SERVICE DEFINITION

MANAGED WIRELESS LAN

INFRASTRUCTURE SERVICE

For Heathrow Airport

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Contents

Version Control

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Glossary

Acronym/Terminology	Description
Access Point (AP)	The AP is a dual-radio "hybrid" access point that provides concurrent operation of 802.11b/g and 802.11h services. These standards provide wireless LAN coverage in the 2.4GHz and 5GHz frequency bands.
Authorised Users	Those personnel, or third party vendor personnel named by the Customer, authorised to contact the IT Service Desk.
Business Change Control Periods	To ensure that the IT Infrastructure and operational business activities are protected during times of increased volume of passengers. Any Change, that is planned for implementation during a Business Change Control Period and has an operational impact on the airport(s), will require Airport approval before it can be progressed.
Change	Any variation or amendment requested by the Customer to the Services including requests for: (a) additional capacity (coverage) (b) new technology
Emergency / Fix On Fail Works	Emergency / Fix On Fail works are system changes that need to be made immediately to resolve operational problems.
Incident	Any event which is not part of the standard operation of the Wireless LAN Infrastructure Service, which causes, or may cause, an interruption to, or reduction in, the quality of the Services.
IT Service Desk	The service desk provided by the Airport for the receiving and logging of calls from Authorised Users relating to: (a) Incidents; (b) Change requests; and (c) Patching Requests. Please refer to section 5 for contact details
Known Errors	A Problem that is successfully diagnosed and for which a workaround is known.
LAN	Local Area Network.
Planned Works	Planned works are system changes that are scheduled in advance, following the Airport's change management process.
Problem	The unknown underlying cause of one or more Incidents.
Restoration	The restoration of the Services affected by an Incident to normal operating status and includes any temporary workaround
Resolve	The restoration of the Services affected by an Incident to normal operating status and includes any temporary workaround and "Resolution" shall have a corresponding meaning.

Acronym/Terminology	Description
Response	The time taken by the Airport to diagnose the fault and initiate remedial action, including determining the total resolution to a fully restored service, or an acceptable work around until full restoration can be effected and where necessary the dispatching of an engineer to site. It also includes reporting back to the call initiator or their service provider.
WLAN	Wireless Local Area Network
WPM	Working Practices Manual

1. Purpose

The purpose of this document is to detail the scope of the "Wireless LAN Infrastructure Service" being provided to the Customers at the Airport and the Service Levels applying to that service.

The Service Levels within this Service Definition document define the minimum levels of service that the Airport shall deliver to the Customer in provision of the Wireless LAN Infrastructure Service.

2. Service Overview

The Airport Wireless LAN Infrastructure Service will provide sufficient WLAN coverage and capacity to enable and support the secure delivery of the required applications to the Customers of the Airport.

The wireless LAN infrastructure solution is resilient. RF signals are provided by more than one Access Point (AP). This offers a high degree of availability, as a failed AP or access switch does not cause an outage to the Wireless LAN infrastructure service. The solution is also resilient up to the APs, allowing wireless LAN services to be maintained in the event of a single point of failure, right back to the complete loss of one Primary Comms Room.

The Wireless LAN infrastructure will provide a transport service from the Access Point (AP) to, and including, the external interface of the Airport's network. This service will not cover the end user equipment/application, application servers, common services or other network infrastructure.

The Airport's common WLAN infrastructure is designed to comply with the current requirements set out in the PCI DSS standard. This will enable Customers to leverage WLAN for EPOS card payment systems.

Please refer to the Working Practices Manual (WPM) for the low level process detail

3. Service Scope

3.1 Wireless LAN Infrastructure Service

(1) The Airport shall provide a Wireless LAN Infrastructure Service during the relevant service hours set out in section 5 of this Schedule that:

a) Will provide Wireless LAN (Airport only infrastructure) coverage to the Customer within its own premises;

b) Will provide a high degree of inherent reliability, with the ability to maintain a restricted service in the event of major component failure or destruction;

c) Will support the current and legacy industry standard security protocols and encryption techniques and will incorporate additional features for the protection of both the corporate network and end user devices;

d) Will provide the ability to roam between AP's by the Customer within its own premises

e) Will provide unauthorised AP monitoring, real time 24*7*365. The Airport will identify the exact location of an unauthorised AP and commence the removal process.

f) Will support IP

g) Will operate over an MPLS fixed LAN infrastructure

h) Will provide a standard based system capable of:

- 2.40 – 2.4835GHz operation

- 5.15 – 5.35GHz and 5.470 – 5.725GHz operation

- Supporting IEEE 802.11 standard

i) Will provide a service that is free from all commonly known viruses including, but not limited to Trojan horses, worms, logic bombs, time bombs, back doors, trap doors, keys

or other code or components which would be harmful to Customer's operation, systems or networks, including all components of the infrastructure such as (but not limited to) antennae, feeder cables, access points, and WLAN controllers.

3.2 Support and Maintenance Services

The Airport shall provide the following support and maintenance services ("**Support and Maintenance Services**") during the relevant service hours set out in section 5 of this Schedule:

(1) Maintenance

The Airport shall:

a) Use all reasonable endeavours to conduct all planned works ("Planned Works") on the Wireless LAN Infrastructure Service between the hours of 23:00 and 03:00 each day ("Maintenance Window"), when required. All planned changes will be subject to *last flight / first flight* considerations;

b) Notify the Customer and/or any that may be affected at least 10 Working Days prior to any Planned Works, and make allowances for any Customers' concerns over the scheduled period and to take all reasonable steps to mitigate any such concerns, where there is an expected impact to the Services for that Customer. Such notification is to include the impact on the Services and the duration of any associated outage. All reasonable endeavours will be made to notify Customers where the Airport is required to carry out emergency / fix-on-fail works;

c) Develop a regression plan for the Planned Works, with appropriate go/no go decision points;

d) Notify the Customer if they are required to participate in the implementation of the Planned Works and to test for correct operation following the completion of the Planned Works;

e) Use all reasonable endeavours to ensure that any outage caused by the Planned Works will not impact on the Services; and

f) Notify the Customer of the completion of the Planned Works.

(2) Incident Management

The Airport shall:

a) Provide and adequately staff the IT Service Desk to receive and log calls from the Authorised Users relating to Incidents;

b) Accept and log Incidents from Authorised Users;

c) Respond to and Resolve Incidents as appropriate to this SLA;

d) Provide the Authorised User with regular progress updates;

e) Escalate Incidents in accordance with the Escalation Matrix set out in section 9; and

f) Liaise with and co-ordinate all Airport internal teams and any third party suppliers in order to Resolve an Incident.

(3) Problem Management

The Airport shall:

a) Evaluate Incidents with significant impact or repeat Incidents to identify and record a Problem if relevant;

b) Perform problem and/or root cause analysis;

c) Evaluate and agree the viability for implementing permanent solutions over workarounds based on time, effort and likelihood of occurrence;

d) Recommend and implement permanent solutions to Known Errors; and

e) Engage and manage third party suppliers as necessary to resolve Known Errors.

3.3 Change Management Services (Moves/ Adds/ Changes)

(1) The Airport shall, during the relevant service hours set out in section 5 of this Schedule:

a) Receive, log and coordinate a Change request received by phone via the IT Service Desk (option 2);

b) Allocate a reference number to each Change on receipt of the Change request;

c) Ensure that all Change requests, including costs and timescales, are authorised by the Customer;

d) Implement all Changes authorised by the Customer; and

e) Contact the originator of the Change to confirm receipt of the request and, if appropriate, arrange a project initiation meeting.

4. Roles & Responsibilities

The Customer will adhere to the Customer obligations defined in section 7 of this Schedule. Failure to do so may mean that the Airport cannot be held to the terms of the Service Levels that are directly affected by that failure on the Customer's part.

4.1 The Airport's Service Level Manager

Responsibilities of the Service Level Manager shall include, amongst other things, the following:

- To be the primary single point of contact between the Customer and the Airport for service issues. Note that the IT Service Desk is the single point of contact for Incidents.

- Shall be aware of, manage and report on, all and any aspects of the Wireless LAN Infrastructure Service, or its maintenance and support in the Airports,

- Has the ability to escalate and need to acquire, assign or manage other Airport resources to work on any aspect of the service provided in the Airports.

- To attend scheduled and ad-hoc meetings with Customer(s) as reasonably required.

- Shall provide regular status reports to the Customer

5.   Service hours and contact details

The following service hours apply to the provision of the Services:

Service	Service Hours	Service Days	Critical Business Periods
Wireless LAN Infrastructure Service	00.00 – 23.59	Mon – Sun	24*7*365
Support and Maintenance	00.00 – 23.59	Mon – Sun	24*7*365
Change Management service	08.30 – 16.30	Mon - Fri	N/A

A change request itself must be made in the stated time frames, the actual work may be effected at other times.

IT Service Desk contact details:

- Faults   : 0845 602 7793 Option 1

- Requests   : Email itservicedeskrequest@baa.com (primary contact); or
                                        : Phone 0845 602 7793 Option 2

- Change Management : Email itservicedeskrequest@baa.com (primary contact); or
                                        : Phone 0845 602 7793 Option 2

6. Service Levels

The following Service Levels will apply to this service.

(a) To resolve the underlying cause of an Incident

(b) To provide additional coverage

(c) Notification of unauthorised AP access

(d) Service availability

These Service Levels refer to the elapsed time from when the Airport receives and completes the logging of the call. If both parties agree that insufficient information has been given for the Airport to analyse the Incident and complete the request, then an appropriate amount of time will be deducted from the timings. This deduction of time will take account of the period whilst the information was lacking.

Due to the likely collaborative nature of recovering service from passive infrastructure faults, no resolution targets are given below:

Impact		Service Response (Active and Passive)	Service Restoration (Active Network Failure)	Service Level (minimum of)
Standard Description	Service Example			
Down for all	Complete coverage area failure	Within 30 minutes	Remote fix Within 2 hours	95%
			Replacement network device Within 4 hours	
Down for some	Partial coverage area failure	Within 2 hours	Remote fix Within 2 hours	95%
			Replacement network device Within 4 hours	
Down for one	Single AP failure	Within 2 hours	* Please see note below	95%

Note 1: Failure of any single or multiple components will result in the loss of resilience ONLY and the Wireless LAN Infrastructure Service will continue to deliver availability.

Note 2: The above service levels for AP failure quote a 2 hour response time and no resolution time. However, the Airport will take all reasonable steps to restore service within 4 hours. This will be dependent on the time taken to make the area safe and to gain appropriate access to the faulty equipment.

For all AP faults, the following exclusions will apply to the Service Levels:

- Where a permit is required for entry or works to any part of the cable run. This could include an ATP for a baggage area, road closure(s) or airfield area(s).

- Making a public area safe and gaining access to the faulty AP/cabling.

- Access to non Airport offices and equipment cabinets,
- Health & Safety issues.

The Incident Restoration time will be calculated on a weekly basis. The Incident Restoration time is an aggregate percentage measure calculated as follows:

(a) Total number of Incidents logged in the week = M

(b) Total number of Incidents where the Restoration exceeded the Service Level = L

(c) 100 – (L/M x 100) = percentage of Incidents meeting the Service Level

(b) Service Levels to provide additional coverage

Additional New Network Ports	Request Completion Service Level
Acknowledgement of request by IT Service Desk	Within 30 minutes
Project team to arrange site visit and survey	Within 3 working days
Provide scope and cost	Within 5 working days of request (subject to standard request; Customer providing sufficient details; availability of Customer to discuss; and arranged access for survey)
Commencement of works	Within 5 working days of Customer providing the Airport with a Purchase Order to proceed with scope and cost

A standard installation request is defined as:

- Network port within 90m of existing network switch with available capacity
- Cabinet and containment is available and has spare capacity
- No external change control or Authority to Proceed (ATP) is required e.g. from Health & Safety, Engineering, Baggage, etc
- No specialist works are required e.g. asbestos inspection/removal, diamond drilling, etc

(c) Service Levels for notification of unauthorised AP access

Service category	Incident Restoration/Response Service Level	Service Level (minimum of)
Notification of Unauthorised AP	Within 4 hours	95%

The Customer will be notified within 4 hours of unauthorised access to the Wireless LAN Infrastructure Service and BAA will initiate the removal process.

(d) Service availability

Service availability shall be at least 99.95% over each week (ie. non-availability should not exceed 5 minutes).

The Network Management System used by the Airport provides advanced tools, processes and techniques to reduce unplanned outages to extremely low levels and allows the WLAN Infrastructure to achieve high availability levels.

The calculation of actual availability will be:

$$\% \text{ Availability} = \frac{AST - ADT}{AST} \times 100$$

Where AST = Area/areas service time in minutes
= Total service time for each area/areas - Planned maintenance

ADT = Area/areas downtime
= for each incident (downtime in minutes for each area impacted)

Example 1: (T1 BMI Lounge) downtime of 60 minutes during the first week in March, with no planned maintenance.

AST = (24 x 60 x 7) - (0) = 10080 minutes
ADT = 60 minutes

$$\% \text{ Availability} = \frac{10080 - 60}{10080} \times 100 = 99.40\%$$

Example 2: (T1 BMI Lounge) downtime of 2 hours during the first week in March, with 4 hours planned maintenance.

AST = (24 x 60 x 7) - (4 x 60) = 9840 minutes
ADT = 2 x 60 = 120 minutes

$$\% \text{ Availability} = \frac{9840 - 120}{9840} \times 100 = 98.78\%$$

Both examples fail the availability service level**.**

Please note that, if multiple airlines are using the same area under the same contract, then the same availability figure will apply.

7.   Customer obligations

People/Management

7.1 The Customer shall:

(a) Ensure that any use of the LAN services by its employees, agents or sub-contractors, is compliant with the design of the services.

(b) Provide a point of contact for management/escalation of Service issues;

Provisioning

7.2 The Customer shall:

(a) Ensure that all Change requests are filtered and prioritised prior to logging with the IT Service Desk;

(b) Only request business critical Changes to be implemented during the Airport's Business Change Control periods. The Business Change Control Periods will be notified to the Customer in advance at the Service Review. All changes requested during this period will require Airport approval.

Fix/Support Process

7.3 The Customer shall:

(a) Use reasonable endeavours to diagnose a fault reported to it by clients and only raise Incidents with the IT Service Desk if the Customer believes there is a fault with the Wireless LAN Infrastructure Service.

(b) Within a reasonable time of the Customer becoming aware that an Incident has occurred, notify the Airport of the Incident and, if required, or deemed necessary, provide the Airport with all reasonable assistance to resolve the Incident.

8. Service Management

8.1 Service Reviews

Service Review meetings shall be held at least half yearly between key representatives from the Airport and a multi-Customer body. Attendees from the Customer shall be agreed by the parties. Other stakeholders may be invited to these reviews as required. These meetings shall include, but not be limited to:

a) A review of performance against Service Levels;

b) A review of any Planned Works; and

c) Discussion of any new Change requests received by the Airport.

A review of Schedule 2 (Service Definition) shall take place annually at the same meeting. This annual review shall cover:

a) The scope of the Services; and

b) The Service Levels.

Any changes to Schedule 2 (Service Definition) arising from the annual review, or arising from the half yearly review, shall not be effective unless agreed by all parties in writing.

8.2 Reporting

Monthly standard reporting (as detailed in Appendix B) will be provided to the multi-Customer body. This will detail actual performance against the service levels detailed in section 6. If a service level is consistently not being met, a service improvement plan will be established to mitigate the underlying issue. This plan will be managed through the Service Review.

In addition to the actual performance against the service levels detailed in section 6, the monthly report will provide an availability figure for each week of the month.

9.   Dispute resolution and escalation process

The hierarchical escalation path for a Priority 1 Incident is as follows:

| Escalation level	Airport	Customer
1	IT Service Desk	
2	Incident Manager	
3	EMC Manager (or Crisis Manager out of hours)	
4	Head of IT Services	
5	Chief Information Officer (CIO)	

Within the Airport, hierarchical escalation for a Priority 1 Incident will take place from one level to the next at the discretion of the escalating Manager.

Any service disputes in relation to the provision of the Wireless LAN Infrastructure Service shall be escalated as follows:

Escalation level	Airport	Customer
1	IT Service Desk	
2	Service Level Manager	
3	Service Performance Manager	
4	Head of IT Services	
5	Chief Information Officer (CIO)	

At each level, the roles noted above shall use all their reasonable endeavours to resolve any dispute related to the delivery of the Services as soon as practicable after the date on which the dispute was allocated to that level. If the dispute has not been resolved by the level 1 roles within 10 Working Days after the date in which the dispute arose then, at the discretion of both roles, the dispute shall be referred to level 2. Escalation to subsequent levels shall take place within 10 Working Days after the date in which the dispute was allocated to the current level, at the discretion of both roles.

Appendix A: Architecture Design
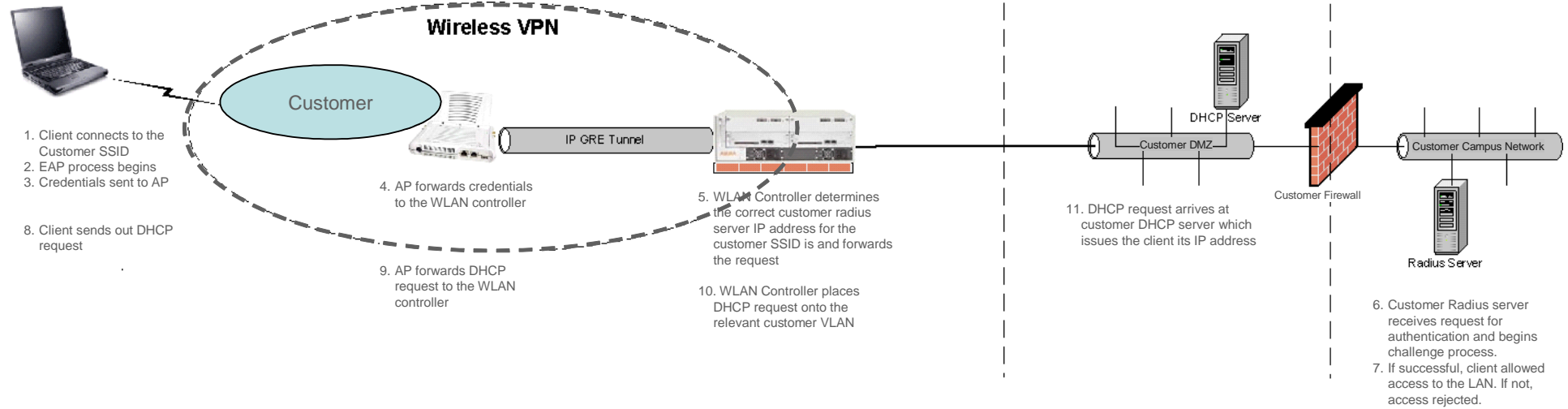
Appendix B: Format of standard monthly report