



## ASX RELEASE

4 July 2016

### 4DS RENEWS HGST AGREEMENT REGARDING NEXT GENERATION NON VOLATILE MEMORY (NVM) TECHNOLOGY

#### Key points

4DS and HGST commit to a further 12 months of their joint development agreement.

The collaboration accelerates evolution of non-filamentary ReRAM for mobile and cloud gigabyte storage.

Non-filamentary ReRAM well positioned to meet the needs of a growing multi-billion-dollar NVM market.

4DS Memory Limited (ASX:4DS) (**4DS**) today announced that it has agreed to a 12-month renewal of a joint development agreement (**JDA**) (**Agreement**) with HGST, a subsidiary of Western Digital Corporation.

4DS is developing a unique, patented, non-filamentary, resistive random access memory (**ReRAM**) technology well suited for gigabyte (**GB**) silicon storage at smaller geometries, using less power with increased reliability and performance when compared to traditional data storage, such as NAND Flash (**Flash**), which is a US\$40 billion market.

Flash is a 35-year-old memory technology with diminishing capacity to reliably scale to meet the exponential growth of data demands globally. The limitation of traditional data storage creates a multi-billion-dollar market for next generation NVM technologies. 4DS believes that ReRAM is emerging as the leading memory candidate to overcome the limitations of Flash.

The 4DS Board considers that renewal of the Agreement is an important milestone for 4DS in developing next generation memory solutions.

The JDA collaboration commenced in July 2014. 4DS believes that the development program accelerates the evolution of non-filamentary ReRAM with the goal of optimising the 4DS memory technology for the mobile and cloud GB storage market.

In February 2016, during the second year of the JDA, 4DS achieved a ground breaking milestone demonstrating a scalable non-filamentary ReRAM cell at a 50 nanometre (**nm**) lithography, approaching production geometries, and parallels the geometries of 3D Flash today.

A new 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 can simultaneously collect endurance yield data across multiple cells, significantly expediting the testing process. In parallel, the existing test station will continue to be used for functional analysis and testing of data retention.



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In the next three months, 4DS is focused on demonstrating viable scalability below 50nm and expects to complete the performance milestone which relates to cycling endurance.

4DS will release an updated presentation and a video to coincide with Australian investor briefings commencing in mid-July, followed by marketing in other regions.

**ENDS**

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### **About 4DS**

4DS Memory Limited (ASX: 4DS), with research and development facilities located in Silicon Valley, is a developer of non-volatile memory technology, pioneering non-filamentary ReRAM for next generation storage in mobile and cloud. Established in 2007, 4DS owns a patented IP portfolio developed in-house to create high density gigabyte storage. 4DS has a joint development agreement with HGST, a global storage leader. For more information, please visit [www.4dsmemory.com](http://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.