

**CH. PERVAIZ ELAHI INSTITUTE OF CARDIOLOGY, MULTAN**  
**MINUTES OF THE MEETING**

A meeting of TEC "Technical Evaluation Committee" for purchase of Invasive Cardiac Monitor with BIS, Part-B (Qty-20) for Ch. Pervaiz Elahi Institute of Cardiology, Multan was held under the chairmanship of **Prof. Dr. Haider Zaman**, Professor of Cardiac Surgery & Chairman TEC, Dated: 29.01.2016 at 02:30 Pm in the office of the Director Technical of this institute.

The following members were present in the meeting:-

1. Prof. Dr. Haider Zaman, Prof. of Cardiac Surgery	Chairman
2. Prof. Dr. Rana Altaf, Prof. of Anesthesia/End User	Member
3. Dr. Tariq Abbas, Associate Prof. of Cardiology	Member
4. Dr. Sohail Ahmad, Assist.Prof of Anaesthesia	Member
5. Dr. Farhan Khan, Director Technical	Member
6. Dr. Fayyaz Hashmi, Sr. Medical Officer	Member
7. Dr. Muhammad Moeen, Sr. Registrar Cardiac Surgery	Member
8. Dr. Sohail Saleemi, Sr. Registrar Cardiology	Member
9. Engr. Muhammad Kaleem, Bio Medical Engineer	Member

AGENDA: TECHNICAL EVALUATION FOR PURCHASE OF INVASIVE CARDIAC MONITOR WITH BIS, PART-B, QTY-20 FOR THE YEAR 2015.16

PROCEEDINGS:

Following 03Nos. firms participated in the tender:

1. M/S Medequips, Lahore
2. M/S Shirazi Trading, Lahore
3. M/S Vertex Medical, Lahore

All the tenders were evaluated with respect to floated specification and requirements.

**1. M/S MEDEQUIPS, LAHORE**

	PRE-REQUISITES	M/S Medequips
1	The quoted equipment must be manufactured in USA, EU or Japan	Japan
2	<b>Specification (PART -B) QTY-20Nos.</b>	
3	<b>Model</b>	BSM-3562K
4	<b>Make</b>	Nihon Kohden
5	<b>Country of Origin: USA / Europe / Japan</b>	Japan
6	<b>Authorization</b>	31.03.2016
7	<b>Certification: (FDA (510K) / CE / JIS)</b>	FDA/CE
8	<b>Warranty: 5 Years Comprehensive with parts &amp; spare including backup services</b>	5Years
9	Configured Bedside monitor for display of vital signs monitoring of Adult/Paeds/N	Configured
10	Mounted on original wall mounted stands	KG 951P
11	Monitors should be connected with central station wirelessly/wired	Through wired
12	<b>OPERATING FEATURES &amp; CHARACTERISTICS</b>	
13	Electro-surgical interference suppression/ protection	Interference protection
14	Defibrillator protection	D.Fib protection
15	Freeze and cascade facility	freeze & cascade

16	waveforms traces speeds 25/50mm/sec	25/50mm/sec
17	Screen size min 12" or more with touch screen colored	12.1 touch screen
18	minimum 12 waveforms or more	14 waveform
19	<b>STANDARD PARAMETERS:</b>	
20	ECG, NIBP, SpO2, 2-Temp, Respiration, Trends, Arrhythmia Analysis, 2-IBP, EtCO2, CO.	TE compliance
21	Monitoring, Recorder	TE compliance
22	<b>ECG: (Cable Alligator Type)</b>	
23	Numeric heart rate	Numeric
24	Waveform: Six wave form minimum, real time freeze ECG trace	Six waveform
25	3, 6 and 12 lead real time monitoring	3/6/12 lead monitoring
26	Measuring range: 15 to 300bpm	15 to 300bpm
27	5 and 10 lead each ECG cable with electrodes	3/6/10 lead with electrode
28	Ability to detect Adult & Pediatric Heart rate range, QRS widths and amplitudes	TE compliance
29	<b>NONINVASIVE BLOOD PRESSURE (NIBP): (Adult, Paeds, Neonates Cuff )</b>	
30	Method: Oscillometric principle	Oscillometric
31	Numeric: Systolic, Diastolic and Mean Pressures	Systolic, DIA, MAP
32	Ability to measure Adult & Pediatric B.P	Adult /Paes/neonates
33	Rising Cuff / continuous pressure display	Rising pressure
34	Selectable auto inflate interval settings	Auto inflate
35	<b>TEMPERATURE (Rectal, Nasal, Skin Probes)</b>	
36	Numeric. Temperature selectable in 'C / 'F	Both C/F
37	Channels: 2 channels or more	2 Channel
38	Ability to measure Adult & Pediatric temperature range	Adult /Paes/neonates
39	<b>PULSE QXIMETRY: (Adults, Paeds, Neonates Probes )</b>	
40	Numeric: 0-100% Oxygen saturation measuring range	0 -100%
41	Masimo Technology/ Other patent technology with motion tolerance	Masimo
42	Waveform: Plethysmograph pulse with pulse strength indication Sensor for Pediatrics & Adult Patients	Adult & Paeds
43	<b>RESPIRATION:</b>	
44	Sweep speed: 6.25, 12.5mm/sec.	6.25/12.5 mm/sec
45	Breath rate display and Settable Apnea Alarm.	TE Compliance
46	<b>RECORDER:</b>	
47	3 Channel Recorder for printing of ECG Waveforms	3 Channel
48	ECG Paper Roll (05)	ECG 05 Roll
49	<b>INVASIVE BLOOD PRESSURE MODULE</b>	
50	2 or more Channel IBP Monitoring	2-Channel
51	Numeric: Systolic, Diastolic and Mean Pressure	Systolic, DIA, MAP
52	Variable scale: Selectable	Selectable
53	5 IBP Complete kits	J902P
54	<b>ARRTHIEMIA ANALYSIS:</b>	
55	Arrhythmia analysis and ST analysis with minimum 10 Arrhythmia detection	10 ARR detection
56	<b>CARDIAC OUTPUT MODULE</b>	
57	Numeric Display	Numeric

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58	Display of Cardiac Output	TE Compliance
59	Thermo dilution Method	Thermo dilution
60	One starter kit	K962
61	<b>CAPNOGRAPHY (ETCO2)</b>	
62	For measuring of End Tidal CO2	Kit907
63	Capability of Main / side stream measurements for intubated and non intubated	Mainstream
64	Airway & nasal adapter 50 each adult and Paeds	30/30
65	<b>TRENDS:</b>	
66	Trends for at least 48-96 hours with graphical and tabular representation for all parameters	72 hours
67	<b>ALARMS:</b>	
68	Selectable automatic Adult and Pediatric Mode alarm limits High and low (settable) on all parameters	TE compliance
69	Visual and Audible indication of alarms	TE compliance
70	<b>BACKUP SUPPORT</b>	
71	Built-in Rechargeable Battery with back up of at least 1-2 hours in case of AC power failure for full parameters.	1-2 hours
72	Wall mount or trolley original from manufacturer.	TE compliance
73	The system must be complete with all sensors, probe, cable or any other accessories required for measuring all the above selectable parameters for adult & Pediatric applications. All the accessories must be supplied by the same manufacturer	Yes Offered
74	<b>Telemetry</b>	Color Digital WEP-5208K for 8-patients system 15" TFT Touch
75	<b>Transmitter:</b> capable of transmitting real time ECG, Spo2, Respiration and other standard vital parameters	ECG, Res, Spo2, NIBP ZS-940PK x 8 instead of 20
76	<b>CENTRAL MONITORING SYSTEM</b>	
77	Multi Channel	PU-621R
78	Central station to monitor different patient data centrally	Expansion Kit QP-625P
79	Central station should be connected with above mentioned monitors wirelessly/ wired	Both offered
80	supplied with pure sine wave UPS with minimum battery backup of 1 or more hour	UPS with 1 hour
81	Provided UPS must be imported	Imported
82	<b>OPERATING FEATURES &amp; CHARACTERISTICS</b>	
83	Colored monitor with min 19" or higher	24" NKD-EL024
84	Laser printer Latest HP or equivalent min 45pages/ min	HP laser
85	Trend display 72 hours or more	72 hours
86	Event and full disclosure for Upto 16 waveforms	16 waveform
87	HL7 interface capable of connectivity with HIMS	HL7 interface
88	Bedside connection: min 10bedside monitors or more and will be able to enhance up to 20 or more	

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89	<b>Parameters</b>	
90	Selectable display of all parameters of bedside monitors	TE compliance
91	Alarms	TE compliance
92	All parameters alarms on central station monitor with bed No.	TE compliance
93	Identification	TE compliance
94	All alarms of each bedside monitors selectable form central workstation	YL-612P
95	Firm is bound to provide 02X 55" or more LED and will install at two different places as per user recommendation and both display will be connected to central station for live viewing and monitoring of each patients	02X 55" LED
96	Installation of network cables as per international standards will be responsibility of firm	TE compliance
97	Central station and monitors must be from same manufacturer	TE compliance
	<b>REMARKS</b>	<b>Technically Accepted</b>

## 2. M/S SHIRAZI TRADING, LAHORE

	<b>PRE-REQUISITES</b>	<b>M/S Shirazi</b>
1	The quoted equipment must be manufactured in USA, EU or Japan only	USA/EU
2	<b>Specification (PART -B) QTY-20Nos.</b>	
3	<b>Model</b>	Carescape B-450
4	<b>Make</b>	GE
5	<b>Country of Origin:</b> USA / Europe / Japan	USA/EU
6	<b>Authorization</b>	31.12.2015
7	<b>Certification:</b> (FDA (510K) / CE / JIS)	FDA/CE
8	<b>Warranty:</b> 5 Years Comprehensive with parts & spare including backup services	5 Year
9	Configured Bedside monitor for display of vital signs monitoring of Adult/Paeds/N	Configured
10	Mounted on original wall mounted stands	Yes Offered
11	Monitors should be connected with central station wirelessly/wired	Through wired
12	<b>OPERATING FEATURES &amp; CHARACTERISTICS</b>	
13	Electro-surgical interference suppression/ protection	Interference protection
14	Defibrillator protection	D.Fib protection
15	Freeze and cascade facility	freeze & cascade
16	waveforms traces speeds 25/50mm/sec	25/50mm/sec
17	Screen size min 12" or more with touch screen colored	12" TFT Touch
18	minimum 12 waveforms or more	6 waveform
19	<b>STANDARD PARAMETERS:</b>	
20	ECG, NIBP, SpO2, 2-Temp, Respiration, Trends, Arrhythmia Analysis, 2-IBP, EtCO2, CO.	TE compliance
21	Monitoring, Recorder	TE compliance
22	<b>ECG: (Cable Alligator Type)</b>	
23	Numeric heart rate	Numeric
24	Waveform: Six wave form minimum, real time freeze ECG trace	Six waveform
25	3, 6 and 12 lead real time monitoring	3/6/12 lead monitoring

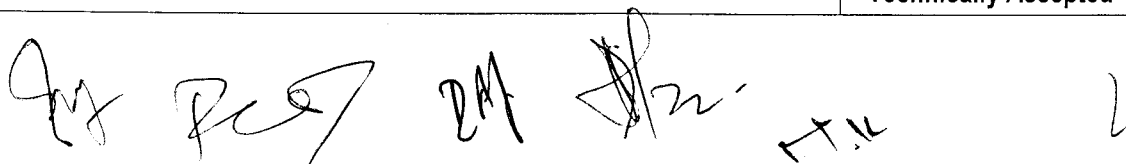
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26	Measuring range: 15 to 300bpm	30 to 300bpm
27	5 and 10 lead each ECG cable with electrodes	3/6/10 lead with electrode
28	Ability to detect Adult & Pediatric Heart rate range, QRS widths and amplitudes	TE compliance
29	<b>NONINVASIVE BLOOD PRESSURE (NIBP): (Adult, Paeds, Neonates Cuff )</b>	
30	Method: Oscillometric principle	Oscillometric
31	Numeric: Systolic, Diastolic and Mean Pressures	Systolic, DIA, MAP
32	Ability to measure Adult & Pediatric B.P	Adult /Paes/neonates
33	Rising Cuff / continuous pressure display	Rising pressure
34	Selectable auto inflate interval settings	Auto inflate
35	<b>TEMPERATURE (Rectal, Nasal, Skin Probes)</b>	
36	Numeric. Temperature selectable in 'C / 'F	Both C/F
37	Channels: 2 channels or more	2 Channel
38	Ability to measure Adult & Pediatric temperature range	Adult /Paes/neonates
39	<b>PULSE QXIMETRY: (Adults, Paeds, Neonates Probes )</b>	
40	Numeric: 0-100% Oxygen saturation measuring range	0 -100%
41	Masimo Technology/ Other patent technology with motion tolerance	Masimo
42	Waveform: Plethysmograph pulse with pulse strength indication Sensor for Pediatrics & Adult Patients	Adult & Paeds
43	<b>RESPIRATION:</b>	
44	Sweep speed: 6.25, 12.5mm/sec.	6.25/12.5 mm/sec
45	Breath rate display and Settable Apnea Alarm.	TE Compliance
46	<b>RECORDER:</b>	
47	3 Channel Recorder for printing of ECG Waveforms	3 Channel
48	ECG Paper Roll (05)	ECG 05 Roll
49	<b>INVASIVE BLOOD PRESSURE MODULE</b>	
50	2 or more Channel IBP Monitoring	2-Channel
51	Numeric: Systolic, Diastolic and Mean Pressure	Systolic, DIA, MAP
52	Variable scale: Selectable	Selectable
53	5 IBP Complete kits	5 IBP Kit
54	<b>ARRTHIEMIA ANALYSIS:</b>	
55	Arrhythmia analysis and ST analysis with minimum 10 Arrhythmia detection	10 ARR detection
56	<b>CARDIAC OUTPUT MODULE</b>	
57	Numeric Display	Numeric
58	Display of Cardiac Output	TE Compliance
59	Thermodilution Method	Thermodilution
60	One starter kit	One starter kit
61	<b>CAPNOGRAPHY (ETCO2)</b>	
62	For measuring of End Tidal CO2	Yes Offered
63	Capability of Main / side stream measurements for intubated and non intubated	Mainstream
64	Airway & nasal adapter 50 each adult and Paeds	30/30
65	<b>TRENDS:</b>	
66	Trends for at least 48-96 hours with graphical and tabular representation for all parameters	72 hours
67	<b>ALARMS:</b>	

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68	Selectable automatic Adult and Pediatric Mode alarm limits High and low (settable) on all parameters	TE compliance
69	Visual and Audible indication of alarms	TE compliance
70	<b>BACKUP SUPPORT</b>	
71	Built-in Rechargeable Battery with back up of at least 1-2 hours in case of AC power failure for full parameters.	
72	Wall mount or trolley original from manufacturer.	
73	The system must be complete with all sensors, probe, cable or any other accessories required for measuring all the above selectable parameters for adult & Pediatric applications. All the accessories must be supplied by the same manufacturer	Yes Offered
74	<b>Telemetry</b>	No detail Provided
75	<b>Transmitter:</b> capable of transmitting real time ECG, Spo2, Respiration and other standard vital parameters	No detail Provided
76	<b>CENTRAL MONITORING SYSTEM</b>	
77	Multi Channel	Yes Offered
78	Central station to monitor different patient data centrally	Yes Offered
79	Central station should be connected with above mentioned monitors wirelessly/ wired	Yes Offered
80	supplied with pure sine wave UPS with minimum battery backup of 1 or more hour	Yes Offered
81	Provided UPS must be imported	Imported
82	<b>OPERATING FEATURES &amp; CHARACTERISTICS</b>	
83	Colored monitor with min 19" or higher	Yes Offered
84	Laser printer Latest HP or equivalent min 45pages/ min	Yes Offered
85	Trend display 72 hours or more	Yes Offered
86	Event and full disclosure for Upto 16 waveforms	Yes Offered
87	HL7 interface capable of connectivity with HIMS	Yes Offered
88	Bedside connection: min 10bedside monitors or more and will be able to enhance up to 20 or more	
89	<b>Parameters</b>	
90	Selectable display of all parameters of bedside monitors	Yes Offered
91	Alarms	Yes Offered
92	All parameters alarms on central station monitor with bed No.	Yes Offered
93	Identification	Yes Offered
94	All alarms of each bedside monitors selectable form central workstation	Yes Offered
95	Firm is bound to provide 02X 55" or more LED and will install at two different places as per user recommendation and both display will be connected to central station for live viewing and monitoring of each patients	02X 55" LED
96	Installation of network cables as per international standards will be responsibility of firm	TE compliance
97	Central station and monitors must be from same manufacturer	TE compliance
	<b>REMARKS</b>	<b>Technically Accepted</b>

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## 3. M/S VERTEX MEDICAL, LAHORE

	PRE-REQUISITES	M/S Vertex Medical
1	The quoted equipment must be manufactured in USA, EU or Japan	China
2	<b>Specification (PART -B) QTY-20Nos.</b>	
3	<b>Model</b>	Vista 120
4	<b>Make</b>	Drager
5	<b>Country of Origin: USA / Europe / Japan</b>	China
6	<b>Authorization</b>	31.12.2016
7	<b>Certification: (FDA (510K) / CE / JIS)</b>	CE
8	<b>Warranty: 5 Years Comprehensive with parts &amp; spare including backup services</b>	3 Years
	<b>REMARKS</b>	<b>Technically Rejected</b>

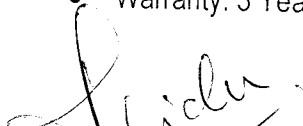
**CONCLUSION:**

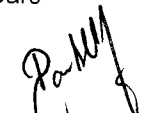
The committee scrutinized and discussed the technical offer of all above firms in detail and made the following decision unanimously.

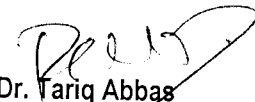
1. The offer of M/S Shirazi Trading, Lahore & M/S Medequips is technically accepted while the offer of M/S Vertex Medical, Lahore is technically rejected due to following reasons:-

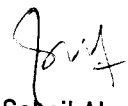
**M/S Vertex Medical, Lahore**


- The quoted equipment must be manufactured in USA, EU or Japan
- Country of Origin: China instead of USA / Europe / Japan
- Warranty: 3 Years instead of 5 Years

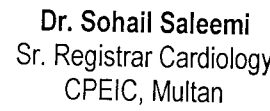
  
**Dr. Haider Zaman**  
 Prof. of Cardiac Surgery  
 CPEIC, Multan  
 (Chairman TEC)


  
**Dr. Raja Altaf**  
 Prof. of Anesthesia/End user  
 CPEIC, Multan  
 (End-User)

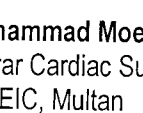
  
**Dr. Tariq Abbas**  
 Associate. Prof. of Cardiology  
 CPEIC, Multan  
 (Member)


  
**Dr. Sohail Ahmad**  
 Assist. Prof. of Anaesthesia  
 CPEIC, Multan  
 (Member)

  
**Dr. Fathman Khan**  
 Director Technical  
 CPEIC, Multan  
 (Member)

  
**Dr. Sohail Saleemi**  
 Sr. Registrar Cardiology  
 CPEIC, Multan  
 (Member)

  
**Dr. Fayyaz Hashmi**  
 SMO Pathology Department  
 CPEIC, Multan  
 (Member)

  
**Dr. Muhammad Moeen**  
 Sr. Registrar Cardiac Surgery  
 CPEIC, Multan  
 (Member)

  
**Engr. Muhammad Kaleem**  
 Bio-Medical Engineer  
 CPEIC, Multan  
 (Member)