



**PENTING : DOKUMEN MEJA INI HANYA UNTUK RUJUKAN DAN TIDAK DIANGGAP SEBAGAI DOKUMEN SEBUTHARGA**

**JABATAN PENGAIRAN DAN SALIRAN NEGERI SELANGOR**  
**Sebutharga Untuk Kerja Bahagian Perkhidmatan Mekanikal Dan Elektrikal**

**KERJA-KERJA PEMBAIKAN SISTEM AUTOMASI SCADA DI PINTU AIR DAERAH KUALA LANGAT BAGI JABATAN PENGAIRAN DAN SALIRAN NEGERI SELANGOR**

**JPS/N/ME/B13/04/2017(SH)**

Bil	Perkara	Unit	Kuantiti	Kadar	Harga
<b>1.0</b>	<b>PRELIMINARIES</b>				
1.1	Provide Insurance of the Works, Public Liability Insurance, SOCSO/Workmen Compensation Insurance and other related issues.	L/Sum	L/Sum		
1.2	Holding of labor, machinery and transportation to the site of execution of work including cleaning and waste disposal.	L/Sum	L/Sum		
1.3	To dismantle, assemble, deliver and unload old and damaged parts to BPME JPS Selangor as accordance to SO instruction.	L/Sum	L/Sum		
1.4	To provide report of work done before, during and after completion (Soft Copy & Hard Copy).	Set	3		
1.5	To provide system design and architecture including drawing, Installation, testing and commisioning, operation and manual.	Set	3		
<b>2.0</b>	<b>GATE AUTOMATION AND SCADA SYSTEM</b>				
	The quotation is for the design and provision of materials and equipment for the installation of automated station SCADA system which comprises gate automation and supervisory control & data acquisition (SCADA) system at six (6) location Tidal Control Gate Daerah Kuala Langat for <b><u>Jabatan Pengairan dan Saliran (JPS) Selangor.</u></b>  i. Sg. Lang (AR1/KL5/ME/81) ii. Sg. Buaya (AR1/KL9/ME/81) iii. Sg. Ingat (AR1/KL11/ME/82) iv. Tongkah (AR1/KL13/ME/81) v. Bt. 8, Sijangkang (AR1/KL16/ME/00) vi. Jenjarom (AR1/KL17/ME/02)				
2.1	RTU SCADA c/w digital inputs, digital outputs, analog inputs, PLC, data logger, and controller for single bay TCG control.	Lot	5		
	<b>CARRIED TO COLLECTION</b>				



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2.2	Supply, delivery of Engineering programming to design the automation algorithm in RTU for TCG control including SMS Alarm based on I/O monitored.	Lot	5		
<b>3.0</b>	<b>INSTRUMENTATION AND ACCESSORIES FOR WATER LEVEL SENSOR</b>				
3.1	Supply, Install and Configure Ultrasonic Sensor water level sensor for upstream & downstream for each TCG complete with DC to DC power supply converter and related accessories.	Lot	12		
3.2	Metal Enclosure for water level sensor (Stainless Steel Material).	Lot	12		
3.3	Supply and install 4C/1.5MM/PVC/Screen Type cable for WL sensor covered with G.I pipe 1 inch from sensor box to control panel including concrete cutting, hacking, manual excavation, concrete backfilled and finishing. (6 TCG Sites).	M	360		
3.4	Supply and install 4-20mA signal surge protection unit (SPD) to protect ultrasonic water level sensor and analogue input from current surge damage.	Pcs	24		
3.5	Supply and install sensor bracket and mounting accessories for upstream and downstream including concrete base.	Lot	12		
<b>4.0</b>	<b>AUTOMATION AND ELECTRICAL CONTROL PANEL ACCESSORIES &amp; INTERFACE</b>				
4.1	The contractor shall supply, install, testing & commissioning of Automation & Electrical Control Panel IP65 complete with wiring type floor standing panel or wall mounted galvanized epoxy coated similar in construction to LV boards. It shall be bottom entry of all cables and front access of all components. The control panel shall also be weather resistant and of watertight polyester or epoxy coated metal enclosure type IP65.	Set	5		
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4.2	The contractor shall supply and install 1.5mm x 12 core Signal Armoured Cable to connect main panel to the actuator motors including Hot Dip Trunking, Steel Band, Bracket Holder and other related components.	M	75		
4.3	The contractor shall supply and install 2.5mm x 4 core Power Supply Armoured Cable to connect main panel to the actuator motors including Hot Dip Trunking, Steel Band, Bracket Holder and other related components.	M	75		
4.4	Supply and install Strobe light and Siren including PVC box and accessories.	Pcs	5		
4.5	Supply, deliver and install automation control panel components complete with wiring as below:  1) 3 pole selector Switch (10 pcs) 2) 24VDC MY2N Relay with based (45 pcs) 3) 240Vdc Relay complete with based (15 pcs) 4) Indicator Lamp (35 units) 5) 1P&2P electrical push button (20 pcs) 6) Terminal block, fuse holder and accessories 7) Exhaust fan for panel ventilation (20 Units) 8) Panel limit switches, panel lamp and timer	Set	5		
<b>5.0</b>	<b>ELECTRICAL PROTECTION, COMPONENTS AND BACK UP POWER SUPPLY</b>				
5.1	Supply, deliver and install battery charger power supply complete with back-up batteries for RTU and automation components.	Set	5		
5.2	The contractor shall supply, repair, testing & commissioning earthing system using passive type (copper), copper tape and Earthing chamber. Reading of the earthing system testing shall not less than 5ohm.	Set	5		
	<b>TOTAL CARRIED TO BORANG SEBUT HARGA</b>				



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5.3	Supply, install, testing and commission various type of Automatic ELCB, MCB and MCCB but not limited to:  1) Auto Reclose ELCB 2) MCCB 40 Amp 3P 3) MCB 16 Amp 3P 4) MCB 20,10 & 6 Amp 1P	Set	5		
5.4	Upgrading electrical protection by installing and testing unit of AC Surge Protection Device SPD 4P 40kA.	Pcs	5		
5.5	Supply, install 2 Pole 240Vac electrical contactor for component switching complete with wiring.	Lot	5		
5.6	Supply and Install 150 watt spotlight come with photocell sensor including all related wiring and mounting accessories.	Set	5		
5.7	Supply, install and upgrade weather proof enclosure for TNB Meter include rewiring works.	Lot	5		
5.8	GSM Bill payment for 1 year for 6 sites.	Lot	6		
5.9	Supply and install GSM antenna complete with cabling and mounting accessories.	Pcs	10		
5.10	Service and maintenance (every 3 months) for 1 year.	Lot	4		
<b>6.0</b>	<b>STRUCTURE FENCING, SIGNAGE, STICK GAUGES AND LAND SURVEYS</b>				
6.1	Vandalism proof fencing for water level sensors.	Lot	12		
6.2	Signage - Site signage for all installation sites.	Lot	6		
6.3	Water level stick gauge for both upstream and downstream locations.	Lot	12		
6.4	Land survey for stick gauge installation purposes.	Lot	12		
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<b>7.0</b>	<b>OTHERS</b>				
7.1	Provide hands on training package on operation and maintenance of SCADA & Electrical equipment locally for 15 operation and maintenance staff, including training notes as per Specification.	L/Sum	L/Sum		
7.2	Testing and Comissioning (T&C)	L/Sum	L/Sum		
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	<b>TOTAL CARRIED TO BORANG SEBUT HARGA</b>				