

Annex C

NWIFCA Underwater survey equipment purchased with Defra finance in 2013-4 and 2014-5

Item	Status	Item	Maker	Cost	Notes
PATZ Camera system	Complete	Camera	Kongsberg	£13900 (Kongsberg package)	Camera is in a Kongsberg waterproof case in the Whitehaven shed this box also contains the installation CD and remote control for the camera pan and tilt.
PATZ Camera system	Complete	Cable	Kongsberg		The cable for this unit is in blue case from the previous under water camera.
PATZ Camera system	Complete	Mains lamp	Kongsberg		The mains power lamp for this system is in a cardboard box about 20cm square on the bench in the Whitehaven shed it is Halogen and 230v AC.
PATZ Camera system	Complete	Power Supply	Kongsberg		The power supply for this system is in a wooden box under the bench in the Whitehaven shed.
PATZ Camera system	Complete	Image enhancer	Lynn	£2,950	We have an image enhancer that is used in line with the image coming from the Kongsberg unit. It is made by Lynn and is in a pelli case in the Whitehaven shed.
PATZ Camera system	Complete	Battery lights	Greenaway Marine	£1250 inc VAT	In the shed in Whitehaven in a Pelli case we have a set of twin battery powered lights to accompany this system, to be fitted to the frame and used iteratively to provide the best lighting for this system.
PATZ Camera system	Needs attention	Interface	Star light	£45.81	RS232 converter to USB for the image to be displayed on a computer screen and then manipulated (in Peli case in Whitehaven Shed), I could not make this work and we used Trevor Agnes own TV set to view images.
Side Scan Sonar	Complete	Software	Geocoda	£6,000.00	Mozaic software, can be used to analyse side scan images and compile them in a mozaic.
PATZ Camera system Requires	Needs attention	Frame	McGradies?		This system requires a frame to be made to house the camera and lasers, I have drawn designs for this and they have been sent to Trevor and he has sent them on to McCredie's in Whitehaven. May require prompting.
PATZ Camera system Requires	Needs attention	Camera Clamp	McGradies?		The camera needs a clamp making, I have done technical drawing of this (based upon CEFAS clamps) I have bought a piece of DelryrinTM type plastic sheet which is on my desk in the Carnforth office, in the box there is also some stainless steel grub screws to be used as clamping pins for the lasers.
PATZ Camera system Requires	Needs attention	Lasers	Bowtech	£7660 + £468 (cable) + £310 (spider)	The lasers for system on order. Cable spider made such that if we change the bulb in the lamp to 12v and the top end of the power supply to the light to 12v (I have been talking to Kongsberg about this and it might be possible) we could then plug the lasers into the lamp supply. but until that point we will be using a separate cable to power the lasers.

PATZ Camera system Requires	Needs attention	Derek	McGradies?		The deployment of this equipment may require the reinstatement of the lifting derek on the Solway protector depending upon the final weight of the system. We have 2 drop down cameras and a power supply in a peli case in Whitehaven Shed. The images from these are also viewed using Trevors TV. To be used to guide other equipment or attach to gear whilst its being used etc (novel applications)
Drop down cameras	Complete	Camera	RF Concepts	£465 (total)	
Side Scan Sonar	complete	Head unit	Tritech	£7,122	In a blue rectangular case under the bench in the Whitehaven Shed.
Side Scan Sonar	Being fitted	Cable and reel	Tritech and STR	£1376 (cable) £7495 (winch)	In Whitehaven shed Trevor is working on wiring power to this and making a making attachments to the deck. It has a separate deck lead and power lead.
Side Scan Sonar	Complete	Computer	Getac	£1,931.42	Tablet computer to run survey equipment in Peli case in Whitehaven shed.
Side Scan Sonar	Complete	Converter	Tritech		Blue RS232 to USB converter in pelic case in Whitehaven shed.
Side Scan Sonar	Complete	Hard drives	Samsung	£226.39	On the bench in the shed in Whitehaven one is unopened the other has some survey data on and a backup of all the installations CDs for all the equipment on.
GPS	Being fitted	Vessel position	Hemisphere		Designed to give high accuracy vessel position for survey requirements from defra. It is on the bench in the Whitehaven shed, it has an additional pole mount, is plug and play and gives multiple outputs to suit any of our equipment.
Peli cases	Complete	Peli case	Probrand	£118.18	2 of and an additional Kongsberg case of the same size.