30 September 2011

Ms Karly Pidgeon
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Office of Transport Security
Karly.Pidgeon@infrastructure.gov.au

cc. Mr Andrew Solomon
A/g Assistant Commissioner, Operations
Office of the Australian Privacy Commissioner
Andrew.Solomon@privacy.gov.au

Dear Ms Pidgeon

Re: Body Scanners – Response to the PIA Report Consultation Draft

We refer to our previous correspondence on this matter, and to the PIA Report Consultation Draft, dated August 2011.

We attach our joint response to the document.

The detailed mitigation measures demonstrate assimilation of, and effective response to, some of the concerns expressed by civil society organisations during 2008-10.

However, as explained in sections 3 and 4 of our response:

- no justification has been provided for introducing the measure; and
- the PIA Report and the briefings have included unclear, inconsistent and contradictory statements relating to important aspects of the matter.

If your Office intends to continue with the proposal, then we submit that your Office needs to :

- address the deficiencies identified in this response;
- move to the next round of consultation on the PIA; and
- make no further commitment to implementation until those steps have been taken.

Yours sincerely

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APF and the Four CCLs

Response to the PIA Report on Body Scanning

30 September 2011

EXECUTIVE SUMMARY

The Consultation Draft of the PIA Report of August 2011 demonstrates assimilation of and response to some of the concerns expressed by civil society organisations during 2008-10. More specifically, some of the detailed mitigation measures that are now intrinsic to the Proposal go some way towards balancing the privacy and air transport security interests.

However, there are serious deficiencies in the current version of the PIA Report. In addition, a number of specific points require clarification. Depending on the further information provided, additional privacy concerns may arise.

The most serious issues that need to be addressed are as follows:

(1) **no justification** for the proposal has been provided. Clear statements are necessary that declare:
- the problem(s) being addressed
- how the proposed measure addresses the problem(s)
- how the anticipated benefits will arise
- the measure's effectiveness in addressing the problem(s)

(2) **no quality assurance information** has been provided. Evidence must be provided from existing applications of the technology and from the current trials. In addition, responses are necessary to the substantial evidence that the technology is seriously inadequate

(3) **no adequate description of the operational procedures** has been provided. A PIA cannot be completed until information has been made available, and assimilated, about such critical issues as the trigger for an individual to be subject to a body-scanning demand, the main flow, the exceptional flows, and the controls

(4) the lack of detail about operational procedures extends to the critical questions of **special circumstances, and persons refusing to undergo a body scan**

(5) **the catalogue of privacy issues** identified in the Report omits multiple key concerns that have been previously expressed to OTS

(6) more detail is needed in relation to **the communication strategy**

(7) the proposal lacks the critical feature of a transparent, credible and effective **complaints-handling** scheme, including a line of appeal to an independent body

The APF and the CCLs welcome the progress made, but the PIA process is incomplete.

If the OTS intends to proceed with the initiative, detailed information needs to be provided first, as indicated by the list above and spelled out in greater detail in the body of this Submission.

A further round of consultation is essential, as soon as practicable, and in any case prior to any further commitment to implementation.

APF and the Four CCLs

Response to the PIA Report on Body Scanning

30 September 2011

1. Introduction

A long series of announcements have been made by the Minister for Infrastructure and the Office of Transport Security (OTS), declaring the intention to install additional body-scanning equipment at international airport departure-points.

A roundtable was held in September 2010, at which civil society organisations were able to express their concerns. The event included a commitment to conduct a Privacy Impact Assessment (PIA).

A submission was provided at that time by the Australian Privacy Foundation (APF) and the Council for Civil Liberties organisations (the CCLs), on the specific needs of the PIA process. The submission is included at Appendix 1.

A Consultation Draft of the PIA Report was published in August 2011, at:
http://travelsecure.infrastructure.gov.au/POC/

A second roundtable was held in September 2011, with the agenda published at:
http://www.privacy.org.au/Papers/BodyScanning-110921-Agenda.pdf

This document is a submission to OTS in response to the Consultation Draft.

This Submission applies solely to the Proposal as identified in the document and somewhat expanded upon during the September 2011 Roundtable. Any material variation from the Proposal as declared in the Consultation Draft would invalidate the PIA and require it to be at least re-visited, or a further PIA performed.

2. The Proposal

2.1 The Scope of the Initiative

The declared scope of the Proposal under consideration and of the PIA is "external [millimetre-wave] body scanners at departure points at Australian international airports" (p. 6).

The scope of the consultations emphatically did not encompass any other technology – such as X-ray / back-scatter. **Any proposal to implement any technology other than millimetre-wave scanners would require the conduct of a new PIA**. The work undertaken during the current process would of course be relevant; but it would certainly not be sufficient.

2.2 The Technology

The Proposal is to apply 'millimetre-wave technology', including 'Automatic Threat Recognition' (ATR) software:

- "[M]illimetre-wave technology ... uses non-ionizing radio frequency energy in the millimetre wave spectrum to generate a representation based on the energy reflected from the body. Millimetre-wave body scanners used for aviation security screening operate at very low power levels within the radio frequency spectrum. The energy projected by millimetre-wave body scanners is 10,000 times less than a mobile phone transmission" (p. 21)
- "Automatic Threat Recognition (ATR) is a privacy enhancement technology that is applied to body scanners as a method of addressing the privacy concerns raised by the travelling public worldwide. ATR software eliminates the need for a human operator to look at 'raw'

images and instead generates a generic ‘stick figure’ image. The fixed generic ‘stick figure’ image is a permanent feature on the alarm screen and any potential targets are mapped on it with coloured ‘marks’ or ‘boxes’. The body scanner collects a numeric representation of the subject and an algorithm is then applied to this representation" (p. 28-29)

- "Body scanners to be installed at Australia’s eight international gateway airports will be fitted with ATR ... [whose] software generates a ‘threat box’ over a generic ‘stick figure’ image to indicate the location of the potential prohibited items so that a screening officer can work with the passenger to resolve these areas of concern. They will not produce ‘raw’ images nor will they be able to store data so no images can be reconstructed" (p. 22)
- "The Government intends that all body scanners used in Australia will utilise ATR technology, for both the proof of concept activity and implementation" (p. 25)

We understand OTS to have provided the following undertakings:

- **the technology it proposes to deploy does not involve ionising radiation**
- **no image of the individual will be displayed**
- **no data will be retained that would enable re-construction of the display or of an image**

If any of those undertakings were to be breached, any consensus emerging from the PIA process would be invalidated and the process would need to be resumed.

2.3 The Procedure

Very little information has been provided about the procedure to be used.

It was evident during the Roundtable that:

- there may be considerable differences in procedures in the dozen locations involved
- OTS does not yet have a clear idea of what requirements it will communicate to airports

As regards current procedures:

- a description is provided on pp. 18-19
- the Screening Practice Guidelines are here: http://www.infrastructure.gov.au/transport/security/aviation/screening/guidelines.aspx

The current Guidance is vague, however, and appears to provide no information relating to, for example, people with a stoma / colostomy pouch, and it appears to contain only a single vague mention of prostheses.

"Body scanners will be used in a similar way to existing walk-through metal detectors. The scanning experience will differ little from the current walk-through metal detector procedures, other than the requirement for passengers to stand still for a few seconds for the scan. One type of body scanner which may be used requires a passenger to rotate on the spot" (p. 21).

"[During the POC trial,] Passengers will be asked to step into the body scanner and stand with their legs approximately 50cm (shoulder width) apart with their hands raised above their head and remain still for a approximately two seconds while the scanner obtains and analyses the data. Following the instruction from the screening officer, the passenger will then exit the body scanner" (p. 26).

The Draft PIA Report failed to declare that the person's gender has to be indicated to the scanner prior to the computation being performed. Participants sought and received confirmation that this was the case. This has privacy implications.

The contention that the procedure is 'similar to present procedures' is unsustainable. Differences include the following:

- each person is required to stop
- someone has to make a decision as to which gender to indicate to the scanner
- the person is required to adopt a particular position
- for various categories of people, that position may be physically difficult, or embarrassing
- the person may be required to move in designated ways
- the person is required to wait until instructed to carry on through the exit door
- the person is aware that a representation is produced rather than just a green or red light

The PIA is incomplete. If the initiative were to proceed, **detailed information needs to be provided** in relation to the following, **and a further round of consultation is essential**:

- queuing arrangements for security channels
- the trigger(s) for an individual being subject to body-scanning
- the main flow of the procedure
- the flows intended for each exceptional circumstance
- the design and implementation of controls

3. The Justification Provided

Measures that have a negative impact on privacy must be justified. Justification comprises:

- a statement of the problem(s) being addressed
- a statement as to how the proposed measure addresses the problem(s)
- a systemic explanation of how the anticipated benefit will arise
- an evaluation of the measure's effectiveness in addressing the problem(s)
- the identification and evaluation of alternative measures that may be effective and that would be less privacy-invasive
- an assessment of design features and complementary measures that mitigate the negative privacy impacts

Appendix 2 lists the information found in the Consultation Draft that appears to be relevant.

No clear statements have been provided about:

- **the problem(s) being addressed**.
  By inference, the problem is "non-metallic weapons concealed on a passenger" (pp. 10, 36). On the other hand, if the scanners replace existing devices, then the problem-statement has to be expressed in more general form, to encompass the full range of threats
- **how the proposed measure addresses the problem(s)**.
  The absence of any information of this nature is quite remarkable
- **how the anticipated benefit will arise**.
  The same applies to this omission
- **the measure's effectiveness in addressing the problem(s)**. The statement is made that "Body scanners are the best technology available for detecting non-metallic threats concealed on a person" (p. 36). But no evidence is provided, and no references are cited

During the Roundtable, OTS stated that it would not be possible to draft and have approved a statement of the problem prior to the closing date for comments on 30 September.

The PIA is incomplete. If the initiative were to proceed, **detailed information needs to be provided in relation to the vital question of the justification for the initiative, and a further round is essential**.

4. Quality Assurance

The investment of taxpayer funds must be subject to cost-benefit analysis, and equipment that is to be acquired needs to be demonstrated to perform the desired functions.

Notwithstanding a Minister's statement of commitment to a project, OTS remains subject to such matters as procurement probity and privacy policy. Unless the proposal is justified, and demonstrated to be effective for its purpose, and includes performance measures, then it fails procurement probity tests; and if no PIA is undertaken, or the PIA is materially inadequate, then it fails expectations in relation to privacy protections. In either case, it is very likely to be subject to seriously negative audit comment.

4.1 The Quality Assurance Information Provided

No information is provided about:

- the criteria against which the technology's effectiveness is being measured
- the tests that have been conducted, and who conducted them
- the results that were achieved

More specifically:

- **no information has been provided from independent testing organisations**
- despite OTS claiming that "a number of other countries are using body-scanners", no information has been provided about the technology's effectivess or quality
- despite direct requests, OTS has provided no information about the countries using these scanners, nor of countries not using them, nor of countries that have decided against them
- occasional mention had been made of the US Transportation Security Administration (TSA), but the statement was also made that **the TSA will not permit any information that it has provided to OTS to be forwarded to civil society organisations**. In any case, TSA cannot be regarded as a reliable source of information on such matters, because the US Administration continues to make its decisions in the area of national security on the basis that it is on a war footing. Unsupported statements it makes in relation to the performance quality of the technology must be regarded with scepticism
- a single mention was made of Schiphol, but again no data was provided
- no information submitted by technology providers has been made available

OTS said that "we're assured", by suppliers and TSA, and that any 'certificate' that would be provided would be a self-issued certificate by the supplier. This is a completely inadequate approach to quality assurance. **It is untenable for OTS to depend entirely on tainted sources, and untenable for PIA consultations to be based on inadequate information of inadequate reliability.**

OTS needs to make quality assurance data available to civil society organisations. To the extent necessary, this could be under conditions that protect security-sensitive details from undue exposure (such as an appropriate non-disclosure agreement and/or the provision of access to the information only under controlled conditions and with no copies able to be retained by civil society representatives).

The statement is made that "a voluntary proof of concept activity [will] be conducted at two international airports" (p. 25). This presumably refers to the activities conducted at "Sydney International Airport from 2 August until 19 August 2011, and at Melbourne International Airport from 5 September until 30 September 2011", as disclosed at http://travelsecure.infrastructure.gov.au/POC/. **The first phase concluded a month before the Roundtable, and results should have been provided**. (The second phase concludes on the day that submissions have been requested).

"This activity will provide an opportunity for passengers to experience body scanners in operation, familiarise themselves with the technology and provide an avenue to ask questions. It will allow the Department and airports an opportunity to refine operational processes and procedures for using the body scanners. The proof of concept activity will also inform the communications strategy prior to and during the subsequent equipment rollout at Australia's eight international gateway airports" (p. 25).

These statements completely omit any mention of testing as an objective of the "proof of concept activity". This suggests that the OTS and/or the Minister consider the decision to be already made, in the absence of any quality assurance information, or at least in the absence of any publicly-available quality assurance information.

The PIA is incomplete. If the initiative were to proceed, **detailed information needs to be provided** in relation to the quality assurance processes and outcomes, **and a further round is essential**.

4.2 Evidence that the Technology is Seriously Inadequate

If, as interpolated above, the problem to be addressed is the detection of non-metallic threats concealed on a person, then substantial evidence exists that the technology does not work.

Appendix 3 identifies the following examples:

- **Ineffectiveness**:
  - millimetre-wave scanners miss plastic, chemicals and liquids
  - the scanners are not designed to detect powdered explosives like PETN, the explosive used in the failed 2009 Christmas Day 'underwear bomb' plot
  - the technology is not effective at detecting explosives hidden within the body
  - "even the newest body scanners have an unimpressive hit rate on home-made explosives"
- **Inaccuracy**:
  - false positives have arisen in 7 out of 10 cases
  - the technology is reportedly confused by layers of clothing, boots, zips and pleats
  - the passenger's posture causes problems in about 10% of cases
  - sweaty armpits have triggered false positives
- **Operational Inadequacy**:
  - processing is slow and inconvenient

It was of particular concern to discover during the Roundtable that **no 'false negative' testing** appears to have been performed. That is of even greater concern if the scanners are being used as a replacement technology.

It was also a matter of serious concern that **the proposal appears to reduce the capacity of departure security lanes by one-third. That would result in substantial increases in queuing and delays, and hence in pressure on staff and in passenger discomfort and anxiety.** (OTS stated that half of the current devices were to be replaced by body-scanners, but also that scanners have 30% of the throughput of the existing devices. The calculation is: 2 * 275 = 550, whereas 1* 275 + 1 * 85 = 360, and 360/550 = 65%).

The effectiveness, accuracy and practicality issues are sufficiently serious that at least Italy and Germany have abandoned their own initiatives, which were conducted in parallel with Australia's.

The PIA process and Report have failed important tests:

- they have not identified the technology's weaknesses
- they have not explained how those weaknesses are to be addressed
- they have not specified the evaluation criteria
- they have not specified what metrics are to be applied
- they have not provided evidence of the technology's performance against the criteria
- they have not presented any information on false positives and false negatives

The PIA is incomplete. If the initiative were to proceed, **detailed information needs to be provided** in response to these concerns, **and a further round is essential**.

5. Privacy Impacts

5.1 Misleading Statement in the Executive Summary

The Executive Summary attempts to gloss over the privacy impacts, as follows:

"[M]uch of the concern held by stakeholders stems from the **possible misuse of realistic images** produced by body scanners. This concern is ameliorated by the Government requirement that:

- only generic 'stick figure' images will be produced by the body scanners;
- body scanners must use automatic threat recognition (ATR) technology; and
- machines will be unable to store or transfer images.

"In addition, the images produced by the body scanners will not be **linked to or labelled with any biographical identifiers** such as names, passport numbers or boarding pass details" (p. 8).

A great many concerns have been communicated to OTS, and a significant proportion of them are listed on pp. 36-43 of the Consultation Draft. But they are not appropriately reflected by the statement in the Executive Summary.

5.2 Identified Information

"[T]he introduction of body scanners will not impact on the privacy of the travelling public in terms of personal information being collected, stored or disclosed ... " (p. 28).

The statement is misleading, and taken in isolation would be cause for serious concern. This section considers the statement as it stands. A later section considers the important further statements that follow it – which overcome some, but not all, of the problems it creates.

If the technology works, it will disclose the existence of an anomaly to any person who sees the screen, and that anomaly is clearly related to the person in the body-scanner at the time.

Depending on the procedures and practices involved, the existence of the anomaly may be broadcast by voice, which on occasions will inevitably draw the attention of others in the vicinity.

At least one person will be involved in investigating the anomaly. To the extent that the anomaly arises from something about the person (as distinct from an 'artefact' created by the technology, giving rise to a 'false alarm'), personal information (such as the existence of a stoma / colostomy pouch or prosthesis, or possibly genitalia different from those expected for a person of the nominated gender) may be disclosed to at least the individual performing the investigation.

Some disclosures may be necessary, in the interests of traveller safety (although, as explained in the preceding sections, this has not been established to be the case). However **it is disturbing that, even after conducting a PIA, the OTS could suggest that the procedure does not involve the disclosure of sensitive personal data.**

"The identity of an individual will not be apparent, or reasonably ascertainable, from the information displayed on the monitor of a body scanner when an individual is screened. No identifying information will be collected during any part of the body scanning process" (p. 28).

If no record is created, then the provisions in the Privacy Act do not apply. But the statement is misleading, because **ephemeral information exists, and is clearly associated with the individual who is in, or emerging from, the body-scanner**.

5.3 The Catalogue of Privacy Issues

"The stakeholder issues table located at Annex A outlines and addresses each issue or concern raised by stakeholders at the roundtable meeting" (p. 28). The Table on pp. 36-4 identifies and provides responses to 20 areas of concern, some of which include multiple sub-topics.

APF and the four CCLs submitted to OTS a document called 'Key Aspects of an Effective PIA Process'. It was dated 28 September 2010, very shortly after the first roundtable. It is reproduced at Appendix 1. **The following 9 items were notified to OTS, but are not reflected in the table:**

- **A Sufficient Description of the Proposal**
  - limitations on the technology (e.g. body cavities, liquids, body suits)
- **Threat Management**
  - The threat model (e.g. non-metallic/low-metallic objects, secreted close to the body). It is essential that the threat be understood, to enable judgement of justification and proportionality
  - How the proposal addresses the relevant threat(s)
  - The effectiveness of the technology and procedures in practice, especially in the case of a determined adversary
  - Test designs and results – by independent laboratories, not suppliers or pre-committed users
- **Mitigation Measures**
  - criminal offences for breaches by staff and contractors
  - enforcement
  - governance, including community participation in the oversight processes, to ensure that the controls are established and sustained
  - complaints-handling, investigation and resolution, and resulting action, by an independent body with sufficient scope, resources, and powers

The PIA is incomplete. If the initiative were to proceed, **detailed information needs to be provided** in response to these concerns, **and a further round is essential**.

6. Privacy Impact Mitigation Measures

6.1 Images of Individuals

"[N]o personal information will be collected" (p. 4).

On the other hand, "all reasonable steps will be taken to **protect the physical security of any images**" (p. 4) – which implies that storage and retention may be involved.

"Measures ... will include ... a requirement that any software used to display or store individuals' images must not be installed on body scanners used at Australia's eight international gateway airports" (p. 4).

"Body scanners to be installed at Australian international airports will not reveal realistic images of individuals, nor will they be able to store data" (p. 5)

"It is not possible to use this data to display images without special imaging software and the addition of a workstation. The body scanners to be used in the POC and any scanners destined to be installed at Australia's eight international gateway airports will not be loaded with the imaging software or workstations, nor will they be physically able to store data. No images can be reconstructed. ... [A]ny ability to store or transmit images generated by body scanners will be disabled prior to installation of any body scanner in an Australian airport" (p. 28-29).

"Scanners destined to be installed at Australia's eight international gateway airports will not be loaded with the imaging software or workstations, nor will they be physically able to store data, no images can ever be reconstructed" (p. 42).

"**The images** are not stored or transferred and **are deleted** once the automated assessment processing is complete. No person will have access to any 'raw' or 'naked' image" (p. 37).

Most of the above statements are unequivocal, but the two statement that have been highlighted create ambiguity (although this may be because of limitations in the language commonly used to describe data processing). If images are to be "deleted", it could mean that they are "stored", at least on an interim basis. An answer to the following question would probably resolve the ambiguity:

> 'Once is new scan is activated, does the data arising from the previous scan, or any earlier scan, still exist, such that it can be recalled for review?'

Clarification is needed as to whether the two ambiguous statements weaken the apparent strength of the other statements.

During the Roundtable, it appeared that OTS's undertaking may be that 'the data will only ever be in short-term storage, will not be written to long-term storage, and will exist in a device that has no way to write data to long-term storage, and hence the data will cease to exist when the next scan is performed and when the device is turned off'. If that is the case, then the undertaking should be expressed in that manner.

6.2 Privacy Impacts of Operational Procedures

No description is provided of the proposed procedures.

Such description as is provided relates only to existing procedures, or to the procedures to be adopted during the 'Proof Of Concept' trial – which has already concluded in Sydney, and concludes in Melbourne on the same day as submissions relating to the PIA have been requested.

One example of the inadequacy is the handling of the (many) special circumstances that arise (addressed in s.6.3 below), and another is the confusing use of 'selection', 'requirement' and 'refusal' (addressed in s.6.4 below).

The sentence discussed in section 5.2 above continues " ... the introduction of body scanners ... will have an impact on a number of community groups who have certain medical conditions or special circumstances. Screening by body scanner will mean that for some passengers it will become necessary for them to disclose personal conditions to aviation security screeners in order to explain why a body scanner has alarmed. While measures will be implemented to ensure that such passengers are screened respectfully and discreetly, it is acknowledged that **the introduction of body scanners will create a degree of anxiety among some passengers**. Further consultation with affected stakeholders will be undertaken to ensure that their requirements are addressed as far as possible, while maintaining the security outcome required by the Government" (p. 28).

"Screening officers are trained in how to deal with issues sensitively and to protect passengers' privacy" (p. 30).

This indicates effective assimilation of a significant amount of the information provided by civil society organisations representing particular interest groups.

However, **the PIA is incomplete**. If the initiative were to proceed, **the following further actions are needed, and a further round is essential**:

- provision of detailed information on the procedures that are to be used
- evaluation of the procedures by civil society organisations
- testing of the procedures
- adaptation of training
- provision of information about the controls that are to be designed in, and applied, in order to ensure that practices actually reflect policies and procedures.

6.3 Special Circumstances

"The roundtable meeting held in September 2010 identified a number of community groups ... who would ordinarily pass through aviation security screening without their particular circumstances coming to the attention of security screeners. Body scanners, however, are a different screening method and may reveal more personal details than current screening methods. On the other hand, passengers with some implanted prosthetic devices, such as artificial hips, will find the clearance process simpler as these devices will not be detected by a body scanner whereas they are currently detected by the metal detector.

"For those with **external medical aids or prostheses** that cause the body scanner to alarm, there are procedures currently in place for the appropriate clearing of medical devices and aids and these will continue largely unchanged. For further information on the screening of passengers with special circumstances please go to the Travelsecure website at: http://travelsecure.infrastructure.gov.au/international/special_needs.aspx" (p. 30).

That web-page covers some situations, but remains vague about a variety of sensitive circumstances. The closest that the document comes to addressing stomas / colostomy pouches, prostheses, and inspections of the crotch and genitalia is this:

"Going through security checks

- Inform the security screening officer if you have any medical conditions, such as a pacemaker, that might be affected by security screening.
- Inform the security screening officer if you have an implanted metal device, or any other device that may affect the screening equipment.

"Passengers with **a prosthesis or a colostomy pouch** will not be required to carry a medical certificate or letter from a medical professional. However, to aid in the screening process, it may be helpful to let the screening officer know prior to the start of the scan. Passengers will not be required to expose devices such as colostomy pouches or prostheses for inspection" (p. 31).

"It may ... be appropriate for **transgender [and inter-sex and uni-sex] passengers** to choose at the time whether they are more comfortable with a female or male screening officer conducting their frisk search. Any passenger selected to undergo a body scan may refuse without providing a reason and will be screened by an alternative screening method in line with the current procedure carried out at airport screening areas. Training provided to security screening officers is designed to ensure everyone is treated fairly and with respect when going through security screening at the airport. For the screening of transgender or intersex passengers that are selected to undergo a body scan, a key element will be effective training for aviation security screening staff. Further consultation on this issue will be undertaken with stakeholders to ensure appropriate training is developed and implemented" (p. 32).

Many individuals (rationally or otherwise) are terrified of exposure of conditions of this nature, to the extent that they may evidence neurotic behaviour at the control-point, or may feel themelves forced to avoid air-travel in order to not be subject to such disclosures.

Other exceptional circumstances that have not been adequately addressed include:

- **unsuitable candidates for a body-scanner**. These include a height-limitation, the need to be able to stand still, the need to be able to enter alone (i.e. without a helper, a wheel-chair, a guide-dog or a stick), and the need to be able to hold their arms in the air
- **individuals with a personal preference** for or against the two existing alternatives (magnetic device or manual examination) and the possible third alternative (body-scanner). For example, a person with a stoma or bulky clothing would rationally prefer the metal-detector, a person with a metal implant or a pacemaker would rationally prefer the body-scanner, and a person who is very nervous about technology would rationally prefer a pat-down by a human being

Confusion arose when we requested information relating to **people who need or want separate treatment**. The most common situation appears to be that the person must wait until they reach the device before saying that they need or want a separate examination. Sydney Airport said they have introduced a separate queue for 'special needs', but to date no-one who was present has seen it in operation. And there appears to be no intention that such an arrangement be put into place in all airports.

OTS needs to create an explicit requirement that individuals be able to choose against a body-scanner. (Assessment is obligatory, but there are three alternatives, which are differentially invasive or embarrassing for different categories of people; and individuals should be able to choose among them).

OTS needs to specify criteria that are protective of privacy, but that are sufficiently open-ended to enable varying implementations in the highly diverse contexts in the dozen international departure-points. OTS then needs to expose those criteria in draft form to civil society organisations.

The PIA is incomplete. If the initiative were to proceed, **the following further actions are needed, and a further round is essential**:

- the procedures must be designed, or at least the requirements that each airport must comply with when designing and implementing their own procedures must be specified
- the procedures and/or requirements must be subjected to evaluation by civil society organisations
- the procedures must be tested
- training must be adapted
- controls must be designed in, and applied, in order to ensure that practices actually reflect policies and procedures
- information on the site must be updated to include this information
- information at the entry-points to all relevant locations must be updated to include this information

6.4 Refusal to Undergo a Body Scan

"[S]ome people may not wish to undergo a body scan for a variety of reasons. Any passenger will be **able to refuse** to be screened by a body scanner without providing a reason, and in such cases the passenger will be screened using screening methods already in place at Australian airports. In accordance with current airport screening requirements, if the person then chooses not to undergo the alternative screening measures they will be not be allowed to pass through the screening point" (p. 29).

"If a passenger who **is selected** to undergo a body scan does not consent to the process and chooses to 'opt-out', they will be asked to undergo a range of other screening measures" (p. 36).

"Any passenger **may refuse** to undergo a body scan, without providing a reason and be screened by alternative screening methods" (p. 38).

On the other hand, "Children under the age of 18 years of age **are required** to pass through the body scanner **if selected**" (p. 31). This is expressed somewhat differently elsewhere: "Persons under the age of 18 may be selected on a random basis to undergo a body scan, however as with anyone who is selected they will be asked if they **consent** to being scanned. In the case of younger children, consent will need to be given by the guardian or parent" (p. 38).

There is a conflict between statement that a person may be "required" and the notion of "consent". This must be resolved.

Clarification is needed as to whether a person can be "required" to pass through a body scanner.

A second concern is how young people will have communicated to them that, if selected, they still have a choice between a body scan (possibly followed by a specific physical scan) and a one-on-one general physical scan. This is a serious issue for many adolescents.

Clarification is needed as to how young people in particular will have their choices made clear to them.

The following statements are presaged on the assumption that there will be no compulsion, for any person, including persons under the age of 18. If that assumption were to be incorrect, much more serious concerns will have to be expressed.

This policy and associated measures will be critical to people who have serious concerns, because of their particular circumstances, rational and otherwise. It is critical that this information be publicised on the site, through the media, and at the entry-points to all facilities.

The PIA is incomplete. If the initiative were to proceed, **the following further actions are needed, and a further round is essential**:

In addition, these circumstances need to be addressed in far greater detail. It is essential that:

- the procedures must be designed, or at least the requirements that each airport must comply with when designing and implementing their own procedures must be specified
- the procedures and/or requirements must be subjected to evaluation by civil society organisations
- the procedures must be tested
- training must be adapted
- controls must be designed in, and applied, in order to ensure that practices actually reflect policies and procedures
- information on the site must be updated to include this information
- information at the entry-points to all relevant locations must be updated to include this information

6.5 Communication Strategy

"A communication strategy will be developed to inform passengers of the security requirements when body scanners are deployed. It will inform passengers of the alternative screening methods if they choose not to use a body scanner. Communications initiatives may include public information posters (including diagrams, charts, photos etc) at international airports, the publication and display of brochures explaining the new technology and a frequently asked questions document. Information will also be available on the Department of Infrastructure and Transport website at www.travelsecure.infrastructure.gov.au and the Smart Traveller website at www.smartraveller.gov.au." (p. 33).

It is important that each item of information identified above as a privacy impact mitigation measure be publicised on the site, through the media, and at the entry-points to all facilities.

The PIA is incomplete. If the initiative were to proceed, **detailed information needs to be provided** in relation to the communication processes and content, **and a further round is essential**.

6.6 Complaints-Handling

"The existing arrangements for handling complaints will not be changed with the introduction of body scanners" (p. 42). These are the subject of a two-page brochure at: http://www.infrastructure.gov.au/transport/security/aviation/screening/files/SPG_ComplaintHandling.pdf

The structure and process are seriously deficient, in at least the following ways:

- there is no evidence that the internal processes are compliant with 'Customer satisfaction—Guidelines for complaints handling in organizations' (ISO 10002:2004 / AS ISO 10002-2006)
- there is no community oversight
- there is no transparency
- there are no published statistics
- there is no independent oversight

The PIA is incomplete. If the initiative were to proceed, **a transparent, credible and effective scheme must be defined and implemented, subject to appeal to an independent body, and a further round is essential**.

Appendix 1: Body Scanners in International Airports
Key Aspects of an Effective PIA Process

Clarity about the Process and Its Purposes

Civil society needs:

- information about how the PIA will be conducted
- information about the opportunities that advocacy groups will have to learn about, consider, and provide input concerning, the emergent proposals
- clarity that the outcomes of the PIA process will be reflected in decisions about the project

Consultation as Part of the PIA Process

Agencies gain most from PIAs when they engage with the relevant representatives of and advocates for the interests of civil society. A best practice guide dealing with the specifics of consultation is published by the UK Information Commissioner's Office, at pp. 32-38 of: http://www.ico.gov.uk/upload/documents/pia_handbook_html_v2/files/PIAhandbookV2.pdf

In this case, the cluster of NGOs brought together by the OAPC on behalf of OTS provide a good cross-section of both the general interests (civil rights and privacy) and the specific-segment interests (including the sight-impaired, the mobility-impaired, trans-gender and inter-gender groups, youth and two religions).

The best interests of the Office and civil society alike are served by utilising this now-established cluster as the Consultative Group for the PIA to be conducted by OTS.

Background Information on the Project

Effective consultation processes depend on:

- sufficient information being provided to the PIA Consultation Group
- in writing, and
- sufficiently long in advance of each interactive session with OTS staff

Where options exist (which it is understood may remain the case for some time yet), sufficient information is needed about each of the options.

Appendix 1 contains an outline of the information needed to support effective consultation. Appendix 2 identifies issues that have been surfaced by the discussions to date.

Publication of the Outcomes

A PIA Report needs be published, at least to the participating public interest groups, which reflects:

- the information provided to them
- the analysis undertaken
- the submissions made, and
- the conclusions reached about privacy issues, and avoidance and mitigation measures.

Governance

If the project proceeds, measures are needed to ensure that the design, implementation and operation reflect the outcomes of the PIA process, and the undertakings provided. To be credible to the civil society participants, it is necessary that those measures be transparent.

Appendix 1: Body Scanners in International Airports
Key Aspects of an Effective PIA Process

Attachment A: Information Needs

The 2008 PIA Report

Reference was made to a PIA having been previously conducted. It appears that involvement of civil liberty and privacy organisations during that process was very limited.

Although the specifics may no longer be directly relevant, the PIA Report has clearly influenced thinking on the matter, and it will therefore be valuable input to the process.

A Sufficient Description of the Proposal

- The technology/ies under consideration, including:
  - features, including:
    - radiation characteristics
    - data forms
    - display forms (image; and 'stick-figure'/'generic image' with anomaly indications)
  - variants and options
  - limitations (e.g. body cavities, liquids, body suits)
- The procedures whereby the technology/ies would be applied, including variants.
  It is understood that these may be referred to within OTS as methods and techniques, and that they are under discussion in a parallel forum involving authorised screening authorities
- Exception-handling and criteria for determining exceptions
- The scope for selective usage, such as specific destinations, alert-level, targeted individuals e.g. based on risk-profiles, 'random and continuous', etc.
- The budget available (half of $28.5 million?)
- Physical layouts, options and constraints
- Data format and display format options
- Staffing aspects such as training, controls, sanctions and enforcement mechanisms
- Data storage, data retention and data destruction options
- Concomitant changes to existing technologies and procedures
  (e.g. metal detection, chemical residue detection, frisk/pat-down)

Threat Management

- The threat model (e.g. non-metallic/low-metallic objects, secreted close to the body). It is essential that the threat be understood, to enable judgement of justification and proportionality
- How the proposal addresses the relevant threat(s)
- The effectiveness of the technology and procedures in practice,
  especially in the case of a determined adversary
- Test designs and results – by independent laboratories, not suppliers or pre-committed users

Appendix 1: Body Scanners in International Airports
Key Aspects of an Effective PIA Process

Attachment B: Impact Management

- **Issues Register**:
  - health
  - human dignity
  - privacy of the person
    - visibility of body-parts / modesty / standards of various religions
  - privacy of personal behaviour
    - breach of freedom of movement through 'no scan, no fly' policy
    - constraint on freedom of movement for some categories of people
  - privacy of personal data
    - display of a stripped image
    - forced disclosure of sensitive facts (such as a stoma, pregnancy)
    - the possibility of image data capture, storage, retention and disclosure
  - discrimination against particular categories of people
  - compliance with rights, laws and Standards for the disabled

- **Special Categories of People**, including:
  - children
  - adolescents
  - pregnant women
  - inter-gender, trans-gender and uni-sex people, who do not fit the conventional male/female dichotomy
  - people with superficial prostheses, especially non-obvious prostheses such as stomas, urinary bags and genitalia
  - people with deformities, such as additional fingers or toes
  - the sight-impaired
  - the mobility-impaired
  - the wheelchair-dependent
  - the mentally-impaired
  - the mentally ill
  - people who can't raise their arms above their heads
  - people whose religious beliefs place great stress on modesty, especially Muslims

- **Measures**
  - avoidance and mitigation measures for each negative impact
  - controls over technology, procedures, staff and contractors
  - controls over data collection, use, disclosure, retention
  - controls over function creep
  - criminal offences for breaches by staff and contractors
  - enforcement
  - governance, including community participation in the oversight processes, to ensure that the controls are established and sustained
  - complaints-handling, investigation and resolution, and resulting action, by an independent body with sufficient scope, resources, and powers

Appendix 2: Justification for the Proposed Measure

Extracts from the PIA Report

The following are the only passages that have apparent relevance to the key questions of:

- What is the problem being addressed?
- Why is this measure needed?
- What will it achieve?
- How will it achieve it?
- What alternative approaches are available to achieve the same aim?

The early parts of the document rehearse general information about airport security.

"The passenger screening process in Australia ... is primarily designed to detect metallic weapons either on the passenger or in carry-on luggage. The process is less effective in **detecting non-metallic weapons concealed on a passenger**" (p. 10).

"[R]andom explosive trace detection, X-ray of baggage and passenger screening ... reduce the likelihood of a terrorist being able to smuggle a bomb or other weapon through a screening point into a sterile area and on-board an aircraft. The ability of screening personnel to detect prohibited, suspicious, or altered items during the screening process is the key to effective screening" (p. 10-11).

"The 2006 plot to use **liquid explosives** to bomb transatlantic airliners mid-flight and the 2009 attempted bombing of flight NW253 demonstrate the unwavering intent and increasing capability of terrorists ..." (p. 11).

"The use of body scanners is increasing ..." (p. 11).

"Aviation security measures and procedures are designed to deter and detect unlawful interference with aviation and to provide for a safe and secure environment for passengers, visitors and staff. Security screening is only one component of an integrated preventive security regime" (p. 11).

" ... multiple layers of preventive security ... [including] ...

- Screening what goes on board aircraft
    - Screening of passengers and carry-on baggage, including X-ray of baggage and checked baggage, metal detection equipment, random and continuous explosive trace detection and physical searches

    ...

    - Passengers are currently restricted in the amount of liquids, aerosols and gels they can take in carry-on baggage on international flights to, from and within Australia" (pp.12-14).

Details of current procedures are on pp. 18-19.

"[This] is the only type of body scanning technology currently used in the Netherlands: http://www.schiphol.nl/Travellers/AtSchiphol/CheckinControl/SecurityChecksUponDeparture/SecurityScan.htm " (p. 24).

"Body scanners are the best technology available for detecting **non-metallic threats concealed on a person**" (p. 36).

Appendix 3: Body Scanner Quality

Some Relevant Media Reports

Are planned airport scanners just a scam?
The Independent
By Jane Merrick
Sunday, 3 January 2010
http://www.independent.co.uk/news/uk/home-news/are-planned-airport-scanners-just-a-scam-1856175.html

The explosive device smuggled in the clothing of the Detroit bomb suspect would not have been detected by body-scanners set to be introduced in British airports, an expert on the technology warned last night.
...
Umar Farouk Abdulmutallab, 23, allegedly concealed in his underpants a package containing nearly 3oz of the chemical powder PETN (pentaerythritol tetranitrate). He also carried a syringe containing a liquid accelerant to detonate the explosive.

Since the attack was foiled, body-scanners, using "millimetre-wave" technology and revealing a naked image of a passenger, have been touted as a solution to the problem of detecting explosive devices that are not picked up by traditional metal detectors – such as those containing liquids, chemicals or plastic explosive.

But Ben Wallace, the Conservative MP, who was formerly involved in a project by a leading British defence research firm to develop the scanners for airport use, said trials had shown that such low-density materials went undetected.

Tests by scientists in the team at Qinetiq, which Mr Wallace advised before he became an MP in 2005, **showed the millimetre-wave scanners picked up shrapnel and heavy wax and metal, but plastic, chemicals and liquids were missed.**

If a material is low density, such as powder, liquid or thin plastic – as well as the passenger's clothing – the millimetre waves pass through and the object is not shown on screen. High- density material such as metal knives, guns and dense plastic such as C4 explosive reflect the millimetre waves and leave an image of the object. ...

Airport body scanners useless: German police
(AFP) – Jul 30, 2011
http://www.google.com/hostednews/afp/article/ALeqM5jGUyRTjF-WA40GLjIMEo6dFgSxlw?docId=CNG.d76d1890df3edca8dd08181cb6808c7f.881

BERLIN — Body scanners being tested at Germany's Hamburg airport have had a thumbs down from the police, who say **they trigger an alarm unnecessarily in seven out of 10 cases**, a newspaper said Saturday.

The weekly Welt am Sonntag, quoting a police report, said **35 percent of the 730,000 passengers checked by the scanners set off the alarm more than once despite being innocent**.

The report said **the machines were confused by several layers of clothing, boots, zip fasteners and even pleats, while in 10 percent of cases the passenger's posture set them off**.

The police called for the scanners to be made less sensitive to movements and certain types of clothing and the software to be improved. They also said the US manufacturer L3 Communications should make them work faster.

In the wake of the 10-month trial which began on September 27 last year, German federal police see no interest in carrying out any more tests with the scanners until new more effective models become available, Welt am Sonntag said.

The European parliament backed on July 6 the deployment of body scanners at airports, but on condition that travellers have the right to refuse to walk through the controversial machines.

Worried about embarrassing intrusion into people's privacy, the parliament said the scanners should only produce images of "stick figures" and that any data must be immediately destroyed.

Concerned about the potential health risks, lawmakers also called for a ban on the use of X-ray scanners that use ionising radiation.

The use of scanners caused an uproar in the United States last year because they produce a graphic image of a person's body, giving rise to the name "naked scanner".

The United States stepped up the deployment of body scanners at airports after a Nigerian man was accused of trying to ignite explosives concealed in his underwear during a Christmas day flight from Amsterdam to Detroit in 2009.

Washington then urged the European Union to follow suit but Europeans decided to first study their impact on health and privacy.

Some EU states, including Britain, France, the Netherlands, Italy and Finland, as well as Germany, have tested body scanners.

New scanners to beef up airport security but preserve dignity
Nick Ralston
August 2, 2011
The Sydney Morning Herald
http://www.smh.com.au/travel/travel-news/new-scanners-to-beef-up-airport-security-but-preserve-dignity-20110801-1i86c.html

[Photo: Albanese with his arms not high enough
[Caption: Nothing to declare ... the Transport Minister, Anthony Albanese, launches the full body scanner at Sydney Airport.

TALL, short, fit or not - everyone will end up looking the same if they volunteer to undergo a full body scan as part of a security trial that begins today at Sydney International Airport.

Amid concerns a scanner could produce "nude" images of passengers, the machine being tested by the federal government will display a "generic outline of passenger", like a stick figure, on a screen.

"[It] provides for best security scanning available whilst ensuring that any concerns over privacy are addressed," the Transport Minister, Anthony Albanese, said.

"Any male outline looks like any other male outline and any female outline looks like any other female outline."

Appearing like an oversized phone booth, a passenger walks into the full body scanner, turns sideways and raises their arms above their head.

Two scanners, one at the front and one at the back, rotate once around and, in a matter of seconds, a generic body outline is displayed on a screen to security.

Any abnormalities are pinpointed and highlighted on the body in yellow allowing guards to conduct further inquiries.

The scanner uses low-energy radio waves to detect metal and non-metal objects, along with any shapes that do not accord with the usual contours of the body. The machine can also detect implants and medical devices, such as colonoscopy bags.

One scan will emit 10,000 times less radio frequency energy than an average mobile phone call.

The $6 million trial, which runs in Sydney until August 19, is voluntary and any passenger not wishing to participate will be processed normally through airport security.

Mr Albanese said the scans would become compulsory if the trial, which will also be undertaken in Melbourne in September, is successful. He envisaged the scanners would operate in tandem with the existing metal detectors.

People that would be compulsorily scanned however would be randomly selected by the technology itself, to prevent "profiling" of particular passengers.

"When people see what this technology is they will be very relaxed about it's introduction," he said.

The use of full body scanners created controversy in the US because some produced a graphic almost "naked" image of a person's body.

Trials have also been undertaken in parts of Europe.

A trial at Germany's Hamburg airport concluded on the weekend and police have criticised the machines, saying they triggered an alarm unnecessarily in seven out of 10 cases.

The scanners, which are produced by the same manufacturer as used in the Australian trial, were reportedly confused by layers of clothing, boots and zips and, in 10 per cent of cases, a passenger's posture set them off.

Sweating over scan - new airport body scanner doesn't like perspiration
Tim Vollmer
The Daily Telegraph
August 02, 2011 12:00AM
http://www.theaustralian.com.au/travel/news/sweating-over-scan-new-airport-body-scanner-doesnt-like-perspiration/story-e6frg8ro-1226106381522

SWEATY armpits had alarm bells ringing at Sydney Airport yesterday with controversial full-body scanners baulking at perspiring passengers.

The second person to use the new machine, part of a $6 million trial, triggered the alarm three times. Security staff blamed the passenger's armpits for upsetting the machine.

From today travellers will be able to volunteer to trial the scanner, which uses low-energy radio waves to detect items concealed under clothing, as the federal government assesses how best to roll out the new technology at major airports.

Transport Minister Anthony Albanese pitched the scanners as the "most advanced passenger screening technology available in the world".

However the device, which uses advanced computer software to detect miniscule differences in the radio wave radiation that is reflected from the body, has come under fire in Europe for being slow, inaccurate and ineffective.

Last week German police rejected the scanners for being too sensitive, saying in more than two thirds of cases the alarm had gone off in error, with the machine confused by multiple layers of clothing, zippers, and even a passenger's posture.

Mr Albanese said the trial aimed to simply highlight the position of suspicious objects on an empty outline of a person.

"There were, I believe, some legitimate concerns about privacy that had been raised," he said.

"We know unfortunately that we live in an unsafe world, and in those circumstances this government will ensure that people's security is looked after."

Mr Albanese also said the cost of any broader roll-out of the machines would be borne by private airport operators, although a final decision would not be made until after a similar trial next month in Melbourne.

EPIC
2 August 2011
http://www.epic.org/alert/epic_alert_1815.html

"The system's effectiveness has been called into question, however; documents obtained via EPIC's Freedom of Information Act lawsuit against the Agency reveal that **the scanners are not designed to detect powdered explosives like PETN, the explosive used in the failed 2009 Christmas Day "underwear bomb" plot**"

EPIC
18 August 2011
http://www.epic.org/alert/epic_alert_1816.html

As part of a Freedom of a Information Act (FOIA) lawsuit against the [US] Transportation Security Administration (TSA), EPIC has obtained an initial set of documents that describe the new software the agency is installing on airport millimeter-wave full-body scanners. The heavily redacted documents include procurement contracts, training materials, and technical specifications for the software, which shows human forms as 'stick figures' rather than naked bodies. ...

However, EPIC's documents indicate that the new software still may be capable of storing and transmitting unfiltered images of naked airline travelers. The documents also indicate that passengers passing through the machines will be identified by gender and assigned a unique identification number".

Body scanners can not reliably detect home-made explosives
Karen Dearne
The Australian
September 13, 2011 12:00AM
http://www.theaustralian.com.au/australian-it/body-scanners-can-not-reliably-detect-home-made-explosives/story-e6frgakx-1226135199335

TRANSPORT Minister Anthony Albanese was warned by US security advisers that body scanners could not reliably detect home-made explosives before committing to a $28.5 million plan to X-ray international travellers.

With trials of new X-ray imaging technology just concluded at Sydney airport and currently being held in Melbourne, the department says volunteers have been queuing up to undergo a scan.

It says 40 per cent of participants were found to have metallic or non-metallic objects -- mostly wallets and jewellery -- in or under their clothing.

But a cable from the US embassy in Canberra, leaked by WikiLeaks, reveals that Mr Albanese and local security advisers were told the technology was "not foolproof".

"Even the newest body scanners have an unimpressive hit rate on home-made explosives," then US Homeland Security chief Jane Holl Lute said during a visit to Australia in January last year. The briefing occurred in an atmosphere of heightened concern following the attempted Christmas Day terrorist attack on a flight to the US.

Shortly afterwards, then prime minister Kevin Rudd announced an aviation security upgrade, including the purchase of backscatter X-ray machines that have sparked safety and privacy backlashes in the US and Europe.

The local Office of Transport Security has sought to calm health fears by selecting a "millimetre wave" machine that uses radio waves with an energy level claimed to be comparable to a mobile phone handset held some metres away.

And to quell privacy concerns, it has chosen "automatic threat recognition" software that generates a box on a human outline to indicate areas for investigation, rather than naked images.
Mr Albanese's spokeswoman told The Australian all the major issues had been covered.

"The image that is generated is the same for all passengers," she said.

"It appears as a stick figure and the images cannot be stored or shared in any way."

The department has just released a privacy impact assessment on the implementation of body scanners, with submissions due this month.

But the spokeswoman did not confirm whether the program has been independently assessed for radiation safety.

While the Australian Radiation Protection and Nuclear Safety Agency says the risk of increased cancer incidence due to exposure to airport screening technologies is low, its expert radiation health committee says any new use of radiation on humans "must be justified" prior to introduction.

"Technologies should be evaluated based on the expected reduction of the threat, as weighed against the risks associated with the technology and social and legal implications," it says.

It cites including individual doses per scan, exposure levels for operators and likely acute and chronic screening risks.

Germany Finds No Practical Use for Airport Full Body Scanners
http://www.epic.org/alert/epic_alert_1818.html
13 September 2011

After extensive testing, the German government has decided not to deploy body scanners at the nation's airports. Officials from Germany's Interior Ministry field-tested the scanners at Hamburg Airport, screening more than 800,000 passengers between September 2010 and July 2011. **German Interior Minister Hans-Peter Friedrich said in an official statement that the tests demonstrated that the body scanners were not effective enough for nationwide rollout, citing that the devices produced too many false alarms**.

Italy also removed the scanners from its airports in late 2010. Following field tests in Rome, Milan, Palermo, and Venice, **the Italian Civil Aviation Authority determined that the scanners were both inconvenient and inaccurate**.

Similarly, the European Commission has stated that body scanners raise "several serious fundamental rights and health concerns," and has recommended less intrusive security measures.

In the US, **former 9-11 Study Commission Chairs Lee Hamilton and Thomas Keen** have released a "Tenth Anniversary Report Card," assessing the status of the recommendations made by the 9-11 Commission. The **report finds that** even "with significant federal funding . . . explosive detection technology lacks reliability" and that "**the next generation of whole body scanning machines are not effective at detecting explosives hidden within the body** and raise privacy and health concerns that DHS has not fully addressed."

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http://en.wikipedia.org/wiki/Full_body_scanner#Ineffectiveness

Full body scanner –

Opponents of full-body scanners claim that the technology is ineffective because terrorists have already evolved their tactics with the use **of surgically implanted bombs or bombs hidden in body** .[106][107]

In one test of the full-body scanners, the machines failed to **detect bomb parts hidden around a person's body**.[108]

In another test in 2011, an undercover TSA agent **was able to carry a handgun through full body scanners multiple times without the weapon being detected**.[109]

Rafi Sela, an Israeli airport security expert who helped design security at Ben Gurion International Airport, has said: "I don't know why everybody is running to buy these expensive and useless machines. I can overcome the body scanners with enough explosives to bring down a Boeing 747... That's why we haven't put them in our airport."[110]

Despite the scanners, the TSA has been unable to stop **weapons like box cutters and pistols** from being carried onto airplanes, raising questions about whether the agency needs more oversight in

Two alternatives that have been argued for by experts, such as Prof Chris Mayhew from Birmingham University, are chemical-based scanners and bomb-sniffing dogs.[112] Others have argued that passenger profiling, as done by Israeli airport security, should replace full body scanners and patdowns.[113]

106. Andrew Heasley (2010-02-01). "Body scanners no match for latest terror ploy: surgically implanted bombs". Melbourne: The
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