SHAMAL

TECHNOLOGIES

Head Office:

Office No: 1109, 11th Floor
The Headquarters Business Park,
Jeddah 23511, Kingdom of Saudi Arabia.

Shamal Technologies is a Saudi Geospatial Data Company

We Provide end-to-end solutions from data acquisition to data visualization and analytics using world leading technology to empower leaders to make data informed decisions and reduce operation costs

WHO WE ARE

Shamal Technologies is a leading provider of smart data solutions in the Kingdom of Saudi Arabia. As a **fully Saudi owned** and funded company, we proudly support **Vision 2030** by investing in local talent, with over **93% Saudi workforce** undergoing continuous development.

Our advanced solutions cover ground, aerial, and marine data acquisition, offering clients high-precision datasets, complete visibility, and a deeper understanding of their environment.

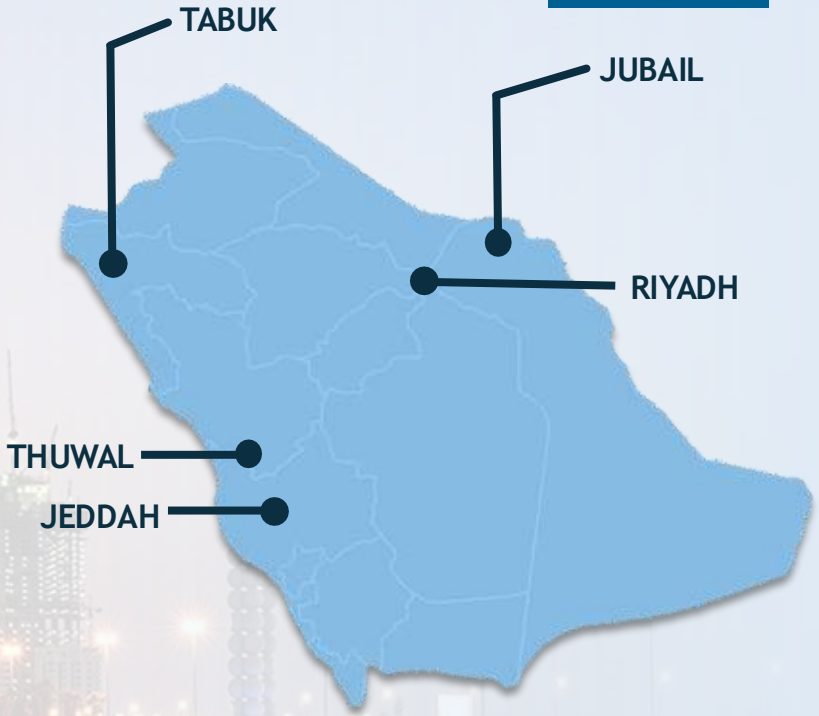
We operate across industries using **market-leading drone systems** and **cutting-edge data processing methodologies** to ensure **best in class services and deliverables.**

STRATEGIC PARTNERSHIPS

Our capabilities are powered by world-leading technology partnerships. We are authorized distributors and partners of DJI products and satellite data, and a Business Partner of CyberHawk.

Shamal Technologies is committed to providing **world-class geospatial data services**, strengthened by local expertise, strategic collaborations, and integrated project delivery.

LOCALLY
EXPERIENCED



KEY STAFF

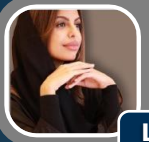
SHAMAL TECHNOLOGIES

Co-Founder & COO

Craig Mushet

Founder & CEO

Haitham Al-Jahdali



Co-Founder

Lama Al-Jahdali

Projects Head

Eyad Alamoudi

Deputy CEO

Dr. Hisham Malak

Business Development Manager

Jameer Mohammed

Operation Manager

Nawaf Alsahli

Geomatics Department Manager

Ahmed Hadeel

Senior Project Management

Khalid Shami

BUSINESS PARTNERS

SHAMAL TECHNOLOGIES

CYBERHAWK

Shamal Technologies maintains a strategic technology partnership with CyberHawk to enhance our digital and UAV-based service capabilities. This partnership is non-commercial and focused solely on technical collaboration and innovation.

dji

Shamal Technologies is an official partner and authorized distributor of DJI products, delivering industry-leading drone and imaging solutions to our clients. We provide certified expertise and trusted access to DJI's full range of professional technologies.

ECURS

SHAPING A CONNECTED, INTELLIGENT WORLD TOGETHER!

Shamal Technologies is proud to collaborate with ECURS, a leading provider of geospatial intelligence and remote-sensing solutions. Together we deliver cutting-edge satellite imagery, GIS software, and tailored applications across diverse industries.

nybl.

Shamal Technologies collaborates with nybl, a global leader in AI-driven analytics and digital transformation. Through this partnership, we deliver advanced, data-intelligence solutions that enhance decision-making and operational efficiency across multiple sectors.

ERM

Shamal Technologies is proud to partner with ERM, the world's leading sustainability consultancy, to deliver integrated environmental, health, safety and risk-management solutions. Together we support our clients in achieving high-impact sustainable outcomes and meeting their ESG commitments.

OUR SERVICES

SHAMAL TECHNOLOGIES

- Aerial Survey
- Construction Monitoring
- Inspection
- Bathymetric & Under water Survey
- Traffic Count & Traffic Analysis
- GIS and Remote Sensing
- Environmental Monitoring
- Scan/CAD to BIM
- Mining & Exploration
- Oil & Gas
- Security Surveillance
- AI Application Development
- Agriculture Monitoring
- Special Projects

PRODUCTS

SHAMAL TECHNOLOGIES

DJI Professional Solutions

Integrated Drones & Payload Systems

Matrice 400

Dock 3

FlyCart 100

Zenmuse L3

Zenmuse P1

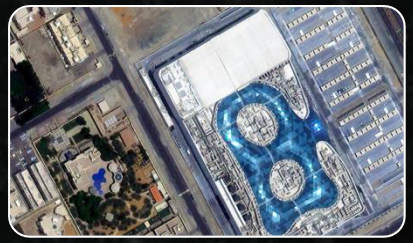
Zenmuse H30

Zenmuse S1

PRODUCTS

Satellite Data Imagery Solutions

Integrated High-Resolution Optical Sensors



Mono Satellite Imagery

High-resolution 2D optical imagery captured from a single viewing angle, typically offering spatial resolutions from **30 cm to 1 m**. Mono imagery is optimized for **large-area mapping, land-use classification, asset inventory, and environmental monitoring**, providing frequent revisit capability and consistent baseline datasets for change detection and planning applications.

Stero Satellite Imagery

Stereo imagery consists of two images of the same location captured from different viewing angles, enabling **3D terrain reconstruction**. It supports the generation of **Digital Surface Models (DSM) and Digital Terrain Models (DTM)** with vertical accuracies typically in the range of **0.5–1.0 m**, making it suitable for **construction progress monitoring, volume calculations, slope analysis, and infrastructure design** at scales up to **1:10,000**.

Tri Stero Satellite Imagery

Tri-stereo imagery captures **three images (forward, nadir, and backward)** in a single orbital pass, significantly reducing occlusions and improving height accuracy. This dataset enables **high-precision 3D mapping** with vertical accuracies of **≤0.5 m**, supporting **dense urban modeling, complex terrain analysis, and critical infrastructure projects** at mapping scales of **1:5,000 or better**.

INVENTORY

SHAMAL TECHNOLOGIES

Drones:

- DJI M400, 350
- DJI Dock 3
- DJI M30T
- DJI FPV
- DJI Mavic 3 (Cine, Pro & enterprise)
- Quantum Systems Trinity F90+ Pro
- CW-15

Payloads:

- DJI Zenmuse P1
- DJI Zenmuse L1
- DJI Zenmuse H20
- DJI Zenmuse H20T
- DJI Zenmuse X7
- Sony RXR1
- Emersent Hovermap
- Micansense Altum
- Micansense RedEdge-MX

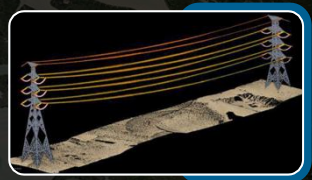
DATASETS

SHAMAL TECHNOLOGIES

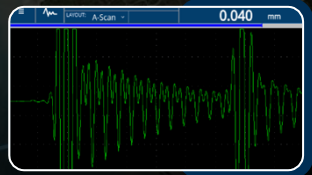
Visual Imagery (RGB)
Our drones carry RGB cameras that capture high-resolution, highly accurate images, ideal for producing detailed maps and 3D models

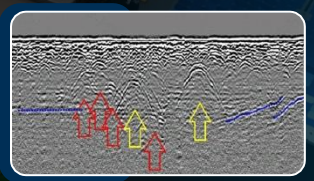
Detail Visual Inspection
Specialized visual inspection payloads are used for tasks such as flare stack checks, tower inspections & confined space inspections to detect damage & document findings

LiDAR Point Cloud
It produce very precise point clouds used for topographic mapping and 3D modeling, enabling creation of digital twins of the surveyed area

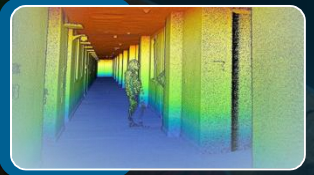


UT Thickness Measurement
It measures the remaining thickness of surfaces, walls, and plates, including Dry Film Thickness (DFT), which is essential for infrastructure integrity checks

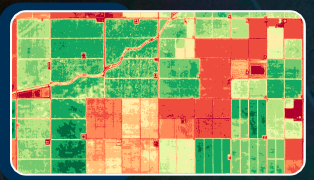




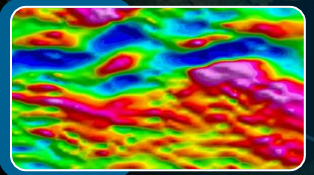
Radar gram GPR
Ground-penetrating radar (GPR) payloads produce radar grams used in mineral exploration and geotechnical surveys, accurately mapping subsurface structures.



Thermal Imagery
Thermal cameras are crucial for thermographic analysis, helping to locate defects, identify issues, and support operations such as night-time surveillance.



Multispectral Imagery
Multispectral sensors deliver index data essential for assessing plant health, monitoring environmental changes, and conducting mineral exploration surveys.



Magnetic Reading
Magnetic sensors generate high-resolution, accurate magnetic maps that are vital for mineral exploration.

ACCREDITIONS

Shamal is proudly accredited by the General Authority of Civil Aviation (GACA) and holds ISO certifications, demonstrating our commitment to maintaining the highest standards of safety, quality, and operational excellence in the drone industry.

Shamal Technologies' operations meet international levels of standardization. All activities, solutions, and services are entirely legalized and approved by the Saudi General Authority of Civil Aviation (GACA), Our Drone pilots are GACA 107 certified and insured for third party liability.

Shamal Technologies are proud to have recently obtained ISO 9001, ISO 14001 & ISO 45001 & ISO 27001 certification which underlines our commitment to meeting the quality expected by our clients, whilst operating with the health and safety of our teams at the front of mind, and ensuring we operate in an environmentally sound manner.

Shamal Technologies has engineers certified with the Saudi Council of Engineers (SCE), ensuring full compliance with national engineering standards and professional regulations in the Kingdom of Saudi Arabia.

SECTORS WE SERVE

SHAMAL TECHNOLOGIES


Government


Transportation


Mining


Construction


Real Estate


Education


Oil & Gas


Heritage


Marine


Agriculture & Environment


Utilities


Application Development

ASSET INSPECTION

Traditional inspection methods, like manual climbing and ground photography, put workers at risk and deliver inconsistent and incomplete data. Drones revolutionist inspections by offering a safer, more reliable, and comprehensive alternative Get an up-to-date view of your assets with georeferenced data that is easy to prioritize and analyze with just a few clicks.

Shamal's immersive drone-powered photographs and thermal imagery provides a detailed and accurate record of the state of your assets. This helps you identify maintenance issues, monitor the condition of your assets, and keep meticulous historical records for better asset lifecycle management.

Shamal has partnered with world-leading software providers to bring you advanced data visualization for critical infrastructure in a structured and coherent format – providing a powerful time-saving collaboration platform for asset management.

Project Case Study

SEC - Western Region:

In 2023, Shamal worked alongside our partners, international infrastructure drone inspection company, CyberHawk, to undertake the inspection of over 3,000 towers and over 2,000 km of power lines in the Western Region Focusing primarily on RGB and thermal data capture and analysis, the team was also responsible for undertaking corona UV data capture, through the deployment of the M300 multi-rotor drone system and a combination of market-leading payloads. Through a combination of Cyberhawk's experience and Shamal's local knowledge, the towers and power lines were captured efficiently and within program through rigorous planning and SOPs.

CONSTRUCTION SURVEY MONITORING

Tight deadlines and stringent budgets are the realities of construction – Shamal' s drone solutions equip project teams with the data they need to optimize every aspect of delivery. Leverage highly accurate distance, area, and volumetric measurements directly from your true-to-scale imagery and create detailed maps and site plans for effective planning and resource allocation, providing compelling visuals to enhance stakeholder communication.

Providing a critical layer of context to BIM and GIS workflows, enhancing spatial accuracy and real-time insights. By integrating up-to-date aerial imagery and 3D models, drones help teams visualize site conditions, monitor changes, and make more informed decisions. This synergy between drone data, BIM, and GIS streamlines project coordination, improves risk management, and supports proactive planning throughout the project lifecycle.

Project Case Study

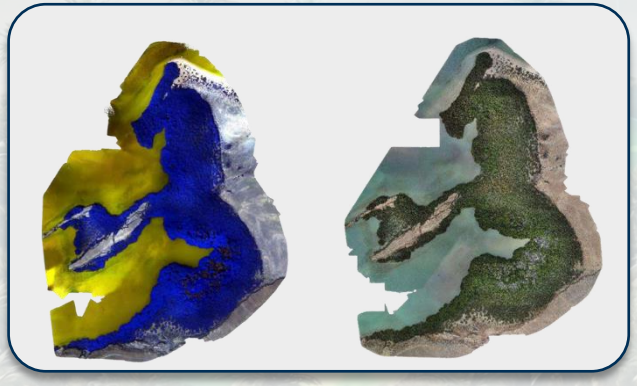
Shamal has operated daily flights in the NEOM region for over two years, often with multiple teams, the majority of this work has been to support construction monitoring requirements across each of the major sites. Our field teams have delivered highly accurate surveys for site planning activities, providing the client with high resolution imagery including orthophotos, point clouds and digital elevation models. This priceless data is fully compatible with existing digital construction workflows, seamlessly integrating with both BIM and GIS software. Working directly for the CEO's office, Shamal have also been providing videography for macro-level progress updates and comparison of every major NEOM project. This footage is captured under NDA and is shared with the most senior of NEOM stakeholders.

ENVIRONMENTAL MONITORING

Gather data across vast landscapes in a fraction of the time and enhance decision making with best-practice environmental monitoring processes Many organizations still rely on outdated, labor-intensive methods for environmental monitoring. These traditional approaches are not only slow and resource-draining, but also prone to inaccuracy, usually only offering a momentary glimpse rather than the whole picture.

Drones can revolutionize this process by covering larger areas more quickly and with greater detail, transforming how data is collected and analyzed, so you can capture the health of vegetation and track wildlife populations with unparalleled detail for informed conservation efforts.

High resolution video and still imagery, multispectral datasets, point clouds, and bathymetric surveys can all be delivered by Shamal's expert team and delivered to our clients with precision and efficiency.



Project Case Study

Mangrove Monitoring:

Shamal, in collaboration with the National Centre for Wildlife, King Abdulaziz University, and 02 Marine, is monitoring mangrove health along the Red Sea coast from Jazan to NEOM. High-resolution RGB and multispectral data are being captured for NDVI calculations to assess vegetation health.

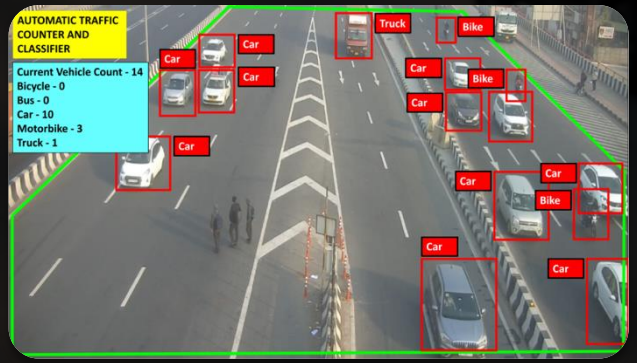
Drone precision is critical for detecting subtle differences in red and near-infrared light, enabling targeted interventions and deeper ecosystem understanding.

TRAFFIC COUNT & TRAFFIC ANALYSIS

Gather accurate traffic data across complex urban and highway environments in a fraction of the time and support data-driven transportation planning with best-practice traffic survey methodologies. Traditional traffic surveys are often labor-intensive, time-consuming, and limited in coverage, providing only partial insights into network performance.

Advanced video-based traffic counting and AI-driven analytics transform how traffic data is collected and analyzed. By capturing continuous, high-resolution traffic movement data, Shamal enables a comprehensive understanding of traffic flow, demand patterns, and congestion behavior across road networks.

High-definition video surveys, AI-based vehicle classification, ANPR data, and aerial observations can all be delivered by Shamal's expert team, providing precise, reliable, and decision-ready traffic intelligence for planning and infrastructure development.



Project Case Study

Traffic Monitoring & Analysis – Saudi Arabia:

Shamal, through its strategic collaboration with Trans Analyst, has delivered multiple traffic count and traffic analysis projects across Saudi Arabia, including Riyadh, Jeddah, Makkah, Madinah, Jubail, and NEOM.

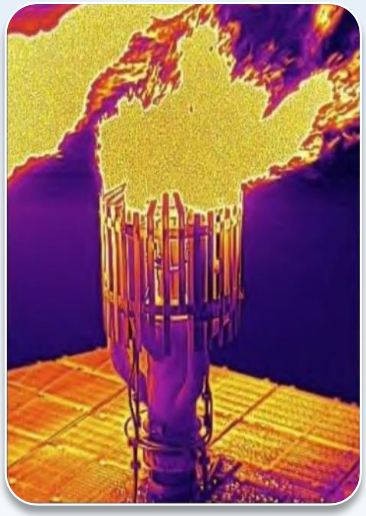
Surveys included automatic and manual traffic counts, turning movement counts, classified vehicle counts, peak hour analysis, and origin–destination studies using HD cameras and AI-based processing technologies.

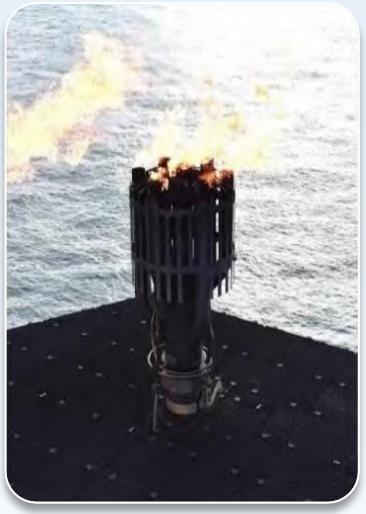
These studies provided high-accuracy traffic datasets (97–99%) to support transport planning, congestion management, and infrastructure optimization, enabling informed decision-making for public authorities and private developers.

OIL & GAS CAPABILITIES

Visual Intelligence & Asset Monitoring Services

Shamal Technologies delivers advanced visual intelligence, inspection, and monitoring services for critical infrastructure, leveraging aerial, satellite, robotic, and sensor-based technologies to provide safe, accurate, and actionable asset insights.



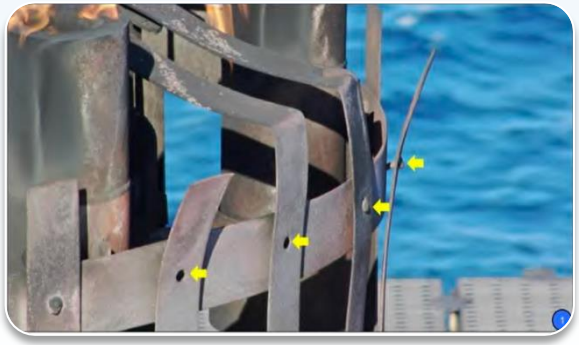


Shamal can deliver:

- Aerial visual inspections for complex and hard-to-access assets
- High-resolution imaging for condition assessment and defect identification
- Satellite and drone-based monitoring for large-scale assets and facilities
- Digital inspection workflows with structured, client-ready reporting

Our approach reduces risk, eliminates the need for scaffolding or rope access, and enables faster, safer inspections across onshore, offshore, and industrial environments.

Obs. No.	Item(s)	Location(s)	Description	Page(s)
			HP Flare – F6001	
1	Loose/missing fixings	Wind shield strakes	Multiple fixings at wind shield strakes noted missing or loose - minor PDO risk	18, 21, 22
			Safety Relief HP Flare – F6002	
2	Degradation of fittings	Flame retention segments	Washers at flame retention segment fittings are noted to be degrading and missing in cases	29, 30
3	Minor degradation	Pilot burners	Minor degradation/wastage to pilot burners noted	33, 35
4	Crack-like indication	Spider burner	Crack-like indication visible at spider burner tip periphery	32
5	Wastage/material loss	Flame retention segments	Visible wastage/material loss noted at flame retention segments	35
6	Failed pilot lines	Pilot ignition manifold	Pilot lines at ignition manifold have failed and are now disconnected	37, 39
			Flare Deck & Heatshield	
7	Minor deformation	Grating panels	Grating panels adjacent to access hatch show minor deformation, still appear secure	63
8	Localised corrosion	Chords and bracing	Main structure chords and bracing tubulars show localised corrosion at connection to flare deck	65, 66, 68, 71, 73
9	General corrosion	Pipe hangers	General surface corrosion and light scale present across pipe hangers at flare deck	66, 72, 74
10	Loose fixings	Grating clips	Multiple instances of loose/improperly secured grating clips at flare deck underside – PDO risk	67, 70
			Flare Structure	
11	General corrosion	Flare structure	Scattered coating breakdown with surface corrosion and areas of blistering/scale present throughout tower structure	Throughout – no tag used
12	Sealant degradation	HP Flare - F6002 Riser	Previously reported degradation to sealant at riser inlet shows no further deterioration	76
13	Missing brackets	Adjacent to 1Fh system	Previously reported corroded redundant bracketry is now missing, either removed or has failed	78
14	Pad eye degradation	EL+100m lift platform	Pad-eye adjacent to lift platform shows visible degradation, PDO risk as condition worsens	80
15	Corrosion/perforation	Atmospheric vent line	Small bore vent line shows heavy scale throughout, potential holed section noted	81
16	Clamp degradation	Flare riser clamps	Redundant riser clamps are in poor order, clamp sections pose PDO risk as condition deteriorates	82, 84
17	Clamp degradation	Small bore line clamps	Redundant small bore clamps are in poor order, clamp sections pose PDO risk	83



INSPECTION, MONITORING & MEASUREMENT ACTIVITIES

SHAMAL TECHNOLOGIES

What Shamal Can Do

Inspection & Asset Integrity

- Visual inspections of towers, stacks, flares, tanks, pipe racks, bridges, and structures
- Confined-space inspections without manned entry
- High-resolution imagery for welds, corrosion, coatings, and structural defects

Thermography & Emissions Monitoring

- Drone-based thermographic inspections for furnaces, heaters, and ducting
- Optical Gas Imaging (OGI) for hydrocarbon leak detection
- Methane & CO_2 emissions monitoring aligned with **OGMP 2.0**

Ultrasonic Testing & Advanced Measurement

- Drone-based ultrasonic thickness measurements
- Internal and external UT inspections in hazardous or inaccessible areas
- Location-tagged measurements integrated with 3D models

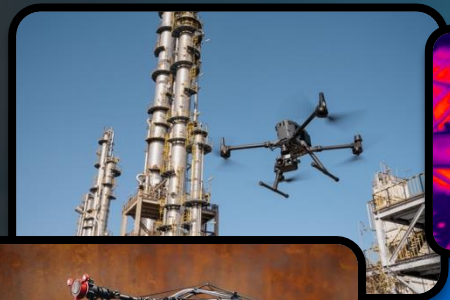
Marine & Underwater Inspections

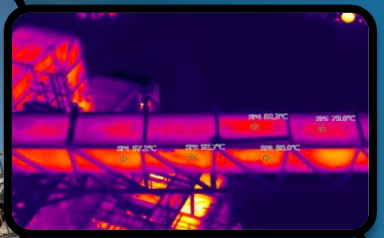
- Mini-ROV inspections for tanks, piers, jetties, bridges, and underwater structures

Deliverables

- High-resolution inspection imagery
- Location-referenced findings and measurements
- Structured inspection and condition assessment reports

Enabling safer inspections, reduced downtime, and data-driven maintenance decisions.



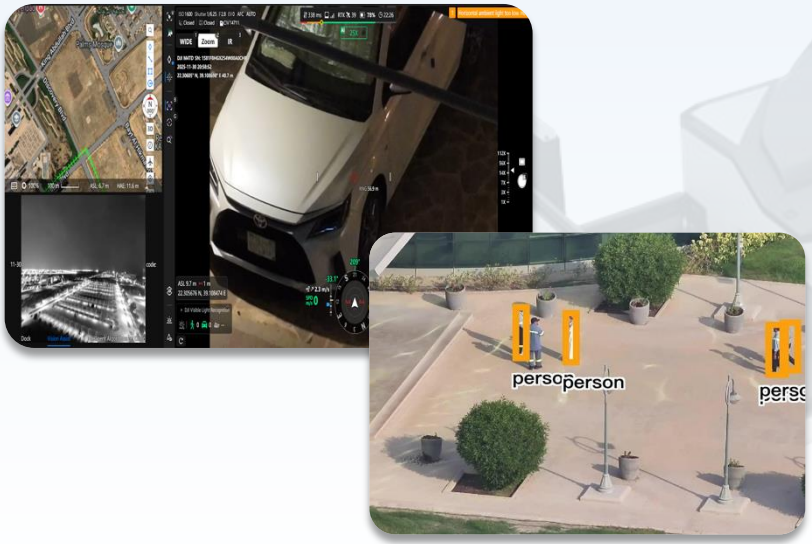


SECURITY SURVEILLANCE

Enhance site security and situational awareness across large and complex environments with advanced, best-practice aerial surveillance solutions. Traditional security methods such as fixed CCTV and ground patrols often provide limited visibility, are resource-intensive, and struggle to cover wide or hard-to-access areas effectively.

Autonomous drone-based surveillance transforms this approach by providing rapid aerial coverage, real-time monitoring, and intelligent detection capabilities. By integrating AI-enabled analytics, drones can identify and track humans and vehicles, monitor perimeters, and support faster, more informed security response decisions.

High-resolution RGB video, thermal imagery, low-light sensors, real-time streaming, and centralized command-and-control platforms are delivered by Shamal's expert team to provide reliable, scalable, and secure aerial surveillance operations.



Project Case Study

Autonomous Drone-in-a-Box Security Monitoring

Shamal Technologies successfully conducted a **Drone-in-a-Box Proof of Concept (PoC)** for autonomous security surveillance at a large industrial facility, validating the use of drones for continuous situational awareness.

The solution enabled scheduled autonomous patrols, day and night monitoring using RGB and thermal sensors, and real-time detection and tracking of humans and vehicles within defined security zones.

The project demonstrated the effectiveness of Drone-in-a-Box systems as a scalable aerial security layer, enhancing perimeter protection, improving visibility, and supporting faster incident detection without disrupting site operations.

SATELLITE DATA IMAGERY SOLUTIONS

Integrated High-Resolution Optical Sensors:
Shamal Technologies is an authorized distributor of high-resolution satellite data, providing access to a wide range of Mono, Stereo, and Tri-Stereo satellite imagery solutions to support mapping, urban planning, construction monitoring, and infrastructure development across the Kingdom of Saudi Arabia.

Through partnerships with leading satellite constellations, Shamal delivers reliable, scalable, and decision-ready imagery products tailored to project-specific requirements.

Project Case Study

Construction Progress Monitoring – ROSHN (PIF)

Shamal Technologies supplied high-resolution Stereo Satellite Imagery to ROSHN (Public Investment Fund) for construction progress monitoring across three major residential developments: Sedra, Al-Manar, and Al-Arous.

The stereo datasets enabled accurate 3D visualization, terrain modeling, and progress assessment across large construction sites, supporting project monitoring, planning verification, and data-driven decision-making.

By leveraging high-precision stereo imagery, the client gained consistent, up-to-date spatial insights without the need for frequent ground surveys, improving efficiency and visibility across all project locations.

SPECIAL PROJECTS

Shamal is a hub of innovation – whilst we intentionally specialize in our key industries, we are always exploring ways to create new solutions in our existing market space, or into new areas where spatial insights, accessibility, and precision will provide value, improves efficiency and increase safety.

The flexibility of drone systems and the datasets we deliver, means that we are only limited by our imagination, and we actively pursue partnerships with likeminded, industry-leading and complimentary technology providers from around the world, to deliver innovative and tailored solutions to our clients.

Nothing is off the table, let's start a conversation and create something together.

Project Case Study

Waste Management Compliance:

Shamal, in partnership with KAUST Beacon Development (KBD) and on behalf of MEWA, surveyed multiple mining sites across KSA to assess environmental compliance, focusing on waste management. RGB and multispectral data, along with 3D mesh models, were captured for analysis. AI-driven models identified waste piles, and stockpile analysis provided insights into material volumes.

OUR CULTURE OF STRATEGIC PARTNERSHIPS

Shamal Technologies prides itself on the strategic partnerships that we build and grow with our key clients, working closely to deliver the outcomes that our clients wish to achieve, in alignment with their digital roadmaps.

We firmly believe that collaboration and openness should be the core values of any partnership and have formed close working relationships with some of the most innovative, and market-leading clients and technology vendors in our sector, specializing in the joint-delivery of client scopes, while focusing primarily on high quality, value-driven, data-centric services.

Continuous improvement is at the heart of everything we do, allowing us to balance being both innovative and programmatic in our approach to our work.

OUR KEY CLIENTS

Since 2019 we have collaborated with key clients, in multiple markets, across KSA, gaining a strong reputation as an industry-leading service provider. We are selective in the projects that we undertake, ensuring all contracts allow us to deliver to the highest standard, and present an opportunity for strategic growth

GET IN TOUCH

Lama Al-Jahdali
Co-Founder
l.aljahdali@shamal.sa

Haitham Al-Jahdali
CEO
h.aljahdali@shamal.sa

Dr. Hisham Malak
Deputy CEO
hamalak@shamal.sa

Jameer Mohammed
Business Development Manager
j.mohammed@shamal.sa

shamal.sa