

		Inspection and Test Plan - Control and Supervision of the Works		Doc ID: FH-ZU2-QU-ITP050 REV: 0	
Client: Melbourne Airport			Contract No: CP14038-01		Prepared By: Ahmad El Wazer
Project: Taxiway Zulu				Reviewed By: Jamal Khodr	
Construction Process: ALER 3 ICT Installation				Approved By: Marco Poggenberg	
Specifications: ZULU-BECA-001-SPC-00005					
Structure / Component: ICT Fibre Installation and Migration					

Lot No:	Lot Details:	Lot size/Quantity:	Date:
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		Frequency	Acceptance Criteria	Reference Documents	Inspection/ Test Method	Record of conformity		Project Engineer Principal's Rep. Surveyor Foreman	Principal's Rep.	FH	Date
1.0	Preliminary Activities – Permits, Documentation, Approvals, Survey Documentation										
1.1	Check for correct documentation	Prior to commencing activity	Ensure that all employees and subcontractors are: - using the correct and complete set of drawings. - all drawings are the latest revision.	Drawings / Aconex Register	Verify	Drawings and drawing registers	HP*	Project Engineer / Site Engineer			
1.2	Implementation of all measures and controls	Prior to commencing activity	All necessary measures and controls being implemented, that is PSP, EMP, TMP, SWMS & WP.	PSP, EMP, TMP, JSEA, SWMS, WP	Visual inspection	This ITP signed	HP*	Project Engineer / Site Engineer			
1.3	Submission & approval of shop drawings	Prior to commencing activity	<u>HOLD POINT</u> Submit shop drawings to the principal's representative for approval prior to fabrication commencement. Items to include but not limited to: <ul style="list-style-type: none">• Netshelter Comms Racks• Power Rails• UPS• Loaded Patch panels• Additional Battery Pack to suit UPS• Hard wired input and output for downstream switchboard	ZULU-BECA-001-SPC-00005 - C3500.2 Drawings	Verify	Aconex Reference	HP	Project Engineer / Site Engineer / Principals Representative			

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1.4	Material Submissions	Prior to commencing activity	<u>HOLD POINT</u> Provide technical datasheets and compliance certifications for all ICT materials. This includes but not limited to: <ul style="list-style-type: none"> OS2 G.652D fibre optic cable (12-core microblown) TE Connectivity or equivalent FOBOTS and patch cords Cat6A UTP/FTP cable and modules LC duplex connectors (blue or green coded) Critchley label sleeves or heat-shrink tubing Fibre warning labels, jumper rings, dust caps, cable markers Cable trays: pre-galvanised/hot dip (min. 42µm) UPS APC Smart-UPS 3 kVA 	ZULU-BECA-001-SPC-00005- C3500.2 Drawings AS/NZS 1252.2	Verify	Aconex Reference	HP	Project Engineer / Site Engineer / Principals Representative			
2.0	Construction										
2.1	Delivery of Materials to site	Each item	Verify each cable drum label, cable length, and ID matches the approved submission and cable schedule. Inspect condition of fibre drums and verify ends are sealed with heat-shrink and protected from dust or water ingress. All components shall be stored elevated on insulated racking. Equipment that has been damaged or exposed to moisture must be rejected. All fibre drums shall be colour coded yellow (OS2) and visibly tagged at source and destination.	ZULU-BECA-001-SPC-00005- C3500.2 Drawings	Visual Inspection	This ITP Signed Materials Inspection Checklist on ConQA	IP	Project Engineer / Site Engineer			

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2.2	Inspection of installed Pits, Conduits, Slabs and Structure	Each Lot	Inspect that all underground conduits are clean, dry, and fitted with compliant drawrope. Duct ends must be bell-mouthed and sealed when not in use. Comms pits must include the following: <ul style="list-style-type: none"> Approved pit covers Earthing (if metallic) Cable support brackets, Internal spacers (where applicable) Ensure pit depth and position align with survey setouts and installation tolerances. Check slab penetrations are core-drilled or pre-formed as shown in IFC and sealed post-install.	Drawings	Visual Inspection	This ITP Signed Stowe ITC	IP	Project Engineer / Site Engineer			
2.4	Cable Pathway Inspection	Each Lot	Verify cable tray installation matches approved shop drawings. All directional changes must be supported with brackets within 300mm. Maximum tray support spacing is 1.5m. Confirm no tray deformation or sharp edges exist. Earthing continuity must be maintained with bonding links across expansion joints. Segregation dividers must be present where power and ICT cables share a common tray. Firestop penetration seals must be compliant with AS 4072.1 and identifiable by tag number or batch number.	ZULU-BECA-001-SPC-00005 Drawings	Visual Inspection	This ITP Signed Stowe ITC	IP	Project Engineer / Site Engineer			
2.5	Fibre Cable Installation	Each Lot	Fibre shall be pulled using calibrated tension monitoring equipment to ensure no tension exceeds 270N. Minimum bend radius must be ≥10x cable outer diameter or 80mm for microblown 12-core units. Label each cable at both ends using Critchley sleeves or approved printed heat-shrink tubes. Every 4 metres,	ZULU-BECA-001-SPC-00005 Drawings	Visual Inspection	This ITP Signed Stowe ITC	IP	Project Engineer / Site Engineer			

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			apply orange warning labels inside shared containment paths. Route must follow a star topology structure unless otherwise specified. Keep micro ducts free of gel, dust, or moisture during installation.								
2.6	Comms Room Fit-Out and Installation	Each Lot	Install racks, patch panels, and FOBOTS as per manufacturer's instructions. All patch modules to be 19" rack mounted, fixed with screws and dust covers. Incorporate jumper rings, labelling strips, and drawer sliders where required. LC connectors shall be installed clean and dry, colour coded (Blue = PC, Green = APC), and secured to minimise bend strain. Verify the presence of cable strain relief and that unused ports are sealed with caps.	ZULU-BECA-001-SPC-00005- C3500.2 Drawings	Verify	This ITP Signed Stowe ITC	IP	Project Engineer / Site Engineer			
2.7	Comms Room UPS Installation	Each Lot	Confirm UPS installed are as per approved material submission. Verify battery and/or UPS capacity can operate normally for a duration of Eight (8) hours.	ZULU-BECA-001-SPC-00005- C3500.2 Drawings	Verify	This ITP Signed Stowe ITC	IP	Project Engineer / Site Engineer			
2.8	Control/Data Cable Installation (AGL & ICT)	Each Lot	Install Cat6A UTP cables in separate containment from power. Maintain ≤90° bend angles and ≤45m run length between active equipment unless boosted. Label within 300mm of each end. Each pair must be colour matched to the patch panel schedule. Testing of all the criteria for compliance with CAT6A, NEXT and ACRF values post-install to validate compliance with ISO/IEC 11801 Category 6A	ZULU-BECA-001-SPC-00005- C3500.2, C3501.4 AS/ACIF 3009:2006 AS/NZS 3080 Drawings	Verify	This ITP Signed Stowe ITC	IP	Project Engineer / Site Engineer			

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			standards. No unapproved joins or patch-throughs allowed inside ceiling space or risers.								
2.9	Cat 6A RJ45 Data outlets Installation (AGL & ICT)	Each Lot	Installation of all Cat 6A RJ45 data outlets are as indicated in drawings. Confirm mounting height of outlets on site with the Superintendent. Generally, and unless otherwise shown on the drawings, outlets shall be mounted at: <ul style="list-style-type: none"> 300 mm above floor level or 200mm above benches in commercial areas. 1400 mm above floor level in plant and industrial areas 	ZULU-BECA-001-SPC-00005-C2141 Drawings 030-3100 set AS/NZS 3000 AS/ACIF S009:2006	Verify	This ITP Signed Stowe ITC	IP	Project Engineer / Site Engineer			
2.10	Fibre Testing (OTDR + IL/ORL)	Each Lot	<u>WITNESS POINT</u> Verify fibre cable performance through industry-standard testing methods: <ul style="list-style-type: none"> OTDR (Optical Time Domain Reflectometer): used to detect faults, splices, and measure the attenuation along the fibre length. IL (Insertion Loss): the total loss of signal power resulting from the insertion of a device (connector, splice, or cable) into the optical path. ORL (Optical Return Loss): the amount of light reflected back toward 	ZULU-BECA-001-SPC-00005-C3502.5 Drawings AS/ACIF S009:2006	Verify	This ITP Signed Stowe ITC	WP	Project Engineer / Site Engineer			

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			the source, which must be minimized to avoid interference or data errors. Conduct 100% testing of all fibre cores in accordance with AS/NZS 14763.3: <ul style="list-style-type: none"> Use 1-jumper test method to verify Insertion Loss (IL < 0.5 dB per connector) Conduct OTDR tests bi-directionally (A–B and B–A) for links >150m Measure Optical Return Loss (ORL > 35 dB per core) Include test at 1310nm and 1550nm wavelengths Submit OTDR trace files, link loss reports, fibre IDs, test configurations, and calibration certificates of equipment used. All testing must be supervised by the Site QA Representative.								
2.11	Tray Earthing Continuity Test	Each Lot	Confirm electrical continuity of all metallic cable trays using a calibrated digital multimeter. Bonding between tray segments shall not exceed 1Ω resistance. Ensure earthing tails are installed and terminated using crimped lugs at each fixed support location. Earth point locations must be clearly marked and photographed as part of the QA record.	ZULU-BECA-001-SPC-00005-C1740.6 Drawings	Visual Inspection	This ITP Signed Stowe ITC	IP	Project Engineer / Site Engineer			
2.12	Air Blown Fibre Testing	Each Lot	All Air Blown Fibre (ABF) testing must be conducted using a calibrated tester with a valid calibration certificate not exceeding 12 months from the test date. New test reference leads shall be used.	ZULU-BECA-001-SPC-00005-C3502.5 AS/NZS 14763.3							

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			Testing shall include ABF Tube Calibration & Testing for each individual primary tube within the tube bundle in the following sequence: 1. Tube Air Flow Testing – confirm a clear airflow path over the full tube length and correct coupling sequence. 2. Tube Pressure Testing – confirm no leaks in the tube route or connector fittings by applying and monitoring a test pressure. 3. Tube Continuity Testing – verify the bore diameter and concentricity are suitable for blowing the fibre bundle without obstruction. Once tube integrity is confirmed, blown fibre shall be tested in accordance with the fibre optic test regime in C3502.5: <ul style="list-style-type: none">• Link Loss Testing (OLTS, 1-jumper method) to confirm Optical Loss Budget compliance.• Insertion Loss (IL) not exceeding 0.5 dB per connector.• Optical Return Loss (ORL) ≥ 35 dB per core.• Bi-Directional testing for each core Results shall be recorded in raw-data and PDF formats, referenced to the tube ID and cable ID, and included in the O&M manual.								
2.13	Testing of the Racks Power Distribution Units	Each Lot	Testing shall confirm: <ul style="list-style-type: none">• Mechanical & Electrical Installation – PDU securely mounted in rack, aligned with	ZULU-BECA-001-SPC-00005-C3502.3							

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			cable management hardware, and labelled in accordance with the rack equipment schedule. <ul style="list-style-type: none"> Functional Verification – confirm correct input voltage, output voltage, and phase balance (if applicable). Test each outlet socket for correct operation and power-on indication. Load Testing – verify the total connected load does not exceed the PDU rated capacity. If PDUs have integrated circuit protection or surge suppression, confirm correct operation. Earthing & Bonding – confirm PDU body and mounting rails are bonded to the rack earthing system (max resistance ≤ 1 Ω). Integration with Rack Cabling – ensure PDU installation does not obstruct cable management systems or violate bend radius requirements for adjacent fibre or Cat6A patching. Maintain clearance for fibre patch panels and FOBOTS as per C3502.3(g–j). Labelling – each outlet and PDU to be labelled in accordance with the approved IFC and as-built drawings, matching the equipment schedule and port mapping. 	AS/NZS 3000							
2.14	Final Labelling Verification	Each Lot	<u>HOLD POINT</u> Verify that all ICT infrastructure is labelled clearly and permanently in accordance with the approved IFC drawings and the final as-built documentation, Including: <ul style="list-style-type: none"> Cable tags at both ends (heat shrink or engraved) Enclosure and tray ID labels Rack/patch panel port label 	ZULU-BECA-001-SPC-00005-C0171-7.16 Drawings	Verify	This ITP Signed Stowe ITC	HP	Project Engineer / Site Engineer / Principals Representative			

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			<ul style="list-style-type: none"> Floor boxes and comms cabinets Labelling must match the naming conventions and ID numbers in the approved schedules. Any mismatch, missing tags, or unclear labels shall trigger non-conformance and require rework prior to Practical Completion.								
2.135	Survey As Built	Prior to Covering Services	Survey to pick up services prior to covering	FH QMP	Verify	Survey	HP*	Project Engineer / Site Engineer /Surveyor			
3.0	Communication Service Migration										
3.1	Existing Comms Services Migration	Each Lot	The following existing services have been migrated to the new ALER3 Comms Rack: <ul style="list-style-type: none"> Building 52 ALER 2 Terminal 2 RVR 	ZULU-BECA-001-SPC-00005-C2100.2 Drawings 030-3100 set APAM standards AS/NZS 3000 AS/ACIF S009:2006	Verify	This ITP Signed Stowe ITC	TP	Project Engineer / Site Engineer			

