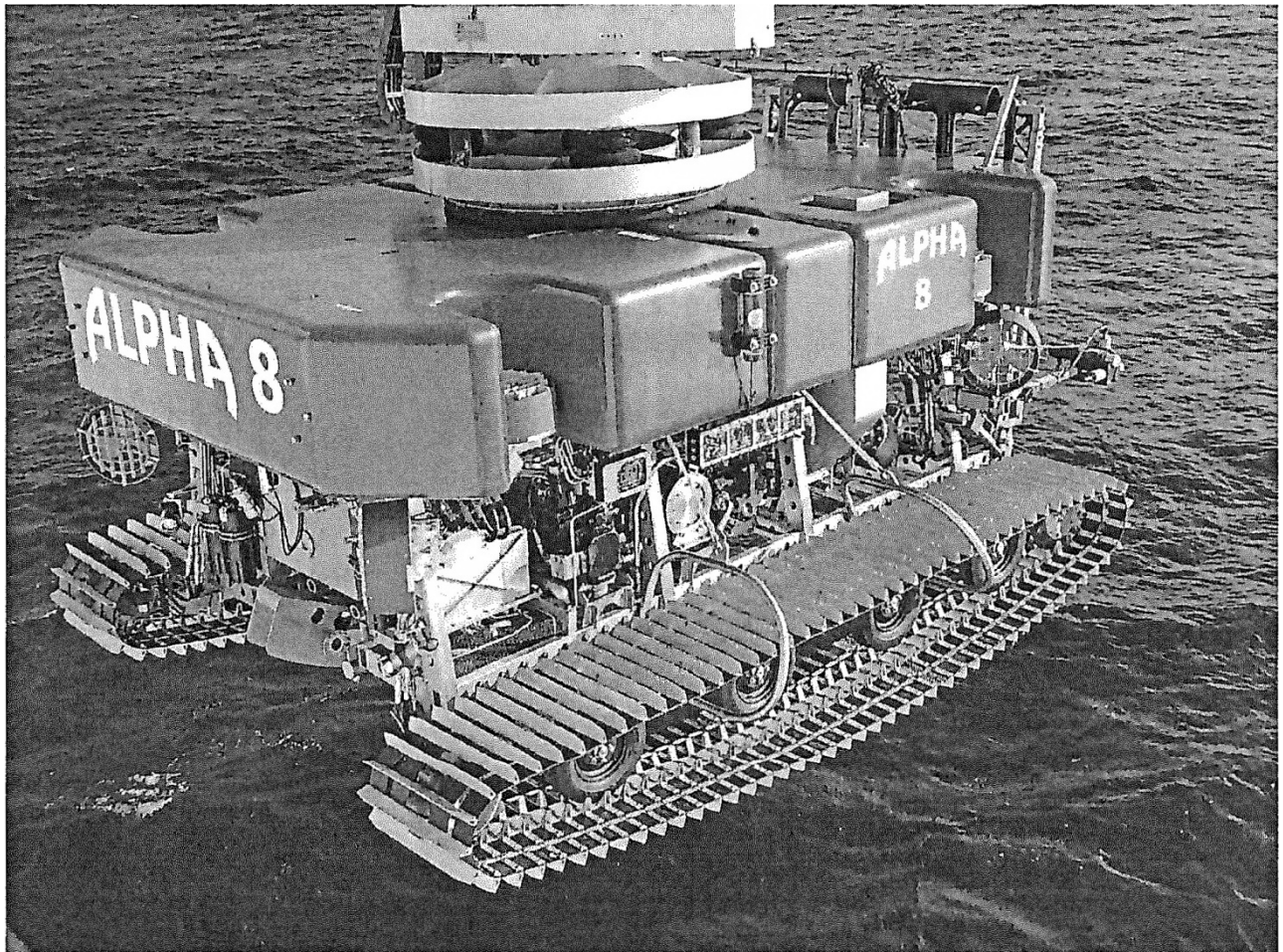


CABLE BURIAL ROV SYSTEMS QUOTATION



SUMMARY

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1. INTRODUCTION

On behalf of its customer, requested SIMEC SASU to provide a quotation for the design and manufacturing of 2 jetting trencher ROVs systems dedicated to maintenance on board their vessels.

SIMEC is honored to present is proposal for the manufacturing those 2-meter cable burial ROV systems, including the installation onboard of this vessel.

A complete POW is provided with all details concerning the design, manufacturing, FAT, installation and sea trials.

The specification attached has to consider as a compromise between the requirements and our advice coming from our expertise and are fully customizable.

1.1 Plan of work

The following items are included in Plan of work:

- Schedule of:
 - Each step of the manufacturing
 - FAT
 - Delivery
 - Installation on board host vessel
 - Sea trials
- Miles stone of payment

2. TECHNICAL SPECIFICATIONS

2.1 Principle Characteristics

Vehicle Operating Range	7-3000 m
Vehicle Power rating	400 kW (540 HP)
Vehicle Speed	
Free Swimming	Forward : 3 Knots
	Lateral : 2 Knots
	Vertical : 1.5 Knots
On Track	Up to 2400 m/h
Front Tool	Yes
Back Tool	
Extended Tool	0-2 trenching depth
Width mm	400mm
Depressor	
Independent	Yes
Cable Detector	2 Units fitted on the depressor

Dimensions (Transport without tracks)	
Length	<6m
Width	<2.1m
Height	<2.5m
Vehicle dimensions with tracks	
Length	<6m
Width	<4.3m
Height	<2.5m
Weight	
In air	< 13 T
In Sea	Neutral (free flying allowed)
Buoyancy	Syntactic Foam
Auto Mode	
Auto Depth	Yes
Auto Heading	Yes
Auto Altitude	Yes
Auto Tracking	Yes

SIMEC TECHNOLOGIES

2.3 Electrical and Telemetry

Power requirement	Dictated by design
Required supply Power	690V, 60Hz
Telemetry	
Video channel	8
Ethernet	1
Responder	1
RS485	4
RS232	4
Arcnet	1

2.4 Control Van

Size	20 feet
Power supply	690V, 60Hz or 220V 60Hz
Control equipment	
Communication	Yes
Air cooling	Yes
Control Armchair	2
Computer	5
Video screen LCD	12
KVM	1 or 2
Video Overlay	1
Videoo Matrix	1
GFM	1
Winch Control	1
Printer	1
UPS	2

SIMEC TECHNOLOGIES

2.5 Vehicle Equipment

Power repartition	
Jetting HP	150Kw
Jetting BP	100Kw
Hydraulic	150Kw
Cable Tracker	
TSS	440 and 350
Sonar	
Tritech	Blueview
Manipulator	Schilling Conan 7 function x 2
Jaw type	Normal and intermeshing
Cable cutter	
Cable Gripper	
Compass	
Number of compass	2
Type	Tritech IGC
Light	
Number of Tungsten Light dimmable (250W)	6
Number of Led Light dimmable (250W)	6
Camera	
NSTC Color Zoom 18:1	4
ULL Camera	1
HD SD Camera	1
Electrical Pan & Tilt	
Number of P&T	3
Type	Schilling SA-A-1129-MAS
Depth sensor	YES
Altimeter	PA500
Pressure Sensor	Up to 8
PT100	YES
Temperature and Salinity probe	YES
Responder mode	YES

SIMEC TECHNOLOGIES

2.6 LARS and Winch

SeaState	Sea state 5 swl 15tons
Winch Drum	
Umbilical capacity	3200m
Umbilical	3300m
Drum temperature	YES
Water Cooling	YES
Hydraulic Power Unit	YES
Fleeting	YES
Fail safe	YES
Manual Speed control	Low/Normal
Emergency	YES
Control Van Remote	YES
Length Display	YES
Cable Tension	YES
HPU Control	YES
Speed and in/out Control	YES
Emergency	YES
Control Kiosk	
Umbilical Winch Control	YES
A-Frame Control	YES
Docking Head Control	YES
HPU Instrumentation	YES
HPU Control	YES
Emergency	YES

2.7 Power Distribution

Size	Fitted in an existing room
Air Cooling	YES
Electrical Cabinet	YES
Fast Connectors	YES
Transformer	
HPU 440V/4000v or 3000V	YES
Jetting	YES
Instrumentation	YES
Power conversion for Control Van	YES
Soft start	YES
GFM Sensor	YES
Umbilical Junction box	YES
Safety Protection	YES

SIMEC TECHNOLOGIES

2.8 Bridge Display

Flight Case	1
Power Requirement	220V or 110V
LCD Screen	1
Video matrix	1
Multimedia recorder	1
Computer	1
Communication	Yes

2.9 Workshop

Size	Fitted on an existing room
Air Cooling	YES
Tools	Full Equipped
Cabinet	YES
Communication	YES

2.10 Spare Parts for each Vehicle

Power VAN	
Transformer	
HPU 690V/4000V or 3000v	1
Jetting	1
Instrumentation	1
Power conversion for Control Van	1
Soft Start	
HPU	1
Jetting	1
GFM sensor	1
Electric Component	1
Control VAN	
LCD Screen	2
Computer	2
KVM	1
Video Matrix	1
Multiplexer spare card	1 set
ROV	
Power Pack	1
Jetting Motor	1
Servo Valve	
Solenoid	8
Proportional	8
TSS Motor	1
Track Motor	2

SIMEC TECHNOLOGIES

Tracks	1
Hydraulic Hoses	2 set
Electronics	1 set
Transformer	1
Mechanical coupling	2
Mechanical coupling parts	1 set
Hydraulic Filters	16
Pressure sensor	6
Temperature sensor	4
Tungsten light1TemperatureSensor	6
LED light	2
HID	1
Tungsten Bulbs	30
Led bulbs	12
Pan and Tilt unit	1
Camera Zoom	2
ULL Camera	1
HD SD Camera	1
Sea Hub	1
SONAR	1
Profiler	1
TSS COIL	3
Altimeter	1
HP Pump	1
BP Pump	1
Piping spare	1 set
Cable detector for Depressor	2

Sonar	1
Profiler	1
Sea Hub	1
ROV Power Pack	2
Jetting Motor	1
HP Pump	1
BP Pump	1
Altimeter	1
Front Tool	1
Black Tool	1
Depressor	1

3. CLASSIFICATION AND STANDARD

3.1 Electrical Safety

All electrical equipment will be designed and delivered in accordance with European guidelines for the safe use of electricity underwater and safe high voltage procedures. All main electrical systems shall be isolated by means of unique key switches. Main subsea electrical supplies will not operate if an earth circuit is not present.

3.2 International Regulation

All survey certificates and quality assurance documentation will be supplied within the documentation system.

3.3 Classification society

Lifting appliances will be load tested and witnessed in accordance with Lloyd's regulations for lift appliances. Original certificates will be provided in a Lift Appliance register

3.4 Measurements

All dimensions, graduations and instrument scales within the ROV system and the documentation are to be shown in S.I. units approved by the purchaser.

5. PLANNING