

## QUOTATION NOTICE NO. 1 FOR 2013-14

The Executive Engineer, Tilari Canal Division No.1, Charathe-Sawantwadi, Dist-Sindhudurg, Pin Code No. 416510, Telephone No 02363/272213 is inviting sealed quotations from various experienced suppliers for preparing estimate of continuous online discharge measurement & remote monitoring and control system for Tilari Canal as given below.

### SCHEDULE

Sr. No.	Particulars	Qty.	Unit	Rate	Amount
1	Real time canal monitoring & control system having interfacing with VSAT telemetry including remote monitoring & canal Control software etc. complete.	1	No.		
2	Remote monitoring system having interfacing with GSM/GPRS telemetry system & remote monitoring software etc. complete.	2	No.		
3	GSM/GPRS based communication system for real time data collection from Master station.	2	No.		
4	Trends/Graph Color laser Printer	3	No.		
5	Un-inrruptible power supply (UPS) of 1 KVA capacity with 4 hours backup time.	3	No.		
6	Doppler type flow measurement sensor for measuring flow in the canal at D/S of the CR Gates.	5	No.		
7	Solar Power Supply for canal gate control system including charge controller, PV pannels & Batteries etc complete.	4	No.		
8	Remote Terminl Unit (RTU) with built in control system having interfacing with solar powered canal gate actuator, Gate measurement system, Level sensor, Dopler flow sensor & VSAT telemetry for data communication.	4	No.		
9	Canal Gate Actuator operating on Solar power supply for operation of canal(HR/CR) gates having interfacing with RTU etc. complete.	10	No.		
10	Gate Measurement System for extent measurement of gate opening of canal (HR/CR) gates etc complete.	10	Nos.		
11	Canal Level sensor for measurement of U/S level	4	Nos		
12	Equipment Housing Cubicle for computer and peripherals	3	No.		
13	Equipment Housing Cubicle for equipments at canal field stations.	4	No.		
14	VSAT communication system.	5	Nos		

15	Instrument grade control cable 4 core 2.5 sq. mm	800	Mtr.		
16	Pipe in Pipe type GI plated Earth electrode with necessary back fill compound etc., complete.	6	No.		
17	Earth conductor 20x 3 mm size	60	kg.		
18	GSM based on line information Management system to get on line information on the cell phones of concern authorities.	1	No.		
19	Installation Commissioning of the system	1	Job		
20	Comprehensive annual maintenance of the system	36	Months		
21	Construction of Gauge House of size 3mtr X 3 Mtr	4	Nos		

The rates shall include all Taxes/ duties and transportation charges etc.

The rates are invited for only preparing estimate and not for actual supply of material/ instruments however no compulsion will be remained for approval of rates.

Right is reserved to reject any or all quotations without assigning any reason thereof.

Sealed quotations should be reached in the office of the Executive Engineer, Tilar Canal Division No.1, Charathe-Sawantwadi from 16-12-2013 to 30-12-2013 upto 13.00 hrs. The all received quotations will be opened on 30-12-2013 at 15.00 hrs. if possible or thereafter as early as possible.

Executive Engineer,  
Tilari Canal Division No.1,  
Charathe-Sawantwadi

**दरपत्रक सुचना क्र.१ सन २०१३-१४**

कार्यकारी अभियंता, तिलारी कालवा विभाग क्र.१, चराठे-सावंतवाडी, जि. सिंधुदूर्ग पिन कोड क्र. ४१६५१० दूरध्वनी क्र. ०२३६३/२७२२१३ हे तिलारी कालव्याचे कंटयुनिअस ऑनलाईन डिसचार्ज मेझरमेंट व रीमोट मॉनिटरींग आणि कंट्रोल सिस्टीमचे अंदाजपत्रक तयार करणेसाठी लागणारे साहित्य /उपकरणे याकरिता संबंधीत नामांकित व अनुभवी पुरवठादारांकडून सिलबंद लखोटयातून दरपत्रके मागवीत आहेत..

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15	Instrument grade control cable <b>4 core 2.5 sq. mm</b>	800	Mtr.		
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उपरोक्त पुरवठ्याचे दर हे सर्व करांसहीत व वाहतुक खर्चासह समाविष्ट असावेत.

सदरचे दर हे केवळ उपरोक्त कामाचे अंदाजपत्रक तयार करणेसाठी मागविणेत येत असून प्रत्यक्ष पुरवठ्यासाठी नसल्याने दर मंजूरीबाबत कोणतेही बंधन राहणार नाही.

कोणतेही एक अथवा सर्व दरपत्रके नामंजूर करण्याचे अधिकार सक्षम स्तरावर राखून ठेवण्यात आलेले आहेत.

सिलंबंद दरपत्रके कार्यकारी अभियंता, तिलारी कालवा विभाग क्र.१, चराटे-सावंतवाडी यांचे कार्यालयात दि. १६-१२-२०१३ ते ३०-१२-२०१३ या कालावधीत दुपारी १३.०० वाजेपर्यंत पोहोचणे आवश्यक आहे. प्राप्त झालेली सिलंबंद दरपत्रके शक्यतो दि. ३०-१२-२०१३ रोजी दुपारी १५.०० वाजता अथवा त्यानंतर शक्यतो लवकरात लवकर उघडणेत येतील.

कार्यकारी अभियंता,  
तिलारी कालवा विभाग क्र.१,  
चराटे-सावंतवाडी

**दरपत्रक सुचना क्र.१ सन २०१३-१४**

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दूरध्वनी क्र . ०२३६३/२७२२१३ हे  
तिलारी कालव्याचे कंटयुनिअस  
ऑनलाईन डिसचार्ज मेझरमेंट व रीमोट  
मॉनिटरिंग आणि कंट्रोल सिस्टीम चे  
अंदाजपत्रक तयार करणेसाठी लागणारे  
साहित्य /उपकरणे याकरिता संबंधीत  
नामांकित व अनुभवी पुरवठादारांकडून  
सिलबंद लखोटयातून दरपत्रके मागवीत  
आहेत.

इच्छुक पुरवठादारांनी सविस्त  
दरपत्रक सुचना महामंडळाचे  
<http#kidc.maharashtra.etenders.in>  
या संकेत स्थळावरुन दि. १६-१२-२०१३  
ते ३०-१२-२०१३ या कालावधीत दुपारी  
१३.०० वाजेपर्यंत उपलब्ध करुन  
घ्यावीत.

कार्यकारी अभियंता,  
तिलारी कालवा विभाग क्र.१,  
चराठे-सावंतवाडी

**Quotation Notice No.1 for 2013-14**

The Executive Engineer, Tilari Canal Division No.1, Charathe-Sawantwadi, Dist-Sindhudurg, Pin Code No. 416510, Telephone No 02363/272213 is inviting sealed quotations from various experienced suppliers for preparing estimate of continuous online discharge measurement & remote monitoring and control system for Tilari Canal

Detailed notice is available on Govt. of Maharashtra sub portal [http#kdc.maharashtra.etenders.in](http://kdc.maharashtra.etenders.in) from 26-12-2013 to 30-12-2013 at 13.00 hra.

Executive Engineer,  
Tilari Canal Division No.1,  
Charathe-Sawantwadi

# 1 SPECIFICATIONS OF PRINCIPAL HARDWARE ITEMS

## 1.1 INDUSTRIAL GRADE COMPUTER CONTROL SYSTEM (IPC)

Make	:	Advantech / IEI / Equivalent
Processor	:	Pentium IV Core 2 Duo @ 2.4 GHz or higher
FSB	:	1066 MHz.
Chipset	:	INTEL
Memory	:	2 GB DDRII
Hard Disk	:	500 GB SATA
Optical Drive	:	DVD writer
Keyboard	:	Keyboard
Mouse	:	Scroll Mouse / USB
Monitor	:	17" LCD monitor of standard make
Expansion Slots	:	5 PCI, 1 AGP
Ports	:	4 serial, 2GLAN, 1 Parallel, 4 USB, 1 VGA
Sound	:	On-Board
Ethernet	:	On-Board Gigabit Ethernet
O/S	:	Windows 7
Power Consumption	:	400VA @ 240V AC, 50Hz.

## 1.2 GSM /GPRS COMMUNICATION SYSTEM

Type	:	GSM /GPRS Modem
Make	:	TMAS / Siemens/ Phoenix/ V3nous/ Equivalent
Input Supply	:	12 V DC
Input signal	:	RS-232 output from DASTU / PC
Transmit power	:	1 Watt
Operating frequency	:	900/1800/1900 MHz Tri band
Receive sensitivity of modem	:	-102 dBm
Dynamic range	:	62 dB
Frequency Tolerance	:	$\leq \pm 0.1$ ppm
SIM card holder	:	Internal
Antenna Interface	:	Yes
Operating Temperature	:	-25 to 60°C
Humidity	:	0-95 % NC

## 1.3 COLOR LASER JET PRINTER:

Type	:	Laser jet
Size	:	A4 Size
Make	:	Canon/HP/ Equivalent
Power Consumption	:	250VA

#### 1.4 UN-INTERRUPTIBLE POWER SUPPLY [UPS]:

Make	:	Transtech/ Emerson/ APC/ Equivalent
Capacity	:	2 KVA
Input	:	240V AC, 50Hz. + 10%
Batteries Voltage	:	48 for 1 KVA
Backup	:	4 Hours
Protection	:	under / over voltage, overload,
Indications	:	Power, Battery Low, Trip, Fault,

#### 1.5 DOPLER FLOW SENSOR:

Type	:	Doppler type
Application	:	Irrigation canals
Sampling Range	:	0.2 to 20 Meter
Accuracy	:	depth < 3 Mtr $\pm$ 0.3 Cm, depth $\geq$ 3 mtr $\pm$ 0.1%
Resolution	:	0.1 cm/s
Memory	:	4 MB internal
Operating Temp	:	-5 to 60°C
Horizontal beam width <sup>2</sup>	:	1.4°
Vertical beam width <sup>2</sup>	:	2.9°
<u>Water Level</u>		
Vertical beam range	:	0.15 to 10 Mtr.
Input power	:	7-15 VDC
Power consumption	:	0.5 to 0.7 watt
Calculations	:	All Calculations Internally Performed

#### 1.6 SOLAR POWER SUPPLY:

##### **CHARGE CONTROLLER**

Type	:	Solar
Capacity	:	As per site requirement
Input	:	10-18 V AC from Photo Cell
Protection	:	under / over voltage, overload,
Indications	:	ON, Battery Low, Trip,
Color	:	Siemens Gray (RAL7032)

##### **SOLAR PANELS**

Make	:	Tata BP / Photon/ Equivalent
Wattage	:	As per site requirement
Input	:	solar radiations
Type	:	Photovoltaic mono/multi crisline type
<b>Battery</b>		
Type	:	SMF
Voltage	:	12 VDC
Battery Bank	:	To be asses by bidder as per power requirement
Capacity	:	As per site requirement.



## 1.7 REMOTE TERMINAL UNIT WITH BUILT IN PLC ( RTU)

Type	:	Microprocessor / Microcontroller based
Processor	:	32 Bit
Power Supply	:	10-30V DC
Input	:	4 Analog inputs (Failsafe) 8 Digital inputs 8 Digital Outputs
Communication ports	:	Two Serial RS-232, One RS-485, One SDI-12, Two USB, One Ethernet.
Display	:	Graphics / LCD display
Keypad	:	membrane Keyboard
Software	:	Special purpose embedded software
Memory	:	8 MB NV RAM with RTC expandable up to 32 GB
Data Storage	:	365 days @ 15 min. interval (first in first out)
Data Retrieval	:	RS-232 under software control
Enclosure	:	Standard

## 1.8 CANAL GATE ACTUATOR

Make	:	Mechatronics / Marsh/ Rotork/ Equivalent
Type	:	DC Actuator with 8 RPM @ output
Input	:	60 VDC
Output	:	4-20 mA Current
Motor	:	60 V operated DC motor with suitable Torque for operation of Canal Gates.
Colour	:	Standard
Motor RPM	:	1500

## 1.9 GATE MEASUREMENT SYSTEM

Make	:	Any Standard
Type	:	Non contact Rotational type (Suitable for Canal Gates)
Resolution	:	One (1) cm as per ISO standard.
Accuracy	:	+ 1% of the range
Repeatability	:	+ 1cm
Operating Temp	:	0 to 50 oC
Power	:	12-30 V DC Ripple free power source
Output Signals	:	4 to 20 mA OR RS 232 / 485
Range	:	12.00 mtrs
Display	:	LCD Display

## 1.10 CANAL LEVEL SENSOR

Make	:	Siemens / solid / E+H /ABB/ Equivalent
Type	:	Ultrasonic
Power Supply	:	24 V DC / 110 – 230 V AC (250 mA Typical)

Output	: 4-20 mA / RS-485
Accuracy	: ± 0.25% of the range
Repeatability	: ± 1% of the range
Range	: 0-8 Mtr., 0-15 Mtr., 0-50 Mtr.
Sensitivity	: Ultra High
Certifications	CE,

### 1.11 EQUIPMENT HOUSING CUBICLE

Make	: Any Standard
Type	: Equipment housing cubicle
Size	: 19" 30 U
Material	: 16/14 SWG CRCA sheet
Rating	: Suitable for indoor use
Colour	: Structured Siemens Gray (Powder coated)
Wiring	: Internally wired as per Requirement

### 1.12 VSAT Transreceiver

Type	: VSAT Terminal
Make	: Gilat/ Hughes / Equivalent
<b>Out Band Carrier</b>	:
Standard	: DVB-S
Carrier Bit Rate	: 340 Kbps – 66 Mbps
Modulation	: QPSK
Coding	: Viterbi & Reed somolon or Turbo
FEC rate	: ½, 2/3, ¾, 5/6, 7/8
<b>Inbound Carrier</b>	:
Access Scheme	: Combined TDMA, FDMA
Bit Rate	: 60 Kbps – 2 Mbps ( as per requirement)
Modulation	: GMSK
Coading	: Turbo coding FEC 3/4, 7/8
<b>Out Door Unit</b>	:
Antenna Size	: Ku Band 0.55 m to 1.2 m, C band 1.8 m
Operating Temp	: -40 to + 60 C
Humidity	: Up to 100 %
Transmitter ODU	: 1W, 2W Ku Band
LNB	: Standard TVRO type
<b>Indoor Unit</b>	:
Operating Voltage	: 100-240 VAC
RF Input / Output	: Two F Connectors, 75 Ohm Female
Data Interface	: 100 Base T / RS-232 ( Optional)
Size	: 300 X 233 X 50 mm

### 1.13 INSTRUMENT GRADE POWER & CONTROL CABLE

The PVC armoured cables to be used on work shall be heavy duty instrument grade with copper conductor shall be got approved from executive engineer. All cable ends shall be terminated electrically by suitable lugs and provided with adequate size brass cable glands for mechanical strength.

A continuous earth wire of required size should be laid along with the cables the cost of which should not be claimed by the contractor. The cables shall be bent with radius not less 16 times dia of the cable. The cable entering the switchgears required to have sharp bends shall be provided with connecting chambers. The cables shall be one length and no joints will be allowed. The portion of these cables to be erected on wall shall follow the following procedure. The position of cable saddles will have clearance 50 cms between the saddles.

<b>Environment Conditions</b>	:	
Operating Temperature	:	- 5 to + 50 oC
Storage Temperature	:	- 40 to + 70 oC
Relative Humidity	:	Up to 90 %