

# CIP.20.07.033

## HBS Standard 3 – Terminal 1

V2

### Project Summary

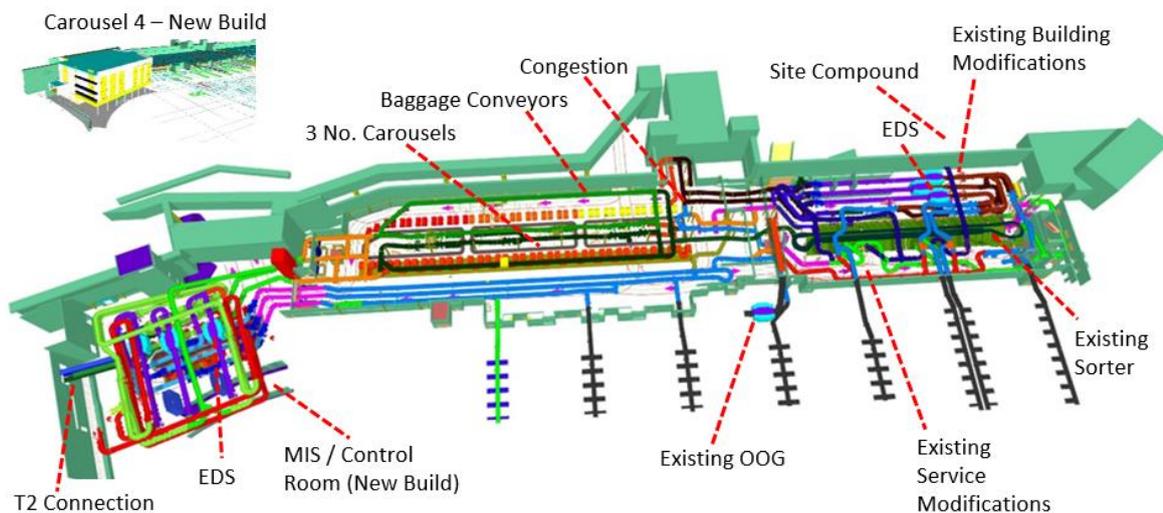
**This proposal contains the early estimated costs and programme associated with upgrading the Standard 2 HBS equipment in Terminal 1 to Standard 3 HBS in line with EU Regulations.**

The primary driver for this upgrade is to ensure that HBS at Dublin Terminal 1 is compliant with the requirements of Commission Implementing Regulation 2015/1998.

The Regulation requires that the current Standard 2 Explosive Detection Systems (EDS), used as part of the Hold Baggage Screening (HBS) process in Terminal 1 at Dublin Airport be replaced with new compliant Standard 3 EDS equipment, in line with the requirements and timelines set out in this regulation. This Regulation stipulates that Standard 2 EDS equipment is removed from service by 1 September 2020, but also provides for the possibility of extended use for some Standard 2 equipment, by permission from the Appropriate Authority in the State (Irish Aviation Authority) to 1 September 2022, subject to certain conditions. The extended use permission is at the sole discretion of the Appropriate Authority.

While the timeline for the project is being driven by regulatory requirements, the solution implemented will be such as to future proof (capacity, structures and systems) for up to 40mppa at Dublin Airport. This project will be part of Terminal 1's development and is driven by the following:

- **The need to comply with Security Screening Requirements for Hold Baggage Screening**
- **Replacement of end of asset life systems within the T1 BHS system.**
- **Safeguard for the combined T1 and T1 40mppa capacity in respects to the HBS systems in Terminal 1.**



**Exhibit 1 : High level representation of proposed design scheme for Terminal 1 BHS**

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Exhibit 2 : Proposed Standard 3 EDS Screening Machines (and size comparison to existing Standard 2 EDS)

The Baggage Handling System (BHS) in Terminal 1, including the HBS has grown and evolved with various expansions of Terminal 1 to meet growing demand and changing regulations. As a result, the overall BHS system in Terminal 1 is complex and the ability to modify is extremely limited, which raises significant challenges for the installation of the Standard 3 HBS. A 'like for like' replacement in Terminal 1 is **not possible** owing to the increased size and increased weight of Standard 3 machines and the limited physical space and limited vertical load in Terminal 1, coupled with the modifications to existing conveyors at each machine location. In addition, the majority of the components of the BHS system in Terminal 1 are between 17 and 25 years old and are showing signs of impending failure as they reach the end of their design life. The design solution must therefore take into consideration end of life equipment replacement and capacity growth in line with the masterplan and current passenger forecasts.

The solution in Terminal 1 will require the phased replacement of the majority of the BHS and HBS equipment to facilitate the new Standard 3 HBS screening technology and associated conveyor changes. The solution also requires the upgrade of Area 14 to Standard 3 to provide resilience, additional capacity and to facilitate phasing during the main Terminal 1 construction works. Area 14 has 24 check-in desks and 28 make-up positions. Currently, the Area 14 HBS is a stand-alone system with no connections to the main HBS in Terminal 1. It currently screens bags through 2 No. Standard 2 X-Ray machines at level 2 and one Standard 2 machine at level 3, however after September 2020 these machines can no longer be in use for screening hold baggage. In developing phasing options for the Standard 3 upgrade to Terminal 1, it has become apparent that Area 14 could provide resilience because of the need to disconnect check-in islands on Departures level, make-up and sortation carousels. Area 14 can be upgraded to Standard 3 in advance of any planned down time of check-in desks and make-up carousels in the 6-bay and 8-bay areas of the Terminal 1 HBS. This will act as the overflow area where specific airlines may be relocated to facilitate the phased delivery of Standard 3. Once the Standard 3 upgrade is complete, Area 14 will continue to be used in the same manner as it is today for peak periods, specific flights, as contingency or for occasions where large events such as Euro 2020 etc. may generate a significant number of flights or passenger groups. It can also be safeguarded for a future integrated connection back to the Terminal 1 6-bay.

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The total project in Terminal 1 will include;

- (a) A multi-storey building expansion between Terminal 1 and Terminal 2 to accommodate baggage make-up (ground floor), HBS Screening & baggage processing (first floor), offices and accommodation and screening rooms (second floor)
- (b) Re-design of the existing Baggage Handling System to accommodate Standard 3 HBS equipment and screening process
- (c) Modifications to the existing baggage conveyor system to ensure correct routing into machines and adequate tracking time after screening.
- (d) Modifications to the control system to accommodate the Standard 3 technology.
- (e) Provision of a Terminal 1 / Terminal 2 baggage interconnectivity link (single conveyor each direction)
- (f) Provision of a centralised screening and baggage control room for Terminal 1 and Terminal 2
- (g) Provision of Standard 3 HBS capability in Area 14

This project is currently in procurement and the total costs will not be fully known until tender return in Q4 2019. We are requesting that this project is specifically reviewed and considered under the proposed new **Independent Fund Surveyor (IFS)** process.

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Project Details Summary		
<b>Category: Plant and Equipment</b>		
<b>Primary Driver</b> Regulatory	<b>Secondary Driver</b> Capacity	<b>Total Capex requirement</b> € [REDACTED]m* <small>* Subject to Independent Fund Surveyor process for duration of delivery of project</small>
<b>Underpinning Assumptions and Cost Benchmarks</b>	<ul style="list-style-type: none"> <li>T1 HBS Standard 3 system upgrade is currently under a procurement process. [REDACTED]</li> <li>[REDACTED] There are significant risks associated with the project as most HBS Standard 3 projects completed to date across the UK and Europe. [REDACTED]</li> <li>[REDACTED]. Due to the complexity of the project, the associated risk and the programme challenges it is daa's view and request that this project be controlled under an <b>independent fund surveyor process</b>, which would provide the assurance that capex is scoped efficiently and delivered at efficient cost</li> <li>The costs are presented as a fair reflection of the gross estimate price presented to daa through Pre-Construction Services Agreement with baggage integrators. They are presented only as a basis for assessment at outrun costs.</li> <li>Re-use of existing 6-Bay sorter in completed system.</li> <li>Contingency is based on P80 QCRA assessment.</li> </ul>	
<b>Opex Impacts</b>	<ul style="list-style-type: none"> <li>Annual opex impact of €0.5m per annum:               <ul style="list-style-type: none"> <li>€0.1m based on tender prices for HBS machine 3<sup>rd</sup> party maintenance support given the higher specification of the new equipment.</li> <li>€0.2m based on tender prices for IT Costs, i.e. - SCADA (Supervisory Control and Data Acquisition) and PLC (Programmable Logic Controller). Standard 3 HBS equipment is more complex meaning more sophisticated software and hardware support is required. T1 costs are higher due to a higher volume of units and conveyors.</li> <li>€0.2m for additional FTE – 4 x baggage operatives will be required in T1 due to design constraints in the baggage hall which will make it congested and difficult to access.</li> </ul> </li> </ul>	

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<b>Project Output</b>	<ul style="list-style-type: none"><li>• Provision of a number of enabling works packages to facilitate the phasing requirements for the project in a live operational environment.</li><li>• Building expansions and/or alternations required, including alternations to existing building services to facilitate the new system design. Including a multi-storey building expansion between Terminal 1 and Terminal 2 to accommodate baggage make-up (ground floor), HBS Screening &amp; baggage processing (first floor), offices and accommodation and screening rooms (second floor)</li><li>• Re-design of the existing Baggage Handling System to accommodate Standard 3 HBS equipment and screening process</li><li>• Modifications to the existing baggage conveyor system to ensure correct routing into machines and adequate tracking time after screening.</li><li>• Modifications to the control system to accommodate the Standard 3 technology.</li><li>• Provision of a Terminal 1 / Terminal 2 baggage interconnectivity link (single conveyor each way).</li><li>• Provision of a centralised screening and baggage control room for Terminal 1 and Terminal 2.</li><li>• The upgrade of the existing 3 x Standard 2 HBS machines in Check-in Area 14, to Standard 3 HBS.</li></ul>
<b>Asset Life</b>	<ul style="list-style-type: none"><li>• 15 Years (BHS) / 10 Years (HBS)</li></ul>
<b>Project Delivery Key Milestones</b>	
<b>Procurement complete:</b>	<b>Q4 2019</b>
<b>Planning Complete</b>	<b>Q2 2019</b>
<b>Start on site:</b>	<b>Q2 2019</b>
<b>Project Handover:</b>	<b>Q3 2022</b>

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LEVEL 1 - Cost Analysis	Represents	Total
Design and Management Costs	Redacted Cost Information	
Construction Costs		
Escalation & Contingency (QCRA P80)		
<b>Total</b>		

LEVEL 2 - Cost Analysis				
Design and Management Costs	Value	Unit	Rate	Total
Multi Discipline Consultant	1	Sum	Redacted Cost Information	
Capitalised Labour	1	Sum		
Baggage & Building Works Design	1	Sum		
Area 14 Confidence trials	1	Sum		
<b>Total - to summary</b>				
Construction Costs	Quantity	Unit	Rate	Total
EDS Equipment (incl Area 14)	9	Nr	Redacted Cost Information	
Area 14 HBS Works	1	Nr		
MIS Room	1	Sum		
Belt Conveyor	1	Sum		
T1 / T2 Connectivity	1	Sum		
Sorter	1	Sum		
Enabling Works / Services etc (incl Area 14)	1	Sum		
General Project Costs (Planning Costs New Builds, IT Consultants) Surveys / Opening Up works/ Repairs	1	Sum		

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Misc Construction Costs (incl Transition Screening)	1	Sum	Redacted Cost Information	
Interface Management (Construction)	1	Sum		
<b>Total - to summary</b>				
<b>Escalation &amp; Contingency</b>	<b>Value</b>	<b>%</b>	<b>Total</b>	<b>Total</b>
Project Contingency (P80) (incl Area 14)	1	Sum	Redacted Cost Information	
<b>Total - to summary</b>				

\*. Subject to Independent Fund Surveyor (IFS) for the duration of the project