

# GIVING THE GEOSCIENCES INDUSTRY A NEW OPTION TO BRING DATA HOME SAFE

## Seagate™s Lyve Mobile Mass Storage and Data Transfer Solution



Geosciences survey companies face a constant challenge in securing and moving data. Operating in far-flung, barely connected parts of the world, with temperatures and weather hard to predict, they deploy scanning and sensor technologies that can generate gigabytes of data in a single shift, and terabytes every few days. Storing such massive amounts of data in the field



(or on an ocean vessel) and moving large data sets quickly and reliably to a cloud or on-premises processing centre present tough dilemmas.

Understanding that data expansion will continue in the foreseeable future, Seagate has introduced [Lyve Mobile Edge Storage and Data Transfer Service](#).

With its fleet of [Lyve Mobile™ data shuttles and arrays](#), [Lyve Mobile](#) enables geoscience businesses to move mass data quickly, securely and simply. Scalable, modular and vendor agnostic, this storage solution eliminates network dependencies so that companies can transfer mass datasets in a fast, secure and efficient manner, making sure no time is wasted waiting for data to upload.

**A conversation with Nir Elron, Seagate's director of global commercial activities for [Lyve Mobile](#), and Darren Biggs, geoscience services manager at ET Works.**

**Seagate is rolling out [Lyve Mobile](#) first to industries that generate a lot of data. That certainly applies to hydrography and oceanography.**

N.E.: Today, everything needs to be digitized and done quickly. Everybody's running in the same race, trying to map their terrains or the ocean floor quicker than the competition. Seagate is the single largest storage vendor in the world in terms of sheer media capacity. We make and deploy more than 600 million terabytes of storage solutions every year. Almost half the data in the world is stored on our devices. Over the last few years, we've added another leg to the business. Instead of just 'make and sell', we now also 'make and deploy as a service'. That is [Lyve Mobile](#) (pronounced as in 'alive'). It is a subscription-based service, so customers can scale up or scale down according to their present needs.

**How does [Lyve Mobile](#) work?**

N.E.: [Lyve Mobile](#) resolves technical issues around data acquisition and movement for customers. It doesn't matter if it's an oil rig or ship, or a vehicle on land that is performing seismic surveys. The data is recorded in the field on mobile arrays. These are Seagate's highest grade, enterprise self-encrypted drives (SED), meaning that every bit copied onto the array is encrypted. The encryption keys are managed by our clients, providing access to the data stored on the arrays only to their trusted targets.

The mobile arrays are totally host agnostic and cloud agnostic, with a capacity of up to 100 terabytes per unit. It's about a shoebox in terms of size. You can connect these devices in the field to any kind of host, any kind of streamer, any kind of sensor you want to record.

At the end of the session – every day, every week, every month, every six months, depending on the cycles of moving the data from the endpoint to the cloud – the mobile arrays are put in a Peli case. It is then the customer who decides what to do next. One option is to leverage our logistics services, meaning that we deliver the data wherever it needs to go via our extremely well-established logistics networks. Seagate manufactures and ships around a half a million devices every day.



### Managing high data volumes at sea (Image courtesy: Terradepth)

*Terradepth, based in Austin, Texas, was an early adopter of Lyve Mobile. The company needed a data transfer solution that could withstand environmental extremes, and easily connect to their autonomous surface and subsurface vessels (AxVs). At the end of a mission, the accumulated data is retrieved from the AxVs via a cable connection and saved to 96-terabyte Lyve Mobile arrays. The edge-collected data is then transferred in bulk to an on-premises cloud access point.*

## NEXT-DAY DELIVERY

D.B.: It's effectively like leasing data storage and mobility solutions. For every project, you have the latest version. In the Lyve Management Portal, users can set up their project scope and data storage requirements. In most cases, their caddies arrive the following day, ready to be plugged into the vessel. If you need more, you add more. If you need less, you take less. You get the exact components you need. You use them for the life of the project, then they go back to Seagate and get refreshed and updated. So you're always going to have the latest generation.

N.E.: You might have a burst where you suddenly need to move 5 terabytes or 50 terabytes every day, or you might have a 500-terabyte event that you need to move and ingest. Within 24 hours, we get you what you need to move it. That's the kind of flexibility we're offering.

D.B.: With [Lyve Mobile](#) we can scale up to the petabyte level, which is necessary for a lot of oceanographic data. But equally, Seagate has ingestion points at key locations globally. These are on 100 gigabyte lines, which then talk to the Seagate Lyve cloud environment. An ecosystem is the best way of describing it.

## BYPASSING PUBLIC NETWORKS' VULNERABILITIES

N.E.: There's a mentality today that every dataset can go over 4G or 5G networks, or over fixed landlines. But when we're talking about terabytes of data, there's no way to move tens of terabytes daily using networks. You need to physically perform some sort of forklifting, moving data from point A to another point, then ingest it to a trusted target, whatever that may be. Security is also an issue. Data is very vulnerable if you try moving it using public networks. With [Lyve Mobile](#), all data copied onto an array is 'encrypted at rest'. That is by definition more secure and less costly compared to 'encryption in transit'. With our encryption and built-in security elements, the mobile arrays become like a data vault.



The mobile arrays fit into the Rackmount Receiver. Once devices are active, the included client software allows you to customize your settings and create copy workflows. (Image courtesy: Terradepth)

## GEOSCIENCES USE CASES

N.E.: We see upstream use cases around exploration and drilling, activities like site mapping, offshore modelling, geophysical surveys, seismic surveys, environmental and drilling monitoring and acoustic sensing. These generate tens and in some cases hundreds of terabytes every day. Midstream, too, in production and transport, there is a need to acquire a lot of data and move data quickly. Offshore pipe performance monitoring, for example. It all uses high-fidelity, high-resolution sensors. Those sensors are storage hungry, and their resolution keeps growing.

D.B.: ET Works serves clients in oil and gas, but also in offshore wind and renewables, all of which use offshore data. For our acquisition and processing clients also, storage is a big concern. Seagate came to us with the Lyve portfolio for edge data storage, high-speed, ruggedized, large data sets where you can't transfer the data over the wire or over cloud or over satellite. We said yes, this looks very exciting.

N.E.: Everything with the 'Lyve' label is made by Seagate and offered to customers as a service. It is part of a general evolution within the company, and globally. It lets customers shift costs for data storage and movement from capital expenditures to operating expenses. That dramatically reduces any capital expense barriers for customers.

D.B.: Because of the cyclical nature of the oil and gas industry, it helps if you can expand and contract your project portfolio as needed. Many companies have moved away from owning even the vessels. Seagate's [Lyve Mobile](#) is well aligned to that because it's next-day delivery.



For more use cases and to learn what Lyve Mobile can do for you, visit

[www.seagate.com/products/data-transport](https://www.seagate.com/products/data-transport)

---

<https://www.hydro-international.com/case-study/seagate-s-lyve-mobile-mass-storage-and-data-transfer-solution-gives-the-geosciences-industry-a-new-option-to-bring-data-home-safe>

---