

Exhibit C: Infringement of U.S. Patent No. 12,265,715 – 7/29/2026

The Accused Instrumentalities consist of Meta's data center servers, including Meta owned data centers, Meta operated data centers, and data centers operated on behalf of Meta, that support Flexible Data Placement (FDP) and and/or NVMe 2.1 and associated hardware, software, and firmware. For example, this includes but is not limited to, making data centers with Samsung's PM9D3 solid-state drives ("SSDs") and using data centers with Samsung's PM9D3 SSDs.¹ The Accused Instrumentalities infringe claims 1 and 9 ("the Asserted Claims") of U.S. Patent No. 12,265,715 ("the '715 patent") in at least the following exemplary ways.

Meta infringes the Asserted Claims under 35 U.S.C. § 271(a) by making and/or using the Accused Instrumentalities in the United States. Meta makes the Accused Instrumentalities when it combines an SSD that supports FDP and/or NVMe 2.1 with a Meta server. Once the SSD is installed, the resulting system infringes as it contains each element of the asserted claims. Further, once the SSD is installed and the server is powered on for Meta's usage, the resulting usage infringes as it contains each element of the asserted claims.

Meta's CacheLib, a software running on Meta's data center servers, provides an example of Meta benefitting and/or taking advantage of the Accused Instrumentality's FDP functionality. To the extent it is argued that the asserted claims require the FDP functionality to be invoked and/or used, CacheLib independently demonstrates such infringement. CacheLib causes Meta's servers to invoke FDP as described in the contentions below.

These infringement contentions are provided based on information obtained to date and may not be exhaustive. Gaea's investigation of Meta's infringement is ongoing. Gaea reserves the right to seek to supplement and/or amend these disclosures to identify additional accused instrumentalities and/or to further identify where each element of each asserted claim is found in each accused instrumentality, including on the basis of discovery obtained from Meta and from third parties during the course of this litigation.

Discovery is ongoing, including identification of the specific SSDs used by Meta and the SSDs support for various identified functionality elements of FDP and/or NVMe 2.1.

¹ <https://semiconductor.samsung.com/news-events/tech-blog/nvme-fdp-a-promising-new-ssd-data-placement-approach/>

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'715 Patent Claim 1	'715 Patent Accused Instrumentalities
1[P] A solid-state drive comprising:	The Meta Accused Instrumentalities are an apparatus. For example, the Accused Instrumentalities include data center servers that include SSDs which together are devices or systems. For example, public documentation indicates that Meta's Accused Instrumentalities include Samsung SSDs: "At Samsung, we enabled FDP on Meta (Facebook)'s CacheLib deployments using Samsung PM9D3 SSD. This work has been merged with the mainstream CacheLib code."² To the extent Meta's Accused Instrumentalities include other SSDs that support FDP and/or NVMe 2.1, the Accused Instrumentalities that include these other SSDs are further examples of the Meta Accused Instrumentalities consisting of an apparatus. Discovery is ongoing, including identification of the specific SSDs used by Meta.
1[A] a solid-state memory;	The Meta Accused Instrumentalities include a solid-state memory, including for example, non-volatile flash memory. As described for '023 Patent claim limitation 1[A] and 14[A], incorporated here by reference, Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD, which contains storage media in the form of a sold-state memory. Discovery is ongoing, including identification of the specific SSDs used by Meta.
1[B] a device memory;	The Meta Accused Instrumentalities comprise a device memory. As described for '553 Patent claim limitation 1[B], incorporated here by reference, the Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD include a device memory. Discovery into the specific SSDs used by Meta is ongoing, including the device memory used by the SSD.

² <https://semiconductor.samsung.com/news-events/tech-blog/nvme-fdp-a-promising-new-ssd-data-placement-approach/>

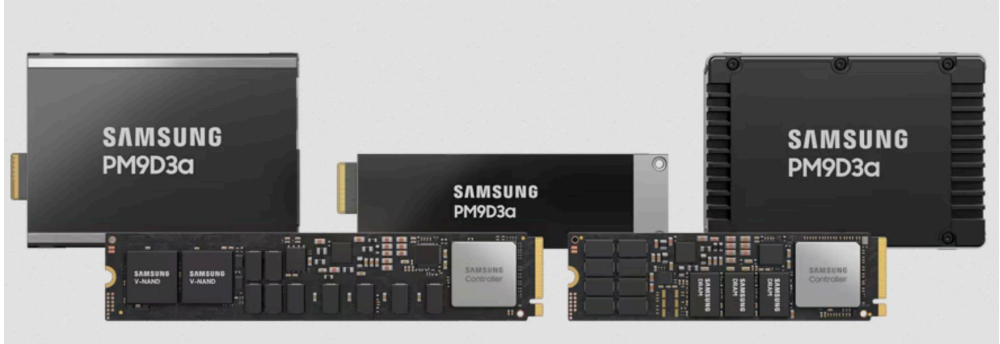
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1[C] a programmable processor operatively coupled to the device memory;	The Meta Accused Instrumentalities comprise a programmable processor operatively coupled to the device memory. As described for '553 Patent claim limitation 1[C], incorporated here by reference, Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD, include a programmable processor operatively coupled to the device memory. Discovery into the specific SSDs used by Meta is ongoing, including the specific processor used by the SSD.
1[D] a device controller operatively coupled with the solid-state memory and the programmable processor; and	The Meta Accused Instrumentalities comprise a device controller operatively coupled with the solid-state memory and the programmable processor. As described for '553 Patent claim limitation 1[D], incorporated here by reference, Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD, include a device controller operatively coupled with the solid-state memory and the programmable processor. Discovery into the specific SSDs used by Meta is ongoing, including the specific device controller used by the SSD.
1[E] an application stored on the device memory comprising instructions that, when executed by the programmable processor, direct the programmable processor to:	The Meta Accused Instrumentalities comprise an application stored on the device memory and comprising instructions that, when executed by the programmable processor, direct the programmable processor to at least do the limitations described below. As described for '553 Patent claim limitation 1[E], incorporated here by reference, Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD, include an application stored in device memory comprising instructions executed by the programmable processor. Discovery into the specific SSDs used by Meta is ongoing, including the specific application stored on the device memory of the SSD.

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1[E1] process content for storage based on a storage policy;	The Meta Accused Instrumentalities comprise an application stored on the device memory and comprising instructions that, when executed by the programmable processor, direct the programmable processor to process the content for storage based on the storage device policy. As described for '553 Patent claim limitation 1[E2], incorporated here by reference, Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD, include a programmable processor that processes the received content based on the received storage device policy. Discovery into the specific SSDs used by Meta is ongoing, including the implementation of FDP and/or NVMe 2.1 and/or NVM Write Command by the SSD as identified above.
1[E2] transfer the content to the device controller; and	The Meta Accused Instrumentalities comprise an application stored on the device memory and comprising instructions that, when executed by the programmable processor, direct the programmable processor to transfer the content to the device controller. As described for '553 Patent claim limitation 1[E3], incorporated here by reference, Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD, include a programmable processor that transfers the received content to the device controller. Discovery into the specific SSDs used by Meta is ongoing, including the implementation of FDP and/or NVMe 2.1 and/or NVM Write Command by the SSD as identified above.
1[F] the device controller to: 1[F1] receive the content from the programmable processor; and 1[F2] store the content on the	The Meta Accused Instrumentalities comprise the device controller configured to receive the content from the programmable processor and store the content on the solid-state memory. As described for '553 Patent claim limitation 1[F], incorporated here by reference, Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD, include a device controller configured to receive the content from the programmable processor and store the content on the solid-state memory. Discovery into the specific SSDs used by Meta is ongoing, including the implementation of FDP and/or NVMe 2.1 and/or NVM Write Command by the SSD as identified above.

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solid-state memory.	
'715 Patent Claim 9	'715 Patent Accused Instrumentalities
9[A] The solid-state drive of claim 1 further comprising: 9[A1] a communication interface to communicatively couple the solid-state drive to a host device;	The Meta Accused Instrumentalities include a communication interface to communicatively couple the solid-state drive to a host device. As described for '553 Patent claim 2, incorporated here by reference, documentation show an interface connector connecting components to a host computer, including PCIe. Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD. Public documentation from Samsung indicates that the Samsung SSDs, including but not limited to the Samsung PM9D3 SSD contains NAND and/or V-NAND, a Samsung Controller integrated circuit, and memory used by the controller integrated circuit³. 

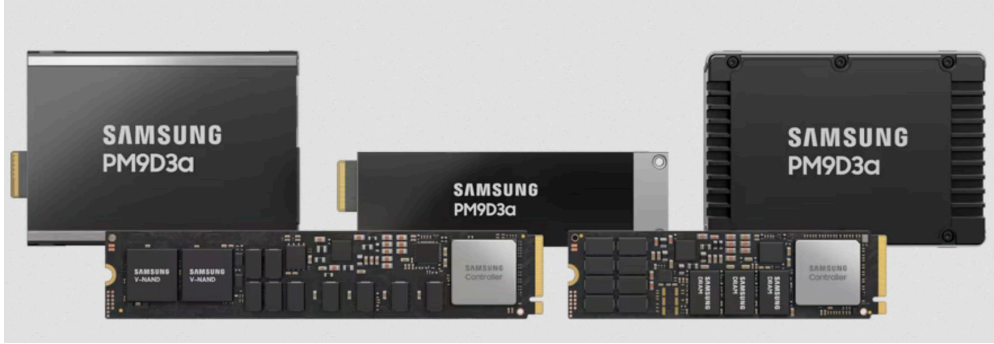
³ <https://image.semiconductor.samsung.com/image/samsung/p6/semiconductor/products/pf-layout/spec-ssd-dcssd-pm9d3a.png>
(showing “Samsung V-NAND”)

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	As another example, Samsung documentation describes the Samsung device as supporting PCIe⁴: PM9D3a Features and Benefits Best in Class Performance The PM9D3a features a Storage Networking Industry Association (SNIA) based 2.5" form factor with full PCIe Gen5 support. This device is able to harness the production efficiencies of Samsung's eighth-generation three-bit V-NAND technology to boost random read speeds up to 2.4 times. Sequential read and write speeds can reach 12,000MB/s and 6,800MB/s respectively. With random reads up to 2,000K IOPS, random writes up to 400K IOPS, and a 15.36TB capacity, the PM9D3a is one of the highest-performing SSDs in the industry. These maximum speeds are based on the U.2/E3.S form factors. Discovery into the specific SSDs used by Meta is ongoing, including the communication interface used by the SSD to a host computer.
9[A2] a data link to communicatively couple the programmable processor and the device controller;	The Meta Accused Instrumentalities comprise a data link to communicatively couple the programmable processor and the device controller. As described for '553 Patent claim limitation 1[E3], incorporated here by reference, Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD, include a data link for transferring data from the programmable processor to the device controller. Discovery into the specific SSDs used by Meta is ongoing, including the data link that communicatively couples the programmable processor and the device controller within the SSD.
9[A3] a printed circuit board to mount the solid-state memory, the device memory, the device controller, the	The Meta Accused Instrumentalities include a printed circuit board to mount the solid-state memory, the device memory, the device controller, the programmable processor, and the data link. As described for '553 Patent claim 3, incorporated by reference, Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD, include a printed circuit board.

⁴ <https://semiconductor.samsung.com/news-events/tech-blog/samsung-pm9d3a-solid-state-drive/>

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programmable processor, and the data link; and	Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD. Public documentation from Samsung indicates that the Samsung SSDs, including but not limited to the Samsung PM9D3 SSD include a printed circuit board⁵ as shown below that mounts the solid-state memory, the device memory, the device controller, the programmable processor, and the data link.  Discovery into the specific SSDs used by Meta is ongoing, including the printed circuit board used by the SSD.
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⁵ <https://image.semiconductor.samsung.com/image/samsung/p6/semiconductor/products/pf-layout/spec-ssd-dcssd-pm9d3a.png>
(showing “Samsung V-NAND”)

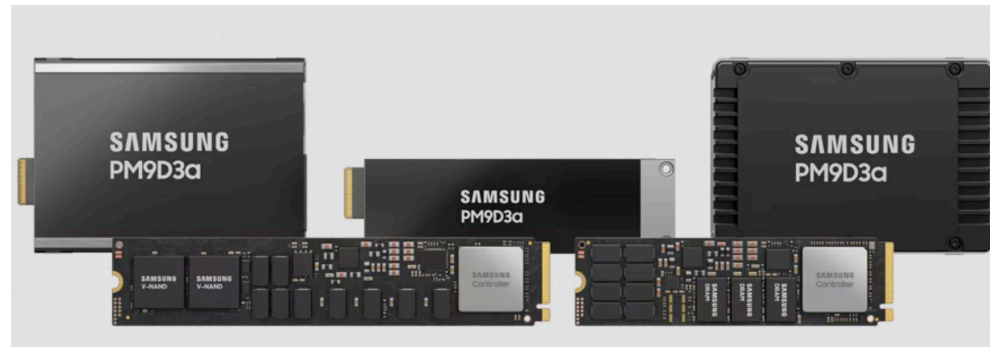
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9[A4] a case to mount the printed circuit board and the communication interface.

The Meta Accused Instrumentalities include a case that mounts the printed circuit board and the communication interface.

As described for '553 Patent claim 4, incorporated by reference, Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD, include a case that supports the printed circuit board.

Meta Accused Instrumentalities include SSDs, including but not limited to the Samsung PM9D3 SSD. Public documentation from Samsung indicates that the Samsung SSDs, including but not limited to the Samsung PM9D3 SSD include a case that mounts the printed circuit board and the interface connector that provides the communication interface⁶ as shown below:



Discovery into the specific SSDs used by Meta is ongoing, including the case used by the SSD.

⁶ <https://image.semiconductor.samsung.com/image/samsung/p6/semiconductor/products/pf-layout/spec-ssd-dc SSD-pm9d3a.png>
(showing “Samsung V-NAND”)