



**TRIOCON**  
CONSULTING ENGINEERS  
ELECTRICAL | ELECTRONIC | MECHANICAL | FIRE

CSIR  
Bio-Pharm  
Selected Subcontract Tender document for the Electronic Services  
Triocon Consulting Engineers (Pty) Ltd

# ANNEXURE

## CSIR

### **BILL OF QUANTITIES**

### **FOR BIO-PHARM**

### **ELECTRONIC SERVICES**

BIO-PHARM PRICED BILL SUMMARY		
Item	Description	Amount (Excl. VAT)
	PRELIMINARIES & GENERAL	R
	Bill 1 : DATA INSTALLATION	R
	Bill 2 : FIRE DETECTION SYSTEM	R
	Bill 3 : ACCESS CONTROL SYSTEM	R
	Bill 4 : CCTV SYSTEM	R
TOTAL CARRIED OVER TO FORM OF TENDER (Excl VAT)		R

PRELIMINARIES AND GENERAL						
Item	Description	Unit	QTY	Supply Unit rate	Installation Unit Rate	Total Amount
	Supply & Install the following equipment including all connectors, terminal screws. Price to meet the main contractor's contract conditions as per Part 4:					
1	<b>P&amp;G</b>					
1.1	<b>SITE ESTABLISHMENT</b>					
1.1.1	Site Office equipment	Sum	1			
1.1.2	Site Storage (Lockable Container)	Sum	1			
1.1.3	Site Workshop Area	Sum	1			
1.1.4	Other requirements (specify )	Sum	1			
1.2	<b>ADMINISTRATIVE</b>					
1.2.1	Site Personnel	Sum	1			
1.2.2	Supervisory Staff	Sum	1			
1.2.3	Draughtsman and Tracers	Sum	1			
1.2.4	Transportation cost (up to incl.1 ton Truck)	Sum	1			
1.2.5	Larger than 1 ton Truck	Sum	1			
1.2.6	Insurance and Assurance(administrative)	Sum	1			
1.2.7	Telephone ,electricity water, stationary for all construction phases	Sum	1			
	<b>Hourly rates: Normal hours:</b>					
	(1) Site Project Manager	R/h	1	R	NIL	
	(2) Site Project Coordinator	R/h	1	R	NIL	
	(3) Site Supervisor	R/h	1	R	NIL	
	(4) Site Journeyman	R/h	1	R	NIL	
	(5) Installer	R/h	1	R	NIL	
	(6) Labourer	R/h	1	R	NIL	
	(7) System Operating Trainer	R/h	1	R	NIL	
	<b>Hourly rates: After hours (weekdays):</b>					
	(1) Site Project Manager	R/h	1	R	NIL	
	(2) Site Project Coordinator	R/h	1	R	NIL	
	(3) Site Supervisor	R/h	1	R	NIL	
	(4) Site Journeyman	R/h	1	R	NIL	
	(5) Installer	R/h	1	R	NIL	
	(6) Labourer	R/h	1	R	NIL	
	(7) System Operating Trainer	R/h	1	R	NIL	

<b>Hourly rates: weekends/public holidays:</b>						
	(1) Project Manager	R/h	1	R	NIL	
	(2) Site Project Coordinator	R/h	1	R	NIL	
	(3) Site Supervisor	R/h	1	R	NIL	
	(4) Site Journeyman	R/h	1	R	NIL	
	(5) Installer	R/h	1	R	NIL	
	(6) Labourer	R/h	1	R	NIL	
	(7) System Operating Trainer	R/h	1	R	NIL	
<b>1.3 GENERAL COSTS</b>						
1.3.1	Loading and off loading of material and equipment.	Sum	1			
1.3.2	Setting out of Works, according to specification	Sum	1			
1.3.3	Cleaning of site upon completion of Contract.	Sum	1			
1.3.4	Detailed Critical Path/Schedule according to engineers specifications	Sum	1			
1.3.5	Development of workshop drawings, according to the specification	Sum	1			
1.3.6	CADDED "As Installed" drawings and "Red Mark-Up" architectural drawings, as specified	Sum	1			
1.3.7	Test and commissioning of complete Works to engineer and client satisfaction.	Sum	1			
1.3.8	Client Training of staff	Hrs	12			
1.3.9	Inspection and handing over of fully operational systems to client and consulting engineer's satisfaction	Sum	1			
1.3.10	Maintenance and Operational manuals as specified	Sum	3			
1.3.11	Health and safety file in accordance with principal contractor	Sum	1			
<b>1.4 CONTRACTOR SPECIAL CONDITIONS</b>						
1.4.1	Maintenance	Sum	1			
1.4.2	Security	Sum	1			
1.4.3	Protection of Trees	Sum	1			
1.4.4	Ablutions	Sum	1			
1.4.5	Temporary Lighting	Sum	1			
1.4.6	Safety Inspection	Sum	1			
1.4.7	Removal of Rubbish and Cleaning	Sum	1			
1.4.8	Scaffolding, ladders as specified and as may be required	Sum	1			
1.4.9	Induction	Sum	1			
1.4.10	Disbursements	Sum	1			
1.4.11	Identification of Workforce	Sum	1			
1.4.12	Settlement discount	Sum	1			
1.4.13	PPE - Reflective vest with company logo, safety shoes etc	Sum	1			
<b>Total carried forward to the Bill Summary page =</b>						

BILL 1: Data Installation						
Item	Description	Unit	QTY	Supply rate	Install Rate	Combined Amount
	Supply & Install the following equipment including all connectors, terminal screws:					
1	<u>Data Installation</u>					
1.1	<b>Data Cabinets</b>					
1.1.1	19" 12U Wall mounted cabinet with swing frame and fan unit– grey	No	1			
1.1.7	4 way papst fan unit	No	1			
1.1.11	6 way 15A Power Duct	No	1			
1.1.12	450mm deep flat shelf	No	1			
1.1.13	Power cable 15A x 5m for power duct complete with dedicated (red) 16A plug	No	1			
1.2	<b>Cabling and Terminations</b>					
1.2.1	Cat6a Molex U/FTP network cabling complete with labeling and Velcro strips	m	2500			
1.2.2	Cat6a U/FTP Krone Moulded Fly leads complete with labeling (3m) (RJ45 to RJ45)	No	27			
1.2.3	Cat6a U/FTP Krone Moulded Patch leads complete with labeling (2m) CCTV Purple (See specs for colours)	No	6			
1.2.3	Cat6a U/FTP Krone Moulded Patch leads complete with labeling (2m) - Data Grey (See specs for colours)	No	20			
1.2.3	Cat6a U/FTP Krone Moulded Patch leads complete with labeling (2m) - WiFi yellow (See specs for colours)	No	1			
1.2.4	Krone Cat 6a keystones for patch panels	No	27			
1.2.5	Krone Cat 6a keystones for floor terminations and dual insert for cover and cradle (Execuduct)	No	20			
1.2.5	Krone Cat 6a keystones for termination of WiFi and CCTV points above ceiling in 4 x 4 back box	No	7			
1.2.6	24 port patch panel	No	2			
1.2.7	1U Blanc plates	No	4			
1.2.8	8 terminal copper earth bar in cabinet	No	1			
1.2.9	16 mm insulated earth cable from earth bar in cabinet connected to local DB ground busbar (TMGB)	m	80			
1.2.10	Grounding of cabinets and patch panels with 2.5mm conductor	No	1			
1.2.11	12 core single mode HDD Fibre (cut and return) between LAN rooms	m	200			
1.2.12	Fibre termination and splicing (Done by NCS)	No	24			
1.2.13	24 port Fibre splice tray LC - LC	No	2			
1.2.14	LC - LC connectors	No	24			
1.2.15	Fibre pig tails 2m - yellow	No	24			
1.2.16	1U Blank plates	No	2			
1.2.17	1U Brush panels	No	2			
1.2.18	Patch lead guides	No	4			
1.2.19	Testing upon completion per network point	No	27			
1.2.20	As built/installed documentation	No	1			
1.2.22	Testing of fibre on completion of splicing	Sum	1			
1.3	<b>Sundries</b>					
1.3.1	Any additional items to conform to specification :	sum	1			
	Telephone installation	sum	1			R 15 000.00
Total for Bill 1 carried forward to the Bill Summary page =						R

BILL 2: Fire Detection System						
Item	Description	Unit	QTY	Supply Unit rate	Installation Unit Rate	
	Supply & Install the following equipment including all connectors, terminal screws:					
2	Addressable Fire Detection System					
2.1 HEAD END EQUIPMENT						
2.1.1	Interface into existing Fire Detection System and reprogramming of existing fire panel	sum	1			
2.2 FIELD EQUIPMENT						
2.2.1	Complete addressable red break glass unit, as specified	No.	4			
2.2.2	Complete addressable base sounder combined with flashing LED unit, with optical detector mounted on base unit (Price for combo)	No.	22			
2.2.3	Void detectors complete with ceiling mount LED indicators (Price for detector plus LED)	No.	0			NIL
2.2.4	24V power supply for sequential door hold open devices, interfaced to fire detection system	No.	0			NIL
2.2.5	Hold open maglocks	No	0			NIL
2.2.6	Hold open door closer	sum	0			NIL
2.2.7	Complete addressable loop sounders Red Horns	No.	0			NIL
2.2.8	Complete addressable line relay unit, as specified	No.	10			
2.2.10	Complete addressable line isolator unit, as specified	No.	2			
2.2.11	Door contacts for monitored doors	No.	0			
2.2.12	Installation sundries	No.	1			
2.3 CABLE						
2.3.1	PH30 1.0mm cable (red)	m	560			
2.4 GENERAL						
2.4.1	Test and commissioning of complete system to deliver a fully operational system to client and engineers requirement.	Item	1			
2.4.2	12 Month period full service of fire detection system. Service includes 2 x service of system and completion of log books	Sum	1			
2.5 SUNDRIES						
2.5.1	Any additional items to conform to specification :	sum	1			
Total for Bill 2 carried forward to the Bill Summary page =						R

BILL 3: Access Control System						
Item	Description	Unit	QTY	Supply Unit rate	Installation Unit Rate	Combined Amount
	Supply & Install the following equipment including all connectors, terminal screws:					
3	Access Control System					
3.1	IMPRO ACCESS CONTROL					
3.1.1	System Master Controller - ImproX IXP400i (XEC900-1-0-GB) with 5Amp Power supply and 17A/Hour battery	No.	1			
3.1.2	Door controller - Impro ITRT XRT920 ethernet XRT920-0-0-GB-07	No.	10			
3.1.3	Aiphone 2 way Intercom - audio only	No.	1			
3.1.4	Card readers Impro MDR	No.	8			
3.1.5	LeGrand No touch push button	No.	10			
3.1.6	Green breakglass Unit (DMN702G)	No.	10			
3.1.7	Power supply - 5Amp	No.	6			
3.1.8	Battery backup (12V 17aH CSB Deep Cycle)	No.	6			
3.1.9	Mag Locks - LK118 for Aluminium Doors	No.	10			
3.1.10	Mag Locks - LK126 for Wooden Doors	No.	0			NIL
3.1.11	Door loops - Silver armored CN22	No.	10			
3.1.14	Removal and reinstallation of access control door equipment	Prov	1			R 2 500.00
3.2	CABLING FOR ACCESS CONTROL					
3.2.1	2 Pair Mylar screen cabling for RS485 comms for access control	m	300			
3.2.2	2 Pair Mylar screen Reader and Lock Cabling	m	90			
3.2.3	Cabtyre 0.5mm, 2 core white Low Voltage power cabling for power supply to ITRT controller	m	25			
3.3	GENERAL					
3.3.1	Test and commissioning of complete system to deliver a fully operational system to client and engineer's requirement	Sum	1			
3.4	SUNDRIES					
3.4.1	Any additional items to conform to specification :	sum	1			
	Please list them					
Total for Bill 3 carried forward to the Bill Summary page =						

BILL 4: CCTV System						
Item	Description	Unit	QTY	Supply Unit rate	Installation Unit Rate	Combined Amount
	Supply & Install the following equipment including all connectors, terminal screws:					
4	CCTV System					
4.1	HEAD END EQUIPMENT					
4.1.1	Hikvision IP Embedded NVR - 8 Channel Recorder with POE	No	0			NIL
4.1.2	Western Digital Surveillance Hard Disk Drive 4TB	No	0			NIL
4.1.3	Mecer 27" 16 x 9 TFT LED Wide Monitor, 1920 x 1080 Full HD W/VGA + HDMI & Built-in Speakers (2 x 2W) - Black	No	0			NIL
4.1.6	Camera licenses	No	5			
4.1.7	Setup of remote viewing of cameras in security control room	Sum	1			
4.1.9	User Training	hours	2			
4.2	FIELD EQUIPMENT					
	Security Cameras (Complete with mounting brackets)					
4.2.1	Hikvision AcuSense 2MP fixed dome camera. 2.8mm Lens.Excellent low-light performance with powered-by-DarkFighter technology. Up to 30m IR.Clear imaging against strong back light due to 120 dB true WDR technology.Efficient H.265+ compression technology.False alarm reduction through human and vehicle target classification based on deep learning.IP66 and IK10. 12VDC or POE. Built in Microphone.	No	2			
4.2.2	Hikvision 6MP Infra-red Fisheye Network Camera. 11.8 Progressive CMOS, ICR, 0lux with IR, 3072 x 2048 @30fps, 1.27mmF2.6 lens, 360°Panoramic view, H.265+H.265H.264+H.264MJPEG	No	3			
4.2.4	Sundries & Consumables	No	1			
4.2.5	Setup & Configuration & Adjustments	Sum	1			
Total for Bill 4 carried forward to the Bill Summary page =						R





# ANNEXURE

## CSIR

### **BILL OF QUANTITIES**

### **FOR THE SMALL MOLECULAR FACILITY**

### **ELECTRONIC SERVICES**

## SMF - PRICED BILLS SUMMARY PAGE

Item	Description	Amount (Excl. VAT)
	PRELIMINARIES & GENERAL ITEMS	R
	Bill 1 : DATA INSTALLATION	R
	Bill 2 : CRITICAL ALARM SYSTEM	R
	Bill 3 : FIRE DETECTION SYSTEM	R
	Bill 4 : ACCESS CONTROL SYSTEM	R
	Bill 5 : CCTV SYSTEM	R
	Bill 6: GAS SUPPRESSION SYSTEM (Provisional Amount)	R 180 000.00
TOTAL CARRIED OVER TO FORM OF TENDER (Excl VAT)		

PRELIMINARIES AND GENERAL						
Item	Description	Unit	QTY	Supply Unit rate	Installation Unit Rate	Total Amount
	Supply & Install the following equipment including all connectors, terminal screws. Price to meet the main contractor's contract conditions as per Part 4:					
1	<b>P&amp;G</b>					
1.1	<b>SITE ESTABLISHMENT</b>					
1.1.1	Site Office equipment	Sum	1			
1.1.2	Site Storage (Lockable Container)	Sum	1			
1.1.3	Site Workshop Area	Sum	1			
1.1.4	Other requirements (specify )	Sum	1			
1.2	<b>ADMINISTRATIVE</b>					
1.2.1	Site Personnel	Sum	1			
1.2.2	Supervisory Staff	Sum	1			
1.2.3	Draughtsman and Tracers	Sum	1			
1.2.4	Transportation cost (up to incl.1 ton Truck)	Sum	1			
1.2.5	Larger than 1 ton Truck	Sum	1			
1.2.6	Insurance and Assurance(administrative)	Sum	1			
1.2.7	Telephone ,electricity water, stationary for all construction phases	Sum	1			
	<b>Hourly rates: Normal hours:</b>					
	(1) Site Project Manager	R/h	1	R	NIL	
	(2) Site Project Coordinator	R/h	1	R	NIL	
	(3) Site Supervisor	R/h	1	R	NIL	
	(4) Site Journeyman	R/h	1	R	NIL	
	(5) Installer	R/h	1	R	NIL	
	(6) Labourer	R/h	1	R	NIL	
	(7) System Operating Trainer	R/h	1	R	NIL	
	<b>Hourly rates: After hours (weekdays):</b>					
	(1) Site Project Manager	R/h	1	R	NIL	
	(2) Site Project Coordinator	R/h	1	R	NIL	
	(3) Site Supervisor	R/h	1	R	NIL	
	(4) Site Journeyman	R/h	1	R	NIL	
	(5) Installer	R/h	1	R	NIL	
	(6) Labourer	R/h	1	R	NIL	
	(7) System Operating Trainer	R/h	1	R	NIL	

<b>Hourly rates: weekends/public holidays:</b>						
	(1) Project Manager	R/h	1	R	NIL	
	(2) Site Project Coordinator	R/h	1	R	NIL	
	(3) Site Supervisor	R/h	1	R	NIL	
	(4) Site Journeyman	R/h	1	R	NIL	
	(5) Installer	R/h	1	R	NIL	
	(6) Labourer	R/h	1	R	NIL	
	(7) System Operating Trainer	R/h	1	R	NIL	
<b>1.3 GENERAL COSTS</b>						
1.3.1	Loading and off loading of material and equipment.	Sum	1			
1.3.2	Setting out of Works, according to specification	Sum	1			
1.3.3	Cleaning of site upon completion of Contract.	Sum	1			
1.3.4	Detailed Critical Path/Schedule according to engineers specifications	Sum	1			
1.3.5	Development of workshop drawings, according to the specification	Sum	1			
1.3.6	CADDED "As Installed" drawings and "Red Mark-Up" architectural drawings, as specified	Sum	1			
1.3.7	Test and commissioning of complete Works to engineer and client satisfaction.	Sum	1			
1.3.8	Client Training of staff	Hrs	12			
1.3.9	Inspection and handing over of fully operational systems to client and consulting engineer's satisfaction	Sum	1			
1.3.10	Maintenance and Operational manuals as specified	Sum	3			
1.3.11	Health and safety file in accordance with principal contractor	Sum	1			
<b>1.4 CONTRACTOR SPECIAL CONDITIONS</b>						
1.4.1	Maintenance	Sum	1			
1.4.2	Security	Sum	1			
1.4.3	Protection of Trees	Sum	1			
1.4.4	Ablutions	Sum	1			
1.4.5	Temporary Lighting	Sum	1			
1.4.6	Safety Inspection	Sum	1			
1.4.7	Removal of Rubbish and Cleaning	Sum	1			
1.4.8	Scaffolding, ladders as specified and as may be required	Sum	1			
1.4.9	Induction	Sum	1			
1.4.10	Disbursements	Sum	1			
1.4.11	Identification of Workforce	Sum	1			
1.4.12	Settlement discount	Sum	1			
1.4.13	PPE - Reflective vest with company logo, safety shoes etc	Sum	1			
<b>Total carried forward to the Bill Summary page =</b>						

BILL 1: Data Installation						
Item	Description	Unit	QTY	Supply Unit Rate	Install Unit Rate	Combined Amount
	Supply & Install the following equipment including all connectors, terminal screws:					
1	<u>Data Installation</u>					
1.1	Data Cabinets					
1.1.1	Modrac 43u 600 x 800 skeleton cabinet – Black	No	1			
1.1.2	43u 600 wide glass door Modrac for front – with lock	No	1			
1.1.3	43u 300 wide perforated front and rear door Modrac – with lock (2 x saloon type doors per cabinet)	No	0			NIL
1.1.4	43u 600 wide perforated door Modrac for rear – with lock	No	1			
1.1.5	43u side panel – 800mm – Modrac – grey	No	2			
1.1.6	43u panel mount cabinet	No	1			
1.1.7	4 way papst fan unit	No	1			
1.1.10	43u x 304mm wide cable tray inside cabinet to strab cabling to - black	No	2			
1.1.11	6 way 15A Power Duct	No	2			
1.1.12	450mm deep flat shelf	No	1			
1.1.13	Power cable 15A x 5m for power duct complete with dedicated (red) 16A plug	No	2			

### 1.2 Cabling and Terminations

1.2.1	Cat6a Molex U/FTP network cabling complete with labelling and Velcro strips	m	5700			
1.2.2	Cat6a U/FTP Krone Moulded Fly leads complete with labeling (3m) (RJ45 to RJ45)	No	77			
1.2.3	Cat6a U/FTP Krone Moulded Patch leads complete with labeling (2m) - CCTV purple	No	32			
1.2.3	Cat6a U/FTP Krone Moulded Patch leads complete with labeling (2m) - WiFi Green	No	4			
1.2.3	Cat6a U/FTP Krone Moulded Patch leads complete with labeling (2m) - Data Gray	No	41			
1.2.4	Krone Cat 6a keystones for patch panels	No	77			
1.2.5	Krone Cat 6a keystones for floor terminations and dual insert for cover and cradle in power skirting(Execuduct)	No	41			
1.2.6	Krone Cat 6a keystones for terminations in 4 x 4 back box mounted in ceiling void for camera and wifi points.	No	36			
1.2.7	24 port patch panel	No	4			
1.2.8	1U Blanc plates	No	4			
1.2.9	8 terminal copper earth bar in cabinet	No	1			
1.2.10	16 mm insulated earth cable from earth bar in cabinet connected to local DB ground busbar (TMGB)	m	80			
1.2.11	Grounding of cabinets and patch panels with 2.5mm conductor	No	1			
1.2.12	12 core single mode HDD Fibre (cut and return) between LAN rooms	m	100			
1.2.13	Fibre termination and splicing (Done by NCS)	No	24			
1.2.14	24 port Fibre splice tray LC - LC	No	2			
1.2.15	LC - LC connectors	No	24			
1.2.16	Fibre pig tails 2m - yellow	No	24			
1.2.17	1U Blank plates	No	2			
1.2.18	1U Brush panels	No	2			
1.2.19	Patch lead guides	No	16			
1.2.20	Testing upon completion per network point	No	67			
1.2.21	As built/installed documentation	Sum	1			
1.2.22	Testing of fibre on completion of splicing	Sum	1			

### 1.3 Sundries

1.3.1	Any additional items to conform to specification :	sum	1			
	Telephone installation	sum	1			R 15 000.00
Total for Bill 1 carried forward to the Bill Summary page =						R

<b>BILL 2: Critical Alarm System</b>						Rev 1
Item	Description	Unit	QTY	Supply Unit Rate	Install Unit Rate	Combined Amount
	Supply & Install the following equipment including all connectors, terminal screws:					
<b>2</b>	<b><u>Critical alarms</u></b>					
<b>2.1</b>	<b>Head end equipment</b>					
2.1.1	Annual cloud hosting, SMS and email alarming and reporting	No	2			
<b>2.3</b>	<b>Monitoring equipment/Probes</b>					
2.3.7	P8641, 4 Channel temperature transmitter	No	1			
2.3.8	T4611, single channel temperature sensor with display	No	1			
2.3.9	SN205, temperature rpobes, 5m tail	No	3			
2.3.10	Installation Setup, commissioning and training	No	3			
<b>2.4</b>	<b>Sundries</b>					
2.4.1	Any additional items to conform to specification :	sum	1			
	Please list them					
<b>Total for Bill 2 carried forward to the Bill Summary page =</b>						<b>R</b>

**BILL 3: Fire Detection System**

Item	Description	Unit	QTY	Supply Unit rate	Installation Unit Rate	Combined Amount
	Supply & Install the following equipment including all connectors, terminal screws:					
<b>3</b>	<b><u>Addressable Fire Detection System</u></b>					
<b>3.1 HEAD END EQUIPMENT</b>						
3.1.1	Interface into existing Fire Detection System and reprogramming of existing fire panel	sum	1			
<b>3.2 FIELD EQUIPMENT</b>						
3.2.1	Complete addressable red break glass unit, as specified	No.	6			
3.2.2	Complete addressable base sounder combined with flashing LED unit, with optical detector mounted on base unit (Price for combo)	No.	32			
3.2.3	Void detectors complete with ceiling mount LED indicators (Price for detector plus LED)	No.	8			
3.2.4	24V power supply for sequential door hold open devices, interfaced to fire detection system	No.	0			NIL
3.2.5	Hold open maglocks	No	0			NIL
3.2.6	Hold open door closer	sum	0			NIL
3.2.7	Complete addressable loop sounders Red Horns	No.	0			NIL
3.2.8	Complete addressable line relay unit, as specified	No.	7			
3.2.10	Complete addressable line isolator unit, as specified	No.	2			
3.2.11	Door contacts for monitored doors	No.	0			NIL
3.2.12	Installation sundries	No.	1			
<b>3.3 CABLE</b>						
3.3.1	PH30 1.0mm cable (red)	m	250			
<b>3.4 GENERAL</b>						
3.4.1	Test and commissioning of complete system to deliver a fully operational system to client and engineers requirement.	Item	1			
3.4.1	One year maintenance on system which includes 2 full services. Service is over one year period. This also includes update of log book after each service	Sum	1			
<b>3.5 SUNDRIES</b>						
3.5.1	Any additional items to conform to specification :	sum	1			
<b>Total for Bill 3 carried forward to the Bill Summary page =</b>						<b>R</b>



BILL 4: Access Control System						
Item	Description	Unit	QTY	Supply Unit rate	Installation Unit Rate	Combined Amount
	Supply & Install the following equipment including all connectors, terminal screws:					
4	<u>Access Control System</u>					
4.1	IMPRO ACCESS CONTROL					
4.1.1	System Master Controller - ImproX IXP400i (XEC900-1-0-GB) with 5Amp Power supply and 17A/Hour battery	No.	0			NIL
4.1.2	Door controller - Impro ITRT XRT920 ethernet XRT920-0-0-GB-07	No.	3			
4.1.3	Aiphone 2 way Intercom - audio only	No.	1			
4.1.4	Card readers Impro MDR	No.	6			
4.1.5	LeGrand No touch push button	No.	1			
4.1.6	Green breakglass Unit (DMN702G)	No.	3			
4.1.7	Power supply - 5Amp	No.	3			
4.1.8	Battery backup (12V 17aH CSB Deep Cycle)	No.	3			
4.1.9	Mag Locks - LK118 for Aluminium Doors	No.	3			
4.1.10	Mag Locks - LK126 for Wooden Doors	No.	0			NIL
4.1.11	Door loops - Silver armored CN22	No.	3			
4.1.14	Removal and reinstallation of access control door equipment	Prov	1			R 2 500.00
4.2	CABLING FOR ACCESS CONTROL					
4.2.1	2 Pair Mylar screen cabling for RS485 comms for access control	m	300			
4.2.2	2 Pair Mylar screen Reader and Lock Cabling	m	90			
4.2.3	Cabtyre 0.5mm, 2 core white Low Voltage power cabling for power supply to ITRT controller	m	5			
4.3	GENERAL					
4.3.1	Test and commissioning of complete system to deliver a fully operational system to client and engineer's requirement	Sum	1			
4.4	SUNDRIES					
4.4.1	Any additional items to conform to specification :	sum	1			
	Please list them					
Total for Bill 4 carried forward to the Bill Summary page =						

BILL 5: CCTV System						
Item	Description	Unit	QTY	Supply Unit rate	Installation Unit Rate	Combined Amount
	Supply & Install the following equipment including all connectors, terminal screws:					
5	<u>CCTV System</u>					
5.1	HEAD END EQUIPMENT					
5.1.1	Hikvision IP Embedded NVR - 32 Channel Recorder with POE	No	0			NIL
5.1.3	Western Digital Surveillance Hard Disk Drive 4TB	No	0			NIL
5.1.5	Mecer 27" 16 x 9 TFT LED Wide Monitor, 1920 x 1080 Full HD W/VGA + HDMI & Built-in Speakers (2 x 2W) - Black	No	0			NIL
5.1.11	Camera licenses	No	23			
5.1.13	Setup of remote viewing via IVMS4200 Software (Free supply)	Sum	1			
5.1.15	Setup & Configuration	Sum	1			
5.1.17	User Training	Hours	4			
5.2	FIELD EQUIPMENT					
	<u>Security Cameras (All cameras to be complete with mounting brackets)</u>					
5.2.1	Hikvision AcuSense 2MP fixed dome camera. 2.8mm Lens.Excellent low-light performance with powered-by-DarkFighter technology. Up to 30m IR.Clear imaging against strong back light due to 120 dB true WDR technology,Efficient H.265+ compression technology.False alarm reduction through human and vehicle target classification based on deep learning.IP66 and IK10. 12VDC or POE. Built in Microphone.	No	5			
5.2.2	Hikvision 6MP Infra-red Fisheye Network Camera. 11.8 Progressive CMOS, ICR, 0lux with IR, 3072 x 2048 @30fps, 1.27mmF2.6 lens, 360°Panoramic view, H.265+H.265H.264+H.264MJPEG	No	1			
	<u>Safety Cameras (All cameras to be complete with mounting brackets)</u>					
5.2.3	Hikvision High quality imaging with 4 MP resolution, Excellent low-light performance with powered-by-DarkFighter technology, Efficient H.265+ compression technology, Clear imaging against strong back light due to 120 dB true WDR technology, False alarm reduction through human and vehicle target classification based on deep learning, -ISU: Water and dust resistant (IP66) and vandal-resistant (IK10); -I: Water and dust resistant (IP67) and vandal-resistant (IK10), ISU: built-in microphone for real-time auto security, 3D DNR technology delivers clean and sharp images	No	17			
5.2.4	Sundries & Consumables	No	1			
Total for Bill 5 carried forward to the Bill Summary page =						R



**Bill  
No**

Amount

## 5.5 Electronic Bills of Quantities

R

Main Contractors percentage for all mark-ups, attendance, etc on specialist domestic contractor

R

**Carried Forward To Section 5.10 : Final Summary**

R

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## CSIR Future PHARMA Facility