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Context

1. This constitutes a reply to the AEC's submissions to the OAIC by letter from Owen Jones dated 17 April 2014 (AEC ref LS4944 ~ file 13/945).
2. For ease of reference I refer to documents in the following ways:
 - (a) **"initial request"** means my initial request by email to AEC dated 4 October 2013
 - (b) **"initial decision"** means the decision of Paul Pirani dated 4 November 2013 in relation to the initial request
 - (c) **"internal review request"** means my request for internal review of the initial decision, sent by email 8 November 2013
 - (d) **"internal review decision"** means the decision of Tom Rogers dated 9 December 2013 in relation to the internal review request
 - (e) **"my first IC review submission"** means my request for IC review of the internal review decision, sent by online form 5 February 2014
 - (f) **"AEC's first IC review submission"** means the AEC's submissions to the OAIC by letter from Owen Jones dated 17 April 2014
3. Unless otherwise indicated I maintain the position I took in my first IC review submission.

Schedule of documents

WHAT ARE THE CONTENTS OF THE SCHEDULE

4. I proceed on the basis that the schedule of documents is similar to other schedules prepared by the AEC in response to FOI requests.¹ In that case it would contain:
 - (a) a document identification number (specific to this schedule),
 - (b) a page count,
 - (c) a description of the document,
 - (d) the date of the document, and
 - (e) some information about the exemption claimed in relation to the document.

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¹ For example, <http://www.aec.gov.au/information-access/foi/2014/files/ls4856/ls4856-schedule.pdf>.

PRELIMINARY ISSUE

5. I have based my submissions on the premise that the considerations in the FOI Act apply to the AEC's decision to release the schedule. I note that as a matter of law that may not be correct because no valid FOI request was submitted for the schedule.
6. Despite this, I would hope that the AEC will consent to treating the release of the schedule as though the FOI Act applies.
7. If they would prefer I am happy to submit a formal FOI request for the schedule. However, I suspect that such a request would be fruitless and we would be in the same position.
8. If the AEC wishes to claim that FOI Act considerations do not apply to my request for the schedule, I contend that:
 - (a) part of my internal review request should be treated as a request for the schedule, notwithstanding that it may not satisfy s 15(2)(aa) of the FOI Act; and
 - (b) the AEC breached of s 15(3) of the FOI Act by not taking reasonable steps to ensure that request was compliant with s 15(2) of the FOI Act.
9. I proceed on the basis that the FOI Act applies.

SUFFICIENCY OF DECISION

10. The AEC's first IC review submission at paragraph 19 contends that the reason for the decision not to release the schedule was contained in paragraphs 83 and 84 of the internal review decision. The reason given that the schedule is exempt in reliance on s 26(2) of the FOI Act on the basis that the schedule:

"...would give general guidance to a person on how to uncover the trade secret protecting the EasyCount Software."
11. Section 26(2) of the FOI Act provides that reasons for a FOI decision are:

"...not required to contain any matter that is of such a nature that its inclusion in a document of an agency would cause that document to be an exempt document."
12. In order for a document to be an exempt document it must be exempt for the purposes of Part IV (or otherwise fall within the definition in s 2 of the FOI Act).
13. Paragraph 84 of the internal review decision does not state an exemption that applies under Part IV of the FOI Act. This is the basis for my contention that the reasons for decision were insufficient under s 26(1).
14. At best paragraph 84 of the internal review decision implies that the document would be exempt under s 47(1)(a).

APPLICATION OF S 47(1)(A) EXEMPTION

15. The exemption under s 47(1)(a) where disclosure of the document would disclose trade secrets.

Does the existence of a trade secret need to be determined first?

16. The AEC's first IC review submission contends that it is necessary to determine first whether a trade secret exists in the listed documents, then to determine whether the trade secret extends to the names of the documents.
17. While if there is no trade secret in the documents there cannot be trade secrets in their names, it is possible to resolve this preliminary point under the assumption that there are trade secrets in the documents.
18. Even assuming the documents contain trade secrets, there is no indication that the titles of the documents contain trade secrets. This is an independent question.

General guidance

19. Giving "general guidance to a person on how to uncover the trade secret" is not disclosure of a trade secret.
20. "Disclose" is not a defined term in the FOI Act. The Macquarie Dictionary defines disclose as:²

*to cause to appear; allow to be seen; make known; reveal: to disclose a plot
to uncover; lay open to view*

21. The provision of "general guidance" on how to access materials does not:
 - (a) cause the contents to appear,
 - (b) allow the contents to be seen, or
 - (c) make the contents known.
22. The FOI Guidelines at [5.70] deal with disclosure in a slightly different context, in relation to official disclosures of Cabinet decisions. There disclosure requires a statement about the decision, as distinct from a disclosure of the fact of a decision being reached in [5.67].
23. This distinction was also made in *Re Toomer and Department of Agriculture, Fisheries and Forestry* [2003] AATA 1301 at [88].
24. Even if the assertion of the AEC in relation to the effect of disclosure of the names of documents is correct, at its highest it is not sufficient to attract the exemption in s 47(1)(a).

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² Macquarie Dictionary Online quoted in *Regina v Richard Lipton* [2011] NSWCCA 247, [105].

Names of documents generally

25. Refusing to disclose the name or a description of a document is tantamount to refusing to confirm the existence of a document. Section 25 of the FOI Act deals specifically with this.
26. Section 25 only permits an agency to refuse to confirm the existence of a document if doing so would affect national security, protection of public safety or the Parliamentary Budget Office.
27. Even if the name or description of the document could be validly withheld, other information in the schedule (for example, a broad description of the document; the number of pages in the document; and the date of the document) cannot be exempt.

PROVISION OF AN EDITED VERSION

28. Even if the schedule contains trade secrets, the exempt material could be removed from the schedule and an edited version provided.
29. The AEC has routinely provided edited schedules in the past to remove information that was exempt from disclosure:
 - (a) <http://www.aec.gov.au/information-access/foi/2013/files/ls4746-schedule.pdf>
 - (b) <http://www.aec.gov.au/information-access/foi/2013/files/ls4730-schedule.pdf>

EFFICIENCY OF REVIEW PROCESS

30. I have requested access to the schedule as preliminary relief in order to aid the process of IC review.
31. If provided access to the schedule I may be in a position to modify my request in respect of some of those documents to facilitate a faster resolution of this matter.

Substantive claim

TREATMENT OF THE SOURCE CODE AS A SINGLE DOCUMENT

32. It is wholly inappropriate to treat the source code as a single document, if indeed this is the approach that the AEC is taking.
33. The source code is 270,000 lines. It is almost certainly broken up into a number of computer files, each of which contains some smaller number of lines of code.
34. At the very least, each separate computer file should be considered a separate document.
35. Each file is likely further broken up into modules, classes, methods, functions or subroutines. Each of these serves an independent purpose and can operate somewhat independently of each other. It may be possible to treat each module, class or function as a separate document.

36. There are automated tools³ which compile lists of these documents which could result in the quick identification of the relevant parts of the source code for this purpose.
37. Separately identifying each file (or logical grouping of code) may permit the scope of my request to be narrowed.
38. Certainly it would mean that parts of the software implementing functionality used in competitive environments (i.e. for non-Senate counts) could be excluded easily, without having to perform a line-by-line assessment of the code.
39. In any case, the suggestion that five minutes would be required for each line of code⁴ is patently absurd. A suitably qualified individual could easily consider large segments of code as blocks very quickly.

DESCRIPTION OF ALGORITHMS

40. An algorithm is “a sequence of computational steps that transform [...] input into [...] output.”⁵
41. Certain algorithms can be protected by trade secrecy. However, algorithms which are well-known cannot be trade secrets.
42. It is fundamental to an algorithm that the steps are clearly documented.

WHAT IS AND IS NOT SECRET?

Algorithm

43. It is a legislative requirement⁶ that the steps used in counting Senate votes follow the precise procedure published in the *Commonwealth Electoral Act*.
44. It is this sequence of steps that is therefore necessarily the algorithm.
45. I do not dispute that this sequence of steps is embedded in a larger program which performs other functions.
46. However, it is this sequence of steps that is contained in each algorithm used to count (or a similar, also publicly-known sequence of steps for any other type of count).
47. It is the components that perform this count which are the subject of my FOI request.

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³ These depend on programming language, but include (for example) Doxygen:
<http://www.stack.nl/~dimitri/doxygen/>.

⁴ AEC's first IC review submission, [99].

⁵ Cormen, T et al, *Introduction to Algorithms* (2nd ed) (2001) MIT Press and McGraw Hill, p 5.

⁶ *Commonwealth Electoral Act 1918* (Cth), s 273A(1).

48. These components of the EasyCount software are trivial to reproduce, and in fact were reproduced by Grahame Bowland.⁷

Compound program

49. While the combination of disparate parts of a program requires significant skill and labour, ultimately the combination of items can be replicated by another person of similar skill merely by spending time replicating it.

50. In particular, no competitive advantage is acquired in the particular way component modules are combined.

51. The same set of algorithms can be put together in different ways (for example, with different interfaces) and retain equal competitive value as against each other.

52. The combination of algorithms to create the compound program (i.e. EasyCount) therefore lacks commercial value per se.

EFFICIENCY OF THE ALGORITHM

53. The AEC asserts that the efficiency of its algorithm is the source of its value.⁸

54. The algorithm used for Senate vote counting (i.e. the actual subject of my request) must follow the steps described in the legislation. As a result its efficiency is fixed and it can be no more or less efficient than any other software that performs the same algorithm.

55. In any case, any vote-counting algorithm has an identical efficiency.

56. Algorithmic efficiency is measured by the number of steps required to come to a result.⁹

57. In order to accurately count votes, every algorithm that does so must:

- (a) examine each preference marked on each vote; and
- (b) combine those preferences in accordance with an established set of rules.

58. For every voting system, this requires some combination of:

- (a) summing the number of votes;

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⁷ My first IC review submission, [155].

⁸ AEC's first IC review submission, [32].

⁹ Strictly there are other measures of efficiency, but in most environments efficiency means shortest runtime and the number of operations performed (expressed as a function of the size of the input) is the best estimate of runtime. See generally Cormen et al (n 5) and Weiss, M *Data Structures and Algorithm Analysis in C* (2nd ed) (1997) Addison-Wesley. Alternatively the Wikipedia page at http://en.wikipedia.org/wiki/Analysis_of_algorithms provides a good overview.

- (b) allocating a weight to votes;
 - (c) adding or removing items from a list; and
 - (d) sorting a list by size.
59. Each of these elements of a vote-counting algorithm consists of a well-analysed problem in algorithm design. Existing algorithms of very high efficiency are already known for all of them.
60. The combination of these items is determined entirely by the voting system itself. The documentation explaining how the count operates determines in what order these instructions are performed.
61. Absolute precision is required to count all votes.
62. On that basis there can be no improved algorithmic efficiency of a particular piece of vote counting software over another.
63. That is not to say that a particular author could not choose one (for example) list-sorting algorithm over another, resulting in software that runs faster. It is just that such a choice is also available to every other programmer, because of the widely-published nature of these algorithms. As such there is no commercial value in knowing what choice was made.
64. For completeness I note that some vote counting tasks can operate in parallel, again reducing runtime. However there is again no particular novelty in this, nor in selecting algorithms to perform these functions in response to known constraints.

WHERE IS THE VALUE?

65. I do not dispute that the production of EasyCount required a significant investment by the AEC. However this “sweat of the brow” is not sufficient to require protection.
66. A trade secret (or equivalently s 47(1)(b)) protects information which, if revealed, would result in a loss of commercial value.
67. The disclosure of the EasyCount source code would not result in a disclosure of information of commercial value per se.
68. The loss of commercial value (equivalently, the gain in commercial value for a competitor) would only occur were a competitor of the AEC to make use of the software developed by the AEC. That would permit them to make use of the significant skill and labour that has gone into the production of EasyCount.
69. However, knowing how the count is conducted, the methods chosen by particular programmers and the like would not result in any additional advantage for a competitor, unless the algorithm is non-trivial and either:
- (a) itself secret; or

(b) more efficient than any other published algorithm for performing the same task.

70. I have demonstrated above that the algorithms used for counting are not secret.
71. I have demonstrated above that the algorithms used for counting cannot be more computationally efficient than the published algorithms (both because of how the algorithms are prescribed by legislation, and because of the inherent nature of the problem).
72. The combination of the components made up by different algorithms is trivial. While particular decisions may be made about the connection between components, and this may have some associated complexity, that itself does not create any particular value.
73. In particular, an individual could specify other ways of connecting those components to perform the same tasks without any significant difference in competitive value. For example, an individual could use a different encoding method or programming language.

The nature of trade secrets

74. Trade secrets protect information which if disclosed would result in commercial value. This protection is different from the protection offered by copyright.
75. Material protected by trade secrets may also be protected by copyright, however it is the underlying information that is protected as a trade secret, not the expression as copyright.
76. For example, a list of names can clearly be a trade secret because the information (i.e. the identities of the people) has value. Such a list cannot be protected by copyright because its expression is not sufficiently creative.
77. Conversely, while a short story can be protected by copyright (there is creative expression) the underlying ideas are not trade secrets (and would not be amenable to protection even if they were maintained as secret).
78. This difference is because the underlying idea in a short story is not that which has commercial value.

IMPACT OF COPYRIGHT

79. The true value of EasyCount is in the significant skill and labour that has gone into its production.
80. This value is protected by copyright. That copyright prohibits anyone else from using the code in a manner that detracts from competition.
81. Copyright is the preferable means of protecting that skill and labour.

82. In particular, as the owner of copyright, the Commonwealth (through the AEC) has a right to prevent others using the product of their effort to compete with them.

Impact of copyright infringement

83. At [70] of the AEC's first IC review submission, the AEC contends that copyright infringement would result in an overall loss because they would likely only be able to recover party/party costs in any litigation.

84. In the first instance, there can be no value to a competitor where the AEC has the capacity to acquire an injunction and recover an account of profits or damages, as they do under copyright¹⁰.

85. Injunctions and an account of profits makes certain that a competitor cannot gain value from unlawful use of the AEC's copyrighted materials. Therefore the disclosure cannot be said to change the competitive environment, the key test under s 47.

86. Moreover damages would in any case completely and adequately compensate the AEC for whatever loss it incurred. In fact, the AEC may be able to recover damages in excess of actual loss incurred.¹¹

87. This is the policy position taken by the *Copyright Act* and it is not for the AEC to assert some special loss that a court would not recognise.

88. Most importantly however, the hypothetical misuse of this material should not be considered when asking the threshold question of whether or not a trade secret exists.

89. Consider by analogy exemption under s 47F of the FOI Act. When considering whether disclosure of personal information is unreasonable it is necessary to consider a hypothetical misuse of this information (for example, identity theft).

90. However this goes to the reasonableness of the disclosure, not to whether the threshold is met.

91. There is no similar question of reasonableness contained in the s 47 exemption. The question must be whether there is a trade secret (i.e. a loss in commercial value from disclosure).

92. The commercial value must be considered adequately protected by the *Copyright Act*, as that was Parliament's intent when providing the rights, obligations and exceptions in that Act.

93. On that basis the hypothetical copyright infringement by a competitor should not be considered in the analysis of s 47.

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¹⁰ *Copyright Act 1968* (Cth) s 115(2).

¹¹ *Copyright Act 1968* (Cth) s 115(4).

PROVISION OF AN EDITED VERSION

94. If each source file is treated as a separate document it should be a simple task to provide just those components used in the Senate counting process.
95. If I had access to the schedule of documents I may even be able to withdraw my request for documents which are not relevant to the Senate count (for example, user interface files or those used for other types of count).
96. The provision of an edited version would make it even more difficult for those files published to be put to any use by a competitor.

Ancillary issues

“IMPLIED” S 47E EXEMPTION CLAIM

97. I agree with paragraphs 89-92 of the AEC’s first IC review submission that there is no present need to address the exemptions under ss 47E(b) and 47E(d) of the FOI Act.
98. Should this be a matter that this review intends to consider, I will make specific submissions both on the threshold question of whether a conditional exemption applies and on the s 11B public interest factors.

SECURITY RISKS

99. Paragraph 79 of the AEC’s first IC review submission refers to security risks associated with disclosure of source code. These submissions are not relevant to a consideration of s 47. These submission should be ignored unless s 47E is to be considered, in which case both the AEC and I intend to make further submissions.
100. Briefly however, I note that disclosure of the source code for EVACS in the ACT led to identification and rectification of security vulnerabilities, rather than the compromise of elections.¹²

FORMAT OF DOCUMENTS

101. At paragraphs 10-12 of the AEC’s first IC review submission the AEC contends that correspondence can be provided in scanned form. This illustrates some confusion about what was contained in my first IC review submission.
102. This confusion is perhaps understandable, given a non-FOI request I made for correspondence in a different format on 10 December 2013.¹³

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¹² Goré R & Teague V, submission to JSCEM Inquiry into the 2013 Federal Election (Submission No 114), <http://www.aph.gov.au/DocumentStore.ashx?id=9ae9299e-16fa-4bb0-ae2-387992a8700b&subId=206202>, 7.

¹³ https://www.righttoknow.org.au/request/software_by_which_senate_counts#outgoing-1005.

103. The purpose of paragraph 31 of my first IC review submission was to note the format in which I request FOI materials be provided, assuming they are eventually provided.
104. The AEC is correct that this matter depends on the outcome as to whether the documents are exempt from disclosure. However, I thought it best to make my intentions clear early.
- (a) In particular, section 20 of the FOI Act envisages the applicant requesting access in a particular form.
105. I can find no reference in *'BA' and Merit Protection Commissioner* [2014] AICmr 9 to tampering with documents in the manner described in paragraph 11 of the AEC's first IC review submission.
106. I note that in *Diamond and Australian Curriculum, Assessment and Reporting Authority* [2013] AICmr 57 at [57]-[59] the FOI Commissioner found that it was necessary for the respondent to provide documents in the electronic format requested by the applicant, by virtue of ss 20, 22 of the FOI Act.
107. The interpretation of "document" as including any electronic data which the agency has a right to access and which capable of interpretation is not only clear on the face of the definition in s 4 but has been adopted by the Federal Court in *Beesley v Australian Federal Police* [2001] FCA 836.
108. In *QVFT and Secretary, Department of Immigration and Citizenship* [2011] AATA 763 the AAT found that it was not necessary to provide documents in the format required by the applicant, but only because "[i]t would constitute an unreasonable diversion of resources from the operations of DIAC to undertake the extensive further work the applicant wishes done for him."¹⁴
- (a) In that case it would have been necessary for the respondent to create new documents, something clearly outside the ambit of the FOI Act.
- (b) In particular the documents in question only existed in hard copy and would have to be typed up to meet the applicant's request.
- (c) In this instance the documents already exist in soft copy in the format I seek. The AEC would have to create new documents in a different format to provide them to me other than as I request.

WIKIPEDIA AS AUTHORITY

109. Paragraphs 7-9 of the AEC's first IC review submission suggest that little weight should be given to the use of Wikipedia as an authority in paragraphs 72, 108, 111, 117, 145 and 146 of my first IC review submission. I note that the paragraph references are not necessarily accurate.

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¹⁴ [124].

110. I accept that it is unfair for the AEC to determine the correctness of a Wikipedia entry.
111. My inclusion of references to Wikipedia was for ease of reading and use. However, I provide additional references below.

Software design patterns

112. Paragraph 72 of my first IC review submission referred to the Wikipedia article on software design patterns to illustrate the existence of software design patterns as standard methodologies for development of software.
113. The book Gamma, E et al, *Design Patterns: Elements of Reusable Object-Oriented Software* 1994 Addison-Wesley Professional provides a seminal look at the concept of software design patterns. Hopefully this suffices as evidence of a passing comment in my submission.

Algorithms

114. Paragraphs 108, 109 and 117 of my first IC review submission referred to the Wikipedia article on algorithms to describe the formal meaning of algorithm.
115. I cite a different definition at paragraph 40 above, which should suffice.
116. Should additional material be required, I am happy to provide more detailed primary source references.

Alternative voting methods

117. Paragraphs 145 and 146 of my first IC review submission referred to the existence of a variety of voting methods and the widespread availability of procedures to count votes using these methods.
118. The Wikipedia articles cited stand as evidence of this, regardless of the truth of their contents.
119. In any case, this is a matter which is hopefully beyond contention.

ONUS OF PROOF

120. The AEC asserts that I have not provided sufficient evidence for certain matters relating to the application of s 47.
121. I note that there is a presumption in the FOI Act that documents should be released unless can be demonstrated otherwise.
122. While I note the role of IC review is to make a new decision, to the extent there is an onus to prove the application of an exemption, that falls squarely to the AEC.