

orbit

MAGAZINE FOR GEOSPATIAL TECHNOLOGIES

SPOTLIGHT

Antwerp police optimises Public Safety and Traffic with Orbit

SOLUTIONS

Borough of Zoutleeuw introduces better cemetery management thanks to GIS integration with Orbit

PRODUCT

Mobile Mapping data put to best possible use with Orbit Asset Inventory Management

INNOVATION

Orbit stands for Integration and Innovation. Your geo-data infrastructure for the future.

We all know about cycloramas or panoramic images, which are very useful and practical in so many work processes. Only now the visualisation capabilities have been revolutionised: entire areas and surroundings can be viewed from the comfort of your office. You can also project your own data on to the image and so trim it against the photo.

But there's more. In the photos you can also make measurements, take a snapshot, or record and document an object in your GIS system.

Make inventories

Using Orbit Asset Inventory Suite, you can construct and update any inventory you want. At your office. And everything neatly integrates both into your day-to-day work and your central geo-data infrastructure.

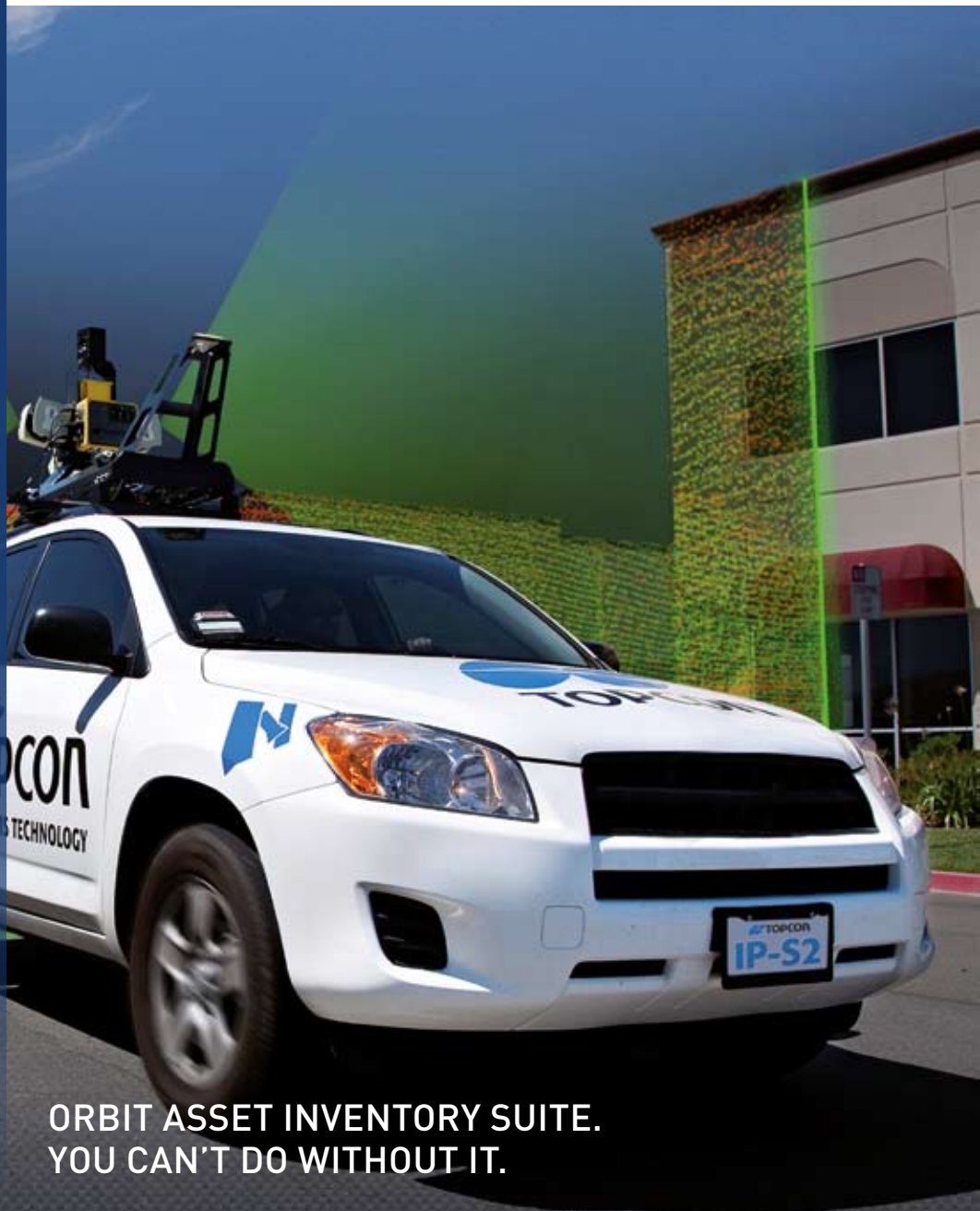
Innovate

But Mobile Mapping is more than just pretty pictures. Using LiDAR technology, you can also create scatter diagrams. Each of the dots has a high level of positional accuracy. This scatter diagram increases the accuracy of the measurement. So, combined with images, this is a significant step forward.

With its Asset Inventory Suite, Orbit GeoSpatial Technologies has become the first company to produce a Mobile Mapping integrated solution for make inventories of objects.

ASSET INVENTORY MANAGEMENT & MOBILE MAPPING

MOBILE MAPPING IS HOT. TECHNOLOGICAL DEVELOPMENT IS FLYING HIGH IN MOBILE DATA-CAPTURE.



CONTENTS

SPOTLIGHT

Antwerp policing area sketched digitally

Page 4

Zoutleeuw leads the way with fully digital cemetery management

Page 10

SOLUTIONS

We innovate, we integrate

Page 8

TRENDWATCHER

Bridging the Gap between Airborne and Mobile Mapping

Page 14

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EDITORIAL



You are now looking at the very first issue of Orbit Magazine. Chances are, you may be wondering about the title. Well if you are, it all has to do with the exciting new wind that is currently blowing through our company: Eurotronics has changed its name to 'Orbit GeoSpatial Technologies'. And the EDL product name has also been replaced in full by 'Orbit'.

But don't worry! You will still be able to rely on the same excellent products and committed service you have always been accustomed to with us. In fact things will be even better: read all about the changes in the article on pages 8 and 9.

The aim of this magazine is to tell you about some of the interesting user cases involving our customers and partners. All too often successful projects remain shyly in the background or are only known about within a limited circle. But we intend to give them all the attention and fanfare they deserve, including outside their specific area. Creating constructive cross-pollination from a whole range of different projects gives us all the opportunity to find ways to even better solutions.

In any event, these cases are a stroke of luck for anyone looking to guide this and other projects to a successful conclusion. At the same time, Orbit Magazine is a tribute to all of our loyal customers: without them, none of what we do would be possible.



Orbit Magazine is published twice a year and comes to you entirely free of charge. I very much hope that the examples you read about in Orbit Magazine will also provide you with great inspiration.

We wish you an enjoyable read!

Peter Bonne

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ANTWERP POLICING AREA SKETCHED DIGITALLY

DIGITAL ACCIDENT DIAGRAMS CONTRIBUTE TO GREATER EFFICIENCY
AND HIGHER QUALITY



While the technology for digitising geographic information may not be totally new any more, there are virtually limitless opportunities for applying it in all sorts of sectors. So it may come as some surprise (or perhaps not!) to learn that as a result of the pioneering role played by the software company, Orbit GeoSpatial Technologies, a good number of government bodies are among the 'early adopters' of geographic information systems.

These early adopters include the Antwerp Local Police, who have already completed an impressive amount of re-sourcing and quality improvement as part of the Antwerp Master Plan, along the way discovering the innovative application capabilities made possible by Orbit for enhancing policing for the benefit of citizens. In addition to various initiatives for optimising the way the Antwerp Local Police operate, a new system has been implemented

for recording the location of accidents digitally. We spoke with Commissioner Roger Wouters, head of the Southern Division, about this successful initiative, which he and his team have introduced in conjunction with IT partner Orbit GeoSpatial Technologies. Since policing arrangements were reorganised in the city, the Antwerp Local Police have consisted of six territorial divisions, with a staff of approximately 2550. Commissioner Roger Wouters is the chief of the Southern Division and as such heads up a team of 220 staff, who are responsible for policing the Antwerp districts of Wilrijk and Hoboken. Commissioner Wouters was appointed as project leader for the umbrella programme that focuses on optimising the way in which accidents are reported.

"I was asked to examine carefully and improve all of the processes involved in recording and reporting traffic ac-

cidents," he says. "The aim of setting up a working group was to limit the administrative process of registering and reporting collisions to a minimum – while at the same time improving the quality of accident reports."

Uniformity a long way off

Every year, around 10,000 accidents are recorded in the Antwerp area. In the past, the sketches made to describe those accidents have been extremely variable in terms of quality. Each member of staff produced his or her own accident reports, producing a diagram of the incident as they saw fit, often using carbonless report forms based on standard templates. These details were then usually stored locally within each division.

The move to storing accident sketches in a central server represented an initial step towards making the whole

“Today, we can see that not only has the quality of the sketches improved, but they have also reached a more consistent level than ever before. That means a significant reduction in administrative worries after-wards.”

*Commissioner Roger Wouters,
Divisional Head Antwerp Policing Area,
Southern Division*

process uniform. Trouble was, the lack of standardisation in the sketches themselves was something of a thorny issue.

“There was a definite need to improve the quality and uniformity of these accident sketches,” says Commissioner Wouters. “After all, they are a valuable source of information when it comes to analysing dangerous traffic situations. And for that, having clear sketches is essential.”

Digital accident sketches with Orbit Sketch

A demonstration presented by Orbit Geospatial Technologies, which specialises in geographic information systems, quickly convinced Commissioner Roger Wouters of the fact that the future for Antwerp Local Police lay in fully digitising its accident sketches.

ACCIDENT REGISTRATION: simple and quick

Orbit GeoSpatial Technologies is constantly seeking innovative new technologies. After computerising accident sketches, recording terrain is the next step down the digital path.

TopView Photomast and Camera

The TopView camera is able to make a photographic recording of the accident scene. The inspector takes photos of the location from a maximum height of 5.5 metres. None of the vehicles or damaged objects needs to be measured separately.

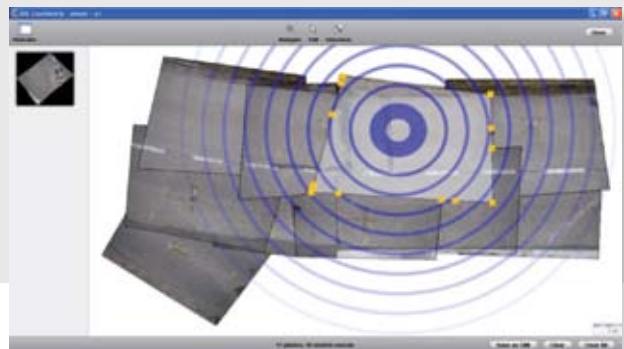
The entire accident location is recorded photographically, meaning that no element or item at the scene, no matter how small, can be forgotten.

Orbit Live Sketch

Fitted to an MDT, this mobile application can be used immediately on site. The photos are first corrected metrically and then used in a photo-mosaic to form the overall image. The result is a metrically accurate photograph of the accident or the accident scene.

Integration with Orbit Sketch

The accident assessor can then use this photo-mosaic in the Orbit Sketch application in conjunction with the basic maps. The measurement criteria are automatically calculated in relation to a carefully selected baseline when the user clicks on a particular mark on the photo-mosaic.





After an in-depth analysis, the software company began implementing the Orbit Police Suite in the Antwerp Policing Area. Today, the procedures involved with an accident have not changed fundamentally, but the efficiency and quality of recording accidents have increased significantly. After a police inspector has been to survey the location of the accident, the accident sketches are then entered into Orbit Sketch. The system uses various digital basic mapping overlays that can be activated as required: street plans, traffic signs, road-markings, etc.

“We were on the same wavelength as Orbit from the start of the project Orbit and they were also very aware of the problems facing us.”

Commissioner Roger Wouters, Divisional Head Antwerp Policing Area, Southern Division

“We are already seeing a marked increase in enthusiasm among the staff who produce these accident sketches,” says Commissioner Wouters. “In the old days, this was a job that was usually seen as an irritating chore.”

Training crucial

Orbit GeoSpatial Technologies and Antwerp Local Police also immediately saw the importance of providing thorough training for staff. “It was like emerging from the Stone Age,” recalls Commissioner Wouters. “Not only did we have to make staff familiar with using Orbit Sketch, but we also pro-

vided a refresher course in the method used for producing accident sketches. Let's just say that over the years, a certain degree of laxness had crept in in that particular area..."

An in-depth training process was linked to the introduction. At the policy academy, VESTA campus, group training was provided for staff: after a practical outdoor exercise consisting of taking measurements at an accident site, the afternoon was spent learning how to use Orbit Sketch.

"42 sessions were held over a period of 4 months, enabling 820 staff to receive training given by employees from our IT partner, Orbit," relates Commissioner Wouters. "After that, introducing the use of Orbit Sketch to our inspectors went without a hitch and they soon became familiar with the new environment."

Better decision-making

Producing drawings of accident situations using Orbit Sketch has meant a major step forward. "Today, we can see that not only has the quality of the sketches improved, but they have also reached a more consistent level than ever before. That means a significant reduction in administrative worries afterwards."

The Courts are also very pleased with the new accident sketches. With any traffic accident, rulings are based first and foremost on the diagram made of the accident. Previously, the Courts often had to ask Antwerp Local Police for additional clarification. Today, the fact that the sketches are uniform and

OFFICIAL ACCREDITATION FOR 'ORBIT SKETCH' TRAINING

As part of the training process for the Antwerp Policing Area, the Provincial Police Academy Antwerp (PPA) lodged an accreditation application for 'Orbit Sketch' training (still under the name of 'EDL Sketch'). This course is now accredited and published. It is also eligible as part of ongoing career training.

The course takes the form of an 8-hour day, with the morning spent studying theory and taking practical terrain recordings. In the afternoon, the 'Orbit Sketch' module is explained in depth and the terrain recordings are converted into a finished accident sketch.

Available at www.police.ac.be :

Accreditation n° 3430

Title: 'Traffic – Recording Sketches – Traffic Accidents (Orbit GT software)'

Type: advanced target group: OPS

For more information, contact the Antwerp Police Academy (info@ppa.provant.be) or timothy.vancleemput@orbitgis.com



easier to read means that the judicial process runs more smoothly.

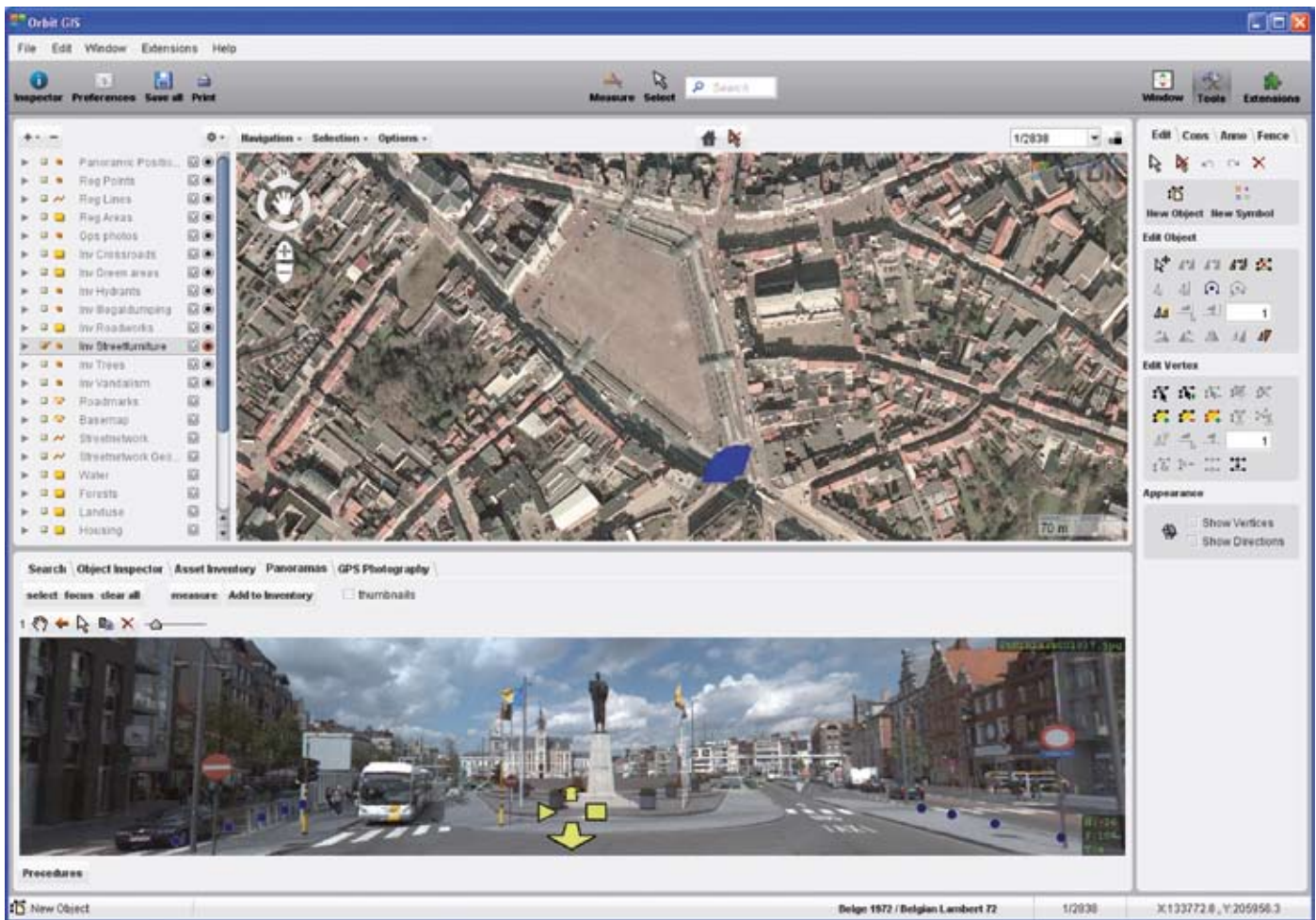
Collaboration with Orbit GeoSpatial Technologies

Roger Wouters reports that collaboration with Orbit GeoSpatial Technologies is pretty smooth, too. "We were on the same wavelength as Orbit from the

start of the project," he says, "and they were very aware of the problems facing us. We were also pleasantly surprised by their professionalism: in the beginning, we had progress meetings every two weeks. This was later extended to one per month and after each meeting, the agreements made were clearly summarised in a written report."

WE INNOVATE, WE INTEGRATE.

AFTER 38 YEARS, EUROTRONICS IS CHANGING NAME.
EUROTRONICS HAS BECOME ORBIT GEOSPATIAL TECHNOLOGIES.



In addition to the name change, the most striking feature is the new logo and updated house style, which can be seen from our revamped website, re-worked leaflets and printwork. Orbit Magazine, which you are currently reading, is another part of the change.

But there is more to the new 'us' than just external change. As the heading of this page puts it, 'We Innovate, We Integrate', which traditionally has always very much applied to our company.

Innovating is more than just a change

of style, too. As you know, our entire team is constantly improving our applications, expanding our capabilities and upgrading our functionalities. At the same time, we also keep our finger firmly on the pulse of 'emerging technologies' so that we can be the first to roll out the latest developments in our sector. And a healthy dose of creativity helps us to bridge the gap between technology and ease of use.

Our long-standing customers know that we have always prided ourselves on being the first to come out with new



applications. In 2000, we set the tone by introducing our Planning Register in all local authorities in Flanders. This resulted in technical implementation orders being adjusted because what we had to offer provided many benefits, both to local and central government.

We have created and produced new applications for the police service and fire brigade that promote their safety and increase efficiency. This has all been based on our own research and investment – not to mention the essential close bonds and cooperation we enjoy with our customers.

We also lead the way in the area of professional mapping. Our photogrammetric software is used all over Europe. Mapping using the 'Microdrone' is a unique application of its kind and our 'mobile mapping' solutions are the benchmark in this specialist field. We have also more than earned our spurs in terms of integration. In 2000, with the 'Decreet Suite', we demonstrated that geographic applications are most effective when they are integrated as part of day-to-day working processes. This brought GIS down from its ivory tower and everyone now uses it, even if they are not aware of the complex geoprocesses and analyses it involves.

And that is precisely what we are all about. Our customers today have a broad palette of tasks to perform. By adding GIS complexity to their work package, we may be doing no-one a favour. But GIS has so much to offer in just about everyone's work. We see it as a way of lightening the load. All sorts of complex and involved operations are made superfluous, automated or included in hidden processes. We call it simplicity, innovation and – let's face it – integration. Integration in your own work processes, integration with the packages of our many partners, integration in databases, integration in your own geo-data infrastructure.

Software and Services

Our slogan of 'We Innovate, We Integrate' also applies to our products. Customers can expect to see a highly innovative Orbit GIS shortly, also fully integrated in EDL. Better still, EDL has been totally revamped and the old name replaced by a new one: Orbit. The functionalities of Orbit GIS and EDL are mutually interchangeable – to the immediate benefit of all users! And as the cherry on the cake, this is now part of standard upgrades.

Innovation also includes ease of use. With EDL, we demonstrated that anyone can work with GIS. Now we have set the bar very high for the new version. The user interface has been totally reworked, with the emphasis placed on ease of use. GIS was being used in more and more areas, unavoidably becoming increasingly difficult and complex. So a new exercise in simplification was required – and we can be proud of the results.

In addition for the user, there are also all sorts of new features to discover in the heart of the system. The server has been given a thorough upgrade. Operation has been significantly modernised and at the same time we have also ensured that your organisation now has a genuine GDI (GeoData Infrastructure) and is ready to join the European Inspire project.

To achieve all that, more than just software is required. We are aware better than anyone else that providing surrounding support is essential for achieving proper geo-integrated work processes. Also because we are able to

draw on years of expertise and experience, ranging from data production to project management and consultancy.

Finally, our aim is to show our customers that our focus is now and will remain specifically on our applications for government, public safety and the mapping industry: the three areas where we have maximum expertise. And we do this unstintingly always to produce the best tools for desktops, servers, the Internet and for mobile devices that will continue to play an increasingly important role.

ZOUTLEEUW INTRODUCES FULLY DIGITAL CEMETERY MANAGEMENT

DIGITISED MAPPING INFORMATION DELIVERS MORE EFFICIENT PROCESSES AND BETTER SERVICES TO CITIZENS



Its rich history is not the only attraction of Zoutleeuw: the town can also boast a well-structured borough administration with a modern infrastructure. Zoutleeuw today has approximately 8,300 inhabitants – a number that will continue to rise in the years ahead as the result of new social housing districts. In total, the borough council is responsible for managing seven cemeteries. We spoke to Ludo Devos, the town's administrative officer, about the sophisticated digital cemetery management system introduced recently by Zoutleeuw in conjunction with its IT partner, Orbit.

Managing the seven different cemeteries and a total of around 1000 burial plot concessions is no easy task for the borough council. And as it is in every other borough, the issue of cemetery management is becoming increasingly complex.

By definition, the issue of cemeteries is extremely sensitive. Which means that services to citizens are very important: the registrar of births, marriages and deaths needs to be able to tell relatives where graves are located, as well as inform them in good time when a plot becomes available.

"The overall complexity is getting greater all the time as the result of increasingly strict town planning regulations," explains Ludo Devos, administrative officer for the town of Zoutleeuw. "And with less and less space available, every borough has to manage its cemeteries and burial plot concessions more efficiently. Graves are cleared regularly to make way for new burials and naturally people have to be informed. What makes things more difficult is that we are talking about period of decades."

From filing tray to Personal Computer

Filing trays were a familiar sight in the council offices for years. A record sheet was kept for each grave, containing all of the relevant information: location of the grave and its reference number, name and surname of the deceased person, the start date and period of the concession, etc. Zoutleeuw also used detailed plans of each cemetery: a system of successive numbers enabling each concession or grave to be identified. But keeping the records up to date required a great deal of time and it was difficult to monitor which concessions were due to expire shortly.

First step towards digital cemetery management

Under the impetus of Mr Devos, the borough made a start in 1990 to develop its own software application for

cemetery management. "You have to remember that at the time, the town administration was not yet computerised," he says. "However, I was quite familiar with the Quick Basic development environment and I developed an application from A to Z on my own PC that would enable our cemeteries to be managed digitally."

For more than 15 years, this application proved its worth. Having the ability to print off specific reports on topics such as all expired concessions was a major step forward.

Continuity required

But the application had two main drawbacks. First and foremost there was the issue of continuity: as he was allotted greater responsibilities elsewhere, Mr Devos no longer had sufficient time to devote himself 100% to keeping the application up to date. Cemetery man-

agement also had to be transferred from the town-planning department to the births, marriages and deaths registry.

Another stumbling block was the fact that Zoutleeuw was only partially computerised and was still working with paper plans of the cemeteries.

Towards fully digital mapping information

In 2007, the town council began looking for a new application to replace the existing system, including the digitisation of all geographic information. The alderman responsible for IT at the time, Roger Mertens, was a great supporter of the further digitisation of cemetery management.

Orbit, the IT company from Lokeren, had specialised for decades in the digitisation of geographic information. When it

"The colour coding enables us to see at a glance which plots are still available, which are still in use and which are fully occupied. One click on the map is all you need to display the full details for a specific concession."

*Ludo Devos, administrative officer,
Zoutleeuw Council*



“This project is the result of genuine interaction between Orbit and ourselves. Orbit thinks actively with us and thanks to our GIS agreement, is able to anticipate our questions and comments and take action quickly. We intend to keep working together like this for some years.”

*Ludo Devos, administrative officer,
Zoutleeuw Council*



demonstrated its solution to the local council, it was an immediate success, offering a sophisticated system that worked entirely with digitised plans of all the cemeteries and that also integrated seamlessly with the administrative for cemetery management.

“We can now access the digital maps of every cemetery directly on our computer screen,” says Ludo Devos. The colour coding enables us to see at a glance which plots are still available, which are still in use and which are fully occupied. One click on the map is all you need to display the full details for a specific concession.”

‘Smart’ solutions from Orbit

Mr Devos very much appreciates the efforts that Orbit made in creating a solution geared to the specific needs of Zoutleeuw Council.

“Every local council has its own way of working,” he says. “One example is the way that the graves are numbered. Orbit made sure that we were able to retain our numbering system.”

Orbit has also come up with a great many ‘smart’ ideas, such as a solution for projecting vertical columbaria (walls of urns) horizontally on to the digital map and making it individually clickable.

Electronic service desk

“Working with digital maps means that our internal processes are much more efficient,” says Mr Devos. “The next step is to improve our service to citizens. For instance, we can make certain information available online, such as the expiry dates for burial plot concessions, as part of our electronic service desk concept.”

He believes that the collaboration with Orbit forms a solid foundation in the future for working further on more efficient internal management and better service provision. “This project is the result of genuine interaction between Orbit and ourselves,” he says. “Orbit thinks actively with us and thanks to our GIS agreement, is able to anticipate our questions and comments and take action quickly. We intend to keep working together like this for some years.”

MICRODRONE DEPLOYED TO ESTABLISH A DIGITAL CEMETERY MANAGEMENT SYSTEM

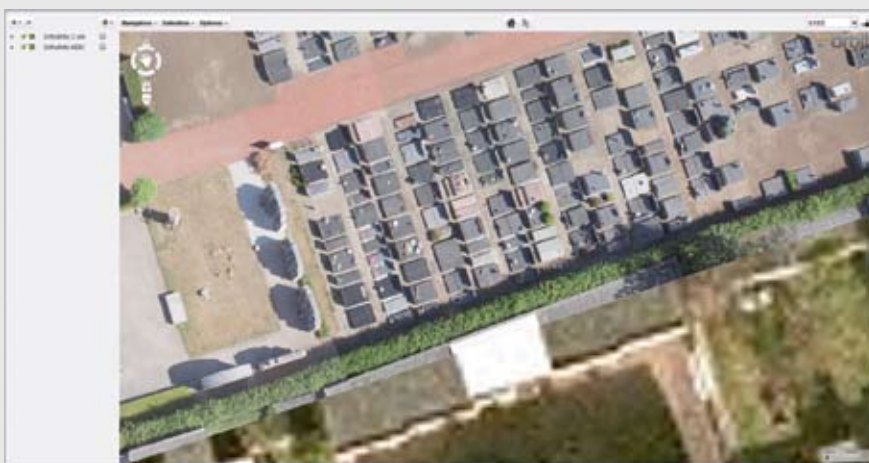
The move to digital cemetery management is about more than just entering concession details in an administrative application. Having an overview of the cemetery in the form of a graphic is equally important.

These days, digital cemetery management is an essential tool for building a vision of the future. Having a graphic overview, showing available capacity, tells us how we can implement our future approach and management of the cemetery.

What happens if no plan of the graveyard is available?

The Microdrone can be put to use quickly on an ad hoc basis to produce a high-resolution digital aerial photograph of the cemetery. Working from a height of approximately 60 metres, the Microdrone photographs the graveyard in a pattern that covers the whole area. The flight path is automatically calculated in OrbitGIS and uploaded to the Microdrone, which then undertakes the calculated photo flight totally automatically and autonomously, producing a high-quality aerial shot of the whole area.

After the flight, post-processing is carried out in OrbitGIS, creating an orthophotograph. The result is an aerial photograph that can be used for measurements, with a pixel resolution of 2 centimetres or even finer!



High-resolution digital aerial photograph

Usage in cemetery management

This aerial shot provides a usable base for pinpointing headstones and the surrounding elements. A spatial plan can then be produced based on this accurate aerial photograph. In addition to gravestones, other surrounding elements, such as paths and green areas, can be mapped, all of which contributes to a map or plan that is clearly laid out and easy to read.



Spatial plan

Interdisciplinary input

Having a detailed photo of the graveyard does more than merely pinpoint headstones – it is also very useful in managing the green areas and other assets at the location. It's a technique that is also of value for the architect when it comes to designing a new cemetery. Finally, the technology can be used in many other areas, such as construction sites, road-building, etc.).

BRIDGING THE GAP BETWEEN AIRBORNE AND MOBILE MAPPING

THE TECHNOLOGY FOR GATHERING DATA HAS EVOLVED IN SPECTACULAR FASHION IN RECENT YEARS.



With over 45 years of experience in aerial photography, photogrammetry, mapping, geo-databases and geo-data processing, Orbit GeoSpatial Technologies (and previously, Eurotronics) is able to call on a great deal of specialised knowledge. This knowledge and experience has for many years been transformed into innovative technology.

In the 1970s, the hardware for digitally recording difficult-to-make measurements and an early digital production line for geo-data and maps was first created.

The 1980s brought newly structured software for photogrammetric production, with the unique support for the first relational databases.

This resulted, in the 1990s, in a high-end geographic information system that could be applied to all GIS usage. In the second half of that decade, the development of PC hardware made it possible to bring this complex technology to everyone's desktop.

The first years of the 21st century brought us the desktop integration of generic GIS applications, geo-databases and photogrammetric applications. Now we are adding low-altitude mapping with the Microdrone and mobile mapping with panoramic images and scatter diagrams.

Bridging and Integrating technologies

The technology for gathering data has evolved in spectacular fashion in recent years. In particular, mobile recording is now in full swing.

All of these technologies stem from the basic principles of photogrammetry. Through the knowledge, experience and software specialisation already in place, Orbit is the only provider able to bridge the gap between classic photogrammetry, based on photos taken from great altitude, low-altitude photogrammetry, and photo-recording from standing height (panoramic or other images from mobile mapping).

Microdrone Low-Altitude High-resolution Mapping

The Microdrone means that it is now possible to produce aerial photos and metrically correct orthophotographs, and the Orbit software developed for that purpose has become very uncomplicated. The excellent qualities of the Microdrone make this mini-helicopter the best device of its kind for this type of application: usable immediately and everywhere, right here and now, high stability and outstanding GPS positioning, high-resolution cameras.

The Orbit Microdrone Airborne Mapping extension enables a flight plan to be calculated immediately on site, so that the Microdrone can be sent to precise locations to take aerial photos. The device takes all of its photographs fully automatically. The results can be processed immediately with the Orbit Strabo photogrammetric applications into a stereo image and/or orthophotograph. This creates super-detailed aerial photo images that are ideal for recording small objects.

Mobile Mapping and Asset Inventory Management

The data gathered from mobile mapping can be reduced to 2 types of data: photographic material, and scatter dots.

We know the photographic material best as 360° panoramic images. Scatter dots are gathered in large numbers to create scatter diagrams.

The various recording techniques result in a difference in quality, density and accuracy. Some techniques focus on image material, while others concentrate on laser-measure scatter diagrams.

In all cases, obtaining this material is just the first step. It is usually desirable to use the data gathered to identify the

objects in question that we want to locate as users, i.e. to make an inventory.

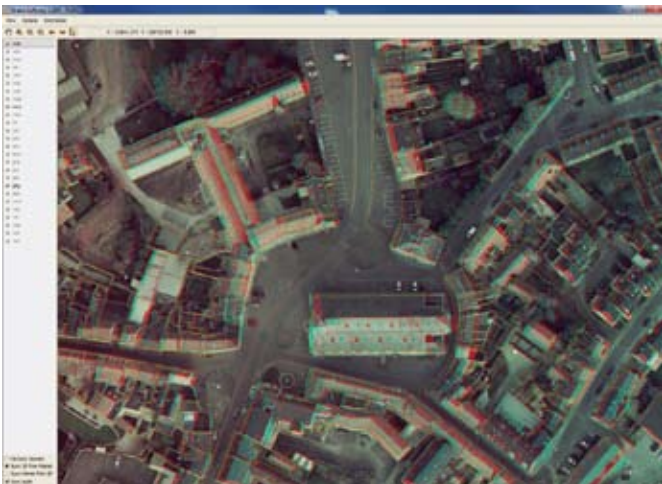
To do that, we take measurements. Based on image material with accurate positioning, we are able to measure a great many objects. We take measurements in 2 images, as with classic photogrammetry. The result is a coordinate that we store in our GIS file. This is also identical to photogrammetric mapping.

With mobile mapping image material, we have an additional advantage: we can document the point measured with a snapshot of the photo. We can also add in other properties of the object as attributes to the measurement. For example, a height, a width or some other dimension.

The scatter diagram gives us other possibilities still that enable us to produce the same object with just one measurement: this halves the recording time! And we can still store the snapshot of this one photo.

Choosing the right tools

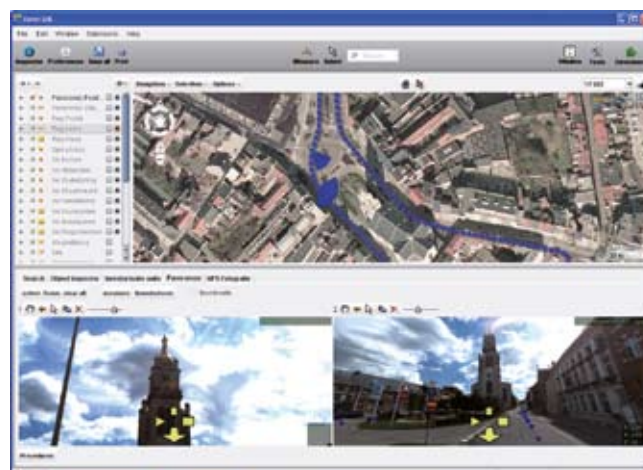
By connecting the various techniques, we are now able to select the right tools for every challenge: classic photogrammetry, Microdrone recordings or Mobile Mapping. In every case, Orbit has the right tools for the job.



Strabo Photogrammetry

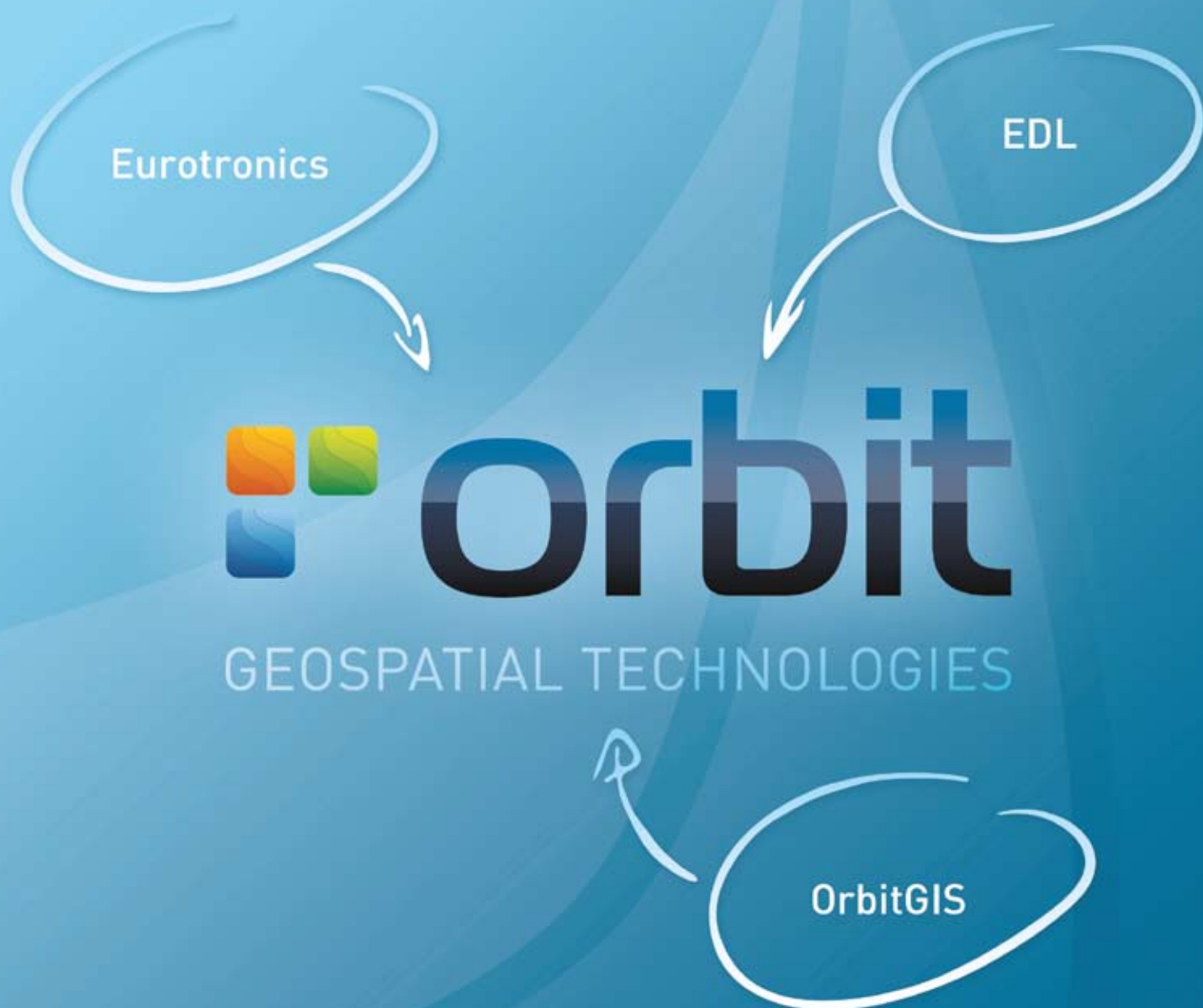


Microdrone automatic flight plan



Visualising and measuring Mobile Mapping

We innovate. We integrate.



Eurotronics becomes Orbit

Discover Orbit on our new website www.orbitgis.com.
Orbit GeoSpatial Technologies: Smart solutions for Government, Public Safety
and the Mapping Industry.

www.orbitgis.com

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GEOSPATIAL TECHNOLOGIES