



# AIRPORTS COMPANY SOUTH AFRICA

## HOLD BAGGAGE SCREENING

### SCOPE OF WORK

<b>Document Type</b>	Scope of Work
<b>Document prepared by:</b>	Moeketsi Sempe
<b>Designation</b>	Group Manager Airport and Physical Security
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### Document Review and Distribution

This document will be managed and controlled in terms of the ACSA Enterprise Security and Compliance Project Management Office document management procedure.

### Revision History

Version No	Author	Date	Revision
1.0	Moeketsi Sempe	20 May 2024	Document created

### Glossary:

Acronym	Description
ACSA	Airport Company South Africa
ASP	Airport Security Program
BMS	Baggage Management System
BRS	Baggage Reconciliation technology
CAPEX	Capital Expenditure
CARS	Civil Aviation Regulation
CATS	Civil Aviation Technical Standards
CDSA	Chief Dawid Stuurman Airport
CoC	Certificate of Compliance
CUSS	Common Use Self Service
CUTE	Common Use Terminal Equipment
CTIA	Cape Town International Airport
CTX	Computer Tomography X-ray

ECAC	European Civil Aviation Conference
EDDS	Explosive device detection systems
EDS	Explosive detection system
HBS	Hold Baggage System
HBSS	Hold baggage security screening
ICAO	International Civil Aviation Organisation
NCASP	National Civil Aviation Security Program (NCASP)
SACCA	South African Civil Aviation Authority
KIM	Kimberly
KPA	King Phalo Airport
KSIA	King Shaka International Airport
OEM	Original Equipment Manufacturer
OGG	Out of Guage
OPEX	Operational expenditure
ORTIA	OR Tambo International Airport
TSA	Transportation Security Authority

## 1. Purpose of the RFP:

The purpose of the RFP is to solicit proposals from accredited vendors for the Design, Supply, Installation, Commissioning, Processing Capacity Testing, Project Management and 5-year Maintenance of Hold Baggage System (HBS) at ACSA Airports. and decommissioning of the existing systems. A successful vendor will be expected to have the required expertise, resources, and experience within the aviation environment to provide the highest-quality solution and service which can be tailored to the very specific needs of the nine ACSA Airports.

## 2. High-Level Overview of the Required Solution

Enterprise Security and Compliance is mandated to implement security measures that will prevent acts of unlawful interference by deploying HBS security screening detection equipment in accordance with South African Civil Aviation Authority (SACAA) standards, International Civil Aviation Organisation (ICAO) European Civil Aviation Conference (ECAC) and Transportation Security Administrations (TSA) global best practices. As part of implementing this mandate, Enterprise Security and Compliance seeks to:

- Adopt risk-based security initiatives to address evolving global threats.
- Enable focused resource mitigation risks based on advanced detection of metallic or non-metallic anomalies.
- Introduce new technology to allow focused screening on threat items that are considered most relevant in today's risk context.
- Allow ACSA to be ahead of the curve in terms of newer and more productive screening processes.
- The implementation of an efficient and effective 100% HBS system will also facilitate the implementation of the so-called "one-stop security" concept.

In 2005, the International Civil Aviation Organisation (ICAO) introduced Annex 17: Security Standard 4.5.1 stating that "Each contracting state shall establish measures to ensure that originating hold baggage is screened prior to being loaded on to an aircraft engaged in commercial air transport operations departing from a security restricted area". Standards and Recommended Practices (SARPs) made it mandatory for all bags to be subjected through screening. The requirements became effective as from 01 January 2006. In South Africa aviation legislation is embodied in the following:

- Civil Aviation Act 13 of 2009
- Civil Aviation Regulation (CARS) Part 139 – Aerodromes and Heliports
- Civil Aviation Regulation Part 140 – Safety Management
- Civil Aviation Technical Standards (CATS) – 139 and 140

HBS equipment and operating protocols are subject to SACAA approval in terms of the provisions of the National Civil Aviation Security Program (NCASP) and approved through the Airport Security Program (ASP).

Some of the technologies that enable ACSA to deliver on this mandate are:

- (a) Baggage Management System (BMS)
- (b) Common Use Terminal Equipment (CUTE)
- (c) Common Use Self Service (CUSS)
- (d) Hold Baggage Screening (HBS).
- (e) Baggage Reconciliation technology (BRS)

The hold baggage security screening (HBSS) is one of the important functions of each Airport Authority to ensure a preflight operational process. The hold baggage is the passenger's luggage that enters the luggage hold of a flight which requires to be thoroughly screened for explosives, flammables and incendiary materials or devices.

## 2 In Scope:

The following milestones are in scope for the project:

- i. Decommission the existing systems.
- ii. Design, procurement, supply, installation, commissioning, Integration, Processing Capacity, testing, handover the new solution to Operations.
- iii. Project Management
- iv. User Training
- v. Provide system support & maintenance to the new system at all ACSA airports, in line with ACSA operational service level agreement (SLA).

## 3 Business Requirements:

The Scope of work must take the following upgrading principles into account.

- a. The HBS project shall start in parallel to the immediate short-term interventions, once the best fit analysis is completed by the Vendor/Partner for all airports.
- b. Due to the complexities of upgrading ORTIA equipment, KSIA departures HBS screening equipment followed by CTIA departures HBS screening equipment will be considered the first airport (s) based on a relatively easier implementation process.
- c. The upgrade of ORTIA Terminal B departure HBS screening equipment remains priority number one with ORTIA terminal A departures HBS screening equipment remaining as priority number two.
- d. Ensure that the HBS is integrated with the baggage reconciliation system (BRS).
- e. Design and implement HBS system that is suitable to the configuration of the airport as well as to the operational requirements (baggage throughput).
- f. Re-design of the existing Baggage Handling System to accommodate the latest ECAC and / or TSA HBS equipment and screening process.
- g. Modifications to the existing baggage conveyor system to ensure correct routing into machines and adequate tracking time after screening.
- h. Integration of the HBS system controls with the baggage system controls.
- i. Provide a central screening point with requisite workstations, networking, furniture, etc.
- j. Safe installation and disposal including Department of Health certification.
- k. Supply, install, integrate, test and commission a luggage tracking system that will address the requirements of IATA resolution 753 throughout the journey of a baggage:
  - Acquisition of the bag from the passenger by the member or it agent;
  - Delivery of the bag on to the aircraft.
  - Delivery and acquisition of the bag between members or their agents when custody between carriers; and
  - Delivery of the bag to the passenger.

### 3.3.1 Local Airports

- Upgrading the HBS system to the latest ECAC and / or TSA approved standards which should result in less complexity, less operators, more space, less power consumption, more efficient operation, low maintenance and advanced security standard.
- Assessment of the best fit scenario for ACSA in terms of existing configurations and constraints of equipment.

- An immediate upgrade of all Level 3 HBS operations with new CT machines with full 3D capability and higher detection of explosives as main screening equipment. This includes the replacement of all Smiths Detection HS 100/100 out of gauge equipment used as level 3 back up with the deployment of CT machines at ORTIA, CTIA and KSIA

### 3.3.2 Local Airports

The scope of work shall include:

The replacement of all Smith HS 100/100 inline baggage screening with New CT machines with full 3D capability and higher detection of explosives as main screening equipment.

## 1. Proposed Evaluation Criteria

Tenderers will be evaluated in three phases as follows:

A 2-envelope process for the bid is recommended. This will allow price reading without opening the proposed solution envelope.

### Phase one – Mandatory Administration Requirements

- Letter of Good standing
- Acceptance of ACSA T&Cs
- Acceptance of the ACSA's insurance requirements for the project
- All Respondents to be registered on Treasury Central Supply Data Base (South African bidding entity)
- A signed agreement with the Original Equipment Manufacturer (OEM) on the OEM letterhead and signed by designated/mandated executive. The agreement must include at the minimum the following:
  - Commitment to supply HBS screening equipment,
  - Commitment to provide support and technical know-how for the successful implementation of the solution, installation, and commissioning of the equipment.
  - Commitment that equipment will be supported throughout their life cycle through availability of spares.
  - Commitment to provide an after-sale support for a period of at least 10 years and inclusive of 3yrs warranty and
  - Commitment to provide technical maintenance and operational training of ACSA staff.
  - Commitment to provide maintenance services for a period of 5 years.
  - Commitment to establish a satellite operation of the OEM in the country if it does not exist already, with the ability to provide advance troubleshooting, equipment reconditioning, trained staff, spare parts holding, and with specialised equipment such as test benches.

### Phase two – Functionality

- Demonstrate having completed/managed similar projects in the past.



- Qualifying bidders will be evaluated on the presentation of their technical and resources proposal, financial proposal and project schedule.

<b>Functionality Evaluation Summary</b>		
<b>Selection Criteria</b>	<b>Max Score</b>	<b>Min Score</b>
1. Company experience	8	4
2. Company references	4	2
3. Critical Project Resources	10	7
4. Project Management Plan	4	2
5. Specifications	8	8
6. Cost Estimate (TCO)	4	2
7. Agreement with OEM	8	8
8. Evidence of test piece Performance	10	5
9. Processing Capacity	8	4
10. Performance Guarantees	8	4
11. Certification (Machine level)	8	4
12. Decommissioning and safe Disposal of HBS Screening Equipment Experience	4	2
13. Reliability Engineering Information	4	2
14. Maintenance Information	4	2
15. Quality Assurance	4	2
16. Subject Matter Expert Assessment	4	2
<b>TOTAL</b>	<b>100</b>	<b>60</b>

Detailed breakdown of functional evaluation is under **appendix B**

***The minimum threshold for functionality is the minimum threshold set for criterion/criteria and achieve a minimum of 160 points out of 260 points for functionality for their tender to progress to the next stage. Tenderers are required to score the minimum threshold for each criterion to achieve the minimum qualifying score of 185 points as set out in the table below.***

NB: It is mandatory that a minimum threshold is achieved in each criteria description to proceed to the next evaluation phase, should the minimum threshold be not achieved in any criteria description, a supplier will not proceed further to the evaluation stage.

**Phase three – Price & BBBEE**

This phase is based on the 80/20 preference point system in terms of the Preferential Procurement Policy Framework Act, with 80 points reflecting price and 20 points reflecting BBBEE recognition. ACSA will only accept the DTI criteria as proof of BBBEE status.



**Appendix A: Functional requirements (Part of the Scope of Work)**

Technology	Requirement	Technical Specification																																
Computer Tomography (CT) for Explosive detection system (EDS) and explosive device detection systems (EDDS)	<ul style="list-style-type: none"> <li>All offered makes and models must be capable of automatically detecting presence of Explosives and Explosive Devices in the luggage irrespective of the material from which the bag is made.</li> <li>Must have high automated explosive detection capacity.</li> <li>Full 3D Volumetric Computed Tomography (CT) Imaging.</li> <li>High-resolution 3D images along with 2D and 3D organic/inorganic material discrimination.</li> <li>Must have on-screen alarm resolution protocols (OSARP) for 3D imaging to facilitate the decision making of screeners at level 2.</li> <li>Must be able to transmit real time scanned images to a centralized control room after the luggage has passed through the CT scanner detection zone (level 1)</li> <li>Capability to store images.</li> <li>Threat Image Projections [TIPs] to ensure sustained awareness and develop operator (screener).</li> <li>The machine shall have the capability of producing screener performance detection report.</li> <li>It must be capable of being networked and interoperable with standard network protocols, for the images to be remotely monitored and controlled by operators.</li> <li>Must allow Screener to make quick explosive detection decisions.</li> <li>Must be able to process bags at a high rate (more than 1500 bags per hour with 80% clearance rate)</li> <li>Must be able to reduce the false rate alarm.</li> </ul>	<p><b>EDDS – With Full 3D Capability</b></p> <table border="1"> <thead> <tr> <th data-bbox="938 499 1249 577">General Description</th> <th data-bbox="1257 499 1544 577">Minimum Requirement</th> </tr> </thead> <tbody> <tr> <td data-bbox="938 589 1249 667">Certification</td> <td data-bbox="1257 589 1544 667">TSA Certified or ECAC approved</td> </tr> <tr> <td data-bbox="938 678 1249 824">Throughput</td> <td data-bbox="1257 678 1544 824">To be selected based on the required processing capacity</td> </tr> <tr> <td data-bbox="938 835 1249 981">Conveyor Speed</td> <td data-bbox="1257 835 1544 981">To be selected based on the required processing capacity</td> </tr> <tr> <td data-bbox="938 992 1249 1149">Tunnel width</td> <td data-bbox="1257 992 1544 1149">To be selected based on existing conveyor configuration</td> </tr> <tr> <td data-bbox="938 1160 1249 1238">Maximum Conveyor Belt Load</td> <td data-bbox="1257 1160 1544 1238">200 kg (Evenly Distributed)</td> </tr> <tr> <td data-bbox="938 1249 1249 1440">System power</td> <td data-bbox="1257 1249 1544 1440">220VAC ± 10%, single phase, 50Hz or 380VAC ± 10%, three phase, 50Hz</td> </tr> <tr> <td data-bbox="938 1451 1249 1485">Tunnel width</td> <td data-bbox="1257 1451 1544 1485">1000 mm x 800 mm</td> </tr> <tr> <td data-bbox="938 1496 1249 1529">Gantry</td> <td data-bbox="1257 1496 1544 1529">Full 3D capability</td> </tr> <tr> <td data-bbox="938 1541 1249 1653">Cooling</td> <td data-bbox="1257 1541 1544 1653">Sealed oil bath with forced air/Air-conditioning</td> </tr> <tr> <td data-bbox="938 1664 1249 1731">Duty Cycle</td> <td data-bbox="1257 1664 1544 1731">100 % Automatic Start-up</td> </tr> <tr> <td data-bbox="938 1742 1249 1821">Operating temperature</td> <td data-bbox="1257 1742 1544 1821">0 to 40°C</td> </tr> <tr> <td data-bbox="938 1832 1249 1865">Relative humidity</td> <td data-bbox="1257 1832 1544 1865">5 to 95%</td> </tr> <tr> <td data-bbox="938 1877 1249 1910">Design Lifespan</td> <td data-bbox="1257 1877 1544 1910">Min 15 years</td> </tr> <tr> <td data-bbox="938 1921 1249 1955">Average ‘uptime’</td> <td data-bbox="1257 1921 1544 1955">99%</td> </tr> <tr> <td data-bbox="938 1966 1249 2033">Maximum leakage radiation</td> <td data-bbox="1257 1966 1544 2033">Less than 0.1 mR/hr</td> </tr> </tbody> </table>	General Description	Minimum Requirement	Certification	TSA Certified or ECAC approved	Throughput	To be selected based on the required processing capacity	Conveyor Speed	To be selected based on the required processing capacity	Tunnel width	To be selected based on existing conveyor configuration	Maximum Conveyor Belt Load	200 kg (Evenly Distributed)	System power	220VAC ± 10%, single phase, 50Hz or 380VAC ± 10%, three phase, 50Hz	Tunnel width	1000 mm x 800 mm	Gantry	Full 3D capability	Cooling	Sealed oil bath with forced air/Air-conditioning	Duty Cycle	100 % Automatic Start-up	Operating temperature	0 to 40°C	Relative humidity	5 to 95%	Design Lifespan	Min 15 years	Average ‘uptime’	99%	Maximum leakage radiation	Less than 0.1 mR/hr
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	<ul style="list-style-type: none"> <li>• Must have Operator Assist to either highlight area of concern or force operator interface.</li> <li>• It must be capable of being integrated with automated baggage-handling systems.</li> <li>• Must be integrated into the current baggage belt system, both in terms of system physical layout and controls.</li> <li>• Must possess upgrade capabilities to meet future detection and capacity requirements.</li> <li>• The EDS or EDDS must not cause damage or significant residual change to the baggage or its contents.</li> <li>• The machine shall be installed with security features and controls to ensure that customer data and assets are well protected from cyberattacks.</li> <li>• Should have the capability of:               <ul style="list-style-type: none"> <li>(a) Computer based training.</li> <li>(b) Recording of image data.</li> <li>(c) Recording of user ID, date, time etc.</li> <li>(d) Software version display at start- up.</li> </ul> </li> <li>• Should have a minimum of *2 zoom on any part of the image.</li> <li>• The supplier shall provide a manufacturer's machine specific standard test piece (STP) per machine.</li> <li>• Must comply with the following <b>regulatory requirements:</b> <ul style="list-style-type: none"> <li>(a) Must be in latest list of ECAC Approved equipment for Explosive detection systems with Standard 3.</li> <li>(b) TSA (latest) Qualified equipment list of Explosive detection systems for Advanced Baggage Screening.</li> <li>(c) Compliance with Radiation Safety as provided for in the Hazardous Substances Act, 1973 (Act 15 of 1973) and Regulations (No R1332 of 3 August 1973) govern the safe use of medical x-ray</li> </ul> </li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">BHS Communication Interface</td> <td style="width: 50%;">To be compatible with the existing BHS interfaces</td> </tr> <tr> <td>Protection class</td> <td>IP33</td> </tr> </table>	BHS Communication Interface	To be compatible with the existing BHS interfaces	Protection class	IP33																											
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	<p>equipment in South Africa) for radiation emitting devices and approval shall be obtained.</p> <p>(d) Must comply with international standards such as ECAC and be TSA certified as indicated above.</p> <ul style="list-style-type: none"> <li>• Must have a scanner server which shall have the following features:</li> </ul> <p>(a) Dual processors for increased computing power</p> <p>(b) High memory capacity for data scanning and image buffering</p> <p>(c) Multiple I/O, Ethernet, and system expansion slots that can support high-power graphics cards for integrating equipment controllers and peripheral devices.</p>	<table border="1"> <tr> <td data-bbox="831 315 1249 434">BHS Communication Interface</td> <td data-bbox="1254 315 1552 434">To be compatible with the existing BHS interfaces</td> </tr> <tr> <td data-bbox="831 441 1249 479">Protection class</td> <td data-bbox="1254 441 1552 479">IP33</td> </tr> </table>	BHS Communication Interface	To be compatible with the existing BHS interfaces	Protection class	IP33	
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<p>Baggage Tracking and identification System</p>	<p>a) The Baggage tracking and Identification System must be a fully automatic reading gate including all framework, scan heads with on board decoder, local network-controller and host communication to read the IATA-Barcodes on belt-conveyors or tilt-tray sorter-systems and arrival and departure carousels.</p> <p>b) Must be able to record data elements such as:</p> <ul style="list-style-type: none"> <li>• Passenger Name</li> <li>• PNR</li> <li>• Outbound flight number and date</li> <li>• Inbound flight number and date</li> <li>• Onward flight number and date</li> <li>• Security/Sequence Number</li> <li>• Tracking action/event</li> <li>• Time and date of recording</li> <li>• Station of recording</li> <li>• Recording Location/device (physical location)</li> <li>• Container ID (ULD, Trolley or Cart)</li> </ul> <p>(c) The local network-controller ought to incorporate a controller for the local CAN-Scanner network, opto-isolated</p> <p>digital I/O's, flexible HOST-Interface.</p>						



Technology	Requirement	Technical Specification
	<p>(d) The HOST-interface can be adapted to customer's specific requirements in terms of HOST-Protocol and physical interface.</p> <p>(e) The complete system consists of bar code readers, the control unit, photoelectric switches for object-trigger, cables and incremental encoder.</p> <p>(f) Must be able to register end to end baggage tracking points where custody change to record:</p> <ul style="list-style-type: none"><li>• Acceptance</li><li>• Load</li><li>• Transfers</li><li>• Arrivals</li></ul>	



Appendix B – Functionality (phase 2 of evaluation) SCORES

Functionality Evaluation Summary															
Selection Criteria	Description of Quality criteria	Max Score	Min Score												
1. Company experience	<p>Bidder must provide proof of company experience in installation and maintenance (ad hoc, preventative, and equipment recondition) of detection and screening equipment, as well as the ability to achieve planned equipment life cycle costing or forecasted annual maintenance costs and availability targets.</p> <table border="1"> <thead> <tr> <th>Component</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>Less than 3 Sites / Projects of installation</td> <td>0</td> </tr> <tr> <td>3 Sites / Projects of installation</td> <td>4</td> </tr> <tr> <td>3 Sites / Projects of installation + Maintenance (ad hoc, preventative, and equipment reconditioning or upgrades)</td> <td>8</td> </tr> </tbody> </table>	Component	Score	Less than 3 Sites / Projects of installation	0	3 Sites / Projects of installation	4	3 Sites / Projects of installation + Maintenance (ad hoc, preventative, and equipment reconditioning or upgrades)	8	8	4				
Component	Score														
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2. Company references	<p>Reference letters (clients letter head corresponding to experience in section 1 above) from three (3) contactable references for where Security Screening equipment works or projects were executed. At a minimum the reference letters must include successful implementation of the solution, realization of the design during beneficial operation without post implementation complications, implementation on time and within budget.</p> <table border="1"> <thead> <tr> <th>Component</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>&lt;3 References</td> <td>0</td> </tr> <tr> <td>3 References</td> <td>2</td> </tr> <tr> <td>&gt;3 References</td> <td>4</td> </tr> </tbody> </table>	Component	Score	<3 References	0	3 References	2	>3 References	4	4	2				
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3. Critical Project Resources	<p><b>Project Manager:</b> The project manager must have adequate experience in project management of brown fields projects and relevant experience in dealing project governance issues such as stakeholder management, risk management, issues management, project assurance, and operational interface management.</p> <p><b>I.Relevant Project management experience</b> (details and reference to be supplied on the CV)</p> <table border="1"> <thead> <tr> <th>&gt;5 years</th> <th>3 – 5 Years</th> <th>&lt;3 Years</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5</td> <td>0</td> </tr> </tbody> </table> <p><b>II.Brown fields developments: Successful project implementation with live business/infrastructure</b> (Attach project portfolio summary)</p> <table border="1"> <thead> <tr> <th>More than 2 Projects</th> <th>2 Projects</th> <th>Less than 2 Projects</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	>5 years	3 – 5 Years	<3 Years	1	0.5	0	More than 2 Projects	2 Projects	Less than 2 Projects				10	7
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More than 2 Projects	2 Projects	Less than 2 Projects													



	<table border="1" style="width: 100%;"> <tr> <td style="width: 33%;">1</td> <td style="width: 33%;">0.5</td> <td style="width: 33%;">0</td> </tr> </table> <p><b>III. Successful stakeholder management</b> (<i>sanitised stakeholder matrix /interface matrix from previous works</i>)</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;"><b>Matrix Provided</b></td> <td style="width: 50%;"><b>Matrix not Provided</b></td> </tr> <tr> <td>1</td> <td>0</td> </tr> </table> <p><b>IV. Relevant Education &amp; Qualification</b> (<i>qualification certificate to be provided</i>)</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 33%;"><b>&gt;NDip</b></td> <td style="width: 33%;"><b>NDip</b></td> <td style="width: 33%;"><b>&lt;NDip</b></td> </tr> <tr> <td>0.5</td> <td>0.2</td> <td>0</td> </tr> </table>	1	0.5	0	<b>Matrix Provided</b>	<b>Matrix not Provided</b>	1	0	<b>&gt;NDip</b>	<b>NDip</b>	<b>&lt;NDip</b>	0.5	0.2	0	
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<b>Matrix Provided</b>	<b>Matrix not Provided</b>														
1	0														
<b>&gt;NDip</b>	<b>NDip</b>	<b>&lt;NDip</b>													
0.5	0.2	0													
	<p><b>Lead Engineer:</b> The Lead engineer must have design and commissioning experience in Integrated Hold Baggage Screening Systems,</p> <p><b>I. Relevant design experience</b> (<i>details and reference to be supplied on the CV</i>)</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 33%;"><b>&gt;5 years</b></td> <td style="width: 33%;"><b>3 – 5 Years</b></td> <td style="width: 33%;"><b>&lt;3 Years</b></td> </tr> <tr> <td>1</td> <td>0.5</td> <td>0</td> </tr> </table> <p><b>II. Relevant Education and Qualification</b> (<i>qualification certificate to be provided</i>)</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 33%;"><b>&gt; BTech + Pr Tech Eng</b></td> <td style="width: 33%;"><b>BTech/BSc Eng/</b></td> <td style="width: 33%;"><b>&lt;BTech</b></td> </tr> <tr> <td>0.5</td> <td>0.2</td> <td>0</td> </tr> </table>	<b>&gt;5 years</b>	<b>3 – 5 Years</b>	<b>&lt;3 Years</b>	1	0.5	0	<b>&gt; BTech + Pr Tech Eng</b>	<b>BTech/BSc Eng/</b>	<b>&lt;BTech</b>	0.5	0.2	0		
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0.5	0.2	0													
	<p><b>Lead Technician</b> The Lead Technician must have as a minimum a National Diploma and relevant experience in doing ad-hoc maintenance, preventative maintenance, and advanced troubleshooting of security screening equipment.</p> <p><b>I. Relevant maintenance experience</b> (<i>details and reference to be supplied on the CV</i>)</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 33%;"><b>&gt;5 years</b></td> <td style="width: 33%;"><b>3 – 5 Years</b></td> <td style="width: 33%;"><b>&lt;3 Years</b></td> </tr> <tr> <td>0.5</td> <td>0.2</td> <td>0</td> </tr> </table> <p><b>II. Relevant Education</b> (<i>qualification certificate to be provided</i>)</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 33%;"><b>&gt;NDip</b></td> <td style="width: 33%;"><b>NDip</b></td> <td style="width: 33%;"><b>&lt;NDip</b></td> </tr> <tr> <td>0.5</td> <td>0.2</td> <td>0</td> </tr> </table>	<b>&gt;5 years</b>	<b>3 – 5 Years</b>	<b>&lt;3 Years</b>	0.5	0.2	0	<b>&gt;NDip</b>	<b>NDip</b>	<b>&lt;NDip</b>	0.5	0.2	0		
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<b>&gt;NDip</b>	<b>NDip</b>	<b>&lt;NDip</b>													
0.5	0.2	0													
	<p><b>Professional Engineering Services/Consultant: Structural</b> It is the responsibility of the bidder to ensure that the proposed solution is accommodated within the plot space of current equipment. Furthermore, the infrastructure integrity should not be compromised with the installation (load bearing, strength, and stability). The structural integrity assessment shall be conducted and signed-off or approval by a relevant structural/civil engineering professional.</p> <p><b>I. Civil/Structural Engineering Qualification &amp; ECSA Professional Registration</b> (<i>qualification certificate to be provided</i>)</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;"><b>&gt;BEng/ BSc Eng + Pr Eng or BTech + Pr Tech Eng</b></td> <td style="width: 50%;"><b>&lt; BTech or No Pr Eng/Pr Tech Eng</b></td> </tr> </table>	<b>&gt;BEng/ BSc Eng + Pr Eng or BTech + Pr Tech Eng</b>	<b>&lt; BTech or No Pr Eng/Pr Tech Eng</b>												
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	2	0										
	<p><b>Professional Engineering Services/Consultant: Electrical</b></p> <p>It is the responsibility of the bidder to ensure that the proposed solutions power requirements are met by tapping electrical power from the power tap-off provided by ACSA. The electrical reticulation design which also includes safe shut-off instruments and equipment and ability to switch over to back-up power in the event of grid failure shall be approved by an electrical engineering professional engineering.</p> <p><b>I. Electrical Engineering Qualification &amp; ECSA Professional Registration (qualification certificate to be provided)</b></p> <table border="1"> <tr> <td>&gt;BEng/ BSc Eng + Pr Eng or BTech + Pr Tech Eng</td> <td>&lt; BTech or No Pr Eng/Pr Tech Eng</td> </tr> <tr> <td>2</td> <td>0</td> </tr> </table>		>BEng/ BSc Eng + Pr Eng or BTech + Pr Tech Eng	< BTech or No Pr Eng/Pr Tech Eng	2	0						
>BEng/ BSc Eng + Pr Eng or BTech + Pr Tech Eng	< BTech or No Pr Eng/Pr Tech Eng											
2	0											
4. Project Management Plan	<p>The Bidder must provide a detailed project implementation project document which includes Project Execution Plan, Project Schedule, Risk Management Plan, Stakeholder Management Plan, Airport Interface Management, Work permit, and Safety Management for the contract duration of 3 years ONLY for evaluation purposes.</p> <table border="1"> <thead> <tr> <th>Component</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>No project implementation plan</td> <td>0</td> </tr> <tr> <td>Incomplete Project Implementation Plan (Without all the required details)</td> <td>2</td> </tr> <tr> <td>Project Implementation plan which includes: <ul style="list-style-type: none"> <li>• Project Execution Plan</li> <li>• Project Schedule</li> <li>• Risk Management Plan</li> <li>• Stakeholder Management Plan</li> <li>• Project Interface Management</li> <li>• Work permit and Safety Management</li> </ul> </td> <td>4</td> </tr> </tbody> </table>		Component	Score	No project implementation plan	0	Incomplete Project Implementation Plan (Without all the required details)	2	Project Implementation plan which includes: <ul style="list-style-type: none"> <li>• Project Execution Plan</li> <li>• Project Schedule</li> <li>• Risk Management Plan</li> <li>• Stakeholder Management Plan</li> <li>• Project Interface Management</li> <li>• Work permit and Safety Management</li> </ul>	4	4	2
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5. Specifications	<p>To score full points, the proof of specification must contain ALL the specification stated in Appendix A: Functional requirements above. The designs must be in line with the floor plans as provided in the appendices as well as stipulated processing rate.</p> <p>Failure to submit proof of all specifications will result in the bidder scoring 0.</p> <table border="1"> <thead> <tr> <th>Component</th> <th>Compliance with all requirements</th> <th>Non-compliance with any one of the requirements</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Component	Compliance with all requirements	Non-compliance with any one of the requirements				8	8		
Component	Compliance with all requirements	Non-compliance with any one of the requirements										



	3D capable machine	2	0		
	CTX type machines	2	0		
	BHS integration	2	0		
	IATA Compliance Requirements	2	0		
6. Cost Estimate (TCO)	<b>Component</b>	<b>Compliance with all requirements</b>	<b>Non-compliance with any one of the requirements</b>		
	Class 3 cost estimate per Appendix E (of the DR)	2	0		
	Class 2 cost estimate breakdown per Appendix E (of the DR) + Maintenance costs breakdown	3	0	4	2
	Class 1 cost estimate breakdown per Appendix E (of the DR) + Maintenance costs breakdown	4	0		
7. Agreement with OEM	<p>A signed agreement with the Original Equipment Manufacturer (OEM) on the OEM letterhead and signed by designated/mandated executive. The agreement must include the following:</p> <ul style="list-style-type: none"> <li>• Commitment to supply screening equipment, to support and technical know-how for the successful implementation of the solution, installation, and commissioning of the equipment.</li> <li>• Commitment to provide an after-sale support for a period of 15 years</li> </ul>			8	8
	<b>Component</b>	<b>Evidence Provided</b>	<b>Evidence not provided</b>		
	Supply, Installation, and Commissioning	4	0		
	After Sales Support	4	0		
8. Evidence of Test Piece Performance	<p>Evidence that all equipment has successfully performed against the test pieces and that the test pieces are accredited by ECAC and / or TSA.</p>				
	<b>Component</b>	<b>Evidence Provided</b>	<b>Evidence not provided</b>		
	3D capable machine	5	0		
	CTX type machines	5	0	10	5





<p>9. Processing Capacity</p>	<p>The bidder adequately demonstrates that the current BHS throughput will not be reduced.</p> <table border="1" data-bbox="496 315 1074 506"> <thead> <tr> <th>HBS system design capacity</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>Less</td> <td>0</td> </tr> <tr> <td>The same</td> <td>4</td> </tr> <tr> <td>More</td> <td>8</td> </tr> </tbody> </table>	HBS system design capacity	Score	Less	0	The same	4	More	8	<p>8</p>	<p>4</p>							
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<p>10. Performance Guarantees</p>	<p>The physical equipment and system performance guarantee shall be demonstrated during the reliability test run for a period of 45 days.</p> <table border="1" data-bbox="496 640 1295 1077"> <thead> <tr> <th>Component</th> <th>Provided</th> <th>Not Provided</th> </tr> </thead> <tbody> <tr> <td>Guarantee performance at the target life cycle cost.</td> <td>2</td> <td>0</td> </tr> <tr> <td>Guarantee the time design basis will not be breached for level 1 and 2</td> <td>2</td> <td>0</td> </tr> <tr> <td>Cycle time (intervals) before preventative maintenance service.</td> <td>2</td> <td>0</td> </tr> <tr> <td>Guarantee the on-line availability and reliability of the equipment over the useful lifespan.</td> <td>2</td> <td>0</td> </tr> </tbody> </table>	Component	Provided	Not Provided	Guarantee performance at the target life cycle cost.	2	0	Guarantee the time design basis will not be breached for level 1 and 2	2	0	Cycle time (intervals) before preventative maintenance service.	2	0	Guarantee the on-line availability and reliability of the equipment over the useful lifespan.	2	0	<p>8</p>	<p>4</p>
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<p>11. Certification(Machine Level)</p>	<p>The bidder must provide a valid Transport Security Administration (TSA) and / or European Civil Aviation Committee (ECAC) (On the OEM letterhead and signed by designated/mandated executive)</p> <table border="1" data-bbox="496 1245 1287 1384"> <thead> <tr> <th>Component</th> <th>Certified</th> <th>Not Certified</th> </tr> </thead> <tbody> <tr> <td>3D capable machine</td> <td>4</td> <td>0</td> </tr> <tr> <td>CTX type machine</td> <td>4</td> <td>0</td> </tr> </tbody> </table>	Component	Certified	Not Certified	3D capable machine	4	0	CTX type machine	4	0	<p>8</p>	<p>4</p>						
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3D capable machine	4	0																
CTX type machine	4	0																
<p>12. Decommissioning of Screening Equipment Experience</p>	<table border="1" data-bbox="496 1451 1283 1816"> <thead> <tr> <th>Component</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>No experience</td> <td>0</td> </tr> <tr> <td>Prior experience through self-execution or the use of the third party.</td> <td>2</td> </tr> <tr> <td>Prior experience + successful reconditioning and extension of useful life.</td> <td>3</td> </tr> <tr> <td>Prior Experience + The ability to monetise the equipment with Benefit to the disposing party (ACSA).</td> <td>4</td> </tr> </tbody> </table>	Component	Score	No experience	0	Prior experience through self-execution or the use of the third party.	2	Prior experience + successful reconditioning and extension of useful life.	3	Prior Experience + The ability to monetise the equipment with Benefit to the disposing party (ACSA).	4	<p>4</p>	<p>2</p>					
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<p>13. Reliability Engineering Information</p>	<p>The reliability engineering information shall contain the following statistics and targets as a minimum:</p> <ul style="list-style-type: none"> <li>• Mean time to repair from breakdowns</li> <li>• Mean time before failures</li> <li>• Availability</li> </ul> <table border="1" data-bbox="496 2018 1230 2054"> <thead> <tr> <th>Component</th> <th>Score</th> </tr> </thead> <tbody> </tbody> </table>	Component	Score	<p>4</p>	<p>2</p>													
Component	Score																	



	Reliability Engineering information not provided	0		
	Reliability Engineering information without required minimum information	2		
	Reliability Engineering information with minimum required information	4		
14. Maintenance Information	<p>A detailed Maintenance information pack containing the following information as a minimum shall be provided:</p> <ul style="list-style-type: none"> <li>Maintenance catalogues containing frequency of inspections and items/components to be inspected.</li> <li>Maintenance cost curve for the duration of the asset</li> <li>Maintenance cost curve that provides detail of the major components and cost items</li> </ul>		of	
			4	2
	<b>Component</b>	<b>Score</b>		
	Maintenance Information pack not provided	0		
	Maintenance Information pack without required minimum information	2		
	Maintenance Information pack with minimum required information	4		
15. Quality Assurance	<p>A detailed Quality Assurance Program shall be provided and shall contain the following as a minimum:</p> <ul style="list-style-type: none"> <li>Typical Check-sheets to be used during inspections/assessments.</li> <li>Ability to connect the quality control measure to the code of practice/Regulation.</li> </ul>			
			4	2
	<b>Component</b>	<b>Score</b>		
	Quality Assurance Program not provided	0		
	Quality Assurance Program without required minimum information	2		
	Quality Assurance with minimum required information	4		
16. Subject Matter Expert Assessment	<p>The following information shall be provided as a minimum pertaining Subject Matter Expert (SME) assessment:</p> <ul style="list-style-type: none"> <li>Sample reports/due diligence reports that will be presented to ACSA.</li> <li>Clearly showing the headline items that will be reported against</li> <li>Typical qualifications and experience of SME</li> </ul>			
			4	2
	<b>Component</b>	<b>Score</b>		
	SME Assessment information not provided	0		



	SME Assessment information without required minimum information	2		
	SME Assessment information with minimum required information	4		
<b>TOTAL</b>			100	60

\*NOTE: Machines / systems that score zero (0) for items 8 and 11 will not be assessed further.

**Appendix D – Engineering, Risk, and Technical Information (part of the technical proposed solution)**

<b>ACSA Requirement</b>	<b>Rationale for request</b>	<b>Additional Comments/Guideline to Bidders</b>
<b>D.1 Contingency planning to prevent interruption of airport operation</b>	Outline the situations that can cause business interruption during the installation of HBS equipment and mitigation there-of.	<ul style="list-style-type: none"> <li>Describe the situations/incidents that could occur during the installation and the contingency plan to prevent business interruption.</li> <li>Provide a view of how redundancy of the current system/s can be leveraged to continue operation while the new devices are being installed.</li> <li>At a minimum, contingency planning for the following should be contained in the bid: equipment damage during installation; deviations in the rigging plan; environmental occurrence; damage to building; injury to staff and/or passenger.</li> <li>ACSA further expects that the Estimated Maximum Loss (EML) of these occurrences will be covered by the insurance program of the Bidder. Bidders to confirm this.</li> </ul>
<b>D.2 Detailed environmental management plan</b>	Assessing the impact on the environment, disposal/installation and remediation plans	<ul style="list-style-type: none"> <li>This is a mandatory requirement for a project of this nature. Particularly on the matter of handling and disposal of radio-active materials. The handling of such matters will be in a live operating environment. Irrespective of whether work will be done after-hours, aspects such as isotope half-lives will need to be provided and test certificates issued on a daily basis that radio-activity is within acceptable limits</li> <li>Guidelines for handling Radio-active substances are prescribed by the Department of Health with the completion of certain forms and arrangements for inspection services and on-site presence during such work.</li> <li>ACSA expectation is that the environmental program will ensure that the equipment replacement does not negatively impact flora and fauna. ACSA environmental management commitments cannot be compromised as it would threaten our operating permits.</li> <li>Bidders to provide such a plan in their bids</li> </ul>
<b>D.3 Detailed engineering, technology and quality plans</b>	ACSA receives assessments of the suitability of the terminal infrastructure and obligations to ensure that the quality management program is executed	<ul style="list-style-type: none"> <li>ACSA expects a Class 2 cost estimate for this proposal. The level of detail for such an estimate is contained in Appendix 1.</li> <li>Engineering and structural due diligence, method statements, process and instrumentation diagrams, battery limit conditions, and assurance plan. This should be approved by a Professional Engineer.</li> <li>This is to ensure that ACSA terminal building infrastructure would not be compromised during the build program. Failing this, a work permit to perform the replacement cannot be issued.</li> </ul>



<b>ACSA Requirement</b>	<b>Rationale for request</b>	<b>Additional Comments/Guideline to Bidders</b>
<b>D.4 Plans for commissioning and decommissioning</b>	Ensuring the Airport Operations value chain functions during the program as well as assurance on technology performance without negative impact to health and airport	<ul style="list-style-type: none"> <li>The duration of the program is important for each airport to enable ACSA to alert stakeholders and provision for movement of materials to and from the staging area.</li> <li>Plans for the decommissioning and safely disposal of current equipment assets.</li> <li>Start-up, declaring beneficial operation, and reliability testing. The reliability test condition and the report will be required to provide assurance that safety and equipment deviations (if any) are manageable</li> </ul>
<b>D.5 Construction completion guarantee and reliability test program for the new installation</b>	An incomplete construction renders the airport operations value chain interrupted and/or terminal building	This is a significant installation, and an incomplete project can render the airport at risk of disruption for an extended period. In the event of a radio-active incident, there is also risk of contamination, human and environment radiation and permanent damage to high value equipment. ACSA will require this risk to be suitably covered in the Builders all risk insurance program. The underwriting technical report should consider these situations. In the event such situations are triggered, there should be clear remedy in favour of ACSA and its stakeholders that business is able to fulfil its payment obligations. Business interruption is a well-known insurance risk and ACSA has the expectation that ACS provides it with an instrument that addresses and covers such a risk.
<b>D.6 Risk management and safety plan to enable issue of works permits</b>	Risk assessment to enable suitable insurance coverage and to understand the likely occurrences plus their mitigation	<ul style="list-style-type: none"> <li>ACSA has OHS processes for construction and stakeholders. These should be adhered to and will be provided in the tender data-room.</li> <li>A risk assessment should be performed, and all risks be evaluated from a monetary perspective to enable determination of the loss events that can occur. This is crucial in determining whether the insurance claims procedure and recurrences are properly stipulated.</li> </ul>
<b>D.7 Insurance program for the replacement plus policy wording</b>	ACSA and Stakeholders are name insured. Suitable coverage and coverage areas indicated	<ul style="list-style-type: none"> <li>ACSA requires the policy wording for the Builders All Risk program and Third-Party Liability that would be project specific.</li> <li>ACSA also expects to receive a copy of the underwriting technical manuscript. This will be a submission that will form part of the work permit.</li> </ul>
<b>D.8 Maintenance Regime and Cost</b>	Determine the maintenance program and associated cost	<ul style="list-style-type: none"> <li>Provide detail of the preventative maintenance regime to be followed over the useful life of the equipment. Provide indication of cost and duration to perform such work.</li> <li>Assessment of the top 10 recurring failures on such equipment. The time taken to repair and the components replacements for such work. Provide cost estimate in each case.</li> <li>View of the maintenance team required to provide maintenance services on such equipment.</li> </ul>



ACSA Requirement	Rationale for request	Additional Comments/Guideline to Bidders
		<ul style="list-style-type: none"> <li>Training and development program plus costs to capacitate staff to maintain/operate such equipment</li> </ul>
<b>D.9 Life Cycle Costing</b>	Assess the total cost of ownership for the equipment	<ul style="list-style-type: none"> <li>Capital cost (Equipment)</li> <li>Preventative maintenance cost estimate for the duration of the useful live</li> <li>Reactive Maintenance cost estimate for the duration of the equipment</li> <li>List of critical spares and spares holding cost per site</li> <li>Establishment/Set-up costs to enable the maintenance and oversight of equipment.</li> <li>Operating overheads to enable the asset management program.</li> <li>Cost to inspection and certify equipment from time to time</li> </ul>

**APPENDIX E1: Cost Estimate Input Checklist and Maturity Matrix**

S – Specific, P – Preliminary, C - Complete	ESTIMATE CLASSIFICATION				
	CLASS 5	CLASS 4	CLASS 3	CLASS 2	CLASS 1
<b>MATURITY LEVEL OF PROJECT DEFINITION DELIVERABLES</b>	0% to 2%	1% to 15%	10% to 40%	30% to 75%	65% to 100%
<b>General Project Data</b>					
Project Scope Description	General	Preliminary	Defined	Defined	Defined
Plant Production / Facility Capacity	Assumed	Preliminary	Defined	Defined	Defined
Plant Location	General	Appropriate	Specific	Specific	Specific
Soils & Hydrology	None	Preliminary	Defined	Defined	Defined
Integrated Project Plan	None	Preliminary	Defined	Defined	Defined
Project Master Schedule	None	Preliminary	Defined	Defined	Defined
Escalation Strategy	None	Preliminary	Defined	Defined	Defined
Work Breakdown Structure	None	Preliminary	Defined	Defined	Defined
Project Code of Accounts	None	Preliminary	Defined	Defined	Defined
Contracting Strategy	Assumed	Assumed	Preliminary	Defined	Defined
<b>Engineering Deliverables</b>					
Block Flow Diagrams	S/P	P/C	C	C	C
Plot Plans		S/P	C	C	C
Process Flow Diagrams (PFD'S)		P	C	C	C
Utility Flow Diagrams (UFD's)		S/P	C	C	C

<sup>1</sup> Owner Cost Estimate Reviews, Allen C Hamilton, Final Paper ICEC, 2014



S – Specific, P – Preliminary, C - Complete	ESTIMATE CLASSIFICATION				
	CLASS 5	CLASS 4	CLASS 3	CLASS 2	CLASS 1
<b>MATURITY LEVEL OF PROJECT DEFINITION DELIVERABLES</b>	<b>0% to 2%</b>	<b>1% to 15%</b>	<b>10% to 40%</b>	<b>30% to 75%</b>	<b>65% to 100%</b>
Piping & Instrument Diagrams (P&ID's)		S/P	C	C	C
Heat & Material Balances		S/P	C	C	C
Process Equipment List		S/P	C	C	C
Utility Equipment List		S/P	C	C	C
Electrical one-line drawings		S/P	C	C	C
Specifications and Datasheets		S	P/C	C	C
General Equipment Arrangement Drawings		S	C	C	C
Spare-parts Listings			P	P	C
Mechanical Discipline Drawings			S/P	P/C	C
Electrical Discipline Drawings			S/P	P/C	C
Instrumentation/Control System Discipline Drawings			S/P	P/C	C
Civil/Structural/Site Discipline Drawings			S/P	P/C	C

**Comparison of Cost Estimate Classification Practices**

	AACE Classification Standard	ANSI Standard Z94.0	AACE Pre-1972	Association of Cost Engineers (UK) ACoStE	Norwegian Project Management Association (NPP)	American Society of Professional Estimators (ASPE)
INCREASING PROJECT DEFINITION	Class 5	Order of Magnitude Estimate -30/+50	Order of Magnitude Estimate	Order of Magnitude Estimate Class IV -30/+30	Concession Estimate Exploration Estimate Feasibility Estimate	Level 1
	Class 4	Budget Estimate -15/+30	Study Estimate	Study Estimate Class III -20/+20	Authorization Estimate	Level 2
	Class 3		Preliminary Estimate	Budget Estimate Class II -10/+10	Master Control Estimate	Level 3
	Class 2	Definitive Estimate -5/+15	Definitive Estimate	Definitive Estimate Class I -5/+5	Current Control Estimate	Level 4
	Class 1		Detailed Estimate			Level 5
						Level 6



**Estimation Classification Matrix**

<b>AACE Estimate Class</b>	<b>End Usage Typical Purpose</b>	<b>ANSI Standard Z94.0</b>
<b>Class 5</b>	<b>Concept Screening</b>	<b>Order of Magnitude (OOM) Estimate</b>
<b>Class 4</b>	<b>Study or Feasibility</b>	<b>Budget Estimate</b>
<b>Class 3</b>	<b>Budget, Authorization, or Control</b>	
<b>Class 2</b>	<b>Control or Bid</b>	<b>Definitive Estimate</b>
<b>Class 1</b>	<b>Check Estimate or Bid</b>	