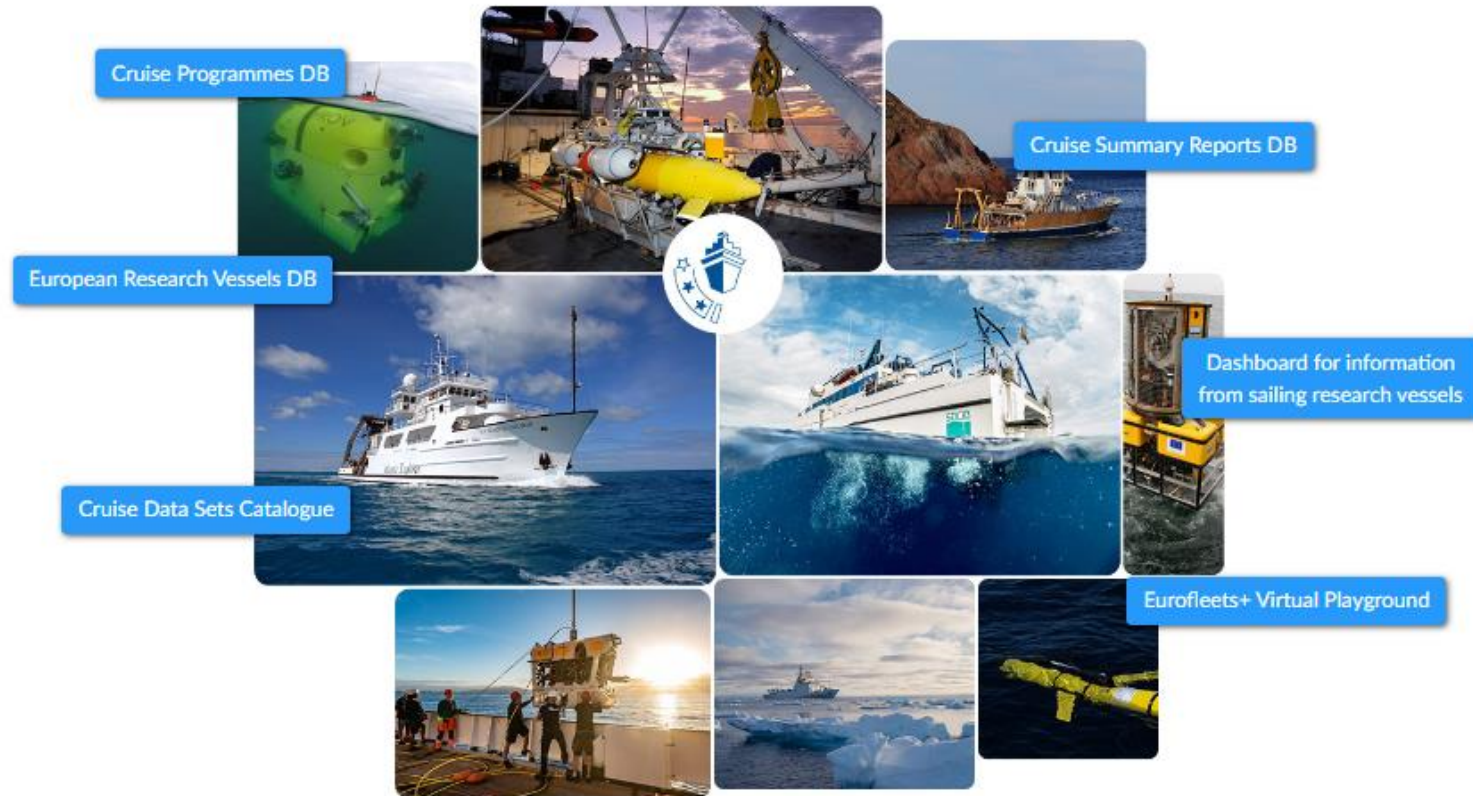
Previous activities

| Name | Start time | End time | |
|-----------|-------------|-------------|---|
| Bunntål 6 | 03-06 09:31 | 03-06 11:49 | ✘ |
| Bunntål 5 | 03-03 16:40 | 03-03 16:40 | ✘ |
| Bunntål 4 | 02-28 12:54 | 02-28 14:30 | ✘ |
| Bunntål 3 | 02-28 09:41 | 02-28 09:50 | ✘ |
| Bomtrål 1 | 02-28 09:40 | 02-28 09:41 | ✘ |

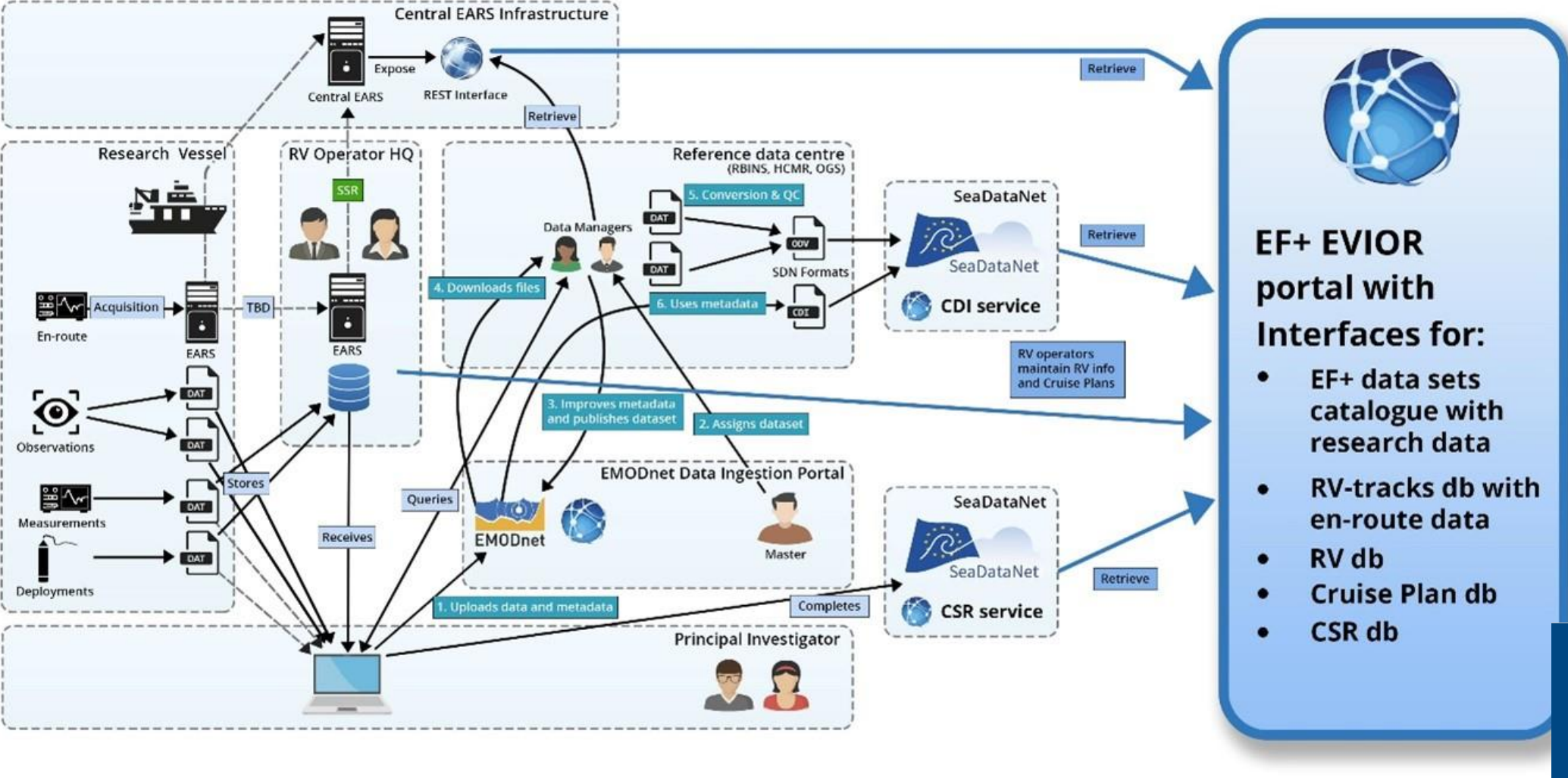




European Virtual Infrastructure in Ocean Research (EVIOR)



Management of data acquired as part of Eurofleets+ cruises, using EARS



Information regarding software to be installed on board for a cruise

- Contact RV Operator and/or assigned Instrument technicians in due time before cruise start.
- Software that needs to be installed onboard usually must be whitelisted by the RV Operator if the software is not signed by the software developer.
- If there is a new version of already whitelisted software, this must be whitelisted again.
- Software developers are encouraged to have their products electronically signed or certified.



On board Health, Safety and Environment committee

- An HSE responsible with the required HSE Sea training/certification shall be appointed among the cruise personnel for each cruise.
- HSE rep for the cruise party cooperates with the HSE rep for the crew.
- HSE rep for the cruise party and the cruise leader shall be invited to HSE-meetings held on board during the cruise.



On-board Risk assessment and Management - SOPs

- For routine operations risk assessments shall be done on board before cruise commencement or before an operation is executed and identified risk mitigation measures implemented before start of operations.
- The RV operator should therefore develop “Standard Operating Procedures” (SOPs) for routine operations.

| Nr | Task/activity | Risk/ Unwanted incident | Risk description/ Cause | Exposed for/ Danger for | Preventive measure/ Assessment | Risk type | | | Reference |
|----|-------------------------------------|--|---|--|--|-----------|---------|------|--|
| | | | | | | Safety | Quality | Env. | |
| 1 | E.G Preparation for bunkering | Too low flashpoint | Explosion hazard if flash point below 60°C | Crew Vessel Environment | <ul style="list-style-type: none"> • Check Bunker Deliver Note (BDN) and data sheet before start of bunkering | X | X | X | KS&SMS-03-2-6-15 Checklist “Activity X” |
| 2 | Preparation for bunkering | Low/wrong bunker quality Wrong price | Engine damage Violation of contract conditions | Environment Vessel Economy | <ul style="list-style-type: none"> • Requirements for sulphur level for planned area of operations • Check BDN and check of bunker oil analysis from supplier if available | | X | X | KS&SMS-03-2-3-18 Training plan “Crew type Y” KS&SMS-03-2-6-14 Procedure for “Activity X” KS&SMS-03-2-6-15 Checklist “Activity X” |

On-board Risk assessment and Management, Non-Standard Operations

- For Non-Standard Operations, for example when new scientific equipment is taken on board for the first time, or new or unknown equipment are to be deployed or recovered, it is important to prepare for it in a well planned and executed manner.
- It should ideally start with a “table top exercise” in the RV operator office with representatives for the vessel crew, science party and vessel operator staff present to analyse the planned operation, identify risks and mitigating efforts to be done before the cruise.
- At the start of the cruise in question, ideally before leaving the port, assemble all involved crew, instrument technicians and scientist party members to go through the plan, procedures, safety measures etc and if possible do a “dry run” under “benign” conditions (waves, wind etc) before performing the actual operation.
- Make sure that all steps are sufficiently documented for later use/analysis if something goes wrong and to be used as a starting point for similar future operations.



Leadership

- Visible leadership and management!
- Follow up of cruise personnel at their workplaces on board, in particular those who are working alone, in “remote parts” of the vessel and at odd hours.
- Cruise personnel needs and expects the cruise leader to “see them” and be concerned about their working conditions, results, productivity and efficiency.
- Cruise leader shall cooperate with the Captain about the work environment, flow of information, handling conflicts, motivating people etc!



Code of conduct

- Sexual harassment is a problem in society in general and can be a very difficult issue if it happens on a cruise where there is «no place to hide» and to avoid meeting the other person(s) involved for days and weeks afterwards.
- It is therefore very important to avoid such situations in the first place and it is the employer representatives (Captain and Cruise leader) who are formally responsible for the necessary information and motivation of their employees about expected conduct, and to take necessary action during the cruise if such situations occurs, in addition to take the necessary formal steps after the cruise with regards to potential sanctions against the offender(s).



Code of conduct cont'd

- It is important to keep in mind that there are large cultural differences, and that a Norwegian or Dutch PhD student is probably more likely to speak up than a young, female, PhD student from Asia, because of the way their society works.
- Also, a pre-cruise discussion of telling new cruise participants what to expect and to explain the “do’s and don’ts” on board ships.
- Not everyone intuitively understand the implications of being in a confined space with other, often unknown people from a prolonged period of time. Very different from going to a bar at home where it is possible to stay clear of people you are not comfortable with!



Code of Conduct reporting

- A person experiencing sexual harassment in any shape or form is encouraged to report it to their department head if crew, and the cruise leader if cruise participant, or to their HSE rep or Union rep on board, or to their line manager after the cruise.
- It can also be reported to the Designated Person Ashore (DPA) who according to the ISM-code has direct access to the top management of the RV operator organization/institution with regards to HSE-related issues on board.
- The main challenge is often to get reports about unacceptable behavior. It is not difficult to understand why some are hesitant to report a colleague or shipmate, but that can lead to underestimating the problem, and that necessary action and precautions are not implemented.
- Cruise leaders, together with the Captain, are encouraged to put this topic on the agenda at the beginning of each cruise and in HSE-meetings on board since it is better to acknowledge a potential problem and discuss it up front then hope it will not happen and have a much bigger problem to deal with afterwards!



Alcohol and drugs regulations

- Illegal drugs are of course forbidden to use at sea, but different RV operators may have slightly different policies or guidelines with regards to alcoholic beverages on board.
- For IMR vessels it is forbidden to bring on board and drink alcohol on board, but the Captain can apply to the Director of IMR Research Vessel Department for permission to serve alcohol in given quantities at official functions in port.
- Breaches to be reported to responsible line manager ashore!



Work and rest regulations

- Working periods on board is regulated by the ILO 180 convention.
- National interpretations/adjustments to ILO 180 can be implemented, e.g for Norwegian flagged vessels national rest period regulations are given by Norwegian Maritime Administration.
- These regulations applies to everyone on board, including the cruise leader!
- Norwegian rules:
 - At least 10 hours rest during any given 24 hours period.
 - Rest can be divided in two periods, of which one must be at least 6 hours and the interval between rest periods shall not exceed 14 hours.
 - Rest period form to be filled in by everyone and be delivered to the Captain before disembarking.



End of cruise duties

RV operators usually have local rules and guidelines with regards to end of cruise activities, some are listed below:

- Make sure that all scientific work is stored, packed, labelled and shipped.
- Check cleaning of labs, packing of equipment etc.
- Check chemical log, bring ashore "left overs".
- Make sure that all goods to be shipped is prepared, properly packed and labelled.
- Local IMR rule:
All cruise personnel, equipment, samples and chemicals to be ashore before 23.59 on the last day of the cruise, since the vessel shall be ready for the next cruise party at 0800 the following day.
- Local NIOZ rule: Everyone to clean their cabins before leaving the vessel.



Questions?

