Australian Government

Department of Industry, Science and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval
NMI S567

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

BCS Model BAGgate Self 'Bag-drop' Control System for Airline Baggage Weighing

submitted by   BCS New Zealand Ltd
                      Unit F, 7 Orbit Drive, Albany
                      Auckland   0632   New Zealand

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – interim certificate issued	15/06/12
1	Pattern & variant 1 approved – certificate issued	14/09/12
2	Variant 2 approved – interim certificate issued	13/09/13
3	Variant 2 approved – certificate issued	16/10/14
4	Variant 3 approved – certificate issued	13/11/15
5	Variants 4 & 5 provisional approved - interim certificate issued	3/08/18
6	Variants 4 & 5 amended (validity date) - interim certificate issued	31/10/18
7	Variants 4 & 5 amended (validity date) - interim certificate issued	31/01/19
8	Variants 4 & 5 approved – certificate issued	15/01/25

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S567' and only by persons authorised by the submittor.

Note: The approved weighing instrument to which this system is attached shall also carry its own markings and pattern approval number.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999.*

Darryl Hines
Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No S567

1.   Description of Pattern   approved on 12/06/12

A BCS model BAGgate control system (Figure 1).

The system is intended to be used for weighing of baggage as part of an airline self 'bag-drop' system. The 'bag-drop' functionality may be part of a more extensive airline check-in system, and may include functionality additional to just the weighing operations.

Note :   References to 'airline' may also be taken to refer to 'airport' or 'airport baggage system operator' as appropriate depending on the operator of the system. References to 'bag' may be taken refer to any similar single item (e.g. suitcase or box).

1.1   Applicability of the system

The system is for use with:

An Atrax C24B weighing instrument having a model OP-960 indicator (as described in variant 6 of approval NMI 6/9C/244B). This provides the weight information for the BAGgate control system.

The Atrax model C24B instrument is a Class 4 weighing instrument with a maximum capacity of 100 kg, a verification scale interval of 0.2 kg, and a minimum capacity of 2 kg.

Note: The Atrax instrument may be configured with its indicator (and additional equipment associated with the BAGgate system) located such that the OP-960 indicator is not normally visible (e.g. as shown in Figure 1(b)). Access to the OP-960 must be provided for verification.

1.2   Key Characteristics

The following are key characteristics of the pattern:

(a)   The system allows a pre-set tare value, associated with use of baggage trays (tubs) the presence of which is indicated by a radio frequency identification (RFID) tag, to be subtracted from the gross weighed value. Only baggage trays with the particular RFID identification associated with the pre-set tare may be used with the system.

   Note: The baggage trays used are nominally the same, and the system uses the same pre-set tare value for all trays. The system operator is responsible for ensuring that the pre-set tare value used is suitable to ensure correct weighing.

(b)   The net weight value determined for a bag is rounded down to the nearest multiple of 1 kg, prior to determining whether a bag exceeds the value allowed by the airline. This rounded net weight value is displayed by the instrument, and a printout of this is provided on a transaction record.

   Note: The applicable baggage weight limits are the subject of particular airline policies and are NOT covered by this approval.

(c)   The system may totalise the rounded net weight values for determining whether a baggage allowance has been exceeded. See also the note regarding item (b) above.

(d)   The system does not determine excess baggage charges, or receive payments based on the weight. Such charge determinations are made, and payments received, through other airline and related systems.

(e)   The system provides a sequence of operations intended to ensure correct measurement, including arrangements for checking of the zero condition of the weighing instrument, disabling operation of the system if the weighing instrument is not at zero prior to a transaction, and requiring manual intervention of a supervisor/attendant to zero the operator through the supervisor/attendant mode of the BAGgate system.

1.3   Additional Characteristics

(a)   The system may include arrangements for indicating oversize baggage. This approval does NOT approve any aspect of the determination of baggage size.

(b)   Applicable baggage weight limits may be updated to the instrument without requiring re-verification of the system.

(c)   The 'bag-drop' functionality may be part of a more extensive airline check-in system, and may include functionality additional to just the weighing operations (e.g. related to client identification, check-in, seat allocation, safety and security). Such functions may be provided directly by the airline baggage weighing control system console, or by other equipment interfaced to it.

(d)   The BAGgate system will not necessarily process items up to the maximum capacity of the weighing instrument to which it is connected, nor down to its minimum capacity.

(e)   The nominal supply voltage is 240 V AC.

1.4   System Hardware

The BAGgate control system is comprised of the following (see Figure 2):

Note: For items below marked (*), 'Compatible and Equivalent' equipment may be used. 'Compatible and Equivalent' refers to equipment of the same or better specifications, requiring no changes to software for satisfactory operation of the complete system including all checking facilities.

(i)   Customer interface screen

An ELO model EO12584 touch-sensitive liquid crystal display (*) which provides the interface to the system.

This screen also provides the interface ('diagnostic' screen) for the supervisor/ attendant when appropriate (access to supervisor/attendant mode is restricted by use of a specific barcode or airline employee tags).

(ii)   BAGgate system computer

A Sonar model Kino-HM551 computer (*), with UPS model AUPS-A20-R11 (*) power supply and using Microsoft Windows XP operating system running BAGgate software controls the BAGgate system and is connected to the indicator of the weighing instrument, the customer interface screen, and a networking hub (TCP/IP) which interfaces to the airlines computer system, and the RFID tag reader and the Control Box.

(iii) Control box

A control box (which may be located beneath the weighing instrument platform) is provided, and contains items such as:

- motor drives for the weighing conveyor and output conveyor system, and

- interfaces to photoelectric sensors (e.g. for intrusion protection).

(iv) Printers

A DED model NP-K204 printer (*) is provided.

The printer is used to print (as appropriate):

- a customer baggage receipt (e.g. to be used for baggage reclaim) (see Figure 3a). This receipt is not for trade use; and/or

- an excess baggage advice ticket (see Figure 3b).

The system prevents operation in case of printer errors such as out of paper conditions, and provides warning indications prior to this.

(v) Baggage tray (tub)

The system uses baggage trays, all nominally of similar weight and fitted with RFID tags. See note under item (a) of clause **1.2 Key Characteristics** above.

(vi) RFID tag reader

The system utilises an Impinj model Speedway Revolution IPJ-REV-R220-EU11M (*) RFID tag reader to determine the presence of baggage trays (tubs) on the weighing system. The antenna for the RFID tag reader is located beneath the conveyor of the weighing instrument.

(vii) Bar code scanning, RFID card reading

The system includes a number of bar code scanning devices (similar devices such as RFID card reading devices may also be used) for purposes such as reading boarding passes, baggage tags, etc.

These devices may also provide access to the supervisor/attendant mode of the system.

(viii) Optical sensors

The system utilises various sensors (e.g. optical sensors or light curtains) to aid proper operation and for security and related purposes (e.g. optical sensors related to the conveyor belt drive arrangements and to detect intrusion into secure areas of the airport).

These devices may also provide facilities such as the detection of oversize baggage (see item (a) of clause **1.3 Additional Characteristics** above).

(ix) Interface to airline computer system

The system interfaces to the airline's computer system and its databases to access passenger and flight details, store baggage information, and determine appropriate baggage limits.

1.5   Software

Software version numbers of the system software are displayed at the bottom of the 'diagnostic' screen (which is provided for use of supervisors/attendants). See Figure 4.

The main measurement related aspects of the system operation are provided in two software modules which have their own version numbers. These version numbers are "Vedaleon SSBD NMI v1.0.0.1" and BAGgate NMI v0.2.

Other aspects of the instrument operation (e.g. primarily related to airline business processes, and determination of baggage limits) are provided by other software modules. The version numbers for this latter software is also provided at the bottom of the 'diagnostic' screen (e.g. 'Vedaleon SSBD v1.0.14.1' and 'BAGgate Services v1.0.1616.1'). Version numbers 'Vedaleon SSBD v1.0.14.1' and 'BAGgate Services v1.0.1616.1' or later are acceptable.

1.6   Operation and Checking Facilities

At the appropriate time in the customer 'bag-drop' procedure, the BAGgate system requests the customer to place their baggage on the weighing platform. The baggage may either be placed directly on the weighing platform (direct bag weighing) or may be placed in a baggage tray (tub) for weighing (e.g. for items which may be problematic in the baggage transfer system).

The system is also designed to correctly handle situations in which the customer places baggage on the weighing system prior to being requested in the 'bag-drop' procedure.

Note: It is assumed that prior to the weighing procedure, the baggage will have been tagged for identification purposes, either by use of bar coded tags provided at the time of check-in (obtaining boarding pass), or by use of an RFID bag tag (provided by the airline). If the baggage has not been tagged for identification purposes, the system will detect this and request tagging accordingly.

The typical weighing ('bag drop') procedure is as follows:

- passenger scans boarding pass.

- system requests baggage to be placed on weighing conveyor either directly, or in a baggage tray (tub), dependent on the nature of the baggage.

(a)   Direct Bag Weighing

- passenger places baggage directly on the conveyor of the weighing instrument; and

- baggage weight is determined from the weighing instrument and displayed on the customer interface screen (similar to Figure 4, but without the information relating to tub detection).

(b)   Using Baggage Tray

Where the BAGgate system RFID tag reader detects that a baggage tray is being used, the weighing process is as follows:

- recalls the pre-set tare value of the baggage tray from the configuration file of the BAGgate software module referred to in clause **1.5 Software** above;

- reads the (gross) weight value from the approved weighing instrument;

- subtracts the pre-set tare value from the weight value provided from the approved weighing instrument; and

- provides a net weight value for the baggage, with suitable indication (see Figure 5).

In either case, the weight information from the weighing instrument is provided (unrounded) at the lower left of this screen.

The baggage data, including baggage weight is provided to the airline's computer system, which determines the appropriate baggage allowance for the passenger (e.g. according to ticket class, frequent flyer status, etc).

Note: The existing practice(*) in the airline industry is that baggage limits are commonly determined using values in whole kilograms only. Consequently the value determined by the weighing instrument is truncated (rounded down to a whole kilogram value). This rounded value is used by the airline's computer system for determination of baggage limits and excess baggage charges. Where a total of several baggage weights is provided (e.g. on the Excess Baggage Advice shown in Figure 3b), this is based on a summation of these truncated weight values. The system may also have provision for an additional allowance (e.g. where an additional 1 kg is accepted before a bag is considered to exceed allowable limits or before additional fees are charged).

(*)   Variant 2 relates to an alternative industry practice.

According to this determination, the airline's computer system may determine and initiate actions such as the following (and in some cases a combination of these):

- the baggage is within appropriate allowance and can be 'checked-in' (following which a baggage receipt is provided).

- the baggage is too heavy to be allowed, (or is required to be checked in using a manual system)

- the baggage is in excess of the applicable allowance

In the latter case a ticket will be printed and determination of any applicable charged, payment and processing will be carried out through other airline systems (example shown in Figure 3b).

The determination of the appropriate baggage allowance and charge is considered to be outside the scope of this certificate.

Hence only the weight values shown against checked-in items (with status "CHKD") and the "Current Bag Weight:" on the Excess Baggage Advice is considered to be approved for trade use.

Where baggage is considered to be within limits a baggage receipt showing checked baggage may also be produced – this is for baggage reclaim purposes and is not for trade use (see Figure 3a for an example).

Airline employees may be able to access special modes of the instrument (i.e. supervisor/attendant with additional functions (including a 'Zero Scale' button). An example is shown in Figure 4.

1.7   Zero

The automatic zero tracking facility of the weighing instrument shall be enabled.

In addition, the BCS BAGgate system has provision to check whether the weighing instrument is at zero as part of its sequence of operations, and periodically. Where these checks determine that the zero of the instrument is not correctly set, the system enters a non-operational state and requires the intervention of a supervisor/attendant to manually check and re-zero the instrument through the 'diagnostic' screen.

1.8   Pre-set Tare

The pre-set tare value (subtracted from the gross weight in the case of use of a baggage tray) shall have the same scale interval as the weighing instrument.

1.9   Verification Provision

The BCS BAGgate system has provision for the application of a verification mark.

1.10   Descriptive Markings

The BCS BAGgate system is marked with the following data (shown below at right):

Manufacturer's name or mark	BCS	
Model number	BAGgate	
Serial number	……...	
Maximum capacity	Max = …….. kg	(*)
Minimum capacity	Min = ……… kg	(*)
Verification scale interval	e = ………... kg	(*)
Pattern approval mark	NMI S567	
Special temperature limits	………………	(*)

These markings are in addition to markings required in the approval of the weighing instrument to which the BAGgate system is connected.

(*)   These markings shall be the same as those of the weighing instrument to which the BAGgate system is connected.

Note: The special temperature limits reflect those of the weighing instrument.

2.   Description of Variant 1   approved on 14/09/12

The system for use with an Atrax C24B weighing instrument having a model OP-960 indicator (as described in variant 6 of approval NMI 6/9C/244B), being in one of the configurations shown below.

Class	Maximum capacity	Verification scale interval	Minimum capacity
4	**100 kg**	**0.2 kg**	**2 kg**
4	150 kg	0.2 kg	2 kg
4	100 kg	0.2 kg	2 kg
4	100 kg	0.1 kg	1 kg
3	150 kg	0.2 kg	4 kg
3	100 kg	0.2 kg	4 kg
3	150 kg	0.1 kg	2 kg
3	100 kg	0.1 kg	2 kg

Note: The instrument shown in **bold** above is the pattern.

Note: The Atrax instrument may be configured with its indicator (and additional equipment associated with the BAGgate system) located such that the OP-960 indicator is not normally visible (e.g. as shown in Figure 1b). Access to the OP-960 must be provided for verification.

3.   Description of Variant 2   approved on 13/09/13

The BCS BAGgate system (the pattern or variant 1) in a version operating without Vedaleon SSBD software module.

This version facilitates operation in a 'piece rate' mode, in which airlines permit a certain number of bags per passenger provided that each bag is below a certain weight (see note below). In this 'piece rate' mode the BAGgate system is utilised to determine whether the baggage is within the weight limit – an Excess Baggage Advice (i.e. similar to that shown in Figure 3b) is not required (although a display screen advising of an overweight bag will appear). Sample Customer Interface Screens in this mode (with alternative branding) are shown in Figure 6, and a Typical Baggage Receipt is shown in Figure 7.

Note: The system includes facilities for an airline agent to manually determine acceptability of particular items (e.g. which are 'excess') and indicate this by manual intervention via an access protected 'permit' screen, such decisions are outside the scope of this approval.

The system is as described for the pattern, except that:

a)   A software module 'BCS BAGgate SSBD NMI v1.0.0.1' is used rather than the 'Vedaleon SSBD NMI v1.0.0.1' software module described for the pattern. Note that the 'BAGgate NMI v0.2' software module is still used (although it has been renamed to 'BCS BAGgate (Services) NMI v0.2').

b)   'BCS BAGgate SSBD v1.1.0.2266' software is used rather than the 'Vedalion SSBD v1.0.14.1' software mentioned for the pattern. 'BCS BAGgate Services v1.0.1616.1' software as mentioned for the pattern is also used (Version numbers 'BCS BAGgate SSBD v1.1.0.2266' and 'BCS BAGgate Services v1.0.1616.1' or later are acceptable).

c)   The weight values are displayed un-rounded (although the determination of whether baggage is within the weight limit may involve rounding down of the weight value).

This affects the description of the pattern as follows:

d)   As described for the pattern in clause **1.2   Key Characteristics** except item (b) which should be:

The net weight value determined and displayed is in accordance with the indication on the Atrax instrument (less the Tub Tare Weight if a tub is in use). Rounding down to the nearest multiple of 1 kg prior to display does not occur, however rounding down may occur in the determination of compliance with weight limits (according to the particular airline policies).

e)   As described for the pattern in clause **1.6   Operation and Checking Facilities** except the 'note' in item (b) which should be:

Note: The system may have provision for an additional allowance or rounding prior to the determination of compliance with weight limits (according to the particular airline policies).

f)   The system uses a Sonar model KINO DH610 R10 computer (*) with and operates with the Windows 7 operating system, and Zebra TTP2130 printer (*), rather than the corresponding items of the pattern.

Note: For items marked (*) above, 'Compatible and Equivalent' equipment may be used. 'Compatible and Equivalent' refers to equipment of the same or better specifications, requiring no changes to software for satisfactory operation of the complete system including all checking facilities.

4.   Description of Variant 3   approved on 13/11/15

Note: For items below marked (*), 'Compatible and Equivalent' equipment may be used. 'Compatible and Equivalent' refers to equipment of the same or better specifications, requiring no changes to software for satisfactory operation of the complete system including all checking facilities.

The BCS BAGgate system in a later version (known as BCS BAGgate ITER 4), similar to the pattern or variant 1 or 2, however the ITER 4 version:

- Operates with a 3D camera rather than the RFID tag reader described for the pattern (see 3.1 below).
- Provides a sequence which may automatically zero the instrument where small deviations from zero are detected (see 3.2 below).
- Has a capability for alternative software modules tailored to suit different airlines to be operated on one BCS BAGgate system (see 3.3 below).
- May have alternative locations for the OP-990 indicator to that shown in Figure 1(b) – See Figure 9.

A screen (Figure 8(c)) is provided which allows an operator to manually zero the instrument where necessary. (Note: Weight indications on this screen are not for trade use).

Note: For this variant, applicable software versions are:

(a)   BCS BAGgate (Services) NMI v0.2 (this is a renamed later version of the BCS BAGgate NMI v0.1 shown in Figure 4).

(b)   BCS BAGgate Services v1.1.0.6722 (this is a later version of the 'BCS BAGgate Services v1.0.0.0' shown in Figure 4. Versions v.1.0.1616.1 or later are acceptable).

(c)   Vedaleon NMI v1.0.0.1 (note that 'NMI v1.0.0.1' corresponding to this is shown on each screen of the application).

(d)   Vedaleon SSBD (version v1.0.12.4 or later versions are acceptable).

The version number for the Vedaleon SSBD software is displayed at the bottom left of the Customer Interface screens (Figures 8(a) & (b)).

The version number for the Vedaleon NMI software is displayed at the bottom right of the Customer Interface screens (Figures 8(a) & (b)).

4.1   3D Camera

A Microsoft Model Kinect 3D camera system (*) is used to detect that a baggage tray (tub) is in use (i.e. in this respect performing the role of the RFID tag reader, item 1.4(vi) as described for the pattern), and may also provide additional functionality such as:

-   Determining baggage convey-ability (e.g. providing instruction to customer to use a baggage tray or reposition baggage).

-   Detecting intrusions into the weighing area.

Where the 3D Camera system is used it is not required for the baggage trays (tubs) to be fitted with RFID tags, or for the system to be provided with an RFID tag reader. However the note under item (a) of clause **1.2 Key Characteristics** for the pattern still applies.

4.2   Automatic Zeroing Sequence

The system provides a sequence of operations intended to ensure correct measurement, including arrangements for checking of the zero condition of the weighing instrument, and re-zeroing or requesting manual intervention of a supervisor/attendant as appropriate. The system provides the ability for a scale zero command to be sent to the scale unit when a non-zero weight is detected.

Note: As described for the pattern, the automatic zero tracking facility of the weighing instrument shall be enabled.

4.3   Alternative Software Modules

The system may use alternative software modules tailored to suit different airlines on one BCS BAGgate system.

The selection of the appropriate software module may be made by the passenger (by selection from the customer interface screen, or by scanning an airline ticket).

An airline software module may operate in a way similar to that described:

(a)   For the pattern in **1.6 Operation and Checking Facilities**; or

(b)   In variant 2, i.e. a 'piece rate' mode.

Typical customer interface screens are shown in Figure 8. A typical baggage receipt is shown in Figure 7.

Note: Although customer interface screens, operation screens and baggage receipts may vary between airline software modules, it is the responsibility of BCS New Zealand Ltd to ensure that the clarity and size of information (particularly weight values), correspondence between the displayed weight value and that of the weighing instrument, and operation sequence does not differ substantially from that described or shown in this certificate.

5.   Description of Variant 4   provisionally approved on 3/08/18
                                          approved on 15/01/25

The BCS BAGgate system which is similar to the pattern and variants but in a version operating on a SITA CUSS platform which interfaces to the BCS Web Services using AEA interface layer and airline bag drop applications to share weighing data, and to retrieve passenger and flight information.

The airline application interfaces to the airline's computer system and its databases to access passenger and flight details, store baggage information, and determine appropriate baggage limits.

The system may use Air New Zealand BCS CUSS Bag Drop User application (Figure 10) and/or alternative BCS CUSS software applications tailored to suit different airlines developed by DBCS (Daifuku BCS Group) on BCS BAGgate bag drop systems deployed on the SITA CUSS environment.

An airline BCS CUSS bag drop application may operate in a way similar to that described:

(a)   For the pattern in **1.6 Operation and Checking Facilities**; or

(b)   In variant 2, i.e. a 'piece rate' mode.

5.1   Software

Software version numbers of the system software are displayed at the bottom of the 'Maintenance' screen (which is provided for use of supervisors/attendants).

For this variant, applicable software versions are:

(a)   BCS BAGgate CUSS App NMI v1.0 shown in Figure 12.

(b)   BCS BAGgate Services NMI v0.2 shown in Figure 12.

(c)   BCS BAGgate AEA App NMI v1.0 shown in Figure 12.

(d)   BCS BAGgate CUSS App (airline application) Air NZ v2.0.0 165 shown in Figure 12.

(e)   SITA CUSS (v2.0.0 1653 or later versions are acceptable).

5.2   Alternative Airline Application Software Modules

The system may use alternative BCS BAGgate CUSS App (airline application) software modules tailored to suit different airlines on one BCS BAGgate system.

Typical customer interface screen is shown in Figure 11.

The airline application software version is BCS BAGgate CUSS App WLA v2.0.0 17186 shown in Figure 13.

Note: Although customer interface screens, operation screens and baggage receipts may vary between airline software modules, it is the responsibility of BCS New Zealand Ltd to ensure that the clarity and size of information (particularly weight values), correspondence between the displayed weight value and that of the weighing instrument, and operation sequence does not differ substantially from that described or shown in this certificate.

6.   Description of Variant 5   **provisionally approved on 3/08/18**
                                              approved on 15/01/25

The system which is similar to variant 4 but may use ICM Airports Technics Qantas Self Service Bag Drop User Interface application (Figure 14) on the BCS BAGgate bag drop equipment connected to the SITA CUSS environment.

6.1   Software

Software version numbers of the system software are displayed at the bottom of the 'ICM Airline application admin' screen (which is provided for use of supervisors/attendants).

For this variant, applicable software versions are:

(a)   BDS (Bag Drop Service) v12.1s2 Rev 19476 shown in Figure 15.

(b)   ICM Airline application v11.4s1 shown in Figure 15.

(c)   NMI version v4.1a0 shown in Figure 15.

(d)   SITA CUSS (v2.0.0 1653 or later versions are acceptable).

TEST PROCEDURE No S567

The maximum permissible errors applicable are those applicable to the weighing instrument to which the BAGgate system is connected (or in Schedule 1 of the *National Trade Measurement Regulations 2009*). The weighing instrument to which the BAGgate system is connected shall be verified in accordance with any tests specified in the approval documentation for the weighing instrument, and in accordance with any relevant tests specified in the national instrument test procedures. The following are additional tests to be carried out for verification of the BAGgate system.

The use of a supervisor/attendant tag to access the 'diagnostic' screen and any keys or tools to access the indicator of the weighing instrument will be required.

1.   Check the version number of the measurement related system software, as described in the description of the pattern or variant.

2.   Check, for baggage items without use of a baggage tray (tub);

- at or close to (but above) the minimum capacity (*Min*) of the weighing instrument

- close to (but above) the minimum capacity of the weighing instrument

- close to (but below) the 'overweight' limit set by the airline for carriage of baggage (e.g. 32 kg), and

- at or close to the maximum capacity (*Max*) of the weighing instrument, that

the indication of luggage weight on the Customer Interface Screen is identical to that on the indicator of the approved weighing instrument.

3.   Check, for baggage items using a baggage tray (tub) detected by either an RFID tag or via the 3D camera;

- close to (but above) any 'underweight' limit set by the airline for carriage of baggage (or the minimum capacity of the weighing instrument if no such limit has been set), and

- close to (but below) the 'overweight' limit set by the airline for carriage of baggage (e.g. 32 kg), that

(i)   the indication of gross weight is identical to that on the indicator of the approved weighing instrument

(ii)   the calculation of net weight is arithmetically correct, i.e. gross weight – baggage tray (tub) value as displayed on the instrument = net weight, and

(iii)   the luggage weight displayed is the same as the calculated net weight.

4.   Apply version (i) or (ii) below as appropriate:

(i)   When operating in with rounding as described for the pattern & variant 1:

Check that, for the series of weighing instrument weight readings below, the unrounded indication shown on the BAGgate display, and the rounded indication shown on the BAGgate display are as shown.

Weighing Instrument Indication	Unrounded BAGgate Indication	Rounded BAGgate Indication
2.0 kg	2.00 kg	2 kg
2.1 kg *	2.10 kg	2 kg
2.2 kg	2.20 kg	2 kg
2.3 kg *	2.30 kg	2 kg
2.4 kg	2.40 kg	2 kg
2.5 kg *	2.50 kg	2 kg
2.6 kg	2.60 kg	2 kg
2.7 kg *	2.70 kg	2 kg
2.8 kg	2.80 kg	2 kg
2.9 kg *	2.90 kg	2 kg
3.0 kg	3.00 kg	3 kg

Note: Where the weighing instrument has a verification scale interval of 0.2 kg, the lines marked * above do not apply.

(ii) When operating in a 'piece rate' mode (as described in variant 2):

Check that, for five weighing instrument weight readings, the indications shown on the BAGgate display are the same as those shown on the weighing instrument.

5. Apply version (i) or (ii) below as appropriate:

(i) When operating in with rounding, as described for the pattern & variant 1:

For a sample transaction (of one piece of luggage resulting in an Excess Baggage Advice), check that when the value of the baggage weight displayed on the Customer Interface Screen is truncated (rounded down to a whole kilogram value) the resulting value is identical to the Checked Baggage weight shown on the Excess Baggage Advice.

(iii) When operating in a 'piece rate' mode (as described in variant 2):

If a baggage receipt is provided, ensure that (for a sample transaction), the value of the baggage weight shown on the baggage receipt is identical to that shown on the Customer Interface Screen.

6. Check that the automatic zero tracking facility of the weighing instrument is enabled (e.g. by slowly successively adding 10 small loads of 20 g each and ensuring that the instrument remains at zero).

FIGURE S567 – 1

(a)   The system (inserts shows dual arrangement)

(b)   Showing location of OP-960 Indicator

BCS Model BAGgate Self 'Bag-drop' Control System
for Airline Baggage Weighing

FIGURE S567 – 2

System Overview, Some Sensors/Devices Have Been Omitted
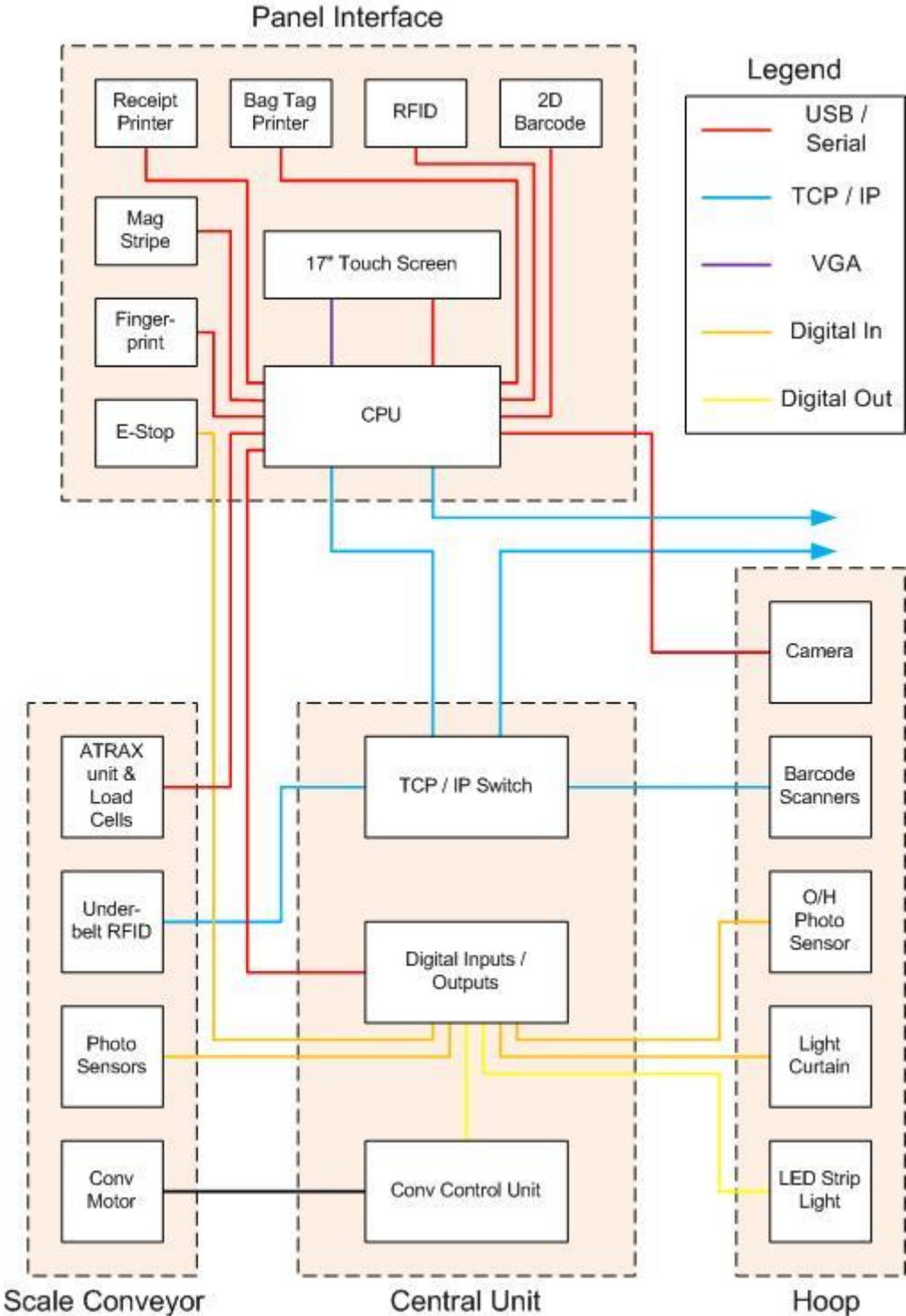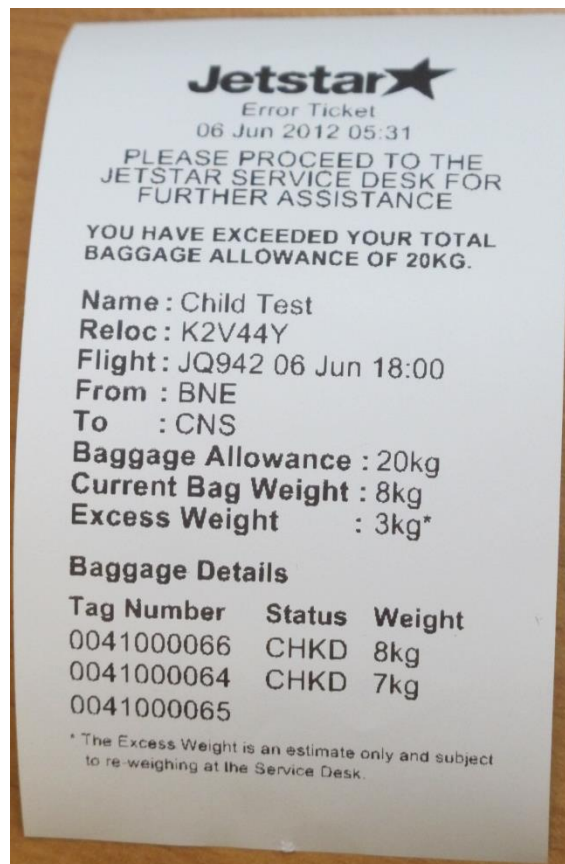

BCS Model BAGgate Self 'Bag-drop' Control System
for Airline Baggage Weighing

FIGURE S567 – 3

(a)   Sample Printout – Baggage Receipt

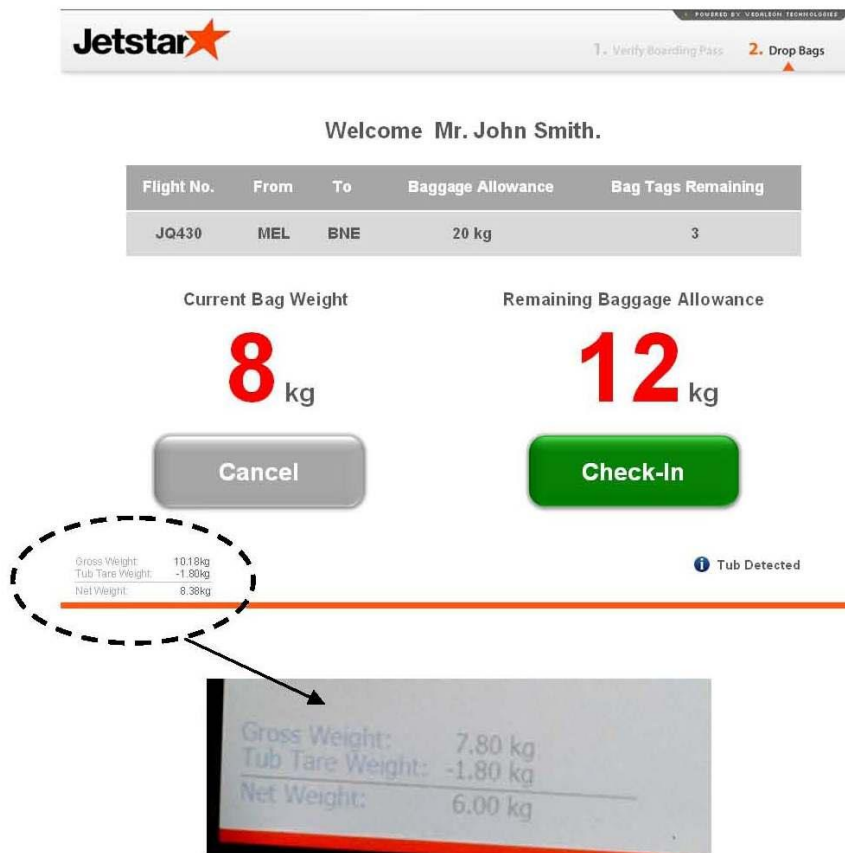(b)   Sample Printout – Excessive Baggage Advice

FIGURE S567 – 4

Software version numbers at bottom of screen

Sample Supervisor/Attendant 'Diagnostic Screen (branding may vary)

FIGURE S567 – 5

(a) 'Entry' Screen

(b) Sample Customer Interface Screen (branding may vary)
(showing deduction of Tub Tare Weight)

FIGURE S567 – 6
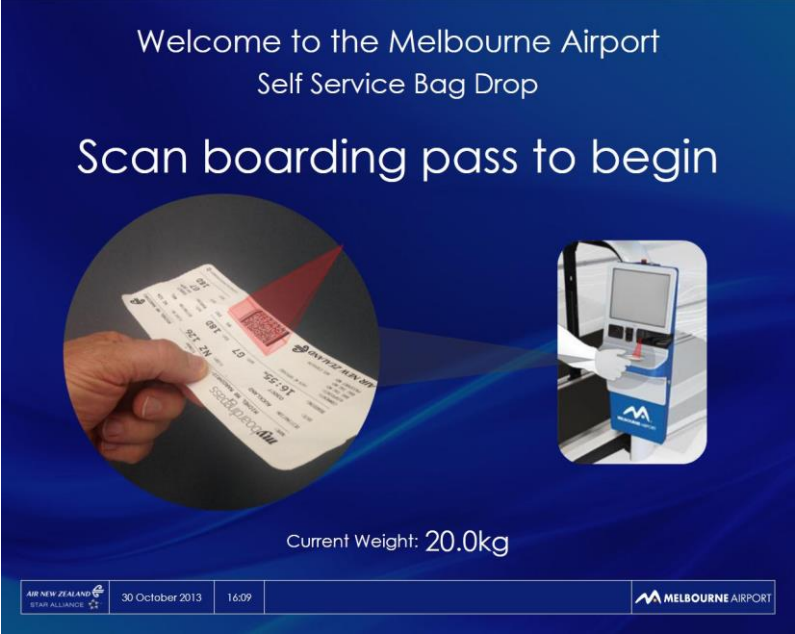
(a) 'Entry' screen

(b) Sample Customer
     Interface Screen
     (branding may vary)

(c) Typical Airline agent
    manual intervention,
    'permit' screen.

Sample Customer Interface
Screens (Variant 2)
(Note: other screens are
involved in the process)

FIGURE S567 – 7

Air New Zealand	Customer Baggage Receipt
Passenger: John Smith	Issued: 20 Aug 2013 15:59
Booking: ABC123	
Flight: NZ123 1 Jul 2013	From: MEL To: AKL
Number of Bags Accepted: 1	
Bag Tag/s: (Note bag tags with weight relate to bags accepted)	
0123456780: 0123456781: 20.0 kg	

Typical Baggage Receipt (Variant 2)

FIGURE S567 – 8

(a) 'Entry' screen

(b) Sample Customer
     Interface Screen
     (branding may vary)

Customer name

Destination
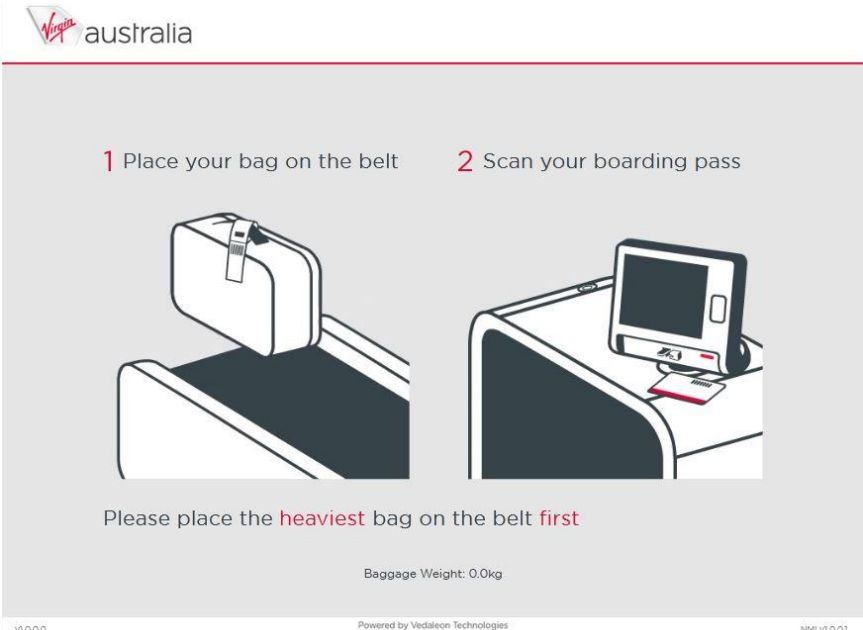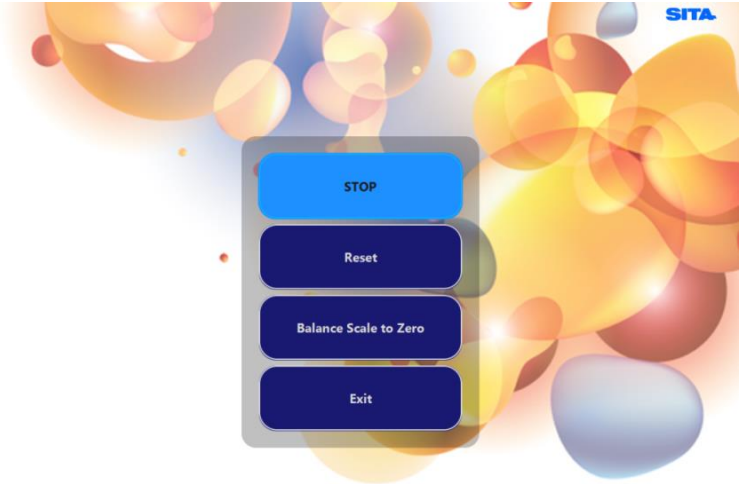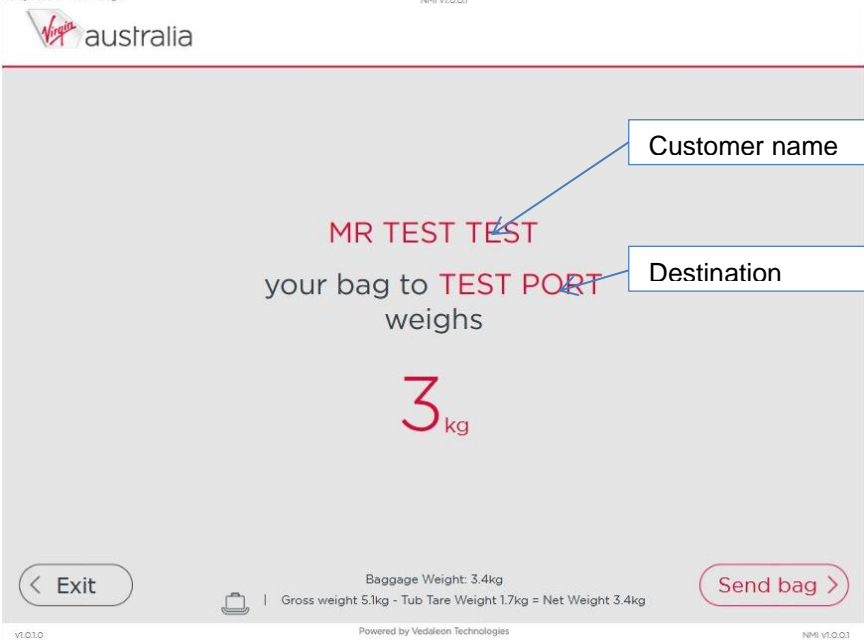
(c) Operator Screen for manual
     zeroing. [Weight values not
     for trade use].

Sample Customer Interface
Screens (Variant 3)
(Note: other screens are
involved in the process)

FIGURE S567 – 9

Hybrid Desk - Located next to operator Keyboard

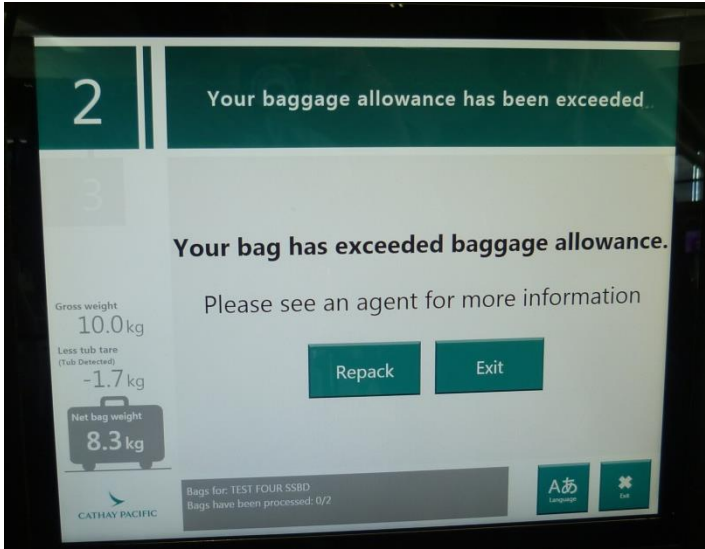

Located on hinged bracket within the Passenger Interface

Alternative locations for OP-960 indicator
(i.e. in addition to that shown in Figure 1(b))
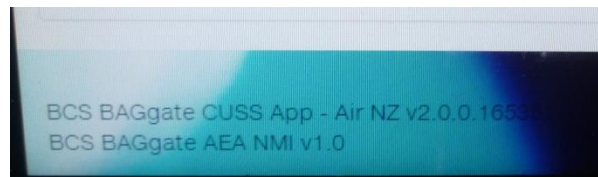
FIGURE S567 – 10
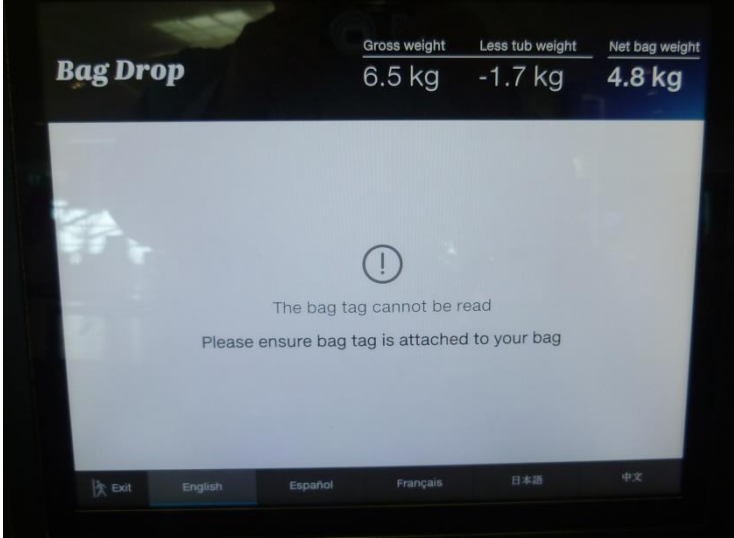
Sample Customer Interface Screen (Air New Zealand)
(showing deduction of Tub Tare Weight)

FIGURE S567 – 11

Sample Customer Interface Screen (branding may vary)
(showing deduction of Tub Tare Weight)
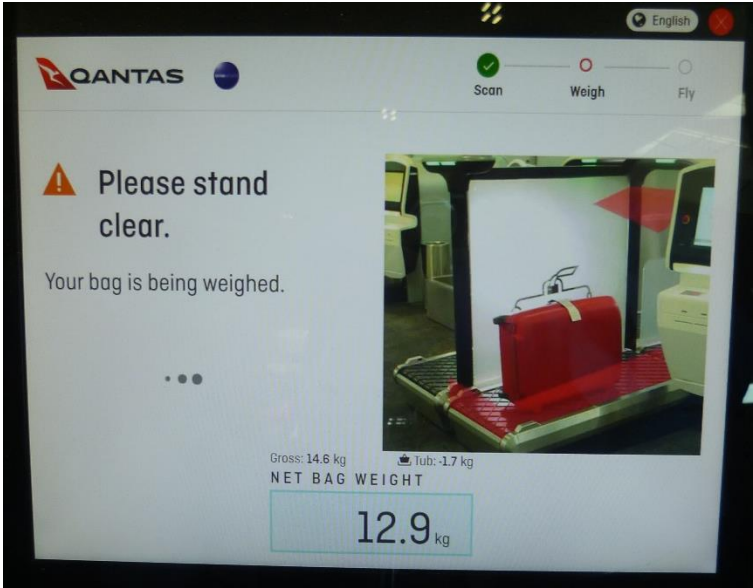
FIGURE S567 – 12

BCS System Software version numbers at bottom of screen
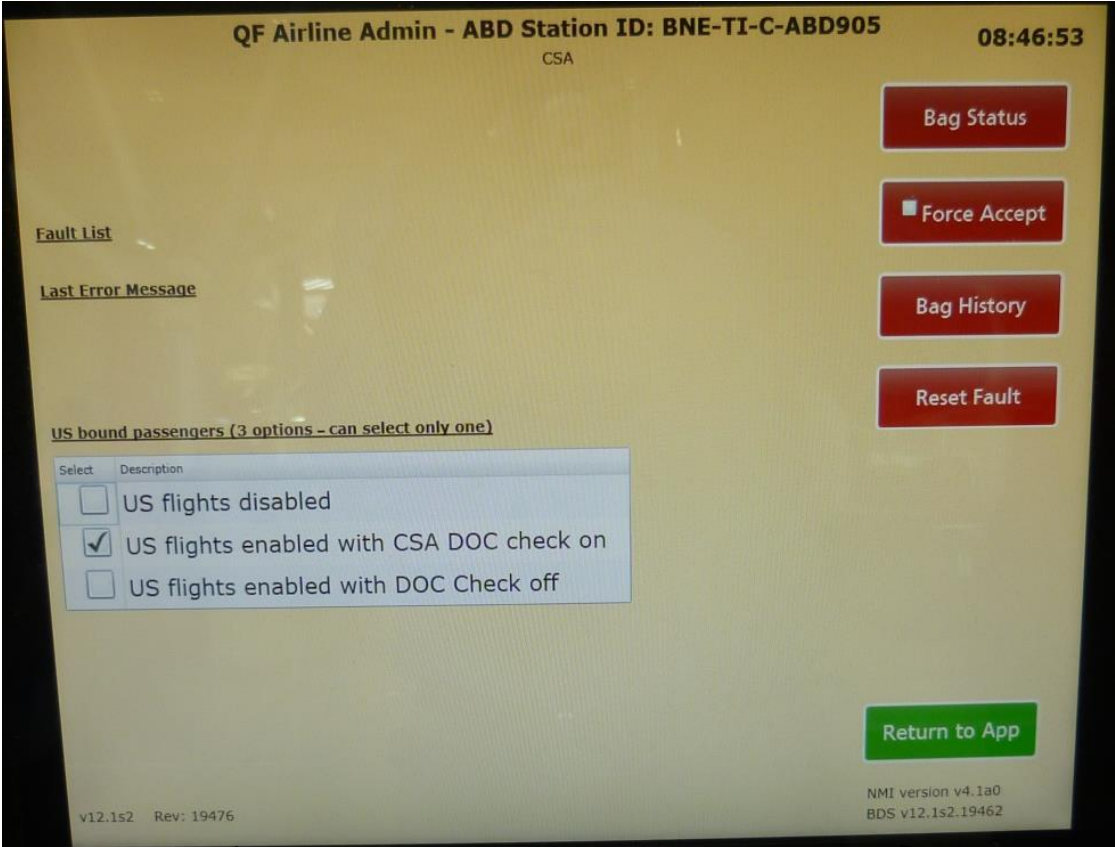
FIGURE S567 – 13

Alternative Airline Application Software version numbers

FIGURE S567 – 14

Sample Customer Interface Screen (QANTAS)
(showing deduction of Tub Tare Weight)

FIGURE S567 – 15

Software version numbers at bottom of screen

Sample Supervisor/Attendant 'Diagnostic Screen' (branding may vary)

~ End of Document ~