



Anthony Baker,  
CEO, Satellite Vu ●●●

# Q&A

## Observing the Earth

NewSpace pioneer Satellite Vu was recently launched to apply new technological developments to monitor plastic, pollution and pirates from space. In the last decade, humans have produced more plastic than in the entire 20th century and plastic constitutes approximately 90 percent of all waste floating on the ocean surface. By 2050, there could be more plastic in the world's waters than fish, measured by weight. This is just one of the challenges Satellite Vu means to meet, as CEO, Anthony Baker, explains.

**Question: Can you provide an overview of Satellite Vu's capabilities and expertise?**

**Anthony Baker:** Satellite Vu is developing a small satellite fleet which will eventually comprise seven satellites. These satellites will be capable of delivering constant, near real-time information on target sites over a 24 hour period, day and night.

Typically, current satellite technology allows a target re-visit of just once per day, often around mid-morning, and therefore you only get that snapshot for a very restricted time period. If you want to carry out pattern

of life analysis – things that are going on all day and all night – you must have remote sensing capability that can deliver consistent, reliable frequent data. Plus, if you are capturing this imagery every hour, you have to deliver that information in a way that is meaningful to your customers. Satellite Vu has developed unique algorithms that help us to analyse data in a timely way. We are harvesting billions of pixels from thousands of locations - and this all needs to be analysed. We will use machine learning and automation to enable us to process it. The human element is important too, but we need help to process the data into trends so that we can look at activity and changes in trends to help us to alert customers when a change is anomalous.

Satellite Vu will offer activity-based intelligence which looks at the pattern of life, so we are trying to determine the economic activity by looking at stationary pictures. This data must then be converted into something that end users understand, particularly if you're looking at the stock market or commodity brokers, for example that need to determine what's going on, on the ground and give it some economic value.

**Question: What are the benefits of Satellite Vu's technology compared with other satellite operators, or competing technologies?**

**Anthony Baker:** As I mentioned, as it stands today, Earth observation (EO) satellites typically re-visit a location just once a day, mid-morning when the air tends to be clearer and the shadows prominent. These observations cannot deliver the temporal pattern of life



The value of plastic pollution is reportedly US\$139 billion per year. Photo courtesy of Adobe Stock Images ●●●



insights that Satellite Vu can deliver. It is the constant stream of information that is required to gain understanding of changes that are happening on the ground. Furthermore, our use of algorithms and automation to help to process the data and bring insights to end users is a real differentiating factor. We can also overlay this data on existing data to provide even more meaningful insights dedicated to specific customer requirements. If the information is rapid, precise, very clear and therefore actionable, it has a greater commercial value. That is the most important aspect of what we do – delivering information that is useful to the user in a timely manner.

**Question: What can you tell us about Satellite Vu's funding arrangements? We understand you've looked at crowdfunding?**

**Anthony Baker:** We did look into crowdfunding, but it's a lot more effort than we expected; to make a success of it we would need to dedicate considerable effort on PR and

managing the expectations of the potential investors. To make a meaningful difference, we would likely need several hundred investors which would become a significant task in itself. We need to focus our energy on our technology and more importantly our customers requirements.

Currently, we are funded by seed funds, but we anticipate that we will close on a grant and a large revenue generating contract this year, thereafter we will seek new investors probably early next year.

**Question: Why is Earth observation so important in the modern world?**

**Anthony Baker:** There is no better way to look at the world as from space. EO data provides vital information on even the most minute changes that happen here on Earth, which means that these changes can be monitored and acted upon if necessary. Nothing else can give the same perspective, and the developments in EO capabilities over the last few years alone have been phenomenal. Resolution has got much

higher so that we can see features in great detail and the sensors on board the satellites have become ever more sophisticated. Algorithms take the Big Data produced by the satellites and convert this into meaningful information that can be used by a plethora of industries and sectors from environmental, agricultural all the way down to businesses such as insurance companies.

The other important trend in the EO sector to point out is that the cost to manufacture an EO satellite has dropped. This is due to the advent of NewSpace innovations. Small satellite technology has skyrocketed in popularity and is at the centre of a paradigm shift in the EO market which has lowered the cost and time taken to manufacture spacecraft. This transformation is significant because it is making space accessible to all and is giving less developed countries the opportunity to tackle some of their greatest problems. Satellites can now be built in just 6-12 months, yet can give excellent resolution in comparison with

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their large counterparts. Small EO spacecraft can produce imagery down to one metre, and in the best cases, up to 30cm resolution.

Earth Observation has a huge amount to offer the modern world, but challenges still remain to provide night and day vision, and to optimise the latency of information in order to make EO information relevant to more users; Satellite Vu is addressing these challenges.

**Question: Looking at the problem of plastic pollution specifically, how can Satellite Vu take a role in meeting this global environmental challenge?**

**Anthony Baker:** Plastic is a massive problem. The value of plastic pollution is reportedly US\$139 billion per year. This is the main area of focus for us at the moment.

The technology offered by Satellite Vu significantly decreases the time in which it takes to measure the plastics problem. We are looking at reducing the process from years to weeks. If we can enable rapid identification of where the plastic is located and where it is originating from, governments and organisations can act. This is where our rapid re-visit times are so critical, because we build up a real-time picture of where the plastic is becoming built up we can track it as it happens.

Measuring the distribution of plastics is also essential in enabling us to tackle it. We will provide direct multispectral measurement of the plastic contamination providing actual, rather than simulated data therefore giving the true scale of the problem. Infrared sensors, that will be built into the Satellite Vu payload, are able to detect the presence of floating debris and ultimately the type of plastic.

Then there is the data analysis. If the data is not processed quickly and precisely, the problem is simply allowed to grow, costing economies even more and resulting in wasted efforts. Satellite Vu offers both speed and precision, helping users to better identify the source.

This early detection aids in more accurate localisation of the plastic before it drifts away. Our fast and reliable data processing will provide accurate and actionable data that speeds up decision-making and the delivery of solutions that can help to tackle what is

a huge task for humanity. The point is that if we start this process now, we can do something about it. We can turn it around.

**Question: In June, Satellite Vu won first prize in the European Space Agency's (ESA) Ocean x Space competition. What can you tell us about the competition, and this achievement?**

**Anthony Baker:** The competition was held during the 8th edition of ESA's annual Business Applications Conference, held in Stavanger from 22-24 May, which brought together companies, users, experts, entrepreneurs and investors to foster partnerships and new ideas. The Ocean x Space competition invited small companies of 50 employees or less, to submit ideas for innovative, space-enabled services in the maritime sector. Amongst other criteria, the judges were looking for clarity of value proposition, the problem to be tackled, the use of

space assets, technical feasibility and the maturity of the idea.

The award is very important to Satellite Vu as it reinforces the importance of what we are doing and striving to achieve. Plastic pollution is a massive challenge for the maritime environment and our solution provides a means to tackle it rapidly and affordably. Gaining recognition from ESA meant a great deal to us and further validates what we are doing.

**Question: What do you expect Satellite Vu to achieve in 2019 and beyond?**

**Anthony Baker:** 2019 will be a pivotal year for Satellite Vu. We aim to have our platform operational, we will be generating revenue and our future satellite sensor will be in the final stages of completion. It is set to be an exciting and ambitious year and the team is very much looking forward to making it a success and seeing our technology doing good things for the planet. 🌱



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