

Heathrow Airport CAA proposals for the specification of capex triggers

October 2008

***Civil Aviation Authority
CAA House, 45-59 Kingsway, London, WC2B 6TE***

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1. Introduction

Purpose of this document

- 1.1 This document seeks views on the detailed specification of Capital Expenditure triggers at Heathrow Airport for the purposes of the price control condition published in March 2008 for the period 1 April 2008 to 31 March 2013. It is likely to be of particular interest to the operator and financiers of the airport and to airline users.

Background

- 1.2 The CAA published its price control decisions in respect of Heathrow and Gatwick Airports for the five-year period commencing 1 April 2008 (the fifth quinquennium, or Q5).¹ A feature of the price control at both Heathrow and Gatwick was a series of capital investment triggers. These specified a reduction to the level of the revenues that the airport would be allowed to recover in airport charges if certain milestones were not reached in respect of relevant capital projects by defined dates. (These reductions would then apply on a monthly basis until the milestones were reached).
- 1.3 While the broad specifications of these capital triggers were set out in high level terms and the relevant dates and penalties determined in its decision, the CAA envisaged that a process would be required to specify in greater detail the relevant projects and, in particular, the success conditions to allow the CAA to take a view as to whether the milestones had been met. It should be emphasised that this refinement of the definitions is intended to relate to the scope and phasing of projects consistent with the capex programme that underpinned the CAA's price determination decision in March 2008. This is designed to establish a clear basis of expectations of the parties before the application of any subsequent modification. The anticipated process for making any such changes is set out in section 3 below.
- 1.4 The CAA envisaged that the following would ideally need to be agreed to allow users and the CAA to take a view as to whether the milestones had been met:
- the groups of projects, works packages and programme activities and how the BAA Works Contract procurement strategy would be applied to ensure 'completion' dates would be easily understood;
 - how triggers would be applicable to groups of projects, works packages and programme activities;
 - the scope of commissioning / testing work to be carried out (relevant to each project, works package / programme activity) before a works package completion; and
 - the scope of any commissioning /testing works to be carried out (relevant to

¹ Economic Regulation of Heathrow and Gatwick Airports 2008-2013, CAA decision, 11 March 2008

each project, works package / programme activity) in the subsequent 'operational readiness' period.

Timetable

- 1.5 The CAA expected a process along the following lines:
- April–August 2008: dialogue between the airports and airlines on more detailed definition of triggers;
 - September 2008: BAA submits a proposal to CAA, setting out what has been agreed and disagreed;
 - September 2008: CAA Publishes proposals for consultation;
 - December 2008: CAA publishes detailed specification of triggers.
- 1.6 BAA has duly submitted a proposal to the CAA for each trigger setting out what has been agreed or disagreed. These are set out in detail in annexes A-X. These have been reviewed by the CAA in section 2 below with its proposals for consultation.
- 1.7 Going forward, the CAA expects to publish its decision on an initial detailed specification of triggers in January 2009.

Views invited

- 1.8 The CAA is allowing 2 months for written comments on the proposals in this document. Any comments should be sent, if possible by e-mail, to airportsreview@caa.co.uk, by 23 December 2008. Alternatively, comments may be posted to:
- Susie Talbot
Economic Regulation Group
CAA
4th Floor
CAA House
45-59 Kingsway
London WC2B 6TE
- 1.9 The CAA will acknowledge all responses. It expects to make responses available on its website for other parties to read as soon as practicable after the period for written comments has expired. Any material that is regarded as confidential should be clearly marked and included in a separate annex which, subject to further discussion with the author and subject to the criteria the CAA has established for treating information as confidential, will not be published.
- 1.10 If you have any immediate questions on this document please contact Mike Goodliffe on 020 7453 6226, Daniel Storey on 020 7453 6270 or by e-mail to mike.goodliffe@caa.co.uk or daniel.storey@caa.co.uk

2. Trigger Specification

2.1 This section sets out the list of triggers from the CAA decision and then reviews the proposition put forward by the airport and airlines, including any outstanding comments or disagreements between the parties and considers, from the point of view of the CAA, whether the proposition is consistent with the CAA's requirements including whether it appears to be practicable. The CAA then sets out its proposal for consultation.

List of triggers

Trigger Project	"Milestone Month"	"Monthly Trigger Payment _i "
Completion of T5 Satellite C	May 2011	£1.47million
T4 Check-in Extension Completion of South West Bank of Check-in Desks	June 2009	£0.10 million
T4 Check-in Extension Completion of North East Bank of Check-in Desks	January 2010 ²	£0.10 million
T4 New CIP Completion of Shell and Core for fit-out	February 2009	£0.10 million
T4 Completion of Baggage Sorter	January 2009	£0.10 million
T4 A380 jetty facilities Completion of 3rd Jetties on each 2 A380 stands	May 2009	£0.10 million
Completion of the T3 Integrated Baggage System	March 2012	£1.19 million
T3 Refurbishment Completion of Pier 5 refurbishment	July 2009	£0.10 million
T3 Refurbishment Completion of Pier 7 refurbishment	August 2009	£0.10 million
T3 Refurbishment Completion of Check-in & Security Search Refurbishment	March 2010	£0.10 million
T3 Refurbishment Completion of Immigration, Landside Departures & Baggage Hall Refurbishment	March 2011	£0.16 million
HET Phase 1 Demolition of T2 sufficiently complete to enable start of HET construction and HET building substructures complete within main terminal floorplate	March 2011	£2.78 million
HET Phase 1 Completion of Building weather-tight	February 2012	£3.03 million
HET Phase 1 Construction sufficiently progressed for operation trials to commence	November 2012	£1.22 million
T1 Completion of T1 bmi Nose Building Facility	January 2009	£0.10 million
Completion of Mid-field Pier North	January 2010	£0.50 million
Completion of Mid-field Pier Centre	November 2012	£0.67 million
Completion of Passenger Connectivity to the Midfield Pier	November 2012	£0.31 million
Completion of the Outer Pier North	January 2012	£0.49 million
Eastern Maintenance Base Redevelopment Completion of the diversion of East Church Road	March 2010	£0.17 million
Post T5: Transfer Baggage System Completion of the T5-T3 Tunnel & Baggage System	November 2011	£0.79 million
Post T5: Transfer Baggage System Completion of the T3-T1 Tunnel & Baggage System	June 2012	£0.41 million

²This corrects a typographical error in table 1 of the condition.

Trigger Project	“Milestone Month”	“Monthly Trigger Payment _i ”
Completion of the T4-T1 Tunnel Refurbishment	January 2009	£0.10 million

- 2.2 The table sets out the triggers included in the price condition for Q5. In addition, the CAA specified a further trigger for the HET multi-storey car park. This was not included in the formal price condition as the milestone month would fall in the last month of Q5 such that any effect on charges would come outside the Q5 charge control period.
- 2.3 For the avoidance of doubt this current consultation is not directed to adding to, or deleting from, the list above or to changing milestone months or the level of monthly trigger payments. Any such changes would require a formal change to the price control and would be subject to the change control mechanism set out in section 3 below.

Completion of T5 Satellite C

Introduction

- 2.4 The joint submission on this trigger is set out at annex A. The milestone test is that T5C should be considered construction complete such that the construction, installation and integration of all the specified scope is finished to P1 completion standards, and jointly inspected by BAA, airline and other users and signed off. The test would be that it would be ready to be handed over so that all stakeholders can commence a full programme of operational readiness and familiarisation. The scope of the project in terms of requirements is set out in further detail in the joint proposal supplemented by diagrams.
- 2.5 The phasing of the project has changed since the triggers were first framed and it is now envisaged that an initial 10 stands would be built alongside the substantive T5C project, while the remaining two stands would not be available until December 31 2011. The joint proposal envisages that the trigger should be reactivated at that point if the last two stands were not delivered and available for use from that point.

Outstanding comments or disagreement between the parties

- 2.6 The proposal describes phase 1 and 2 of the scheme design as signed off subject to further comments being closed out. While the CAA recognises that dialogue on the detail of the project may continue between the airport and airlines the CAA believes that it is appropriate to consider the joint proposal as it stands for consultation.

CAA analysis

- 2.7 Annex A sets out a coherent framework in general for the scope and success conditions for satisfying the relevant milestone test. The CAA's provisional view is, however, that it needs to consider the following issues:

- The proposal for the trigger to be reactivated if the last two stands are not

delivered, is outside the scope of this consultation. It would require a change to the price control itself and would require the implementation of the change control mechanism. That said this is clearly the type of change that the CAA had in mind when it conceived the process for change control – where it could be in the interests of both the airport and the airline to adjust the dates and payments better to reflect the changed phasing of the programme by, for example, splitting the trigger into two distinct triggers and dates. This does, however, raise the issue of what the provisional trigger arrangements should be until such a change is made. The CAA decision paper in March was very clear that the trigger was set in respect of 12 stands³ and it is proposing here that that remains the test unless and until the trigger is changed.

- One issue around such an extensive list of requirements is whether all have to be in a business ready state at the point at which the trigger applies. Clearly, the critical mass of the requirements would have to be satisfied but it might be considered disproportionate to generate the full trigger payments where there was some minor snagging around part of the specification. There may be circumstances in which some judgement would need to be applied, in terms of sign-off by the parties, initially and if this is contentious, by the CAA as to whether the project in the round is in an appropriate level of business ready state.

CAA proposal for consultation

- 2.8 The project definition sheet set out in annex A (except that the CAA is including the full 12 stands and not proposing at this stage any reactivation of the trigger).

T4 Check-in Extension Completion of South West Bank of Check-in Desks

Introduction

- 2.9 The joint submission on this trigger is set out at annex B. The relevant test submitted is that a specified scope of work shall be conducted and be proven by operational trials to specified standards of serviceability and reliability such that it is delivered fit for purpose by the milestone date. The testing and commissioning of airlines' procured and installed equipment on check-in desks, together with airlines' staff training and familiarisation that cannot be completed by the milestone date, will run beyond it as mutually agreed between BAA and the airline community.

Outstanding comments or disagreement between the parties

- 2.10 None noted in joint submission.

CAA analysis

- 2.11 The CAA's provisional view is that the specification in annex B provides a coherent basis for this trigger.

³ Paragraph 8.33 and paragraph 13.17.

- 2.12 For the avoidance of doubt, the two storey extension to the terminal (total footprint circa 6000m²) is a common extension for this trigger and for the completion of the North-East bank of check-in stands. As such, this single extension is an enabler for each project and a necessary prerequisite for each milestone to be met.

CAA proposal for consultation

- 2.13 The project definition sheet set out in annex B.

T4 Check-in Extension Completion of North East Bank of Check-in Desks

Introduction

- 2.14 The joint submission on this trigger is set out at annex C. The approach taken is the same as for the South West bank of check in desks (although the scope of the works involved is different).

Outstanding comments or disagreement between the parties

- 2.15 None noted in joint submission.

CAA analysis

- 2.16 The CAA's provisional view is that the specification of this trigger in annex C provides a coherent basis for this trigger.
- 2.17 As stated in paragraph 2.12 the two storey extension to the terminal (total footprint circa 6000m²) is a common extension for this trigger and for the completion of the South-West bank of check-in stands. As such, this single extension is an enabler for each project and a necessary prerequisite for each milestone test to be met.

CAA proposal for consultation

- 2.18 The project definition sheet set out in annex C.

T4 New CIP Completion of Shell and Core for fit-out Introduction

- 2.19 The joint submission on this trigger is set out at annex D. The milestone test proposed would be based on the commissioning and testing of the facility (consisting of a specified scope of works) such that it is considered fit for purpose by the end of the milestone month.

Outstanding comments or disagreement between the parties

- 2.20 None noted in joint submission.

CAA analysis

- 2.21 The CAA 's provisional view is that the specification of this trigger in annex D provides a coherent basis for this trigger.

CAA proposal for consultation

2.22 The project definition sheet set out in annex D.

T4 Completion of Baggage Sorter*Introduction*

2.23 The joint submission on this trigger is set out at annex E. The milestone test proposed is defined in terms of the commissioning and testing of a new departure baggage sorter and all constituent systems such that they are delivered fit for purpose by the milestone date. Standards of performance in terms of capacity and reliability are defined for the facility to meet the milestone.

Outstanding comments or disagreement between the parties

2.24 None noted in joint submission.

CAA analysis

2.25 The CAA's provisional view is that the specification of proven output parameters in annex E, in general, provides a reasonable basis for defining the success conditions for this trigger. The CAA has concerns, however, around making the metric of the percentage of time that the system is available part of the milestone test, given that this could only be based on the preceding period of testing. This aspect of reliability will only be meaningful after the system has been in full use for a period of time and will not be fully apparent at the point of commissioning. The CAA therefore proposes that this does not form part of the milestone test.

CAA proposal for consultation

2.26 The project definition sheet set out in annex (except that the availability of the system will not form part of the milestone test.).

T4 A380 jetty facilities Completion of 3rd Jetties on each 2 A380 stands*Introduction*

2.27 The joint submission on this trigger is set out at annex F. The milestone test is whether two specified stands have been brought up to the standard for serving A380 aircraft such that there are three available jetties to agreed standards of capacity and reliability. The milestone is the successful completion of testing and commissioning of the facility and all constituent systems such that they are fit for purpose by the milestone date.

Outstanding comments or disagreement between the parties

2.28 None noted in joint submission.

CAA analysis

- 2.29 The CAA 's provisional view is that the specification of proven output parameters in annex F provides a reasonable basis for defining the success conditions for this trigger. (For the avoidance of doubt the two stands are being created from three existing stands which already have all the standard equipment which is not being modified – other than by the addition of airbridges as specified. Stands will continue to have at least the existing level of equipage.)
- 2.30 The specification in annex F sets out standards of capacity and robustness for meeting the trigger. The CAA has concerns around making average availability part of the milestone test, given that this could only be based on the preceding period of testing and this aspect of reliability will only be meaningful after the system has been in full use for a period of time. It will not be fully apparent at the point of commissioning. Jetty availability is also one of the quality measures dealt with by the scheme of quality standards and rebates (albeit at a lower standard than cited in annex F). The CAA therefore proposes that this does not form part of the milestone test.

CAA proposal for consultation

- 2.31 The project definition sheet set out in annex F (except that the availability of the system will not form part of the milestone test).

Completion of the T3 Integrated Baggage System

Introduction

- 2.32 The joint submission on this trigger is set out at annex G. The milestone test is the system completed and handed over to the business with a capacity of 4500 bags per hour and an in-system time of 15 minutes. The final phase of operational readiness will proceed after this completion date.

Outstanding comments or disagreement between the parties

- 2.33 The agreed option has been agreed at an Option Decision Workshop. We are aware of a continuing dialogue with Virgin as to whether this will meet user need up to 2020.

CAA analysis

- 2.34 The CAA 's provisional view is that the specification of proven output parameters in annex G provides a reasonable basis for defining the success conditions for this trigger. The CAA recognises that there may be uncertainty as to whether the project will be sufficient to accommodate all traffic growth or other changes up to 2020, and in this respect the CAA takes the view that the "system requirement" to provide capacity to meet anticipated capacity up to 2020, with an allowance for continued growth up to 2026, should be considered an ex ante aspiration before the project commences, rather than part of the harder edged milestone test.

CAA proposal for consultation

2.35 The project definition sheet set out in annex G.

T3 Refurbishment Completion of Pier 5 refurbishment*Introduction*

2.36 The joint submission on this trigger is set out at annex H. The milestone test is Practical Completion, defined as the project has delivered the defined scope, including Stage 1 of PA3 handover document, but with the exception of snags that do not affect primary functions or safety. All BAA systems will be tested and commissioned prior to Practical Completion. This excludes the testing and commissioning of airline's own equipment.

Outstanding comments or disagreement between the parties

2.37 While the CAA recognises that dialogue on the detail of the project continues between the airport and airlines the CAA believes that it is appropriate to consider the joint proposal as it stands for consultation.

CAA analysis

2.38 The CAA's provisional view is that the specification of this trigger in annex H provides a reasonable basis for this trigger. (This would be helped by plans etc. to show the extent of particular elements of the refurbishment which it would expect to be available before it reaches a final decision.)

CAA proposal for consultation

2.39 The project definition sheet set out in annex H.

T3 Refurbishment Completion of Pier 7 refurbishment*Introduction*

2.40 The joint submission on this trigger is set out at annex I. The milestone test is that the project's Practical Completion is defined as the project delivers the defined scope, including Stage 1 of PA3 handover document, but with the exception of snags that do not affect primary functions or safety. All BAA systems will be tested and commissioned prior to Practical Completion. This excludes the testing and commissioning of airlines' own equipment.

Outstanding comments or disagreement between the parties

2.41 Virgin has criticised the detailed specification as falling short of equivalence with the T5 environment operationally and from a passenger viewpoint (e.g. rubber flooring rather than conglomerate flooring) and want list of features not in the current specification.

CAA analysis

- 2.42 The CAA 's provisional view is that the specification of this trigger in annex I provides a practicable basis for this trigger. (This would be helped by plans etc to show the extent of particular elements of the refurbishment which it would expect to be available before it reaches a final decision.)
- 2.43 The CAA recognises that Virgin does not consider that the scope of works as set out replicates as far as is practical within the existing infrastructure, the T5 environment. If this is so there may be a contradiction between the general objective of this project and the budget and more detailed work assumed in the Q5 determination. The CAA's task here is to set a trigger consistent with the capital programme and costs assumed in its decision. In the absence of evidence that the budget for this project would in practice fully replicate the T5 environment the CAA has decided to accept the scope of works as set out in the joint proposal in Annex I.

CAA proposal for consultation

- 2.44 The itemised scope set in the project definition sheet set out in annex I .

T3 Refurbishment Completion of Check-in & Security Search Refurbishment*Introduction*

- 2.45 The joint submission on this trigger is set out at annex J. The milestone test is the Practical Completion defined as the project delivers the defined scope including Stage 1 of PA3 handover document, but with the exception of snags that do not affect primary functions or safety. All BAA systems will be tested and commissioned prior to practical Completion. This excludes the testing and commissioning of airline's own equipment and does not allow for operational readiness.

Outstanding comments or disagreement between the parties

- 2.46 While the CAA recognises that dialogue on the detail of the project continues between the airport and airlines the CAA believes that it is appropriate to consider the joint proposal as it stands for consultation.

CAA analysis

- 2.47 The CAA's provisional view is that the specification of this trigger in annex J provides a reasonable basis for this trigger. (This would be helped by plans etc to show the extent of particular elements of the refurbishment which we would expect to be available before we reach a final decision.)

CAA proposal for consultation

- 2.48 The project definition sheet set out in annex J.

T3 Refurbishment Completion of Immigration, Landside Departures & Baggage Hall Refurbishment

Introduction

2.49 The joint submission on this trigger is set out at annex K. The milestone test is the Practical Completion of the defined scope, including Stage 1 of PA3 handover document, but with the exception of snags that do not affect primary functions or safety. All BAA systems will be tested and commissioned prior to practical completion. This excludes the testing and commissioning of airlines' own equipment.

Outstanding comments or disagreement between the parties

2.50 While the CAA recognises that dialogue on the detail of the project continues between the airport and airlines the CAA believes that it is appropriate to consider the joint proposal as it stands for consultation.

CAA analysis

2.51 The CAA's provisional view is that the specification of this trigger in annex K provides a reasonable basis for this trigger. (This would be helped by plans etc to show the extent of particular elements of the refurbishment which we would expect to be available before we reach a final decision.)

CAA proposal for consultation

2.52 The project definition sheet set out in annex K.

HET Phase 1 Demolition of T2 sufficiently complete to enable start of HET construction and HET building substructures complete within main terminal floorplate

Introduction

2.53 The joint submission on this trigger is set out at annex L. The milestone test is based on a specified scope of work being completed.

2.54 The project has had a name change from HET phase 1 to T2A Terminal and Forecourt but the scope of the project has remained the same since the IBR3 plans which formed the basis of the CAA's price control. (While the expected phasing of the project has slipped this has no effect on this current process focussed on the assumptions inherent in the capex programme and triggers underpinning the determination.)

Outstanding comments or disagreement between the parties

2.55 Resolution of the baggage solution for T2A is outstanding. This may impact on the use of PTS and the structural grid derived from the solution.

CAA analysis

- 2.56 The CAA's provisional view is that the scope set out in annex L provides a reasonable trigger to reflect the scope of the project as at the time of its decision. Any change to the scope arising from change to the project requirements should be addressed through the change mechanism.

CAA proposal for consultation

- 2.57 The project definition sheet set out in annex L

HET Phase 1 Completion of Building weather-tight*Introduction*

- 2.58 The joint submission on this trigger is set out at annex M. The milestone test is based on a specified scope of work being completed. T2A terminal building internal floor areas should be weather-tight with roof and cladding complete to the extent needed to provide a watertight environment in all internal areas except elements relating to: sun shading, nodes, circulation cores, walkways, canopies, doors and openings left for construction access and plant, pipe-work or ductwork penetrations.

Outstanding comments or disagreement between the parties

- 2.59 While the CAA recognises that dialogue on the detail of the project continues between the airport and airlines the CAA believes that it is appropriate to consider the joint proposal as it stands for consultation.

CAA analysis

- 2.60 The CAA's provisional view is that the scope set out in annex M provides a reasonable trigger to reflect the scope of the project as at the time of its decision. Any change to the scope arising from change to the project requirements should be addressed through the change control process.

CAA proposal for consultation

- 2.61 The project definition sheet set out in annex M.

HET Phase 1 Construction sufficiently progressed for operation trials to commence*Introduction*

- 2.62 The joint submission on this trigger is set out at annex N. The milestone test is that the building is ready (a safe and suitable environment) to enable the commencement of integrated operational trials for T2A and T2B covering departures, arrivals and connections processes.

Outstanding comments or disagreement between the parties

2.63 None noted in joint submission.

CAA analysis

2.64 The CAA's provisional view is that this is a reasonable high-level test. The CAA recognises that it may not be reasonable to anticipate the exact sequence of operational trials at this stage but all significant baggage installations, IT and airfield systems will need to be complete to the extent needed for integrated testing of operations. The proposed scope states that third party fit out works are excluded from the scope. For the avoidance of doubt, the CAA considers "third parties" in this instance to include only airline users, and their agents and contractors.

CAA proposal for consultation

2.65 The project definition sheet set out in annex N.

T1 Completion of T1 BMI Nose Building Facility*Introduction*

2.66 The joint submission on this trigger is set out at annex O. The milestone test is that the specified scope of works for this project meets CAT B fit out.

Outstanding comments or disagreement between the parties

2.67 Changes to the previously assumed IT scope have resulted in the need for an enhanced specification. bmi has acknowledged that this enhanced specification cannot be contained or delivered within the Nose Building trigger date.

2.68 The current construction schedule identifies a completion date of 31st October 2008. Both parties understand that there may be a need for snagging and exceptional works after this date and a completion schedule for these works will be agreed prior to the current completion date.

CAA analysis

2.69 The purpose of the current process is not to adjust trigger dates for changes in scope or otherwise since the March 2008 decision. In principle, the trigger as specified here should be the scope and date anticipated in the capex programme underpinning the March 2008 decision. In practice, the project as now specified is still expected to meet the target. The CAA's provisional view is that it is pragmatic and not unreasonable to continue to adopt the project as now specified against the original trigger date.

CAA proposal for consultation

2.70 The project definition sheet set out in annex O.

Completion of Mid-field Pier North

Completion of Mid-field Pier Centre

Completion of Outer Pier North

Introduction

- 2.71 Because of changes in the solutions envisaged for the outputs underpinning these three triggers since the March 2008 decision it makes sense to consider these three triggers together.
- 2.72 The original plan was to provide stands on two piers as part of the development of the Eastern Apron within the Q5 timeframe. Stands on the mid-field pier would be developed in two phases: the completion of: (A) Mid-field Pier North and (B) Mid-field Pier Centre. Further stands would be provided on an outer pier: "Completion of Outer Pier North". The revised plan is to provide a more extensive mid-field pier, renamed T2B Phase 2, with two phases (1) Completion of T2B Phase 1 (T2B North) Stage 1, and (2) Completion of T2B Phase 2 (T2B Centre & South). The "South" element of this revised project is essentially an alternative approach to providing the additional pier served stands which were previously expected to be provided by the outer pier.
- 2.73 Three proposals for triggers are set out at annexes P, Q and S. These are triggers against the revised two phases of the midfield pier and a trigger against the outer pier North. It is, however, recognised that discussions will take place regarding the latter trigger being discontinued and some compensating changes being incorporated into the trigger for T2B phase 2.

Completion of Outer Pier North

Introduction

- 2.74 The joint submission on this trigger is set out at annex S.

Outstanding comments or disagreement between the parties

- 2.75 None noted in joint submission.

CAA Analysis

- 2.76 The CAA recognises that a change of approach has been agreed by the airport and airlines, and that the capital expenditure for this project has been diverted to increase the scope of the midfield pier. This is precisely the type of situation that the CAA envisaged when it set out a process for change control. However, the CAA is currently consulting on the scope and specification of the trigger projects underpinning the March 2008 decision. While it now seems clear that the original trigger project as conceived will not go ahead it is important to establish the baseline for the respective airline and airport rights and expectations to support a negotiated change to reflect the revised allocation of expenditure and delivery of

outputs.

- 2.77 The parties have understandably not spent appreciable effort in defining the success conditions for a trigger that is not expected to go ahead. However, there is merit in having a clear sense of what the 2008 decision expected before going on to develop any mutually agreed change. In this context, it is appropriate to consider those parts of the output of the new Mid-Field Pier Central and South which were formally delivered by the Outfield Pier and define the trigger for the Outfield Pier in those terms. (A consequence of this approach would be to take out those elements from the new trigger for the Mid-Field Pier Central and South – see paragraph 2.87 below).

CAA proposal for consultation

- 2.78 The CAA proposal is that this trigger should be the completion of 6 pier served stands

Completion of Mid-field Pier North

Introduction

- 2.79 The name of this project has changed to Completion of T2B Phase 1 (T2B North) Stage 1. The joint submission on this trigger is set out at annex P. The milestone test is a defined scope of works to enable the commencement of the programme of integrated operational trials for T2B north and T1. These will cover: departures, arrivals and connections processes.

Outstanding comments or disagreement between the parties

- 2.80 While the CAA recognises that dialogue on the detail of the project continues between the airport and airlines the CAA believes that it is appropriate to consider the joint proposal as it stands for consultation.
- 2.81 The baggage master plan for baggage connectivity between T2A and T2B is outstanding.

CAA analysis

- 2.82 As currently specified the CAA's provisional view is that this appears to be a coherent scope of works in terms of piers, stands and passenger connectivity – but not yet baggage connectivity. The baggage system, which will apply during the period that the pier is served from Terminal 1, was not set out at the time of the determination. The CAA does not therefore consider that it is consistent with the current process to add this scope to the scope of the trigger. (Of course that does not preclude additional baggage functionality being added to the programme – or the scope and timing of the trigger being separately modified under a subsequent adjustment by means of the change control process set out in section 3.)

CAA proposal for consultation

2.83 The project definition sheet set out in annex P.

Completion of Mid-field Pier Centre*Introduction*

2.84 As described above, the scope of the project has been extended and the name of the overall project changed. The joint submission on this trigger (corresponding to the full extended scope of the revised project) is set out at annex Q.

Outstanding comments or disagreement between the parties

2.85 While the CAA recognises that dialogue on the detail of the project continues between the airport and airlines the CAA believes that it is appropriate to consider the joint proposal as it stands for consultation.

2.86 The baggage master plan for baggage connectivity between T2A and T2B is outstanding.

CAA analysis

2.87 The big issue for this project is how the CAA should address the significant extension of scope in this project compared with the trigger envisaged in its March 2008 decision. The date, money at risk, and scope of the project should all be consistent with the March 2008 determination. This represents the equitable baseline from which the parties can negotiate and agree any changes to the triggers better to reflect the new allocation of capital expenditure and the scope of expected works and outputs. The CAA's preliminary view is that the scope of works should be limited to that part of the project which was not expected to be provided by the outer pier extension. Consistent with paragraph 2.77 above, the CAA therefore puts forward for consultation the scope of work in the joint submission minus the scope of works attributed to the now defunct outer pier trigger.

2.88 The CAA observes that parties may want to consider whether they can agree some change to the triggers that better reflects the revised allocation of capital expenditure and phasing of projects but this should be conducted under the change control process, separately from this consultation.

2.89 The same issues around the specification of the baggage system apply as for the Mid-field Pier North trigger. The CAA's preliminary view is not to add this scope to the scope of the trigger.

CAA proposal for consultation

2.90 To base the milestone on the project definition in annex Q but to exclude the 6 stands relating to the "South" element.

Completion of Passenger Connectivity to the Midfield Pier

Introduction

2.91 BAA's description of this trigger has changed to Completion of Passenger Connectivity to T2B Phase 2. The joint submission on this trigger is set out at annex R. This milestone test requires substantial completion of an agreed scope of works for a passenger connector structure with life safety testing being completed. A safe and suitable environment must be provided for non-construction staff and the equipment needed to provide horizontal and vertical passenger circulation must be operational.

Outstanding comments or disagreement between the parties

2.92 While the CAA recognises that dialogue on the detail of the project continues between the airport and airlines the CAA believes that it is appropriate to consider the joint proposal as it stands for consultation.

CAA analysis

2.93 The CAA 's provisional view is that the specification in annex R in general provides a coherent basis for this trigger. The CAA does, however, have a concern that the project definition sheet sets down two provisos:

- the milestone is subject to T2A being available
- that there is agreement to Q5/Q6 funding.

2.94 The CAA's provisional view is that neither of these provisos is consistent with the trigger proposition underlying the March 2008 decision. This assumed capital expenditure phased to achieve the trigger. On this basis it seems reasonable for the milestones to apply and for the relevant trigger modifications to the price control to apply whether T2A is available and whatever the funding plan may be going forward – as the funding had been assumed to take place in Q5.

CAA proposal for consultation

2.95 The project definition sheet set out in annex R (irrespective of the status of T2A or decisions on the future funding.)

Eastern Maintenance Base Redevelopment Completion of the diversion of East Church Road

Introduction

2.96 The joint submission on this trigger is set out at annex T. The relevant test submitted is that a specified scope of work to divert East Church Road onto a new alignment shall be conducted and the road open to all airport related traffic and newly diverted services.

Outstanding comments or disagreement between the parties

- 2.97 The Airport and airlines agree that further work is required on the Masterplan, and that consideration should be given to the creation of a common user access road within a Restricted Zone. This will be investigated through the development of the Masterplan. Once this work is complete this project will be reviewed against the completed Masterplan and any changes will be taken through the change process. It is acknowledged that there may be alternative options for this scheme, which could be progressed once the masterplanning works are complete, and agreement on the future security strategy agreed.

CAA analysis

- 2.98 The CAA's provisional view is that the joint submission provides a sufficiently coherent specification to allow a trigger to be set. This does not preclude a change through the change Control process if the two parties identify and agree a modification.

CAA proposal for consultation

- 2.99 The project definition sheet set out in annex T.

Post T5: Transfer Baggage System Completion of the T5-T3 Tunnel & Baggage System

- 2.100 The joint submission on this trigger is set out at annex U. The milestone test proposed is for the tunnel to be completed and fully equipped with M&E services with the cart tracks installed and fully tested to meet the bag throughput and 'in-system time' trials (using test bags). Operational readiness would proceed after this date.

Outstanding comments or disagreement between the parties

- 2.101 The project scope has been agreed progressively at the Connectivity Airline Working Group monthly meetings
- 2.102 The airlines have requested a 15 min peak of 1000 bags (against the 750 specified) for robustness in peak periods, but are willing for a final decision on the number to be based on simulation data.

CAA analysis

- 2.103 The CAA's provisional view is that the joint submission provides a coherent basis for the trigger. In this context the CAA understands that 97% predictability is the percentage of bags which are actually delivered to the right output within the target in system time (10 minutes). The CAA recognises that users want resilience and the capacity for higher throughput for short periods in the peak. In the absence of any evidence that the capex assumptions underpinning the March 2008 decision anticipated this higher specification, the CAA's provisional view is not to specify it as part of the trigger. This does not preclude users and the airport agreeing that

such a standard should be set or that any consequent standard could be added to the specification under the change control process.

CAA proposal for consultation

2.104 The project definition sheet set out in annex U.

Post T5: Transfer Baggage System Completion of the T3-T1 Tunnel & Baggage System

Introduction

2.105 The joint submission on this trigger is set out at annex V. The milestone test would be the tunnel (as specified in the scope of works) completed and fully equipped with M&E services with the cart tracks installed and fully tested to meet the bag through put and 'in system time' trials (using test bags). Operational readiness would proceed after this completion date.

Outstanding comments or disagreement between the parties

2.106 Project scope has been agreed progressively at the Connectivity Airline Working Group monthly meetings

2.107 The airlines have requested a 15 min peak of 1000 bags (against the 750 specified) for robustness in peak periods, but are willing for a final decision on number to be based on simulation data.

CAA analysis

2.108 The CAA's provisional view is that the joint submission provides a coherent basis for the trigger. In this context the CAA understands that 97% predictability is the percentage of bags which are actually delivered to the right output within the target in system time (10 minutes). The CAA recognises that users want resilience and the capacity for higher throughput for short periods in the peak. In the absence of any evidence that the capex assumptions underpinning the March 2008 decision anticipated this higher specification, the CAA's provisional view is not to specify it as part of the trigger. This does not preclude users and the airport agreeing that such a standard should be set or that any consequent standard could be added to the specification as part of the change control mechanism.

CAA proposal for consultation

2.109 The project definition sheet set out in annex U.

Completion of the T4-T1 Tunnel Refurbishment

Introduction

2.110 The joint submission on this trigger is set out at annex W. The relevant milestone test would be that the facility and all constituent systems (as set out in the scope of works) shall be delivered fit for purpose and meeting the defined performance

standards, following commissioning and testing, by the milestone date. This will include the additional functionality, which will allow parking of carts without taking the tunnel out of service, and automated flow monitoring. The system will have a maximum capacity of 1200 bags per hour at the maximum configuration of carts.

Outstanding comments or disagreement between the parties

2.111 None noted in the joint submission.

CAA analysis

2.112 The CAA's provisional view is that annex W provides a reasonable milestone test. The CAA does however have two concerns:

- that the measure of robustness at 99.5% relates to the availability of the system. On the current plans this will only relate to two months of in service use at the point that the milestone test would be expected to become active and this would be a period over which functionality would be being added to the system;
- there may be issues around the dual measure of the maximum and optimum capacity of the system. The optimum capacity will be reactive to the volume of bags presenting.

2.113 The CAA's provisional view is that the milestone test should not include the availability of the system, as this cannot be measured and it should be based on the system being able to demonstrate the maximum flows of 1200 bags per hour.

CAA proposal for consultation

2.114 The project definition sheet set out in annex W as modified in paragraph 2.112

HET MSCP

Introduction

2.115 This trigger has been subject to a name change in the joint submission and is described as New Build MSCP - East. Construction sufficiently progressed for operational trials to commence. The joint submission on this trigger is set out at annex X. The proposal sets out an indicative scope of work to be sufficiently complete to enable the first substantial operational trial of all car parking floors other than the ground floor. In order to conduct the first trial, a safe and suitable environment must be provided for non- construction staff and the equipment needed to undertake the first trial must be operational.

Outstanding comments or disagreement between the parties

2.116 At this stage, there is very little information about the exact location and size of the car park in relation to the CTA control tower building and road system. While the CAA recognises that dialogue on the detail of the project continues between the

airport and airlines the CAA believes that it is appropriate to consider the joint proposal as it stands for consultation.

CAA analysis

2.117 The indicative scope consists of three elements, an overall number of parking spaces

- Minimum spaces available for Phase 1 is 1650
- Suitable passenger walkway connectivity with T2A
- Suitable passenger vertical circulation between floors (Lifts/Stairs)
- Suitable systems to operate a car park (excluding third party fit out)

2.118 There are a number of potentially contentious issues around these elements:

- users in HET (otherwise known as T2A) will want the location of the car park to be sufficiently convenient for their passengers. This is not yet satisfied.
- The definition of the subjective description “suitable” for the walkway, vertical circulation and systems may be a material consideration in the relevant outputs for users.
- Given the dispute that there has been in the past with some users about the T3 car park – the design itself may also be material.

2.119 Nevertheless, the CAA’s preliminary view is that it is appropriate to specify a trigger now based on the best information available.

CAA proposal for consultation

2.120 The project definition sheet set out in annex X.

3. Change Control

- 3.1 In its March decision on the price the CAA set out its process for change control as set out below.
- 3.2 In order to cater for significant external events which could have an adverse impact on BAA's ability to adhere to its original project schedules, the CAA proposes that there should be a clearly defined change control process incorporated within the terms of the capital investment triggers element of the price control conditions.
- 3.3 The CAA envisages that it would amend the standards and rebates in one of two ways:
- a. Changes agreed by the airport and the airlines through the relevant LACC Committee and notified in writing to be approved by the CAA on an expedited basis. The process would be:
 - i. The CAA publishes any proposed agreement between the LACC and the airport inviting objections from interested parties.
 - ii. The CAA then allows 28 days for any objections.
 - iii. Unless the agreement raises significant issues, the CAA would expect to approve the agreement within 14 days of the end of the consultation period.
- 3.4 The CAA would anticipate that changes of this sort are likely to redistribute money at risk for triggers between projects reflecting changes to the anticipated content or phasing of the programme. While the CAA would be prepared to approve changes, which either added to or reduced the amounts at risk, it would not anticipate that this would be likely.

The CAA would expect to withhold approval only in limited circumstances where it concluded that the change was inconsistent with its statutory duties, for example where such agreements:

- did not give adequate weight to the interests of passengers as users;
 - on the basis of objections made, the agreement did not seem to the CAA to represent the interests of users generally or which appeared unreasonably to discriminate against any user or class of user.
- b. Alternatively the CAA could revise the substance of the triggers in the price control without the agreement of users. This may occur in a range of circumstances where BAA made a formal application to the CAA for a change, which was not agreed by airlines generally, or which did not have sufficient support to allow the agreement of the relevant LACC committee. It might also be brought forward at the instigation of the CAA because it considered that such a change would be best calculated to meet its statutory duties. The process under these circumstances would require the following elements:
- i. Any change to the price control condition would require the agreement of

the airport operator under the Airports Act 1986. The CAA would not proceed with any prospective change unless this was expected to be forthcoming;

- ii. The CAA would publish proposals for consultation and invite interested parties to respond.
- iii. It would allow an adequate period for written submissions which would not be less than 12 weeks.
- iv. Depending on the significance of the changes the CAA may then decide to hold meetings with some of the respondents.
- v. The CAA would publish a decision with reasoning together with any revision to the price control to reflect the new triggers.

3.5 The CAA would normally seek to limit changes to the price control under these arrangements to triggers and would not seek to make other changes.

Further comment

3.6 The CAA would like to draw emphasis to the point that it would expect change control to allow the process of triggers to adapt to circumstances where airport and users priorities change and monies originally projected for capital expenditure on one project are diverted to extend the scope of, or bring forward the scope of some other project. It is certainly not intended to allow the airport to cancel trigger payments where it is no willing or able to pursue projects (unless the capital expenditure is redirected to extending the scope or expediting other projects). In this context it should be recognised that the building block projections allowed a return on such capital expenditure and it would be unreasonable for the airport to be able to avoid the mechanism in place to reduce at least some of that return if the relevant projects do not take place.

Annex A.

Trigger Project Definition Sheet			
Programme	Western Campus	Stage	Construction
Project	T5C	CIP Ref	H.T5.28
Milestone	T5C Construction Complete	Trigger Month	May 11

Milestone Definition			
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This document details the scope, design and context of the building, airfield and services infrastructure for T5C. T5C will be considered construction complete when the construction, installation and integration of all the scope within this document has been finished to P1 completion standards, and jointly inspected by BAA, airline and other users and signed off. At this stage it will be in a business ready state, ready to be handed over for all stakeholders and operations to commence a full Programme of operational readiness and familiarisation.

Scope of Works

This phase of T5 Satellite C will ultimately provide 12 pier served stands with 4 off pier stands around T5C and 3 further off pier stands on the T5 Campus. 10 additional stands are being built. 4 of these are remote, the remaining 6 will be on-pier and 6 existing remote stands will become pier served.

The agreed construction complete date for this phase of the T5C build and integration Programme is end of February 2011, to be followed by 2 months available for operational testing and familiarization.

Only 10 on pier stands will be available on completion as the allocated space for 2 stands is required for construction purposes for the tunnel on the Post T5: Transfer Baggage System Project.

These remaining 2 on pier stands will become available no later than 31st Dec 2011, at which point the trigger will be reactivated if the additional stands are not delivered and available for use.

The final phase of the T5C Programme is the Q6 extension of the building and all related infrastructure and services to create an additional 2 Pier served stands, the latest CIP states that this will be delivered in 2015.

Apron

The following services will be provided on each stand:

- Jetty served on twelve stands only, with 3 jetties on each JX stand.
- Each JX stand shall be equipped with passenger capable lifts from Apron to Node
- Each JW stand shall be equipped with a passenger capable lift from Apron to Node
- FEGP - Power supply to stand to facilitate full aircraft startup capabilities without degradation to services on board
- Stand Number Indicator
- Fuel hydrant incorporating emergency cut off
- Emergency telephones (co located with the emergency fuel stop and parking aid stop buttons)
- Fire hydrant (1 per 2 stands)
- Apron floodlighting
- Stand entry guidance•
- Provision for power and data for British Airways Head of Stand Unit and Tug Charging Facilities

The maximum aircraft sizes that can be accommodated on the stands are as follows: 8 on pier JX stands, max a/c A380. 4 on pier JW stands, max a/c 747, 1 off-pier JX stand and 3

off pier JW stands.

Baggage

The T5C baggage system capacity is based on the British Airways 2012 STO schedule issued in 2004. This needs to be reviewed jointly by BAA and BA in the light of current and proposed future schedule

The system will be fully integrated with the existing system in T5A and T5B, and will provide the following infrastructure and capabilities:

- 4 Input Points
- 12 Output points
- 2 Out of Gauge collection and distribution points
- 4 Team leader workstations
- 2 sites with power and data for BA Forward operation units
- ULD Store for 50 empty ULD's
- Charging for 5 Electric Super Tugs
- Power and data to all BA Baggage work areas
- WLAN provision for BRS on stands and in all baggage areas
- Operational capability that is consistent with BA's current T5 practices
- Weathering over baggage areas
- Throughput capacity that meets the British Airways 2012 STO schedule with up to 20% headroom.
- In system times that maintain Phase 1 levels,
- Ability to input, throughput and output bags to meet 45 min Minimum Connection Times (MCT)
- Capability to fully connect and integrate with future transfer baggage connection to the CTA.
- Demonstration of an Integration and Implementation Plan that supports unaffected baggage operations in T5

The Satellite will comprise of 3 main passenger floor plates; Departures, Arrivals and Apron, with additional passenger activity on Tracked Transit and Walkway levels. All passenger areas being designed to standards allowing for full PRM accessibility.

The Satellite fully segregates arriving and departing passengers by level and using an integrated access control system and all gates allow for independent arrivals and departures

T5 Sat C will be connected to the main terminal building (T5 A), to Sat B by a tracked transit system

The Tracked Transit system will provide a capacity to move 16,000 passengers ph in each direction, using 2 arrivals platforms and 1 departures platform (with an additional departure platform safeguarded).

Departures

T5 Sat C will provide approximately 2600 seats with an open gate lounge layout arrangement of seats with way finding and flight information provision. Provided within T5C departures will be either one centrally located Airline Service Desk of 6 positions, or 2 separate Airline Service desks of 4 positions each as well as a dedicated PRM area

- Each on pier JX stand will be equipped with 4 Boarding desks and 1 service

desk per gate

- Each on pier JW stand will be equipped with 3 Boarding desks and 1 Service desk per gate.
- Each T5C departures gate will provide passenger operable lifts from Gate to Arrivals

Each gate will be provided with a Boarding FID screen at the gate entrance to facilitate an efficient boarding process, and where the seating for that gate is remote from the gate entrance, an additional Boarding FID shall be provided in the allocated seating, along with signage to that seating from the gate.

The full range of Toilets, including Accessible and baby changing will be provided for both arrivals and departures passengers. A minimum of 1400m² of shell and core space will be provided for retail and catering units to be fitted out by concessionaires.

Transfers

The circulation, security and way finding in T5C will be designed to enable passengers with –90-minute connections to make direct intra building transfers between T5C/T5C, T5C/T5B and T5B/T5C without returning to T5A,

At Apron level, T5C will include 4 BA Transfer desk positions, with safeguarding for up to an additional 1 desks, 2 BA Conformance Positions, 1 Transfer security processing facility with space and equipment for a second manual processing point within the area for a safeguarded second Transfer Security point.

A solution will be provided for removal of additional/incompliant transfer hand baggage to be delivered into the baggage system in order to meet DfT and CAA baggage compliance regulations

CIP Lounge

There will be a departures mezzanine floor plate provided for safeguarded use as a BA Commercially Important Passenger Lounge.

The floor plate is 3684m², and provides a safeguard of up to 2000m² of CIP space.

The mezzanine will initially be provided with stair access, and lift shaft with the lift car and escalator to be provided by BAA at a later date, along with glazing around the perimeter of the space once the decision to activate the CIP safeguard is taken.

Vertical Circulation

In order to achieve the level changes within T5C, for Departing passengers there is one bank of 3 lifts and a pair of escalators connecting TTS/Walkway Level via the clean transfer area to Departures, and the same provision for the Arriving passengers from Arrivals via the dirty transfer area to TTS/Walkway Level.

In addition there are 3 goods lifts, which can also be used for mobility buggy circulation, and 12 passenger lifts connecting gate level with arrivals for boarding aircraft.

Information Technology and Data

The following I.T infrastructure will be provided within T5C:

British Airways will provide and install all voice and data connected devices on BA customer facing positions including equipment on boarding desks, service desks and transfer servicing points, and in all British Airways demised locations.

Comms Rooms

Shared Comms rooms built to agreed and defined technical specification (e.g. size, location, appropriate cooling, lighting, fire detection and access control with adequate dedicated enclosures to house British Airways active Network Equipment.

Secondary Comms Rooms and DSCRs provision within the building to allow connection from Comms room, to all end user locations within a distance of no greater than 90 metres, with additional node provision covering all required areas of the baggage demise.

Containment and Cabling

A suitable size and quantity of mechanical containment throughout the building both between comms rooms and to all BA demised locations and to enable connection to future demised locations. The dual routes between all distribution and secondary comms rooms should provide end-to-end diversity in all instances.

Passive Cabling Infrastructure to the agreed technical specification and in appropriate quantity and locations including:

- Backbone infrastructure connecting Primary Comms Rooms in T5A and B to Secondary Comms Rooms in T5C
- Fibre and copper cabling infrastructure between all T5C Comms rooms
- Horizontal cabling to all boarding gates, customer facing positions, all newly constructed Heads of Stands (HOS) and all re-engineered Phase 1 stands.
- Common Infrastructure Consolidation points provided from Secondary Comms Rooms to all demised and safeguarded accommodation

Operational Services

Provision of the following Managed Services and other operational Systems: ACS, FIDS, IDAHO Gate and Check in Clients, APA, Public Address, and supporting LAN.

Wireless LAN

- To the agreed technical specification
- Geographic and capacity coverage to meet all user demands in public and shared areas - as defined in the user requirements and technical specification
- Geographic and capacity coverage as defined in the user requirements and technical specification to include HOS and Baggage input and output areas.

Cellular Coverage

- Passive Infrastructure to meet a range of 90-95% coverage, to enable cellular operators to provide cellular coverage

Radio

Radio passive infrastructure as defined in the user requirements and technical specification

CCTV

- As defined in the user requirements and technical specification, including -
- Shared Coverage in Public and non demised areas to include all major vertical and horizontal circulation flows, external stands and ramp areas, public facing positions, and congestion points.
- Agreed additional coverage to selected demised areas, and user specific

locations at appropriate agree viewing quality.

BSI

- BSI system provision across T5C, with connectivity to all doors, fan coil units, lighting control modules and back to the BSI system.

Joint Systems Integration

Completion of core Joint Systems Integration Tests to test the integration of airport, baggage, airline and 3rd Party systems as defined and agreed within the Systems Integration Test Strategy.

Building Infrastructure

Building Services

Services will be provided to the base standards shown below, to demise line or within adjacent accessible service riser.

Mechanical and Electrical

- Air Conditioning- Condensate Drainage point
- Ventilation and Air changes - 12 l/s/p (at an assumed population density of 5m2 pp)
- Temperature - Summer 24°C & Winter 21°C
- Humidity RH% - 60
- Chilled Water provision
- LHPW - provided for units with external façade and to CIP and as a primary service for Tenant installed calorifiers to nominated plant locations in CIP lounge area.

Power

- Single Phase 13 amp -1No surface mounted metal clad socket outlet close to entrance/exit from room for cleaning only
- Single Phase 30 amp - isolator in all shell units for future connection and with provision for sub metering according to future subdivisions of shells according to location- principally on arrivals level
- Three Phase provided to isolator in CIP or adjacent accessible service riser with same Capacity as T5B CIP

Public Health and Domestic Services

- Cold/Potable Water (Metered) - provided to demise line or in adjacent accessible riser for CIP. Capacity as T5B CIP
- Reclaimed Water (Metered) - Yes to demise line or in adjacent accessible riser for CIP, Capacity as T5B CIP
- Soil (including Vent) - Provided to CIP, two 100mm connections at slab level to north and two to south in 'wet' zones to be shown on plan; and to larger apron level shells where water supply made- one number 100mm connection at slab level per shell.

Lighting

- Illumination Levels (LUX) - 150 LUX at entrance/exit from room
- Emergency Lighting - Self contained non-maintained with local key switch
- Lighting Control – Local Switch

Operational Readiness and Familiarisation Assumptions

Following Building Completion at end of Feb 2011, the O.R Programme agreed to start on 1st March 2011 and to last for 2 months.

The programme will require access to all areas of the building and airfield areas and business ready use of all infrastructure and systems.

Procurement Strategy

The T5 Phase 2 programme is categorised as a 'Complex Project' under the BAA Capital Engagement Strategy. Carillion have been appointed as Complex Build Integrator on T5c under BAA's 'Value in Partnership' frameworks agreement. Their appointment is on the basis of 2-stage Design and Construct, which has been endorsed by the Capital Projects Supplier Engagement Executive.

The key packages that are outside of Carillion's package of work are baggage that will be a fixed price contract with VanderLande, the airfield, which will be managed by BAA and constructed by Ferrovial Agroman and the TTS that will be through Bombardier.

Appendices:

A: T5 Phase 2 Airfield Scope: including phasing dates

B: Examples of each type of stand marked as Draft versions

Financial Penalty:

The Building Construction Complete date is end of February 2011, with a programme of 2 months for Operational readiness. There is an agreed lag of 3 months from due completion date at end of February to allow for unforeseen delays, after which point, from 1st June 2011, the defined monthly penalty is triggered. The monthly penalty payment for late delivery of the milestone is £1.3m (07/08 prices)

Log of Agreements / Disagreements:

Scheme Design Phase 1 Sign off – 29th February 2008 – subject to comments being closed out

Scheme Design Phase 2 Sign off – 12th May 2008 – subject to comments being closed out

Programme Director (Western Campus): Martin Johnson (Interim)

Annex B.

Trigger Project Definition Sheet			
Programme	Terminal 4	Stage	Construction
Project	T4 Check-in Extension	CIP Ref	H.T4.01
Milestone	Completion of South-west bank of check-in desks and associated works	Trigger Month	Jun-09

Milestone Definition
<p>Introduction</p> <p>Terminal 4 (T4) landside departure concourse is to be extended to facilitate the safe, efficient and comfortable processing of passengers and to provide increased and improved passenger processing facilities and increased space to accommodate accompanying friends and relatives. The extension of the check-in concourse together with the 19 additional check-in desks, refurbishment of existing check-in desks and supporting service facilities ie ticket desks and CUSS machines shall be subject to consultation with the current and future T4 airline communities through the auspices of the T4 Stakeholder Programme Board (SPB) and such working groups that may be set up under the SPB.</p> <p>T4 Check-in Extension - Scope of Works</p> <p>The project scope comprises the construction of a two-storey extension (total footprint circa 6,000m²) resulting in an extension to the main Terminal 4 building to provide:</p> <ul style="list-style-type: none"> • an enlarged and updated check in proposition: <ul style="list-style-type: none"> - current departure floor space measures: approx 5,400m² - extended departure floor space measures: approx 10,000m² • 19 additional check in desks plus existing 94 check-in desks refurbished making 113 in total • refurbishment and reconfigured forecourt and MSCP4 operation • 68 ticket desks (increase of 47); <ul style="list-style-type: none"> - airlines' requirements for ticket-desks and where appropriate back office space will be satisfied as close as possible to the airlines' pre-agreed check-in zone. • introduction of circa 30 CUSS units and protection for up to 140; <ul style="list-style-type: none"> - the provision of CUSS units will remain flexible and will be capable of satisfying the increasing need from the Terminal 4 community • 1,400sqm extra quality airline landside accommodation • intuitive wayfinding and improved orientation • an appropriate interface between the new and existing check in <p>Trigger Definition – South-West Check-in – (Capacity and Robustness for meeting trigger)</p> <p>Within this trigger, the following will be delivered:</p> <p>Enlarged check-in space shall be in a fully usable condition, including installation of services and systems and fitting out of check-in desks, associated ticket desks and CUSS kiosks</p>

and related floorspace.

The additional 19 check-in desks will be installed and made fully operational. The existing 94 check-in desks will be refurbished to pre-agreed standards within the same timescale.

The 19 additional check-in desks together with the existing 94 check-in desks will meet the stated and pre-agreed (airline/BAA) requirements of the existing airlines remaining in Terminal 4 together with the airlines moving to Terminal 4 as part of the Airline Relocation Move Sequence 2.1 namely as designated in Step 5, Step 6, Step 7 and Step 9.

Check-in desks will be allocated in pre-agreed (airline/BAA) zones.

Baggage system capacity and robustness will be proven by operational trials. Standards of performance to be attained are as follows:

99.5 % check-in desk/ feeder belt serviceability/reliability performance metric

99.99% CUSS serviceability/reliability performance metric

These levels of performance must be achieved ongoing.

Milestone date to include commissioning and testing of the facility and all constituent systems such that they are delivered fit for purpose by the completion (milestone) date. Project will only be accepted by the airlines after such satisfactory commissioning and testing.

The testing and commissioning of airlines' procured and installed equipment on check-in desks together with airlines' staff training and familiarisation that cannot be completed by the milestone date will run beyond it as mutually agreed between BAA and the airline community

Procurement Strategy

Taylor Woodrow Construction (TWC) have been engaged to carry out early and enabling works, and will work with other suppliers to deliver the Extension project. Packages include the building façade and canopy, check-in desks, ticket desk, office accommodation, and baggage works.

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.10m (07/08 prices)
This payment will continue until the month following the fulfilment of the trigger.

Log of Agreements / Disagreements:

None.

Programme Director (Western Campus): Martin Johnson (Interim)

Annex C.

Trigger Project Definition Sheet			
Programme	Terminal 4	Stage	Construction
Project	T4 Check-in Extension	CIP Ref	H.T4.01
Milestone	Completion of North-East bank of check-in desks and associated works	Trigger Month	Jan-10

Milestone Definition
<p>Introduction</p> <p>Terminal 4 (T4) landside departure concourse is to be extended to facilitate the safe, efficient and comfortable processing of passengers and to provide increased and improved passenger processing facilities and to provide increased space to accommodate accompanying friends and relatives. The extension of the check-in concourse together with the additional 14 check-in desks, refurbishment of existing check-in desks, and supporting airline facilities (ie ticket desks and CUSS machines) shall be subject to consultation with the current and future T4 airline communities through the auspices of the T4 Stakeholder Programme Board (SPB) and such working groups that may be set up under the SPB.</p> <p>T4 Check-in Extension - Scope of Works</p> <p>The project scope comprises the construction of a two-storey extension (total footprint circa 6,000m²) resulting in an extension to the main Terminal 4 building to provide:</p> <ul style="list-style-type: none"> • an enlarged and updated check in proposition: <ul style="list-style-type: none"> - current departure floor space measures: - extended departure floor space measures: • Additional 14 (north-east bank) + 19 (South-West bank) check-in desks plus existing 94 refurbished check-in desks making 127 in total • refurbishment and reconfigured forecourt and MSCP4 operation • 68 ticket desks (increase of 47) <ul style="list-style-type: none"> - airlines' requirements for ticket-desks and where appropriate back office space will be satisfied as close as possible to the airlines' pre-agreed check-in zone. • introduction of circa 30 CUSS units and protection for up to 140; <ul style="list-style-type: none"> - the provision of CUSS units will remain flexible and will be capable of satisfying the increasing need from the Terminal 4 community • 1,400sqm extra quality airline landside accommodation • intuitive wayfinding and improved orientation • an appropriate interface between the new and existing check in <p>Trigger Definition – North-East Check-in - (Capacity and Robustness for meeting trigger)</p> <p>Within this trigger, the following will be delivered:</p> <p>Enlarged check-in space shall be in a fully usable condition, including installation of services and systems and fitting out of check-in desks, associated ticket desks and CUSS kiosks</p>

and related floorspace.

The additional 14 check-in desks will be installed and made operational prior to the end of January 2010 to allow for proving and acceptance by the airline community.

The 14 additional check-in desks together with the existing 113 check-in desks will meet the stated and pre-agreed (airline/BAA) requirements of the existing airlines remaining in Terminal 4 together with the airlines moving to Terminal 4 as part of the Airline Relocation Move Sequence 2.1 namely as designated in Step 5, Step 6, Step 7, Step 9 and 9a.

Check-in desks will be allocated in pre-agreed (airline/BAA) zones.

Baggage system capacity and robustness will be proven by operational trials. Standards of performance to be attained are as follows:

99.5 % check-in desk/ feeder belt serviceability/reliability performance metric

99.99% CUSS serviceability/reliability performance metric

These levels of performance must be achieved ongoing.

Milestone date to include commissioning and testing of the facility and all constituent systems such that they are delivered fit for purpose by the completion (milestone) date. Project will only be accepted by the airlines after such satisfactory commissioning and testing.

The testing and commissioning of airlines' procured and installed equipment on check-in desks together with airlines' staff training and familiarisation that cannot be completed by the milestone date will run beyond it as mutually agreed between BAA and the airline community

Procurement Strategy

Taylor Woodrow Construction (TWC) have been engaged to carry out early and enabling works, and will work with other suppliers to deliver the Extension project. Packages include the building façade and canopy, check-in desks, ticket desk, office accommodation, and baggage works.

Appendices:

Artistic impressions of completed extension scheme.

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.10m (07/08 prices)
This payment will continue until the month following the fulfilment of the trigger.

Log of Agreements / Disagreements:

None.

Programme Director (Western Campus): Martin Johnson (Interim)

Annex D.

Trigger Project Definition Sheet			
Programme	Terminal 4	Stage	Construction
Project	T4 New CIP Lounge	CIP Ref	H.T5.25a
Milestone	Completion of Shell and Core for fit-out	Trigger Month	Feb-09

Milestone Definition
<p>Scope of Works</p> <ul style="list-style-type: none"> • Plasterboard perimeter • Temporary timber entry door • No ceiling. Unfinished floor slab • Smoke detector. Emergency lighting at entry. • Supply & extract air for the main area, via Air Handling Units • Supply air only for the kitchen area • Power – distribution board at demise • Water – supply to wet plant room • Drainage <p>A shell and core facility is to be built at Head of Stand 407 in order to meet the CIP lounge requirements of the non-aligned carriers moving from T3 to T4.</p> <p>The construction will be double-decked with glass frontage to the apron. The upper floor is designated for a single airline. The lower floor is divided and designated for two airlines. The airlines assigned to date will be responsible for fitting out their respective space. One lower lounge remains officially unallocated – the fit-out responsibility of this space will depend on the timescales of occupation of the area.</p> <p>Space available on each floor equates to 8000 sq.ft.</p> <p>Operational Readiness</p> <p>Milestone date to include commissioning and testing of the facility and all constituent systems such that they are delivered fit for purpose by the completion (milestone) date. Project will only be accepted by the airlines after such successful commissioning and testing. This excludes the testing and commissioning of airlines' own procured and installed equipment where applicable.</p> <p>Procurement Strategy</p> <p>Taylor Woodrow Construction (TWC) have been engaged to carry out works as principal contractors, and will work with other suppliers to deliver the project. Packages include the structural frame and envelope, and core services.</p>

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.10m (07/08 prices)
This payment will continue until the month following the fulfilment of the trigger.

Log of Agreements / Disagreements:

None.

Programme Director (Western Campus): Martin Johnson (Interim)

Annex E.

Trigger Project Definition Sheet			
Programme	Terminal 4	Stage	Construction
Project	T4 Baggage Sorter	CIP Ref	H.CX.13b
Milestone	Completion of new single loop baggage Sorter	Trigger Month	Jan-09

Milestone Definition
<p>Introduction</p> <p>A new Departure Baggage Sorter is to be installed within the Terminal 4 baggage hall. This project forms part of a refurbishment of the T4 departure baggage system. The design of the system and works and subsequent phased construction shall be subject to consultation with the current and future T4 airline communities through the auspices of the Terminal 4 Stakeholder Programme Board (SPB) and such working groups that may be set up by the SPB.</p> <p>Scope of Works</p> <p>A new single loop sorter is to be installed to facilitate checked baggage from any check-in desk being processed to any make-up spur in the baggage hall. The new portion of the new HBS system will be incorporated together with improved transfer baggage processing. The remaining elements of the baggage system will ensure there is redundancy in case of unserviceability of the new sorter.</p> <p>Trigger Definition - Capacity and robustness for meeting trigger</p> <p>The time from the furthest check-in desk to the furthest baggage spur shall be 15 minutes. The new system will facilitate an improvement in transfer baggage handling.</p> <p>System capacity and robustness in each phase of work will be proven by operational trials and will be subject to consultation with the airline community as outlined in "Introduction" above. The standards of performance that must be attained to meet the trigger are to be determined as follows:</p> <ul style="list-style-type: none"> • 99.9% belt reliability • The levels of performance to be achieved are 99.5% reliability for one month, and thereafter will be 99.5%. • No bags to be delivered to incorrect chutes. • No bags to be mislaid within the system. • The new sorter will be able to process 4000 bags per hour, with 1100 bags during a peak 15 minutes. • Priority will be given to prevent the baggage system from creating die-back and stoppage of feeder belts at check-in. • Recovery time when system is unserviceable will be kept to a minimum. <p>Operational Readiness</p>

Milestone date to include commissioning and testing of the facility and all constituent systems such that they are delivered fit for purpose by the completion (milestone) date. The project will only be accepted by the airlines after such successful commissioning and testing.

Procurement Strategy

The Construction Manager for this project will be Morgan Ashurst, who have been appointed the Principal Contractor for Baggage projects.

Appendices:

Plan drawing of sorter works.

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.10m (07/08 prices)
This payment will continue until the month following the fulfilment of the trigger.

Log of Agreements / Disagreements:

None.

Programme Director (Baggage): Giles Price

Annex F.

Trigger Project Definition Sheet			
Issue A			
Programme	Terminal 4	Stage	Construction
Project	T4 A380 jetty facilities	CIP Ref	H.T4.08
Milestone	Completion of 3 jetties on each of two A380 stands (405 and 406)	Trigger Month	May-09

Milestone Definition
<p>Introduction</p> <p>Three (3) jetties are required on two initial stands, 405 and 406, designated for the A380 in Terminal 4 (T4). These stands are being modified to accommodate A380 aircraft and when this work is carried out a third jetty will be installed on each stand. At least one of the jetties on each stand will be capable of servicing the upper deck of the A380. The new jetties, refurbishment of existing jetties to bring up to current standards, and the changes to the stands shall be subject to consultation with the current and future T4 airline communities through the auspices of the T4 Stakeholder Programme Board (SPB). Additionally, periodic updates will be provided to Qantas, Malaysia and Qatar.</p> <p>Scope of Works</p> <p>In order to accommodate the A380 in T4, three existing stands (404, 405, 406) will be modified to create two A380 stands (405 and 406). A third jetty will be provided on each stand to allow access to the upper deck of the aircraft, and existing jetties will be refurbished to pre-agreed standards.</p> <p>Operational Readiness</p> <p>The first stand will be made ready for Qantas A380 and will be completed in December 2008. The second stand will be completed in May 2009.</p> <p>Milestone date to include testing and commissioning of the facility and all constituent systems such that they are delivered fit for purpose by the completion (milestone) date. Project will only be accepted by the airlines after such successful testing and commissioning</p> <p>Trigger definition - Capacity and Robustness for meeting trigger</p> <p>Reliability of A380 jetties will be 99.9 %. Should unserviceability occur at least two jetties will be maintained to board an A380. All jetties will be finished inside to current standards and changes of gradient will be manageable by all categories of passenger including PRM's. Easy access for PRM's to both A380 decks is a requirement.</p> <p>Financial Penalty:</p> <p>The monthly penalty payment for late delivery of the milestone is £0.10m (07/08 prices) This payment will continue until the month following the fulfilment of the trigger.</p>

Log of Agreements / Disagreements:

None.

Programme Director (Western Apron): Martin Johnson (Interim)

Annex G.

Trigger Project Definition Sheet			
Programme	Terminal 3	Stage	Scheme Design
Project	T3 Integrated Baggage System	CIP Ref	H.T3.12
Milestone	Completion of the T3 Integrated Baggage System	Trigger Month	Mar 12

Milestone Definition
<p>Scope of Works</p> <p>An integrated baggage system serving Terminal 3 will be built by BAA at Heathrow during Q5. This will include:</p> <ul style="list-style-type: none"> • Flexibility between the front and back of house so any check-in input can be output to any make –up position. • The ability for airlines/handlers to be able to make up direct and transfer baggage together. • Provision of an early bag store to enable “Just in Time” make up of hold baggage. <p>The current intention is that the Post T5 Transfer Baggage System Western Interface Building function will be located within an extended T3 Integrated Baggage building and will provide an integrated facility and system.</p> <p>Performance Specification</p> <p>In order to achieve the objectives, the project will provide the following capability on the current Shelterspan site:</p> <ul style="list-style-type: none"> • Any input to any output functionality • Integrated baggage system which provides integrated make-up facilities for direct and transfer out-bound baggage. • Early Bag Store <p>The capacity of the system will be 4,500 bags per hour.</p> <p>System Requirements</p> <p>System will provide capacity to meet anticipated capacity up to 2020, with an allowance for continued growth up to 2026.</p> <p>System will provide functionality to provide equivalence to the overall functionality listed as per the terms of the Constructive Engagement (Post 2008 Functionality/Service Delivery document).</p> <p>System will deliver operational performance sustained at levels that will assist in meeting the HAL</p>

in-system time element (15 minutes) of the target MCTs.

System to meet the Health & Safety requirements for a safe environment, to reflect current legislation, and BAA 's baggage manual handling strategy.

System to be designed to support the continuation of baggage operations in the event of individual equipment failure, taking account of the provision of any contingency operations required to facilitate this.

System will be able to track bag positions across the system so that it is known which part of the system they are in.

System will have a full Integration and implementation plan that supports T5 and T3 baggage performance during the build, integration and testing. This is being developed during the scheme design stage.

Status

Option Decision received February 2008, scheme design proceeding.

Milestone Completion

Construction completion at 31.12.11 defined as: The system completed and handed over to the business. The final phase of operational readiness will proceed after this completion date.

Operational Readiness Assumptions

Operational readiness will be carried out to facilitate the cut over of the check-in zones in Terminal 3 from the existing system to the new system, with the final phase of operational readiness being carried out from 31.12.11 when the new T3 Baggage system is complete.

Procurement Strategy

Civil and building scope will be procured utilising a Complex Building Integrator
Baggage scope will be procured utilising a baggage integrator.

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £1.16M (At 2007/08 prices).

Log of Agreements / Disagreements:

Preferred Option was agreed at the Option Decision Workshop with Stakeholders on 13 November 2008.

Programme Director (Baggage): Giles Price

Annex H.

Trigger Project Definition Sheet			
Programme	Terminal 3	Stage	Production
Project	T3 Refurbishment	CIP Ref	H.T3.38
Milestone	Completion of Pier 5 refurbishment	Trigger Month	Jul 09

Milestone Definition
<p>Scope of Works</p> <p>The objective of this project is to provide a passenger facing refurbishment solution that replicates, as far as is practical within the existing infrastructure, the Terminal 5 environment.</p> <p>Key points of the project are :</p> <ul style="list-style-type: none"> • To refurbish the walls and ceilings of the main pier walkway • To provide internal glazing between the gaterooms and the walkway <p>The Pier 5 gaterooms, the end of Pier 5, and the Pier 5 elbow are not included in the scope of this project.</p> <p>All BAA systems will be tested and commissioned prior to Practical Completion. This excludes the testing and commissioning of airline's own equipment.</p> <p>Practical completion is defined as the project has delivered the defined scope, including Stage 1 of PA3 handover document, but with the exception of snags that do not affect primary functions or safety.</p> <p>Project Scope detail;</p> <ul style="list-style-type: none"> • New ceiling & lighting • New "Slickfit" wall finishes • New character timber wall panels to gateroom entrances, with integrated LCDs • Introduction of glazing on the wall between the gaterooms and the walkway where this is achievable • Rationalisation and upgrade of fire doors • New HVAC where required <p>Operational Readiness Assumptions</p> <p>The CIP trigger does not allow for OR, and the completion versus the milestone definition should be assessed at Practical Completion, as described above.</p> <p>Procurement Strategy</p> <p>The Project has been procured through the BAA Capital Engagement Strategy and Morgan Ashurst (MA) have been appointed as the Complex Build Integrator (CBI). The CBI will tender the work packages making up the scope to ensure the programme and cost objectives are achieved.</p>

The actual work package breakdown will be subject to the CBI supply chain and procurement strategy.

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.10m (07/08 prices)

Log of Agreements / Disagreements:

Comments on this document are being reviewed with the airline community. Initial feedback and dialogue has been communicated via email.

Programme Director (Western Campus): Martin Johnson (Interim)

Annex I.

Trigger Project Definition Sheet			
Programme	Terminal 3	Stage	Production
Project	T3 Refurbishment	CIP Ref	H.T3.22
Milestone	Completion of Pier 7 refurbishment	Trigger Month	Aug 09

Milestone Definition
<p>Scope of Works</p> <p>The objective of this project is to provide a passenger facing refurbishment solution that replicates, as far as is practical within the existing infrastructure, the Terminal 5 environment. The planned replacement of Pier 7 in Q6 has been taken into account when selecting the relevant finishes and design solutions for this refurbishment, without compromising the main objective.</p> <p>Key points of the project are :</p> <ul style="list-style-type: none"> • To refurbish the floors, walls and ceilings of the connector and pier walkways • To refurbish the floors and walls of the gaterooms. • To enlarge the gateroom entrance lobbies <p>The horizontal segregation of Pier 7 and the changes to the stands and airbridges are not in the scope of this project.</p> <p>All BAA systems will be tested and commissioned prior to Practical Completion. This excludes the testing and commissioning of airline's own equipment.</p> <p>Practical completion is defined as the project has delivered the defined scope, including Stage 1 of PA3 handover document, but with the exception of snags that do not affect primary functions or safety.</p> <p>Project Scope detail;</p> <ul style="list-style-type: none"> • New rubber hard flooring to walkways, except where a Marmoleum floor finish already exists • New stainless steel skirting detail to perimeter wall of pier and connector • New carpet to the gaterooms • Upgrade to the wall finishes, either re-skimmed or dry-lined • New character timber wall panels to gateroom entrances, with LCD screens. • New character timber wall behind the gateroom desks. • New lighting to perimeter wall of pier • New ceiling in gateroom lobby entrances and valve lobbies, complete with new lighting. • New fan coil unit ventilation as required • New gateroom desks • Upgraded wayfinding and signage in connector, pier and gaterooms, as required • Replace fire doors with glazing, between the pier and gaterooms, on gates 317-322 inclusive where fire regulations don't require the door. (Note that the connector/walkway junction timber feature wall overlaps with the gate 316

doorway, and hence this will not be glazed).

- New floor to ceiling glazing and 2 entrance doors between gateroom lobby and gateroom. (note area above character timber feature may be solid panel)
- Internal mesh glazing to be replaced with new glazing in the airbridge entrance lobby/arrivals corridor.
- All areas to be painted, including ceiling to main pier and connector.
- Reclad entrance portal to gate 317 toilet block. Water fountain to be replaced, signage upgraded to T5 standard and all faulty lamps and light fittings to be replaced.
- Install new external glazing to gaterooms 316, 317, 319 and 321.
- Provision of fixed post (4-way retractable belt) queue mazes in gateroom lobby areas to facilitate boarding and security procedures
- Reupholstered seats in the gaterooms
- Glazing elements either side of Gate 318 entrance.
- Partial glazing to valve lobbies (as constrained by containment & services)

Operational Readiness Assumptions

The CIP trigger does not allow for OR, and the completion versus the milestone definition should be assessed at Practical Completion, as described above.

Procurement Strategy

The Project has been procured through the BAA Capital Engagement Strategy and Morgan Ashurst (MA) have been appointed as the Complex Build Integrator (CBI). The CBI will tender the work packages making up the scope to ensure the programme and cost objectives are achieved.

The actual work package breakdown will be subject to the CBI supply chain and procurement strategy.

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.10m (07/08 prices)

Log of Agreements / Disagreements:

Comments on this document are being reviewed with the airline community. Initial feedback and dialogue has been communicated via email.

BAA : A provision of a baggage chute for gate 318 is currently being explored, but a commitment cannot be made by BAA at this time, for the purposes of the Trigger definition.

VAA : . It is fundamental to VAA's operation and on time departure, and other Airlines who may use Pier 7 that this element is included in project scope.

BAA's response to the comment :

Whilst BAA acknowledge that the provision of this chute will be an operational benefit, it was not in the original project scope. It was also identified & requested very late in the programme. A proposed Pier5 solution is feasible, and is currently being designed, with a cost circa £150k. BAA maintains its position that it cannot include this scope in the trigger definition document until such a time that a feasible and affordable solution has been

identified.

VAA : New Fire doors at the end of the connector, nearest to the Pier.

BAA's response to the comment :

Doors will be made good and repainted as required. They will not be replaced due to cost.

VAA : "New floor to ceiling glazing and 2 entrance doors between gate room lobby and gate room. (note area above character timber feature may be solid panel)" The area above character timber feature should be glazed to provide passengers with an acceptable experience.

BAA's response to the comment :

The height of the character wall is in relation to the lower entrance character wall and to the same panel size/configuration. Glazing above is not feasible due to the services cupboard behind the timber wall.

VAA : "Internal mesh glazing to be replaced with new glazing in the air bridge entrance lobby/arrivals corridor" The timber frame should be re-clad with new minimal looking doors.

BAA's response to the comment :

The existing glazing will be replaced with new clear glass, the solutions for the doors and treatment to the timber frame are in production design.

VAA : BAA have an agreed Programme to refurbish one Gateroom at a time. This Programme, with the corresponding specification should be included as an Appendix to this Trigger, to reflect commitments already agreed, and should include any amendments contained within this proposal thereafter.

BAA's response to the comment :

The purpose of the CIP trigger definition document is to define what completion looks like and when it must be achieved by. Whilst relevant from an operational and delivery point of view, it is not directly relevant to this document, and hence BAA proposes not to attach it as an appendix. The document is readily available to share separately, as requested.

Programme Director (Western Campus): Martin Johnson (Interim)

Annex J.

Trigger Project Definition Sheet			
Programme	Terminal 3	Stage	Production / Options
Project	T3 Refurbishment	CIP Ref	H.T3.22 & 22a
Milestone	Completion of Check-in & Security Search Refurbishment	Trigger Month	Mar 10

Milestone Definition
<p>Scope of Works</p> <p>The objective of these projects is to provide passenger facing refurbishment solutions that replicate, as far as is practical within the existing infrastructure, the Terminal 5 environment.</p> <p><i>Check-In Refurbishment</i></p> <p>Key points of this project are :</p> <ul style="list-style-type: none"> • New ceiling, lighting and wall linings • Reclad check-in desks • New ticket desks along facade <p>The provision of new entrance doors for Zones C-F inclusive, the provision of new FIDS in the front of house area, and the provision of new LCD displays above each check-in desk position are being delivered by HAL Minor Projects, and hence are not part of this CIP milestone definition.</p> <p><i>Security Search Refurbishment</i></p> <p>The scope of works to security search is focused around clearly linking each process to a defined zone, each zone being defined by finish, lighting and way finding.</p> <p>Key points of the project are :</p> <ul style="list-style-type: none"> • New hard flooring • New wall finishes • New suspended ceiling <p>This project will deliver an environment that is consistent with the BAA Group standard for security search</p> <p>The SQR projects that deliver increased capacity to central search and staff search are not triggered projects, although the intent is to deliver these as an integral part of the refurbishment project.</p> <p>All BAA systems will be tested and commissioned prior to Practical Completion. This excludes the testing and commissioning of airline's own equipment.</p> <p>Practical completion is defined as the project has delivered the defined scope; including Stage 1 of PA3 handover document, but with the exception of snags that does not affect</p>

primary functions or safety.

Check-in project scope detail;

- A new ceiling, replacing the existing bulkheads
- New lighting
- Reclad wall linings in passenger spaces
- Reclad wall linings behind check-in desks
- Reclad check-in desks (existing functionality and desk structure retained). This includes the desks at the end of the cul-de-sacs, that are predominantly used as ticket desks
- Reclad column casings
- Upgraded wayfinding
- Removal of hammerhead on the "F/G" section
- New queue mazes in cul-de-sac areas – noting that the airline community has agreed that these will be delivered after the completion of the project, when they have had the opportunity to define the most operationally effective layout.
- VCC cladding refinished
- New Zone G entrance door
- New ticket desks along the façade
- Provision of CUSS/SSK units in Zones F&G (maximum 30 in number)
- Inter-terminal airline moves and back office refurbishment within check in.
- New IT communications rooms

Security Search project scope detail;

Included in the trigger scope are the following elements :

- New hard flooring
- New wall finishes, comprising of both glazed and drylined finishes
- New suspended ceiling

For information, Included in the delivery of the related projects, but not part of the trigger scope, are the following elements :

- *2 additional passenger search security lanes*
- *Relocated staff search, with 1 additional lane*
- *New roller beds for security machines*
- *Removal of shoe X-rays beyond embarkation*
- *One additional entrance area for passenger search*
- *New entrance portals and queue mazes, with additional ticket presentation desks*
- *Partial infill to Zone B escalator space to provide additional queuing space*

Operational Readiness Assumptions

The CIP trigger does not allow for OR, and the completion versus the milestone definition should be assessed at Practical Completion, as described above.

Procurement Strategy

Check In Refurbishment

The Project has been procured through the BAA Capital Engagement Strategy and Morgan Ashurst (MA) have been appointed as the Complex Build Integrator (CBI). The CBI will

tender the work packages making up the scope to ensure the programme and cost objectives are achieved.

The actual work package breakdown will be subject to the CBI supply chain and procurement strategy.

Security Search

The Project will be procured through the BAA Capital Engagement Strategy (Either Commodity Build or Complex Build Integrator). The supplier will tender the work packages making up the scope to ensure the programme and cost objectives are achieved.

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.10m (07/08 prices)

Log of Agreements / Disagreements:

Comments on this document are being reviewed with the airline community. Initial feedback and dialogue has been communicated via email.

Programme Director (Western Campus): Martin Johnson (Interim)

Annex K.

Trigger Project Definition Sheet			
Programme	Terminal 3	Stage	Options
Project	T3 Refurbishment	CIP Ref	H.T3.22
Milestone	Completion of Immigration, Landside Departures & Baggage Hall Refurbishment	Trigger Date	Mar 11

Milestone Definition
<p>Scope of Works</p> <p>The objective of these projects is to provide passenger facing refurbishment solutions that replicate, as far as is practical within the existing infrastructure, the Terminal 5 environment.</p> <p>Key points of these 3 projects are as follows :</p> <p><i>Immigration</i></p> <ul style="list-style-type: none"> • A new conglomerate floor • New ceiling system • Upgraded wayfinding • New lighting • New Immigration desks • New queuing system <p><i>Landside Departures</i></p> <ul style="list-style-type: none"> • Reground flooring • New wall panelling • New ceiling system, excluding the southwing annexe, which was recently renewed. • Upgraded wayfinding • Overhaul of the FIDS <p><i>Baggage Hall</i></p> <ul style="list-style-type: none"> • New conglomerate flooring (excluding the extension area which is already done) • New ceiling and lighting where appropriate, within the older baggage hall area. • New wall finish deployed along the back wall of the hall to fully integrate the new and old spaces. • New/refurbished airline desks <p>All BAA systems will be tested and commissioned prior to Practical Completion. This excludes the testing and commissioning of airline's own equipment.</p> <p>Practical completion is defined as the project has delivered the defined scope, including Stage 1 of PA3 handover document, but with the exception of snags that do not affect primary functions or safety.</p> <p>At time of writing, these projects are still in Options Development, and hence detailed briefs are not yet available.</p>

Operational Readiness Assumptions

The CIP trigger does not allow for OR, and the completion versus the milestone definition should be assessed at Practical Completion, as described above.

Procurement Strategy

These projects will be procured using the BAA Capital Engagement Strategy utilising either Commodity Build or Complex Build Integrator. The supplier will tender the work packages making up the scope to ensure the programme and cost objectives are achieved.

The actual work package breakdown will be subject to the suppliers supply chain and procurement strategy.

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.16m (07/08 prices)

Log of Agreements / Disagreements:

Comments on this document are being reviewed with the airline community. Initial feedback and dialogue has been communicated via email.

Programme Director (Western Campus): Martin Johnson (Interim)

Annex L.

Trigger Project Definition Sheet			
Programme	Eastern Campus	Stage	Scheme Design
Project	T2A Terminal & Forecourt	CIP Ref	H ET.01/1
Milestone	Demolition of T2 sufficiently complete to enable start of HET (T2A) construction and HET (T2A) building substructures complete within main floorplate	Trigger Month	March 2011

Milestone Definition
<p>Objective</p> <p>The completion of this milestone provides a basement which keeps out groundwater (other than at open interface points as shown) and enables the main terminal superstructure to be constructed.</p> <p><u>Scope of Works</u></p> <p>A description of project requirements is given in Appendix A.</p> <p>This milestone is in two parts:</p> <p>Demolition.</p> <p>(a) Demolition to ground or apron slab level of all buildings and structures within the blue line on the attached sketch (Appendix B) sufficient to allow construction to commence. This includes all necessary service isolations and diversions, asbestos surveys and removal, soft strip, asset recovery and physical demolition. All demolition arisings will be removed clear of the T2A building footprint (fig 1.1, Appendix C).</p> <p>Substructures.</p> <p>(b) The proposed construction of the substructure consists of a raft foundation slab with a floor level of -3.5 below external ground level and the associated perimeter walls. This is to be completed to the extent shown marked (fig 1.2 Appendix C) so as to enable superstructure works to commence.</p> <p>Procurement Strategy</p> <p>The demolition works may, or may not, be undertaken separately to the main T2A Terminal & Forecourt building works which will be undertaken by a Complex Build Integrator (CBI) in accordance with BAA's Capital Engagement Strategy.</p> <p>Appendices:</p> <p>A: T2A Outline Brief C: Figs 1.1 & 1.2</p>

D: Reference documentation

Programme Commentary

Current forecast date (IBR4 + 3 months) is November 2011

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £2.78m (07/08 prices)

Concerns:

Resolution of the baggage solution for T2A is outstanding. This may impact on the use of PTS and the structural grid derived from the solution.

Programme Director (Eastern Campus): Phil Wilbraham

Annex M.

Trigger Project Definition Sheet			
Programme	Eastern Campus	Stage	Scheme Design
Project	T2A Terminal & Forecourt	CIP Ref	H.ET.01/2
Milestone	HET (T2A) Phase 1. Completion of Building weathertight	Trigger Month	February 2012

Milestone Definition
<p>Objective</p> <p>The completion of this milestone achieves the closure of the internal environment. This enables fit out works which are sensitive to weather conditions to commence in the final external shell zone of the terminal.</p> <p>Scope of Works</p> <p>A description of project requirements is given in Appendix A.</p> <p>T2A terminal building internal floor areas are weathertight – roof and cladding complete to the extent needed to provide a watertight environment in all internal areas except elements relating to: sun shading, nodes, circulation cores, walkways, canopies, doors and openings left for construction access and plant, pipe-work or ductwork penetrations. See figs 2.1, 2.2, 2.3 in Appendix C for the extent of roofing and vertical cladding to be completed. This extent ensures that the main floorplate at each level is protected from the weather.</p> <p>Procurement Strategy</p> <p>This milestone requires completion of the building envelope which will be undertaken by the T2A Complex Build Integrator (CBI) in accordance with BAA's Capital Engagement Strategy.</p> <p>Appendices:</p> <p>A: T2A Outline Brief. C: Figs 2.1, 2.2, 2.3 D: Reference documentation</p> <p>Programme Commentary</p> <p>Current forecast date (IBR4 + 3 months) is February 2013</p>
<p>Financial Penalty:</p> <p>The monthly penalty payment for late delivery of the milestone is £3.43m (07/08 prices)</p>
<p>Concerns:</p>

Outstanding issues from gateway review (see Appendix D)

Programme Director (Eastern Campus): Phil Wilbraham

Annex N.

Trigger Project Definition Sheet			
Programme	Eastern Campus	Stage	Scheme Design
Project	T2A Terminal & Forecourt	CIP Ref	H.ET.01/3
Milestone	HET (T2A) Phase 1. Construction sufficiently progressed for primary operational trials.	Trigger Month	November 2012

Milestone Definition

Objective

The completion of this milestone ensures that the terminal building is ready to enable the commencement of the programme of integrated operational trials for T2A & T2B. These will cover: departures, arrivals and connections processes.

Scope of Works

A description of project requirements is given in Appendix A.

In order to conduct the departure, arrival and transfer operational trials, a safe and suitable environment must be provided for non construction staff and the equipment needed to undertake the first trial must be operational.

Requirements will be dictated by the sequence of operational trials and the construction sequence, both of which are being developed. Completion of certain baggage installations, IT and airfield systems to the extent needed for the integrated testing of operational trial processes will be required. Third party fit out works are excluded from the scope. However, the shell and core area accommodating the CIP lounges will be made available at such time in order to allow a reasonable period for completion of these facilities by the first operational trial.

Procurement Strategy

The T2A delivery works will be undertaken by the T2A Complex Build Integrator (CBI), Baggage Integrator and Master Systems Integrator, with provision of energy by the Energy & Infrastructure Services CBI and Airfield Infrastructure by the Airfield Integrator, all in accordance with BAA's Capital Engagement Strategy.

Appendices:

A: T2A Outline Brief
D: Reference documentation

Programme Commentary

Current forecast date (IBR4 + 3 months) is November 2013

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £1.22m (07/08 prices)

Programme Director (Eastern Campus): Phil Wilbraham

Annex O.

Trigger Project Definition Sheet			
Programme	Eastern Campus	Stage	Construction
Project	T1 bmi Nose Building	CIP Ref	H.ET.03
Milestone	Completion of T1 BMI Nose Building Facility	Trigger Month	January 2009

Milestone Definition
<p>Objective</p> <p>The completion of this milestone provides the CAT B fit out of facilities needed by bmi for their crew reporting facilities.</p> <p>Scope of Works</p> <p>The works comprise CAT B fit out work of the space to the Nose Building interior, refurbishment of access lift and completion of external works including a sheltered walkway and exterior coach pull-in. (See note below regarding IT spec).</p> <p>Procurement Strategy</p> <p>The project went to competitive tender, with three suppliers tendering. It was awarded to Mansell Construction Services, part of Balfour Beatty Group, who are the Complex Build Integrator (CBI) for the satellite pier T2B North.</p> <p>Programme Commentary</p> <p>Current forecast date (IBR4 + 3 months) is February 2009 to accommodate scope change</p>
<p>Financial Penalty:</p> <p>The monthly penalty payment for late delivery of the milestone is £0.10m (07/08 prices)</p>
<p>Concerns:</p> <p>Changes to the previously assumed IT scope have resulted in the need for an enhanced specification. bmi have acknowledged that this enhanced specification cannot be contained or delivered within the Nose Building trigger date.</p> <p>The current construction schedule identifies a completion date of 31/10/08. Both parties understand that there may be a need for snagging and exceptional works after this date and a completion schedule for these works will be agreed prior to the current completion date.</p>
<p>Programme Director (Eastern Campus): Phil Wilbraham</p>

Annex P.

Trigger Project Definition Sheet			
Programme	Eastern Campus	Stage	Construction
Project	T2B Phase 1	CIP Ref	H.T1.07a
Milestone	Completion of T2B Phase 1 (T2B North) Stage 1	Trigger Month	January 2010

Milestone Definition

Objective

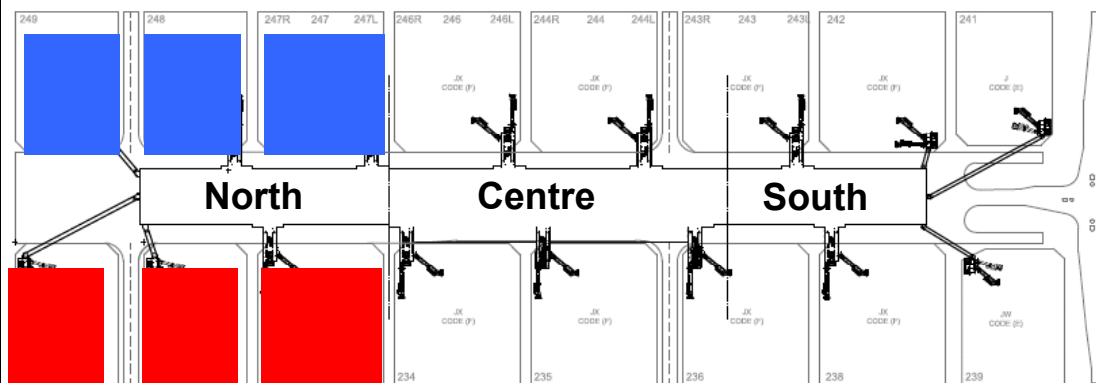
The completion of this milestone ensures that T2B North stage 1 is ready to enable the commencement of the programme of integrated operational trials for T2B north and T1. These will cover: departures, arrivals and connections processes.

Scope of Works

A description of project requirements is given in Appendix B. The North section scope comprises:

- A fully segregated pier to facilitate pier service for 3 stands (247,248 and 249, coloured blue on the plan below) on the Eastern face, including a further 3 stands being delivered as soon as is practical based on the airside apron stand sequence (231,232 and 233, coloured red on the plan below)
- 2 jetties per stand with retro-fit of a third jetty to the 2JX (code F) stands (233 and 247) immediately following completion of the T2B phase 2 stands
- closed gaterooms (to be converted to open when T2B Centre and South opens)
- provision of approx 1,800m2 of ramp accommodation
- toilet facilities at arrivals and departures level
- passenger connectivity from Europier at arrivals and departures level

T2B



In order to conduct the first trial, a safe and suitable environment must be provided for non construction staff and the equipment needed to undertake the first trial must be operational. Third party fit out is excluded from this scope.

Procurement Strategy

These works are being undertaken by the T2B North Complex Build Integrator (CBI), all in accordance with BAA's Capital Engagement Strategy.

Appendices:

Appendix B lists the scope of the full T2B satellite pier.

Appendix D: reference documentation

Programme Commentary

Current forecast date (IBR4 + 3 months) for T2B phase 1 stage 1 is March 2010 due to scope change. Current forecast date (without 3 month contingency) for stage 2 (west stands) is end of September 2010 and completion of phase 2 stands enabling third jetties to be constructed is in June 2013.

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.48m (07/08 prices)

Concerns:

The T2B gateway review in October 2008 may identify outstanding issues but STAR & BAA are working together to minimise any impact.

The baggage masterplan for baggage connectivity between T2A and T2B is outstanding.

Programme Director (Eastern Campus): Phil Wilbraham

Annex Q.

Trigger Project Definition Sheet			
Programme	Eastern Campus	Stage	Options
Project	T2B Phase 2	CIP Ref	H.T1.38/1
Milestone	Completion of T2B Phase 2 (T2B Centre & South)	Trigger Month	November 2012

Milestone Definition
<p>Objective</p> <p>The completion of this milestone ensures that T2B phase 2 is ready to enable the commencement of the programme of integrated operational. These will cover: departures, arrivals and connections processes.</p> <p>Scope of Works</p> <p>A description of project requirements is provided in Appendix B. This is the second phase of a fully segregated pier. The Phase 2 scope comprises:</p> <ul style="list-style-type: none"> • a fully segregated pier to facilitate pier service for 10 stands. Pier service will be facilitated to stands 236, 238, 239, 241, 242 & 243 (coloured blue on the plan below) at the Milestone completion date. Pier service to stands 234, 235, 244 & 246 (coloured red on the plan below) is included in the scope but may be delayed by T2C connectivity construction works. • 3 jetties per JX stand and 2 jetties per JW stand • open gateroom format subject to process solution being trialled, funded and approved • connection centre for “hot connects” comprising 2 security search lanes and airline ticketing desks • retail provision of approx 1,600m² • a total CIP provision of 3,600m² in 3 areas (2,000m², 1,000m² and 600m²) • provision of approx 1,800m² of ramp accommodation • toilet facilities at arrivals and departures level • vertical passenger circulation for arriving and departing passengers from the T2A passenger connectivity • active safeguarding for future TTS (or similar) from T2A and through to T2C • safeguarding for transfer baggage facility (subject to strategic assessment of PTS)

<h2 style="margin: 0;">T2B</h2>
<p>In order to conduct the first trial, a safe and suitable environment must be provided for non construction staff and the equipment needed to undertake the first trial must be operational. Third party fit out is excluded from this scope.</p> <p>It should be noted that these works may be provided ahead of the opening of T2 Concourse A .</p> <p>Procurement Strategy</p> <p>This milestone requires completion of a substantial area of the building with life safety testing being completed in the area being used for the first trial. Requirements will be dictated by the sequence of operational trials and the construction sequence, both of which are being developed. These works will be undertaken by a Complex Build Integrator (CBI) and Master Systems Integrator (MSI), all in accordance with BAA's Capital Engagement Strategy.</p> <p>Appendices:</p> <p>Appendix B lists the scope of the full T2B satellite pier. Appendix D: Reference documentation</p> <p>Programme Commentary</p> <p>Current forecast date (IBR4 + 3 months) is October 2013 due to scope change.</p>
<p>Financial Penalty:</p> <p>The monthly penalty payment for late delivery of the milestone is £0.67m (07/08 prices)</p>
<p>Concerns:</p> <p>The baggage masterplan for baggage connectivity between T2A and T2B is outstanding. Connectivity to T2C is outstanding and may delay completion of certain stands.</p>

Quantum of accommodation on the Eastern Apron is to be determined and ratified.

Programme Director (Eastern Campus): Phil Wilbraham

Annex R.

Trigger Project Definition Sheet			
Programme	Eastern Campus	Stage	Options
Project	T2B Phase 2	CIP Ref	H.T1.38/2
Milestone	Completion of Passenger Connectivity to T2B Phase 2	Trigger Month	November 2012

Milestone Definition
<p>Objective</p> <p>The completion of this milestone provides passenger connectivity to and from T2B to the main Terminal Building T2A (assuming that T2A is available), ready to support the first substantial operational trial.</p> <p>This milestone requires substantial completion of the passenger connector structure with life safety testing being completed. A safe and suitable environment must be provided for non construction staff and the equipment needed to provide horizontal and vertical passenger circulation must be operational.</p> <p>Scope of Works (subject to agreement to Q5/Q6 funding)</p> <p>The passenger connectivity between first phase of T2A & T2B Centre comprises the following scope elements:</p> <ul style="list-style-type: none"> • An interim vertical passenger movement core (VPM) external to T2A (on head of stand #216) connecting the T2A Arrivals & departures to corresponding segregated tunnel corridors. • A permanent segregated tunnel corridor equipped with moving walkways from the VPM external to T2A Phase 1 across to T2B Centre. • Access to the vertical circulation within T2B from the tunnel corridor to the corresponding arrival & departure levels. <p>Because these works are scheduled to be provided ahead of the opening of T2 Concourse A, the VPM external to T2A will also have connectivity to T1. In addition to these live operational elements, the configuration will make future provision for rail connectivity between T2A, via T2B to a future concourse T2C. This provision will include active safeguarded connections with the future rail station box at T2A Phase 2, and corresponding arrangements at T2B.</p> <p>Procurement Strategy</p> <p>The main works will be undertaken by a Complex Build Integrator (CBI) in accordance with BAA's Capital Engagement Strategy.</p> <p>Programme Commentary</p> <p>Current forecast date (IBR4 + 3 months) is October 2013 due to scope change.</p>

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.31m (07/08 prices)

Concerns:

The T2B gateway review in October 2008 may identify outstanding issues but STAR & BAA are working together to minimise any impact.

Programme Director (Eastern Campus): Phil Wilbraham

Annex S.

Trigger Project Definition Sheet			
Programme	Eastern Campus	Stage	Brief
Project	Outer Pier North (T2C North)	CIP Ref	H.ET.50
Milestone	Completion of the Outer Pier North	Trigger Month	January 2012

Milestone Definition
<p>Objective</p> <p>The original objective of this milestone was to provide the first phase of an outer pier facility with associated stands. An alternative means of providing fully pier served stands by completing the southern section of T2B has been proposed by BAA and endorsed by the airline community. Therefore the new objective is to complete T2B phase 2 ready for operational trials (see trigger milestone H.T1.38/1).</p>
<p>Scope of Works</p> <p>BAA originally had a project scoped to build the first phase of the Outer Pier within the timescale listed in the CIP. However, BAA and the airline community have subsequently jointly produced an Eastern Campus master plan which provides for the construction of T2B (previously known as the midfield pier) ahead of the outer pier. This trigger will now cease and discussions will take place regarding T2B south being incorporated into T2B phase 2.</p>
<p>Procurement Strategy</p> <p>To be defined but in accordance with BAA's Capital Engagement Strategy.</p>
<p>Financial Penalty:</p> <p>The monthly penalty payment for late delivery of the milestone is £0.48m (07/08 prices)</p>
<p>Programme Director (Eastern Campus): Phil Wilbraham</p>

Annex T.

Trigger Project Definition Sheet			
Programme	Eastern Campus	Stage	Explore
Project	Eastern Maintenance Base Redevelopment	CIP Ref	H.T1.50a
Milestone	Completion of the diversion of East Church Road	Trigger Month	Mar 10

Milestone Definition

Scope of Works

East Church Road realignment is an enabler to the incremental development strategy of the Eastern Apron, which provides operational stands/pier service and planned future hangar and maintenance stand requirements.

This trigger project involves the diversion of East Church Road onto a new alignment to create a developable site for the construction of a twin bay A380 hangar, which fits with the Eastern Apron Masterplan. The project will also include the diversion of all services affected by the road diversion, and site clearance of the hangar site.

Completion will be signified by the road opening to all airport related traffic, and new diverted services affected by the diversion will be commissioned by the milestone date.

The envisaged scope will be the construction of a diverted East Church Road, consisting of :

Facilities

- A single carriageway two-way road diversion 10m wide and approx 600m long, in accordance with highway standards and to provide a design life of 25 yrs.
- Creation of a landside road, providing and maintaining vehicle access to Control Post 16, Exeter Way, Exeter Road, Vanguard Way and the proposed hangar site.
- Tie ins to the existing East Church Road, East Church Road Roundabout and Vanguard Way.
- Provision of a pedestrian footway and investigate if a cycleway is required.
- Provision of street lighting
- Provision of surface water drainage
- Provision of fencing
- Provision of signs and lines and crossings (vehicle, pedestrian, mandatory) to required standards
- Access points to/from the BA hangar, road and existing BA facilities at agreed locations
- CCTV or surveillance equipment at appropriate locations – requirement yet to be defined
- Defined junctions modelled and sized appropriately to deal with large/ HGV vehicles both on road junctions and at access /egress points and with appropriate traffic management as required.
- Changes in security/ access control, to ensure East Church Road remains a

landside road whilst also ensuring BA facilities and the new hangar will be BA controlled zones. Solution to be developed and jointly agreed.

Services

Diversions and re-provision of all services effected by the road diversion and to clear the proposed hangar site including gas, power, data/telecoms, water and waste. Provision of service routes to the new hanger, requirements of which are to be defined. It is acknowledged that further work is required on definition of all service diversions including those associated with the masterplan and future services strategy. Further discussion agreement as to which services are included within this trigger is required following completion of the masterplan works.

Operational considerations during construction

The areas that will be subject to construction are predominantly operational areas, which require regular and constant access to facilitate time critical activities for engineering and cargo. As a result the construction programme will give consideration to the access arrangement to live facilities during construction to ensure that within reason they are not unduly inconvenienced during the construction process. Where this is not possible, restrictions will be agreed with the affected parties well in advance of the restriction being implemented.

The operational nature of the areas and facilities also requires the construction programme to give consideration to the risks associated with diverting/damaging 'Mission critical' services, in order that all services are maintained to the facilities in a way that is effect neutral on all affected airline operations.

The high value and safety critical nature of the equipment in the hangar areas require particular attention is given to maintaining high standards of construction debris control during construction and post programme. This includes provision of a site clear of services and to a reasonable profile free from construction debris and to a finish to be jointly be agreed with BA/BAA.

Operational Readiness Assumptions

It is assumed that we are not changing the current operation significantly, which will reduce the need for operational readiness. Where new access routes and/or access control equipment and procedures are introduced, there will be a requirement to provide a period of time for staff communication and familiarisation.

There will be a communication strategy to be put in place to keep affected parties informed of changes to access during construction and final arrangements before handover.

Procurement Strategy

It is assumed that the works will be delivered by a Complex Build Integrator to be identified at the appropriate stage of the project. Third party utility companies, yet to be identified, will deliver the service diversion element of the works.

The main packages of work consist of the construction of the road diversion, associated service diversions and clearance of the hangar site.

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.17m (07/08 prices)

Log of Agreements / Disagreements:

It is agreed that there is further work required on the Masterplan, and that consideration should be given to the creation of a common user access road within a Restricted Zone, this will be investigated through the development of the Masterplan. Once this work is complete this project will be reviewed against the completed Masterplan and any changes will be taken through the change process. It is acknowledged that there may be alternative options for this scheme which could be progressed once the Masterplanning works are complete and agreement on the future security strategy agreed.

Programme Director (Infrastructure): Matt Palmer

Annex U.

Trigger Project Definition Sheet			
Programme	Connectivity	Stage	Scheme/Construction
Project	Post T5: Transfer Baggage System	CIP Ref	H.CX.07
Milestone	Completion of the T5-T3 Tunnel & Baggage System	Trigger Month	Nov 11

Milestone Definition
<p>Scope of Works</p> <p>An automated transfer baggage system will be built by BAA at Heathrow during Q5. The system will be a DCV (Destination Coded Vehicle) baggage system and operate as an extension to and integrated with the T5 DCV direct baggage system. Project Scope includes baggage transfer connecting tunnel between T5C and T3, construction and integration of Interface facility at T5C and Western Interface Building (W.I.B link to T3). The linkage between the systems will be made underground at T5 Satellite C.</p> <p>The current intention is that the WIB function will be located within an extended T3 Integrated Baggage building and will provide an integrated facility and system.</p> <p>Performance Specification</p> <p>The in-system time of 10 mins each way will be measured from the point that a bag leaves the off-ramp in T5 Satellite C until it leaves the Western Interface Building for entry into the T3 Integrated Baggage system.</p> <p>This automated tunnel based system will provide a predictability of service of 97% and system availability of 99.5%.</p> <p>The capacity of the system will be 3000 bags per hour each way with a 15 min peak of 750 bags per 15 mins. <i>(See also Log of Agreements / Disagreements)</i></p> <p>System Requirements</p> <p>System has been designed using system technology and operational capability that is proven and has been measured in other airport locations</p> <p>System will deliver operational performance sustained at levels that will assist in meeting the HAL in-system time element of the target MCTs</p> <p>System has been designed with infrastructure to support the continuation of baggage operations in the event of tunnel or T5C failure. Provision of contingency operation procedures will be established independently utilizing such infrastructure and existing terminal ITO docks.</p> <p>System will be able to track bag positions across the systems (input & output T3/T5C and within the tunnel)</p>

System will have a full Integration and implementation plan that supports T5 and T3 baggage performance during the build, integration and testing. This is being developed during the scheme design stage.

Status

Construction Decision for below ground civil works (basements at T5C, WIB & EIB and connecting tunnel) received July 2008, civil construction underway (including enabling works from February 2008) . Option Decision for baggage and building works received June 2008, scheme design proceeding.

Milestone Completion

Construction completion at 31.08.11 defined as: The tunnel completed and fully equipped with M&E services with the cart tracks installed and fully tested to meet the bag through put and 'in system time' trials (using test bags). Operational readiness will proceed after this completion date.

At this milestone completion date discharge from the tunnel at T3 will be onto docks for onward transport of transfer bags to the T3 baggage system which will not be fully integrated until December 2011. Docks will also be used to load bags transferring from T3 to another terminal into the tunnel.

Operational Readiness Assumptions

Operational readiness will be carried out from 31.08.11 for the fully integrated system at T5C and the dock arrangement at T3.

Operational readiness will then be carried out again at T3 from 31.12.11 when the new T3 Baggage system is complete

Baggage performance of the existing systems in T5 and T3 will be unaffected during the OR period for those elements under the control of HAL.

Procurement Strategy

Civil and building scope will be procured utilising a Complex Building Integrator
Baggage scope will be procured utilising a baggage Integrator

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £ 790k

Log of Agreements / Disagreements:

Project scope has been agreed progressively at the Connectivity Airline Working Group monthly meetings.

The airlines have requested a 15 min peak of 1000 bags (against the 750 shown above) for robustness in peak periods, but are willing for a final decision on number to be based on simulation data.

Programme Director (Baggage): Giles Price

Annex V.

Trigger Project Definition Sheet			
Programme	Connectivity	Stage	Scheme/Construction
Project	Post T5: Transfer Baggage System	CIP Ref	H.CX.07
Milestone	Completion of the T3-T1 Tunnel & Baggage System	Trigger Month	Jun 12

Milestone Definition
<p>Scope of Works</p> <p>An automated transfer baggage system will be built by BAA at Heathrow during Q5. The system will be a DCV (Destination Coded Vehicle) baggage system and link the western interface building at T3 with the T1 baggage system via an eastern interface. Project Scope includes baggage transfer connecting tunnel between T3 and T1, construction and integration of Western Interface Building (W.I.B link to T3) and Eastern Interface Building (EIB link to T1)</p> <p>Performance Specification</p> <p>The in system time for baggage to move (either way) through the tunnel between the transfer input/output points of T3 western interface building and the transfer input/output points of T1 eastern interface building will be 10 mins.</p> <p>This automated tunnel based system will provide a predictability of service of 97% and system availability of 99.5%.</p> <p>The capacity of the system will be 3000 bags per hour each way with a 15 min peak of 750 bags per 15 mins. <i>(See also Log of Agreements / Disagreements)</i></p> <p>System Requirements</p> <p>System has been designed using system technology and operational capability that is proven and has been measured in other airport locations</p> <p>System will deliver operational performance sustained at levels that will assist in meeting the HAL in-system time element of the target MCTs</p> <p>System has been designed with infrastructure to support the continuation of baggage operations in the event of tunnel or T3/T1 failure. Provision of contingency operation procedures will be established independently utilizing such infrastructure and existing terminal ITO docks.</p> <p>System will be able to track bag positions across the systems (input & output T3/T1 and within the tunnel)</p> <p>System will have a full Integration and implementation plan that supports T3 and T1 baggage performance during the build, integration and testing. This is being developed during the scheme design stage.</p>

Status

Construction Decision for below ground civil works (basements at T5C, WIB & EIB and connecting tunnel) received July 2008, civil construction underway (including enabling works from February 2008) . Option Decision for baggage and building works received June 2008, scheme design proceeding.

Star Alliance have stated at the August 2008 Connectivity Airline Working Group that until the Eastern Apron Baggage strategy has been agreed they will not agree to the EIB baggage and building design. EIB basement location agreed in April 2008, and re-confirmed by Star Alliance at the August 2008 AWG
Target for resolution of strategy Autumn 2008.

Milestone Completion

Construction completion at 31.03.12 defined as: The tunnel completed and fully equipped with M&E services with the cart tracks installed and fully tested to meet the bag through put and 'in system time' trials (using test bags). Operational readiness will proceed after this completion date.

Operational Readiness Assumptions

Operational readiness will be carried out from 31.03.12 for the fully integrated system at T3 and T1

Baggage performance of the existing systems in T3 and T1 will be unaffected during the OR period for those elements under the control of HAL.

Procurement Strategy

Civil and building scope will be procured utilising a Complex Building Integrator
Baggage scope will be procured utilising a baggage Integrator

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £ 410k

Log of Agreements / Disagreements:

Project scope has been agreed progressively at the Connectivity Airline Working Group monthly meetings

The airlines have requested a 15 min peak of 1000 bags (against the 750 shown above) for robustness in peak periods, but are willing for a final decision on number to be based on simulation data.

Programme Director (Baggage): Giles Price

Annex W.

Trigger Project Definition Sheet			
Programme	Terminal 4	Stage	Construction
Project	T4 – T1 Tunnel refurbishment	CIP Ref	H.CX.08
Milestone	Tunnel fully Operational after refurbishment	Trigger Month	Jan-09

Milestone Definition
<p>Introduction</p> <p>The T4 – T1 tunnel is to be refurbished to extend its life for a further 10 years. This project shall be subject to consultation with the current and future T4 airline communities through the auspices of the T4 Stakeholder Programme Board (SPB) and such working groups that may be set up by the SPB.</p> <p>Scope of Works</p> <p>Re-life the baggage systems within the existing tunnel for a ten-year period. To include:</p> <ul style="list-style-type: none"> • PLC upgrade using Siemens S7 • Remote IO modules to be replaced • Electrical distribution and cabling • RFID tag reader devices • Sort management system (SMS) • SCADA (stage 2) • Pressline modifications • On-demand functionality (stage 2) <p>The T4 to T1 automated baggage system, together with feeder systems and control units, are to be refurbished prior to the move of the designated carriers from the CTA into T4. The T4-T1 baggage system will link with the airport transfer baggage system to form an integrated baggage transfer system.</p> <p>The airlines expect the refurbished system:</p> <ul style="list-style-type: none"> • To be engineered using system technology with proven operational capability • To deliver operational performance sustained at levels that allow the airlines to meet performance metrics • To have contingency operation in case of system failure • To be able to track bags through the system <p>Performance</p> <p>The in-system times for baggage to move (either way) between input / output points will be no more than:</p> <p>T4 – T1 / T2A + vice-versa = 10 minutes</p> <p>System capacity and robustness should be demonstrated prior to operational use:</p>

Capacity should meet (to 99.5% reliability);

- 1200 bags per hour each way (maximum)
- 600 bags per hour each way (optimum)
- 300 bags per 15 minutes each way (maximum)
- 150 bags per 15 minutes each way (optimum)

Operational Readiness

Milestone date to include commissioning and testing of the facility and all constituent systems such that they are delivered fit for purpose by the completion (milestone) date. Project will only be accepted by the airlines after such successful commissioning and testing.

Financial Penalty:

The monthly penalty payment for late delivery of the milestone is £0.10m (07/08 prices)
This payment will continue until the month following the fulfilment of the trigger.

Log of Agreements / Disagreements:

None.

Programme Director (Baggage): Giles Price

Annex X.

Trigger Project Definition Sheet			
Programme	Eastern Campus / Infrastructure	Stage	Options
Project	New Build MSCP – East (phase 1)	CIP Ref	H.R.05
Milestone	New Build MSCP - East. Construction sufficiently progressed for operational trials to commence.	Trigger Month	March 2013

Milestone Definition
<p>Objective</p> <p>To have an operational car park (phase 1) by opening day of T2 Concourse A Phase 1.</p> <p>Scope of Works</p> <p>Precise details of the proposed MSCP were not known at the time this sheet was prepared. The following scope is indicative of the requirements.</p> <ul style="list-style-type: none"> • Minimum spaces available for Phase 1 is 1650 • Suitable passenger walkway connectivity with T2A • Suitable passenger vertical circulation between floors (Lifts/Stairs) • Suitable systems to operate a car park (excluding third party fit out) <p>The phase 1 stage of MSCP East is to be sufficiently complete to enable the first substantial operational trial of all car parking floors other than the ground floor (which is excluded if the car park opens ahead of T2A, as it may be shared with T2A forecourt construction and T2A construction logistics use).</p> <p>In order to conduct the first trial, a safe and suitable environment must be provided for non construction staff and the equipment needed to undertake the first trial must be operational.</p> <p>Procurement Strategy</p> <p>This milestone requires completion of a substantial area of the building with life safety testing sufficient for operation being completed in the area being used for the first trial. Requirements will be dictated by the sequence of operational trials and the construction sequence, both of which are being developed. These works will be undertaken by a MSCP Complex Build Integrator (CBI). It is likely that there will be some input from the T2A CBI and Master Systems Integrator, all in accordance with BAA's Capital Engagement Strategy.</p> <p>Programme Commentary</p> <p>Current forecast date (IBR4 + 3 months) is November 2013.</p> <p>Financial Penalty:</p> <p>The monthly penalty payment for late delivery of the milestone is £0.48m (07/08 prices)</p>

Concerns:

At this stage, there is very little information about the exact location and size of the car park in relation to the CTA control tower building and road system.

Programme Director (Eastern Campus): Phil Wilbraham