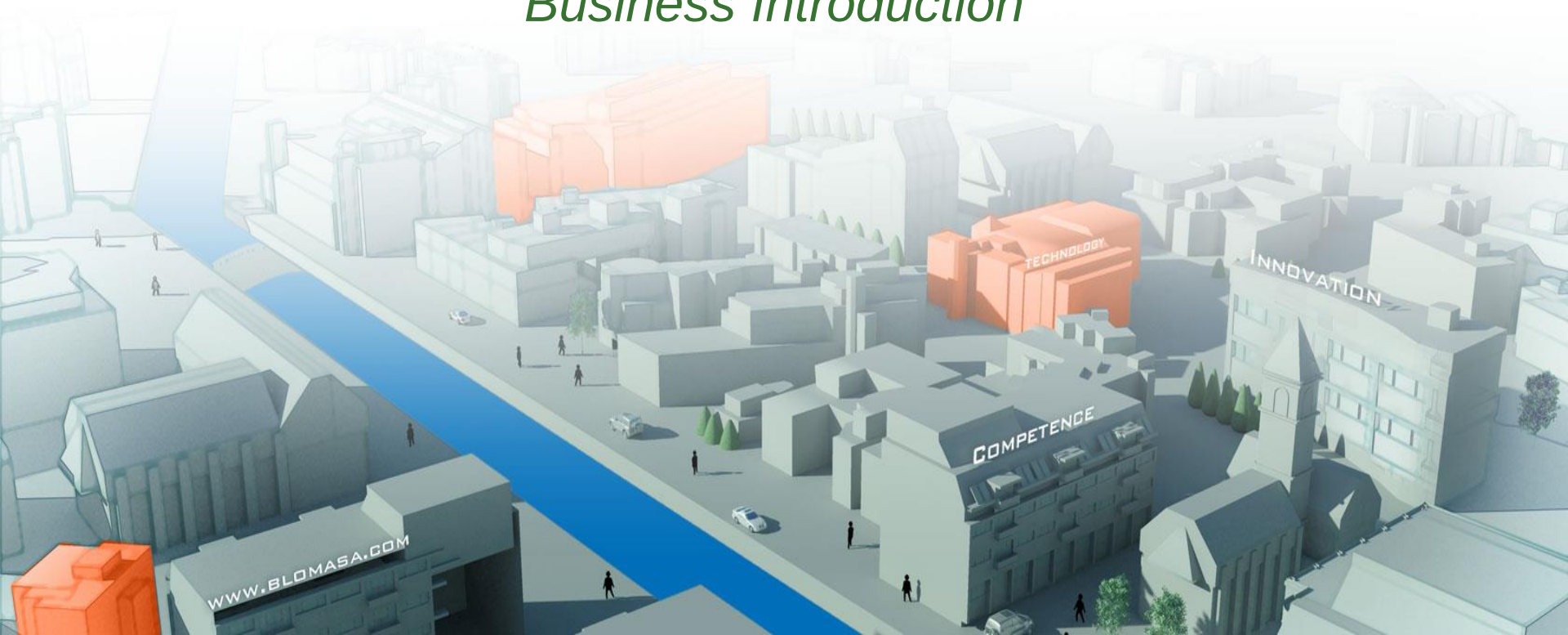
Blom International Operations S.R.L.

Business Introduction



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Company

Blom International Operations S.R.L. (BIO) was established by externalizing process in 2012 as the geospatial services competence center for the Norwegian BLOM Group and is located in Targoviste, Romania. Since June 2017, BIO is fully owned by the Romanian HEVECO Group (www.heveco.ro)

With currently about 80 staff, BIO is one of the largest and most experienced European providers of geospatial data services, both for European public administrations and private industry. Among the international clients of BIO are Cyient Europe (UK), NIRAS (DK), Airbus and Thales (F), Tom Tom (LU), Cowi (Dk).

The geospatial data services offered by BIO enable our customers and partners to use existing GIS systems, or develop their own Geo-IT applications to represent, analyze and monitor valuable infrastructure assets.

BIO holds an impressive portfolio of completed contracts since Blom Romania being established in 2008 and currently provides services in the areas of digital mapping, GIS data production, GeoInformatics, 3D modeling, stereo photogrammetric data capture, image processing, mobile and terrestrial mapping, airborne and terrestrial LiDAR processing, data conversion, BIM and geospatial database management.

Ongoing projects at BIO are originating mainly from Germany, France, UK, Denmark, Norway, Sweden, Finland, Netherlands, Austria, Spain and Italy, but also from non-European clients in Africa, the Middle East, Asia, South America.

Highlights

I *Geospatial services experts with efficient set-up*

II *The need for advanced geographical data is growing*

III *Recurring, solid customer base*

IV *Revenue growth and attractive profitability*

BIO is a geospatial expert providing advanced acquisition, modelling and processing solutions of geographical data for advanced applications.

With about 100 employees in Romania, the company has an efficient set-up combining proximity to key end markets in Western Europe via partners combined with high-quality processing and modelling capabilities in Romania.

The market for advanced geographical data is growing driven by e.g. increasing digitalization of geographical information and the heavily increased use of sophisticated map applications for both customers and governmental institutions.

A cost competitive set-up has allowed for sound EBITDA margins in the range of 11 - 19 % during the last 5 years.

Geospatial services at a glance

Acquisition methods

- Airplane photo acquisition
- Fixed/ Rotary Wing LiDAR
- Unmanned Aerial Vehicle
- Ground & mobile based acquisitions
- Satellite data and Imagery
- Other acquisition methods

Users and segments

- Governmental and public admin
- Defence and security
- Railway companies
- Construction companies
- Engineering consultancies
- Architects and urban planners
- Energy and utilization
- Resource and environment
- Navigation system providers
- Other users and segments

Application areas

- Navigation
- Aerospace
- Forestry and agriculture
- Infrastructure management
- Asset management
- Urban planning
- Environmental assessment studies
- Maps and geodata sets
- Energy potential assessment
- Infrastructure planning
- Geospatial based consultancy
- Other application areas

High-quality geospatial data is used by several different user groups in a wide array of applications

Experienced management team with strong technical backgrounds

Ralf Schroth
German national, studied Geodesy at Stuttgart University, PhD in Photogrammetry and legal surveyor. About 45 years of experience in the management of a variety of international companies in Europe, the Middle East and Africa. Experienced in project management, company operations and general contracting. Lecturer at different Universities in Europe.
Managing Director

Octavian Chiscareanu
Romanian national, B. Sc. in Economics at Valahia University from Targoviste. More than 15 years in Blom with experience in various projects at different levels like: production, technical support and development and project/team management.
Department Manager

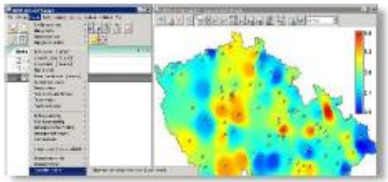
Valerica Soare
Romanian national, M.Sc. in Finances Valahia University of Targoviste. About 10 years in Blom with experience in Human Resources and Finances with a main focus on human resources, health and safety, payroll and general management.
Department Manager

Alexandra Dancus
Romanian national, M.Sc. in Finances Valahia University of Targoviste. More than 15 years in Blom with experience in GIS Data Conversion, Quality Management and Project Management, specialized in Defense Mapping.
Deputy Department Manager

Simplified value chain perspective

Geographic Information System (GIS) Value Chain

Covered
Not covered

Data acquisition

- *Aerial or terrestrial acquisition of geospatial data*

- Airplane photo acquisition
  - Traditional /overview
  - Oblique
- Fixed/ Rotary Wing LiDAR[1)]
- Unmanned Aerial Vehicle (UAV)
- Ground & mobile based laser scanning
- Satellite data & imagery
- Underwater acquisition
- Other acquisition methods

Data processing & modelling

- *Analysis, processing and modelling of geospatial data*

- Aerial triangulation
- 3D stereo mapping & modelling
- CAD Vector Mapping
- LiDAR data processing
- Digital orthophoto production
- Underwater mapping
- Satellite data processing
- Other processing and modelling methods

GIS products

- *Generation of maps and geospatial models*

- Digital geospatial products
  - Cadastral maps
  - Historic maps
  - 3D Models
  - Forestry & Vegetation Maps
  - Universe & globe models
  - Water resource mapping
  - Geoservers and digital libraries
  - Other digital GIS models/maps
- Physical geospatial models
- Printed maps

Applications

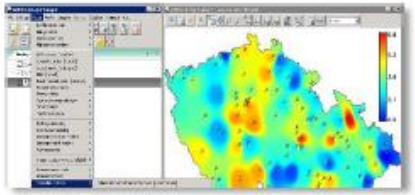
- *Value enhancing application of geospatial products*

- Logistics & operations
  - Transportation & aerospace
  - Facilities management
  - Tourism & navigation systems
- Strategic decision making
  - Energy assessment
  - Environment & agriculture
  - Infrastructure & urban planning
  - Resource management
  - Business location decisioning
  - Sales and marketing
  - Research and education
  - Other applications

Services & applications

Data Aquisition provided mainly by Blom Partners. Starting 2022 Heveco is providing also GIS data

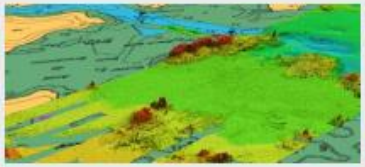
Geographic Information System (GIS) Value Chain

Data acquisition → Data processing & modelling → GIS products → Applications

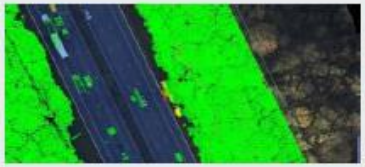
Fixed wing aerial acquisition

- Capture at resolutions from 2–40 cm
- Benefits with regards to rapidity and accuracy of data capture
- Suited for large areas
- Enables access to dangerous areas



Fixed/rotary wing LiDAR

- Both fixed wing, for large area mapping, and rotary wing, for corridor surveys and vegetation penetration
- Applications found in geotechnical assessment, route planning, inventory and management of assets and habitat



Laser scanning

- An accurate and fast way of capturing 'point cloud' information[1)]
- Suited for corridor mapping such as road and rail networks
- Applications found in technical and topographic mapping for asset management and maintenance

Ground and mobile based acquisitions

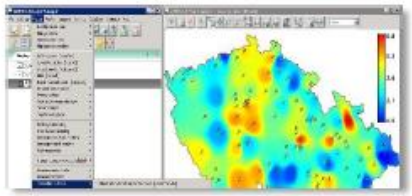
- Land surveying using vehicle mounted or tripod mounted systems
- Applications found in asset maintenance and management
- Benefits with regard to costs, portability and accuracy

Other data acquisition methods

- Processing of third party captured satellite images
- UAV aerial photography, typically used for corridor mapping

Data Processing and Modelling

Geographic Information System (GIS) Value Chain

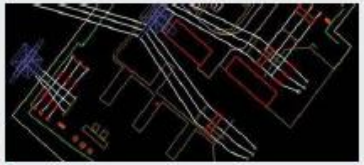
Data acquisition → **Data processing & modelling** → GIS products → Applications

Aerial triangulation

- Establishment of precise relationships between individual photographs
- Providing sufficient number of data points to ensure accuracy when footage is processed into models and maps

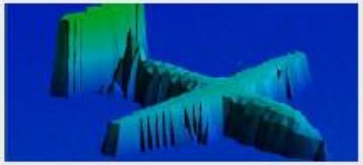
3D stereo mapping and modelling

- The process of extracting 3D information from digital stereo images
- Modelling geospatial data into 3D depictions



CAD[1)] vector mapping

- Global CAD vector mapping projects
- Fully digital production line for topographic and thematic maps



LiDAR data processing

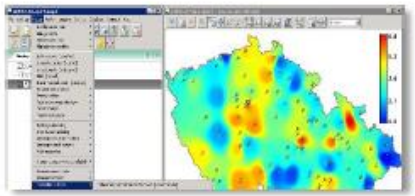
- Processing of LiDAR point data and infrared data into 3D point image
- Further processing of the point image such as:
  - Removal of noise
  - Surface and land use classification
  - Building and contour classification

Digital orthophoto production

- The process of removing distortions arising from variable distances in geospatial data
- Determination of object's precise size and location
- Basis for precise measurements and calculations

GIS Products are completed and adjusted to fit clients requirements

Geographic Information System (GIS) Value Chain

Data acquisition → Data processing & modelling → **GIS products** → Applications





Digital cadastral maps

- Production of cadastral maps, including photographic maps for public and private sector
- New production and update of existing maps

Environmental survey maps

- Digital depiction of vegetation, existing or potential of flooding and similar environmental issues
- Produced from LiDAR data and aerial imagery

3D models

- Models of single assets or whole cities at various levels of detail
- Used in planning and/or decision making processes
- Produced from LiDAR or oblique imagery

Historic maps and image library

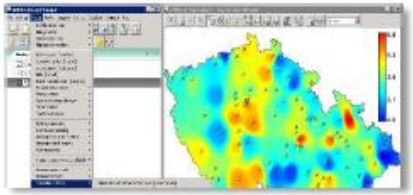
- Production of time-vertical models
- Utilized to track events, changes from natural disasters, land use, wars or similar

Geoservers and digital libraries

- Creation of detailed geodata models accessible on- and offline. This includes
  - Urban areas maps and 3D models
  - Historic maps
  - Landmark 3D models

Value Enhancing Applications
Real value in BIO's offering

Geographic Information System (GIS) Value Chain

Data acquisition → Data processing & modelling → GIS products → **Applications**

Tourist guides and navigation systems

- 3D models used in navigation devices
- Display of landmark and additional geo-information for online 3D guides and tours
- Remote city simulation for tourism

Geospatial datasets for public planning & admin.

- Update and creation of national datasets for governments
- Input for public maps and geospatial database

Asset and infrastructure management

- Laser scanning utilized for maintenance and surveillance of roads, railways and other facilities:
  - Measuring and mapping critical components
  - Spotting irregularities
  - Surveillance of natural resources

Environmental assessment studies

- LiDAR and 3D models utilized for e.g.
  - Potential of flooding
  - Prediction of future growth of trees
  - Storm damage analysis
  - Harvesting planning
  - Forestry management

Energy and infrastructure planning

- LiDAR based 3D models utilized for e.g.
  - Prediction of solar potential
  - Power line planning
  - Telecommunication planning

Location

Blom International Operations S.R.L.
3-5 I.H. Radulescu Street
130010 Targoviste Dambovita Romania
https://blominternationaloperations.com/
Tel: +40(0)245 214 725

CEO
Costin Trandafir
ct@heveco.ro

COO
Alina Popescu
alina.popescu@heveco.ro
Ploiesti, 26 Alexandru Vlahuta str., Prahova county, Romania
Targoviste, Str. I.H. Radulescu, no. 3-5, Dambovita county, Romania

www.heveco.ro
https://www.linkedin.com/company/HEVECO
www.blominternationaloperations.com