

ASX RELEASE

28 October 2016

STRENGTHENED CASH POSITION AND ACHIEVEMENT OF SIGNIFICANT MILESTONES

4DS Memory Limited (ASX:4DS) (**4DS**) (**Company**) today released its Appendix 4C, Quarterly Report for the three months ended 30 September 2016. Full details of the Company's cash flow and cash position are included in the Appendix 4C attached.

Successful placement

On 20 October 2016, 4DS successfully completed a placement of approximately 117.6 million new ordinary shares at an issue price of A\$0.034 per share to professional and sophisticated investors to raise A\$4.0 million (**Placement**).

The Placement shares will be issued via two tranches:

- The first tranche of approximately 88.87 million shares is within the Company's existing 15% placement capacity and was settled on 26 October 2016.
- The second tranche of 28.77 million shares is conditional upon approval of shareholders to be obtained at the Annual General Meeting (**AGM**) to be held on 30 November 2016. Settlement of the second tranche is scheduled to occur on 01 December 2016, following receipt of shareholder approval at the AGM.

Achievement of significant milestone

On 18 October 2016, 4DS announced it has successfully developed and tested 40 nanometre (**nm**) Interface Switching resistive random access memory (**ReRAM**) cells.

This milestone is a significant breakthrough as it represents a digital memory cell size which is smaller than the current large scale volume production sizes of existing non-volatile memory technology, 3D NAND Flash (**Flash**) of between 45nm to 50nm.

The ability to scale down to 40nm is essential for mass market adoption of storage class memory (**SCM**) and this geometry also represents the target cell size needed to prove the value of this leading technology to memory makers.

Operational highlights for the quarter ended 30 September 2016

During the period, 4DS made significant progress in the development of its Interface Switching ReRAM technology including the consistent achievement of key strategic and technical milestones.

In July, 4DS commenced the third year of the joint development agreement (**JDA**) with HGST, a subsidiary of Western Digital Corporation, a global leader in digital storage. The 4DS Board considers this renewal an important milestone in developing 4DS' next generation memory solutions.

The JDA, which has focused on the functional behaviour of memory cells at a small scale, has resulted in a significant reduction from 800nm, when the JDA commenced, to 40nm, demonstrating the scalability needed and achieving the geometries essential for creating long-term storage class memory.

The collaboration enables 4DS to demonstrate the necessary data to prove the value of its IP and the viability of the technology for gigabyte (**GB**) silicon storage without incurring the expense of fabricating fully functional GB ReRAM prototypes.

A test station, which provides 4DS with the ability to test cycling endurance 10 times faster than with off-the-shelf test equipment, has been operational since mid-June.

This customised in-house test station significantly expedites the testing process for the potential to complete the performance milestone which relates to cycling endurance. In parallel, the existing test station will continue to be used for functional analysis and testing of data retention.

Outlook

The next near term development goals are to:

1. Meet the endurance performance milestone – terms included in Section 14.2 of the [Prospectus](#)
2. Further characterisation and optimisation of performance parameters; endurance, access speed and retention.

4DS will continue to make improvements to the core intellectual property of its ReRAM technology and in 4Q16 will provide an update as development progress advances towards the collection of statistically significant endurance yield data.

Dr Guido Arnout said “4DS is addressing the fastest growing segment of the global memory market. In 2020, emerging non-volatile memory is predicted to be a US\$7 billion market.

“With the breakthrough development of achieving 40nm cells, announced last week, and, together with the Company’s strengthened cash position, 4DS is well placed to achieve its goal of demonstrating commercial viability of our technology for storage class memory as early as 2017.”

ENDS

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About 4DS

4DS Memory Limited (ASX: 4DS), with facilities located in Silicon Valley, is a semiconductor development company of non-volatile memory technology, pioneering Interface Switching ReRAM (Non-Filamentary ReRAM), for next generation gigabyte storage in mobile and cloud. Established in 2007, 4DS owns a patented IP portfolio, comprising 16 US patents granted and 7 patents pending, which has been developed in-house to create high density storage class memory. 4DS has a joint development agreement with Western Digital subsidiary HGST, a global storage leader, which accelerates the evolution of 4DS’ technology.

For more information, please visit www.4dsmemory.com.

Disclaimer

This release contains certain forward looking statements that are based on the Company’s management’s beliefs, assumptions and expectations and on information currently available to management. Such forward looking statements involve known and unknown risks, uncertainties, and other factors which may cause the actual results or performance of 4DS to be materially different from the results or performance expressed or implied by such forward looking statements. Such forward looking statements are based on numerous assumptions regarding the Company’s present and future business strategies and the political and economic environment in which 4DS will operate in the future, which are subject to change without notice. Past performance is not necessarily a guide to future performance and no representation or warranty is made as to the likelihood of achievement or reasonableness of any forward looking statements or other forecast. To the full extent permitted by law, 4DS and its directors, officers, employees, advisers, agents and intermediaries disclaim any obligation or undertaking to release any updates or revisions to information to reflect any change in any of the information contained in this release (including, but not limited to, any assumptions or expectations set out in the release). You should not place undue reliance on these forward- looking statements. Except as required by law or regulation (including the ASX Listing Rules) we undertake no obligation to update these forward- looking statements.

Appendix 4C

Quarterly report for entities subject to Listing Rule 4.7B

Introduced 31/03/00 Amended 30/09/01, 24/10/05, 17/12/10, 01/09/16

Name of entity

4DS MEMORY LIMITED (4DS)

ABN

43 145 590 100

Quarter ended ("current quarter")

30 September 2016

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (3 months) \$A'000
1. Cash flows from operating activities		
1.1 Receipts from customers		
1.2 Payments for		
(a) research and development	(310)	(310)
(b) business development	(87)	(87)
(c) advertising and marketing	-	-
(d) leased assets	-	-
(e) staff and board remuneration	(71)	(71)
(f) administration and corporate costs	(153)	(153)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	1	1
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other (provide details if material)	-	-
1.9 Net cash (used in) operating activities	(620)	(620)

2. Cash flows from investing activities		
2.1 Payments to acquire:		
(a) property, plant and equipment	-	-
(b) businesses (see item 10)	-	-
(c) investments	-	-
(d) intellectual property	-	-
(e) other non-current assets	-	-

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
2.2	Proceeds from disposal of:		
	(a) property, plant and equipment	-	-
	(b) businesses (see item 10)	-	-
	(c) investments - shares	112	112
	(d) intellectual property	-	-
	(e) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
2.6	Net cash from investing activities	112	112

3.	Cash flows from financing activities		
3.1	Proceeds from issues of shares	-	-
3.2	Proceeds from issue of convertible notes	-	-
3.3	Proceeds from exercise of share options	-	-
3.4	Transaction costs related to issues of shares, convertible notes or options	-	-
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
3.10	Net cash from / (used in) financing activities	-	-

4.	Net increase/(decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of quarter/year to date	1,243	1,243
4.2	Net cash (used in) operating activities (item 1.9 above)	(620)	(620)
4.3	Net cash from investing activities (item 2.6 above)	112	112
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	-
4.5	Effect of movement in exchange rates on cash held	(19)	(19)
4.6	Cash and cash equivalents at end of quarter	716	716

5. Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1 Bank balances	716	1,243
5.2 Call deposits	-	-
5.3 Bank overdrafts	-	-
5.4 Other (provide details)	-	-
5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)	716	1,243

6. Payments to directors of the entity and their associates

- 6.1 Aggregate amount of payments to these parties included in item 1.2
- 6.2 Aggregate amount of cash flow from loans to these parties included in item 2.3
- 6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2

Current quarter \$A'000
69
-

Payment to Directors are for Non Executive and Chief Executive Officer, remaining Director fees remain accrued and will be settled in subsequent quarters.

7. Payments to related entities of the entity and their associates

- 7.1 Aggregate amount of payments to these parties included in item 1.2
- 7.2 Aggregate amount of cash flow from loans to these parties included in item 2.3
- 7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2

Current quarter \$A'000
-
-

None

8. Financing facilities available <i>Add notes as necessary for an understanding of the position</i>	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
8.1 Loan facilities	-	-
8.2 Credit standby arrangements	-	-
8.3 Other (please specify)	-	-
8.4 Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well.		

None

9. Estimated cash outflows for next quarter	\$A'000
9.1 Research and development	361
9.2 Product manufacturing and operating costs	-
9.3 Advertising and marketing	-
9.4 Leased assets	-
9.5 Staff board remuneration	140
9.6 Administration and corporate costs	143
9.7 Other (provide details if material)	-
9.8 Total estimated cash outflows	644

10. Acquisitions and disposals of business entities (items 2.1(b) and 2.2(b) above)	Acquisitions	Disposals
10.1 Name of entity	-	-
10.2 Place of incorporation or registration	-	-
10.3 Consideration for acquisition or disposal	-	-
10.4 Total net assets	-	-
10.5 Nature of business	-	-

Performance Shares

Number of Class 1 Performance Shares at the beginning of the quarter was 67,604,019.

No Class 1 Performance Shares were converted or cancelled during the quarter.

No Class 1 Performance Share milestones were met during the quarter.

*The Class 1 Performance Shares are shares that will each convert into Shares on a one for one basis upon satisfaction of a performance milestone, being 4DS announcing that the Expert has delivered a report to 4DS confirming that it has achieved "endurance consistency" (the **Milestone**). Endurance consistency will be achieved on the first successful duplication of POR cells in two wafers on one or more lots (that are different lots from the lot that defines the POR), as measured by either:*

- *linear scale endurance yields for 400 cycles where the state current is read after each cycle; or*
- *logarithmic scale endurance yields for 10,000 cycles where the state current is read 4 times per decade,*

that are higher than or equal to 90% for each of the 2 wafers when including all POR cells with sizes up to 3 times the smallest cell size in at least 2 die per wafer.

The Class 1 Performance Shares expire on 31 December 2018. To the extent that the Milestone has not been achieved on or before the expiry date, then the Class 1 Performance Shares will automatically consolidate to a nominal number and convert on a one for one basis to a nominal number of Shares.

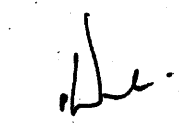
On the basis that the Milestone is drafted with reference to technical criteria which may be outside the scope of expertise of most investors and analysts, ASX requires 4DS to provide the following “plain English” summary of the terms and conditions of the Milestone, so that ordinary investors and analysts can more readily understand the circumstances in which the Milestone will be taken to have been met:

- *All silicon products used in mobile devices (smartphones, tablets, laptops) and data centres (cold storage and the cloud) are very complex high-volume semiconductor products that need a very high degree of manufacturing consistency and operating consistency to be profitable for the chip maker and affordable for the chip buyer.*
- *Today’s high-density memory chips contain billions of memory cells together with the control circuits to select certain cells, read their state (“0” or “1”), or write a different state. The smaller the cells, the more data that can be packed into a single chip. Many memory chips are manufactured together on a wafer through a complex sequence of depositing super thin materials and etching away certain sections of these depositions. When all process steps are completed, the wafer is cut into lots of individual memory chips which are then tested, packaged and sold.*
- *4DS’s initial focus was to establish a baseline process that could manufacture individual memory cells of various sizes that perform the desired function consistently cell-to-cell on the same wafer and on wafers in the same lot (manufactured together). The first goal was to demonstrate that 4DS had a repeatable process that could manufacture cells on wafers in a new lot that behave very similar to cells on wafers manufactured in an earlier lot (ie, lot-to-lot consistency).*
- *Having achieved, lot-to-lot consistency, 4DS’s focus is to gradually improve the process in incremental steps to improve the fundamental behaviour of the cell (reading, writing, storing) while maintaining lot-to-lot consistency. The Milestone is specifically focused on 4DS ReRAM cells reaching a certain endurance level: how many times the state of the cell can be changed reliably from a “0” to a “1”.*
- *4DS has entered into the Joint Development Agreement with HGST Netherlands B.V., to investigate the scaling of 4DS ReRAM cells to small cell geometries for memory applications.*
- *Following the achievement of the Milestone, 4DS will be well positioned to develop arrays of cells, and test chips.*

The Milestone is further detailed in the necessary technical terms in the full terms and conditions of the Class 1 Performance Shares to ensure that the Milestone can be verified and audited using clear metrics by an independent expert.

Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.



Sign here:
(Company secretary)

Date: 28 October 2016

Print name: Peter Webse

Notes

1. The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this quarterly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.