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15 January 1986

Mr N.D. McInnes
Deputy Secretary
Department of the Prime Minister and Cabinet
CANBERRA   ACT

Dear

INAUGURATION OF DSD'S SUPERCOMPUTER FACILITY

I recently discussed with you the proposal that the Prime Minister, Mr Hawke, might be invited to attend DSD on a suitable date over the period 19-30 May 1986 to inaugurate the new supercomputer facility currently being installed.

2.   The facility, which was approved by the Security Committee of Cabinet in July 1984, will comprise a CRAY Research XMP/22 processor installed at a cost of $A15.364m.   In dollar terms, it represents the second largest capital equipment investment by an Australian Government in intelligence;
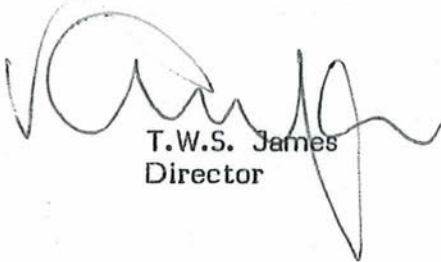
3.   The computer being installed will be the most powerful in the Southern Hemisphere and is a significant step forward in computer technology in Australia there only being perhaps 40 machines installed world wide having comparable power. The installation and operation of the system will involve the transfer of unique high technology skills to Australia.

4.   Commissioning of the supercomputer facility in DSD will significantly enhance Australia's cryptanalytic capability, ie, the "breaking" of foreign cyphers and codes, and should ensure DSD can continue to meet the requirements levied on it for signals intelligence by the assessment agencies and other Government departments.

5.   The presence of the Prime Minister in DSD on this occasion would also provide the opportunity for him to receive a first hand brief on DSD's operations including a
                                        Assuming that a two hour visit would
be possible, I would propose a programme along the following lines:

10.00 - 10.20	Inauguration of new supercomputer facility
10.20 - 10.40	Morning tea
10.40 - 11.40	Brief on DSD's operations
11.40 - 12.00	

6.   Others invited to attend the inauguration ceremony would include the Minister of Defence, Secretary Defence, CDF, Secretary DH & C, Secretary DOLGAS and a senior representative from CRAY Research.

7.   There would, of course, be no publicity given to the ceremony but there would be no need to conceal the fact that the Prime Minister was visiting DSD.

8.   I have discussed the proposed visit with Mr Beazley and Sir William Cole, both of whom endorse the proposal. You may wish to note that the last visit to DSD of a Prime Minister was by Mr Menzies in 1954.

9.   Should you require any additional detail in putting the proposal to the Prime Minister, please do not hesitate to contact me.

T.W.S. James
Director

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INSTALLATION OF A SUPERCOMPUTER AT DSD

1.   The installation of a new Analysis computer at DSD was approved by Cabinet in July 1984 and involves the installation of a Cray Research computer at DSD in early 1986 to provide an enhanced capability for cryptanalysis ("code-breaking").

2.   The Cray computer to be installed is one of a class machines commonly known as "supercomputers" providing the highest computational power attainable with current technology.

3.   In all there are perhaps 40 machines installed in the world having comparable power to the supercomputer being installed at DSD, and the DSD Cray computer will be the most powerful computer in the Southern Hemisphere.

4.   The prodigious computational capacity of the machine, up to 800 million computations per second, makes feasible the solution of otherwise insoluable problems. The operation of the computer at DSD will involve the use of complex mathematical techniques to "break" apparently secure communications of importance to Australian interests.   A typical task may require perhaps one hundred thousand million computations to derive plain language text of intelligence value from an apparently "secure" communication.   This would nevertheless only require 125 seconds on the Cray computer.

5.   The installation and operation of the system will involve the transfer of unique high technology skills to Australia.

6.   The computer will be maintained by Australians employed by a recently established Australian subsidiary of Cray Research.   Through the use of sophisticated repair techniques this operation is unusually self sufficient, with the refurbishment of failed modules being conducted on-site in a specialised test and repair facility.

7.   The key to effective use of a "Supercomputer" is the use of sophisticated computational techniques, and a major feature of the project is the transfer to DSD staff of an extensive body of knowledge and skills in "supercomputing" from the US and UK which will allow the early achievement of a very high level of operational effectiveness and provide a solid basis for further development within DSD.   The body of knowledge on supercomputing techniques available to Australia for this project has been estimated

8.   The system is being installed in March 1986 and following engineering tests and trials, is expected to be available for commissioning by mid May 1986.

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TOTAL MARSIK PROJECT COST   - $15,363,815

WORKS   - $1.9m

Computer Equipments incl. Raytheons, etc.   - $13,463,815