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# Comms and IT on the Oden

# SWERUS-C3

*The following document constitutes the regulations for, and scope of available IT- and communications infrastructure on Oden. Several systems have been assembled on the ship and many of the features should be of high value to participants.*

## IT Systems

### Central server

A central server hosting a number of virtual servers on Oden is available for general use. It is protected by anti-virus software and has an Active Directory with all participants in it. Adequate storage is available and everyone has their own home directory for storage of data.

You can ask the IT-department to set up groups for e-mail distribution and security restrictions for your folders and you can ask them to create secure locations for your group. The server is named “vData” and can be accessed with your expedition logon.

### E-mail server

For e-mail communication within the ship a central e-mail server is provided. It runs Microsoft Exchange Server and has a web-interface reachable from most computers on Oden. The Active Directory address book and all its information are also available through this web-interface.

The internal e-mail system is also used to transfer mail to shore. The internal e-mail address is also available to the real world, so participants can easily send e-mails ashore.

### Database server

Oden has a database server that on a read-only basis is available to all participants. It hosts all sampled data from Oden along with information about other ships in Oden’s vicinity that use AIS transponders.

### Network

Oden is fully “wired” in terms of network infrastructure. All laboratories and cabins have a cable connection to the network.

### Wi-Fi

The basic technology used is WLAN IEEE 802.11a and 802.11b/g. The a-standard has slightly better in-door coverage in some areas due to its higher frequency band. Users connecting on this network can reach all resources on Oden.

## Communications

### Maritime VHF

Maritime VHF is usually reserved for normal maritime operations. Marine VHF will be used for communication with the bridge during work onboard and in Skidbladner.

### Cobs telephones All participants will be issued a Cobs telephone. Cobs is the internal telephone system onboard.

### Iridium satellite phones

Expeditions will use Iridium as the primary communication with the world (voice and e-mail). We have an Iridium phone for general use on-board Oden, and we ask you kindly to limit the use of individual Iridium phones to conserve the somewhat limited bandwidth of that system. When operating at or below/above approximately 75 degrees north/south, the e-mail system may use other satellite services to improve bandwidth, and this situation relaxes the requirements for limitations on Iridium use.

### E-mail within the expedition

You may use the internal e-mail system as much as you please. There are no limitations on storage in this system, and you only need a web browser to be able to use it. The web-interface also makes any mailbox available from any system connected to the network.

All participants receive an e-mail address and password at the time of embarkation.

Note: Email accounts are disabled and removed immediately after the expedition – there is NO facility for continued forwarding of email after you disembark the vessel.

### E-mail to the rest of the world

All e-mail messages are sent via the internal e-mail system. No specific measures need to be taken, but there is a size limitation on outgoing e-mails. Anything sent to an address outside of the Oden’s internal domain will be screened for size and then forwarded to an Iridium-based e-mail transmission system. E-mails coming in will be handled in the same manner and forwarded to the proper e-mail recipient as soon as it is received.

E-mails going to and from shore are transmitted in batches several times per day, in most cases much more often (more or less immediately). When e-mails arrive that are above the size restrictions imposed for the expedition, the IT department will see them and can download the e-mail without attachments should it be of importance. You will be given an internal e-mail notice of this.

In the past, some participants have had people ashore forwarding very large e-mails in several chunks with individual sizes just below the allowed threshold. This, of course, is not a popular conduct. If you need an important e-mail, let us know and we can try to download it when the queues are small. Please do not try and “cheat the system”!

Please also note that an email with for example 10 recipients, the massage will consequently be transmitted 10 times and thus occupying capacity. For this purpose engage somebody at home to forward on your behalf.

Size of outgoing emails will be restricted so you will not be able to send home pictures etc.

Note: DO NOT forward your regular e-mail address to your expedition Oden address! This is strictly forbidden and your expedition Oden email account will be suspended.

Note: DO NOT publish you Oden address on a web site! Even though we do have SPAM prevention, it can be disastrous.

## Specific regulations

### Wireless network

You can use IEEE 802.11a (5 GHz) or 802.11b/g (2.4 GHz). Many laptops have built-in 802.11b/g and can be used with almost no configuration. We suggest you use the a-band as it has better in-door coverage given the amount of steel on a ship. Many modern laptops, though, lack support for the a-band.

The SSIDs for the two bands are “POLAR” and “POLAR-G” (5 and 2.4 respectively). There is no encryption or passphrases on the wireless network. If you find SSIDs other than POLAR and POLAR-G in the air, please do not attempt to connect to them.

You may not use wireless access-points that you have brought on-board. There are a vast number of access-points on Oden, and frequency allocation between them is rather tight.

Iridium

If you plan to bring your own Iridium phone, please think twice. Even though we do not want to completely ban them, we ask that you consult us as to the extent of your usage. We have a “public” Iridium phone on the bridge, and you are welcome to use it after consulting expedition management. You will sign for your calls on a list and you will be charged for the cost (0,5 USD/minute).

For **urgent** phone calls to Oden use +881621464034.

### VHF

VHF radios are available from us. If you want to bring your own this is fine, but the expedition management needs to know which channels are in use so we ask you to get one allocated from them before starting your daily VHF operations.

E-mail

E-mails from or to the rest of the world are limited to 100 Kbytes of text. The figure 100 may be changed as the expedition goes on depending on the actual usage. Naturally, you will at some point want to be able to send or receive attachments or larger e-mails, and we will do our best to accommodate you with that service. E-mail is normally transferred at reasonably frequent intervals, but other schedules may temporarily apply. If something is urgent, we can send it right away for you.

Your email address will be: firstname.lastname@swerus.polar.se

### Your computer

Laptops are usually connected via the wireless network. If you have desktops you may have to consult us in order for them to be connected to the wired network.

## IT support

Even though we do not offer a formal 24-hour service from the IT department, we should be able to provide you with everything you need most of the hours of the day. We have some computer spares, good knowledge of the systems and tools, and software. Just ask if you have any problems and we will do our best to help.

## Internet access

There is no internet access (e.g. no web browsing, no downloads and no surfing) available on the expedition. It is strictly forbidden for any participant to attempt to connect to any part of the onboard network which is not normally available to them.

## Other interesting services

### Information system

On the Oden network, a specific web-site with general and safety information is available. The same information is also presented on monitors at select locations on-board. Please check this info-system frequently as this is the primary place for us to post information, schedules etc.

The URL is <http://info.polar>

### Data available in the SQL-server

From our SQL-server you can read just about anything from Oden’s sensors, updated from every five seconds to every minute depending on the type:

* Position, speed, heading, course
* Depth, water temperature, lab water temperature, salinity
* Wind, average wind, pressure, pressure-trend, temperature, wind-chill factor
* Ship positions in the vicinity (via AIS)
* Outdoor temperature and humidity
* PAR insulation
* Cloud height
* Visibility

Reading the data requires the use of ODBC or similar technology that can interface with Microsoft SQL-server. Contact us for database definitions.

### Data extraction

We can supply data in many different formats. Please check with us if you need something specific, and we will do our best to help you. Normal procedure is to export all expedition data to a common format on the transit after the expedition and put those files on the server. This includes a specially filtered track of Oden’s movements in exactly 10, 50, 100, 500 and 1000 meter increments as well as a time-based track, normally with one minute precision, but we can supply down to five seconds if you want it.

### Bringing data home

Should you store a lot of data on the expedition servers, please use a portable hard drive to get it off of our systems. Let us know if you need any help with this.

## Getting hooked up

As you come on-board, you will participate on a short seminar welcoming you to the expedition. At that time, we will provide the details pertaining to the circumstances of the expedition in question and give you all server names and IP-addresses etc. that you need to get started.

## Conclusion

Even though we impose some restrictions, the general idea is to raise the level of services available on expeditions above what is normal in situations like this. Building systems that work on ships is a difficult task but we believe we have a good setup that will work.

It is our sincere hope that you will find the systems useful and use them frequently! Please feel free to ask us for help with any part of these systems when you are onboard.

*Axel Meiton and Chris Buckley,*

Communications- and IT-managers for Oden: Swerus- C3 2014.