



These are a few of my favourite things



Chris Harris

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Having hung up his Christmas stocking, **Chris Harris** looks back at a few of his favourite developments during 2018, and sets out his 'wish list' for the year ahead!

Trimble MX9: New mobile mapping technology, capable of measuring two million points per second at motorway speeds. People are putting this type of equipment on vehicles to measure anything along our carriageways; kerb lines, new structures, central reservation changes along smart motorway, even hanging baskets (seriously!). This technology can be used to capture a whole borough or a city in days, or perhaps something smaller like a railway line in hours. Mass, precise data capture, in a short timeframe, to update records or detect change.

GeoSLAM's ZEB-HORIZON: carrying a similar USP to the above, this is back to mass data capture but in a handheld format. GeoSLAM has been around for quite a while now and its earlier handheld laser scanners have been a worldwide hit, predominantly for indoor data capture. The company's latest product is really exciting though. With hugely upgraded LiDAR capacity, the potential for carrying this device literally anywhere and mapping your world is finally here. The really clever bit: while the SLAM (Simultaneous Localisation and Mapping) algorithm is essentially unchanged from previous models, the HORIZON now captures many more points and at greater range. The end result is far more robust and reliable point cloud registration. Good for harsher SLAM environments (when limited features are available to reference) and much easier for newcomers to the technology.

Computers! I appreciate they've been around for a while now, but not necessarily for working outdoors (or at least, not nicely). Enhancements to last year's crop of 'in the field' dataloggers have finally integrated the full Windows operating systems in a very easy-to-use format. The screens are also vastly improved, and users can now happily tap away all day long and see everything that is going on. They are finally becoming a pleasure to use (the computers that is!).

Computing power is also the key to a lot of new geospatial technology. People want to streamline their processes and that means using as few office platforms as possible. This trend is reflected in a new version (5.0) of Trimble Business Center, the processing and handling software can literally take on anything, working with data from GNSS, mobile laser scanning, aerial photogrammetry and automated algorithms. To get to the point, we are now realising a vision dating back many years and which has only been made possible with modern day computers.

And so, on to 2019...

Augmented Reality: in 2019 we can expect to see further evidence of 'cool gadgets' turning into workable solutions. For example, there is vast potential for devices such as Microsoft's HoloLens in viewing or altering digital models; e.g. walking up a staircase to check the beams on the floor above - but from miles away - and then dynamically changing and updating the model regardless of the BIM system in use.

Think even further. Attach a GNSS receiver (for precise position and orientation) to a dual camera phone in the field and load onto it whatever data you want. With the GNSS's position/orientation and the ranging cameras on the phone, the potential applications are now even greater, e.g. bring up the video feed and load on top of it what 'should' be there. How about making a building float in its desired location before the foundations have even been dug?

And how about visualising assets that may never be visible, such as utilities? Cable strikes are still a significant problem in our industry and translating a utility map in the field is tricky, but if you can 'virtually' see the pipes and cables all around you, in their true position, then you can dig with an added level of confidence.

Perhaps pointing the way is Trimble's SiteVision solution which uses the company's Catalyst softGNSS receiver combined with Google ARCore technology, to deliver a handheld, high accuracy outdoor AR system (pictured above).

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