Memorandum

TO: Murray Breeze, Ben Smith, Emma Weston **DATE:** 11/09/2017

FROM: Julee Browning

SUBJECT: Advanced Imaging Technology (AIT) Trial Results

Good afternoon

The following report will provide an insight into the trial outcome as informed by the trial objectives and hypotheses provided by the Strategic Development Group. It should be noted that the complexity of the analysis is indicative of the questions posed by the hypotheses which in turn, demonstrates the importance of clear and concise desired outcomes for a trial such as this.

The key findings indicate that the time to process end to end through the screening process will take longer than the current state of operation. However, it should be noted that this is a different perspective to the notion of throughput. It will be important to have a clearer understanding of how the equipment is intended to be used to better inform how best to use the data and findings from this trial in any subsequent business case for equipment procurement.

It should also be noted that the application of using the simulation software of ArcPORT would greatly inform planning for deployment and this trial has resulted in significant data that would benefit informing such a simulation which in turn, would greatly benefit planning for implementation.

Feedback received from both the travelling public and staff was extremely positive and support the notion of an increase in the perception of safety through the use of the AIT approach. It is important to note, however, that in this trial environment, a lack of familiarity with the equipment, process and some application of the requirements cannot be disregarded as not having had a degree of impact on the trial findings. Nevertheless, the trial findings are robust and as empirical as possible to inform a strong business case with caution in the way in which the findings are applied to support such a case.

Best Regards

Julee Browning
National Manager: Continuous Improvement

Aviation Security Service

Kaiwhakamaru Rererangi

Will it FLY?

Briefing Paper

Advanced Imaging Technology (AIT)

Trial Report

WIF I.D. 0223

Prepared on behalf of Continuous Improvement by

George Copas,

National Lead Practitioner

Date: 08/09/17

EXECUTIVE SUMMARY

The following document has been prepared to support the work being undertaken and led by the AVSEC Strategic Development Group in determining the applicability of Advanced Imaging Technology (AIT) for the New Zealand context. This document, prepared by the Continuous Improvement (CI) team, outlines and analyses the data collected to inform and contribute to understanding answers for each hypothesis posed by the objectives of this initiative from Strategic Development Group.

Hypotheses:

a. Security Scanners will improve end to end processing time.
b. Staff are willing, able and engaged to uptake the technology.
c. An increase in staff numbers will be required in deploying AIT.
d. [redacted].
e. Passengers will report the same levels of satisfaction through WTMD [Walk-Through Metal Detector] as the Security Scanner.

A – Security Scanners will improve end to end processing time: The evidence outlined in this report refutes this hypothesis. The deployment of AIT scanners would slow average end to end processing times in most, if not all, deployment models. In trial 1, the trialled process was slower, on average, for 82% of participants. In trial 2, the trialled process was slower, on average, for 87% of participants. The full divest trial was slower for 100% of participants. A hypothetical rearrangement of process steps has been described which replicates a plug and play replacement of WTMDs with AIT scanners – this calculation also proves slower than the current system, in terms of end to end processing time. It must however be noted that a slowing of end to end processing times does not necessarily translate into a decrease in throughput. Throughput is dependent upon how many passengers we can have "in process" simultaneously. (Refer to section 2.1 and Appendix 1.)

The quality of the data collected for these trials, and the manner in which it was collected enable all possible deployment options to be effectively modelled and simulated via the ArcPORT process simulation platform.

B – Staff are willing, able and engaged to uptake the technology: The evidence outlined in this report supports this hypothesis. This result is dependent upon Wellington staff being an accurate reflection of AVSEC staff nationally. (Refer to section 2.2 of the report and Appendix 2.)

C – An increase in staff numbers will be required in deploying AIT: No evidence has been uncovered that refutes this hypothesis. Further assessment would be needed by the appropriate work group in order to fully comprehend the ramifications of this hypothesis when/if a finalised Concept of Operations (CONOPS) and deployment model is developed. (Refer to section 2.3 of the report.)

D – [redacted]: Ultimately, this is a decision for the regulator, however, evidence could be easily provided to the regulator in order to support such a recommendation. [redacted]

[redacted]

(Refer to section 2.4 of the report.)

E – Passengers will report the same levels of satisfaction through WTMD as the Security Scanner: The evidence provided suggests that passengers saw the AIT technology as preferable to the current system – the majority of passengers reported an increased perception of safety, thought AIT was good for New Zealand and gave positive responses when comparing AIT to the usual screening method. Positive responses outweighed the negative by 4:1 on the "Happy or Not" kiosk. (Refer to section 2.5 of the report and Appendix 3.)

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1.0 Introduction

The following document has been prepared to support the work being undertaken and led by the AVSEC Strategic Development Group in determining the applicability of Advanced Imaging Technology for the New Zealand context. It was agreed that a trial would be conducted at Wellington International Airport, at the domestic screening point in the Southern Pier, in the live operational environment to understand both quantitative and qualitative aspects that included measurable data captures to illustrate timeliness, customer and staff feedback for lessons learned.

This document, prepared by the CI team outlines and analyses the data collected to inform and contribute to understanding answers for each hypothesis posed by the objectives of this initiative from Strategic Development Group.

1.1 Background

The CI team worked collaboratively with the Strategic Development Group throughout the planning and development stages of the trial to ensure that both work groups had a clear understanding of both what was required and what would be produced. It was recognised by both groups, that the CI team would be well placed to provide evidence around a number of the proposed hypotheses and less well placed to provide evidence upon others. As such, CI committed to providing empirical evidence to support/refute hypotheses A, B and E from the below list and to provide observations to support/refute hypotheses C and D if pertinent information was uncovered in this process. Best efforts were applied to meet the data collection requirements in alignment with the proposed hypotheses, however, the importance of clarity of question is imperative to achieving good outcomes from data collected.

2.0 Hypotheses to be tested

The following lists a series of hypotheses developed by the Strategic Development Group representatives leading this project. A Data Collection Plan[1] was developed by the CI team to determine measurable and applicable trial parameters with a desire to provide empirical data to inform and/or contribute to answering the following, with particular emphasis on hypotheses A, B and E:

a. Security Scanners will improve end to end processing time.
b. Staff are willing, able and engaged to uptake the technology.
c. An increase in staff numbers will be required in deploying AIT.
d. [redacted]
e. Passengers will report same levels of satisfaction through WTMD as the Security Scanner.

[1] See "AIT Initiative Data Capture Timeline Planning v3" document.

2.1 Security Scanners will improve end to end processing time

Methodology: In order to provide evidence to prove/refute the above hypothesis, timings were taken of the current process as observed at the Wellington South Domestic screening point. These timings were captured using stopwatches and data capture sheets. Timings were taken of the divest process, the WTMD process and any subsequent Hand Held Metal Detector (HHMD – used interchangeably with the term wand) clearance process.

The same measurements were then taken, using the same method, during each trial. This provided timings for the divest process, the WTMD process, the security scanner process and timings for each of the four subsequent clearance processes (Wand, Wand & Targeted Pat Down, Targeted Pat Down and Full Pat Down in a booth). Wherever possible, the same staff were deployed to capture the data throughout, reducing the opportunity for variation within the measurement system.

Whilst the hypothesis refers to end to end processing time, all measurements for both the baseline and trials were stopped once the passenger had been cleared by the wand/security scanner officer. This was done deliberately so that any differences could be attributed to the differences in either divest behaviour or the equipment deployed – using a wider lens and incorporating the x-ray process in its entirety may have resulted in attribution problems and/or confounding variables.

The data does not necessarily follow the same passenger throughout all recorded processes in a linear fashion, although there may be instances of this within the data. The data was captured on a process by process basis, whereby a sample was collected on each process step separately. This methodology enables stratification of variables, allowing process differences to be visible at a greater level of granularity.

Result/Answer: The evidence outlined below refutes the hypothesis that security scanners will improve end to end processing time. The deployment of AIT scanners would slow average end to end processing times in most, if not all, deployment models. In trial 1, the trialled process was slower, on average, for 82% of participants[2]. In trial 2, the trialled process was slower, on average, for 87% of participants. The full divest trial was slower for 100% of participants. The sections below outline the differences in individual process steps. A hypothetical rearrangement of process steps has been described which replicates a plug and play replacement of WTMDs with AIT scanners – this calculation also proves slower than the current system, in terms of end to end processing time. It must however be noted that a slowing of end to end processing times does not necessarily lead to a decrease in throughput. Throughput is dependent upon how many passengers we can have "in process" simultaneously.

The quality of the data collected for these trials, and the manner in which it was collected enable all possible deployment options to be effectively modelled and simulated via the ArcPORT process simulation platform.

Notation: The results outlined above are based on the process determined by the Strategic Development Group and incorporates elements within the process that may or may not be applicable for the implementation of this or similar equipment. The impact of these potentially confounding variables does have an impact on the time to process and does not necessarily reflect a

[2] See Appendix 1 for further analysis of passenger journeys in the trialled processes.

true representation of the actual time taken for a business as usual format. Moreover, the lack of familiarity with the equipment and required process for staff, has had a direct impact on the time taken to process passengers through this trial.

Scanner vs WTMD – Part for part comparison

The baseline average for the WTMD process was 4.7 seconds whereas the average time observed (across all trials) for the scanner was 18.8 seconds. Whilst the time for the security scanner to complete a scan is very rapid, in order to do this the person being scanned must first be positioned in the required manner. Both timings followed identical operational definitions and are therefore directly comparable measurements. This data shows us that the security scanner process observed across all trials was, on average, 14.1 seconds (300%) slower than the WTMD process.

Average Scanner Time Comparisons	
Trial #	**Average Scanner Time**
1	19.8 seconds
2	17.8 seconds
Full Divest	18.4 seconds
Average	18.8 seconds

Alarm Rates Comparison

[redacted]

In the current (baseline) process, [redacted] of passengers require further processing in order to be cleared after completing the WTMD process. This further processing is primarily conducted with a HHMD (wand). The average alarm rate across trials 1 and 2 was [redacted] this relates to the number of passengers required to undergo further processing in order to be cleared after completing the security scanner process. In all the trial processes, four different methods were available to complete this subsequent clearance; targeted wand (when alarms were indicated in sensitive areas of the body), targeted pat down, a combination of targeted wand and pat down, and a full pat down (conducted in a private booth).

In the current process, all passengers are required to pass through the WTMD. In the trial processes, all passengers were still required to pass through the WTMD where upon they were selected for subsequent screening via the security scanner in two different ways. Firstly, passengers who alarmed the WTMD were selected to go through the scanner, if the scanner was available (not in use). Secondly, if the security scanner was not in use, passengers who had cleared the WTMD were

selected, at random, to go through the scanner[3]. The table below outlines the difference in alarm rates between these two selection types.

[redacted]

[redacted]

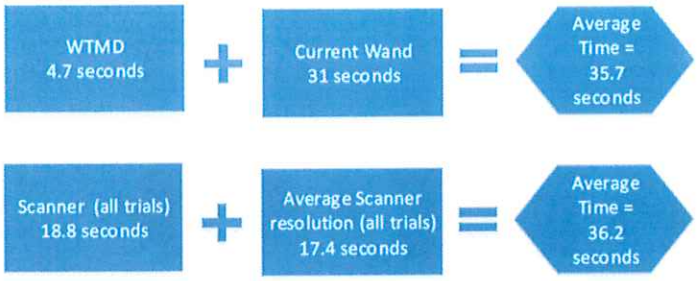
Volunteers in the full divest trial experienced a lower alarm rate when compared with other trial participants, however this must be considered alongside the considerably longer period of time they spent divesting.

Alarm Resolution Comparison

On average, the resolution for a security scanner alarm across all trials is 13.6 seconds (44%) faster than the baseline WTMD alarm resolution. An individual resolution, in isolation, was faster for scanner resolutions than WTMD resolutions. This should however, be read in conjunction with the alarm rate comparisons, [redacted] Further analysis of the four different resolution options trialled with the security scanner is available in Appendix 1.

[3] In the full divest trial, a queue comber sought out passengers willing to participate prior to screening, all volunteers in the full divest trial were selected for security scanner processing, regardless of whether or not they alarmed the WTMD.

Combined Scanner/WTMD and Resolution Comparison



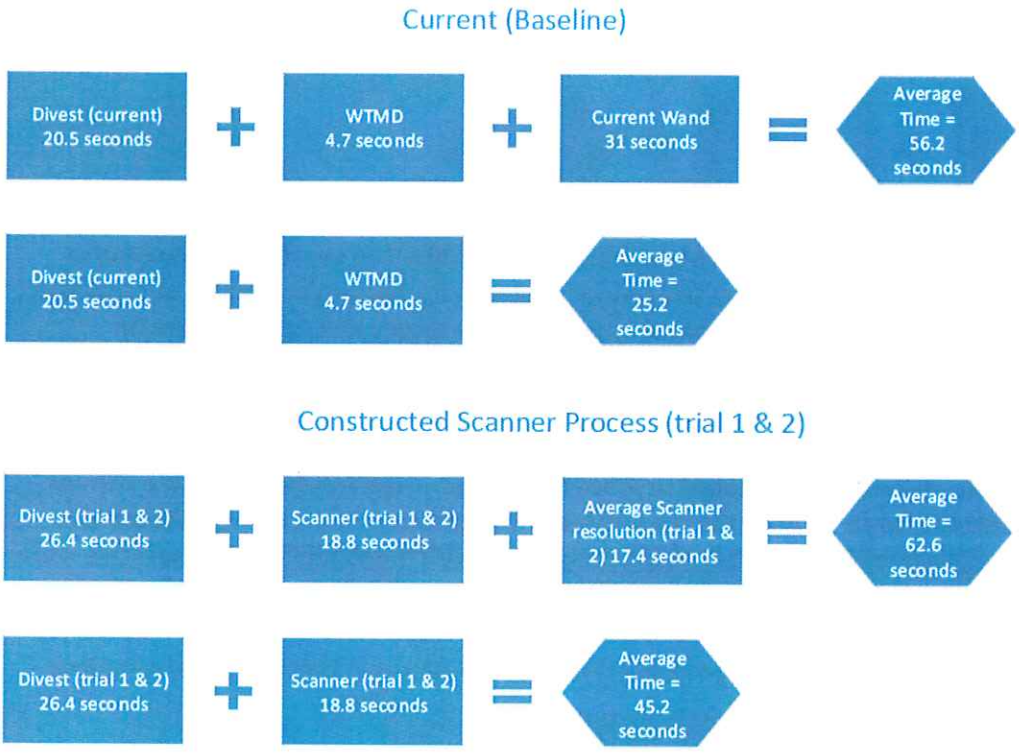
There is no real difference between the two process times when they are clumped together as above, however it must be noted that this only correlates to the passenger journeys of those that are subjected to a secondary form of personal search. These results should also be read in conjunction with the alarm rate data to assess the full impact/difference.

Impact on Divest

During the trials, passengers were asked to divest themselves of more items than in the current (baseline) process in order to minimise the number of unnecessary alarms through the security scanner. [redacted]. Passengers were asked to remove all items from their pockets and to remove outer jackets, coats and similar items of clothing. During the full divest trial, passengers were also asked to remove belts and shoes. This impacted the average time a passenger spent divesting themselves in preparation for screening.

The average time taken by passengers to divest across trial 1 and 2 was 5.9 seconds (29%) slower than the baseline. In the full divest trial the average time to divest was 36.9 seconds (180%) slower than the baseline.

Constructed Process Comparisons



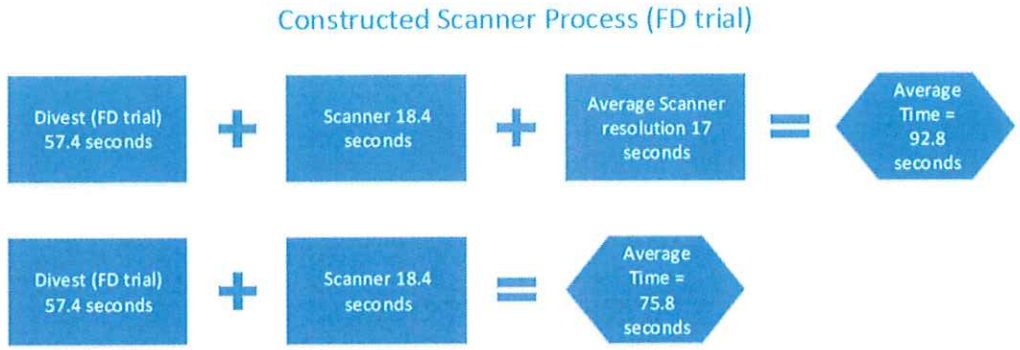
When the process steps are clumped together in the above manner, the constructed scanner process is, on average, 6.4 seconds (11%) slower than the baseline for those passengers that alarm the WTMD/Scanner. For those passengers that do not alarm the WTMD/Scanner, this constructed scanner process is, on average, 20 seconds (79%) slower than the baseline.

In the baseline process we can expect 82% of passengers to have a process time (to this point of the overall process) centring around an average time of 25.2 seconds. Whilst 18% will have a time centring around 56.2 seconds. In the constructed scanner process above, this is somewhat reversed, with 72% of passengers processed to this point in the longer average time of 62.6 seconds and 28% processed in 45.2 seconds.

If 1000 passengers were processed via each of the above processes in a linear and one at a time fashion whereby then the next person in the queue did not start to divest until the person in front of them had completed the final step of the process, then the constructed scanner process (trial 1 & 2) is 73% slower than the baseline. In the baseline process, 1000 passengers would be processed (in the above hypothetical manner[4]) in 513 minutes, whilst the constructed scanner process would take

[4] This is documented for illustrative purposes only. In reality, multiple passengers are "in process" at any given time.

886.8 minutes to process the same number[5]. If we apply this difference to our current optimal screening figure of 270 passengers per hour (per lane), the constructed scanner process above would screen 156 passengers in the same timeframe. Combining the individual process timings as above represents a 'plug and play' replacement comparison[6]. The major constraint in such a deployment model is the difference in alarm rates[7].



If the above calculations were applied to the above constructed (full divest) process, 1000 passengers would be processed in 1430.5 minutes, 179% slower than the baseline. If we apply this difference to our current optimal screening figure of 270 passengers per hour (per lane), the constructed full divest process above would screen 97 passengers in the same timeframe.

Model with least impact on end to end time:

As demonstrated above, the implementation of AIT scanners would have a negative impact on end to end processing time under most, if not all, deployment models. The model with potentially the least impact in this regard would be to deploy AIT scanners in parallel with the current WTMD technology. In this model, as deployed overseas, all passengers divest as though they will be processed via an AIT scanner, however only those passengers selected are processed by the scanner, with all others processing via WTMDs. In this model all passengers would still spend longer on average at divest (thus leading to an increased end to end processing time), however only those passengers selected for AIT scanning would be further impacted upon – in theory, leaving the WTMD process to continue unimpeded at close to 270 passengers per hour per lane. Thus, in theory, it is possible to have slower end to end processing times (as these relate to individual customers) without greatly affecting the overall throughput rate (as we can have multiple customers in process simultaneously).

[5] [redacted]

[6] This is a theoretical calculation based upon the average sub-process timings. The equipment was not trialled in this deployment sequence.

[7] These calculations are based on the staffing set-up deployed during the trials. Resource demand for scanner resolutions is driven by the alarm rate of the scanner. Deploying more staff to scanner resolutions would give different results. Various staffing deployment arrangements can be simulated via the ArcPORT platform.

Please Note: The quality of the data collected for these trials, and the manner in which it was collected enable all possible deployment options to be effectively modelled and simulated via the ArcPORT process simulation platform.

2.2 Staff are willing, able and engaged to uptake the technology

Methodology: Two methods were employed to provide evidence around this hypothesis. Firstly, staff feedback sessions were run after both trial one and trial two. These sessions were run as a facilitated discussion among those who attended, as small groups and some one on one sessions. Twenty-one staff provided feedback via this forum after trial one, with thirty-three staff providing feedback after trial two. During these sessions staff were asked the following questions:

- In your view, how does operating the AIT compare to our current process?
- Do you believe there are advantages to AIT?
- Do you believe there are disadvantages in the AIT process?
- How easy did you feel the AIT process was to operate?
- In your view, how do you think customers found the process?
- Do you see this technology as good for New Zealand?

Staff were also given the opportunity to give open feedback.

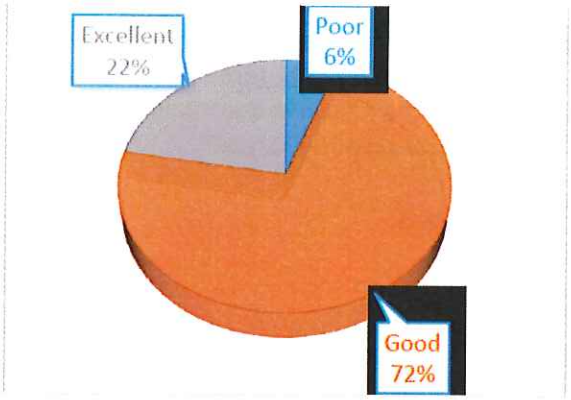
Secondly, a "Happy or Not" kiosk was placed in the staff ready room to capture anonymous feedback from staff. The kiosk asked staff to rate their experience of operating the AIT scanner in the recent trial. The kiosk was deployed for both trial one and two. Four response options were available on the kiosk - the dark green smiley face represents a very positive response to the question, light green represents a positive response, light red represents a negative response and dark red represents a very negative response.

The above approach resulted in a triangulated method involving three elements for data collection, namely: survey via kiosk, one on one interviews and focus groups. This approach ensured that an in-depth and rich data and verbatim commentary was solicited to uncover and understand the meaning given to survey answers which in turn, identified themes and trends from within the feedback.

Result/Answer: The evidence listed below supports the hypothesis that staff are willing, able and engaged to uptake the technology. However, this result is dependent upon Wellington staff being an accurate reflection of AVSEC staff nationally. (Refer to Appendix 2 for verbatim commentary from staff.)

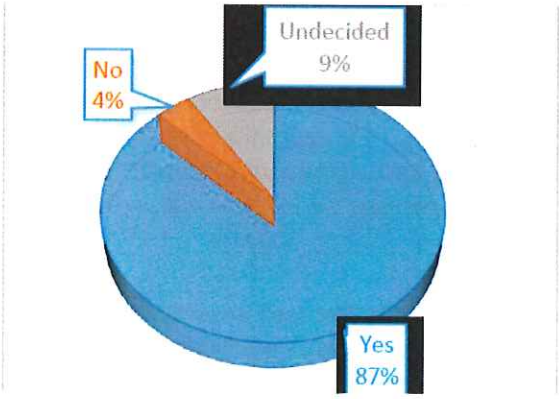
Staff Feedback Session Responses:

In your view, how does operating the AIT compare to our current process?



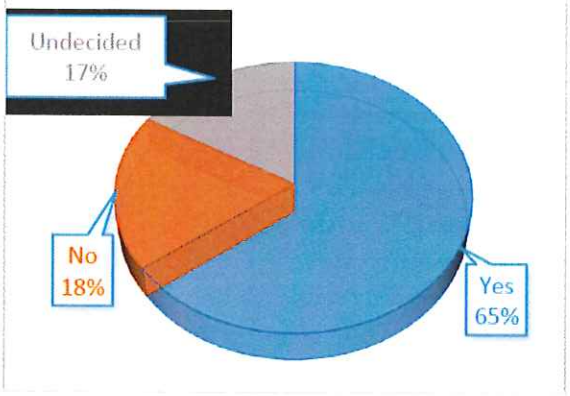
94% of staff viewed the AIT process positively when compared with our current process. The highest response category was "Good" with 72%.

Do you believe there are advantages in the AIT approach?



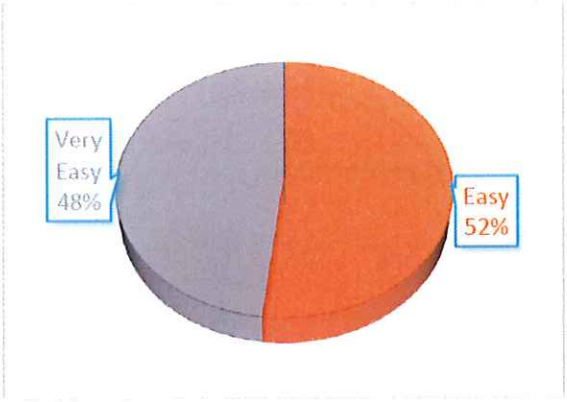
87% of respondents believed that there are advantages in the AIT approach.

Do you believe there are disadvantages in the AIT approach?



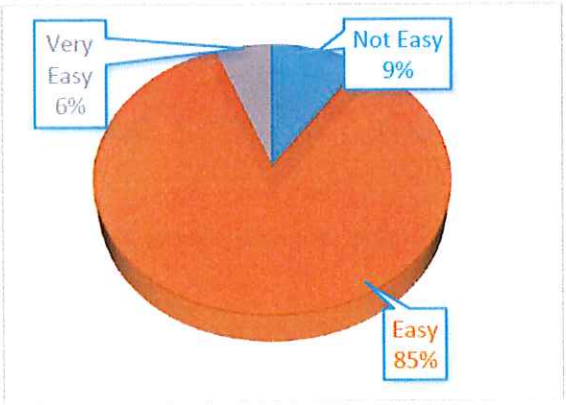
65% of respondents believed that there are disadvantages in the AIT approach.

How easy did you feel the AIT process was to operate?



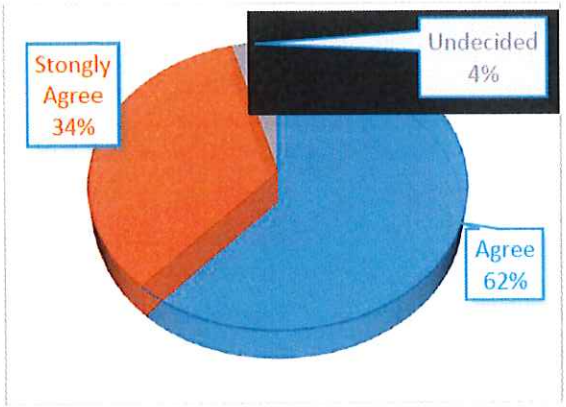
100% of respondents felt that the AIT process was either easy or very easy to operate. No respondents rated the process as 'Not Easy'.

In your view, how do you think customers found the process?



91% of staff respondents felt that customers found the process either easy or very easy.

Do you see this technology as good for New Zealand?



96% of respondents either agreed or strongly agreed that AIT is good for New Zealand.

Happy or Not Kiosks – Staff

Trial 1

Please rate your experience of operating the AIT in the recent trial

From a total of 118 responses, 51% rated very positive. Overall the positive response outweighed the negative 63% to 37%.

Trial 2

Please rate your experience of operating the AIT in the recent trial

From a total of 57 responses, 68% rated very positive. Overall the positive response outweighed the negative 70% to 30%.

A total of 175 response were captured by the kiosks across both trials. Of these responses 100 (57%) were very positive, 15 (9%) positive, 10 (6%) negative and 50 (29%) very negative. Overall, the positive responses outweighed the negative 66% to 34% or approximately 2 to 1.

2.3 An increase in staff numbers will be required in deploying AIT

Methodology: The information gathered does not empirically inform an answer to this hypothesis based on the parameters of the trial determined by the Strategic Development Group, the CI team is not in a position to offer data or a view based on a quantifiable answer. This hypothesis falls outside of the scope of the CI team's data collection role. However, from an observational viewpoint, the following provides some insight in to, and may contribute to, the opinion and conclusions of the Strategic Development Group regarding this element.

Result/Answer: No evidence has been uncovered that refutes this hypothesis**.** Further assessment would be needed by the appropriate work group in order to fully comprehend the ramifications of this hypothesis when/if a finalised CONOPS was developed.

Commentary: The staffing numbers required to deploy AIT are dependent upon the CONOPS deployed – for instance, whether there is one AIT scanner per throat, one per lane, or some other arrangement. It is also dependent upon whether AIT scanners are deployed as the primary, secondary or parallel clearance mechanism.
If AIT scanners were deployed with the same CONOPS as the trial conditions then this would undoubtedly lead to an increase in staff positions on a lane. In the current (baseline) state there are four staff positions per lane (not including the supervisor)[8]. In the trial conditions, there were 5 staff positions on the trial lane (not including the supervisor).

Regardless of the deployment model, it is likely that the addition of AIT scanners would lead to an increase in staff positions at screening points. How these additional positions translate into FTE could be calculated by the appropriate work group once the deployment model was determined. There is likely to be a correlation between the number of staff deployed to clear scanner alarms and throughput rates as scanner resolution demand is driven by the alarm rate of the scanner.

[8] In a domestic screening set-up; load, wand and 2 x screeners.

2.4 [redacted]

Methodology: The information gathered does not empirically inform an answer to this hypothesis based on the parameters of the trial determined by the Strategic Development Group, the CI team is not in a position to offer data or a view based on a quantifiable answer. This hypothesis falls outside of the scope of the CI team's data collection role. However, from an observational viewpoint, the following provides some insight in to, and may contribute to, the opinion and conclusions of the Strategic Development Group regarding this element.

Result/Answer: Ultimately, this is a decision for the regulator, however, evidence could be easily provided to the regulator in order to support such a recommendation.

Commentary: [redacted]

2.5 Passengers will report the same levels of satisfaction through WTMD as the Security Scanner

Methodology: Two methods were employed to provide evidence around this hypothesis. Firstly, a staff member was deployed to conduct passenger survey questionnaires during the data capture periods of both trials. Participants were asked the following questions:

- Has your experience in this trial today increased your perception of safety?
- Do you see this technology as good for New Zealand?
- How does your experience in this trial today compare to the usual screening method you experience?

Participants were also given the opportunity to provide further comment if they so wished. In trial one, 122 surveys were completed. In trial two, 99 surveys were completed – providing a total sample of 221 surveys across both trials.

Secondly, a "Happy or Not" kiosk was deployed at the screening point during both trials. The kiosk asked passengers to rate their experience using the following question, "Does the use of body scanners increase your perception of safety?" Four response options were available on the kiosk - the dark green smiley face represents a very positive response to the question, light green represents a positive response, light red represents a negative response and dark red represents a very negative response.

This bi-lateral information gathering method involved two elements for data collection, namely: survey via kiosk and one on one interviews. This approach ensured that an in-depth and rich data and verbatim commentary was solicited to uncover and understand the meaning given to survey answers which in turn, identified themes and trends from within the feedback.

Result/Answer: The evidence provided below suggests that passengers saw the AIT technology as preferable to the current system – the majority of passengers reported an increased perception of safety, thought AIT was good for New Zealand and gave positive responses when comparing AIT to the usual screening method. Positive responses outweighed the negative by 4:1 on the "Happy or Not" kiosk. (Refer to Appendix 3 for verbatim commentary.)

Passenger Survey Questionnaire Responses:

Demographic Data:

82% of customers involved in the survey questionnaire self-identified as being regular flyers (those who flew at least monthly).

- Female: 48%
- Male: 52%
- 20-30 years: 20%
- 31 – 40 years: 23%
- 41 – 50 years: 16%
- 51+ years: 41%

Has your experience in this trial today increased your perception of safety?

Rating	Trial 1	Trial 2	Overall
Disagree	4.2%	27.3%	23%
Agree	75%	52.5%	57%
Strongly Agree	0	0	0
Undecided	20.8%	20.2%	20%

Do you see this technology as good for New Zealand?

Rating	Trial 1	Trial 2	Overall
Disagree	5%	6.1%	5%
Agree	67.8%	71.4%	69%
Strongly Agree	16.5%	4.1%	11%
Undecided	10.7%	18.4%	14%

How has your experience in this trial today compare to the usual screening method you experience?

Rating	Trial 1	Trial 2	Overall
Very Good	25.8%	6.1%	17%
Good	48.3%	46.9%	48%
Acceptable	24.2%	42.9%	33%
Poor	1.7%	4.1%	3%

A Summary of Additional Passengers Comments[9]:

- Positive 72%
- Negative 16%

[9] Complete passenger feedback available in Appendix 2.

- Neutral 12%

Happy or Not Kiosks – Passengers

Trial 1

Does the use of body scanners increase your perception of safety?

From a total of 939 responses, 57% rated very positive. Overall the positive response outweighed the negative 78% to 22%.

Trial 2

Does the use of body scanners increase your perception of safety?

From a total of 302 responses, 77% rated very positive. Overall the positive response outweighed the negative 87% to 13%.

A total of 1241 response were captured by the kiosks across both trials. Of these responses 767 (62%) were very positive, 230 (19%) positive, 88 (7%) negative and 156 (13%) very negative. Overall, the positive responses outweighed the negative 80% to 20% or 4 to 1.

Summary Key Findings

The deployment of AIT scanners would slow average end to end processing times in most, if not all, deployment models. It must however be noted that a slowing of end to end processing times does not necessarily translate into a decrease in throughput. Throughput is dependent upon how many passengers we can have "in process" simultaneously. (Refer to section 2.1 and Appendix 1.)

The quality of the data collected for these trials, and the manner in which it was collected enable all possible deployment options to be effectively modelled and simulated via the ArcPORT process simulation platform once this option is available in the near future.

Staff are willing, able and engaged to uptake the technology: This result is dependent upon Wellington staff being an accurate reflection of AVSEC staff nationally. (Refer to section 2.2 of the report and Appendix 2.)

An increase in staff numbers will most likely be required in deploying AIT: Further assessment would be needed by the appropriate work group in order to fully comprehend the ramifications of this hypothesis when/if a finalised CONOPS and deployment model is developed. (Refer to section 2.3 of the report.)

[redacted]. This may go some way to offsetting any additional staffing requirements necessitated by the introduction of AIT. [redacted]. (Refer to section 2.4 of the report.)

Evidence suggests that passengers saw the AIT technology as preferable to the current system – the majority of passengers reported an increased perception of safety, and perceived that AIT was good for New Zealand and gave positive responses when comparing AIT to the usual screening method. Positive responses outweighed the negative by 4:1 on the "Happy or Not" kiosk. (Refer to section 2.5 of the report and Appendix 3.)

Conclusion

A wealth of quality data was collected over the course of the AIT trials in order to support the work being undertaken and led by the AVSEC Strategic Development Group in determining the applicability of AIT for the New Zealand context. This report contributes to the organisations understanding of both quantitative and qualitative considerations of any future AIT deployment.

The quality of the data collected for these trials, and the manner in which it was collected enable all possible deployment options to be effectively modelled and simulated via the ArcPORT process simulation platform to better inform deployment decision. Such simulation would enable robust and empirical decision making around the ramifications of all options. However, whilst the software is operational, the expertise to facilitate is not currently available. This is a consideration in relation to time-frame to contribute – nevertheless, this approach would greatly inform an implementation plan.