

APPENDIX

S.A. Agulhas II Passenger Cabin Allocations

Voyage: **52**

Date: **27/06/2022**

Port Side Cabins

PASSENGERS			
CABIN	TEL. EXT.	NAME	SURNAME

DECK 7			
7327	2727		
7325	2725		
7323	2723		
7320	2720		
7318	2718		
7314	2714		
7310	2710		
7304	2704		

DECK 6			
6320	2620		
6318	A 2618		
	B 2618		
6316	A 2616		
	B 2616		
6313	A 2613		
	B 2613		
6307	A 2607		
	B 2607		
6301	A 2601		
	B 2601		
6209	A 2659		
	B 2659		
6207	A 2657		
	B 2657		
6201	A 2651		
	B 2651		

DECK 5			
5320	A 2520		
	B 2520		
	C 2520		
	D 2520		
5319	A 2519		
	B 2519		
	C 2519		
	D 2519		
5317	A 2517		
	B 2517		
	C 2517		
	D 2517		
5314	A 2514		
	B 2514		
	C 2514		
	D 2514		

DECK 4			
4223	A 2423		
	B 2423		
	C 2423		
	D 2423		
4221	A 2421		
	B 2421		
4219	A 2419		
	B 2419		

TOTAL		0	
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Starboard Side Cabins

PASSENGERS			
CABIN	TEL. EXT.	NAME	SURNAME

DECK 7			
7328	2728		
7326	2726		
7324	2724		
7322	2722		
7319	2719		
7316	2716		
7311	2711		
7307	2707		

DECK 6			
6321	2621		
6319	A 2619		
	B 2619		
6317	A 2617		
	B 2617		
6314	A 2614		
	B 2614		
	C 2614		
	D 2614		
6310	A 2610		
	B 2610		
	C 2610		
	D 2610		
6304	A 2604		
	B 2604		
	C 2604		
	D 2604		
6210	A 2660		
	B 2660		
6208	A 2658		
	B 2658		
6204	A 2654		
	B 2654		

DECK 5			
5321	A 2521		
	B 2521		
	C 2521		
	D 2521		
5318	A 2518		
	B 2518		
	C 2518		
	D 2518		
5315	A 2515		
	B 2515		
	C 2515		
	D 2515		
5311	A 2511		
	B 2511		
	C 2511		
	D 2511		
5309	A 2509		
	B 2509		
	C 2509		
	D 2509		

TOTAL		0	
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NOTE:

1. Cabins 6321 and 6320 are the suites for the DCO and Chief Scientist.
2. Cabins 7327 and 7328 are slightly larger than the other single cabins.
3. 100 People can be accommodated.
4. The Doctor has to be accommodated in the passenger cabins.
5. There are 18 x single cabins, 15 x doubles and 13 x four-berth cabins.
6. For passenger cabin layout, consult attached diagrams.

SEA-GOING MEDICAL

MEDICAL FORM for South African Polar Research Infrastructure cruises										
1 POSITION APPLIED FOR		INITIAL		2 FULL NAMES & SURNAME						
		RENEWAL								
3 POSTAL ADDRESS				4 TELEPHONE NUMBERS			5 DATE OF BIRTH			
				() (HOME)			(DD.MM.CCYY)			
POSTAL CODE :				() (WORK)						
				() (CELL)						
6 AGE		7 SEX		8 OCCUPATION			9 ID/PASSPORT NUMBER			
Years										
10 (EMPTY)			11 CRUISE			12 HAVE YOU USED ANY MEDICINE IN THE LAST				
			SCALE Winter 2022			3 MONTHS				
						YES <input type="checkbox"/>		IF YES, Please		
						NO <input type="checkbox"/>		provide detail		
13 MEDICAL HISTORY: If YES please provide complete detail below (if the space is insufficient, add supplementary notes on separate sheet) (N=NO, Y=YES)										
Family History of:		N	Y	Have you ever had, or do you now have:			N	Y	Have you ever had, or do you now have:	
(1) Heart disease or high blood pressure				(14) Epilepsy or fits of any kind					(29) Heart murmur, or valve problem	
(2) Epilepsy or convulsions				(15) Any other neurological disorder					(30) Heartburn, frequent indigestion	
(3) Glaucoma or blindness				(16) Any mental/psychological disorder					(31) Stomach, liver or intestinal trouble	
(4) Diabetes Mellitus				(17) Misuse of drugs or other substances					(32) Bleeding from the rectum	
Have you ever been:				(18) Alcohol abuse					(33) Kidney stone or blood in the urine	
(5) Refused Life Assurance				(19) Suicide attempt					(34) Sugar or protein in the urine	
(6) Medically rejected for military service				(20) Motion sickness (requiring treatment)					(35) Diabetes Mellitus	
(7) Convicted of a civil or criminal offence				(21) Eye or vision problems (except glasses)					(36) Prostate/Gynaecological problems	
(8) A smoker				(22) Hearing or speech disorders					(37) Any blood or thyroid disorder	
Have you ever had, or do you now have:				(23) Hay fever or allergy					(38) Malignant tumours or cancer	
(9) Appendicitis/Appendectomy				(24) Asthma or lung disease					(39) Weight loss (without dieting)	
(10) Frequent or severe headaches				(25) Collapsed lung (pneumo/haemothorax)					(40) Syphilis or sexually transmitted disease	
(11) Dizziness or unsteadiness				(26) Tuberculosis or pneumonia					(41) A positive HIV test	
(12) Unconsciousness (any reason)				(27) Heart disease or high blood pressure					(42) Admission to hospital (any reason)	
(13) Head injury or concussion				(28) Chest discomfort, pain or palpitations					(43) Any other illness or injury	
REMARKS (To be completed by Medical Examiner. Comment in full on all items marked YES)										
14 MEDICAL TREATMENT WITHIN THE LAST TWO YEARS										
DATE		NAME OF MEDICAL PRACTITIONER AND MEDICAL SPECIALITY					DIAGNOSIS/REASON FOR TREATMENT			
15 NOTICE: Any person who makes, either verbally or in writing, a false or misleading statement in connection with an application for any appointment, licence, certificate or rating, will be regarded as guilty of an offence.					16 DECLARATION BY APPLICANT: I hereby certify that all the above statements are to the best of my knowledge complete and true. I hereby agree: (1) The statements are to be considered part of the basis for issuance of any medical certificate: (2) Medical records may be released to the Department of Environmental Affairs and Tourism					
17 Signature of Applicant			18 Signature of examiner (as witness)			19 Date (DD.MM.CCYY)				
20 RADIOLOGICAL REPORT (To be completed by a radiologist)										
Chest X-Ray report					Sinus X-Ray report					
NORMAL <input type="checkbox"/>					NORMAL <input type="checkbox"/>					
ABNORMAL <input type="checkbox"/>					ABNORMAL <input type="checkbox"/>					
Describe any abnormality in full										
Name of radiologist (Print)					Signature of radiologist					

PHYSICAL EXAMINATION

21 MASS	22 HEIGHT	23 PULSE RATE	24 BLOOD PRESSURE	Lying	Sitting	25 Urinalysis (reading only required if abnormal:)					
				NORMAL	Appearance	pH	Protein	Sugar	Blood		
Kg	cm	/mm				ABNORMAL					

Mark each item in the appropriate column			NAD	ABN	Mark each item in the appropriate column			NAD	ABN
26 Head, face, scalp and neck					35 Genito-urinary system (males-rectal exam; females-gynaecological exam)				
27 Nose and sinuses					36 Neurological system				
28 Ears and eardrums					37 Upper limbs (strength, range of motion)				
29 Valsalva (patent bilaterally)					38 Lower limbs (strength, range of motion)				
30 Romberg					39 Spine; musculoskeletal				
31 Lungs, chest (breasts)					40 Skin				
32 Heart					41 Identifying body marks, scars, tattoos etc				
33 Vascular systems and lymphatics					42 Psychological evaluation				
34 Abdomen					43 Any other problems and general impression				

56 AUDIOLOGICAL EXAMINATION (d3 hearing loss)										SPECIAL EXAMINATIONS												
Ear	250	500	1 000	2 000	3 000	4 000	6 000	Hz	57 Resting/Stress ECG	Performed			Data next due									
Right								NAD	58 Chest X-Ray report	Performed												
Left								ABN	59 Lung function test	Performed												
										60 Gynaecological Examination										Performed		

61 Are any other tests indicated? (Fasting cholesterol, etc)			YES	NO	IF YES, please specify -														
62 SUMMARY OF FINDINGS: Describe every abnormality in detail. Attach additional pages if necessary.					RPR					Positive					Negative				
					Hepatitis B					Positive					Negative				
					HIV					Positive					Negative				
					Cholesterol														
Significant medical history/findings			YES	NO	Blood Group					O	A	B	AB	Rh	Rh				

65 DECLARATION BY MEDICAL EXAMINER:
I hereby certify that I personally examined the applicant. This report embodies my findings correctly and completely.

Recommendation	64 I find the applicant to be			Fit	Unfit	Temporarily Unfit	65 Name, Address and Qualifications of Medical Examiner (Print)					66 Date of Examination				
	as			RESTRICTIONS/REASONS FOR DECISION								67 Telephone Number ()				
										68 Signature						

SAMHS Confirmation	This is to certify that the applicant is:										From																		
	Fit			Temporarily unfit			Unfit			as					To														
Signature										Name and Qualifications										SG Code					Date				

SPECIAL NOTE TO MEDICAL DOCTOR:

NO PERSON MAY BE DECLARED FIT IF THEY HAVE ANY HISTORY OF STABLE ANGINA, RECENT MYOCARDIAL INFARCTS, INSULIN DEPENDANT DIABETES MELLITUS, KNOWN PSYCHIATRIC AILMEMTS AND PEOPLE ON TUBERCULOSES TREATMENT.

.....
Signature of medical practitioner (Doctor)

.....
Date

Contact details: (work)
..... (cell)

Address:
.....
.....
.....
.....



SCALE

Southern Ocean seasonal Experiment

SCALE Committee

PARTICIPANT CODE OF CONDUCT: RESEARCH CRUISES

Participant's Name: _____

Participant Agreement of Behaviour & Attitudes While on the SCALE Scientific Cruises

TO BE READ AND SIGNED BY PARTICIPANT

I will comply with the SCALE rules, standards and instructions for participant behaviour. I understand I am responsible to help make the activities I participate in a **safe experience for everyone** through my behaviour and conduct. This is a required contract of agreement between the Chief Scientist of the SCALE Cruise, and all employees, researchers, students and volunteers as part of the SCALE Program. By signing this contract, I am agreeing to the following terms:

Participant Contract

I agree to be on time for all SCALE activities and ship drills (e.g., lab meetings, advisories, special events). I am responsible for knowing where I am supposed to be during all SCALE activities and at what time each activity starts.

I agree to promote an environment that is inclusive and free of discrimination, violence, bullying and harassment for everyone, regardless of gender, race, sexual orientation, disability, physical appearance, age, mental or physical health, HIV-status, political opinion or religion.

I will do my best to be positive, and to maintain an atmosphere of mutual caring, respect, and understanding. I will participate willingly and enthusiastically in all activities.

I will promptly communicate to the Team Leader any personal anomalous physical condition that may pose any risk to the safety of the ship.

When working on the ship and in the field, I will always wear appropriate attire and required personal protective equipment, as outlined by National standards or standard operating procedures.

I agree to always be respectful towards project personnel, including but not limited to ship's crew, ship's officers, and my peers.

SCALE has a zero tolerance for harassment, violence, and physically or verbally threatening behaviours (see explanation of sexual and other harassment below). Safety is our top priority. As such, engaging in these behaviours will result in immediate termination of the activities and self-confinement in the cabin until return to port.

I have read and agree to the above guidelines. I understand failure to comply with these guidelines may result in your employer/supervisor being informed and disciplinary hearings at your relevant institution.

Signature

Date

Printed name

Chief Scientist

Date

Appendix and definitions:

What is Sexual Harassment?

Sexual harassment has many forms. A person sexually harasses someone when they:

- Insinuate, propose or demand sexual favours of any kind.
- Invade another person's personal space (e.g., inappropriate touching)
- Stalk, intimidate, coerce or threaten another person to get them to engage in sexual acts.
- Send or display sexually explicit objects or messages.
- Comment on someone's looks, dress, sexuality or gender in a derogatory or objectifying manner or a manner that makes them uncomfortable.
- Make obscene comments, jokes or gestures that humiliate or offend someone.
- Pursue or flirt with another person persistently without the other person's willing participation. Also, flirting with someone at an inappropriate time (e.g., in a team meeting) is considered sexual harassment, even when these advances would have been welcome in a different setting. This is because such actions can harm a person's professional reputation and expose them to further harassment.
- The most extreme form of sexual harassment is sexual assault. This is a serious crime and we will support anyone who wants to press charges against offenders.

What other kinds of discrimination/harassment are there?

- People can be harassed, bullied and discriminated against because of gender, race, sexual orientation, disability, country of origin, physical appearance, age, mental or physical health, HIV-status, political opinion or religion. • This includes sexist, racist, and other exclusionary imagery and language, including "jokes"

PASSENGER DETAIL – SA AGULHAS I

SA Agulhas II - Passenger Details

Cabin Number	Surname	Initials	First Name	Gender	Function	Date Joined	Place of birth	D.o.B (yyyy-mm-dd)	Nationality	Passport	
										Number	D.o.E. (yyyy-mm-dd)
7328											
7327											
7326											
7325											
7324											
7323											
7322											
7320											
7319											
7318											
7316											
7314											
7311											
7310											
7307											
7304											
6321											
6320	Vichi	MV	Marcello	M	Chief Scientist		Italy	06/04/1970	Italian	YA5741927	17/01/2024
6319	A										
6319	B										
6318	A										
6318	B										
6317	A										
6317	B										
6316	A										
6316	B										
6314	A										
6314	B										
6314	C										
6314	D										
6313	A										
6313	B										
6310	A										
6310	B										
6310	C										
6310	D										
6307	A										
6307	B										
6304	A										
6304	B										
6304	C										
6304	D										
6301	A										
6301	B										
6210	A										
6210	B										
6209	A										
6209	B										
6208	A										
6208	B										
6207	A										
6207	B										
6204	A										
6204	B										
6201	A										
6201	B										
5320	A										
5320	B										
5320	C										
5320	D										
5321	A										
5321	B										
5321	C										
5321	D										
5319	A										
5319	B										
5319	C										
5319	D										
5318	A										
5318	B										
5318	C										
5318	D										
5317	A										
5317	B										
5317	C										
5317	D										
5315	A										
5315	B										
5315	C										
5315	D										
5314	A										
5314	B										
5314	C										
5314	D										
5311	A										
5311	B										
5311	C										
5311	D										
5309	A										
5309	B										
5309	C										
5309	D										
4223	A										
4223	B										
4223	C										
4223	D										
4221	A										
4221	B										
4219	A										
4219	B										

1 Passengers onboard in total.

Marine Technician 101

Vessel: SA Agulhas II

Cruise: SCALE Winter Cruise 2022

Author: Tahlia Henry 2022

Ship-based Instruments:

- Ecosounders
- TSG
- ADCP
- CTD ops
- Winches
- SDS
- Underway Pumps
- Salinometer

Ecosounders:

- Three ecosounders (EA600, Kongsberg Fishfinder and Kongsberg Topaz) are located in the ops room, EA 600 (Simrad) is used mainly for all over the side operations. Keep an eye on the “environment parameters” on the EA 600 found in “Settings” tab. Change these when there is a drastic change in water temperature. The enviro parameters are: Ocean temp and Salinity. (get this info from the SDS/TSG).
- Note the Kongsberg Topaz (sub bottom profiler) doesn’t work. The IMU was removed in 2019 so the instrument is not georeferenced and out of calibration.

Start-up procedure:

- † Deck unit for ecosounders in the TSG cupboard (small black box at the bottom of the cupboard)
- † On switch: Green button
- † EA600 and Fishfinder computer will turn on automatically

Potential issues:

- † If no data (0.00 m) is seen on either the SDS dashboard or on the ecosunder screen, normally due to cavitation under the vessel, particularly if keel is up. Troubleshooting the ecosounder can be done by pinging the ports to check for incoming data. OR. Alter the “environmental” – (temperature, salinity) setting on the EA 600.

- † If error message on either SDS and or ecosounder screen (no data in red text), check the power box on the 3rd deck (crew section). The power box is found in room where the engineers extract the keel (also where the ADCP deck unit is). Ask for assistance from Orlando (ETO) when wanting to gain access to the Ecosounder Power Cabinet (it requires a key).

TSG:

- TSG computer monitor is found on the back bench in the ops room (far righthand side when facing the bench). The deckunit is a small white box located in the same cupboard as the ecosounder deckunit in the ops room. Actual TSG instrument is mounted on the bulkhead in the wetlab between the distilled water tank and sink.

Start – up procedure:

- † Start up the pumps in the underway lab and allow the system to flush for at least an hour after the vessel has left the port.
- † Once the system has been thoroughly flushed ensure that there is a steady flow of water from the outlet.
- † Put on the deckunit in the cupboard (found in the ops room)
- † Start the data logging acquisition on the TSG computer by starting up SeaSave7 software (found on desktop)
- † Ensure that the data is logging to a directory setup for the cruise in the TSG folder on the C: of the computer.
- † The naming convention for each file should be “AGU(insert cruise number)+letter indicating consecutive sequence”
- † TIP: Break the acquisitions into “legs” for the duration of the cruise, example “CT to Ice Edge” and note this in the comments section of the header file on setup prior to data logging.

Potential issues:

- † Keep an eye on the data that it is true and accurate (can check temperature against CTD temperature data at 5m during a cast).
- † If the realtime data output seen on the TSG interface is “fuzzy” and sharp continuous spikes in the graph the system may require a clean.
- † To flush the TSG unit please contact Tahlia this is a very involved procedure and considered as a last resort.
- † Keep an eye on the overflow pipe and the status of the pipe. It will become discoloured over time which is normal, but only change or clean if it compromises the integrity of the underway samples taken.

ADCP:

- The ADCP deck unit is located on deck 3 (port side) in the “keel house”. Notify the bridge that you wish to switch on the ADCP and the keel needs to be dropped. An Engineer will assist with this, once the keel is down put on the deckunit of the ADCP (behind the door). The computer is located in the ops room. Start up the SEABIRD software on the desktop and begin acquisition. Allow the instrument to establish NMEA settings and once all green lights are given (indicated by two green squares top right of the

screen) real-time data will be displayed in a form vector plot. Don't forget to save the acquisition file, give it a simple name with the ship cruise number and name of the voyage.

CTD Ops:

- CTD rosette in the environmental hanger, CTD computer in the ops room and CTD deckbox in the cupboard opposite the whiteboard. Start - up procedure:
 - † Equipment: Lock and load the bottles, check the taps, spigots and leads before the CTD deployment. Check the split pin on the dead end and inspect the integrity of the cable prior and post deployment. Remove sensor caps and syringes before deployment.
 - † Computer: Start the acquisition by naming and saving the file in the correct directory using the SeaSave software. Set up the header file and standby for CTD deployment to commence. Do not hit "ok" until the side door is open and CTD is ready to be deployed.
 - † Once the side door has been open, and the bridge has given the go ahead for the CTD, switch on the deck unit and then tick "ok" on header window.
 - † Once CTD is in the water at surface (reset winch), ask the Bosun to take the CTD to 10m and stand by until 0111 is seen on the deck unit.
 - † Bring the CTD back to the surface, clear plots and return to 10m (done by the Bosun) and CTD operator takes over and drives to the desired depth.
 - † Radio dialog: All oceanographic operations are communicated over channel 5. Prior to CTD cast, open the station (SDS) with the bridge and confirm activities for the station, depth and communication checks. Once the bridge has indicated that the ship is on station and given the go ahead to the Bosun to open the side door...communicate with the bridge once the door is open if you can deploy the CTD. If you get the go ahead, ask the Bosun to take the CTD to the surface, he will indicate once the CTD is at surface reset the winch 0 m. Ask the Bosun to take the CTD to 10 m and standby. Once the deckunit indicates 0111 ask the Bosun to return the CTD to surface. At the surface clear plots and ask the Bosun to take the CTD back to 10 m. He will indicate once it is there and hand over the control of the winch to you (CTD operator) indicate clearly which winch you are using and the Bosun will confirm that it is the correct winch. Once the CTD is at the desired depth, radio the bosun and indicate that the CTD is on its way back up. Ensure to radio again at the 100 m and finally once the CTD is at 10 m, notify the Bosun via radio requesting for the CTD to be brought to surface (for surface bottles) or brought straight on board.

Potential issues:

- Potentially a very long list of issues but hopefully you will have none, most issues can be solved on the spot with a bit of common sense and or contact Tahlia or Marcel! A more common issue that could happen particularly after a number of CTDs, may be that the sensors need to be cleaned thoroughly to avoid "fuzzy" data trace. But do clean the sensors after each cast with distilled water. If you get extreme spikes in the profile there will either be water in the cable of the sensor (if its only one trace that's spiking) but if all tracers spike there is possibly water in the underwater unit cable – hopefully not. If anything else goes wrong that doesn't make sense or you need help just give us a shout. Also keep an eye on the centre carousel for salt build up, the catches get sticky over time, a hot cloth on the carousel will dissolve the salt and if necessary a soapy solution (dishwashing fluid) to clean it followed by a good rinse of fresh water.

SDS:

- This system should run seamlessly, start up the voyage before the cruise leaves the port and end the voyage when you return to port. Username: science.....Password:
e=mc2
- If you have any issues (normally it gets a bit glitchy on the bridge but a reboot normally fixes that) any huge issues contact SDS. Andre Hoek to provide more detailed notes on the upgraded system.

Salinometer:

- The salinometer is set up in the Underway lab and currently the bath is filled and cells have been flushed with triton x and stored in distilled water. There is a spares kit and box of essentials stored in the cupboard under the salinometer, along with seawater standards. In the black file (on top of the salinometer) is a "Cheatsheet" for operations and how to run a sample. The machine will need to be recalibrated before use, please follow the calibration instructions outlined in section 7 of the manual. Any issues, please give Tahlia a call.

XBTs:

- Not sure who will be in charge of XBTs for this voyage, but I have setup and left the system in the geolab along with deckchits. The system is stable but if you need to power it down there is a specific shutdown and power up sequence. I will send this in a separate document along with the operational procedure as I am aware that SAWS may have written on already for this voyage. If more assistance is needed please contact Tahlia.

Quick hot tips:

- † Make sure you are on the correct winch for whichever operation
- † Keep the Ops Room clean and tidy (rounds on Sundays) but also it is the workspace for the technicians and not a hang out spot for chatty ice people or annoying students.
- † Respect the guys driving, they may be tired but need to focus, ideally NO cellphone use during winch operations. If anything goes wrong and you were on your phone this is taken into account for an AMSOL/DFFE report.
- † Respect the crew
- † Access the weather prior to every station and during the cast. The Kevlar winch and Steel cable are governed by a compensator but it has its limits. Kevlar is super light in water but strong...but will be pinched and cut if the block turns 90°. Consult the Bosun and bridge regarding weather state and Bosun for recommended line speed. However, you as the operator are responsible for the equipment the ship crew are not held liable for it, they are there for assistance and ensuring safe operations.
- † Window in the ops room remains shut at all times unless performing maintenance work on the CTD (when the side door is obviously closed).
- † HAPPY SAILING, you got this and look after our red giant!

‡ Myself (Tahlia) and the guys at SDS are just a WhatsApp away so please don't hesitate to contact us.



SEA
TECHNOLOGY
SERVICES

TECHNICAL NOTE

SDS AgulhasII
Technical Notes for SDS Support

Ref: STS-DEFF-SDS-TN-220711001

ver 0.0.1
11 July 2022

Revision History

REVISION	DATE	AUTHOR	ABOUT
0.0.1	11 Jul 2021	A.Hoek	Draft release
0.0.2			

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1. SCOPE

This Technical Note is aimed at technical personnel supporting the Scientific Data System (SDS) onboard the S.A. Agulhas II. The technical note gives high level instruction for switching the data system and supporting hardware on and off as well as basic fault finding instructions for the most common problems experienced on the SEAMester / ASCA June 2022 cruise.

Instructions for enabling remote shore-based support are also included, should the need arise during the voyage.

2. SCIENTIFIC DATA SYSTEM - SDS

2.1 Starting the system

Switch on the Dell Server labelled “SDS1” in the electronics workshop.
Wait for the system to boot into the Windows Desktop.



Note:

If the trackpad on the server keyboard is not responsive, unplug and re-insert the USB cable at the rear of the server



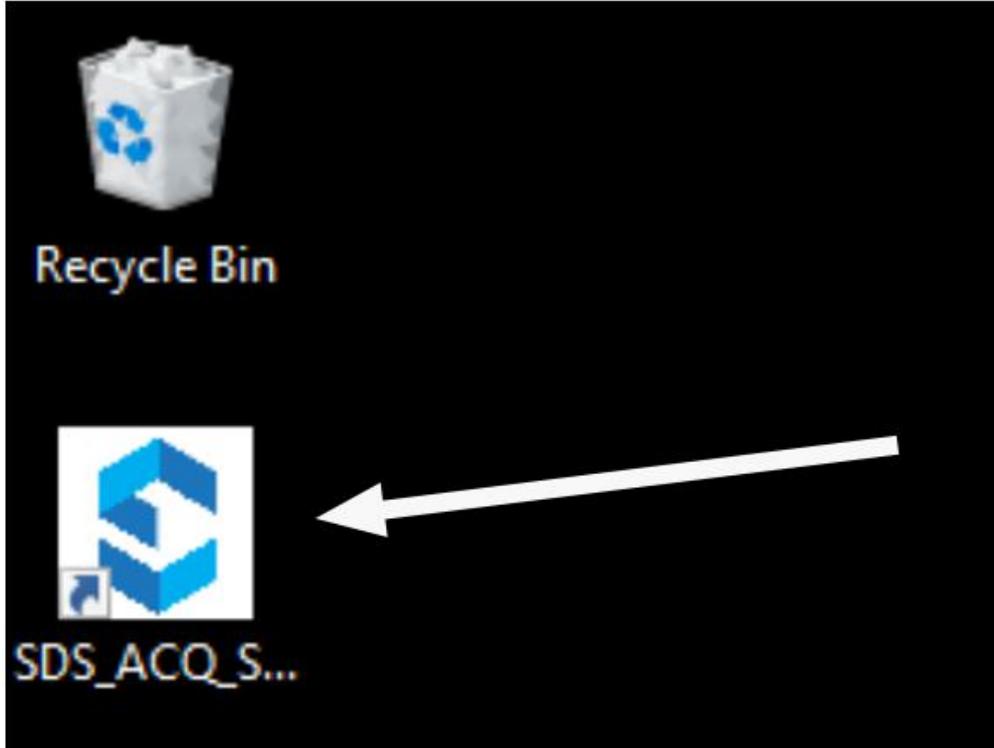
Once boot is complete, click “start WampServer” icon on desktop



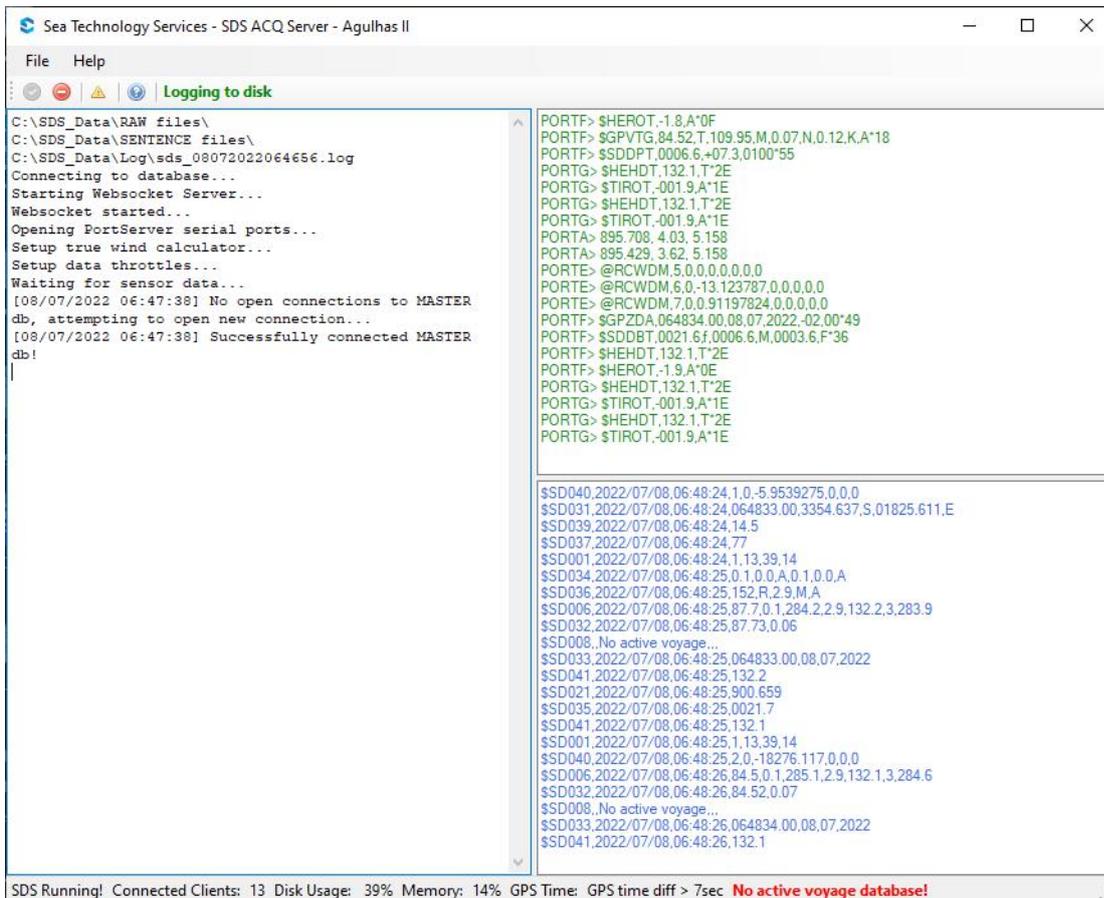
Verify startup OK, green W bottom right



Open SDS_ACQ_Server, shortcut on Desktop, top left.



Verify INPUT/OUTPUT messages (can take up to a minute)



Verify that the web server is running correctly:

Open firefox, type <http://localhost> in the address bar and press Enter.

Verify that values are received and change over time.

The screenshot shows a web browser window displaying the 'Scientific Data System' interface. The page has a blue header with navigation tabs: REAL-TIME TEXT, DASHBOARD, DATA EXPORT, HISTORY GRAPH, MAP, SCIENCE, and ABOUT. A user login area shows 'User ID: science' and a password field. The main content area features the SEA TECHNOLOGY SERVICES logo and the title 'Scientific Data System'. Below this, there are several data panels:

- Real-time Text summary**: A summary of real-time data.
- NAVIGATION DATA**: GPS UTC (06:49:54), GPS Latitude (33° 54.637' S), GPS Longitude (18° 25.610' E), GPS COG (230.45 °), GPS SOG (0.04 K), Gyro Heading (132.0 °), Speed Log, Water Long (0.0), Water Trans (0.0), Ground Long (0.0), and Ground Trans (0.0).
- ECHOSOUNDERS**: Navigation GDS101 (0021.5 m), Navigation EA600 (0.00 m), and Scientific EK60 (6.15 m).
- METEOROLOGICAL**: Wind Speed True (7.39 K), Wind Dir True (276.4 °), Wind Speed Rel (7.39 K), Wind Dir Relative (276 °), Air Temp (14.4 °C), Air Pressure (1.016 bar), Humidity (77 %), SPAR sensor (889.35 µE/m²/s), Intake Temp (23.38 °C), Surface Salinity (0.18 PSU), and Salinity Temp (20.04 °C).
- THERMOSALINOGRAPH**: Intake Temp (23.38 °C), Surface Salinity (0.18 PSU), and Salinity Temp (20.04 °C).
- WINCH MONITORS**:
 - GENERAL PURPOSE WINCH**: Wire Length (-6), Wire Speed (0), Tension (0).
 - UNDULATING WINCH**: Wire Length (-18277), Wire Speed (0), Tension (0).
 - PLANKTON TOWING WINCH**: Wire Length (no data), Wire Speed (no data), Tension (no data).
 - DEEP SEA CORER WINCH**: Wire Length (no data), Wire Speed (no data), Tension (no data).
 - CTD1 COND. WINCH**: Wire Length (no data), Wire Speed (no data), Tension (no data).
 - CTD2 KEVLAR WINCH**: Wire Length (no data), Wire Speed (no data), Tension (no data).
- System Status**: Socket status (Connected), Disk Log (OK), Server date (2022/07/08), Server time (06:49:46), Voyage (No active voyage), Station, Grid, Status, Lat, Lon, and Activities.

2.2 Open a voyage

Open web browser, address <http://localhost/> on SDS server machine

Log in as science user, top right:

User: science
Password: e=mc2



Click on the SCIENCE tab



Click the "New Voyage" button

Verify Cruise Number and Station Numbers with Chief Scientist / Bridge.

Click "Start Voyage".

Verify that the web interface displays and active voyage:

The screenshot shows a web interface with two main panels. The left panel, titled "Voyage Details", contains the following information: Voyage name: SAPRI Winter Cruise 2022; Voyage Number: 053; Voyage Code: AGU053; Start Date: 08/07/2022 06:59:33. There are three buttons: "End Voyage" (with a red 'X' icon), "New Voyage" (with a plus icon), and "Station Import" (with a folder icon). The right panel, titled "System Status", shows: Socket status: (blank); Disk Log: OK; Server date: 2022/07/08; Server time: 07:00:33. Below this, it lists: Voyage: SAPRI Winter Cruise 2022; Station: (blank); Grid: (blank); Status: (blank); Lat: (blank); Lon: (blank); Activities: (blank). A red arrow points to the "Voyage" field in the System Status panel.

Verify that the ACQ interface displays and active voyage:

The screenshot shows a terminal window titled "Sea Technology Services - SDS ACQ Server - Agulhas II". The window has a menu bar with "File" and "Help", and a toolbar with "Logging to disk". The main area is split into two panes. The left pane shows a log of system events, including database connection attempts and successful connections. A red box highlights the following log entries: [08/07/2022 06:59:34] No open connections to Voyage db, attempting to open new connection...; [08/07/2022 06:59:34] Successfully connected Voyage db [sdsagulhasii_0049]; [08/07/2022 06:59:34] Get active voyage details... Below this, a section titled "Active voyage details:" shows: Name: SAPRI Winter Cruise 2022; Number: 053; Code: AGU053; Started: 08/07/2022 06:59:33. The right pane shows a list of data points, including PORTG and PORTF commands and their responses, followed by a list of SSD data points. At the bottom of the window, a status bar reads: "SDS Running! Connected Clients: 17 Disk Usage: 39% Memory: 18% GPS Time: GPS time diff > 8sec".

2.3 Import planned stations for display on live map

Prepare the stations file. The filename has to be **stations.csv** with the format as follows:

Name	Description	Example Value
station	Sequential Integer (1,2,3 etc)	1
grid number	Grid number specific to cruise, supplied by Chief Scientist	V O Y - 0 5 3 - 0 0 1
lat	Latitude of planned station in decimal degrees	- 3 5 . 1
lng	Longitude of planned station in decimal degrees	2 3 . 8 7
depth	Optional depth in metres of planned station	2 5 0
activities	List of activities, separated by semicolons (;)	C T D - O v e r s i d e ; B i

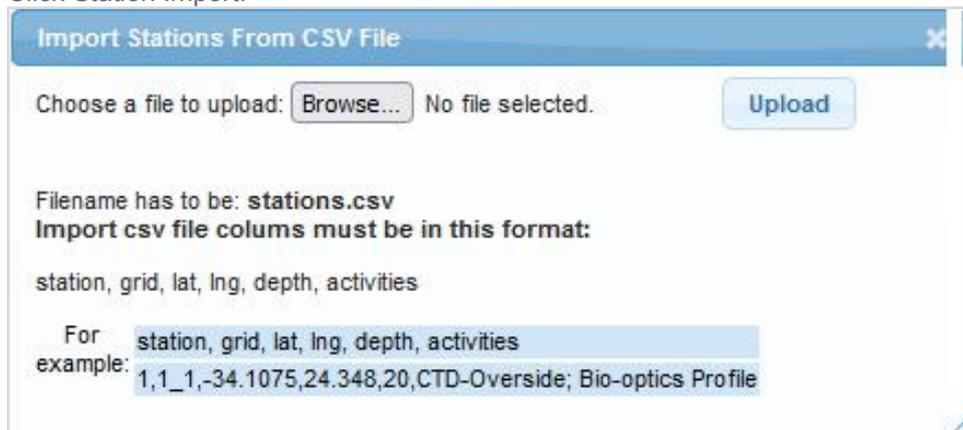
		o - o p t i c s P r o f i l e ; G l i d e r R e t r i e v a l
--	--	---

Sample station.csv file:

```
station,grid,lat,lng,depth,activities
1,VOY-053-001,-35.1,23.87,250,CTD-Overside; Bio-optics Profile; Glider Retrieval
2,VOY-053-002,-35.35,23.85,,TBD
3,VOY-053-003,-35.79,23.82,,TBD
```

Open browser on SDS Server and go to <http://localhost/>
Click the Science Tab (log in if not already logged in, check 2.2 above)

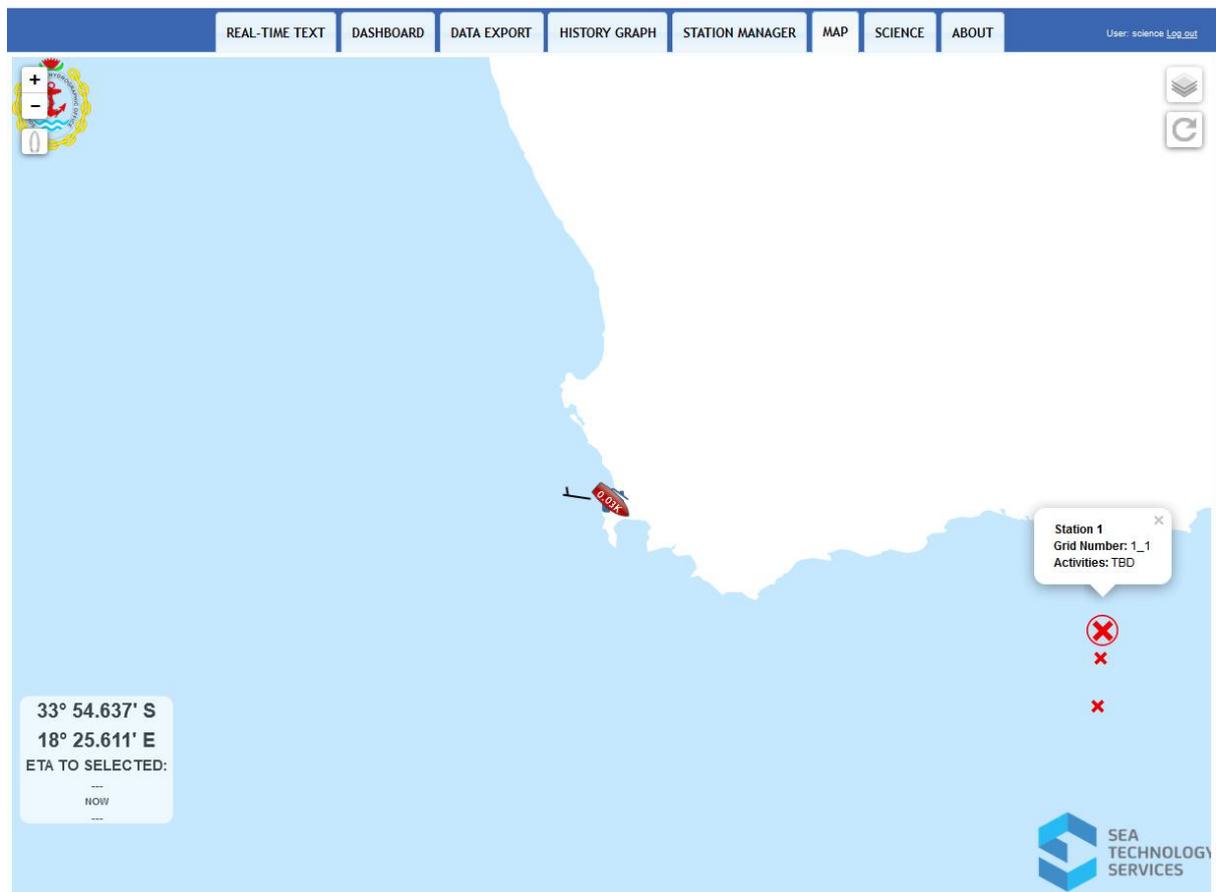
Click Station Import:



Click Browse and select your file, filename **must be stations.csv**.

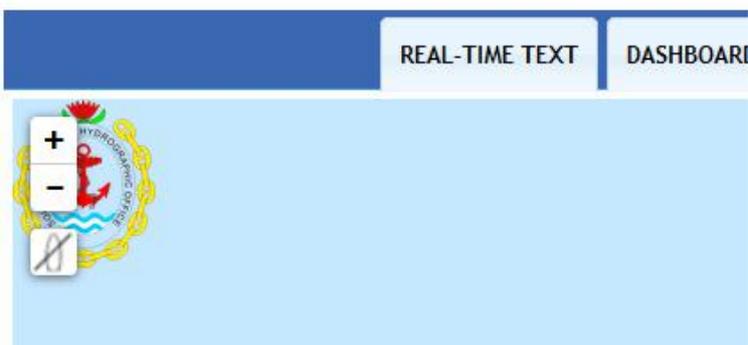
Click Upload.

Click on MAP tab in the web interface and verify stations are displayed:



When a station is selected and the vessel is moving, the ETA will be displayed bottom left.

To stop the map from auto tracking, click the boat icon top left:



2.4 Opening and closing stations on the bridge

Open a web browser on the bridge

Open the SDS interface at <http://172.20.50.233/>

Log in top right:

User: bridge

Password: capetown

Click the STATION MANAGER tab

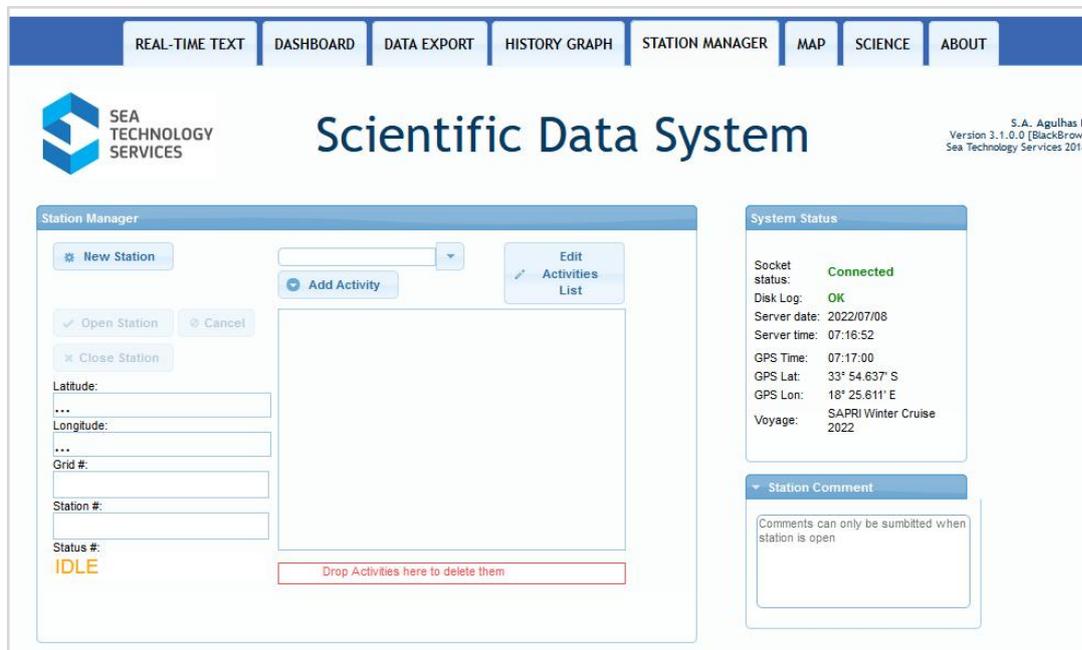
Click the “New Station” button

Enter the grid number, e.g. “VOY-053-001”

Click Add



Select activities from the Activity drop-down and click “Add Activity” for each activity



REAL-TIME TEXT DASHBOARD DATA EXPORT HISTORY GRAPH STATION MANAGER MAP SCIENCE ABOUT User: science

SEA TECHNOLOGY SERVICES **Scientific Data System** S.A. Agulhas II
Version 3.1.0.0 [BlackBrow] Sea Technology Services 2018

Station Manager

Latitude:

Longitude:

Grid #:

Station #:

Station #:

Status #: IDLE

--Select an activity--

- Argo Float - Deploy
- Argo Float - Retrieve
- ARVOR Float-Deploy
- ASFAR
- Bio Argo
- Bio Optics Float - Deploy
- Bio Optics Float - Retrieve
- Bio-optics Profile
- Bongo - Oblique
- Bongo - Vertical
- Buoyancy Glider - Deploy
- Buoyancy Glider - Retrieve
- Camera - Towed
- Camera - Vertical
- CARIOCA
- CPR
- CTD - Geo-trace
- CTD - GoFlo
- CTD - Niskin
- CTD - Oversight
- CTD - Underway
- CTD-Moonpool
- CTD-Overside
- Dredge
- Dredge
- Drift Net
- Drifter
- fishing
- Grab
- Jump camera
- LOPC

System Status

Socket status: Connected

Disk Log: OK

Server date: 2022/07/08

Server time: 07:21:57

GPS Time: 07:22:06

GPS Lat: 33° 54.637' S

GPS Lon: 18° 25.611' E

Voyage: SAPRI Winter Cruise 2022

Station Comment

Comments can only be submitted when station is open

Once all activities are added, an optional - comment for the station can be entered on the right.

172.20.50.233

REAL-TIME TEXT DASHBOARD DATA EXPORT HISTORY GRAPH STATION MANAGER MAP SCIENCE ABOUT

SEA TECHNOLOGY SERVICES **Scientific Data System** S.A. Agulhas II
Version 3.1.0.0 [BlackBrow] Sea Technology Services 2018

Station Manager

Latitude:

Longitude:

Grid #:

Station #:

Station #:

Status #: IDLE

Sail Buoy - Deploy

CTD - Geo-trace

Dredge

Sail Buoy - Deploy

System Status

Socket status: Connected

Disk Log: OK

Server date: 2022/07/08

Server time: 07:26:09

GPS Time: 07:26:18

GPS Lat: 33° 54.637' S

GPS Lon: 18° 25.611' E

Voyage: SAPRI Winter Cruise 2022

Station Comment

This is an amazing station!

When on station, click the “Open Station” button and wait a few seconds. Once open, the green OPEN status text will flash bottom left.

The screenshot shows the 'Station Manager' interface with the following details:

- Station Manager Panel:**
 - Buttons: New Station, Add Activity, Edit Activities List, Open Station, Cancel, Close Station.
 - Station Name: Sail Buoy - Deploy
 - Activities List: CTD - Geo-trace, Dredge, Sail Buoy - Deploy
 - Latitude: 33° 54.637' S
 - Longitude: 18° 25.611' E
 - Grid #: VOY-053-001
 - Station #: AM01308
 - Status #: **OPEN** (indicated by a red arrow)
 - Message: Drop Activities here to delete them
- System Status Panel:**
 - Socket status: **Connected**
 - Disk Log: **OK**
 - Server date: 2022/07/08
 - Server time: 07:27:07
 - GPS Time: 07:27:16
 - GPS Lat: 33° 54.637' S
 - GPS Lon: 18° 25.611' E
 - Voyage: SAPRI Winter Cruise 2022
- Station Comment Panel:**
 - Text: This is an amazing station!
 - Buttons: Submit, Clear

Client machines will see the System Status update with the station details:

The screenshot shows the 'Real-time Text summary' interface with the following data:

NAVIGATION DATA		METEOROLOGICAL		WINCH MONITORS	
GPS UTC:	07:28:28	Wind Speed True:	3.69 K	GENERAL PURPOSE WINCH	
GPS Latitude:	33° 54.637' S	Wind Dir True:	277.1 °	Wire Length:	-6
GPS Longitude:	18° 25.611' E	Wind Speed Rel:	3.5 K	Wire Speed:	0
GPS COG:	107.03 °	Wind Dir Relative:	276.8 °	Tension:	0
GPS SOG:	0.06 K	Air Temp:	15.2 °C	UNDULATING WINCH	
Gyro Heading:	131.8 °	Air Pressure:	1.016 bar	Wire Length:	-18277
Speed Log:		Humidity:	75 %	Wire Speed:	0
Water Long:	0.1	SPAR sensor:	1345.39 µE/m²/s	Tension:	0
Water Trans:	0.0	THERMOSALINOGRAPH		PLANKTON TOWING WINCH	
Ground Long:	0.1	Intake Temp:	23.45 °C	Wire Length:	2
Ground Trans:	0.0	Surface Salinity:	0.18 PSU	Wire Speed:	0
ECHOSOUNDERS		Salinity Temp:	20.13 °C	Tension:	0
Navigation GDS101:	0021.9 m	PLANKTON VERTICAL WINCH		DEEP SEA CORER WINCH	
Navigation EA600:	0.00 m	Wire Length:	-8	Wire Length:	-17
Scientific EK60:	6.38 m	Wire Speed:	0	Wire Speed:	0
		Tension:	0	Tension:	0
		CTD1 COND. WINCH		Wire Length:	-14
				Wire Speed:	0
				Tension:	0

The 'System Status' panel shows:

- Socket status: **Connected**
- Disk Log: **OK**
- Server date: 2022/07/08
- Server time: 07:28:19
- Voyage: SAPRI Winter Cruise 2022
- Station: AM01308
- Grid: VOY-053-001
- Status: **OPEN**
- Lat: 33 54.637 S
- Lon: 018 25.611 E
- Activities: CTD - Geo-trace, Dredge, Sail Buoy - Deploy (indicated by a red arrow)

Once the station has been completed, click the “Close Station” button.

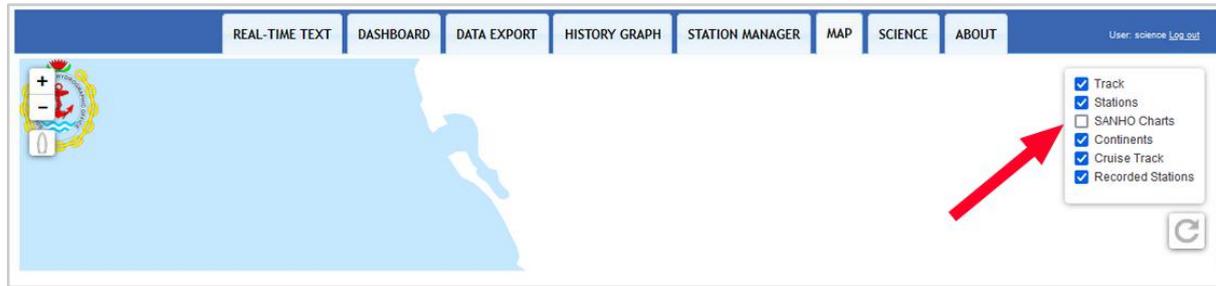
The station interface will display IDLE in orange:

The screenshot shows the 'Station Manager' interface. On the left, there are buttons for 'New Station', 'Open Station', and 'Close Station'. Below these are input fields for Latitude (33° 54.637' S), Longitude (18° 25.611' E), Grid #, Station #, and Status #. The Status # field displays 'IDLE' in orange text, with a red arrow pointing to it. In the center, there is a large empty box with a red border and the text 'Drop Activities here to delete them'. On the right, there is a 'System Status' panel showing 'Socket status: Connected', 'Disk Log: OK', 'Server date: 2022/07/08', 'Server time: 07:30:18', 'GPS Time: 07:30:27', 'GPS Lat: 33° 54.637' S', 'GPS Lon: 18° 25.611' E', and 'Voyage: SAPRI Winter Cruise 2022'. Below this is a 'Station Comment' section with a text area containing 'This is an amazing station!' and a 'Clear' button.

All web clients using the system will also clear:

The screenshot shows the main system interface. At the top, there are navigation tabs for 'MANAGER', 'MAP', 'SCIENCE', and 'ABOUT'. Below the tabs, the word 'stem' is displayed in large blue letters. To the right, it says 'S.A. Agulhas II', 'Version 3.1.0.0 [BlackBrow]', and '© Sea Technology Services 2018'. On the left, there is a vertical list of components with their status: 'S', 'HOSE WINCH', 'WIND WINCH', 'ENGINE WINCH', and 'R WINCH'. Each component has a numerical value next to it. On the right, there is a 'System Status' panel with a '+' and '-' icon. It shows 'Socket status: Connected', 'Disk Log: OK', 'Server date: 2022/07/08', 'Server time: 07:32:06', 'Voyage: SAPRI Winter Cruise 2022', 'Station:', 'Grid:', 'Status:', 'Lat:', 'Lon:', and 'Activities:'. A red arrow points to the 'Status:' field in the System Status panel.

Both planned and completed stations can be viewed on the map interface by selecting the appropriate layers:



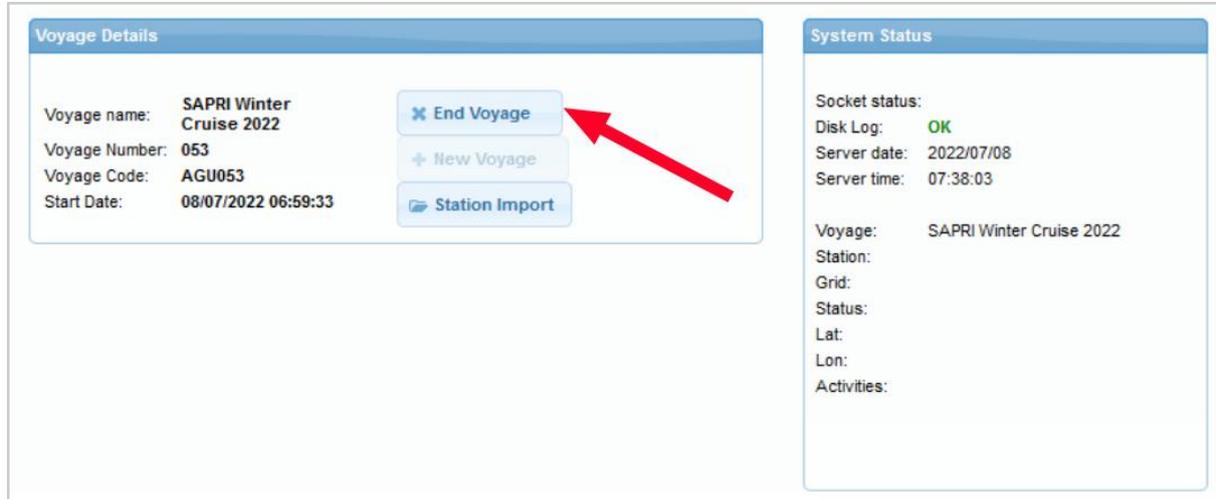
2.5 Closing a cruise

Open the SDS web interface on the SDS Server at <http://172.20.50.233/>

Log in as a science user if not already logged in (see above).

Click on the SCIENCE tab.

Click the End Voyage button.



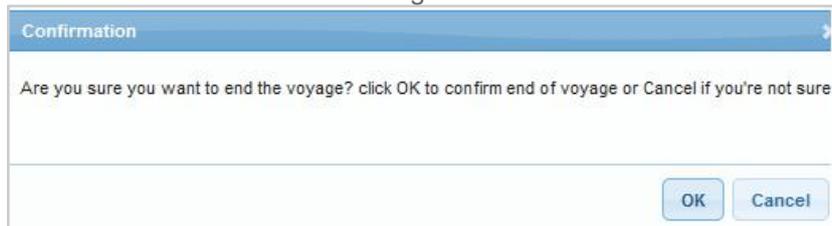
The screenshot shows two panels. The 'Voyage Details' panel on the left contains the following information: Voyage name: SAPRI Winter Cruise 2022, Voyage Number: 053, Voyage Code: AGU053, and Start Date: 08/07/2022 06:59:33. Below this information are three buttons: 'End Voyage' (with a red arrow pointing to it), 'New Voyage', and 'Station Import'. The 'System Status' panel on the right shows: Socket status: Disk Log: OK, Server date: 2022/07/08, Server time: 07:38:03, Voyage: SAPRI Winter Cruise 2022, Station: Grid: Status: Lat: Lon: Activities:

Click the End Voyage button on the popup window:



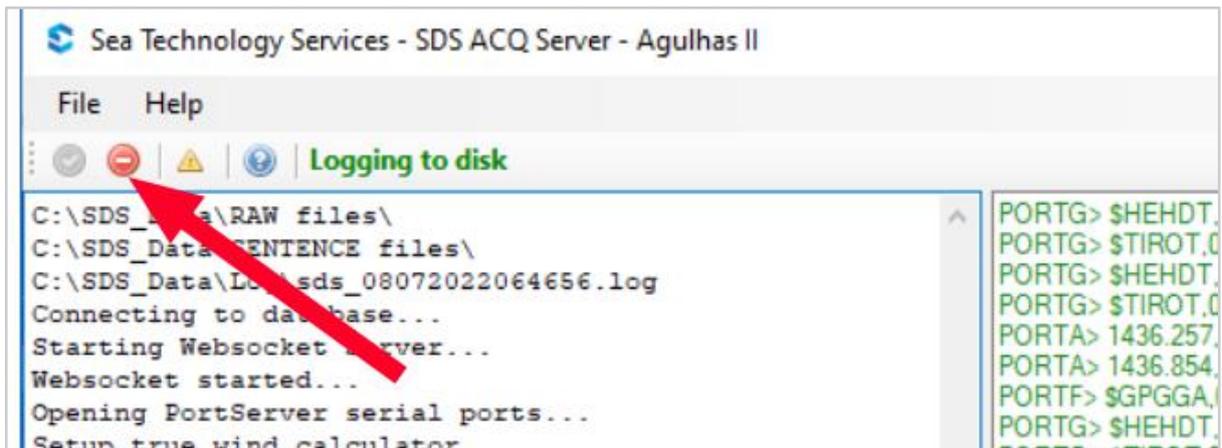
The 'Current voyage details' popup window displays: Voyage Name: SAPRI Winter Cruise 2022, Commence date: 2022-07-08 06:59:33, Voyage Number: 053, and Voyage code: AGU053. At the bottom of the window are two buttons: 'End Voyage' and 'Cancel'.

Click OK on the confirmation dialog:



The 'Confirmation' dialog box contains the text: 'Are you sure you want to end the voyage? click OK to confirm end of voyage or Cancel if you're not sure'. At the bottom right of the dialog are two buttons: 'OK' and 'Cancel'.

Wait a couple of seconds and confirm that the voyage was successfully closed:

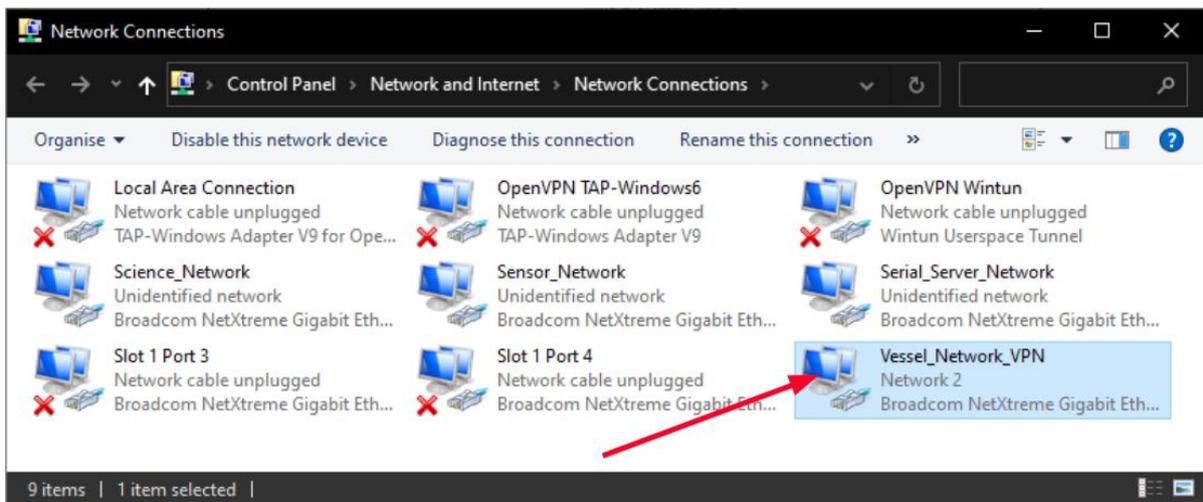


2.6 Enabling Remote Support

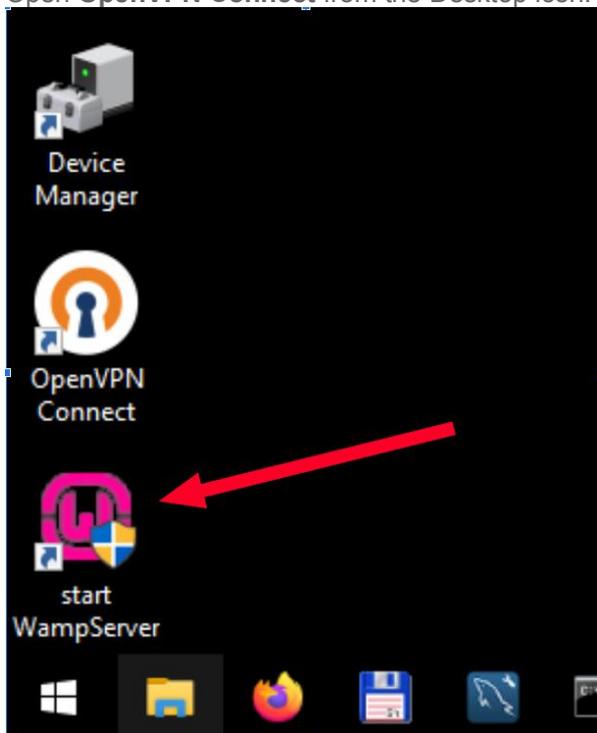
To allow land based support personnel to assist the vessel technicians remotely, the SDS server can connect to a Virtual Private Network via the vessel's satellite link. This link is disabled by default. These instructions describe the steps to enable remote access.

On the Windows server machine, do the following:

Open Network Connection: >> Control Panel\Network and Internet\Network Connections
Right click on the Vessel_Network_VPN connection and click **Enable**.

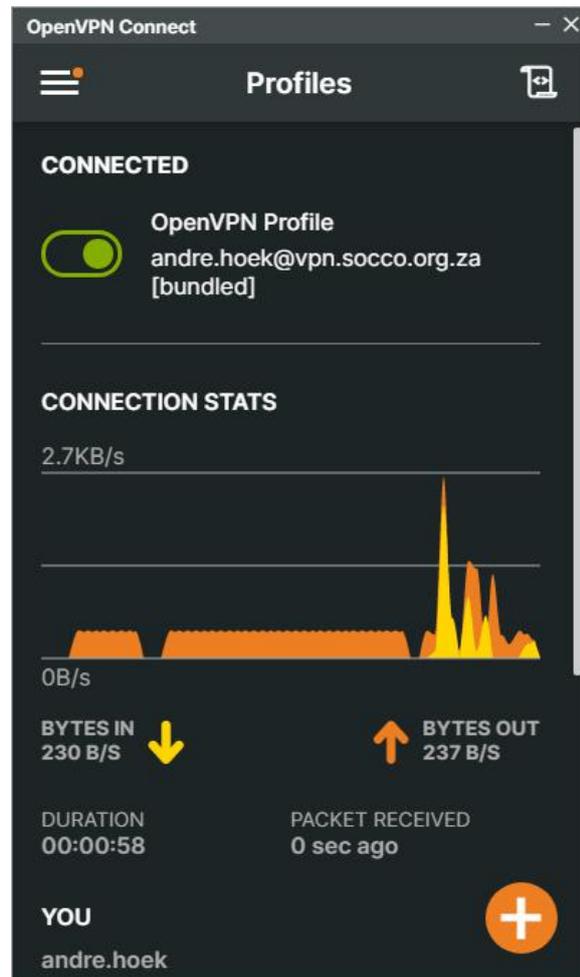
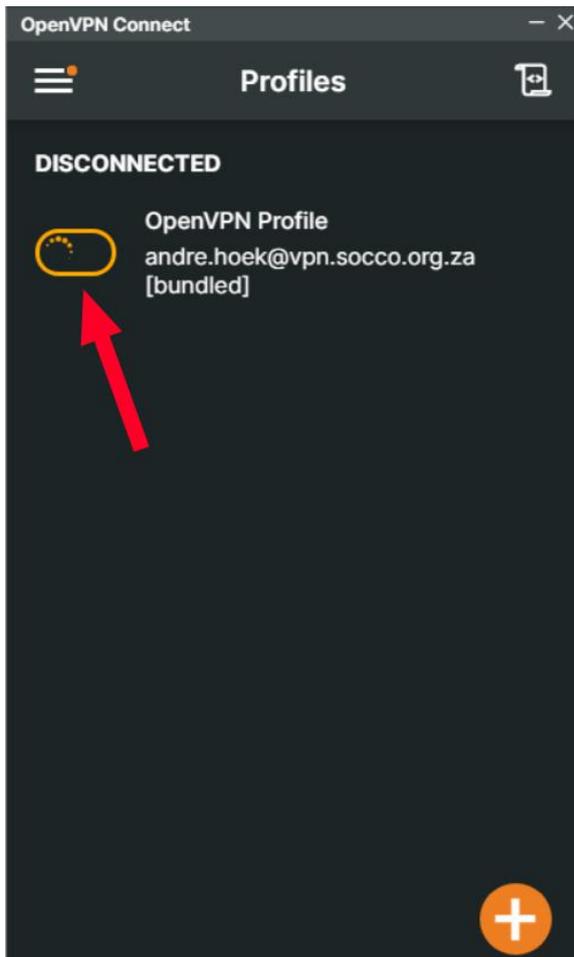


Open **OpenVPN Connect** from the Desktop icon:



Click the slider button next to the VPN Profile:

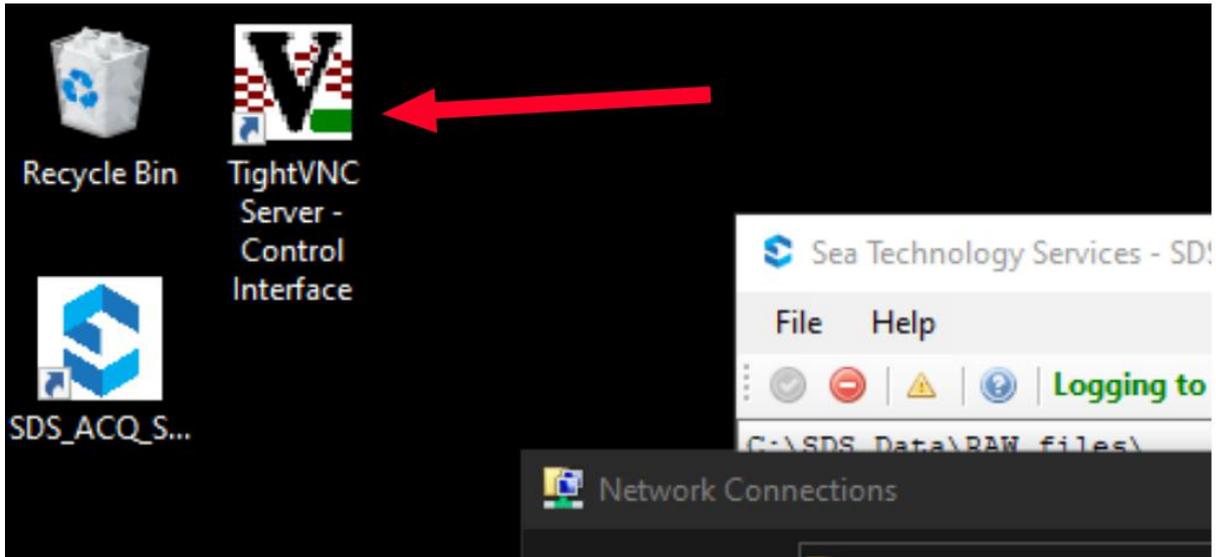
Wait for the VPN to connect:



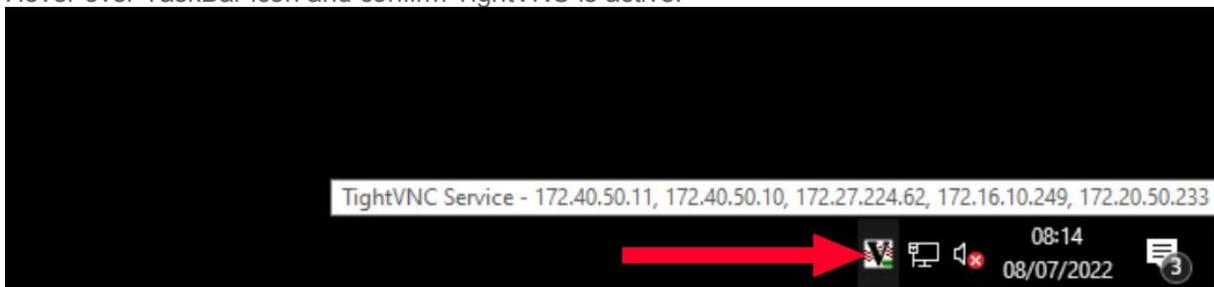
Close the OpenVPN Connect window, an icon should be visible bottom right taskbar to indicate VPN is active:



Open the TightVNC Control Interface from the Desktop shortcut top left:



Hover over TaskBar icon and confirm TightVNC is active:



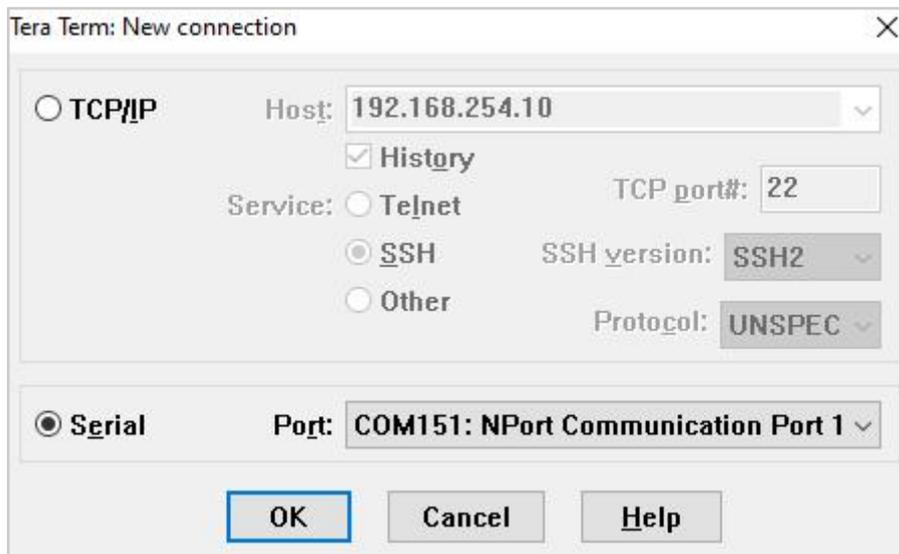
3. HEATFLUX SENSORS DATA COLLECTION

3.1 Procedure for creating new manual log for heat flux sensor:

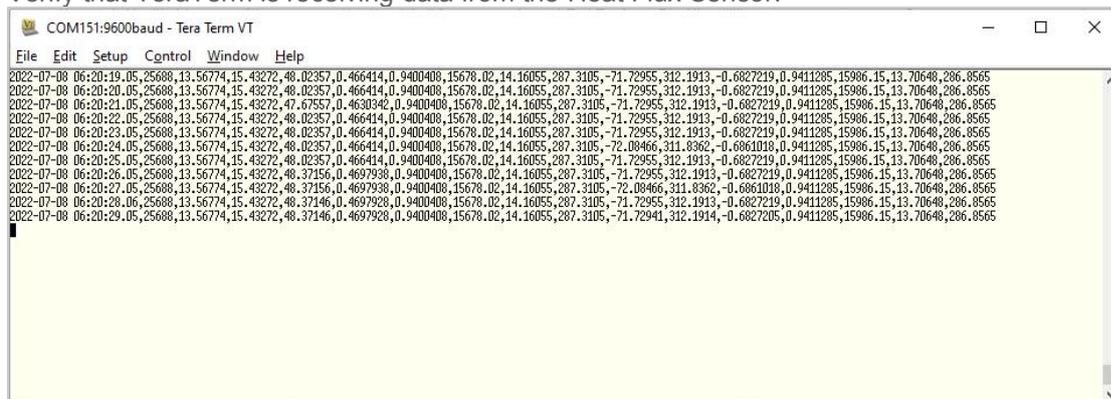
At the time of writing, Heat Flux data is not fed into the SDS database. The procedure below enables data logging via TeraTerm on the SDS Windows Server.

On the Windows SDS server, open TeraTerm.
Heatflux sensor serial logging:

Open TeraTerm.
Select Serial COM151 and press OK.

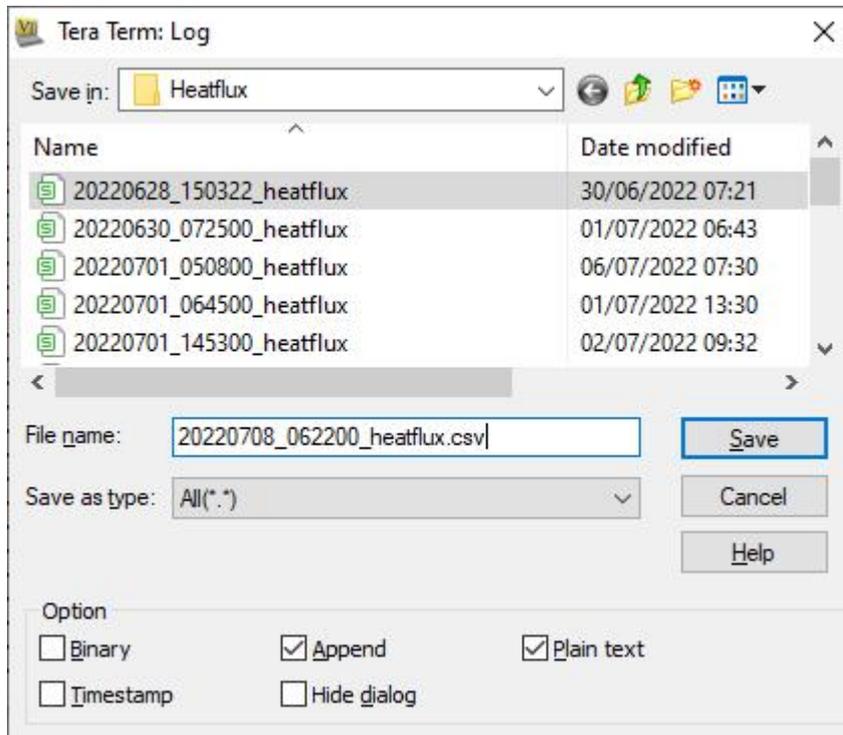


Verify that TeraTerm is receiving data from the Heat Flux Sensor:

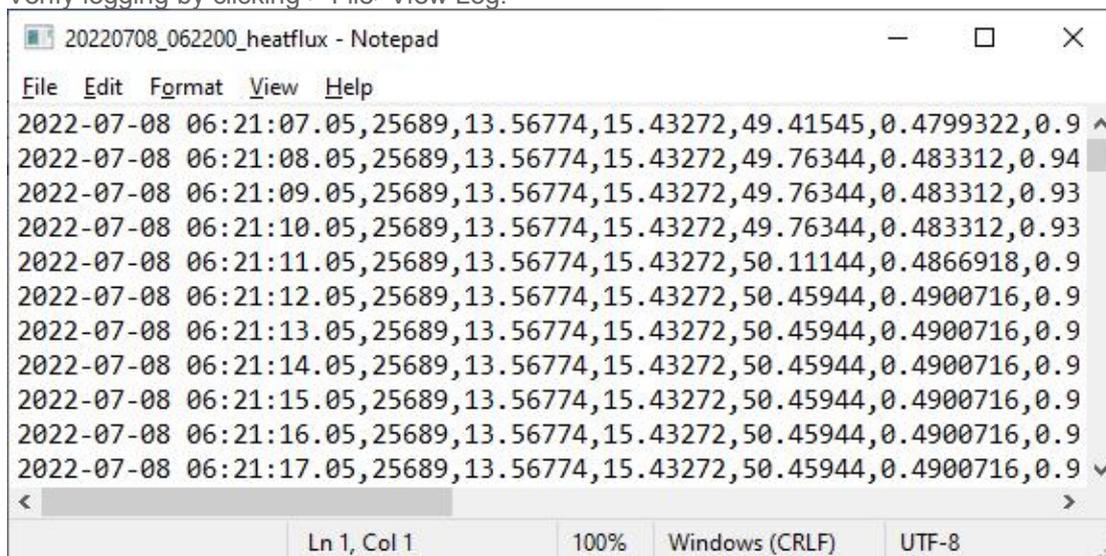


Enable logging in TeraTerm:
 Click File>Log
 Log file location should be: C:\SDS_Data\Heatflux\
 Naming convention:
 YYYYMMDD_HHmmSS_heatflux.csv

Example (08 July 2022, 06:22:00 GMT):
 20220708_062200_heatflux.csv



Verify logging by clicking > File>View Log:



It is recommended that a new log file be created every three days.

Close the current log file and follow the previous steps.