

ICT Communications room, UPS room and General Room-Ward Inspection Hold Points

Version 2019.1.1 - FINAL



1.1.1 Document Review

Version	Summary of Changes	Author	Date
2019.0.1	Migrate information to the new template	Nitin Saxena	29/08/19
2019.1.0	Document for release	Nitin Saxena	29/08/19
2019.1.1	Document update	Robert Vogt	11/10/2019

1.1.2 Document Approval – For Release

Version	Approver	Position	Date
2019.1.1	Mark Moerman	Senior Director, DSD Infrastructure Hub, HD	11/10/2019

1.1.3 References

Document	Version	Location

Executive Summary

This document provides templates for the Communications and Uninterruptible Power Supply (UPS) Rooms inspections. The templates have been developed to provide the head contractor a list of items that will be inspected by the nominated staff.

These templates will be used for inspections, at several stages of the project, as mentioned below:

- Pre room sheeting;
- Pre data cabinet installation communications room inspection;
- Post data cabinet communications room inspection; and
- Pre network installation communications room inspection.

Following each inspection, the head contractor will be provided with a list of defects or non-compliant items, if any. These defects will need to be rectified by the head contractor prior to proceeding to the next stage of inspections.

These inspections are intended to provide the following benefits:

- Setting an expectation with the head contractor as to the quality of construction expected within the communications rooms and the wards;
- Consistent communications room infrastructure implementation that complies with DSD standards;
- Rectification of any issues during the construction phase of the project; and
- Engagement of various stakeholders to ensure their respective requirements are met by the relevant rooms; and
- Signoff from stakeholders.

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1. Introduction

1.1 Document Scope

This document provides templates that will be used for site inspections during the construction of the building.

DSD in conjunction with Shared Services ICT has developed standards and specification that must be complied with by the head contractor and third-party organisations that provide ICT services for the Health Directorate. These standards are critical to the 'problem-free' operation of the all the critical Health services provisioned at the site.

These inspections are intended to ensure that the head contractor has complied with the Specifications and Standards provided by DSD.

1.2 Core infrastructure systems

Several core infrastructure systems will be installed at the site. This document provides scope for each party and the technical specifications for the core infrastructure systems which include:

- **Cabling specification.** Baseline requirements for ICT communication fibre and copper cabling requirements;
- **Communication rooms.** Both building and floor level distribution rooms to host ICT cabinets with network and associated equipment;
- Power specification. Power connection requirements.

1.3 Inspection Notification

For each of the following inspections several people need to be contacted and arrangements made for them to be present at the inspection. As such it is important to provide advance notice to the DSD project manager of upcoming inspections. DSD require a minimum of 5 days' formal notice prior to any inspection being carried out regardless of the inspection points being present in the building schedule. This is to ensure that all parties can be organised to be present.

It is expected that the hold point inspections will appear in the head contractors schedule. Any change to the inspection date will be immediately be escalated to the Major Project's Project Manager and DSD Project Manager. This is so vendors can be notified of any delays or changes to arranged schedules.

Any defects identified in the inspection will require the inspection to be repeated until all defects have been rectified or accepted. On completion and acceptance of the final inspection DSD require 10 days to install and commission ICT systems.

2. Inspection Schedules

2.1 Communication Room Architecture

2.1.1 Staff Representative

The following staff representatives are expected to attend the inspections:

- DSD Architect
- DSD Project Manager;
- IFCW Project Manager; and
- Head Contractor Site Foreman or representative.

2.1.2 Inspection Table

Room number				
Room type	☐ Building Distributor ☐ Floor Distributor ☐ Combined			
Inspection date				
Pre-Sheeting inspection	☐ All checks have been appropriately passed			
Result summary	☐ Most checks have	☐ Most checks have passed, some attention required (See Notes)		
Pass □ Fail □	☐ A number of items	need attent	ion. (See Notes)	
	Name:			
	Signature:			
Item		Initials	Comment	
Room				
Do the dimensions match design drawing	☐ Yes ☐ No			
Does the door match the design location	☐ Yes ☐ No			
Environment				
Are there any pipes crossing the communication room floor space	☐ Yes ☐ No			
Notes:		•		

Table 1 – Communications Room Architecture

2.2 Pre-Sheeting Communications or UPS Room

2.2.1 Staff Representative

The following staff representatives are expected to attend the inspections:

- DSD Architect
- DSD Project Manager;
- IFCW Project Manager; and
- Head Contractor Site Foreman or representative.

2.2.2 Inspection Table

ZiZiZ mopoot	1011 1 4010		
Room number			
Room type	☐ Building Distributor ☐ Floor Distributor ☐ Combined		
Inspection date			
Pre-Sheeting inspection	☐ All checks have been appropriately p	assed	
Result summary	\square Most checks have passed, some atte	ntion required (See Notes)	
Pass □ Fail □	$\hfill\Box$ A number of items need attention. (S	ee Notes)	
	Name:		
	Signature:	-	
Item	Acceptable condition	Initials	
Room			
Confirm Dimensions of room are correct	☐ Yes ☐ No ☐ Not applicable		
Confirm Air Conditioning position is correct	☐ Yes ☐ No ☐ Not applicable		
Cabling			
Separation between power and data cables is correct	☐ Yes ☐ No ☐ Not applicable		
Data cabling is in correct position	☐ Yes ☐ No ☐ Not applicable		
Power cabling is in correct position	☐ Yes ☐ No ☐ Not applicable		
A&B GPO for iSTAR PSU's have been catered for	☐ Yes ☐ No ☐ Not applicable		
Data outlets for iSTAR N+3 have been catered for	☐ Yes ☐ No		

	☐ Not applicable	
Have 2 data outlets for CCTV outlet been installed	☐ Yes ☐ No ☐ Not applicable	
Is the CCTV position correct	☐ Yes ☐ No ☐ Not applicable	
Data outlet for VOIP phone	☐ Yes ☐ No ☐ Not applicable	
Data outlet for Laptop	☐ Yes ☐ No ☐ Not applicable	
Notes: E.g. Lighting, VESDA, Access	Control requirements	

Table 2 - Pre-Sheeting Communication and UPS Room

2.3 Pre-Sheeting General Ward or Room

2.3.1 Staff Representative

The following staff representatives are expected to attend the inspections:

- DSD Architect
- DSD Project Manager;
- IFCW Project Manager; and
- Head Contractor Site Foreman or representative.

2.3.2 Inspection Table

Room number/ Ward			
Room type	☐ Building Distributor ☐ Floor Distributor ☐ Combined ☐ General ward/room		
Inspection date			
Pre-Sheeting inspection	☐ All checks have been appropriately p		
Result summary	\square Most checks have passed, some atte	ention required (See Notes)	
Pass □ Fail □	\square A number of items need attention. (S	ee Notes)	
	Name:		
	Signature:	-	
Item	Acceptable condition	Initials	
Cabling			
Separation between power and data cables is correct	□ Yes □ No		
data capies is correct	☐ Not applicable		
Data cabling is in correct position	☐ Yes ☐ No		
	☐ Not applicable		
Power cabling is in correct position	☐ Yes ☐ No		
position	□ Not applicable		
Notes:			

Table 3 - Pre-Sheeting General Ward

2.4 Pre-Data Cabinet Installation Inspection

2.4.1 Staff Representative

The following staff representatives are expected to attend the inspections:

- DSD Architect
- DSD Project Manager;
- IFCW Project Manager; and
- Head Contractor Site Foreman or representative.

2.4.2 Inspection Table

I		
Room number		
Room type	☐ Building Distributor ☐ Floor Distributor	
	☐ Combined	
Inspection date		
Pre-Data Cabinet Installation	☐ All checks have been a	ppropriately passed
Result summary	☐ Most checks have pass	ed, some attention
	required (See Notes)	
	☐ A number of items need	d attention. (See Notes)
	Name:	
	Signature:	
		· · · · · · · · · · · · · · · · · · ·
Section/Item	Strike out the incorrect options	Initials
Floor surface		
Smooth with no chips or dips	□ Yes □ No	
Commercial grade anti-static vinyl extending to at	☐ Antistatic Vinyl	
least 100mm up the wall	☐ Sealed and painted	
Or	☐ Incorrect/unfinished	
Floor wall intersect joint sealed with a paintable	Painted option approved	
silicon sealer then painted with concrete sealing,	by solutions architect:	
hard wearing epoxy style paint to at least 100mm		
up the wall		
Floor space		
	□ Yes □ No	
	☐ Alternate approved by	
Room is minimum 3.4m wide and 3.1m deep	solutions architect:	
(May need to be larger to allow for ancillaries)		

Walls		
Walls span from floor to hard ceiling (not just to the soft internal ceiling) ensuring room is secure from unauthorised access (may have mesh wall above soft ceiling)	□ Secure □ Insecure	
Surfaces are		
Flat and Smooth	☐ Yes ☐ No	
Painted and clean	│ │ ☐ Yes │ No	
Rendered or plastered (not brick)	□ Yes □ No	
Wall space for non-rack mounted items (allowing for minimum clearances) I-Star unit A and B distribution boards Air conditioners	☐ Available ☐ Not available	
other?		
Ceiling		
Ceiling height clearance is a min 350mm above cabinet height.	☐ Yes ☐ No	
Rack chimneys installed or provisioning to do so where cables penetrate ceilings (or other appropriate measures to prevent ingress of dust and debris)	☐ Yes ☐ No ☐ Not applicable	
Entrance		
Base of door has lip or seal to prevent water ingress	☐ Yes ☐ No ☐ Not applicable	
Door swing path does not interfere with or obstruct open cabinets, other hardware or pathways Minimum 800mm between open doors	☐ Yes ☐ No	
Security		
Two single data outlets (DO) cabled and mounted near the ceiling at the two corners opposite to the wall on which the cabinets are positioned against for provision of IP cameras for access monitoring Note: matching GPO is not required	□ Yes □ No	
Room provisioning		
Power points provided adjacent to all data outlets (excluding Security camera data outlets)	☐ Provided☐ Not provided☐	

Notes:	

Table 4 - Pre-Data Cabinet Installation

2.5 Post-Data Cabinet Installation Inspection

2.5.1 Staff Representative

The following staff representatives are expected to attend the inspections:

- DSD Architect
- DSD Project Manager;
- IFCW Project Manager;
- Head Contractor Site Foreman or representative; and
- SSICT NCS and ICT Facilities.

2.5.2 Inspection Table

Zioiz inopositori rabis				
Room number				
Room type	☐ Building Distributor ☐ Floor Distributor			
	☐ Combined			
Inspection date				
Post Cabinet Installation	All checks have been appro	All checks have been appropriately passed		
Result summary	Most checks have passed,	some attention		
	required			
	A number of items need att	ention.		
	Name:			
	Signature:			
Section/Item	Strike out the incorrect options	Initials		
General				
Reconfirm Pre-Cabinet installation checklist still valid and passed.	☐ Passed ☐ Invalid			
Cabinets				
If room utilised for Building Distributor	□ Yes □ No			
BD data cabinet included	☐ Not applicable			
If room utilised for Floor Distributor	☐ Yes ☐ No			
3x FD data cabinets (FD, Non-Critical,	☐ Not applicable			
Health Appliance) included				
Space for future expansion cabinet included	□ Yes □ No			
Cabinets are SRA frames	□ Yes □ No			
(check specifications from solution design)				
Configured as per Solution design	□ Yes □ No			
45 Rack Units	□ Yes □ No			

Half/double doors front and rear	☐ Yes ☐ No
Side panels and security separation panels installed	☐ Yes ☐ No
Internal cable trays attached spare provides	☐ Yes ☐ No
Cabinets are labelled with Communications room name-number and cabinet ID (e.g. FD2.2-ABCetc)	☐ Yes ☐ No
First cabinet	Cabinet function:
Adjacent to wall	☐ Yes ☐ No
Doors (front and rear) can be opened beyond 90° without impedance	☐ Yes ☐ No
Minimum clearance between front and wall or any mounted fixtures or other obstructions is 1100mm (to allow full length hardware to be racked)	□ 1100+ □ <1100
Minimum clearance between rear and wall or any mounted fixtures or other obstructions is 900mm	□ 900+ □ <900
Second cabinet	Cabinet function:
	☐ Not applicable
Adjacent and bolted to First	□ Yes □ No
Doors (front and rear) can be opened beyond 90° without impedance	□ Yes □ No
Minimum clearance between front and wall or any mounted fixtures or other obstructions is 1100mm (to allow full length hardware to be racked)	□ 1100+ □ <1100
Minimum clearance between rear and wall or any mounted fixtures or other obstructions is 900mm	□ 900+ □ <900

Third cabinet	Cabinet function:		
	□ Not applicable		
Adjacent and bolted to Second	☐ Yes ☐ No		
Doors (front and rear) can be opened beyond 90° without impedance	☐ Yes ☐ No		
Minimum clearance between front and wall or any mounted fixtures or other obstructions is 1100mm (to allow full length hardware to be racked)	□ 1100+ □ <1100		
Minimum clearance between rear and wall or any mounted fixtures or other obstructions is 900mm	□ 900+ □ <900		
Fourth cabinet	Cabinet function:		
	□ Not applicable		
Adjacent and bolted to Third	☐ Yes ☐ No		
Doors (front and rear) can be opened beyond 90° without impedance	☐ Yes ☐ No		
Minimum clearance between front and wall or any mounted fixtures or other obstructions is 1100mm (to allow full length hardware to be racked)	□ 1100+ □ <1100		
Minimum clearance between rear and wall or any mounted fixtures or other obstructions is 900mm	□ 900+ □ <900		
Fifth cabinet	Cabinet function:		
	□ Not applicable		
Adjacent and bolted to Fourth	☐ Yes ☐ No		
Doors (front and rear) can be opened beyond 90° without impedance	☐ Yes ☐ No		
Minimum clearance between front and wall or any mounted fixtures or other obstructions is 1100mm (to allow full length hardware to be racked)	□ 1100+ □ <1100		
Minimum clearance between rear and wall or any mounted fixtures or other obstructions is 900mm	□ 900+ □ <900		

Provisioning for spare cabinet		
Space allocated at end of row	□ Yes □ No	
Doors (front and rear) can be opened beyond 90° without impedance	☐ Yes ☐ No	
Minimum clearance between front and wall or any mounted fixtures or other obstructions is 1100mm (to allow full length hardware to be racked)	□ 1100+ □ <1100	
Minimum clearance between rear and wall or any mounted fixtures or other obstructions is 900mm	□ 900+ □ <900	
End of row walkway minimum clearance of at least 800mm (plus the space of the cabinet) to wall or any mounted fixtures or other obstructions	□ 800+ □ <800	
Cabinets are in good condition and not damaged.	□ OK □ Not OK	
Cabinets have chimneys fitted if cables penetrate a false ceiling	□ OK □ Not OK	
Infrastructure		
Fibre distribution between cabinets is via dedicated pathway through all cabinets (provided in ACT Health custom cabinets) or via "yellow fibre duct" mounted above cabinets. Fibre duct shall be snap together type with waterfalls to each cabinet	☐ Yes ☐ No	
Each patch panel in cabinet labelled at minimum with an ID = "Number of patch panels from top" (e.g. 5)	☐ Yes ☐ No	
Each patch panel port in each cabinet labelled (from 1-24). This will usually be provided by manufacturer on the patch panel. Additional label space provided on PP's shall be used to identify the source in the case of critical or business functions (e.g. WAP, Biomed device, FIP etc) and also be highlighted/coloured appropriately for the given service (same as patch lead colour. E.g. black, purple, red)	☐ Yes ☐ No	
Structured Cabling is CommScope Systemax ® EA/ Cat 6A U/UTP LSZH	☐ Yes ☐ No	
Patch panels are CommScope Systemax ® EA/ Cat 6A U/UTP, 1RU angled, single row outlets, 24 port and fully loaded	☐ Yes ☐ No	

An A4 copy of cable colour standards chart is clearly posted at the end of each cabinet row	☐ Yes ☐ No	
Patch cables to use the agreed colour coding format	□ Yes □ No	
Patch Cabling is CommScope Systemax ® EA/ Cat 6 U/UTP	☐ Cat 6 ☐ Cat 6a ☐ No	
Walls		
All Power GPO's and wall data DO fittings are to be properly and securely finished with plastic screw covers fitted and Traffolyte labels	☐ Yes ☐ No	
Building Data outlets labelled with Comms room name and number ("Room type" -"floor"."rm#" e.g. "BD/FD-2.3), dash, Cabinet ID" & "number of PPs from top"(e.g. E or 5 -numeral is less confusing as cabinets use alpha ID's),dash, port#	□ Yes □ No	
e.g. Floor Distributor level 2, third comms room, second cabinet, fifth PP from top, eighth data outlet along label will look like FD-2.3-B5-8		
A/C		
Room temperature after 24 hours of use acceptable (22° +-2°)	□ Yes □ No	
Remote control(s) present and functional	□ Yes □ No	
BMS		
Air conditioners connected into BMCS for failure warning	☐ Yes ☐ No	
BMCS programmed to alert on room over temperature (>24°)	☐ Yes ☐ No	
Network switches set to alert when overheating	□ Yes □ No	
Fire and Emergency		
IP based heat detectors present in cabinets containing active equipment	☐ Yes ☐ No	
EWIS audible Emergency system or PA speaker in the room. Demonstrated to be clearly heard from within the room above all equipment noise	☐ Present and passed testing ☐ Appears present and untested ☐ Not present	
Check all room penetrations are correctly fire sealed and certified if room is fireproofed.	☐ Comms room certified☐ Battery room certified☐ Not applicable	

Fire certifications scanned. Original forwarded to B&I. Soft copy forwards to HPI Solution architects	☐ Yes ☐ No ☐ Not applicable
Communication room fitted with a wall mounted VoIP phone. The phone has the ability to call TCH Switch and dial 8 for Duress or Fire emergencies, or outlet for VoIP phone connection.	□ Pass □ Fail
Notes/Defects	

Table 5 - Post Data Cabinet Installation

2.6 Defect Inspection

2.6.1 Staff Representative

The following staff representatives are expected to attend the inspections:

- DSD Architect
- DSD Project Manager;
- IFCW Project Manager;
- Head Contractor Site Foreman or representative; and
- SSICT NCS and ICT Facilities.

2.6.2 Inspection Table

Room number				
Room type		☐ Building Distributor ☐ Floor Distributor		
		□ Combined		
Inspection date				
Pre-Network connectivity inspection.		☐ All checks have been appropriately passed		
Result summary		☐ Most checks have passed, some attention required		
		☐ A number of items need attention. (See Notes		
		Name:		
		Signature:		
General				
All items identified as defects in Post Cabinet installation checklist have been addressed.	□ Yes	es 🗆 No		
Notes:				

Table 6 - Pre-Network Installation

3. Signoff

The following form provides formal acceptance by the relevant personnel to indicate that the Communications and other rooms have been inspected and are fit-for-purpose.

Room number					
		ding Distributor □ Floor Distributor			
Representative and title	Area		and sys	completed tems/ icture is in a fit	Signature and date
Mark Moerman, Senior Director, ICT Infrastructure	DSD Infrastr	ucture	□ Yes	□ No	
Kevin Landale, Senior Director, Critical Systems and Infrastructure Hub	DSD Critical Systems		□ Yes	□ No	
Michael Warylo, Manager Fire Safety and Transport	Fire		□ Yes	□ No	
Dario Gomes, Manager, Security Planning and Design	Security		□ Yes	□ No	
	Hydraulics		□ Yes	□ No	
	Mechanical		□ Yes	□ No	
Project Manager	IF&CW		□ Yes	□ No	

Table 7 - Signoff