



RV *Investigator* Information and Communications Technology Network Usage Policy

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1. Marine National Facility

Funded by the Australian Government since 1984 and overseen by an independent Steering Committee, the CSIRO Marine National Facility (MNF) forms a keystone of the national research infrastructure by providing merit-based access to the RV *Investigator*, a blue-water research capability for Australian marine researchers and their international collaborators.

2. Purpose

The *RV Investigator Information and Communications Technology (ICT) Network Usage Policy* articulates definitions, requirements and guidance for all users regarding the access and appropriate use of the *RV Investigator* ICT network.

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. The network provides access to telephones, email, internet, intranet, network shares, printers, some common software tools and data from the ship's scientific instruments.

As *RV Investigator* is required to deliver benefit to the nation, the primary function of its ICT resources is to support the delivery of research operations and voyage objectives. Accordingly, this policy aims to preserve the integrity and security of the ship's ICT network and the critical data that it houses. It 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 voyage objectives.

Typically, two seagoing computing support staff from the MNF Data Acquisition and Processing (DAP) team are allocated to provide 24-hour support to users during each *RV Investigator* voyage.

3. Definitions and Requirements

Term	Definition	Requirement
MNF Communication Advisor	The MNF Communication Advisor provides a dedicated resource to facilitate the communication of voyage outcomes.	All voyage-related media needs to be approved by the MNF – through the MNF Communication Advisor – before the event.
MNF ICT Network	The MNF ICT Network consists of research vessel network infrastructure (cabling, switches, access points, security systems, communication systems, servers, storage), together with all computers and devices connected, including those owned by individuals or groups. The MNF ICT network provides access to telephones, email, internet, intranet, network shares, printers, some common software tools and data from the research vessel's scientific instruments.	The MNF ICT Network is provided to voyage participants for the primary purpose of supporting the delivery of research operations and voyage objectives.

MNF ICT Support	ICT network support is provided to voyage participants through the MNF Data Acquisition and Processing (DAP) team.	MNF ICT Support is subject to DAP availability. Priority will be given to the delivery of research operations and voyage objectives.
Voyage Delivery Coordinator	The Voyage Delivery Coordinator (VDC) provides voyage management services on shore.	The VDC is the voyage participants point of contact prior to voyage departure.
Voyage Manager	The Voyage Manager (VM) provides voyage management services at sea.	The VM is the voyage participants point of contact during the voyage.

4. Computers

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

4.1 Public PCs

A very limited number of public PCs are available in communal spaces. Some of these are intended for general purpose use and others are focussed on information and data display.

4.2 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.

4.3 Other Computers

All other computers on the ship (excluding personal computers brought on board by individuals) 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 network security and operational or data acquisition systems.

4.4 Connecting Devices to the Network

You must have a current and valid electrical safety test tag prior to connecting any electrical device to the ship's mains electricity. User supplied power boards and transformers are not to be used onboard as they are potentially incompatible with the ship's power supply. All computers connected to the ship's network 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.

Connecting to the network:

Connecting laptops to the network can be done wirelessly in most of the ship's working and accommodation spaces and outside on some decks. To connect, see the self-help instructions 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.

Appropriate and secure use:

Use of the network must be legal, ethical and consistent with the aims, values, objectives and security principles of CSIRO. Inappropriate use includes:

- Illegal activities, inappropriate behaviour (e.g., defamation, harassment) or the storage or distribution of pornographic or other inappropriate material.
- Unauthorised access to network management services and infrastructure.
- Continued use of an item of software or hardware after the MNF has requested a user cease doing so.
- Deletion, modification, corruption or destruction of others' data without their consent.
- Denial of service to others.
- Accessing another user's files or folders without their consent.
- Use of another user's account or password.
- Use of Peer to Peer software.

Use of the network must be responsible, lawful, ethical and respectful and not compromise the integrity or security of the network or systems.

5. Communications

5.1 Phone

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

Receiving phone 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 using fixed-line telephones.

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

5.2 Email

Support for external email service providers:

Internet access is generally available to all voyage participants whilst at sea, including access to external email providers' webmail services.

- Due to the expense and bandwidth limitations of satellite transmission, please avoid sending large attachments.
- Internet access is not guaranteed. In the event of an outage, the ship's email system (described below) is optimised for use at sea and may provide more reliable service.

Ship's email service:

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

["preferredname.lastname@investigator.csiro.au"](mailto:preferredname.lastname@investigator.csiro.au).

The following information and requirements apply to email:

- 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 your ship address.
- 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 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.

5.3 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.
- 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 Delivery Coordinator prior to voyage mobilisation. 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 requirement.

5.4 Near Real-Time Underway Data

Key underway data is routinely sent from the ship to a CSIRO public FTP site 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.marine.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.

5.5 Media, Events, Outreach and Education

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 shore: often these are conducted using an iPad so that the presenter is able to move around the ship. Mobile filming on board the vessel must be conducted in accordance with the relevant Safe Work Instruction (SWI).
- Live TV interviews on board: normally these are conducted in a static location (e.g., the Bridge) and a satellite bandwidth upgrade is pre-booked to ensure broadcast quality video.
- Pre-recorded events: video can be pre-recorded and transmitted to shore via Dropbox or similar for later release.
- Blogging: blog posts can be made from the vessel.

To support activities as they arise, the ship's internet resources may need to be fully allocated 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 media, event, outreach or education activities that require significant internet bandwidth, please discuss it with the Voyage Delivery Coordinator or the MNF Communication Officer before the voyage. In some cases, it may be necessary for the ship's satellite bandwidth to be upgraded in order to fully 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 with the Voyage Manager and DAP staff on board.

5.6 Video Conferencing

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

5.7 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 Delivery Coordinator and the DAP team 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. In addition, access may be intentionally interrupted at times when bandwidth is required for critical business-related events or to ensure security of the network at sea.

5.8 Emergency Contact

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 project's Principal Investigator, the contact details of your voyage's Voyage Delivery Coordinator as an alternative, should your family have trouble contacting the ship.

6. Compliance

In addition to this *RV Investigator* Information and Communications Technology Network Usage Policy, network users are expected to behave in accordance with *CSIRO Cyber Security Principles* and the *CSIRO Responsible use of ICT and Internet Services* procedure.

History of compliance with the terms of MNF and CSIRO policies are considered as part of the application for an individual's future use of MNF Capability.

7. Feedback

The MNF is committed to continuous improvement and welcomes your feedback regarding this policy and its application at mnf@csiro.au

Document History

DATE	VERSION	COMMENTS
1 September 2017	1.0	<i>RV Investigator</i> Information and Communications Technology Network Usage Policy
4 July 2022	2.0	Updated and aligned with CSIRO Cyber Security Principles 2020 and CSIRO Responsible use of ICT and Internet Services 2020 procedure