COMPANY PROFILE

For PHOTOGRAMMETRY, LiDAR, BIM, UAV, GIS and SURVEYING SOLUTIONS
# Table of Contents

1. **ABOUT US** .................................................................................................................. 3  
   1.1 **MISSION/VISION** ................................................................................................... 4  

2. **SERVICES & SOLUTIONS** ....................................................................................... 5  
   2.1 **Photogrammetric Services** .................................................................................. 7  
      Aerial Triangulation ...................................................................................................... 7  
      Digital Elevation Model (DEM) .................................................................................. 7  
      Planimetric Mapping .................................................................................................. 8  
      Terrain Modelling ....................................................................................................... 8  
      Topographic Mapping ................................................................................................ 8  
      Orthophoto Production ............................................................................................. 9  
      3D City Modelling ...................................................................................................... 10  
   2.2 **LiDAR Data Processing & Mapping** .................................................................... 11  
      Airborne Laser Terrain Mapping (ALTM): ................................................................... 11  
      Mobile / Handheld LiDAR: ........................................................................................ 11  
      UAV LiDAR: ............................................................................................................... 12  
   2.3 **Building Information Modelling (BIM)** ............................................................... 12  
      Point Cloud Data /BIM Model ................................................................................... 13  
      Architecture, Engineering & Construction (AEC) services ........................................ 14  
      Mechanical Electrical & Plumbing (MEP) solutions .................................................. 14  
      Scan to BIM ................................................................................................................ 16  
   2.4 **UAV Imagery Processing** .................................................................................... 17  
   2.5 **Geographical Information System** ...................................................................... 17  
   2.6 **Surveying Services** ............................................................................................ 18  
   2.7 **Location Based Services** .................................................................................... 19  

3. **INFRASTRUCTURE** ................................................................................................. 20  
   Office .................................................................................................................................. 20  
   Human Resource: ............................................................................................................ 20  
   Policy: ............................................................................................................................... 20  
   Communication: ............................................................................................................... 20  
   Hardware: ........................................................................................................................ 20  
   Software: .......................................................................................................................... 20  
   Our Technology Partners: .............................................................................................. 21  

4. **QUALITY MANAGEMENT SYSTEM** .................................................................... 21  

5. **VALUE PROPOSITION** .......................................................................................... 21  
   Why Choose Our Company: ......................................................................................... 21  
   Effective Management Conditions: ............................................................................... 22  
   Delivery of Effective Products and Services: ............................................................... 22  

6. **CONTACT US** ......................................................................................................... 23
1. About Us

MARVEL GEOSPATIAL SOLUTIONS Pvt. Ltd. (MGSPL) is a business endeavor aiming at serving the needs of the National and Global markets through focused, innovative, efficient, quality products and services in all areas of spatial technology and applications.

MGSPL has based its premises in Hyderabad-India and has a presence in Australia, Africa, US and UAE and has successfully completed 9 years of Industry experience.

MGSPL has the best professionals in this technology and has a top technical team, who bring with them more than 15 years of experience in spatial technology fields. The team has tied-up with some of the best International companies/agencies & partners at National and International level to leverage business solutions & benefits.

MGSPL brings horizontal and vertical integration of Satellite/Aerial/UAV Photogrammetry, LiDAR, Positioning Applications, GIS Databases and Applications, GIS Web-services and Networking of GIS Databases.

The MGSPL team, with its vast experience and expertise, provides the company the strength to offer innovative, quality and effective solutions to all sectors of Government, Private enterprise, Academia and Non-Governmental organizations.

MGSPL measures its success in terms of the value-proposition it provides its customers to help meet their ROI goals and competitive advantage. Our industry focus is on Utilities, Land Administration, Geological Mapping, Transportation and Location-based Services.
### 1.1 Mission/Vision

**MGSPL** is one of the leading Geospatial Solution Providers in the country. We receive this recognition because of our full-service, turn-key solutions for the GIS industry. Our many years of experience and innovation have allowed us to expand into a new era by offering leading-edge technological services and a consistent forward thinking approach in serving our customers.

We believe success is accomplished through **Commitment, Integrity, Discipline, Innovation and Professionalism**.

<table>
<thead>
<tr>
<th>Vision</th>
<th>Be recognized as the leading Geospatial Solutions and Analysis company.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>Improving our world through Geospatial Solutions and Analytical services.</td>
</tr>
<tr>
<td>Values</td>
<td>Integrity, Commitment, Teamwork, Innovation, Professionalism.</td>
</tr>
<tr>
<td>Quality</td>
<td>Provide quality products and services in a timely manner that meet or exceed Customer requirements</td>
</tr>
</tbody>
</table>

**Discriminators**

- Long-term trusted relationships with key Customers.
- Offer full life-cycle Geospatial Services - from inception to completion.
- Offer full suite of Geospatial services from Surveying to Aerial Photography, Photogrammetry, GIS to hardcopy Map production.
- One of few firms operating UAV/ Terrestrial/ Mobile LiDAR and Large format Digital Aerial Cameras.
- One of few firms to offer BIM from Point cloud data including Laser Scanning. Also, pioneer in UAV Imagery & UAV LiDAR data processing.
- Competitive Pricing
2. Services & Solutions

MGSPL provides a variety of services to customers in GIS space, including:

- **Photogrammetric Services:** Aerial Triangulation, DTM / Planimetric Data Extraction, 3D City Modeling, Ortho-rectification.
- **LiDAR:** UAV / Airborne LiDAR data processing, Mobile LiDAR data processing and Terrestrial LiDAR data processing.
- **Building Information Modelling (BIM)**
- **UAV Imagery Processing:** Post-processing of the UAV images to extract DTM and create True Ortho Photo Production.
- **Geographic Information System:** GIS Data Conversion, Geo-Database Design, GIS / Land Information Systems, GIS Application Development, Web Based GIS, Custom Applications, etc.
- **Surveying Services:** UAV Surveys, Topographic Surveys, Cadastral Surveys, Route Surveys, Utility Surveys and Control Surveys.
- **Location Based Services:** GPS/LBS products & services.

Below mentioned are the details of the "Volume of work" we have executed till date for the services we provide:

<table>
<thead>
<tr>
<th>Our services</th>
<th>Volume of work</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Photogrammetry:</strong></td>
<td></td>
</tr>
<tr>
<td>Aerial Triangulation</td>
<td>more than 2,00,000 Imageries</td>
</tr>
<tr>
<td>DTM</td>
<td>more than 10,00,000 Sq.Kms</td>
</tr>
<tr>
<td>Planimetric Data Extraction</td>
<td>more than 1,00,000 Sq.Kms</td>
</tr>
<tr>
<td>3D City Modeling</td>
<td>more than 30,000 Sq.Kms</td>
</tr>
<tr>
<td>Orthorectification.</td>
<td>more than 10,00,000 Sq.Kms</td>
</tr>
<tr>
<td>True Ortho Production</td>
<td>more than 10,000 Sq.Kms</td>
</tr>
<tr>
<td>Photo Texturing for 3D buildings</td>
<td>more than 10,000 Sq.Kms</td>
</tr>
<tr>
<td>Our services</td>
<td>Volume of work</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td><strong>UAV Imagery Processing:</strong></td>
<td></td>
</tr>
<tr>
<td>Triangulation</td>
<td>more than 45,000 imageries</td>
</tr>
<tr>
<td>DTM</td>
<td>more than 600 Sq.Kms</td>
</tr>
<tr>
<td>Orthorectification</td>
<td>more than 600 Sq.Kms</td>
</tr>
<tr>
<td>True Ortho Production</td>
<td>more than 600 Sq.Kms</td>
</tr>
<tr>
<td><strong>LiDAR data processing:</strong></td>
<td></td>
</tr>
<tr>
<td>Airborne LiDAR data processing</td>
<td>more than 25,000 Sq.Kms</td>
</tr>
<tr>
<td>UAV LiDAR data processing</td>
<td>more than 1000 Sq.Kms</td>
</tr>
<tr>
<td>Mobile LiDAR data processing</td>
<td>more than 300 Linear Kms</td>
</tr>
<tr>
<td>Terrestrial LiDAR data processing</td>
<td>more than 300 Linear Kms</td>
</tr>
<tr>
<td><strong>BIM</strong></td>
<td>more than 5,000,000 square ft</td>
</tr>
<tr>
<td><strong>GIS:</strong></td>
<td></td>
</tr>
<tr>
<td>GIS Data Conversion</td>
<td>more than 2,00,000 Sq.Kms</td>
</tr>
<tr>
<td>GIS / Land Information Systems</td>
<td>more than 1,00,000 Sq.Kms</td>
</tr>
<tr>
<td>Web Based GIS</td>
<td><strong>MGSPL</strong> Vehicle tracking System</td>
</tr>
<tr>
<td><strong>Surveying:</strong></td>
<td></td>
</tr>
<tr>
<td>Topographic Surveys</td>
<td>more than 1,000 Sq.Kms</td>
</tr>
<tr>
<td>Cadastral Surveys</td>
<td>more than 3,000 Sq.Kms</td>
</tr>
<tr>
<td>Route Surveys</td>
<td>more than 10,000 Linear Kms</td>
</tr>
<tr>
<td>Utility Surveys</td>
<td>more than 20,000 Linear Kms</td>
</tr>
<tr>
<td>Control Surveys (DGPS)</td>
<td>more than 5,000 Sq Kms / 500 Points</td>
</tr>
</tbody>
</table>
## 2.1 Photogrammetric Services

**Marvel Geospatial Solutions (MGSPL)** has an experienced Photogrammetry team equipped with the latest digital Photogrammetry systems. We offer leading edge, professional mapping services which are time and cost effective. **MGSPL** Offers comprehensive services in the field of Digital Photogrammetry to create 3D Data sets. Our offering includes:

- Aerial Triangulation
- Digital Elevation Model (DEM)
- Planimetric Mapping
- Terrain Modelling
- Topographic Mapping
- Orthophoto Production
- 3D City Modelling

**Aerial Triangulation**

We are capable of triangulating large quantity of Aerial Images, UAV Images & Satellite scenes, Capable of triangulating the images captured from latest digital cameras and sensors.

We ensure the high geometric stability of the blocks with well-defined external orientation and additional parameters meeting the RMSE within tolerance.

**Digital Elevation Model (DEM)**

We use advanced autocorrelation methods to extract high accurate Digital Elevation Model (DEM).

This allows us to derive a 3D model very quickly and affordably, providing maximum exploitation of imagery captured with digital aerial sensors while providing a basis for Orthophotography, Terrain Modelling, Planimetric Mapping and much more.
**Planimetric Mapping**

We are capable of capturing Planimetric data from Aerial Photographs and Satellite Stereo images.

We are specialized in Large Scale Mapping where the Planimetric details are captured from High Resolution Aerial Photographs with high accuracy generating precision 1-foot contour. Details like, Transportation, Buildings, Structures, Hydrography, Vegetation, Boundaries, Utilities, etc. are captured for comprehensive GIS solutions or for individual projects. Our techniques and detailed project management assure accurate results and consistent deliverables.

**Terrain Modelling**

We are involved in the development and deployment of Terrain models to support 3D analysis. Surfaces derived from LiDAR, photogrammetric Techniques and auto correlated surfaces; provide a framework for which a "skin" of realistic imagery is applied, creating a lifelike 3D scene.

**Topographic Mapping**

MGSPL compilers develop topographic data in a softcopy environment. Their workflow is designed such that edge-matching data results in a seamless project wide topographic representation. Great care is taken to ensure accurate and timely deliverables.
Orthophoto Production

We are capable of processing Aerial Images creating Ortho-rectified images. We are also capable of processing satellite images of different sensors.

We do radiometric correction, atmospheric correction, Image fusion (resolution merge), histogram matching (tonal balancing), geo-referencing, ortho rectification, ortho mosaic, color balancing and cut the data into manageable small size tiles for better file management.

We are capable of producing True Orthophoto. An Orthophoto is "correct" at the terrain level were as a True Orthophoto is geometrically correct over in the entire image.
**3D City Modelling**

We have extensive knowledge in preparing 3D city models with real world texture from Multiple Data sources (True Ortho Photographs, UAV, High oblique Aerial Imagery, etc.) by implementing state of the art Work Flows and 3D engines. With High level of automation in the reconstruction of building geometries and facade texturing, we have short production times and a very high level of data quality combined with a considerable reduction of costs. MGSPL has the ability to create and maintain city wide 3D models for online and offline visualization.
2.2 LiDAR Data Processing & Mapping

MG SPL provides turn-key ALTM / Mobile / Terrestrial / UAV LiDAR data processing services:

**Airborne Laser Terrain Mapping (ALTM):**

MG SPL offers cost effective and consistent quality LiDAR services with international standards. We have extensive experience in categorizing LiDAR point cloud data to different classes like Bare earth, Buildings, Bridges, Hydrography, Low & High Vegetations, Pylons, High tension wires & Cables, etc. We also do Flight Line adjustment, advanced as-built 3D Modelling and Planimetric Mapping.

**Mobile / Handheld LiDAR:**

Mobile/Handheld LiDAR (Light Detection and Ranging also known as Laser scanning or 3D scanning) provides accurate three-dimensional topographic information through its high resolution point cloud data. Its ability to survey accurately object elevation and geo-reference location make it useful for mapping.
**UAV LiDAR:**

We are capable of processing UAV LiDAR data from flight line adjustment to classification of point cloud data to its respective feature class and vectoring them creating 3D City Modelling.

---

**2.3 Building Information Modelling (BIM)**

Building Information Modelling (BIM) is the process of generating and managing building data. It is a digital representation of the physical and functional characteristics of a facility. It is a shared knowledge resource for information about a facility, forming a reliable basis for decisions making from origin to demolition. BIM models can give comprehensive construction information which cannot be obtained by 2D drawings alone. The BIM models will be very helpful for Fire Department for planning evacuation of people in case of any eventuality. It will also be helpful to evaluate building compliance to various safety norms and guidelines like fire safety, setback, ratio of construction and open spaces etc., before granting registration or License to use the structure/facility.

**MGSPL** has wide range of expertise in BIM and is actively engaged in various International BIM production activities, seeking a synthesis between technology and effective response to the challenges of each project.

**MGSPL** provides projects and services in the following sectors using BIM.

- Architecture, Engineering & Construction (AEC) services
- Mechanical, Electrical & Plumbing (MEP) solutions
- Structural, Constructions & Analysis
- Scan to BIM
Point Cloud Data /BIM Model

Koti Women’s College – 1803 AD

© Developed by Marvel Geospatial Solutions
Architecture, Engineering & Construction (AEC) services

MGSPLO develops innovative solutions directed towards the Architecture, Engineering and Construction Industries by creating & utilizing BIM, Including:

- 2D Drawing to 3D BIM Model
- 3D Rendering and Modelling
- 4D Construction Planning
- Visualization BIM Modelling
- 3D Coordination / Clash Detection

2D Drawing to 3D Building Modelling

BIM

3D Interior Rendering and modelling

3D Coordination / Clash Detection

Mechanical Electrical & Plumbing (MEP) solutions

MGSPLO has extensive experience in designing, documentation, cost estimation, construction planning of MEP and MEP – Information Modelling, Including:

- Conversion of 2D design drawings to 3D models
- Co-ordination among various MEP trades
- Collision detection
- Fabrication drawings
- Shop drawings
- Parametric modelling and library creation of HVAC & MEP components
- Construction Documents
**Structural Constructions & Analysis**

**MGSPL** has extensive experience in structural constructions in designing, documentation, construction planning, stress analysis and creating BIM, including:

- 3D Modelling & Design
- Construction Documentation
- Stress Analysis
- BIM

---

**3D Designing**

**Construction Document**
Scan to BIM

We are specialized in extracting intelligent BIM from Laser point cloud data

**Buildings:** We create **as-built BIM models for refurbishment, retrofit and renovation projects.**

**Infrastructure:** We create **as-built BIM models for the renovation of infrastructure assets.**

**MEP:** We provide early clash detection by creating **as-built BIM models for MEP services and facilities managers.**

**Oil and Gas:** We create **as-Built models for plant in Oil Refineries and Gas facilities.**
2.4  UAV Imagery Processing

**MGSPL** does post-processing of high resolution UAV images, extract DTM and generate highly accurate/high resolution True Orthophoto.

**MGSPL** has the capabilities to produce Urban cover mapping using high-spatial resolution UAV imagery which is used for Urban Planning and development.

2.5  Geographical Information System

**MGSPL** is an Independent GIS System Integrator and focuses on end to end offerings in geospatial information services. Our offerings includes GIS Consultancy Services, GIS System Development & Implementation, off-the-rack Integration, Testing & Maintenance for various verticals, GIS Data Design & Modelling, Data Migration, Capture, Validation, Maintenance (including remote maintenance), customer application development, web-based GIS for internal project management & for external customers, Geodatabase design configuring RDBMS establishing a multiuser editing environment, Standalone and web/mobile GIS application development.
**MGSPL** offers Geospatial services for Telecom, Electric, Water & Sewer, Waste water, Gas, Land base and all other Utility Domains.

### 2.6 Surveying Services

**MGSPL** provide a variety of surveying services including wetland delineation, boundary, as-built, tree, topographic surveys, staking of roadway and drainage projects and providing finished floor elevation certificates for real estate closings. We provide surveying services for the development of both residential & commercial properties to engineering, architectural & residential design firms. Our client list comprises numerous Federal & State Agencies, major and independent Oil & Gas Companies, pipeline companies and other industrial & private entities.

The Surveying & Mapping services offered by **MGSPL** using Total Stations, Auto levels, GPS, Laser Scanners, etc. are:

- Topographic Surveys
- Cadastral Surveys
- Route Surveys
- Utility Surveys
- Urban Planning/Property Surveys
- DGPS Control Surveys
- Engineering Surveys
2.7 Location Based Services

MGSPL is a dynamic leader in GPS/LBS products and services. MGSPL has Strategic Partners in Mobile assets, significantly reducing associated with those activities by increasing utilization, decreasing direct and indirect costs, increasing productivity and sales, fully automating business processes or providing forms and tools for mobile workers and measuring performance. Customers can use and manage their information by logging onto our website or by using automated reporting tools that send customer selected reports at customer selected intervals. We are poised to provide enterprise quality, location based integration services for large private and public corporate users and international licensees.

- Fleet Management
- Asset and Personal Safety Tracking
- Engine Health Monitoring
- Marine Vessels Tracking
- Mining Equipment Monitoring
- Personal Vehicle Tracking
- Tracking solutions for Logistics and Delivery Enterprises
- Tracking Solutions for School and Academic Institutions
- Tracking Solutions for Cabs, Police and Public Transport
3. **Infrastructure**

**MGSPL** Offices are well equipped with state-of-the-art computing, networking, security and communication infrastructure. The offices are also provided with facilities such as full-fledged conference rooms with Audio conferencing facilities and complete power & system back up to operate 24/7.

**Office**

MGSPL aspires to become a leading GIS and Photogrammetry services provider. This has guided MGSPL to establish and create a work environment conducive for efficiency and innovation.

**Human Resource:**

MGSPL recognizes that its people are the primary source of its competitiveness. It is committed to equal employment opportunities for attracting the best available talent and ensuring a cosmopolitan workforce.

**Policy:**

Pursues management practices designed to enrich the quality of life of its employees, develop their potential and maximize their productivity. It will aim at ensuring transparency, fairness and equity in all its dealings with its employees. MGSPL will strive continuously to foster a climate of openness, mutual trust and teamwork.

**Communication:**

MGSPL possess resources to enable Collaborative Project Management which is increasingly being accepted as the most efficient and effective way to develop products.

**Hardware:**

MGSPL possesses an array of high-end workstations.

**Software:**

Following are the list of major GIS, Photogrammetry and LiDAR software’s we expertise for providing solutions to our customers.

- Z/I
- Z-MAP Laser/Photo
- INPHO
- ESRI
- LEICA
- ORTHO PRO & ORTHO VISTA
- AUTODESK
- BENTLEY-USTATION
- TRIMBLE & ASHTECH
- ER MAPPER
- GLOBAL MAPPER
- ADOBE
- ERDAS IMAGINE
- IDRISI
- CADCORP
- ADOBE PHOTOSHOP
Our Technology Partners:

4. Quality Management System

MGSPL has established a Quality Management System that is in compliance with the International Quality System standard ISO 9001:2015.

MGSPL is committed to provide Global Geospatial Solutions to its customers by meeting the requirements with regard to Quality to enhance customer satisfaction and by continually improving the effectiveness of Quality Management System.

5. Value Proposition

Why Choose Our Company:

In a crowded marketplace, MGSPL remains differentiated on the basis of our financial and technological strengths and strong geospatial pedigree which gives us the ability to engage very closely with our customers on end to end geospatial solutions spanning all stages of a product lifecycle.
We add value to our customer's processes and products in the following manner:

- Virtual Extended Arm of the Customer
- Significant reduction of Product Lifecycle, Time and Cost
- Innovative solutions
- Quality Assurance and timely delivery
- Proven GIS domain expertise
- Robust Security & business continuity
- Flexible Operating Models
- Ability to engage with customers in large & critical programs

Some of our other strength includes:

- Customer Focus
- Our well trained workforce
- Rich Domain knowledge
- Strict Quality and information security standards
- Professionalism & Ethics
- Long-term stability and Relationships
- Financial strength
- State-of-the-art Infrastructure
- Excellent Project Management skills

Effective Management Conditions:

Effective Management optimization is one area that can help tremendously to optimize the overall performance of GIS and Photogrammetry solutions. To Track and optimize productive maintenance activities based on Quality Management System check lists throughout all operational activities on company standards.

Delivery of Effective Products and Services:

MGSPL has been delivering products on time under the client time constraints framework in effective manner and we are fulfilling our customer satisfaction through quality services.
6. Contact Us

INDIA

Mr. Raghu (Raghavendra Boyapally)
Marvel Geospatial Solutions Pvt. Ltd.
9-22/1/B, Shapoor Hall
Shapoorwadi, Aadarsh Nagar
Hyderabad-500063
Telangana, India.
Land Mark: Opp. New MLA Quarters

Phone: +91 40 23239595, + 91 40 6641 3226
Phone/Fax: +91 40 6675 9595

E-Mail: info@marvelgeospatial.com

UNITED STATES

Mr. Bob Shafer
Marvel Geospatial Solutions Pvt. Ltd.
Denver, Colorado

E-Mail: bob.shafer@marvelgeospatial.com