

	<p style="text-align: center;">Access Control Procurement Specification for Integrated Access Control</p>	Project ID	IT00118
		Document Type	CCITE
		Revision	Rev 0.3
		Revision Date	2015-06-22
		Total Pages	37
		GROUP IT	

**ACCESS CONTROL SYSTEM
SPECIFICATIONS AND GUIDELINES FOR PROCUREMENT
FOR
Integrated Access Control**

BUSINESS SPONSOR : Martin Strauss

BUSINESS OWNER/REPRESENTATIVE : Karen Pillay

PROGRAMME MANAGER : Yashil Narandas

SOLUTIONS ARCHITECT : Deepak Belur

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DOCUMENT CONTROL INFORMATION

DOCUMENT REVISION HISTORY

Rev	Date	Author	Reason for change
0.1	22-05-2015	Jaco Dippenaar	First Version
0.2	22-05-2015	Deepak Belur	1 st Review
0.3	26-08-2015	Karen Pillay	2 nd Review

DOCUMENT DISTRIBUTION

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2.	Martin Strauss	Business Sponsor
3.	Karen Pillay	Business Owner/Representative - Group Security
4.	3rd Party Companies	As per tender process

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DOCUMENT APPROVAL

By signing this document, the people listed record their agreement on the contents of this document.

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: **Date** : _____


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DOCUMENT OVERVIEW

1.1 Introduction

The Integrated Access Control (IAC) Project aims to collaborate and align efforts across the logical and physical security domains in an effort to standardise access control within Eskom. The project will define and implement a strategy for the integration of physical and logical security domains within the context of access control. This project is in response to safety concerns raised at EXCO and Board Level.

1.2 Background

A surge in crime related incidents at Eskom sites had prompted Exco in November 2008, to mandate Group Risk Management to initiate a Security Improvement Plan (SIP). The increasing threat to the safety and security of people, information and assets was impacting Eskom operations and its ability to deliver a world class service, and in turn, public confidence in Eskom. The safety of people and the integrity of information and assets is a Key priority in Eskom.

The Integrated Access Control Project was initiated in August 2010, jointly by the CIO and Group Risk Management, in an effort to improve and effectively manage physical access and security at Eskom sites.

A pilot implementation (CRA Phase) was initiated by Group Risk, to prove the concept. DRA Release 1 Phase will be used to achieve a higher level of confidence on the costs of the implementation of Access Control for people management at the various Eskom sites. The selection of the technology platform was completed during the CRA Phase. The Honeywell EBI Technology platform was approved as the technology platform for the IAC System. All future implementation will be standardised based on the Honeywell EBI Technology decision.

The IAC Steering Committee has adopted a Phased Release Approach for the implementation of the IAC System. The full IAC Value Chain will be executed in planned releases where each release will address a subset of the full IAC value chain. The primary reasons for the adoption of this approach are:

1. The phased approach will address quick wins for the business while still planning and conceptualising the value chain, whereas a big bang approach will delay delivery of key priorities, which directly impacts business expectations.
2. Security Management is ever evolving and hence an incremental approach is best suited to ensure the application of key learning's from each phase incrementally while leveraging on the best suited technology.

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3. Security Management projects are always high impact in terms of organisational change management and is generally received with resistance from employees, unions and contractors alike. A phased approach will help manage these risks by slowly settling the organisation into this change journey over a period of time.
4. The phased release will allow Group Security to explore the various deployment methodologies and arrive at a 'best fit' option for the national roll-out of other functionality and systems in Eskom, by means of a global template/enterprise approach.
5. This approach will further assist to reduce the risk of huge upfront capital investments and ensure probability of success compared to a big bang approach that has large capital investment and higher risks of failure.
6. The IAC Project scope is dynamic and changing based on requirements from multiple stakeholders and the multiplicity of related projects such as Security Recovery Programme (SRP). There is a need to consider the IAC Project as a program as opposed to a once off project. The adoption of the phased approach provides flexibility for learning and opportunities for integration into an enterprise security program.

The Phased Release Approach is depicted in the diagram below:

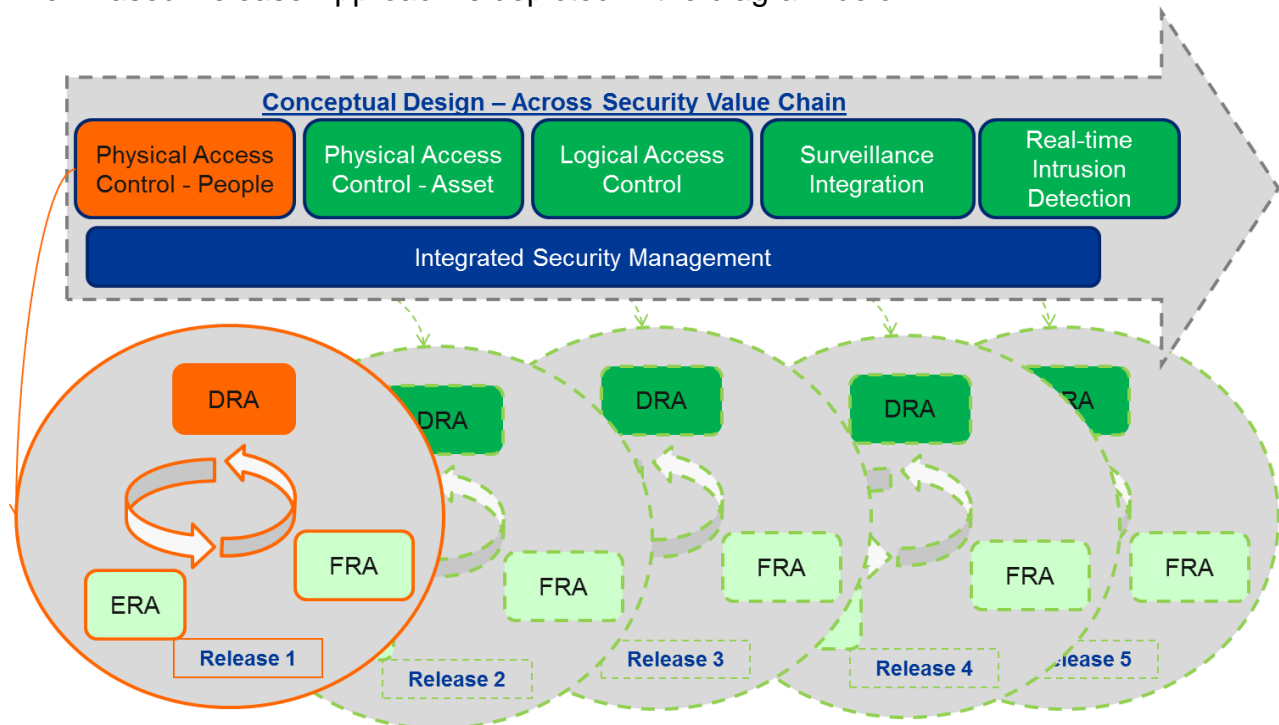


Figure 1: Phased Release Approach

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1.3 Document Purpose

To outline the technical specifications for the Eskom standard access control system . The specification does not address barriers and other peripheral systems necessary for comprehensive access control applications. Group Security must be consulted for specifications before selection and finalization of components such as Turnstiles, X Ray Scanners, Doors, Boom Gate or any other security related equipment.

1.4 Definitions and Abbreviations

Table 1 below provides a list of definitions of terms used in this document:

Term	Definition
Concept Release Approval (CRA)	The first phase, concept and feasibility definition, of the Eskom Project Method.
Definition Release Approval (DRA)	The second phase, definition and detailed design, of the Eskom Project Method.
Execution Release Approval (ERA)	The third phase, execution, of the Eskom Project Method.

Table 1: Definitions

Table 2 below provides a list of abbreviations and acronyms used in this document:

Abbreviation	Description
BI	Business Intelligence
BMS	Building Management System
BU	Business Unit
CAD	Computer-aided Design
CCTV	Close Circuit Television
CIO	Chief Information Officer
CRA	Concept Release Approval
DB	Database
DBMS	Database Management System
DR	Disaster Recovery
DRA	Design Release Approval
DTP	Device Time Patterns
Dx	Distribution
EBI	Enterprise Buildings Integrator
ERA	Execution Release Approval
FRA	Finalisation Release Approval
GUI	Graphical User Interface
Gx	Generation
HA	High Availability
HR	Human Resource

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HVAC	Heating ventilation and air conditioning
IAC	Integrated Access Control
IACS	Integrated Access Control System
IDV	Identity Vault
IIS	Internet Information Services
IT	Information Technology
LDAP	Lightweight Directory Access Protocol
MWP	Megawatt Park
NSCC	National Security Control Centre
POS	Point of Sale
SIP	Security Improvement Plan
SMS	Short message service
SRP	Security Recovery Programme
T&A	Time & Attendance
Tx	Transmission
UC	Use Case
URS	User Requirements Specification
VM	Visitor Management

Table 2: Abbreviations

SYSTEM CONTEXT AND SCOPE

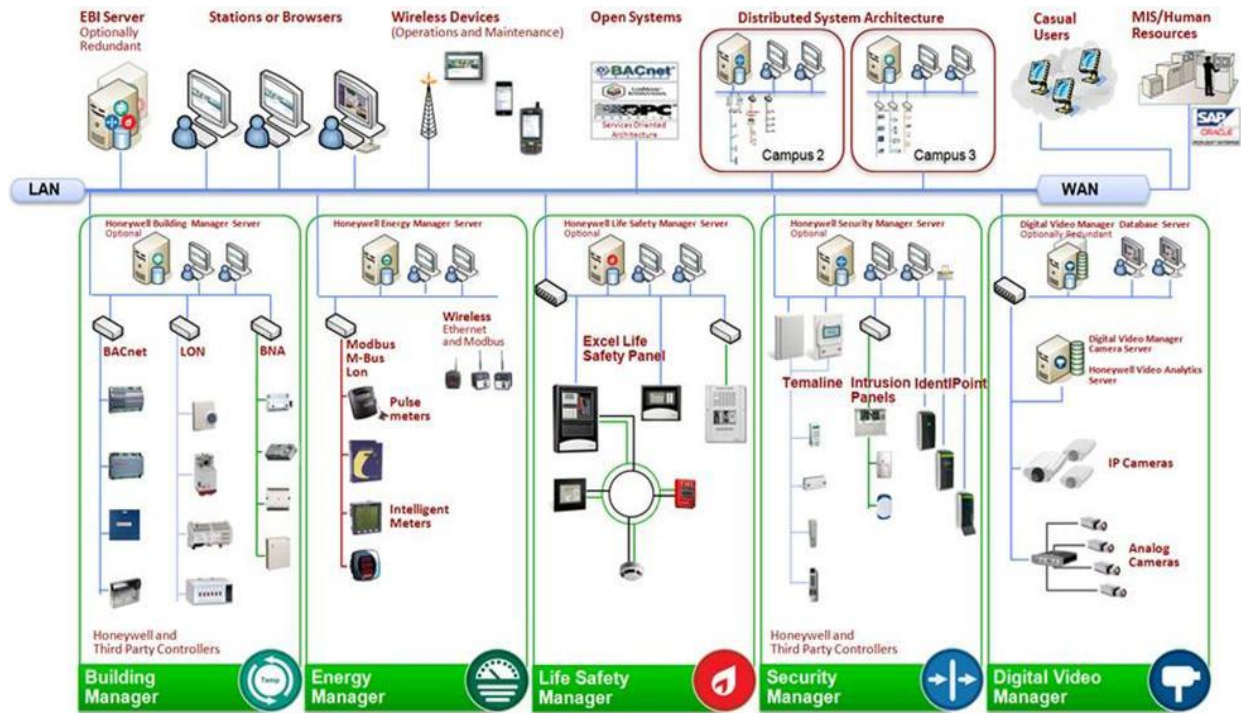
The IAC system is an efficient access control system. The selected security technology is the standard for Physical Access Control across Eskom.

Enterprise Buildings Integrator (EBI) is a modular system with capabilities to serve as a “security backbone” and is capable of catering for future business requirements of integration with CCTV, HVAC, building management systems and other security / business subsystems to provide a unified security management system.




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The design of the system is intended to cater for the following Eskom sites access control requirements:

- Corporate Offices and buildings
- Power Stations
- Tx substations
- Dx Sites
- Sites under construction
- Control Rooms
- Technical Services Centres
- Customer Walk-in Centres
- Laboratories
- Water treatment plants
- Visitor Centres
- Stores
- Workshops
- Canteens
- Medical Centres
- Fire Stations
- Boardrooms
- Conference facilities
- Maintenance or service centres
- Server Rooms
- Gyms
- Kitchens
- Boarding/Accommodation
- Bus areas
- Any other identified sensitive area requiring restricted access








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2.1 System Technology







The table below outlines the hardware required to implement the Eskom standard integrated access control system and to integrate to the Eskom IAC core infrastructure.


Note: In order for the access control equipment to integrate to the IAC core, the card readers are connected to a Honeywell Temaserver. This can also be referred to as the door controller, and is not to be confused with a Windows server. Each Temaserver can control up to 16 doors, via LON network and Wiegand interfaces.








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Component Picture	Component Name	Category	Description
	EBI Primary Server including Licence	1st Party Equipment (OEM - Honeywell) Already Procured	EBI Security Manager is loaded on to this Server. This is where all the configuration and event data is stored. The application runs on Windows 2008 Server with an SQL Server 2008 Database. The current Honeywell application version is EBI R410.2 SP1
	EBI Redundant Server including Licence	1st Party Equipment (OEM - Honeywell) Already Procured	A mirror image of the Primary server. This server is used in case of primary server failure. The application runs on Windows 2008 Server with an SQL Server 2008 Database. The current Honeywell application version is EBI R410.2 SP1
	EBI Subscriber Server including Licence	1st Party Equipment (OEM - Honeywell) Already Procured	A regional server containing hardware configuration data for the region. This server subscribes to the cardholder information of the Primary server, and therefore has the same cardholders as on the primary server. The application runs on Windows 2008 Server with an SQL Server 2008 Database. The current Honeywell application version is EBI R410.2 SP1
	EBI Test Server including Licence	1st Party Equipment (OEM - Honeywell) Already Procured	A mirror image of the Primary server. This server is to perform all testing related activities before moving the changes into production. The application runs on Windows 2008 Server with an SQL2008 Database. The current Honeywell application version is EBI R410.2 SP1
	Client Station	Internal Eskom	Honeywell system uses Client/Server Architecture. The client stations are used by the operator to view alarm/events and manage the system. This system has a standard Eskom desktop image loaded on to it.
	Reception Station	Internal Eskom	Honeywell system uses Client/Server Architecture. The reception stations are used by the operator to manage visitors. This system has a standard Eskom desktop image loaded on to it.
	Network	Internal Eskom	The network is provided by T- systems and link all the Controller servers and client stations.








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	TemaPower (Q1)	1st Party Equipment (OEM - Honeywell)	An intelligent power supply that monitors incoming power, battery status and only supply power to the TemaServer. It has a Backup Battery that ensures at least 4 hours Autonomy.
	TemaServer (TS2)	1st Party Equipment (OEM - Honeywell)	All door controllers are connected to tema server. The TemaServer can manage up to 16 controllers (doors) and runs on firmware version 5.3.
	A08	1st Party Equipment (OEM - Honeywell)	A controller with wiegand interface to the access control card/biometric reader that manages the physical door, for example it releases that maglock and monitors the status of the door. The readers are also wired into this device. A08 controllers run a firmware version X2E
	A01	1st Party Equipment (OEM - Honeywell)	A I/O interface is used to monitor inputs and can switch outputs. Typically used for Fires doors that do not require readers to open. A01 controllers run a firmware version X21
No picture	LON	3 rd Party Equipment (Open Market)	The physical cable and protocol used to connect the A08 and A01 devices to the TemaServer.
	Door Monitor	3 rd Party Equipment (Open Market)	Used to monitor the Status of the door
	Maglock	3 rd Party Equipment (Open Market)	An Electromagnetic lock that the locks the door with a specific break force capability. The maglock gets released by the A08 with an authorized access card.
	Door Closer	3 rd Party Equipment (Open Market)	A door closer is used to keep doors closed and locked.
	Break Glass	3 rd Party Equipment (Open Market)	All doors are fitted with a Resettable Break Glass unit. When the Break Glass is triggered, it overrides the door access and keeps the door unlocked. Should Be used for emergencies only.

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	HID OMNI 10 Reader	3 rd Party Equipment (Open Market) These readers are not to be used in future for new installations.	A standard HID Prox reader capable of reading Prox cards and sends data via Wiegand standard data to A08. They may however still be present in legacy installations.
	HID RSP15 Reader	3 rd Party Equipment (Open Market)	A custom reader has been created for Eskom Megawatt Park using the base part number RSP15. This reader has been configured to read the following 2 technologies simultaneously: <ul style="list-style-type: none"> • HID Prox • MIFARE DESFire EV1 128-Bit AES <i>256-Bit for future implementation, activated through software update on reader.</i>
	RS10 Reader	3 rd Party Equipment (Open Market) This is to be used for any access controlled doors inside a building at new Eskom sites.	A standard HID Desfire only reader capable of reading Mifare Desfire EV1 cards and sends data via Wiegand standard data to A08. <u>256-Bit for future implementation, activated through software update on reader.</u>
	J-Series	3 rd Party Equipment (Open Market)	A Biometric reader, typically for indoor use at any high security access point, for example a control room door. Requests Biometric validation after presenting Mifare Desfire EV1 card, then sends Wiegand standard data to A08. <u>256-Bit for future implementation, activated through software update on reader.</u>
	MA520	3 rd Party Equipment (Open Market)	A Biometric reader, typically for indoor use. Requests Biometric validation after presenting Mifare Desfire EV1 card, then sends Wiegand standard data to A08. This unit includes a display for user interaction. <u>256-Bit for future implementation, activated through software update on reader.</u>
	OMA520	3 rd Party Equipment (Open Market)	A Biometric reader, typically for outdoor use. Requests Biometric validation after presenting Mifare Desfire EV1 card, then sends Wiegand standard data to A08. This unit includes a display for user interaction. <u>256-Bit for future implementation, activated through software update on reader.</u>
	Turnstiles	3 rd Party Equipment (Open Market)	Full height turnstiles used at main entrances or high security entrances.

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	Turnstiles	3 rd Party Equipment (Open Market)	Waist height turnstile will be used for commercial facilities
	Drop Box	3 rd Party Equipment (Open Market)	For Visitors, a Card capture unit will be used to capture the card on exit.
	Booms	3 rd Party Equipment (Open Market)	All vehicle entrances to the facilities will be protected with vehicle barriers
	Card Printer	3 rd Party Equipment (Open Market)	This is used to print the employee details and card layout on top of the cards before issuing.
	Card	3 rd Party Equipment (Open Market)	This is the card format utilized by Eskom. The standard is Corp 1000 Desfire EV1 -128 Bit Encryption
	ACS Card Encoder	3 rd Party Equipment (Open Market)	This is the encoder that will encode the cards by loading the required information regarding the card owner before issuing of the card.
	Electronic Push Bar	3 rd Party Equipment (Open Market)	This is a push bar used on the fire exit doors to open the emergency escape from within the building

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	<p>Microsoft Life Cam HD Photo ID Camera</p>	<p>3rd Party Equipment (Open Market)</p>	<p>This is a camera used to capture the photograph of the card holder before issuing the card.</p>
---	--	---	--

Goosenecks

- For Eskom, standard Single height and double height goosenecks are specified.
- The Rain covers one goosenecks must be capable of fitting an OMA520 reader.




1. Care Gooseneck with base plate and front mounting plate (1.1M High)
2. Car / Truck Gooseneck with base plate and front mounting plates (1.1M and 1.83M High)
3. Raincovers Manufactured to accomodate the OMA520 Reader

Turnstiles

Minimum Requirements

- Status For transit must be installed
- Fire override input must be available
- Must be power by UPS power or ordered with battery backup



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LONWORKS Data Cable

- Mylar 2 core stranded shielded twisted pair will be an allowable alternative cable to that specified above.
- For sizing when using the alternative Mylar cable, please refer to the following table:

LON Bus Length	Core Ø
< 1000m	1.0mm
1000m – 1400m	1.5mm
1400m – 2700m	2.0mm

2.1.1 Typical Access control point installations

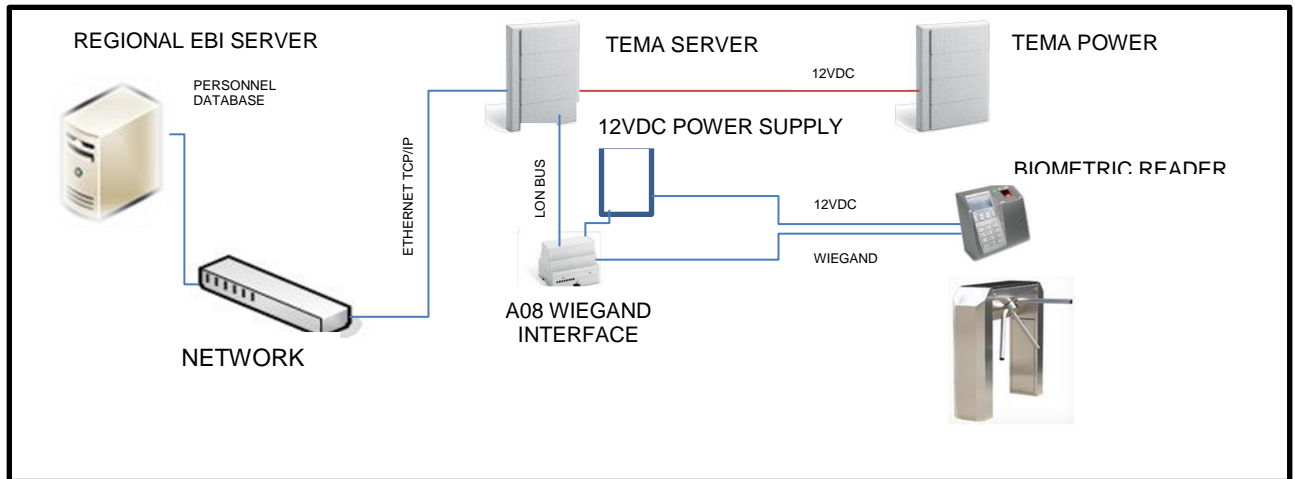



Figure 2 - Typical Installation



Figure 3 - Typical Door installation

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It would be preferable to include any cable trays and routes in the original planning of any new site and building as to avoid any exposed cables on the outside.

2.1.1.2 Manual key overrides



Figure 4 - Manual Key override

Manual key overrides need to be installed for all critical doors in case of hardware failure. The key override is wired in line with the break glass unit to cut power to any connected locks.

2.1.1.3 Emergency Exit Doors

Please refer to *“Von Duprin Emergency exit bolt.pdf”* for details on the door push bar

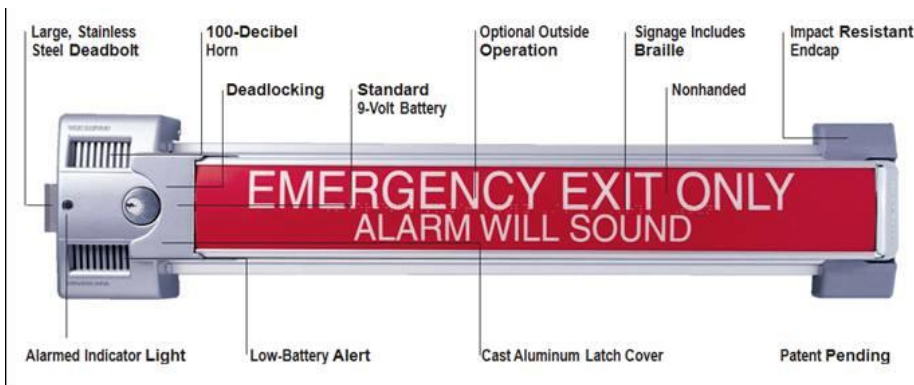



Figure 5 - Emergency Exit Door

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2.1.1.4 Manhole Specifications

- The minimum size for any manhole is to be 600mm (w) x 600mm(l) x 500mm(d).
- Manhole strength should exceed 25 MPa.
- Manholes are to have an elevated lip to prevent water accumulation.
- Conduit is to enter a manhole vertically centred to prevent cable submersion.
- Bricks or pre-cast moulds are to be used as construction material.

Please refer to the following figure as a typical manhole example:

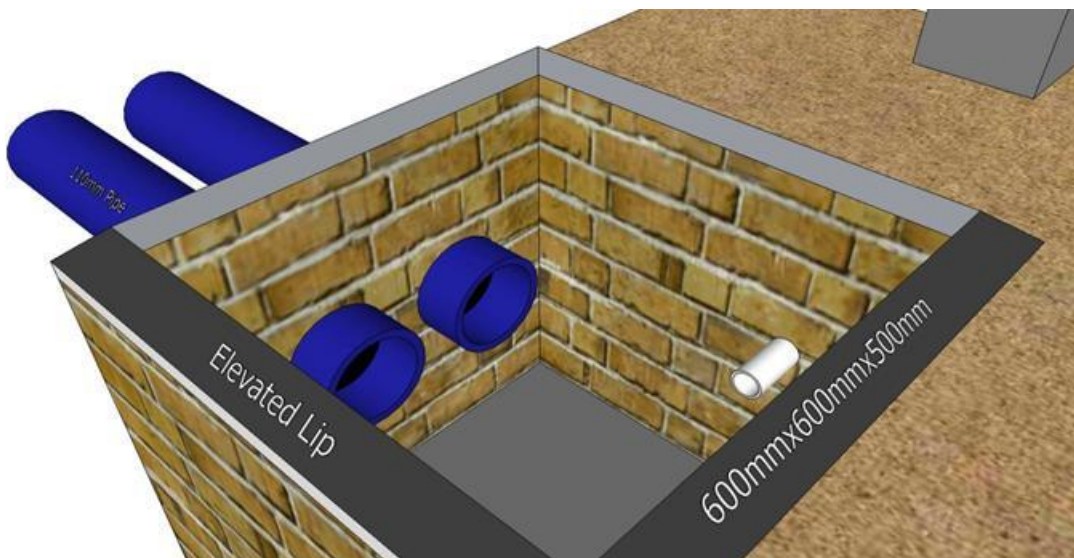


Figure 6 - Manhole across cable route

2.1.1.5 Underground conduit

- Inter-manhole conduit to be 2 x 110mm conduits at a minimum.
- Conduit between manhole and gooseneck / camera pole / beam pole / traffic light or similar installations to be 1 x 50mm conduit as a minimum.
- Conduit between manholes and entry barriers are to be a minimum of 2 x 50mm conduit.

Please refer to the following figure as a typical example of conduit installation:

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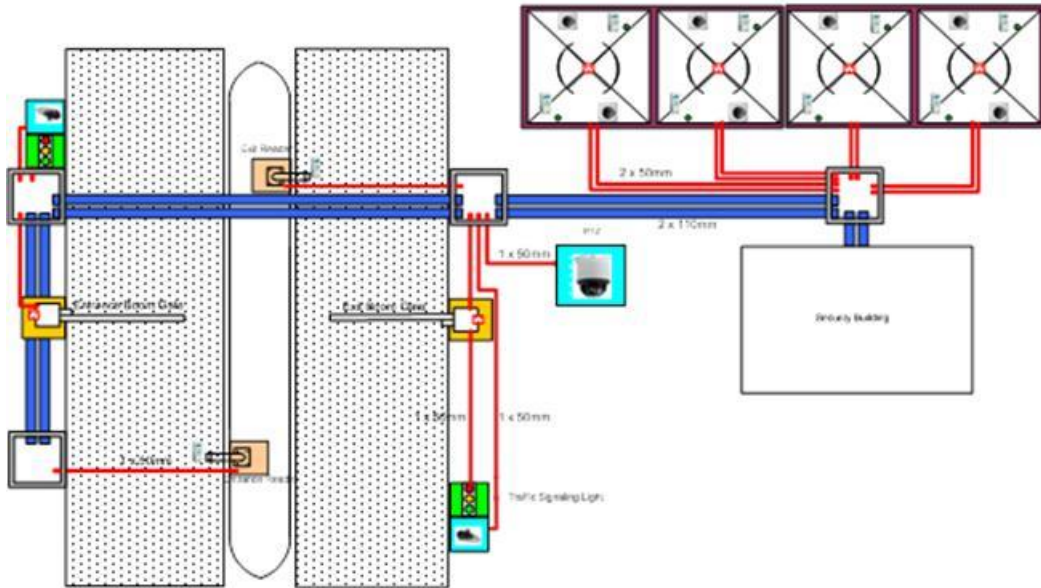



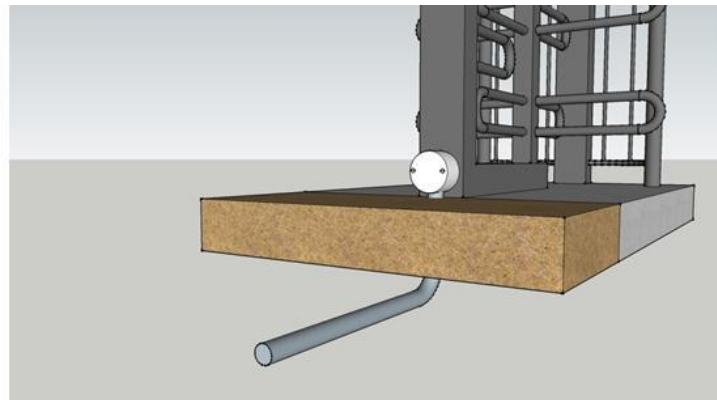
Figure 7 - Underground conduit

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2.1.1.6 Plinth Specification

- Gooseneck: 500mm(w) x 500mm(l) x 500mm(d) 25 – 30 MPa
- Single Turnstile: 1430mm(w) x 1430mm(l) x 200mm(d) 25 – 30MPa
- Double Turnstile: 2180mm(w) x 1430mm(l) x 200mm(d) 25 – 30MPa
- Camera Pole: 500mm(w) x 500mm(l) x 500mm(d) 25 – 30 MPa
- Traffic Light Pole: 500mm(w) x 500mm(l) x 500mm(d) 25 – 30 MPa
- Barrier: 500mm(w) x 500mm(l) x 500mm(d) 25 – 30 MPa

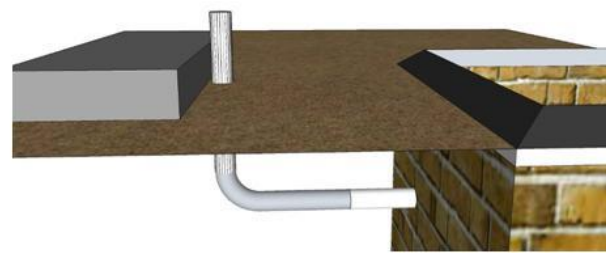
Cable entry to the plinths can be middle or side entry as per the following figures:




Side cable entry termination box



Middle cable entry for goosenecks, camera poles, traffic light poles, barriers, etc.



Side cable entry for single and double turnstiles

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2.1.1.7 LONWORKS Extender

Should it be required to extend the LON bus over extreme distances the following approved fibre extender can be used.

LONWORKS® TP/FT-10 to Fiber Optic Repeater



- ◆ LONWORKS® TP/FT-10, 78 kbps
- ◆ Up to 10 Network Segments
- ◆ Extend Network up to 25 km
- ◆ Easy to Install
- ◆ Multi- or Single Mode Fiber
- ◆ Point-to-Point, Bus or Redundant Ring
- ◆ Transparent Repeater Function
- ◆ Optical Signal Regenerated
- ◆ Electrical Interference Tolerance
- ◆ Alarm Output Indicating Failure
- ◆ Mounted on a 35 mm DIN-rail

**Honeywell LON network will
support any
TRANSPARENT LON
REPEATER**

This repeater has been tested
successfully with Honeywell
equipment

GENERAL

The LR-01 offers an easy way to extend the distance between LONWORKS 78 kbps TP/FT network segments using a fiber optic link. The complete transparent conversion to and from the fiber optic media facilitates the installation procedure by eliminating the need for any additional network addressing or software configuration.

The LR-01 is equipped with either one or two pairs of fiber optic receiver and transmitter. This allows the user to build either point-to-point, bus or ring topology fiber links. The LR-01 has a built-in redundancy scheme that provides for fault tolerance in the fiber rings. A LR-01 link acts as a TP/FT-10 physical layer repeater link providing transparent communication, thus no increase in bandwidth is imposed on the network.

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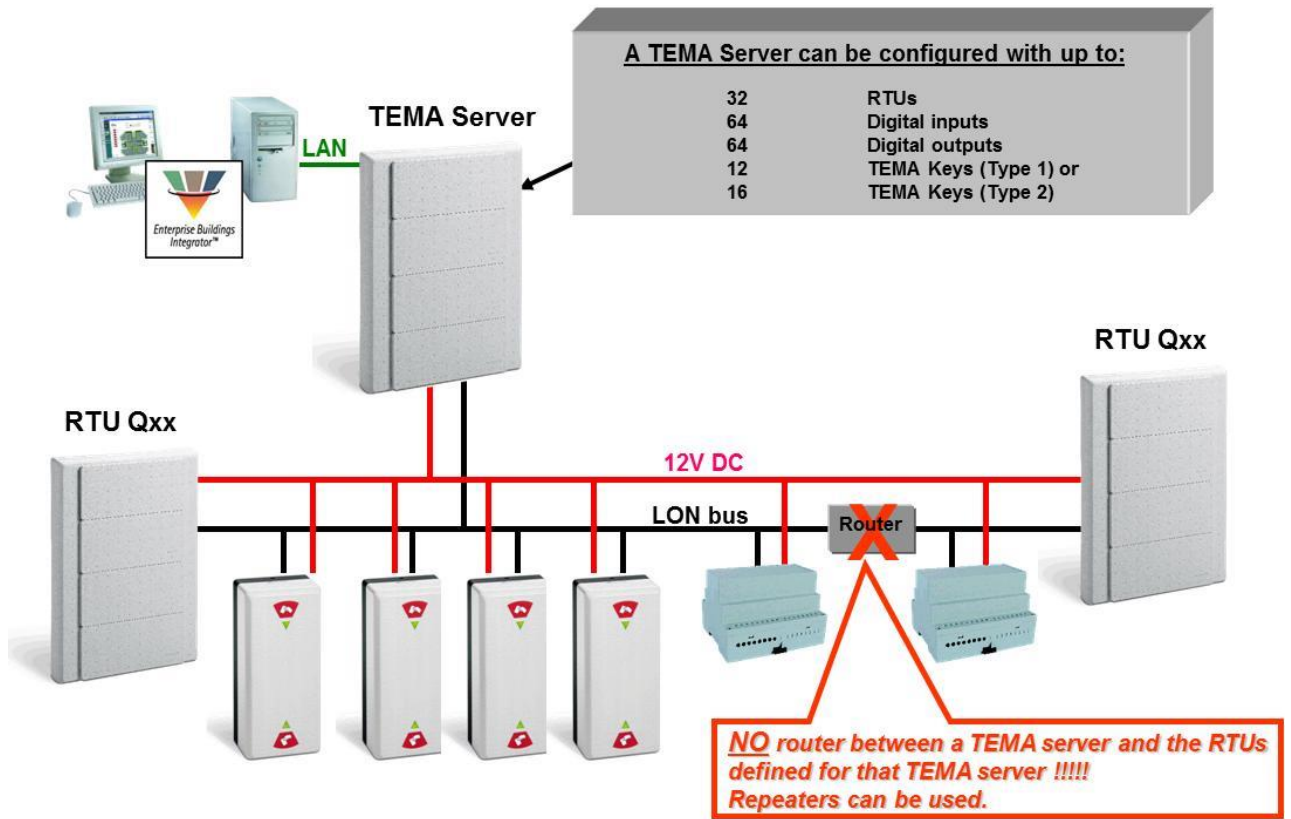




Figure 8 - LON installations

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2.1.1.8 Cabling

- All wiring should be concealed inside trunking or conduit. No exposed wiring will be accepted.
- Cabling in roof or floor voids should be installed in cable trays. Where cable trays are not available or viable, conduit will be acceptable.
- Cabling in trays should be tied off at a maximum of 1.5m interval.
- Data and low voltage (0-48V DC/AC) cable installations should be separated from mains power installations by a minimum of 500mm.
- Where data and low voltage cabling has to cross power cabling, this should always be at 90° angles.
- Cabling in manholes should be kept above the manhole floor level to avoid water contact.
- Cable should be handled with care and not pulled with excessive force that may cause internal damage.
- Honeywell Building Solutions will provide drawings prior to installations. The installer must adhere to the drawings and specifications at all times. Where a discrepancy exists between a drawing and these specifications, the higher of the two standards is to be followed.
- The installation contractor is to provide Honeywell with detailed as built drawings indicating cable routes, installation locations and unique equipment identifiers (i.e. neuron ID for Temaline equipment) on completion of each logical section of an installation.
- Cables are not to be bent at a radius of less than four times the diameter of the cable or tighter than specified by the manufacturer.
- Avoid cable runs next to devices that may cause electro-magnetic interference. Typical devices include photo copiers, electric heaters, speakers, printers, TV sets, fluorescent lights, welding machines, microwave ovens, telephones, fans, elevators, motors, electric ovens, dryers, washing machines and shop equipment.
- Avoid stretching UTP/Mylar cables. Tension when pulling cables should not exceed 10kg.
- Supply and installation of all trunking/conduit/glands/etc. form part of the installation contractor's scope of work.
- Always follow the correct wiring schematic.
- Do not proceed with any wiring if the wiring diagram is unclear. Contact the Honeywell engineer immediately.
- All wiring is to be terminated with bootlace ferrules of the appropriate size and colour to match the cable.
- Ensure that all bootlace ferrules are properly crimped and has a good mechanical and electrical connection.
- Use a dedicated ferrule crimper when crimping bootlace ferrules. The use of side-cutters are not, pliers or other tools for crimping is not acceptable.
- Practice extreme care when cutting cables. Ensure the cables are properly isolated and that no short circuit is caused when cutting.

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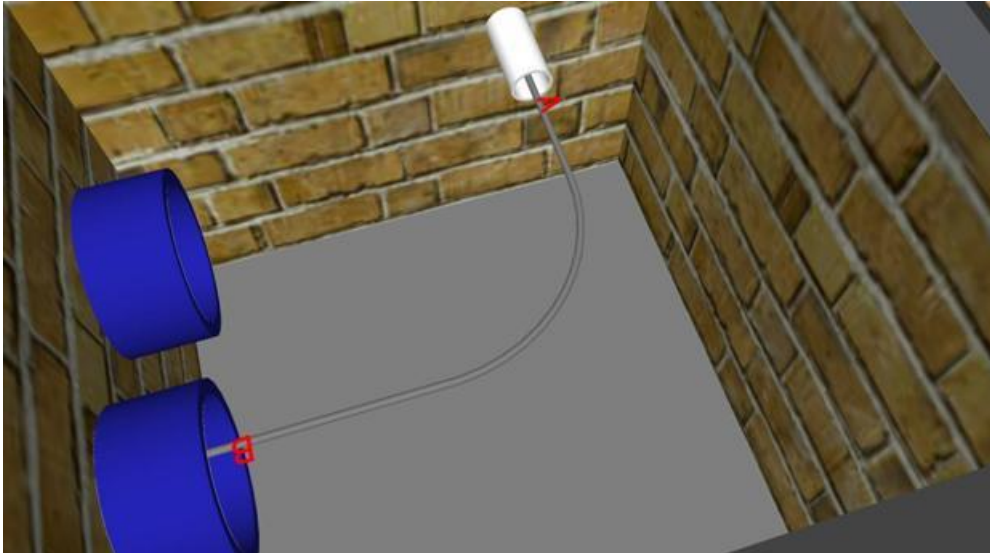


Figure 9 - Cable Labelling

2.1.1.9 Naming conventions and field lengths


Cable inside manholes should be marked to indicate to and from in the manhole (A to B)
Honeywell equipment
Key = 8 characters mandatory as part of standard
Each key is accompanied by 25 character description which will indicate exact location.

Site naming convention: GP100, Gauteng, site number xxx
Tema server: 100T0001
Tema door: 100D0001
Tema RTU: 100R0001
Tema point: 100P0001

Source destination tagging: every cable must be labelled on each end and state where it comes from and where it is going as per the Key naming convention.

T-systems / IT hardware

Switches: IT must inform installers of which port/s to utilise for plugging in access hardware.
Installers will label network cables accordingly and IT shall keep record of who is using relevant Ports. IAC is to acquire this ports list for each access hardware device.

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2.1.3 Access Cards

The Eskom approved access cards must be Corporate 1000 MiFare DESFire Cards (128-bit AES Encryption).

- All new sites will implement the new MiFare DESFire EV1 access cards. New evolution of MIFARE DESFire card, are available with 2 KB, 4 KB and 8 KB NV-Memory. Other features include:
 - Support for random ID
 - Support for 128-bit AES
 - The **Advanced Encryption Standard (AES)** is a specification for the encryption of electronic data.
- Hardware and Operating System is Common Criteria certified at level EAL 4+
- The chip's main characteristics are denoted by its name DESFire EV1 - DES indicates the high level of security MIFARE DESFire EV1 achieves using a 3DES hardware cryptographic engine for enciphering transmission data. Fire reflects its outstanding position as a Fast, Innovative, Reliable and sEecure IC in the contactless proximity transaction market.

NB: 256-Bit AES Encryption can be implemented once the technology is available and proven, activated through software updates.


2.1.4 Software

Supplier: Honeywell
 Product: Enterprise Buildings Integrator
 Version: R410.2
 Licensed Module/s: Security Manager, Reception Manager

Supplier: SAGEM
 Product: MEMS
 Licensed Module/s: VERIF license (offline verification)


2.1.5 Servers

Item	Eskom Recommended Standard Specification
Processor	Intel Core i7 860 2.80GHz
Memory	16 GB RAM
Hard Disk	RAID5 (If we are using local storage. SAN storage can be utilized for the data drives providing that the implementation is transparent to the OS and application layer) C-Drive - 250GB Windows and Honeywell software (Card Layouts and User Photos) D-Drive - 500GB

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	<p>SQL Database files</p> <p>The estimate is based on the following assumptions:</p> <ul style="list-style-type: none"> - 10 000 Cardholders - 4 Transactions per cardholder per day - 40 000 Transactions per Day - 2GB per month - 120GB for 5 year retention time. <p>Additional 80GB storage for Event Management Data</p> <p>E-Drive - 100GB SQL Log Files</p> <p>F-Drive - 500GB Backups and Installation Media</p>
DVDROM Drive	Dual layered DVD-ROM. (This is not an absolute requirement as long you can provide access to the Honeywell installation media, i.e. ISO images or USB drive).
Keyboard	Standard keyboard with 12 function keys
Pointing Device	Standard Mouse
Video Resolution	Default 1280x1024 pixels; min 65K colors
Operating System	Windows Server 2008 R2 Standard 64 bit (Microsoft SQL 2008 Server and SQL 2008 Server Express are automatically installed by EBI.)
Network Card	Dual 1Gb/s NIC
Browser	Internet Explorer 8
Additional Software	<p>Windows IIS Components (IIS 7 for W2K8 R2)</p> <p>Microsoft Net Framework 1.1</p> <p>Microsoft Net Framework 3.5</p> <p>Microsoft Office 2007</p> <p>Up to date anti-virus</p> <p>Server recovery software</p> <p>Disk imaging software (for ISO images)</p>
Comments	<ul style="list-style-type: none"> - Currently for the IAC pilot phase, there are one primary EBI Server and one high-availability EBI Server situated at Megawatt Park. Both these servers are running virtualized on VMWare. - Both these servers are running on Windows Server 2008 and SQL Server 2008 - C Drive: 269 GB containing windows and Honeywell EBI installation. - D Drive: 199 GB containing databases - E Drive: 70 GB containing SQL Logs - F Drive: 199 GB containing Backups and Miscellaneous

Table 3 - EBI Server Platform Specification

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Item	Sizing Specification (Per Server)
Cards	Greater than 100,000 subject to hardware limitations
Points	65,000 per server 180,000* per system * More than 180,000 with Technical Risk Review and Approval
Access Levels	1024
Zones	1024
Time Periods	256
Alarms	2000* unique concurrent alarms. * Each alarm is an aggregating on unlimited recurrences of the same alarm message
Operator Stations	Licensed individually up to 80 concurrent connections
Printers	50
Reports	1000 scheduled standard reports Custom Reports may be configured within SQL reporting Services and this number is not limited
Events	100,000 per 60 MB of disk space available
Assignable Hardware Locations	1000
Users (Operators)	1000
Number of DSA connected Servers	10* * More than 10 with Technical Risk Review and approval
Number of TemaServers	512

Table 4 - EBI Server Sizing Specification

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2.1.6 Workstations

2.1.6.1 Registration Workstations

Item	Eskom Standard Specification
Processor	Intel Core i5 U540 1.20GHz
Memory	4 GB RAM
Hard Disk	500GB (NTFS)
DVDROM Drive	DVD-ROM (Dual layered)
Keyboard	Standard keyboard with 12 function keys
Pointing Device	Standard Mouse
Video Resolution	Default 1280x1024 pixels; min 65K colors
Operating system	Windows 7 Professional 32 bit Service Pack 1
Network Card	Dual 1Gb/s NIC
Browser	Internet Explorer 8
Digital Camera	Canon Powershot A495 or any windows compatible camera that supports TWAIN. Typically Microsoft Lifecam FHD
Tripod stand	Standard off the shelf tripod for digital cameras
Biometric Capture Device	MorphoSmart Optic (MSO300)
Access Card Encoder	SCM Microsystems SDIO10/SDIO11 Smart Card Reader
USB Card Reader	Any reader type that is able to capture the card number into a field
USB Hub	Due to the number of USB devices per workstation a hub is required to cater for at least a total of 10 USB slots
Card Printer	Datacard Colour SP35 Plus printer
Additional Software	As per Eskom standard workstation image
Comments	Active X enabled on Eskom image

Table 5 - EBI Registration Station Specification


The specifications (make, model, etc.) detailed here in; must be adhered to; as these work specifically with the Honeywell EBI software system and these drivers have been installed, tested and are supported. In the event that equipment has become obsolete, the Vendor Honeywell will provide the new alternate hardware to be used. This again, will be updated on the Workstation's image (drivers etc.).

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2.1.6.2 Reception Management Workstations

Item	Eskom Standard Specification
Processor	Intel Core i5 U540 1.20GHz
Memory	4 GB RAM
Hard Disk	500GB (NTFS)
DVDROM Drive	DVD-ROM (Dual layered)
Keyboard	Standard keyboard with 12 function keys
Pointing Device	Standard Mouse
Video Resolution	Default 1280x1024 pixels; min 65K colors
Operating system	Windows 7 Professional 32 bit Service Pack 1
Network Card	Dual 1Gb/s NIC
Browser	Internet Explorer 8
Web Camera	Logitech Webcam Pro 9000 or similar.
Additional Software	As per Eskom standard workstation image
Comments	Active X enabled on Eskom image

Table 6 - EBI Reception Station Specification


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Typical Bill of Quantities

3.1 Typical Installation of 2 x Single Entry Full Height Turnstiles at a main entrance - Bill of Quantities

Item Description	Quantity	Comment
Single Entry Full height Turnstile	2	Two access points at the main entrance
Sagem OMA 520D Biometric reader	4	Two Entry and two Exit
12VDC 4A Power Supply with battery backup	2	For readers and A08 modules. Minimum two, connected in a bus configuration
Honeywell A08 wiegand interface	2	Two readers to one A08. For a Turnstile, these units are usually housed on top of the turnstile under the maintenance lid. Mounted on Din rail
Honeywell TS2 Temaserver	2	Two Temaservers used to provide redundancy. Each configured with a static IP address. For each 4 turnstiles at a main entrance, add another Temaserver. <i>If another Temaserver performing access control is already present with spare capacity, this can also be used.</i>
Honeywell Q1 Tema Power Supply	2	Two supplies used to provide redundancy.
Lan point for Temaserver	2	With connectivity to IAC VLAN
LON Bus from temaserver cabinet to field devices	Determined on site	Can be extended beyond 1km with LON repeater.
Multicore cable from Biometric reader to A08 Wiegand interface	Approx 20m	5m per reader
IP 65 Wall mount cabinet for Temaserver	1	Usually housed inside the nearest guard house

Table 7- Typical Installation of 2 x Single Entry Full Height Turnstiles at a main entrance - Bill of Quantities

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3.2 Typical Installation of 2 x Double Entry Full Height Turnstiles at a main entrance - Bill of Quantities

Item Description	Quantity	Comment
Double Entry Full height Turnstile	2	Two access points at the main entrance
Sagem OMA 520D Biometric reader	8	Four Entry and four Exit
12VDC 4A Power Supply with battery backup	4 or increase Amp rating	For readers and A08 modules. Minimum two, connected in a bus configuration
Honeywell A08 wiegand interface	4	Two readers to one A08. For a Turnstile, these units are usually housed on top of the turnstile under the maintenance lid. Mounted on Din rail
Honeywell TS2 Temaserver	2	Two Temaservers used to provide redundancy. Each configured with a static IP address. For each 4 single entry turnstiles at a main entrance, add another Temaserver. <i>If another Temaserver performing access control is already present with spare capacity, this can also be used.</i>
Honeywell Q1 Tema Power Supply	2	Two supplies used to provide redundancy.
Lan point for Temaserver	2	With connectivity to IAC VLAN
LON Bus from temaserver cabinet to field devices	Determined on site	Can be extended beyond 1km with LON repeater.
Multicore cable from Biometric reader to A08 Wiegand interface	Approx 40m	5m per reader
IP 65 Wall mount cabinet for Temaserver	1	Usually housed inside the nearest guard house

Table 8 - Typical Installation of 2 x Double Entry Full Height Turnstiles at a main entrance - Bill of Quantities

3.3 Typical Installation of 2 x 3m Boom gates at a main entrance with single height pedestals - Bill of Quantities

Item Description	Quantity	Comment
3m Vehicle Barrier with ground loop sensor	2	One Entry lane and one exit lane


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Single height gooseneck pedestal with raincover	2	Sized for OMA520 reader
Sagem OMA 520D Biometric reader	2	One Entry and One Exit
12VDC 4A Power Supply with battery backup	2	For readers and A08 modules. Minimum two, connected in a bus configuration
Honeywell A08 wiegand interface	1	Two readers to one A08. For a Boom gate, these units are usually mounted inside one of the boom enclosures behind the maintenance lid. Mounted on Din rail. <i>Maximum run of wiegand bus between reader and A08 module should not exceed 150m.</i>
Honeywell TS2 Temaserver	1	Add another temaserver for the second vehicle gate, and one more for each two vehicle gates. Each configured with a static IP address. <i>If another Temaserver performing access control is already present with spare capacity, this can also be used.</i>
Honeywell Q1 Tema Power Supply	1	Add one for each temaserver
Lan point for Temaserver	1	With connectivity to IAC VLAN
LON Bus from temaserver cabinet to field devices	Determined on site	Can be extended beyond 1km with LON repeater.
Multicore cable from Biometric reader to A08 Wiegand interface	Largely depends on the cable route from the reader pedestal to the boom gate.	
IP 65 Wall mount cabinet for Temaserver	1	Usually housed inside the nearest guard house

Table 9 - Typical Installation of 2 x 3m Boom gates at a main entrance with single height pedestals - Bill of Quantities

3.4 Typical Installation of 2 x 3m Boom gates at a main entrance with dual height pedestals - Bill of Quantities

Item Description	Quantity	Comment
3m Vehicle Barrier with ground loop sensor	2	One Entry lane and one exit lane


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Dual height gooseneck pedestal with raincover	2	Sized for OMA520 reader
Sagem OMA 520D Biometric reader	4	One Entry and One Exit
12VDC 4A Power Supply with battery backup	3	For readers and A08 modules. Minimum two, connected in a bus configuration
Honeywell A08 wiegand interface	2	Two readers to one A08. For a Boom gate, these units are usually mounted inside the boom enclosure behind the maintenance lid. Mounted on Din rail. <i>Maximum run of wiegand bus between reader and A08 module should not exceed 150m.</i>
Honeywell TS2 Temaserver	2	Add another temaserver each two vehicle gates. Each configured with a static IP address. <i>If another Temaserver performing access control is already present with spare capacity, this can also be used.</i>
Honeywell Q1 Tema Power Supply	2	Add one for each temaserver
Lan point for Temaserver	2	With connectivity to IAC VLAN
LON Bus from temaserver cabinet to field devices	Determined on site	Can be extended beyond 1km with LON repeater.
Multicore cable from Biometric reader to A08 Wiegand interface	Largely depends on the cable route from the reader pedestal to the boom gate.	
IP 65 Wall mount cabinet for Temaserver	1	Usually housed inside the nearest guard house

Table 10 - Typical Installation of 2 x 3m Boom gates at a main entrance with dual height pedestals - Bill of Quantities


3.5 Typical Installation of an access controlled door

Item Description	Quantity	Comment
Electronic NC recessed door contact	1	For door status
Emergency breakglass unit	1	Green
HID Multiclass Card reader	1	One Entry
300kg Magnetic lock with bracket	1	Do not use the door sense

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		inside the maglock, as these are unreliable. Use separate door contact as stated above.
Manual Key override	1	Mounted on the outside of entrances to critical areas, such as control rooms, server rooms and main entrance doors.
Exit pushbutton	1	Infrared No touch exit button usually preferred.
12VDC 4A Power Supply with battery backup	1	For readers and A08 modules. Minimum two, connected in a bus configuration
Honeywell A08 wiegand interface	1	Mounted inside small enclosure located in the ceiling void, or mounted inside a central enclosure where multiple doors are access controlled within a small geographical area
Honeywell TS2 Temaserver	1	Add another temaserver for each 16 doors within the same building. <i>If another Temaserver performing access control is already present with spare capacity, this can also be used.</i>
Honeywell Q1 Tema Power Supply	1	Add one for each temaserver
Lan point for Temaserver	1	With connectivity to IAC VLAN
LON Bus from temaserver cabinet to field devices	Determined on site	Can be extended beyond 1km with LON repeater.
Multicore cable from Biometric reader to A08 Wiegand interface	Largely depends on the cable route from the reader pedestal to the boom gate.	
IP 65 Wall mount cabinet for Temaserver	1	Usually housed inside the server room


Table 11 - Typical Installation of an access controlled door

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3.6 Monitored fire escape door

Item Description	Quantity	Comment
Electronic NC recessed door contact	1	For door status
Emergency breakglass unit	1	Green
300kg Magnetic lock with bracket	1	Do not use the door sense inside the maglock, as these are unreliable. Use separate door contact as stated above.
Emergency Exit bolt	1	
12VDC 4A Power Supply with battery backup	1	For readers and A08 modules. Minimum two, connected in a bus configuration
Honeywell A01 Input/Output module	1	Mounted inside small enclosure located in the ceiling void, or mounted inside a central enclosure where multiple doors are access controlled within a small geographical area. This module can monitor 4 fire escapes
Honeywell TS2 Temaserver	1	Add another temaserver for each 12 x A01 modules used inside the same building. <i>If another Temaserver performing access control is already present with spare capacity, this can also be used.</i>
Honeywell Q1 Tema Power Supply	1	Add one for each temaserver
Lan point for Temaserver	1	With connectivity to IAC VLAN
LON Bus from temaserver cabinet to field devices	Determined on site	Can be extended beyond 1km with LON repeater.
Multicore cable from Biometric reader to A08 Wiegand interface	Largely depends on the cable route from the reader pedestal to the boom gate.	
IP 65 Wall mount cabinet for Temaserver	1	Usually housed inside the server room

Table 12 - Monitored fire escape door

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4. Technical evaluation criteria

Technical Evaluation		
	Description	Weight
1	Number of years' experience the company has in installing, maintaining, servicing, repairing and integrating access control systems	5%
2	Knowledge, training, accreditation and experience of installers/ technicians in implementing and integrating enterprise access control systems	30%
3	Company exposure to: Eskom sites and systems	5%
4	Ability of the company to install the required systems according to Eskom standards and specifications. Company to provide references of work previously done or currently in progress wrt to installing and maintaining access control systems.	20 %
	TOTAL WEIGHT	60%