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INDOORS AND OUTDOORS

POSITIONING INFORMATION IS PROVING VITAL IN FIELDS AS DIVERSE AS CARING FOR THE ELDERLY TO MONITORING ROGUE STATES

When George Orwell wrote *1984*, he envisioned a nightmare society where everyone was monitored all the time. With everyone's speech and behaviour observed, any dissent against the government could so quickly be discovered and squashed, soon there was none.

Orwell's pessimistic view of the then-future is a useful cautionary tale about how we need to be careful about how much power we given to others. Some of those fears have even been realised in countries such as North Korea. It shouldn't be dismissed out of hand.

But the flipside of his dystopia is that monitoring can be useful in certain circumstances. Indeed, anyone who uses a mobile phone will know just how advantageous it can be to let others know where you are, either indoors or outdoors. It's no surprise, therefore, that nearly 50% of all mobile apps use GNSS to provide positioning information.

However, the latest report on location-based services from the European GNSS Agency reveals that the industry is set to expand considerably due to the growth of personal tracking equipment. The main applications for these devices, reports Donna Reay on page 24, are 'social location-based services (LBS)', which help to reduce the barriers limiting the disabled's access to public and private services.

On page 26, Giuseppe Conti looks at a unique use of social LBS in Italy. A care home wanted to monitor its patients at night, to ensure they were safe and not at risk of falling. Rather than the Orwellian – and economically unviable – solution of constant video monitoring, the home decided to use social LBS to determine when patients were moving or had fallen.

What makes the solution the home chose unique is that more traditional indoor positioning technologies didn't work since they required patients to wear some form of tracker and patients frequently forgot to wear their devices or removed them. So the home turned to a system that uses computer gaming technology to determine where the patients are with centimetre-accuracy. Something is watching patients all the time, not someone, and it's keeping them safe.

While Orwell imagined constant varying conflicts between neighbouring states in his future – 'at just this moment it had been announced that Oceania was not after all at war with Eurasia. Oceania was at war with Eastasia. Eurasia was an ally' – in the geospatial-assisted future we live in, positioning information is helping to save lives and prevent conflict.

OpenStreetMap provides free maps of anywhere in the world to anyone who wants them. But as with all open source projects, it relies on the contributions of volunteers – in this case, to ensure those maps are accurate and up to date. In areas of the world where poverty is high and few people have the time, skills and Internet access to contribute to the project, data can be scarce, so when disaster strikes, first responders rarely have the accurate local maps they need.

Humanitarian OpenStreetMap Team (HOT) is a rapid reaction group whose great contribution in times of crisis is to create those maps. Using their own software, satellite imagery, locals on the ground and an army of volunteers around the world, they're able to digitise imagery and add features in record time, to get aid to where it's needed. Paul Stewart explains on page 31 how HOT works, looks at just some of its projects and shows you how you can help HOT, too.

Most wars in history have been caused by clashes over borders, so ensuring that the locations of borders are as indisputable as possible has the potential to avoid large-scale conflict and loss of life. On page 34, Christopher Dekeyne and Cyril Romieu explain how geographic information, both old and new, can be used in negotiations to settle disputes, whether that's through archived maps and photographs, comparing the descriptions of old treaties with the observations of fieldworkers or asking locals for the variant names of points of interest.

Of course, not everyone wants to be monitored – ironically, including North Korea. The country's nuclear testing programme is highly secret and geointelligence specialists around the world would dearly love to know what it's up to. On page 37, Eric Andreu looks at how a new geospatial tool that combines verified geospatial layers with orthorectified colour imagery is helping to reveal what North Korea would rather keep to itself.

Orwell's nightmare cuts both ways, it seems. I hope you enjoy the issue.