

5 Questions to Martin Isenburg



GIM International took the opportunity to ask Martin Isenburg, founder of [rapidlasso GmbH](#), a couple of questions - ranging from Lidar and the large number of conventions and tradeshows he attends, to his complicated relation with Esri.

You are the creator of some indispensable tools for the Lidar industry, such as LAsTools and the compressed LASzip format (*.laz). Much of your work is also open source. What drives you personally to create these products?

The open source library 'LASlib' was originally written to support my scientific work as a postdoc at UC Berkeley. I was working on triangulating gigantic point clouds and wanted to read Lidar from LAS files. I could not find any code online, so I wrote my own read /

write API in C++ and a few simple tools such as las2las, txt2las, and lasinfo. Eventually I zipped up the folder called 'LAsTools' to put this code on my Web page. Others found it, reported bugs, requested features, and it became a bit of a 'hobby' to maintain the code. I never imagined this would become my full-time vocation someday. I certainly would have chosen a better name than 'LAsTools'.

I had also added the possibility to compress LAS files (that can be very big) into 5 to 12 times smaller LAZ files. Two big federal US agencies contracted me to support 'seeking' in LAZ files and add a 'proper license' to LASzip. In hindsight it seems fortunate that - just then - I got fired from my position as a research scientist in a US government lab. This allowed me put my (laser-)focus on the LAS/LAZ work that had become so much more fulfilling than the previous job at a nuclear weapons lab. The excruciating circumstances under which I had been fired certainly added some 'extra drive' but that story is best told after a couple of fine Czech beers.

You are a frequent visitor to conventions and tradeshows around the world. What makes a visit to a convention a success for you?

The ISPRS Congress and other conventions are an opportunity to personally meet technology experts and executives and to discuss new opportunities and resolve current concerns within the Lidar community. My small company rapidlasso GmbH does not get clients for its LAsTools technology through flyers or booths at trade shows. For the most part we are known by word of mouth or through our teaching and standardisation activities within the Lidar community. Please come and talk to me this week. I will wear either red or green trousers so I am easier to find ...

Can you tell us some more about your lifestyle as a digital nomad?

When I finished my PhD in computer science I was a bit frustrated that I had not become a 'real' scientist, like a geologist, an archaeologist or a biologist, who observes and explains the world we live in. But now I am often part of 'real' research in a supporting role where I help with the Lidar processing. Working on the road gives me the flexibility to be on-site and satisfy that curiosity. In two weeks, for example, I will be in Thailand working with the 'real' experts on a biomass project in a tropical forest. I prefer locations that allow me to code Lidar in the morning and go surfing in the afternoon. But it does require a certain amount of discipline as a daily happy hour with two-for-one cocktails on the beach does interfere with getting up at 4 am to support users or design a new Lidar algorithm.

A few years ago you started a war against Esri's proprietary file format for Lidar data. Do you feel any progress has been made since?

I think that war was started by Esri. For many many years Esri was a nobody in Lidar. We invited them into our LAS Working Group (LWG) committee when they started to add LAS support to ArcGIS. But apparently Esri had not come to work with us. Instead of proposing useful additions to the LAS standard (like container files, spatial indexing, or intensity histograms) and contributing this to our Lidar community, they made a number of proprietary formats (*.lasd, *.lasx, *.zlas) in a very non-transparent manner and without consultation of the LWG. Their attempt to hijack the open LAS format and lock Lidar data and users to their platform was literally a stab in the back. By calling them out and exposing their unfair tactics we have been able to attach incredible stigma to their closed 'LAZ clone' that everyone in the industry is aware of. However, I still hope Esri will embrace the open Lidar formats used by our community soon.

The ISPRS Congress shows the current state of the art in scientific research in our field. What topic do you feel is not sufficiently addressed by the scientific community?

The politics that are restricting access to geospatial data or are discouraging its use through restrictive and complicated license models. This prevents innovation from happening, leaves expensive data paid for by the public horribly under-used, and destroys business potential for extracting novel values from these 'raw' geospatial resources.

Finland, the Netherlands and Denmark have paved the way for open Lidar in Europe. England has recently joined this party and suddenly their data sees incredibly wide use for applications never envisioned. But the situation in Germany and Austria, for example, is a disaster. I cannot access the Lidar that my taxes have paid for. Similarly, the Polish National Lidar data of which up to 85% was apparently paid for

by European funds has so far been impossible to obtain for a small side project . For the Czech Lidar data that we used in the ISPRS summer school last week we had to sign a form promising to delete the Lidar at the end of the event. They have incredibly awesome Lidar here in the Czech Republic. It must have been very expensive to obtain at this high density of up to 50 shots per square metre. But who is allowed to use it? My suspicion is that it sits idle on some government hard drive. Our ISPRS community needs to lobby harder to set this data free.

<https://www.gim-international.com/content/news/5-questions-to-martin-isenburg>
