

# DISTANCE LEARNING

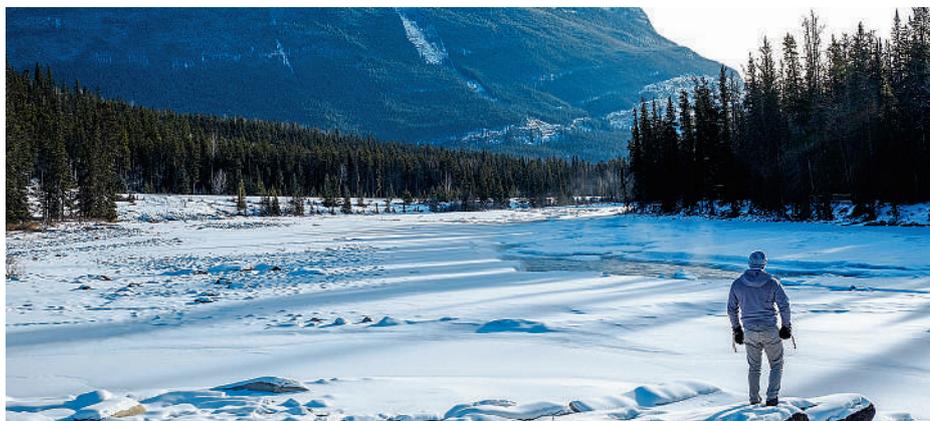


**COVID-19 IS MAKING US ALL SOCIALLY DISTANT. BUT WE'RE ALL HAVING TO LOOK AT NEW WAYS OF UNDERSTANDING LOCATION AT A DISTANCE**

## **ROB BUCKLEY**

EDITOR

robertbuckley@geoconnexion.com



News reports of successful early trials of vaccines for Covid-19 are welcome, but it's hard to tell when – or even if – the world will return to normal following the pandemic. The future always turns out differently to what we think it will be, so predictions of business as normal are undoubtedly going to be as wrong as those that suggest there will be massive changes to society.

In the near-term at least, we're still collectively going to be socially distancing from one another to avoid contracting or spreading the disease. For many, it's already ingrained behaviour and the idea of close proximity to others is not just a distant memory but almost alien and terrifying.

Maybe that's why it feels like we're subconsciously looking for new ways to work at a distance, even in surveying – often without other or even any people involved. In this issue of *GeoConnexion International*, for example, the OGC reports on page 26 its work with machine learning. In dangerous areas such as wildfires or the Arctic, we understandably want to avoid loss of life, so automatic sensors and remote sensing are the order of the day. But with the Internet of Things, 5G and other technology about to deliver the corresponding huge deluges of new data in response, only machines are going to be able to process it.

Equally, on page 34, Ellen Malfliet looks at how UAVs can be automatically dispatched to

emergency situations to monitor them. But without pilots, how can this be done safely?

On page 36, meanwhile, Vincenzo Massimi shows how a combination of optical and radar imagery can be used to monitor disasters and the following reconstruction at a distance. In particular, he reports on work done in Indonesia following the 2018 tsunami, where the ground was treacherous and in some cases practically liquid.

On page 39, Mary Jo Wagner looks at how technology has changed hands-on surveying. A cliff is a dangerous location for anyone to survey, and 13 years ago Paul Reichardt surveyed a California cliff-face from a boat using a total station. Even so, it was a precarious and dangerous job. But now we have UAVs and together with fellow surveyor Robert Lafica, he has developed a new photogrammetric technique for surveying cliffs that doesn't involve anyone putting their life at risk in a boat.

Lastly, on page 42, Andre Gessner considers the legacies of past conflicts: unexploded bombs. Hamburg in Germany was subjected to vast quantities of ordnance during the Second World War and any construction site in the city needs to know if there's a chance that unexploded bombs are located under the surface. And that's not a job where anyone wants to get too close.

I hope you enjoy the issue and find it useful in your work.

## **Editorial:**

**Rob Buckley**, Editor - GeoInternational  
robertbuckley@geoconnexion.com

**Peter FitzGibbon**, Editor - GeoUK  
peterfitzgibbon@geoconnexion.com  
+44 (0) 1992 788249

**Eric van Rees**, News Editor  
+34-958281507  
ericvanrees@geoconnexion.com

## **Columnists:**

### **GeoInternational**

**Louise Friis-Hansen**, FIG

**Daniel Katzer**, Hinte Messe

**Alistair MacLenan**, Quarry One Eleven

**Simon Chester**, OGC

### **GeoUK**

**Mark Poveda**, Modern Surveying

**Terri Freemantle**, Observations

**Seppe Cassetari**, GEO:Innovation

## **Publisher:**

**Mai Ward**

+44 (0) 1223 279151

maiward@geoconnexion.com

## **Advertising:**

**Micki Knight**, Sales & Marketing Director

**+44 (0) 7801 907666**

**mickiknight@geoconnexion.com**

## **Mailing Address & Subscription Enquires:**

**GeoConnexion Limited**,

PO Box 594, Cambridge,

CB1 0FY, United Kingdom

+44 (0) 1223 279151

info@geoconnexion.com

subscription@geoconnexion.com

www.geoconnexion.com

## **Design:**

**Lucy Carnell**

**AT Graphics Ltd**

www.atgraphicsuk.com

### **GeoConnexion International**

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