

RV Investigator
**Information and Communications Technology
(ICT) Network Usage Policy**



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1. Purpose

This document outlines the Marine National Facility's (MNF) Policy on the usage of *Investigator's* Information and Communications Technology (ICT) network resources by all vessel users.

RV *Investigator's* ICT network consists of the ship's network infrastructure (cabling, switches, access points, security systems, communication systems, servers, storage), along with all computers and devices connected, including those owned by individuals or other groups. The network provides access to telephones, email, internet, intranet, network shares, printers, some common software tools and data from the ship's scientific instruments. *Investigator's* ICT network's computing related support is provided through the MNF Data Acquisition and Processing (DAP) team.

2. General Considerations

Investigator, as a Commonwealth funded research vessel, is required to deliver benefit to the nation and as such the primary function of the ICT resources on the ship is to support the delivery of the science operations and voyage objectives.

With this requirement in mind, the policy aims to preserve the integrity and security of the ship's ICT network and the critical data that it houses.

The policy also recognises that the mental health and wellbeing of voyage participants is of critical importance and endeavours to make communication services accessible to all users, within the constraints of limited resources and the voyage objectives.

Support for the ship's ICT network is provided by members of the CSIRO Oceans & Atmosphere (O&A) DAP team. Generally two seagoing computing support staff from the DAP team are allocated to provide 24 hour support on board the vessel during voyages.

3. Computers

There are many computers on the ship, however, only a select number of these computers are designated for public use. Voyage participants are encouraged to bring their own laptops on board to access the network.

3.1. Public PCs

Public PCs are available with standard Microsoft Office applications and allow access to the ship's network shared drives in the following locations:

1. Data Processing Lab (2);
2. Operations Room (1 in the aft corner under the porthole);
3. Dirty Wet Lab (1);
4. Clean Wet Lab (1);
5. Clean Dry Lab (1)

3.2. Crew PCs

PCs are available exclusively for use by the ship's crew in the following locations:

1. Bridge;
2. Ship's Officers', Engineers' and Bosun's cabins;
3. Ship's Office;
4. Hospital;
5. Engine Room.

These machines are not to be accessed by anyone other than crew.

3.3. Mixed Use PCs

A mixed use, wall-mounted PC is available in the ship's mess.

3.4. Other Computers

All other computers on the ship (excluding personal computers brought on board by personnel) are exclusively for use by MNF support staff or by explicitly authorised voyage participants.

Please do not attempt to access any computers you are not authorised to use as this might compromise the ship's operational or data acquisition systems.

3.5. Connecting Devices to the Network

The following steps must be completed prior to connecting a device to the ship's network:

- Any device connected to mains electricity must have a current and valid electrical safety test tag.
- Computers must have up-to-date anti-virus software installed and a recent scan performed.
- Connecting anything other than a standard computer or mobile device to the network is not permitted unless authorised by DAP.

How do I connect?

- Connecting laptops to the network can be done wirelessly in most of the ship's working and accommodation spaces and also outside on some decks. Self-help instructions for connecting wirelessly are available near the white board in the entrance to the Operations Room.
- Alternatively, standard RJ45 Ethernet outlets labelled "User" are available for general use. Connecting a device to any other network port is not permitted unless authorised by DAP.

What can't I use the network for?

- Illegal activities, inappropriate behaviour (e.g. defamation, harassment) or for storing or distributing pornographic or other inappropriate material.
- Unauthorised access to network management services and infrastructure;
- Continuing to use an item of software or hardware after the MNF has requested that user cease doing so;
- Deleting, modifying, corrupting or destroying others' data without their consent;
- Acting in a way that denies service to others;

- Accessing another user's files or folders without their consent;
- Using another user's account or password;
- Use of Peer to Peer (P2P) software.

4. Communications

4.1. Phone usage

Making phone calls to shore

The vessel is equipped with a satellite communication system and telephones are located around the ship, in all cabins and common working spaces. Phone calls are expensive and satellite bandwidth is limited, so generally email and other messaging applications are the preferred method of staying in touch with people on shore.

Voyage participants are allocated up to 40 minutes of free phone calls per week for calls initiated from the ship to standard Australian numbers. The MNF logs all call durations and reserves the right to invoice callers to recover costs for excess phone system usage. Calling cards are not supported and if you use them you may get billed by the MNF as well as by your card service provider.

Note – it is more expensive to make calls from the ship than it is to receive them from shore.

Receiving calls from shore

The ship's VSAT system is provisioned with 4 telephone numbers local to the Tasmanian area code (03). For Australian-based callers (particularly 03 zone) using fixed-line telephones.

Note - each of the ship's satellite systems also has a separate backup support line that bypasses the ship's PABX system and these lines are restricted for use by authorised personnel only.

4.2. Email

A computer account and email address will be automatically generated for you at the start of the voyage, giving you access to the ship's email system and network shares. Email addresses are of the form:

"preferredname.lastname@investigator.csiro.au"

The following information and requirements relating to email should be noted:

- The address will not be activated until your voyage begins.
- The ship's email server transfers emails between ship and shore at frequent intervals. Due to the expense and bandwidth limitations of satellite transmission, please avoid sending large attachments and do not redirect your onshore email account to the ship.
- Email size quotas are applied per email. The quota size varies depending on the capabilities and cost of the active communication link with shore. You will receive a bounced email notification if you exceed your quota.
- Please consider setting up an "out of office" message for all incoming email to your land-based email address, which states that you are away at sea and can be contacted on your ship's email address if necessary, and include a warning about not sending large attachments.

- Do not set up subscription emails using your ship account.
- If you have a valid reason to transfer larger messages than your quota allows, please see one of the DAP staff on the vessel who may be able to allow it on a case-by-case basis.

4.3. Internet Access and Social Media

The ship's internet system relies on satellite communication and consequently is constrained by very expensive and limited bandwidth which is only a fraction of typical home connection speeds. This system needs to cover email, live scientific data transfers, remote support and voice calls, as well as internet usage.

Ensuring that the service meets the needs of the research voyage is paramount, however, the MNF also understands the importance of maintaining personal communications and off-ship connections whilst at sea and have implemented ship-wide internet access via Wi-Fi. There are limitations on what this service can provide and, therefore, responsible and sensible use of the service is required. Social media sites, which incorporate photo and video imagery, place a very heavy demand on the system, ultimately slowing it down and making it ineffective for everyone.

To make the system as functional as possible to the entire ship's complement, please note the following:

- A shared pool of internet bandwidth is open to all users on the ship via Wi-Fi. There is an automated system in place for detecting and throttling traffic from heavy users in the interests of sharing the available resources equitably.
- Internet sites and social media accounts utilising video and large volumes of photos should be avoided.
- Automatic software updates (downloads) should be disabled on personal devices.
- Messaging apps such as WhatsApp, which can be installed on a smartphone, have been found to work well at sea and are a great alternative to emails for keeping in touch with family and friends on shore in real time. If unsure, please talk to DAP staff on board.
- Access to some websites is blocked in accordance with the terms of this policy.
- As explained above, access to the internet cannot be guaranteed. Further to this, access may be interrupted at times when bandwidth is required for critical business related events (e.g. live media events).
- If you plan to undertake science or media related activities that are likely to require significant internet bandwidth (e.g. large imagery downloads, frequent video conferencing or media events that involve uploading video to shore) please discuss it with the Voyage Operations Manager prior to the voyage mobilising. Similarly, if a requirement emerges at sea, please discuss it with the Voyage Manager and/or DAP staff on board. There are options for prioritising network traffic in cases where there is a demonstrated voyage related requirement.

4.4. Near Real-Time Underway Data

Key underway data is routinely sent from the ship to a [CSIRO public FTP site \(ftp://ftp.marine.csiro.au/pub/datacentre/live_mnf_data/\)](ftp://ftp.marine.csiro.au/pub/datacentre/live_mnf_data/) onshore in near real-time. The standard underway summary files each contain 1 hour of data (not quality controlled) at 1 minute resolution or intervals and are normally transferred to shore within 10 minutes of production. The data can be visualised online at <http://www.cmar.csiro.au/data/underway/> and can be a good way for friends and family back home to check the vessel's current location, and check the weather experienced at the ship and other parameters.

4.5. Media and Education Outreach Events

With the aim of delivering maximum impact from the research voyage, or as part of education and outreach programs, media and education outreach events are an important element of many voyages. These events may include, but are not limited to:

- Live video crosses to student groups on shore: Often these are conducted using an iPad so that the presenter is able to roam the ship. Mobile filming on board the vessel must be conducted in accordance with the relevant Safe Work Instruction (SWI).
- Live TV interviews: Normally these are conducted in a static location (e.g. the Bridge) and a satellite bandwidth upgrade is pre-booked in order to ensure broadcast quality video.
- Live Facebook streaming.
- Pre-recorded events: Video is pre-recorded and transmitted to shore via Dropbox or similar for later release.
- Blogging.

To support these activities as they arise, the ship's internet resources may need to be fully utilised and may result in the shutdown of non-critical internet activities. The Voyage Manager will communicate these activities to all personnel on board through daily briefings, a display in the mess, or on white boards in the Operations Room.

If there is a desire to undertake education outreach or media related activities that are likely to require significant internet bandwidth, please discuss it with the Voyage Operations Manager or the MNF Communications Officer before the voyage. In some cases it may be necessary for the ship's satellite bandwidth to be upgraded in order to support an activity, in which case there are associated costs and advance notice is necessary to book the bandwidth. Similarly, if a requirement emerges at sea, please discuss it with the Voyage Manager and DAP staff on board.

4.6. Video Conferencing

The ship has a conference room with video conferencing capabilities. Where there is a demonstrated need these facilities can be made available through a special request to the Voyage Manager. The Voyage Manager will liaise with DAP staff to ensure adequate bandwidth is available. Please see the Voyage Manager if this is required.

4.7. Satellite Communications Coverage

Whilst at sea, off-ship communications (internet, email, video conferencing and voice calls) are reliant on the ship's satellite communications systems. The ship has multiple systems to provide some redundancy but the fall back systems have reduced capabilities compared with the primary system (VSAT).

The VSAT system offers "global" coverage, however, the quality of the coverage will decrease in Polar Regions. Users relying on data communications in these areas should discuss coverage with the Voyage Operations Manager and DAP staff during the voyage planning stage.

The MNF will make every effort to ensure that communication services are maintained at a normal level throughout a voyage, however, there are many factors outside of the MNF's control that influence the reliability of services and the quality of off-ship communications can never be guaranteed. Communication outages can occur and it may take some time for issues to be rectified.

4.8. Emergency contact to the ship

Prior to your voyage you should ensure your family has details on how to communicate with the ship in case they need to contact you in an emergency. Additionally, you should seek, through your Chief Scientist, the contact details of your voyage's Voyage Operations Manager as an alternative, should your family have trouble contacting the ship.

Please refer to the MNF Participant's Manual for details of how to contact the ship.