

**Tier1Research**

Elliptical Mobile Solutions shrinks the container, looks to SPEAR private clouds

Datacenters and Colocation

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The datacenter industry is, quite obviously, moving toward a standardized build approach, with such technologies such as containers, modular builds, modular systems and components, or pseudo-modular solutions. T1R likes the idea of standardization – clearly, modern datacenters are far too customized in terms of generator, UPS, PDU and other options for no discernible reason other than the whims of some datacenter designers. T1R thinks that increased standardization of datacenter components is the only way to reduce long build times, which are currently a serious impediment to the datacenter industry.

One of the reasons that fully containerized solutions draw so much interest is because they are a pre-packaged 'box' that ostensibly just needs to be 'plugged in' and is ready to go. The reality is that far more infrastructure is required beyond what typical server manufacturer containerized datacenters include. There are additional pitfalls to containers. One of the significant issues is the size of the deployment. Containerized datacenters include thousands of servers, which for many companies is far beyond their real needs. There is also the detail of maintainability. When the IT, cooling and some electrical distribution equipment is all mixed together inside a standard shipping container, maintenance can get pretty dicey – not to mention that the lifecycles of the different components almost never coincide and the box itself doesn't offer much in the way of upgradeability when the assets are mixed.

Modular components like those offered by **Turbine Air Systems** in its packaged central plant, **APC's** self-contained modules and **Digital Realty Trust's** new POD Architecture Services are familiar approaches, but T1R thinks **Elliptical Mobile Solutions (EMS)** has another one worth keeping an eye on.

EMS's Relocatable Adaptive Suspension Equipment Rack (RASER) and its close cousin the Self Propelled Electronic Armored Rack (SPEAR) essentially take the advantages of a containerized datacenter and shrink it down into a single self-contained rack requiring only power. Upon initial review, T1R admits we were ready to put EMS's idea right alongside the container guys as a niche product without much hope of widespread adoption. It still requires all of the back-end infrastructure to support it, such as switchgear, UPSes, generators, etc. After spending some time with EMS, however, T1R isn't ready to dismiss them just yet.

EMS's RASER is standard vendor-neutral 19-inch rack with a sidecar for closed-loop internal cooling; i.e., the rack has a sidecar air conditioner (and option for second air conditioner for redundancy). Where T1R thinks EMS is different is in its vision for where its product will fit into future datacenters. EMS admitted that a large-scale deployment can offer difficulties in the way of maintainability (who wants to maintain 150 air conditioners? It would be a full time job in and of itself.) EMS also understands the difficulties that close-coupled cooling presents, that is to say that if cooling is lost in the unit itself, high temperature conditions are going to be reached rapidly and the equipment is likely to see an outage very quickly. EMS isn't exactly targeting traditionally built datacenters, but rather the company sees the sweet spot for its product in a private cloud type deployment where all units are part of a Borg collective where one portion can see a failure or be taken down for maintenance without affecting the operation as a whole. This is how **Google** datacenters work for the most part and T1R thinks it represents a likely future for mainstream datacenters – exactly how far in the future remains to be seen at this point.

T1R take

T1R thinks that EMS's RASER, SPEAR and 'rack container' concept might be a little ahead of its time. The datacenter industry is a tough one to please when it comes to market acceptance of leading edge technologies, and right now we think EMS is riding close to the line. That being said, with advances in virtualization and private clouds, and EMS's understanding of the limitations and pitfalls of containers and its SPEAR, EMS's product (or something like it) could realistically find its place in future datacenters.

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