

JABATAN KERJA RAYA MALAYSIA

**PEMASANGAN SISTEM ICT UNTUK IBU PEJABAT POLIS DAERAH KLANG
UTARA, SELANGOR**

SENARAI KUANTITI

Kami seperti nama syarikat di bawah mengesahkan tawaran harga yang tersenarai di dalam senarai kuantiti ini adalah sama sepertimana di dalam Borang Tender yang dihasilkan di dalam sistem dan sebarang percanggahan akan menyebabkan tawaran kami ditolak.

- A. Nama Syarikat: **Nama Petender**
- B. CIDB/UPKJ/PUKONSA No.: **No.Pendaftaran Petender**
- C. Harga Tawaran: **Harga Tawaran Petender**
- D. No. Siri Tender: **JKR/CKE/21116-3/2024**
- E. Tarikh Cipta Senarai Kuantiti: **25/10/2024**

Senarai kuantiti ini dikeluarkan oleh UPKR. Sebarang pertanyaan boleh berhubung dengan pegawai yang menyediakan tender dan maklumat pegawai untuk dihubungi boleh didapati di laman iklan.

JABATAN KERJA RAYA MALAYSIA

PEMASANGAN SISTEM ICT UNTUK IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

SENARAI KUANTITI

No. Tender: JKR/CKE/21116-3/2024

RINGKASAN TENDER**PEMASANGAN SISTEM ICT UNTUK IBU PEJABAT POLIS DAERAH KLANG UTARA,
SELANGOR**

ITEM	DESCRIPTION	PAGE NO.	AMOUNT(RM)
	Sila pilih disini atau delete sekiranya tidak perlu	RT/1	
A	PRELIMINARIES		0.00
B	PASSIVE INFRASTRUCTURE		0.00
C	ACTIVE INFRASTRUCTURE		0.00
D	TELEPHONE SYSTEM		0.00
E	FIBRE TO THE PREMISE (FTTP)		0.00
F	INFRASTRUCTURE FOR FIXED STATION AND ANTENNA		0.00
G	EARTHING SYSTEM		0.00
H	TESTING & COMMISSIONING		0.00
I	OTHERS		0.00
Jumlah di bawa ke Borang Tender			-
RT/1			

A. PRELIMINARIES

ITEM	DESCRIPTION	UNIT	QTY	RATE (RM)	AMOUNT (RM)
A	<p>PART I - GENERAL INFORMATION</p> <p>Notes: The amounts inserted by the Nominated Sub-Contractor for such Preliminary Items shall be deemed to apply to the whole of the Works carried out under this Sub-Contract.</p> <p>Each Preliminary Item or Clause shall be individually priced. Bulk pricing for sections, trades, groups or pages of Preliminary Items or Clauses shall not be accepted and no subsequent claims for loss or expenses and/or profit shall be entertained for failure to comply with this clause.</p> <p>Where any Preliminary Item or Clause is left unpriced, it shall be deemed that the cost of such Preliminary Items or Clauses have been allowed for elsewhere within these Sub-Contract Document. No subsequent claims arising out of expenses and/or loss incurred against such unprices Preliminary Item or Clauses shall be entertained.</p> <p>Notwithstanding the above clauses, the S.O. reserves the right to request from the Contractor the detailed breakdown of the pricing for Preliminary Items or Clauses or the rates in the Bill of Quantities for examination and approval. The approved detailed breakdown pricing shall then be used as a basis for the administration of the Sub-Contract.</p> <p>Headings are not comprehensive and do not necessarily reflect or modify the meaning of the items in the B.Q. The exact nature and extent of the work to be carried out shall be ascertained by reference to the Contract as a whole, in particular the Conditions of Contract, the Specification and the Drawings.</p> <p>Where Preliminary Items or Clauses or items in the Bill of Quantities are priced but have not been executed on site by the Contractor, the cost of such priced items or clauses or items in the Bill of Quantities shall accordingly be deducted from the Contract Sum when so instructed by the S.O.</p>				
1.0	<u>Pricing of Bill of Quantities</u>				
1.1	The sum of the amounts of all items of the Bill of Quantities priced by the tenderer shall truly represent the amount shown in his tender. The rates set down by the Tenderer against each item in the Bill of Quantities shall be the full inclusive rates and prices for the finished work (unless expressly provided to the contrary) and shall be held to include providing and delivering all materials, unloading, cutting and waste on materials, storage, packing, carriage and cartage, hoisting, all labour, setting, fitting and fixing in position, use of plant, providing suspension, establishment charges, profit and all other labour and everything else necessary for the due and proper completion of each item.				

A. PRELIMINARIES

ITEM	DESCRIPTION	UNIT	QTY	RATE (RM)	AMOUNT (RM)
1.0	<u>Pricing of Bill of Quantities (cont'd)</u>				
1.2	Where the tenderer leaves any item blank in the preliminaries or insert only a dash against any item in these Bill of Quantities the value thereof shall be deemed to be included in the prices or rates of other items therein.				
1.3	No unauthorised alteration, addition or note entered in these Bill of Quantities shall modify the printed text.				
1.4	Headings and notes appearing shall not by itself be deemed to be comprehensive and do not modify the meaning of the items in the Bill of Quantities.				
1.5	Any rates found to be overpriced, inconsistently priced, underpriced or erroneously priced shall be subjected to adjustment, rectification and rationalisation before the signing of the contract and the authority to fix a reasonable rates/amount shall be with the S.O. The amended rates shall be used for computing the progress payments and the measuring of variations				
1.6	Where Quantities in these Bill of Quantities are marked provisional, the works shall be remeasured on completion basing on drawings certified as true and correct representation of the completed works by the Superintending Officer.				
1.7	There shall be no alteration or amendment, specifying or submission of condition in contravention to those contained in Bills of Quantities. If such conditions are included, the tender submitted may not be considered and liable to be disqualified.				
2.0	<u>Currency of Payment</u>				
	Pricing of the Sub-Contract shall be in Malaysian Ringgit to two decimal place. Payment to the Nominated Sub-Contractor under the Sub-Contract shall be in Malaysian Ringgit.				
3.0	<u>Form of Sub-Contract</u>				
	The Conditions of Sub-Contract will be those contained in the Standard Form of Sub-Contract-PWD Form 203N Rev.1/2010 and Instruction To Tenderers (ITT). A copy of the said Form and General Condition which form part of the Tender Table Documents is available for inspection online (for online tendering) or during normal office hours on any working day up to the time appointed for receiving tenders.				
4.0	<u>Compliance with Safety Requirement and Regulations</u>				
	The Nominated Sub-Contractor shall always adhere to all requirement and regulations under Occupational Safety and Health Act and maintain a safe and healthy working environment through out the execution of Sub-Contract Works.				

A. PRELIMINARIES

ITEM	DESCRIPTION	UNIT	QTY	RATE (RM)	AMOUNT (RM)
5.0	<u>Making Good Defects During Defects Liability Period (DLP)</u>				
5.1	The Nominated Sub-Contractor shall make good of any defects, shrinkage and any other faults which may appear within the Defects Liability Period as provided in the Sub-Contract, commencing from Practical Completion of the Sub-Contract Works as certified by the S.O.				
5.2	No claim shall be entertained if the repair of any defects results an increment in cost.				
6.0	<u>Duty Stamping</u>				
	The Nominated Sub-Contractor shall solely bear the cost for stamp duties and anything incidental thereto.				

A. PRELIMINARIES

ITEM	DESCRIPTION	UNIT	QTY	RATE (RM)	AMOUNT (RM)
B	PART II - PRICING OF PRELIMINARIES ITEMS				
1.0	<u>Material and Workmanship</u>				
	The description of materials and workmanship in these Bill of Quantities and/or Drawings are to be read in conjunction with the relevant Specifications contained in the Sub-Contract. Materials and equipment supplied and installed shall comply with the condition set down in the Instruction To Tenderers (ITT).	LS	LS		0.00
	Allow for submission of samples of materials and workmanship as the S.O.'s Representative may require for this approval before the materials are supplied and installed or workmanship are embodied in the finished works. All samples which are approved shall be retained on the Site and shall represent or indicate the standard to be maintained in the execution of the Sub-Contract Works. All samples shall be cleared away when no longer so required for the purpose.				
2.0	<u>Application To and Testing By The Authorities</u>				
	Allow for submission of applications, inspections, tests and approvals including the registration of the installation and endorsement of documents by professional/competant person in compliance to the requirements of the relevant Authorities having jurisdiction over the Sub-Contract Work. All cost and fees incurred in the process of gettings the Sub-Contract Works inspected, tested and approved by the relevant Authorities shall be included in the Sub-Contract Sum. No additional costs will be entertained in this respect. It shall include the following but not limited to:-	LS	LS		0.00
	a) Earth Resistance test results shall be verified by a Service Engineer (The Earth Resistance Tester shall be calibrated every 2 years).				
	b) Test methods must comply with IEEE Std 81- Guide For Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System.				
3.0	<u>Application To Internet and Telecommunication Provider*</u>				
	Allow assisting client in liaising with Internet Service Provider (ISP) and Telecommunication Service Provider (TSP) Authorities for submission of registration and application for Internet and telephone system services.	LS	LS		0.00
	<i>*Strikethrough if not applicable.</i>				
TO COLLECTION					0.00

A. PRELIMINARIES

ITEM	DESCRIPTION	UNIT	QTY	RATE (RM)	AMOUNT (RM)
4.0	<u>Clause 24 - Insurance Against Personal Injuries and</u> The Nominated Sub-Contractor shall be liable and shall indemnify both the Main Contractor and the Government against any expenses, damage, liability, loss, claim, or proceedings whatsoever arising from any common law or statute in the course of the execution of the Sub-Contract Works as per described under Clause 24.	LS	LS		0.00
5.0	<u>Clause 26 - Employee's Social Security Act 1969</u> The Nominated Sub-Contractor shall cause to register all local workmen under his employment under Employee's Social Security Scheme (SOCSO) in accordance with the Employment's Social Security Act 1969 or any subsequent modification and re-enactment of the said Act. The Nominated Sub-Contractor shall submit Code Number and Social Security Numbers of all workmen under the SOCSO scheme to the S.O. The Nominated Sub-Contractor shall make payment of all contributions from time to time on the first day on which the same ought to be paid and until the completion of the Sub-Contract Works, and upon demand the Nominated Sub-Contractor shall produce to the S.O.'s Representative contribution cards or stamp vouchers as evidence of payment of	LS	LS		0.00
6.0	<u>Clause 27 - Insurance of Sub-Contract Work</u> The Nominated Sub-Contractor shall insure for the full value amount of the Sub-Contract Works (including materials and goods of the Nominated Sub-Contractor properly delivered on the Site for use in the Sub-Contract Works) and keep or have them kept insured against loss or damage by fire, lightning, explosion, storm, tempest, flood, ground subsidence, bursting or overflowing of water tanks, apparatus or pipes, aircraft and other aerial devices or articles dropped therefrom, riot and civil commotion as per described in Clause 27. All excesses, if any, imposed by the Insurance Company shall be borne by the Nominated Sub-Contractor.	LS	LS		0.00
7.0	<u>Clause 28 - Performance Bond</u> The Nominated Sub-Contractor shall, as a condition precedent to the commencement of any work under this Sub-Contract, deposit with the Contractor a performance bond in the form of a Banker's Draft or an approved Banker's or Insurance Guarantee equivalent to five (5%) percent of the Sub-Contract Sum to secure the due performance of the obligations under this Sub-Contract by the Nominated Sub-Contractor.	LS	LS		0.00
TO COLLECTION					0.00

A. PRELIMINARIES

ITEM	DESCRIPTION	UNIT	QTY	RATE (RM)	AMOUNT (RM)
8.0	<u>Protection of Existing Services*</u>				
	Protect, uphold and maintain all existing and in use pipes, ducts, sewers, services mains, underground cables, etc. During the execution of the Sub-Contract Works, unless otherwise directed. If the Nominated Sub-Contractor discovers any underground cables, pipes, etc, he shall immediately stop work and report to the S.O.'s Representative of the findings. The Nominated Sub-Contractor shall be responsible for making good all damages to the cable, pipes, etc. and shall indemnify the Government against any claims as a results of such damage. <i>*Strikethrough if not applicable.</i>	LS	LS		0.00
9.0	<u>Sub-Contract Work Programme</u>				
	Provide for implementing the Critical Path Method programme in conjunction with Main Contract Works for planning, monitoring, control of resources and progress of work shall include : Planning, preparing, maintaining and updating the CPM programme preferably using latest version of Microsoft Project. The identification of critical path for the timely execution of the work to completion.	LS	LS		0.00
10.0	<u>Competent Persons</u>				
10.1	The Nominated Sub-Contractor shall appoint a Competent Person or Competent Persons in compliance with the Electricity Regulations 1994 to provide necessary superintendence over the whole site operation for the full duration of the Sub-Contract Works and as long thereafter as the S.O.'s Representative may consider necessary for the proper fulfillment the Nominated Sub-Contractor's obligation under this Sub-Contract Works.	LS	LS		0.00
10.2	The qualification of the Competent Persons shall be in compliance with the Electricity Regulations 1994 and approved by the S.O.'s Representative, and he shall be constantly on the Site and shall devote his whole time to the superintendence of the Sub-Contract Works. He shall take responsibility for the construction, installation testing, commissioning and operation of the whole Sub-Contract Works in compliance with the Electricity Regulations 1994 and any other laws having jurisdiction over the Sub-Contract Works.				
10.3	The S.O.'s Representative will be at liberty to object to and requires the Nominated Sub-Contractor to remove forthwith from the Site such Competent Person, who in the opinion of the S.O.'s Representative, misconducts himself or is incompetent or negligent in the proper considered by the S.O.'s Representative to be undesirable. The Nominated Sub-Contractor shall, upon the removal of such person, thereafter replaced as soon as possible a new Competent Person in compliance with the requirement of this section.				
TO COLLECTION					0.00

A. PRELIMINARIES

ITEM	DESCRIPTION	UNIT	QTY	RATE (RM)	AMOUNT (RM)
11.0	<u>Resources For Site Safety</u>				
	The Nominated Sub-Contractor shall provide and maintain all Personal Protective Equipment required for the use of the S.O.'s Representative and his supervisory staff and any other officials complete as specified and complying with DOSH requirements. All items must obtain approval from the S.O.'s Representative. The items are as follows:				
	a) Safety Helmet (white colour c/w JKR's Logo)	No	4		0.00
	b) Reflective Safety Vest/Protection Clothing (c/w JKR's Logo)	No	4		0.00
	c) Safety Boots (2 Nos for HODT)	No	4		0.00
	d) Safety Cones*	No	N/a		
	e) Warning Lights*	No	N/a		
	<i>*Electrical work for road construction only. Strikethrough if not applicable.</i>				
12.0	<u>Progress Reports and Photographs</u>				
	Allow for providing monthly reports including photographs showing the progress of the Sub-Contract Works in digital format, each of different view of the Sub-Contract Works as directed by the S.O.'s Representative. A total of three (3) sets of reports properly binded and the digital format shall be provided to the S.O.'s Representative (2 sets) and HODT office (1 set).	LS	LS		0.00
13.0	<u>Shop / Working Drawings</u>				
13.1	Provide for the preparation, submission and thereafter the approval for construction from the S.O.'s Representative all shop / working drawings for the Sub-Contract Works as required in the relevant Specifications in the Sub-Contract. The contractor will be provided with project site plan and electrical layout drawings in digital format by JKR for shop/working drawing preparation.	LS	LS		0.00
13.2	Detail final sub-circuits and switching arrangement, shall be prepared, calculated and approved before installation. Final sub-circuits shall include lighting and power installation.				
13.3	For project using Building Information Modelling (BIM), all drawings shall be in 3D model using Autodesk REVIT software which includes preparation of all related electrical system complete with conduit and trunking, all components, system modeling and integration with all related building model not limited to Architectural, Structural and Mechanical model and other services. The integrated 3D model shall be used to generate working drawings as specified in the Sub-Contract.				
TO COLLECTION					0.00

A. PRELIMINARIES

ITEM	DESCRIPTION	UNIT	QTY	RATE (RM)	AMOUNT (RM)
14.0	<u>Coordination of Work (IBS)</u>				
	All electrical works e.g. conduits, openings, back boxes, etc. shall be coordinated with IBS Provider, architectural and structural works for implementation of IBS including Modular Coordination at IBS plant.	LS	LS		0.00
15.0	<u>Electrical Protection Schemes (Calibrations)</u>				
	Allow for fees and charges for the employment of an Electrical Services Contractor registered under Electricity Regulations 1994 to study and submit proposal (with relevant data and calculations) for the electrical protection scheme for the whole electrical installation in the Sub-Contract works. Thereafter, if the proposal is agreeable by the S.O.'s Representative, he shall check, test and calibrate accordingly all protective relays and device provided in the Sub-Contract Works to the requirements of the Electricity Regulations 1994. He shall also prepare, duly sign and submit all certification as required under Electricity Regulations 1994.	LS	LS		0.00
16.0	<u>Clearing and Cleaning of Site</u>				
	The Nominated Sub-Contractor shall, upon completion of the work, remove away immediately from site all plants and surplus materials except those ordered to be left on the site, together with all rubbish and debris. The site is to be restored in a neat, clean and workmanlike manner to the satisfaction of the S.O.	LS	LS		0.00
17.0	<u>Equipment Inventory List</u>				
17.1	Allow for preparation of inventory list for equipment installed as per in the Sub-Contract. The inventory list shall include and not limit to all data and particulars of the equipment and accessories pertaining to their types, models, descriptions and quantities. The format shall be in MS Excel of latest version as per Appendix A of Preliminaries. Two (2) sets of softcopy in CD-RW/DVD-RW and four (4) sets of hardcopy in comb binded shall be submitted to S.O.'s Representative.	LS	LS		0.00
17.2	To submit four (4) sets of hardcopy & softcopy (CD-RW/DVD-RW) of the following documents:- - List of component in each room as specified in latest version of Sistem Pengurusan Bersepadu (SPB) JKR Malaysia, " <i>Borang Senarai Aset Tak Alih Mengikut Ruang (Lampiran 16)</i> ". A copy of this form should also be attached at each room during T&C for S.O verification	LS	LS		0.00
TO COLLECTION					0.00

A. PRELIMINARIES

ITEM	DESCRIPTION	UNIT	QTY	RATE (RM)	AMOUNT (RM)
18.0	<u>Documentation Upon Completion</u>				
	Upon completion of the work and before handing over, the Nominated Sub-Contractor shall submit documents as follow:	LS	LS		0.00
	a) Four (4) sets contained the following documents, properly titled and bound in hard covers :-				
	i) Installation Manuals, Operation Manuals, Service and Maintenance Manuals, and Part Lists for all equipment supplied and installed in the Sub-Contract;				
	ii) All Product Data and Catalogue of equipment supplied and installed in the Sub-Contract;				
	iii) All Supervision and Completion Certificate, and Test Certificate in compliance with the Electricity Regulations 1994;				
	iv) All other Test Certificates;				
	v) As-installed drawings as actually fixed pertaining to the Works including all services and facilities systems. The As-installed drawings shall be submitted by the Contractor for the approval of the S.O / S.O's Representative as to allow for a complete understanding of the Works as they were actually fixed;				
	vi) All Certificate of Warranties and Guarantees copies issued by the original equipment manufacturers.				
	b) i) <u>For BIM projects</u> : Four (4) sets of Digital Copies of As-installed drawings in AutoCAD(dwg.) and/or BIM 3D Model Revit MEP format to be stored in compact discs or physical digital storage.				
	ii) <u>For Non BIM projects</u> : Four (4) sets of Digital Copies of As-installed drawings in AutoCAD(dwg.) or any other compatible format to be stored in compact discs or physical digital storage.				
	c) Four (4) sets of Digital Copies of As-installed drawings in Acrobat (.pdf) to be stored in compact discs or physical digital storage.				
	d) All original Certificate of Warranties and Guarantees issued by the original equipment manufacturers.				
	e) One (1) copy of List of username and password (administrator) for logging in of ELV and ICT systems / equipments (if applicable)				
	f) One (1) set maintenance tools as prescribed in the relevant Specifications.				
19.0	<u>Sub-Contract Document</u>				
	Allow for the cost for eight (8) copies of contract document binding. The document format shall follow as per JKR standard.	LS	LS		0.00
TO COLLECTION					

A. PRELIMINARIES

ITEM	DESCRIPTION	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	<u>Collection</u>				
	Page A/4				0.00
	Page A/5				0.00
	Page A/6				0.00
	Page A/7				0.00
	Page A/8				0.00
	Page A/9				0.00
TO SUMMARY OF TENDER					

PEMASANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
B	PASSIVE INFRASTRUCTURE				
B1	STRUCTURED CABLING				
B1.1	HORIZONTAL CABLING				
B1.1.1	Supply , install and terminate Network point with the following requirement:- i. Pathways: In hot-dipped galvanised / electrogalvanised trunking (excluding down drop) *Connecting pathway to down drop conduit will be supplied by others. ii. *Cable : UTP Cat 6A 23AWG (EIA/TIA) Low Smoke Zero Halogen (LSZH) from patch panel to faceplate iii. Outlet: Metalclad back box, 1 gang angular faceplate and modular RJ45 jack / 1 gang angular faceplate and modular RJ45 jack comply with underfloor finishing floor				
	a. Network Point	Nos	458		
	b. Telephone Point	Nos	283		
	c. Direct Telephone Point	Nos	6		
	d. Access Point	Nos	31		
	e. Fax Point	Nos	2		
	f. Network Printer Point	Nos	15		
B1.1.2	Supply and install UTP Cat 6A 23 AWG (EIA/TIA) Low Smoke Zero Halogen (LSZH) factory terminated patch cords c/w RJ45 connectors and boots				
	a. 2.0 meter (patch panel to network switch)	Nos	870		
	b. 3.0 meter (faceplate to Wireless AP)	Nos	37		
	c. 1.5 meter (faceplate to end device)	Nos	870		
	d. 2.0 meter (device to device)	Nos	0		
B1.2	BACKBONE CABLING				
B1.2.1	FIBRE OPTIC CABLE (Outdoor)				
B1.2.1.1	Supply, install, terminate and test singlemode outdoor armoured fibre optics cable with the following requirements: i. Type: minimum OS2 Singlemode armoured fibre optics cable. All core ii. Installation shall be in hot-dipped galvanised / electrogalvanised 12core Outdoor OS2 Singlemode Fibre Optic from fibre optic patch panel at Server Room/Main TCR Server Room/Main TCR (Aras 4) to fibre optic patch panel at :-				
	a. Cawangan Pengangkutan	Meter	190		
	b. Balai Pengawal	Meter	250		
	c. Stor Barang Kes	Meter	250		
	d. Dewan Serbaguna	Meter	240		
	e. Surau	Meter	350		
	f. PERKEP	Meter	280		
B1.2.1.2	Termination of 12 core OS2 singlemode outdoor armoured fibre optic cable c/w pigtail and splicing cassette.	Nos	144		

PEMASANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
B1.2.2	FIBRE OPTIC CABLE (Indoor)				
B1.2.2.1	Supply, install and terminate multimode indoor fibre optic cable with the following requirements: i. Type: Minimum OM4 multimode indoor fibre optic cable. All core shall ii. Installation shall be in hot-dipped galvanised / electrogalvanised 12core Indoor OM4 Mutlimode Fibre Optic from fibre optic patch panel at Server Room/Main TCR (Aras 4) to fibre optic patch panel at :				
	a. Bilik TCR, Blok Pentadbiran (Aras 1)	Meter	65		
	b. Bilik CCTV (P), Blok Pentadbiran (Aras 1)	Meter	65		
	c. Equipment Rack 1 at Bilik TCR, Blok Pentadbiran (Aras 2)	Meter	60		
	d. Equipment Rack 2 Bilik TCR, Blok Pentadbiran (Aras 2)	Meter	60		
	e. Bilik TCR, Blok Pentadbiran (Aras 3)	Meter	55		
	f. Bilik TCR, Blok Pentadbiran (Aras 4)	Meter	45		
B1.2.2.2	Termination of 12 core OM4 indoor multimode indoor optic c/w pigtail and splicing cassette:-	Nos	120		
B1.3	FIBRE OPTIC PATCH CORD				
B1.3.1	Supply and install 5.0 metre length 1 pair OM4 factory terminated patch cord	Nos	12		
B1.3.2	Supply and install 3.0 metre length 1 pair OM4 factory terminated patch cord	Nos	12		
B1.3.3	Supply and install 3.0 metre length 1 pair OS2 factory terminated patch cord	Nos	12		
B1.3.4	Supply and install 5.0 metre length 1 pair OS2 factory terminated patch cord	Nos	0		
B2	EQUIPMENT RACK				
B2.1	Supply and install 19" Equipment Rack with the following requirements: i. Cable Management Units and Blank Plate (Please refer to Rack Population Drawing) ii. Perforated 1.5mm panel, frame thickness of 2mm				
	Wall Mounted Network Rack				
B2.1.1	Size: 9U equipment rack (Please refer to Rack Population drawing) a. Dimensions: Min. 600mm (w) x 800mm (d) b. Power Distribution Unit (factory Fabricated):3Nos13A SSO.	Lots	0		
B2.1.2	Size: 15U equipment rack (Please refer to Rack Population drawing) a. Dimensions: Min. 600mm (w) x 800mm (d) b. Power Distribution Unit (factory Fabricated):3Nos13A SSO.	Lots	8		
	Network Rack in TCR				
B2.1.3	Size: 27U equipment rack (Please refer to Rack Population drawing) a. Dimensions: Min. 800mm (w) x 1000mm (d) b. Power Distribution Unit (Factory Fabricated): C13 socket outlet (16A)	Lots	0		
B2.1.4	Size: 42U equipment rack (Please refer to Rack Population drawing) a. Dimensions: Min. 800mm (w) x 1000mm (d) b. Power Distribution Unit (Factory Fabricated): 2 x C13 socket outlet (32A) (Left and Right)	Lots	8		
B2.1.2	Network Rack in Server Room				
B2.1.2.1	Size: 42U equipment rack (Please refer to Rack Population drawing) a. Dimensions: Min. 800mm (w) x 1000mm (d) b. Power Distribution Unit (Factory Fabricated): 2 x C13 socket outlet (32A) (Left and Right)	Lots	0		

PEMASANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
B2.2	UTP Patch Panel				
B2.2.1	To supply and install 24 port Cat 6A (EIA/TIA) rackmountable patch panel c/w cable support and cable management	Nos.	16		
B2.2.2	To supply and install 48 port Cat 6A (EIA/TIA) rackmountable patch panel c/w cable support and cable management	Nos.	29		
B2.3	Fibre Optic Patch Panel				
B2.3.1	To supply and install 12 port Fibre Optic Panel c/w duplex for singlemode fibre optic cable.	Nos.	18		
B2.3.1	To supply and install 12 port Fibre Optic Panel c/w duplex for multimode fibre optic cable.	Nos.	8		
B3.0	FIBRE TERMINATION BOARD (FTB)				
B3.1	24 port Fiber Termination Board c/w termination of fibre cable (Adaptor & Connector) sealed, water & dust resistant design with IP55(outdoor) @ IP44(indoor) and approved by SIRIM	Nos.	2		
	a. Material: Plastic Injection Moulded or thermoplastic and made of fire retardant as specified in UL 94 standards.				
	b. Minimum Dimension: 200mm(H) x 200mm(W) x 55mm(D)				
	c. Adaptor: SC/UPC, SC/APC				
SUB-TOTAL TO SUMMARY OF PRICES FOR -Schedule B				RM	
(Carry forward to Ringkasan Tender)					

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
C	ACTIVE INFRASTRUCTURE (Network Equipment)				
	Supply, install, configure, testing and commisioning all the equipment rack using the latest image software, redundant power supply and complete quarantine functionality as per specification. Please refer to SOA, Compliance statement and Network Schematic Diagram to understand the detail design. All the active shall be onsite 8x5xNBD (8 Hours, 5 Days Next Business Day Service Level) support service during DLP and Warranty for 3 Years of the delivery date.				
C1	Firewall				
C1.1	Supply, install and configure firewall, antivirus, anti-malware, intrusion prevention system (IPS), network security and web security. The Firewall shall comply with the minimum following requirement:	No.	1		
	a. Firewall Throughput: 10.4 Gbps				
	b. VPN Tunnel/Throughput: 36 Gbps				
	c. IPS Throughput: 10.5 Gbps				
	d. Antivirus Throughput: 3.6 Gbps				
	e. Concurrent connections: 3 Million				
	f. Inclusive service maintenance, Factory Acceptance Test, Testing & Commissioning				
C2	DNS/DHCP				
C2.1	DNS/DHCP Appliance c/w 2x 10/100/1000 Ethernet port, serial console port, hot swappable hard drive and hot swappable power supply.	No.	1		
C3	NMS				
C3.1	To supply, install, configure and support maintenance 1 nos of NMS Server with license min. 250 workstation	No.	1		
C.4	Core Switch				
C.4.1	Supply, install and configure fully managed Core Switch c/w accessories with the following minimum requirements:	Nos.	2		
	a. Switching capacity is 2.0 Tbps				
	b. Forwarding rate is 1 Bpps				
	c. Layer 2/3/4 Switching				
	d. Support 24 port 10GbE				
	e. Support 4 port 40GbE				
	f. Inclusive service maintenance, Factory Acceptance Test, Testing & Commissioning				
C5	Access Switch POE+				
C5.1	Supply, install, and configure 48-port stackable Layer 2/4 switching Access Switch c/w accessories with the minimum following requirements:	Nos.	10		
	a. 48-port 1000 Base-T (Ethernet)				
	b. Switching capacity is 256 Gbps				
	c. Forwarding rate is 190 Mpps				
	d. 4 port SFP+ fixed 1/10 GbE				
	e. 80 Gb Stacking module c/w cable				
	f. Inclusive service maintenance, Factory Acceptance Test, Testing & Commissioning				

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
C5.2	Supply, install, and configure 24-port stackable Layer 2/4 switching Access Switch c/w accessories with the minimum following requirements: a. 24-port 1000 Base-T (Ethernet) b. Switching capacity is 208 Gbps c. Forwarding rate is 155 Mpps d. 2 port SFP+ fixed 1/10 GbE f. Inclusive service maintenance, Factory Acceptance Test, Testing & Commissioning	Nos.	2		
C5.3	Supply, install, and configure 8-port stackable Layer 2/4 switching Access Switch c/w accessories with the minimum following requirements: a. 8-port 1000 Base-T (Ethernet) b. Switching capacity is 256 Gbps c. Forwarding rate is 190 Mpps d. 2 port SFP+ fixed 1/10 GbE e. 10Gb Stacking module c/w cable f. Inclusive service maintenance, Factory Acceptance Test, Testing & Commissioning	Nos.	3		
C6	Access Switch Non POE				
C6.1	Supply, install, and configure 48-port stackable Layer 2/4 switching Access Switch c/w accessories with the minimum following requirements: a. 48-port 1000 Base-T (Ethernet) b. Switching capacity is 256 Gbps c. Forwarding rate is 190 Mpps d. 2 port SFP+ fixed 1/10 GbE e. 10Gb Stacking module c/w cable f. Inclusive service maintenance, Factory Acceptance Test, Testing & Commissioning	Nos.	14		
C6.2	Supply, install, and configure 24-port stackable Layer 2/4 switching Access Switch c/w accessories with the minimum following requirements: a. 24-port 1000 Base-T (Ethernet) b. Switching capacity is 256 Gbps c. Forwarding rate is 190 Mpps d. 2 port SFP+ fixed 1/10 GbE e. 10Gb Stacking module c/w cable f. Inclusive service maintenance, Factory Acceptance Test, Testing & Commissioning	Nos.	4		
C6.3	Supply, install, and configure 8-port stackable Layer 2/4 switching Access Switch c/w accessories with the minimum following requirements: a. 8-port 1000 Base-T (Ethernet) b. Switching capacity is 256 Gbps c. Forwarding rate is 190 Mpps d. 2 port SFP+ fixed 1/10 GbE e. 10Gb Stacking module c/w cable f. Inclusive service maintenance, Factory Acceptance Test, Testing & Commissioning	Nos.	1		

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
C.7	Transceiver Module				
C7.1	1G Base-SX SFP Transceiver module with LC connector	Nos.	0		
C7.2	10G Base-SR SFP+ Transceiver module with LC connector	Nos.	16		
C7.3	1G Base-LX SFP Transceiver module with LC connector	Nos.	0		
C7.4	10G Base-LR SFP+ Transceiver module with LC connector	Nos.	12		
C9	Wireless Access Point				
C9.1	Supply, install and configure Wireless Access Point c/w antenna, mounting bracket, cable and necessary accessories etc for full functionality with following requirements: a. 802.11a/b/g/n/ac/ax networks WiFi 6+ standard with appropriate license. b. Power Over Ethernet (POE) d. AP bracket shall be hung with mounting steel rod to the the floor slab / direct mounted on the wall. e. Lockable	Nos.	30		
C10	Uninterruptable Power Supply (UPS)				
C10.1	Supply and install 1.0kVA rack mount UPS c/w 30 minutes full load with 50% battery discharge with SNMP enable and 15A power cable for 15A 3 pin plug top.	Nos.	6		
C10.2	Supply and install 2.0kVA rack mount UPS c/w 30 minutes full load with 50% battery discharge with SNMP enable and 15A power cable for 15A 3 pin plug top.	Nos.	5		
C10.3	Supply and install 3.0kVA rack mount UPS c/w 30 minutes full load with 50% battery discharge with SNMP enable and 15A power cable for 15A 3 pin plug top.	Nos.	3		
C10.4	Supply and install 5.0kVA rack mount UPS c/w 30 minutes full load with 50% battery discharge with SNMP enable and 15A power cable for 15A 3 pin plug top.	Nos.	2		
C11	Wireless Controller / Management System				
C11.1	To supply, install and configure Wireless Controller with the following minimum specifications: a. Appliance b. 2 port 1GbE Base-T c. yy port SFP / SFP+	Nos.	1		

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
C12	Server for Network Management				
C12.1	To supply, install and configure Server with the following minimum specifications:				
	a. Intel or AMD processor with latest generation with 4 core 2.0 GHz				
	b. Dual Processor	Nos.	1		
	c. Memory 2 x 8GB DDR4, minimum 24 DIMM slot				
	d. Internal storage minimum 1 TeraByte useable with at least RAID 1 Configuration				
SUB-TOTAL TO SUMMARY OF PRICES FOR - Schedule C				RM	
(Carry forward to Ringkasan Tender)					

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
D	TELEPHONE SYSTEM				
	Supply of material, construct the complete telephones systems as per drawings and scope of works & accordance to the requirements and spesification of JKR/ TELCO (Refer to drawing). <u>All shall must be done by registered contractor with TMB</u> . To liase on and coordinate with TM's technical and sales team for the application of a new Multiline Session Initiation Protocol (SIP)/ direct line as per S.O representative instruction and TELCO requirement. The Multiline SIP line shall be connected to the new IP PBX.				
TELEPHONE EQUIPMENT					
D1	IP PBX System				
D1.1	To supply, install and configure IP PBX for Medium Business up to 400 number c/w required licensing, SIP Gateway that shall configured c/w licenses, cablings and accessories as per technical compliance and specification:				
	a. 300 number of user license	Lot	1		
	b. 20 number of channel license				
	c. Call Billing system (Web Searchable User Interface)				
	d. Inclusive service maintenance, Factory Acceptance Test, Testing & Commissioning. Onsite 8x5xNBD (8 Hours, 5 Days NDxt Business Day Service Level) maintenance service during DLP and Warranty for 3 Years				
D2	Operator System				
D2.1	To install and configure operator system with the following specification c/w licensing needed and/or other necessary accessories, 1 years onsite or approve equivalent to comply with requirement as below:				
	Operator Console	Lot	1		
	a. 20 channels				
	b. Hard phone terminal				
	c. Operating System: Latest Windows Server or Linux				
	d. Storage retention: report, call history, call recording for 7 years				
	e. Inclusive service maintenance, Factory Acceptance Test, Testing & Commissioning. Onsite 8x5xNBD (8 Hours, 5 Days NDxt Business Day Service Level) maintenance service during DLP and Warranty for 3 Years				
D3	Voice Gateway				
D3.1	Supply, install, testing and commisioning the Voice Media Gateway with the following requirement c/w required cablings and/or accessories, rack mount kits system, power supply unit and other necessary accessories, 1 years onsite or approve equivalent to comply with drawing and specification as below:	Lot	1		
	a. Minimum 20 numbers of channel				
	b. Inclusive service maintenance, Factory Acceptance Test, Testing & Commissioning. Onsite 8x5xNBD (8 Hours, 5 Days NDxt Business Day Service Level) maintenance service during DLP and Warranty for 3 Years				
D4	Telephone Set and Fax Machine				
	To supply, install and configure telephone set with the following specification c/w required licensing, cablings and/or other necessary accessories, 1 years onsite or approve equivalent to comply with requirement as below:				
D4.1	Basic IP Phone	Nos	283		
D4.2	Executive IP Phone	Nos	6		
D4.3	Fax Machine c/w Analog telephone adapter	Nos	2		
D4.6	To Supply and install wall mounted metad clad telephone 10 pair c/w termination block, modules (for all pairs), earthing and all necessary accessories to TMB's requirement and as per drawing and spesification DP box	Nos	1		
D4.7	To Supply and install wall mounted metad clad telephone 50 pair c/w termination block, modules (for all pairs), earthing and all necessary accessories to TMB's requirement and as per drawing and spesification DP box	Nos	1		
D4.8	To supply, install and terminate 10 Multipair cable grey cable partly in suitable size rigid compact PVC conduit c/w all necessary accessories as per TMB requirement, drawings and JKR spesification	Meter	10		

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
D5	External Infrastructure (MANHOLE AND DUCTING)				
Note:	Supply of material, construct the complete infrastructure of telephones systems as per drawings and scope of works & accordance to the requirements and specifications of JKR/TELEKOM (refer to drawing). All works shall be done by registered contractors with TMB.				
D5.1	To supply and install of TELCO point chamber/box inclusive of duct seal, cover cable bearer and brackets as per specification. Manholes, handholes and joint boxes including excavation, internal fitting, back filling with suitable materials, compaction and disposal of surplus materials				
D5.1.1	JC9	Lot	5		
D5.1.2	JRC7	Lot	8		
D5.1.3	JB30	Lot	18		
D5.2	Supply and install the following telephone ducts including subduct (3nos 32mm Dia. HDPE Corrugated subduct), Excavation works, backfilling and guide rope as per Telco specifications and requirements				
	As per drawing no.:- HQL.54/2019/PICT1				
D5.2.1	2 way 100mm Telephone duct PVC pipe c/w 3 nos 32mm dia. HDPE Corrugated Sub Duct.	Meter	450		
D5.3	PIPE CROSSING / DUCTING				
	To supply and install 150mm dia. GI Pipe Class 'B' for road crossing, cable crossing, hardstanding and tarmac area.				
	As per drawing no.:- HQL.54/2019/PICT1				
D5.3.1	2 way 150mm GI pipe (Class B) pipe for road crossing	Meter	350		
D5.3.2	4 way 150mm GI pipe (Class B) pipe for road crossing	Meter	370		
D5.4	Horizontal Directional Drilling (HDD)				
	Supply and install High-density polyethylene (HDPE) using " Horizontal Directional Drilling" with size pipe:				
	As per drawing no.:- HQL.54/2019/PICT1				
D5.4.1	4 way 100mm HDPE Duct (PN10 Pipe)	Meter	70		
SUB-TOTAL TO SUMMARY OF PRICES FOR - Schedule D				RM	
(Carry forward to Ringkasan Tender)					

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
E	FIBRE TO THE PREMISES				
	Supply and install the following items as per drawing, technical of compliance and specification:				
	All quantities given are PROVISIONAL. The actual quantities installed shall be measured on site after completion and prices adjusted accordingly.				
	Note:				
	i) All wiring shall be in Concealed Heavy Duty uPVC Conduit/ Electrogalvanised Trunking / Electrovanised Cable Tray All wiring for Top Unit (Suspended Ceiling) shall be in				
	ii) concealed/Suspended Heavy Duty uPVC Conduit/Electrogalvanised Trunking / Electrovanised Cable Tray				
	iii) Brand & Model of FTTH Equipment must have TM Certified approval				
	iv) Contractor must attach relevant catalogues for all equipments and accessories to be used in the FTTH system installation. Otherwise, the tender will not be considered.				
A	KUARTERS KELAS F (PANGSA 7 TINGKAT 48 UNIT)- TASKA & TADIKA				
A1	OPTICAL DISTRIBUTION FRAME				
A.1.1	216 port Incoming & Outgoing Optical Distribution Frame (IODF & OODF)	Lot	1		
	a. Material: cold-rolled steel and powder coated in light grey (RAL7035)				
	b. Dimension: 2200mm(H) x 800mm(W) x 400mm(D)				
A2	FIBRE TERMINATION BOARD (FTB)				
A2.1	8 port Fiber Termination Board c/w termination of fibre cable (Adaptor & Connector) sealed, water & dust resistant design with IP55(outdoor) @ IP44(indoor) and approved by SIRIM	Nos.	11		
	a. Material: Plastic Injection Moulded or thermoplastic and made of fire retardant as specified in UL 94 standards.				
	b. Minimum Dimension: 200mm(H) x 200mm(W) x 55mm(D)				
	c. Adaptor: SC/UPC, SC/APC				
A2.2	6 port Fiber Termination Board c/w termination of fibre cable (Adaptor & Connector) sealed, water & dust resistant design with IP55(outdoor) @ IP44(indoor) and approved by SIRIM	Nos.	3		
	a. Material: Plastic Injection Moulded or thermoplastic and made of fire retardant as specified in UL 94 standards.				
	b. Minimum Dimension: 200mm(H) x 200mm(W) x 55mm(D)				
	c. Adaptor: SC/UPC, SC/APC				
A3	FIBRE WALL SOCKET (FWS)				
A3.1	To supply and install Fiber Wall Socket (FWS) c/w Splicing Cassette and SC Adaptor	Nos	51		

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
A4	FIBRE OPTIC CABLE (INTERNAL CABLING)				
A4.1	a. Type: 8 core OS2 singlemode indoor fibre optics cable. All core shall be terminated to the optical distribution frame or fiber termination				
	b. Pathways: In hot-dipped galvanised				
	c. From OODF to :-				
	i. FTB 1 at Level 1	meter	60		
	ii. FTB 1 at Level 2	meter	65		
	iii. FTB 2 at Level 2	meter	55		
	iv. FTB 1 at Level 3	meter	70		
	v. FTB 2 at Level 3	meter	60		
	vi. FTB 1 at Level 4	meter	75		
	vii. FTB 2 at Level 4	meter	70		
	viii. FTB 1 at Level 5	meter	75		
	ix. FTB 2 at Level 5	meter	70		
	x. FTB 1 at Level 6	meter	80		
	xi. FTB 2 at Level 6	meter	75		
A4.2	Singlemode quick connector or pigtail splicing cassette for 8 port FTB	Nos	176		
A4.3	a. Type: 6 core OS2 singlemode indoor fibre optics cable. All core shall be terminated to the optical distribution frame or fiber termination				
	b. Pathways: In hot-dipped galvanised				
	c. From OODF to:				
	i. FTB 2 at Level 1	meter	55		
	ii. FTB 1 at Level 7	meter	90		
	iii. FTB 2 at Level 7	meter	80		
A4.4	Singlemode quick connector or pigtail splicing cassette for 6 port FTB	Nos	36		
A4.5	a. Type: 2 core OS2 singlemode indoor fibre optics cable. All core shall be end to end terminated.				
	b. Pathways: In heavy duty uPVC conduit, above ceiling/walkways c/w metalclad back box and any necessary accessories	Nos	51		
	c. From FTB at eah floor to FWS inside the unit				
A5	FIBRE OPTIC CABLE (EXTERNAL CABLING)				
A5.1	Supply, install, test and commision singlemode outdoor corrugated steel-armoured fibre optics cable with the following requirements: i. Type: OS2 singlemode outdoor armoured fibre optics cable. All core shall be terminated to the patch panel. ii. Installation shall be in electrogalvanised trunking				
	108 core from Outgoing Optical Distribution frame (OODF) at Bilik SDF Aras 1 (Pangsa 7 tingkat 48 Unit- Taska & Tadika) to :-				
	a. Optical Distribution Frame inside Bilik Telefon ar Kuarters Kelas F (Pangsa 7 tingkat 48 Unit- Perkep)	Meter	120		
A5.2	Singlemode quick connector or pigtail splicing cassette for 108 port FTB	Nos	216		
A5.3	3 metre Single mode fibre factory terminated patch cord	Nos	108		

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
B	KUARTERS KELAS F (PANGSA 7 TINGKAT 48 UNIT)- PERKEP				
B1.1	OPTICAL DISTRIBUTION FRAME				
B1.1	108 port Incoming & Outgoing Optical Distribution Frame (IODF & OODF)	Lot	1		
	a. Material: cold-rolled steel and powder coated in light grey (RAL7035)				
	b. Dimension: 2200mm(H) x 800mm(W) x 400mm(D)				
B2	FIBRE TERMINATION BOARD (FTB)				
B2.1	8 port Fiber Termination Board c/w termination of fibre cable (Adaptor & Connector) sealed, water & dust resistant design with IP55(outdoor) @	Nos.	11		
	a. Material: Plastic Injection Moulded or thermoplastic and made of fire retardant as specified in UL 94 standards.				
	b. Minimum Dimension: 200mm(H) x 200mm(W) x 55mm(D)				
	c. Adaptor: SC/UPC, SC/APC				
B2.2	6 port Fiber Termination Board c/w termination of fibre cable (Adaptor & Connector) sealed, water & dust resistant design with IP55(outdoor) @ IP44(indoor) and approved by SIRIM	Nos.	3		
	a. Material: Plastic Injection Moulded or thermoplastic and made of fire retardant as specified in UL 94 standards.				
	b. Minimum Dimension: 200mm(H) x 200mm(W) x 55mm(D)				
	c. Adaptor: SC/UPC, SC/APC				
B3	FIBRE WALL SOCKET (FWS)				
B3.1	To supply and install Fiber Wall Socket (FWS) c/w Splicing Cassette and SC Adaptor	Nos	50		
B4	FIBRE OPTIC CABLE (INTERNAL CABLING)				
B4.1	a. Type: 8 core OS2 singlemode indoor fibre optics cable. All core shall be terminated to the optical distribution frame or fiber termination				
	b. Pathways: In hot-dipped galvanised				
	c. From OODF to :-				
	i. FTB 1 at Level 1	meter	65		
	ii. FTB 2 at Level 1	meter	55		
	iii. FTB 1 at Level 2	meter	70		
	iv. FTB 2 at Level 2	meter	60		
	v. FTB 1 at Level 3	meter	75		
	vi. FTB 2 at Level 3	meter	65		
	vii. FTB 1 at Level 4	meter	80		
	viii. FTB 2 at Level 4	meter	70		
	ix FTB 1 at Level 5	meter	80		
	x. FTB 2 at Level 5	meter	60		
	B4.2	xi. FTB 1 at Level 6	meter	85	
xii. FTB 2 at Level 6		meter	70		
B4.2	Singlemode quick connector or pigtail splicing cassette for 8 port FTB	Nos	176		

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
B4.3	a. Type: 6 core OS2 singlemode indoor fibre optics cable. All core shall be terminated to the optical distribution frame or fiber termination				
	b. Pathways: In hot-dipped galvanised				
	c. From OODF to:				
	i. FTB 2 at Level 1	meter	98		
	ii. FTB 1 at Level 7	meter	98		
	iii. FTB 2 at Level 7	meter	98		
B4.4	Single mode quick connector or pigtail splicing cassette for 6 port FTB	Nos	36		
B4.5	a. Type: 2 core OS2 singlemode indoor fibre optics cable. All core shall be end to end terminated.	Nos	50		
	b. Pathways: In heavy duty uPVC conduit, above ceiling/walkways c/w metalclad back box and any necessary accessories				
	c. From FTB at eah floor to FWS inside the unit				
SUB-TOTAL TO SUMMARY OF PRICES FOR - Schedule E				RM	
(Carry forward to Ringkasan Tender)					

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

F INFRASTRUCTURE FOR FIXED STATION AND ANTENNA

BILL OF QUANTITIES (All quantities are Provisional and Subjected To Final Measurement)

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	<p><i>To supply, install, testing and commissioning to use the following as per drawing and specifications. All quantities given are PROVISIONAL. The actual quantities installed shall be measured on site after completion and prices adjusted accordingly. All antennas to be supplied and installed by the Client</i></p> <p>The exact location of antennas, surge arrestors, end boxes and internal earthing bars shall be determined at the site by the Client</p> <p>As per drawing no.:- HQL.54/2019/ICT34-37</p>				
1.0	TELECOMMUNICATION INFRASTRUCTURE				
1.1	300mm (width), 2.0mm (thickness) hot dipped galvanised perforated cable trays c/w elbow, supports, fittings, brackets, hangers, all necessary accessories and as required for proper operation. The cable trays shall be bonded to the earthing bars (tower and control room) (both end) with 50 sq.mm bare stranded copper cable c/w lugs. (approximately 75 m)	-	Lump sum	Lump sum	
2.0	TELECOMMUNICATION CABLES AND ACCESSORIES				
2.1	RF Foam Coaxial Cable (LDF4-50A, 1/2 inch) on perforated cable tray and ladder c/w cable clamp from:				
2.1.1	a) Kaunter Perkhidmatan Aduan Trafik, Bahagian Siasatan dan Penguatkuasaan Trafik Daerah (Aras 1) i) Antenna to Surge Arrestor to Surge Arrestor at Kaunter Perkhidmatan Aduan Trafik (approximately 70m)	-	Lump sum	Lump sum	
2.1.2	b) Kaunter Pertanyaan Cawangan Persenjataan, Balai Polis Sg. Kapar (Aras 1) i) Antenna to Surge Arrestor to Surge Arrestor at Kaunter Pertanyaan (approximately 60m)	-	Lump sum	Lump sum	
2.1.3	c) Bilik Perbincangan 2, Bahagian Siasatan Jenayah (Aras 2) i) Antenna to Surge Arrestor to Surge Arrestor at Bilik Perbincangan 2 (approximately 50m)	-	Lump sum	Lump sum	
2.1.4	d) Bilik Perbincangan, Bahagian Pencegahan Jenayah dan Keselamatan Komuniti Daerah (Aras 3) i) Antenna to Surge Arrestor to Surge Arrestor at Bilik Perbincangan 2 (approximately 60m)	-	Lump sum	Lump sum	
2.1.5	e) Ruang PUSKOM, Cawangan Komunikasi (Aras 4) i) Antenna to Surge Arrestor to Surge Arrestor at Ruang Puskom (approximately 30m) ii) Antenna to Surge Arrestor at Ruang Puskom (approximately 30m)	- -	Lump sum Lump sum	Lump sum Lump sum	
2.1.6	f) Bahagian Ketenteraman Awam Daerah (Aras 4) i) Antenna to Surge Arrestor to Surge Arrestor at Pusat Kawalan Daerah (approximately 70m) ii) Antenna to Surge Arrestor at Pusat Kawalan Daerah (approximately 70m) iii) Antenna to Surge Arrestor to Surge Arrestor at Full Manning (approximately 70m) vi) Antenna to Surge Arrestor at Full Manning (approximately 70m)	- - Lump sum Lump sum	Lump sum Lump sum Lump sum Lump sum	Lump sum Lump sum Lump sum Lump sum	
2.2	RF Superflexible Foam Coaxial Cable (FSJ1-50A, 1/4 inch) in surface 25mm rigid high impact uPVC conduit from:				
2.2.1	a) Kaunter Perkhidmatan Aduan Trafik, Bahagian Siasatan dan Penguatkuasaan Trafik Daerah (Aras 1) i) Surge Arrestor to End Box (for Antenna) 3 m cable shall be coiled at End Box	-	Lump sum	Lump sum	
2.2.2	b) Kaunter Pertanyaan Cawangan Persenjataan, Balai Polis Sg. Kapar (Aras 1) i) Surge Arrestor to End Box (for Yagi Antenna) 3 m cable shall be coiled at End Box (approximately 6m)	-	Lump sum	Lump sum	

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

F INFRASTRUCTURE FOR FIXED STATION AND ANTENNA

BILL OF QUANTITIES (All quantities are Provisional and Subjected To Final Measurement)

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
2.2.3	c) Bilik Perbincangan 2, Bahagian Siasatan Jenayah (Aras 2) i) Surge Arrester to End Box (for Yagi Antenna) 3 m cable shall be coiled at End Box	-	Lump sum	Lump sum	
2.2.4	d) Bilik Perbincangan, Bahagian Pencegahan Jenayah dan Keselamatan Komuniti Daerah (Aras 3) i) Surge Arrester to End Box (for Yagi Antenna) 2 m cable shall be coiled at End Box (approximately 6m)	-	Lump sum	Lump sum	
2.2.5	e) Ruang PUSKOM, Cawangan Komunikasi (Aras 4) i) Surge Arrester to End Box (for Yagi Antenna) 2 m cable shall be coiled at End Box (approximately 6m) ii) Surge Arrester to End Box (for Yagi Antenna) 2 m cable shall be coiled at End Box (approximately 6m)	- -	Lump sum Lump sum	Lump sum Lump sum	
2.2.6	f) Bahagian Ketenteraman Awam Daerah (Aras 4) i) Surge Arrester to End Box (for Yagi Antenna) 2 m cable shall be coiled at End Box (approximately 6m) ii) Surge Arrester to End Box (for Yagi Antenna) 2 m cable shall be coiled at End Box (approximately 6m) iii) Surge Arrester to End Box (for Yagi Antenna) 2 m cable shall be coiled at End Box (approximately 6m) iv) Surge Arrester to End Box (for Yagi Antenna) 2 m cable shall be coiled at End Box (approximately 6m)	- - - -	Lump sum Lump sum Lump sum Lump sum	Lump sum Lump sum Lump sum Lump sum	
2.3	End Box , Surface Mounted PVC Back Box, 1 Gang, 87mm (L) x 87mm (W) c/w adapters	Nos	10		
2.4	RF Wireless and Radiating Connector L4TNM-PSA (N Male for 1/2 inch LDF4-50A cable)	Nos	25		
2.5	RF Wireless and Radiating Connector F1PNM-HF (N Male for 1/4 inch FSJ1-50A cable)	Nos	10		
2.6	RF Wireless and Radiating Connector F1MU (Mini UHF Male for 1/4 inch FSJ1-50A cable)	Nos	10		
2.7	Polyphaser Type N F/F Coaxial VHF Surge Protector VHF50HN, 100Mhz-512 MHz, 750W c/w bracket.	Nos	10		
2.8	Grounding Kit SG12-06B2A for 1/2 inch LDF4-50A cable c/w all accessories	Nos	15		
2.9	Control station combiner CS0496-0805-31 (1-8way)	Nos	2		
2.10	Equipment rack for combiner	Nos	1		
2.11	Heavy Duty Galvanised Steel Yagi Mounting Bracket (Right Angle) UCR1 c/w all necessary accessories. (for antennas at tower)	Set	5		
2.12	Cable marker identification for coaxial cables and radio location c/w labelling. The labels on coaxial cables shall installed at the intervals not exceeding 5m. The labels shall be suitable for outdoor use.	-	Lump sum	Lump sum	
2.13	8-way 40mm x 6mm tinned copper Earthing Bar c/w porcelain insulators, bolts and nuts. The earthing bar shall be bonded to the metallic tower body with 50mm ² bare stranded copper cable c/w lugs. The earthing bar shall be installed at each tower platform level (Earthing Bar shall be Factory Ready)	Nos	7		
2.14	16-way 40mm x 6mm tinned copper Earthing Bar c/w porcelain insulators, bolts and nuts. The earthing bar shall be bonded to the metallic tower body with 50mm ² bare stranded copper cable c/w lugs. The earthing bar shall be installed at each tower platform level (Earthing Bar shall be Factory Ready)	Nos	4		

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

F INFRASTRUCTURE FOR FIXED STATION AND ANTENNA

BILL OF QUANTITIES (All quantities are Provisional and Subjected To Final Measurement)

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
2.15	25sq.mm PVC green cable from 8 ways tinned copper earthing bar located at: - Kaunter Perkhidmatan Aduan Trafik at Bahagian Siasatan & Penguatkuasaan Trafik Daerah - Kaunter Pertanyaan at Balai Polis Sg. Kapar - Bilik Perbincangan 2 at Bahagian Siasatan Jenayah - Bilik Perbincangan at Cawangan Khas - Ruang Puskom at Cawangan Komunikasi - Pusat Kawalan at Bahagian Ketenteraman Awam Daerah - Full Manning at Bahagian Ketenteraman Awam Daerah to 16 ways tinned copper earthing bar (located at Tower) in electrogalvanised trunking/hot dipped galvanised perforated cable tray (approximately 410 Meter)	Lump Sum	Lump Sum		
2.16	25sq.mm PVC green cable connecting 4 nos '16 ways tinned copper earthing bar' at each tower platform on hot dipped galvanised perforated cable tray. (approximately 15 Meter)	Lump Sum	Lump Sum		
2.17	16sq.mm PVC green cable from Surge Protector located at - Kaunter Perkhidmatan Aduan Trafik at Bahagian Siasatan & Penguatkuasaan Trafik Daerah - Kaunter Pertanyaan at Balai Polis Sg. Kapar - Bilik Perbincangan 2 at Bahagian Siasatan Jenayah - Bilik Perbincangan at Cawangan Khas - Ruang Puskom at Cawangan Komunikasi - Pusat Kawalan at Bahagian Ketenteraman Awam Daerah - Full Manning at Bahagian Ketenteraman Awam Daerah to 8-way Earthing Bar in electrogalvanised trunking/hot dipped galvanised perforated cable tray (approximately 5 Meter)	Lump Sum	Lump Sum		
3.0	LIGHTNING PROTECTION SYSTEM				
3.1	Earth Termination system with 25mm x 3mm copper tape, 300mm (L) x300mm(W) x180mm(D) heavy duty inspection earth chamber with removeable cover and 16mm dia. X 300mm length copper jacketd steel core earth electrode. The connection of the copper tape and earth electrode shall be bonded to building earth termination system with copper tape by means of exothermic weld connections. The earth electrode resistance shall be less than 5 ohm	Lot	1		
3.2	The following tests shall be carried out in accordance with IEC 62305-3 and shall submit test reports to the Superintendent Officer's (S.O'S) Representative within 2 weeks after completion of the testing:				
	a. Earth electrode resistant test	Lump Sum	Lump Sum		
	b. Measurement of resistance from the air terminal rod to the base of the tower with 4-wire 10A micro-ohm meter.	Lump Sum	Lump Sum		
SUB-TOTAL TO SUMMARY OF PRICES FOR - Schedule F				RM	
(Carry forward to Ringkasan Tender)					

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
G	EARTHING SYSTEM				
	Note:				
	a. It accordance to recommendations contains in IEC 30129, ANSI/TIA/EIA 607 and IEC 60364 Telecommunication Bonding and Earthing Standard for all equipment rack and raise flooring in SDF,MDF,TCR, all Distribution Frame/ Panels and Telephone System.				
	b. Installation shall comply with JKR Specification (L-S38)				
	c. Brand shall be comply with JKR Electrical Material Approved List (EMAL)	Lump Sum	Lump Sum		
	d. Please refer to drawing for details information. As per drawing no. HQL.54/2019/ICT9				
G.1.1	To supply, install, testing and commissioning as per JKR specification of earthing system c/w 2 Nos earthing conductor copper tape 25mm x 3mm copper tape (for Telecommunication Bonding Conductor (TBC), Telecommunications Bonding Backbone (TBB), and Backbone Bonding Conductor (BBC)), 50mm x 6mm copper as Primary Bonding Bar, 25mm x 6mm copper as Secondary Bonding Bar, 16mm sqr earth cable Rack Bonding Conductor RBC, Rack Bonding Terminal (RBT)				
G2	SYSTEM REFERENCE GRID FOR SERVER ROOM				
	Note:				
	a. It accordance to recommendations contains in ISO/IEC 14763-2.				
	b. Installation must comply with JKR Specification (L-S38) and jMAL.				
	c. Please refer to drawing for details information.				
G2.1	The frame bonding grid shall be installed with maximum cell size of 2m in each horizontal direction. The minimum cross-sectional area of the conductors that create the frame bonding grid shall be 10 mm ² as per drawing	Lump Sum	Lump Sum		
SUB-TOTAL TO SUMMARY OF PRICES FOR - Schedule G				RM	
(Carry forward to Ringkasan Tender)					

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
H	TESTING & COMMISSIONING				
NOTE	Testing and commissioning the following systems and guarantee full functionality of the system during defect and liability period as per scope of works & according to the requirements and specifications of JKR. (Contractor need to carry out pre-T&C for all the systems and submit the test results to JKR before T&C with JKR)				
H1	Structure Cabling System Test by using Fluke Tester min model DTX8000	Lump sum	Lump sum		
H2	Network Equipment Test	Lump sum	Lump sum		
H3	Telephone System Test	Lump sum	Lump sum		
Sub total SUB-TOTAL TO SUMMARY OF PRICES FOR- Schedule H				RM	
(Carry forward to Ringkasan Tender)					

PEMSANGAN SISTEM ICT UNTUK PEMBINAAN IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

Items	Description Brief Specifications	Unit	Qty	Unit Price (RM)	Total Price (RM)
I	OTHERS				
I.1	TRAINING				
	To organize and arrange formal and hands-on training sessions with the following requirements:				
I.1.1	a. Networking Technology - Introduction & Intermediate	Pax	4		
	b. Network System Configuration, Operation and Maintenance	Pax	4		
	c. Telephone System Configuration, Operation and Maintenance	Pax	4		
I.1.2	ASSET TAGGING, LABELLING AND REGISTRATION				
I.1.3	Asset labelling and tagging for all equipments, devices and rack using printed label, permanent marker and approved permanent paint for "HAH HERAJAAN MALAYSIA" label	Lot	1		
I.1.4	To provide and install labelling of faceplate, Distribution Frame, patch panel, fibre cabling, equipment rack and telephone system as specified in JHR Specification L-S38 and L-S16	Lump Sum	Lump Sum		
I.1.5	Asset Registration Works				
I.1.5.1	Shall submit 4 sets hardcopy and digital copy in the form of Microsoft Word/MS Excel files of the following:- a. Label identification layout plan drawings using 'SHATA room naming convention' in hard cover binding. b. Asset Information's form (D.A.3 -D.A.6) & template (MS Excel) format as approved by S.O./P.D. c. List of DAH Homponen in each room (as per Borang D.A. 7 in Garis Panduan Pengumpulan Data & Pelabelan Aset TaH Alih (PeDATA): Aset Bangunan. A copy of this form should also be attached at each room during T&C for JHR's verification purposes.	Lot	1		
I.1.5.2	Shall be compile the asset informations as per requirement of latest version Garis Panduan Pengumpulan Data & Pelabelan Aset TaH Alih (PeData): Aset Bangunan for the approval of the S.O./P.D.	Lot	1		
SUB-TOTAL TO SUMMARY OF PRICES FOR - Schedule I				RM	
(Carry forward to Ringkasan Tender)					

MANUFACTURER'S NAME/BRAND OF MATERIALS

PEMASANGAN SISTEM ICT UNTUK IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

PENTING: Pentender adalah WAJIB mengemukakan jenama dan model peralatan elektrik (termasuk katalog) yang berdaftar dengan EMAL JKR. Semakan boleh dilakukan di laman web <http://jmal.jkr.gov.my/emalv3/> Kegagalan pentender mengemukakan senarai peralatan yang berdaftar atau tidak menyatakan sebarang jenama/model boleh menyebabkan ia ditolak dan pemilihan mutlak(jenama/model) akan ditentukan oleh pihak JKR.

ITEM	MATERIALS	BRAND	COUNTRY OF MANUFACTURER	MODEL
1.0	PASSIVE INFRASTRUCTURE			
1.1	UTP Cat 6A Cable 23 AWG (EIA/TIA) Low Smoke Zero Halogen (LSZH)			
1.1	Factory terminated Patch Cord			
1.2	Angled Faceplate Data Outlet			
1.3	Modular Cat6 RJ45 Jack			
2.0	BACKBONE CABLING			
	FIBRE OPTIC CABLE (OUTDOOR)			
2.1	12 Core Outdoor OS2 Singlemode Fibre Optic			
2.1	BACKBONE CABLING			
	FIBRE OPTIC CABLE (INDOOR)			
2.1.1	12 Core Indoor OM4 Multimode Fibre Optic			
2.1.2	8 core Indoor OM4 Multimode Fibre Optic Cable			
3.0	EQUIPMENT RACK			
3.1	Wall Mounted Network Rack 15 U			
3.2	Network Rack in TCR 42U			
3.3	UTP Patch Panel			
3.4	Fibre Optic Patch Panel			
3.5	Fiber Termination Box (FTB)			
4.0	ACTIVE INFRASTRUCTURE			
4.1	Firewall			
4.2	Session Border Control Firewall			
4.3	DNS/DHCP Server			
4.4	Network Management System (NMS)			
4.5	Core Switch Layer 2/3/4			

MANUFACTURER'S NAME/BRAND OF MATERIALS

PEMASANGAN SISTEM ICT UNTUK IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

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ITEM	MATERIALS	BRAND	COUNTRY OF MANUFACTURER	MODEL
4.6	Access Switch Layer 2/3 (48 port)			
4.7	Access Switch Layer 2/3 (24 port)			
4.8	Access Switch Layer 2/3 (8 port)			
4.9	Transceiver Module			
4.10	Wireless Controller			
4.11	Wireless Access Point (AP)			
4.12	Cable Manager			
4.13	Uninterruptible Power Supply (UPS) - rack type			
	a) 5kVA UPS			
	b) 3 kVA UPS			
	c) 2kVA UPS			
5.0	TELEPHONE SYSTEM			
5.1	IP PBX			
5.2	Media Gateway			
5.3	10 Pair Telephone DP Box			
5.4	50 Pair Telephone DP Box			
5.5	10 Pair Multi cable			
5.6	Basic IP Phone			
5.7	Executive IP Phone			
5.8	Fax Machine c/w Analog Adaptor			
6.0	EXTERNAL TELECOMMUNICATION SYSTEM			
6.1	Telephone Manhole			
	a) JC9			
	b) JRC7			
	c) JB30			
	d) Telephone Pit			

MANUFACTURER'S NAME/BRAND OF MATERIALS

PEMASANGAN SISTEM ICT UNTUK IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

PENTING: Pentender adalah WAJIB mengemukakan jenama dan model peralatan elektrik (termasuk katalog) yang berdaftar dengan EMAL JKR. Semakan boleh dilakukan di laman web <http://jmal.jkr.gov.my/emalv3/> Kegagalan pentender mengemukakan senarai peralatan yang berdaftar atau tidak menyatakan sebarang jenama/model boleh menyebabkan ia ditolak dan pemilihan mutlak(jenama/model) akan ditentukan oleh pihak JKR.

ITEM	MATERIALS	BRAND	COUNTRY OF MANUFACTURER	MODEL
6.2	G.I Pipe Class B (Road Crossing)			
6.3	HDPE Duct (PN10)			
6.4	2 way 100mm Telephone duct PVC pipe c/w 3 nos 32mm dia. HDPE Corrugated Sub Duct.			
7.0	FIBRE TO PREMISES			
7.1	Optical Distribution Frame (ODF)			
7.2	Fibre Distribution Board (FTB)			
7.3	Fibre Wall Socket			
7.1	Fibre Optic Cabling (Internal Cabling)			
7.1.1	8 core OS2 Single Mode fibre optic cable			
7.1.2	6 core OS2 Single Mode fibre optic cable			
7.1.3	Single Mode quick connector or pigtail cassette			
7.2	Fibre Optic Cabling (Outdoor Cabling)			
7.2.1	108 core OS2 Singlemode			
7.2.2	Single Mode quick connector or pigtail cassette			
7.2.3	3 meter Single mode fibre factory patch cord			
8.0	TELECOMMUNICATION INFRASTRUCTURE			
8.1	Hot Dipped Galvanised perforated cable tray			
8.1	TELECOMMUNICATION CABLES AND ACCESSORIES			
8.1.1	RF Foam Coaxial Cable (LDF4-50A, 1/2 inch)			
8.1.2	RF Superflexible Foam Coaxial Cable (FSJ1-50A, 1/4 inch)			
8.1.3	End Box, Surface Mounted PVC Back Box, 1 Gang, 87mm (L) x 87mm (W) c/w adapters			
8.1.4	RF Wireless and Radiating Connector L4TNM-PSA (N Male for 1/2 inch LDF4-50A cable)			

MANUFACTURER'S NAME/BRAND OF MATERIALS

PEMASANGAN SISTEM ICT UNTUK IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

PENTING: Pentender adalah WAJIB mengemukakan jenama dan model peralatan elektrik (termasuk katalog) yang berdaftar dengan EMAL JKR. Semakan boleh dilakukan di laman web <http://jmal.jkr.gov.my/emalv3/> Kegagalan pentender mengemukakan senarai peralatan yang berdaftar atau tidak menyatakan sebarang jenama/model boleh menyebabkan ia ditolak dan pemilihan mutlak(jenama/model) akan ditentukan oleh pihak JKR.

ITEM	MATERIALS	BRAND	COUNTRY OF MANUFACTURER	MODEL
8.1.5	RF Wireless and Radiating Connector F1PNM-HF (N Male for 1/4 inch FSJ1-50A cable)			
8.1.6	RF Wireless and Radiating Connector F1MU (Mini UHF Male for 1/4 inch FSJ1-50A cable)			
8.1.7	Polyphaser Type N F/F Coaxial VHF Surge Protector VHF50HN, 100Mhz-512 MHz, 750W c/w bracket.			
8.1.8	Grounding Kit c/w standard weatherproofing accessories.			
8.1.9	Short Haul Control Station Combiner(SHCSC) 40-960 MHz, 1-8 way			
8.1.10	Heavy Duty Galvanised Steel Yagi Mounting Bracket (Right Angle) UCR1 c/w all necessary accessories. (for antennas at tower)			
8.1.11	Cable marker identification for coaxial cables and radio location c/w labelling. The labels on coaxial cables shall installed at the intervals not exceeding 5m			
9.0	EARTHING SYSTEM			
9.1	Main Earthing Bar 50mm x 6mm Tinned Copper Bar			
9.2	Copper Tape (3mm x 25mm)			
9.3	Heavy Duty Concrete Earth Chamber			
9.4	Earth Electrode of Copper-jacketed steel core rod			

MANUFACTURER'S NAME/BRAND OF MATERIALS

PEMASANGAN SISTEM ICT UNTUK IBU PEJABAT POLIS DAERAH KLANG UTARA, SELANGOR

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ITEM	MATERIALS	BRAND	COUNTRY OF MANUFACTURER	MODEL
9.5	Exothermic Welding/ Cold Pressure Welding Plumbed Joints			
9.6	8-way 40mm x 6mm tinned copper Earthing Bar c/w porcelain insulators, bolts and nuts.			
9.7	16-way 40mm x 6mm tinned copper Earthing Bar c/w porcelain insulators, bolts and nuts.			
9.8	25sq.mm PVC Green Cable			
9.9	16sq.mm PVC Green Cable			

NOTE Tenderer is required to submit Manufacturer's catalogue, technical specifications and test data for all equipment offered shall be submitted together with the tender. Tender without complete catalogues and technical details will be rejected.

Deklarasi Pentender:

Saya sedar dan ambil maklum bahawa kegagalan saya untuk menyemak maklumat terkini on-line dalam EMAL serta Pekeliling Kontrak Perbendaharaan Bil 14/2012 yang mengakibatkan keperluan teknikal tidak ditepati dan kegagalan saya untuk mengisi maklumat yang diperlukan dalam ruang-ruang yang disediakan ataupun kegagalan saya mengembalikan maklumat katalog serta dokumen yang lengkap dalam dokumen tender ini boleh menyebabkan tender saya ditolak.

Signature of Tenderer:**Name:****Designation:****Tender's Seal:****Address:****Date****Witness****Signature of witness:****Name:****Address****Date:**