

ANNEX B - Technical Specification Form

No	Equipment	Required Technical specifications	Reference Pictures	Offered Technical specifications	Supplier to indentify detail of Products (Country of Origin, Brand, Model, etc)
1	Boat	<ul style="list-style-type: none"> • Around 6 feet x 20 feet x 2 feet, • Body made of aluminium • Flat workspace in the boat's bottom (e.g. for ease of storing equipment) and with roof. • Must be able to operate in water as shallow as 0.7m • Must have mounting point for outboard motor • Sides of the boat have to be strong enough to mount a crane and winch capable of lifting 60 kg • Warranty: 1 year from hand over • Installation: No • Training: No • Deliver to: 1 to Lao PDR (see delivery address details below) 			
2	Boat engine	<ul style="list-style-type: none"> • 80 or 85 HP • Minimum fuel capacity 80 litres • Warranty: 1 year from hand over • Installation: No • Training: No • Deliver to: 1 to Lao PDR (see delivery address details below) 			

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3	Handheld GPS unit	<ul style="list-style-type: none"> • Hand held GPS. • Waterproof. • Touchscreen • 2 AA batteries. • Screen ~160 x 240 pixels Resolution. • Memory: Internal (at least 4 GB). • Interface: high-speed USB and/or NMEA 0183 compatible. • Waypoints/favorites/locations: at least 2000. • Routes: at least xs200. • Track log: ~10,000 points, 200 saved tracks. • Languages: Thai/ English. • Accessories: USB cable • Includes map of Lao downloaded onto device • Warranty: Minimum one year from hand over • Installation: not needed • Training: not necessary • Deliver to: 2 to Lao PDR (see delivery address details below) 			
4	Horizontal Van Dorn Bottle	<ul style="list-style-type: none"> • Horizontal Van Dorn Bottles: • Designed for trace metal sampling. • May be used for organic sampling to concentrations of mg/L. • Include bottle, carried case, messenger (45-B10)&100 ft. Lie(62-C15). • 5 litre capacity and a minimum of a 30 metre line. • Warranty: Yes – at least one year from hand over • Installation: No – this is a mobile piece of equipment • Training: No • Deliver to: 1 to Lao PDR 			

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5	Logging WQ meter	<ul style="list-style-type: none"> • Manual Water Quality Logger • Capable of recording a set of measurements every 5 minutes for 24 hours, with: • Probes for Dissolved Oxygen, pH, Turbidity, temperature (0°-50°), conductivity and ORP (oxidation reduction potential) • Each probe with 10m cables. • Warranty: Yes – at least one year from hand over • Installation: No • Training: Yes • Deliver to: 1 to Lao PDR (see delivery address details below) 			
6	Portable field radiometer	<ul style="list-style-type: none"> • Portable field radiometer: • With submersible spherical sensor for measuring photosynthetically active radiation (PAR) • With 20m cable. • Warranty: Yes – at least one year from hand over • Installation: No • Training: Yes • Deliver to: 1 to Lao PDR (see delivery address details below) 			
7	Field fluorimeter	<ul style="list-style-type: none"> • Field fluorimeter with probe and 20m cable • Capable of measuring total chlorophyll a and distinguishing "class" level contributions in algae from at least: (i) chlorophyta, (ii) cyanobacteria, (iii) diatoms and (iv) cryptophyta (all in vivo). • Must have a simple calibration process • Should have high sensitivity • Must provide training and 2 years after sales service 			

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8	Narrow band spectrophotometer	<ul style="list-style-type: none"> • Laboratory spectrophotometer • With narrow band (pass) width (0.5 to 20 nm) • Capable of reading absorbance at 750, 665, 664, 647 and 630 nm. • For measuring chlorophyll • Warranty: Yes – at least one year from hand over • Installation: No • Training: Yes – probably about 1 day on the equipment • Deliver to: 1 to Lao PDR 			
9	Camera and tripod	<ul style="list-style-type: none"> • Waterproof • GPS • Preferably at least 12 mega pixels • Fits tripod with minimum 1.2metre height • Accessories: USB cable, manual, tripod (that can extend to at least 1.2metres height) • Warranty: Minimum one year from hand over • Installation: not needed • Training: not necessary • Deliver to: 2 to Lao PDR 1 to Cambodia (see delivery address details below) 			
10	ADCP unit	<ul style="list-style-type: none"> • 9 (transducers) - Dual 4-beam 3.0 MHz/1.0 MHz • Echosounder • Depth range: at least 60metres • Bottom tracking: Yes • Software should be able to collect a loop test and post process the run to establish bed load movement • Ideally ICEM would like to preview software • Warranty: Minimum one year from hand over • Installation: not needed • Training: No but may require refresher on software and specific instrument details from supplier • Deliver to: 1 to Lao PDR 1 to Thailand (see delivery address details below) 			

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11	USGS D-96 Sediment Sampler	<ul style="list-style-type: none"> • Depth-integrated collapsible-bag suspended-sediment/water-quality sampler capable of collecting a 3-liter sample • Warranty: Minimum one year from hand over • Installation: not needed • Training: No • Deliver to: 1 to Lao PDR 1 to Thailand (see delivery address details below) 			
12	Automatic Winch	<ul style="list-style-type: none"> • Consists of three parts (a crane, sounding reel and variable speed drive). • To be mounted on a 20' x 6' boat • Must be capable of raising and lowering at least 60kg at a rate of 1m/s off the edge of a boat. • Warranty: Yes – at least one year from hand over • Installation: No – this will be mounted on a boat • Training: No • Deliver to: 1 to Lao PDR 1 to Thailand (see delivery address details below) 			
13	Bed grab sampler	<ul style="list-style-type: none"> • Can be deployed in 30 metres of water that is flowing at 2 or more metres/second. • Warranty: Yes – at least one year from hand over • Installation: No • Training: No • Deliver to: 1 to Lao PDR (see delivery address details below) 			

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14	2030 mechanical flow meter	<ul style="list-style-type: none"> • Can measure flow rates of 0.1 – 7 metres per second • Is suitable for attaching to bongo and conical nets • Warranty: Yes – at least one year from hand over • Installation: No • Training: No • Deliver to: 5 to Lao PDR 1 to Cambodia (see delivery address details below)			
15	Microscope	<ul style="list-style-type: none"> • Fish larvae microscope with light source • Large objective lenses to maximise light intake • Stereozoom microscope with zoom 0.7 - 7x • Camera port • Connectable to computer • Warranty: Yes – at least one year from hand over • Installation: No • Training: No • Deliver to: 1 to Lao PDR 1 to Cambodia (see delivery address details below)			
16	Bongo nets	<ul style="list-style-type: none"> • mouth opening 100cm diameter • net length 5 metres • mesh size 1mm • shape of the net is cylindrical, however the end of the net should be tied to a collecting bottle, and this makes it a conical shape when in use • Warranty: Yes – at least one year from hand over • Installation: No • Training: No • Deliver to: 5 to Lao PDR 1 to Cambodia (see delivery address details below)			

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17	Fish larvae sampling nets for impoundments	<ul style="list-style-type: none"> • mouth opening 60cm diameter • net length 1.8 metres • mesh size 1mm (for 120cm length at net opening end) and 330microns (60cm length at cod end) • shape of the net is conical. • there should be two nets mounted side by side (see image to right) <ul style="list-style-type: none"> • Warranty: Yes – at least one year from hand over • Installation: No • Training: No • Deliver to: 5 to Lao PDR 1 to Cambodia (see delivery address details below) 			

Address for delivery in each country

Lao PDR:

MRC-GIZ Cooperation Programme
 Deutsche Gesellschaft für
 Internationale Zusammenarbeit (GIZ) GmbH
 GIZ Office Vientiane
 Watanak Nyai Road, House #247/ unit 19,
 Thaphalanxay Village, Sisattanak District
 P.O. Box 9233
 Vientiane Capital
 Lao PDR

Date

Cambodia:

MRC-GIZ Cooperation Programme
 Deutsche Gesellschaft für
 Internationale Zusammenarbeit (GIZ) GmbH
 GIZ Office Phnom Penh
 # 17, Street 306
 Boeung Keng Kang 1
 P.O. Box 81
 Phnom Penh
 Cambodia

Sign and stamp by supplier

Thailand:

C/- Mrs.Chanthana Lakawattana
 398/4 Chai khong Road, Chiang Khan Sub district,
 Chiang Khan District, Loei 42110
 Tel: +66847292388