



We Map. You Explore!

- ❖ Geographical Information Systems (GIS)
- ❖ Land Engineering and Topographical Surveys
- ❖ Drone/Aerial Mapping & Remote Sensing
- ❖ High Resolution Satellite & Drone/UAV images
- ❖ Spatial & Landuse Planning Services
- ❖ Mobile & Web Mapping Applications
- ❖ Navigation and Geo-Location Analytics
- ❖ Map Design and Production Services
- ❖ Geospatial Intelligence Solutions
- ❖ Geoinformation (GIS) Training Services
- ❖ Real time GPS Asset Tracking Services

COMPANY PROFILE

ORBITAL AFRICA

ORBITAL AFRICA

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2022

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List of Abbreviations

EIA	Environmental Impact Assessment
GIS	Geographic Information system
GPS	Global Positioning System
ICT	Information Communication Technology
ISK	Institution of Surveyors of Kenya
LIS	Land Information System
RTK	Real Time Kinematics
UTM	Universal Transverse Mercator



A. INTRODUCTION



Orbital Africa is a registered company under the laws of Kenya. Orbital is a leading Geospatial consulting company that offers services and solutions in realms of Geographic Information System (GIS), Geo-ICT, mapping, aerial/drone services, land, topo, engineering, bathymetric and hydrographic surveys; Remote Sensing (RS) solutions and spatial planning consulting services. Thus, Orbital helps to deliver geospatial solutions that enable our clients to become high-performance businesses.

Orbital Africa is offers survey and mapping consulting services in Kenya and Eastern Africa at large with more than 8 years of proven track record in delivery of robust geoinformation services such as land and topographical surveying, mobile and web mapping, land-use and urban planning including Geospatial training services here in eastern Africa region.

Established in the year 2008, **Orbital Africa** was incorporated in 2nd August 2011 and began operations thereafter. By providing outstanding client-tailored Geospatial services, we ensure customer satisfaction at all stages of project planning and execution.

Orbital Africa offers an array of Geospatial services in the following areas: topographical and land surveying services; GIS and mapping services; web mapping application development; 3D mapping; map production services; enterprise GIS solutions; project planning and management; GIS data capture; urban/spatial planning, Geoinformation training and capacity development; sales and support and technical support services.

Orbital Africa has undertaken several GIS, mapping and engineering design projects to a wide range of clients in Kenya, Uganda and Tanzania, and has a proven track record in areas of capacity building and systems development.

Orbital Africa is differentiated in the marketplace by consistency in building long-term, trust-based relationships with clients; focusing on value creation and business outcomes; fostering a culture of innovation, collaboration and teaming, leveraging on our delivery networks and project management for quality, speed and cost effectiveness; attracting, developing and retaining the best talent.

Orbital Africa is led by a diverse management team with a broad base of business and technical industry experience in Geospatial service delivery. Our management team provides strategic and operational direction to the staff members of the company thus fostering competency in service delivery and execution of big projects.



As one of the leading providers of Geospatial solutions, we intend to apply our expertise in undertaking the land survey and mapping task which is similar to other consultancy projects that we've undertaken to various clients in this region. Our company ranks among the best in designing client tailored survey solutions, mapping, training and an array of professional services which provide the best compromise between cost, speed, and reliability.

1.1 Our Vision and Mission

Our Vision: To be the leading company of choice in the dispensation of cutting-edge Geospatial services and solutions in Kenya and Africa region at large.

Our Mission: To create, demonstrate and deliver geospatial technologies and solutions for long lasting profitable partnerships, through innovation, synergy and by delivering reliable Geo-technology products which enhance the quality of human life, his environment and supports decision making in all spheres of the society.

1.2 Our Core Values

- Honesty and integrity – in all that we undertake.
- Accountability – to ourselves and our clients.
- Respect – for others in all our interactions both in and out of business.
- Intellectual relentlessness – we are continually thinking, inventing new ideas, learning, and solving problems.
- Strife collectively to beat deadlines – so that we all benefit from our collective efforts.
- Working together as a team – to achieve excellent results.

1.3 Our Core Objectives

- Assist and participate in the establishment of Geospatial databases for natural resources development and environmental management in Africa.
- Build capacity to various clients in the use of Geo-information technologies, spatial planning, surveying navigation and environmental management.
- To provide cutting-edge and state-of-the-art technologies in building and construction industries within the country with an aim of nation building.
- Provide consultancy and advisory services in the application of Geo-information technologies in project implementation for sustainable development.
- Work closely with training institutions in the development of Remote Sensing, GIS and training of experts in these fields.
- Growth: We recognize and seize opportunities for growth that builds upon our strengths and competencies.
- To vehemently develop a comprehensive real time vehicle tracking system in Eastern Africa region.
- Commitment to employees: We demonstrate our commitment to employees by promoting and rewarding based on performance and by creating a work environment that reflects our values.

1.4 Our Service Philosophy

We deeply believe in quality, honest, reliable and accurate service delivery to our clients within agreed time period - that by taking care of our clients' needs so that we make greater achievements in every interaction.

1.5 Board of Directors

Orbital Africa has a core team of highly competent and professional staff with immense experience in the areas of Geospatial engineering, Remote Sensing, mapping, GIS training and consultancy services, engineering projects design, GIS database development and management.

1.6 Our Tagline

We **MAP**. You **EXPLORE!**



B. OUR CLIENTS

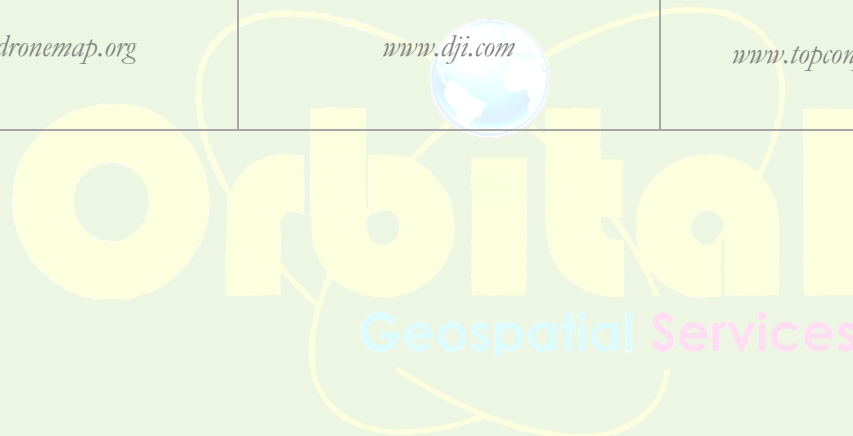
 <p>USAID FROM THE AMERICAN PEOPLE</p> <p>www.usaid.gov</p>	 <p>www.tadegroup.com</p>	 <p>www.pciglobal.org</p>
 <p>www.votalia.com</p>	 <p>www.kenha.co.ke</p>	 <p>www.hydrobox.africa</p>
 <p>www.technobraingroup.com</p>	 <p>www.powergen-renewable-energy.com</p>	 <p>www.mygov.go.ke</p>
 <p>www.ugcafrica.com</p>	 <p>www.ugcafrica.com</p>	 <p>www.rerec.co.ke</p>
 <p>www.wvi.org/kenya</p>	 <p>www.wvi.org/kenya</p>	 <p>www.nrc.no</p>

 <p><i>www.cbu.ac.zm</i></p>	 <p><i>www.enbs.co.ke</i></p>	 <p><i>www.digireg.nl</i></p>
 <p><i>www.polyphase.co.ke</i></p>	 <p><i>www.unhcr.org</i></p>	 <p><i>www.kenya-airways.com</i></p>
 <p><i>www.gmds.co.tz</i></p>	 <p><i>www.synergeticenergy.co.ke</i></p>	 <p><i>https://nakurumwater.co.ke/</i></p>
 <p><i>www.badea.org</i></p>	 <p><i>www.geodev.co.ke</i></p>	 <p><i>www.naivashawater.co.ke</i></p>

C. OUR PARTNERS

 <p><i>www.stonex.it</i></p>	 <p><i>www.boundlessgeo.com</i></p>	 <p><i>www.si-imaging.com</i></p>
 <p><i>www.blumarblegeo.com</i></p>	 <p><i>www.garmin.com</i></p>	 <p><i>www.sensefly.com</i></p>
 <p><i>www.mapbox.com</i></p>	 <p><i>www.geonode.org</i></p>	 <p><i>www.harrisgeospatial.com</i></p>
 <p><i>www.gps-server.net</i></p>	 <p><i>www.autodesk.com</i></p>	 <p><i>www.openstreetmap.org</i></p>

 <p><i>www.pix4d.com</i></p>	 <p>Drone Deploy</p> <p><i>www.dronedeploy.com</i></p>	 <p>Agisoft Metashape</p> <p><i>www.agisoft.com</i></p>
 <p>OpenDroneMap</p> <p><i>www.opendronemap.org</i></p>	 <p><i>www.dji.com</i></p>	 <p>TOPCON</p> <p><i>www.topconpositioning.com</i></p>



D. MAIN AREAS OF OPERATION

We offer various Geospatial products, services and solutions. Our specific areas of expertise include:

2.1 Geospatial and Mapping Services

We develop and maintain spatial databases that support prototyping and high-volume production of urban, regional, natural resource, business and utility databases. Apart from development of GIS databases, we also offer the following additional Geospatial and mapping services:

- ❖ **Web Mapping Application Development:** We use developer APIs from Google and Esri to create customized web mapping applications.
 - ❖ **3D/Drone Mapping:** Incorporating Drones, GIS 3D analyst, Google Earth as well as SketchUp tools to develop 3D interactive models (DEMs & DSMs).
- 

Digital Surface Model (DSM)
- ❖ **Map Production Services:** We offer imaginative and innovative custom map design and production services to clients in need of high quality digital maps for websites, publications, for educational or promotional purposes.
 - ❖ **Enterprise GIS Services:** With GIS technology fast becoming one of the nerve centers of business enterprises, we offer the following enterprise services: software installation, configuration and performance tuning; development of versatile enterprise geo-databases; and the development of geo-information portals for one-stop gathering, storage, integration, and dissemination of geospatial information.
 - ❖ **Project Planning and Management:** Our experienced consulting and project management staff provide services to support GIS implementation ensuring that we cater for specific needs such as: strategic planning, requirements definition and user needs assessment.
 - ❖ **GIS Data Capture:** By exploiting high resolution remotely sensed satellite imagery, we extract information like building patterns in urban setup, population distribution, natural resource mapping, spatial/urban and regional planning; and land use/land cover mapping as well as road network. By utilizing this information, we perform consultancy tasks such spatial planning and GIS mapping adequately.

2.2 Topographical, Engineering, Bathymetric and Land Surveying Services

Our surveying department comprises of professionals registered under “Survey Act Cap 299” and are members of Surveyors of Kenya. We work with Architects, Consulting Engineers, Local Authorities and government to deliver major infrastructure & construction projects. The main tasks of this division are:

- ❖ Establishment of survey control points; assessment of the coordinate system and the determination of transformation parameters from existing local coordinate systems such as Cassini to UTM.
- ❖ Survey work, field data collection/capture using modern survey equipment such as handheld and geodetic GNSS, total stations, digital levels, drones/UAVs and establishment of ground control points for photogrammetric work.



- ❖ Topographical survey and mapping; survey consultancy services in various projects e.g., roads, water network, buildings, dam construction and other large engineering surveying projects.
- ❖ Development of Land Information Systems (LIS) using latest desktop and web mapping software such as Esri's ArcGIS desktop and ArcGIS server, Geoserver, Geoportal and web/online solutions.
- ❖ Land Surveying incorporating mutation surveys, title surveys, cadastral surveys, sectional properties surveys/3D surveys. We employ modern/latest geospatial technologies to perform all these tasks.

2.3 Geoinformation Training and Capacity Development

The development of human resources is probably the single most important success factor for any organization. Training is essential as it enables the staff members of any organization get acquainted with relevant modern Geospatial skills. At Orbital Ltd., we strongly believe that our wide range of GIS training will meet your needs in handling Geoinformation projects and assignments at any time.



2.4 GIS Navigational Mapping Services



Orbital Africa has partnered with GpsGate and Atrack Inc. to distribute vehicle tracking and navigation devices here in Eastern Africa Region. By utilising GpsGate Server software and Google maps, we offer real time vehicle tracking services. The navigation data can be used for automotive navigation systems using portable GPS devices e.g., Garmin Nuvi. With the maps data, the Garmin Nuvi can navigate to a specific address, a Point of Interest (POI), a recent location, a specific junction or your favourites. Our Navigational maps and services include the following:

- ❖ Customized Eastern Africa Maps with Points of Interest e.g., hotels and petrol stations.
- ❖ GPS devices that suite client's needs in terms of accuracy, usage and cost.
- ❖ Training on installation and configuration of maps as well as maintenance.

2.5 GIS Software, Satellite/Drone Images and Survey Equipment

We offer software solutions from SuperMap and Boundless Geo Inc., the world's leading geospatial data authoring software. We sell High resolution Satellite images from SIIS, S. Korea. In addition, we distribute both handheld and geodetic GPS/GNSS from Stonex as well as various industry solutions such as:

- ❖ ENVI (Remote Sensing); Agisoft and Pix4D (Drone/UAV and Photogrammetry software);
- ❖ Google SketchUp (3D Mapping and Urban Geo-modelling); and
- ❖ Global Mapper (Georeferencing and Management of Geospatial Data).



To complement these technologies, we also supply high-resolution satellite imagery (KOMPSAT) from SI-Imaging Company from S. Korea. As well, we sell and lease survey equipment (GNSS, Total Station, Auto Levels, Drones/UAVs etc.). This augments our role as a leading Geospatial solutions provider.

2.6 Technical Support Services

To ensure that clients are not faced with difficulties in using our products, we, from time to time ensure that our clients get software upgrades and hardware support services for maximum returns on their money and investment.

2.7 Geospatial Projects

Orbital is comprised of a group of professionals from GIS, Geo-ICT and Geospatial/Geomatics fields whose mandate is to handle and execute various projects in surveying, engineering and construction industries.



Figure 1: Geospatial Training, Consultancy, Field data Collection and Topo Survey Services

E. KEY DIFFERENTIATORS

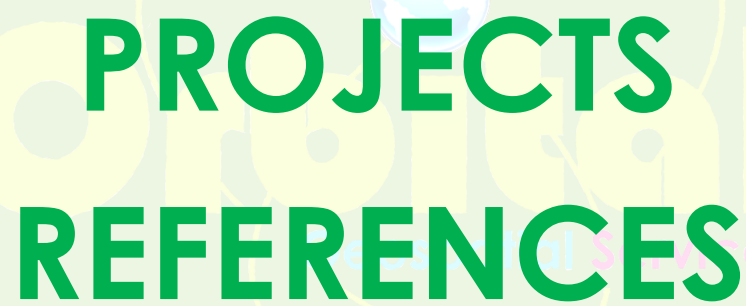
1. A leading and best ranked Geospatial consulting company in Kenya and Africa region at large.
2. Exclusive Africa distributor of SIIS high resolution satellite imagery from South Korea.
3. Authorised Stonex Business Partner for Mapping and Global Navigation Satellite Systems (GNSS).
4. Best ranked company in offering Geospatial services including GIS training and Topographical survey services in Kenya and Africa.

F. PROFESSIONAL BODIES

Orbital Africa is a corporate member of Institution of Surveyors of Kenya (ISK); International Federation of Surveyors (FIG); Commonwealth Association of Surveyors and Land Economists (CASLE) and a member of Open Geospatial Consortium (OGC).



G.


A large, semi-transparent watermark of the Orbital Geospatial Services logo is centered in the background of the page. It features the word "Orbital" in a large, yellow, sans-serif font, with a small blue globe icon above the "i". Below "Orbital" is the phrase "Geospatial Services" in a smaller, yellow, sans-serif font. The entire watermark is enclosed within a thin, yellow, circular line that forms an orbit around the globe icon.

PROJECTS REFERENCES

1. ICS AGRIBUSINESS LTD.

Project Name: Consultancy for Detailed Topographical, Land, Control and Engineering Survey for a 450 Acre Block of Land to Support AgriBusiness Activities.		Client's Country of Origin: United States (USA)
Name of Client: ICS AgriBusiness Ltd. 		Professional Staff Provided by your Firm/Entity (profiles): 6
Project Location within the Country: Dakacha Village in Kilifi County		Client Representative: Name: Ms. Juliet Ligaga Phone: +254 769 221 338 E-mail: juliet.ligaga@icsagribusiness.com
Address: Riana Gardens, Suite D3, Maalim Juma Road, Kilimani P.O. Box 80 – 30205 Matunda Kenya		No of Staff-Months; Duration of Assignment: 2 Months – (ongoing)
Start Date (Month/Year): Apr, 2022	Completion Date (Month/Year): On-going	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Stonex S800A & KQ Geo GNSS Software: Field Genius, AutoCAD Civil 3D & ArcGIS		
Description of Project: Control, topo, land and engineering survey; staking/setting out; alignments & profiles; levelling work.		
Description of Actual Services Provided by Our Staff: The consultancy to conduct a detailed topographical survey on 450-hectare to support agri-business activities was executed Dakacha village in Kilifi County entailed organizing the stakeholder meeting and sensitization of the locals on the nature and scope of the topo survey project. In particular, the following tasks and activities were successfully executed: Bush clearing, General surveys to ascertain the location of beacons and the area of property parcels; Static Survey for the establishment of local GCPs and BMs using Stonex 800A and KQ Geo GNSS; conducted a detailed topographical, land and engineering survey works for entire 450 Ha picking features such as roads, trees, spot heights, rivers, easements etc. The identification of notable landmarks such as trees with diameter (> 20 cm) diameter were mapped and documented. The topographical and terrain data processing was done using AutoCAD Civil 3D and ArcGIS software. A detailed topographical/contour/terrain maps and layouts both cross and longitudinal were generated including project report which were handed to the client.		
Origin of Funding: ICS AgriBusiness		


2. ENGINEERS WITHOUT BORDERS (EWB)

Project Name: Control, topographical and engineering survey for Rumbiye Water Supply Project		Client's Country of Origin: Kenya
Name of Client: Engineers Without Borders, Kenya		Professional Staff Provided by your Firm/Entity (profiles): 4
		
Project Location within the Country: Funyula Constituency, Kenya		Client Representative: Name: Eng. Nicholas Kitivi Phone: +254 712 307678 E-mail: olekitivi@gmail.com
Address: Ring Road, Westlands Off Waiyaki Way		No of Staff-Months; Duration of Assignment: 1 Week
Start Date (Month/Year): Mar, 2022	Completion Date (Month/Year): Mar, 2022	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Stonex S800A & KQ Geo GNSS Software: Field Genius, AutoCAD Civil 3D & ArcGIS		
Description of Project: Control, topo and engineering survey; staking/setting out; alignments & profiles; levelling works etc.		
Description of Actual Services Provided by Your Staff: The 52-hectare Rumbiye water supply project at Rumbiye village in Funyula Constituency, Busia County entailed organizing for stakeholder meeting, sensitization of the locals on the nature and scope of the topo survey project. In a broader perspective, the following tasks and activities were successfully executed: Establishment of local GCPs and BMs using Stonex 800A and KQ Geo GNSS; detailed topographical, land and engineering survey works for entire 52 Ha catchment including one (1) school and one (1) hospital where water will be supplied to; levelling works was also done along proposed one (1) inlet pipeline and five (5) outlet pipelines; water distribution tank and water kiosks. The topographical data processing was done using AutoCAD Civil 3D. A detailed topographical map and layouts (cross/longitudinal) were generated including project report which were handed to the client.		
Origin of Funding: Engineers Without Borders, Kenya		

3. ARAB BANK FOR ECONOMIC DEVELOPMENT IN AFRICA (BADEA)

Project Name: Training of 15 BADEA Engineers on Application of GIS in Monitoring and Evaluation of Projects		Client's Country of Origin: Sudan
Name of Client: Arab Bank for Economic Development in Africa (BADEA)		Professional Staff Provided by your Firm/Entity (profiles): 3
Project Location within the Country: Virtual/Online: <ol style="list-style-type: none"> Nairobi, Kenya – Trainer Khartoum, Sudan – Trainees 		Client Representative: Name: Ms. Gada Fidail Phone: +254 711 620 264 E-mail: gada.fidail@badea.org
Address: Sayed Abdul Rahman Ave, Khartoum 11111 P. O. Box 2640 Khartoum – Sudan		No of Staff-Months; Duration of Assignment: 1 Month
Start Date (Month/Year): Jan, 2022	Completion Date (Month/Year): Feb, 2022	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: <i>Handheld GNSS, Smartphones</i> Software: <i>ArcGIS/QGIS, EpiCollect5 and Pix4D</i>		
Description of Project: Training of 15 BADEA Engineers on the Applications of Geographical Information Systems (GIS) in Monitoring and Evaluation of Projects		
Description of Actual Services Provided by Our Staff: The project scope entailed provision of consultancy training and capacity development services to BADEA's Fifteen (15) Engineers in the use and applications of GIS in the monitoring and evaluation of construction projects. Some of the key topic covered include: Introduction to GIS and GPS concepts; Use of Mobile phones and GPS Devices in M&E of Projects; Participatory GIS for M&E; ICT Support tools for M&E; M&E field data collection using Smartphone & GIS Apps; Monitoring Project Progress using RS/UAV Technology; Assessing and Presenting Project Changes using Maps, Charts etc. Case Study: Using GIS & M&E tools in Project Management, a Case of Nairobi Expressway Project.		
Origin of Funding: BADEA		

4. GEODEV (K) LTD.

Project Name: GPR Underground Utility Scanning and Services along The Landhis – Jogoo Road Roundabouts in Nairobi		Client's Country of Origin: Kenya
Name of Client: Geodev (K) Limited 		Professional Staff Provided by your Firm/Entity (profiles): 6
Project Location within the Country: Nairobi, Kenya		Client Representative: Name: Mr. Geoffrey Wamaina Phone: +254 711 620 264 E-mail: gwamaina@geodev.co.ke
Address: 2 nd Flr, Allbid House, Mombasa Road P.O. Box 14066-00100, Nairobi		No of Staff-Months; Duration of Assignment: 1 Month
Start Date (Month/Year): Aug, 2021	Completion Date (Month/Year): Sep, 2021	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Ground Penetrating Radar (GPR) and GNSS Software: Radar Studio, AutoCAD Civil 3D and ArcGIS.		
Description of Project: Provision of GPR Underground Utility Scanning and Mapping Services along the Landhis Road, Haile Selassie Avenue, Jogoo Road Roundabouts and Intersections in Nairobi County.		
Description of Actual Services Provided by Our Staff: The project scope entailed provision GPR underground utility scanning & Survey Services for Landhis and Jogoo Road Sections, including sections of roads intersecting at the following roundabouts; <ul style="list-style-type: none"> a) Haile Selassie Avenue – Landhies Road – Ring Road Ngara Roundabout; b) City Stadium Roundabout and Intersections/Interchanges; c) Jogoo Road Section– First Avenue Eastleigh Intersection, Likoni – Jogoo road Intersection and Rabai Road Intersection. GPR data processing was also done using Radar Studio as well as training of the client's surveyors.		
Origin of Funding: GeoDev (K) Ltd.		

5. GEO-DATA MOBILE SOLUTIONS (GMS) AFRICA

Project Name: Development of a Mobile Survey App and a Web-Based Land Information System.		Client's Country of Origin: Tanzania
Name of Client: Geo-Data Mobile Solutions (GMS) Africa 		Professional Staff Provided by your Firm/Entity (profiles): 5
Project Location within the Country: Dar es Salaam, Tanzania		Client Representative: Name: Mr. Ibrahim Hape Phone: +1 303 808 1955 E-mail: i.hape@gmds.co.tz
Address: Mori Street, P. O Box, Kinondoni, Dar es Salaam, Tanzania		No of Staff-Months; Duration of Assignment: 4 Months (On-going)
Start Date (Month/Year): Jul, 2021	Completion Date (Month/Year): Nov, 2021	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: <i>Equipment: Laptops & Android phones Software & Frameworks: Linux (Ubuntu Server 20); KoboCollect; ODK; MySQL; Postgres & PostGIS; Javascript; PHP; Java; Kotlin; Geodjango; Python</i>		
Description of Project: GIS services to support client's work in GeoMobile data Solutions development of a mobile- Land Survey application and a Land Information Management System to link farmers to buyers.		
Description of Actual Services Provided by Our Staff: The project entails development and setting up of the LIS app cloud hosting of GIS databases and mobile survey data collection app; Development of a web map interface; Land Information System (LIS); GIS portals for the admins & users; and dashboard; Android apps for surveyors, buyers, sellers; Integration of the platform with bulk SMS system, security features etc. Training of client's five (5) technical staff on use of platform.		
Origin of Funding: GMS Africa		


6. KENYA AIRWAYS

Project Name: Training Seven (7) KQ Engineers on Advanced Drone / UAV Mapping and Data Processing		Client's Country of Origin: Kenya
Name of Client: Kenya Airways Ltd  Kenya Airways <i>The Pride of Africa</i>		Professional Staff Provided by your Firm/Entity (profiles): 4
Project Location within the Country: Karen, Nairobi, Kenya		Client Representative: Name: Ms. Eunice Chepkemboi Phone: +254 721 501 708 E-mail: Eunice.Chepkemboi@kenya-airways.com
Address: Airport North Road, Embakasi P.O. Box: 19002 – 00501 Nairobi, Kenya		No of Staff-Months; Duration of Assignment: 1 Month
Start Date (Month/Year): Jul, 2021	Completion Date (Month/Year): Aug, 2021	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Drones (eBee SQ, DJI Phantom 4 Pro, Matrice 300 RTK) Software: Pix4D, DJI Go, eMotion, DroneDeploy, Open Drone Map (ODM) ArcGIS, Geoserver, Geonode, ArcGIS online etc.		
Description of Project: Training on Drone/UAV data collection and mapping; Data processing workflows; and Data storage/cataloguing in Geoportals.		
Description of Actual Services Provided by Our Staff: The project entailed advanced training of 7 KQ engineers on drones/UAV/UAS data collection and mapping using DJI Go, Pix4D field and DroneDeploy apps; Data processing workflows (local and cloud) using Pix4D mapper, Drone Deploy Cloud, Agisoft, ODM etc; and Data storage/cataloguing in open and COTS Geoportals (Orbital Geoportal, Geonode and ArcGIS Online).		
Origin of Funding: Kenya Airways Ltd.		

7. SYNERGETIC ENERGY PARTNERS CO. LTD.

Project Name: Training of Six (6) Geospatial Engineers on Underground Utility Scanning using US Radar GPR		Client's Country of Origin: Kenya
Name of Client: Synergetic Energy Partners Co. Ltd. 		Professional Staff Provided by your Firm/Entity (profiles): 2
Project Location within the Country: Mombasa, Kenya		Client Representative: Name: Stephen Mwai Phone: +254 723 529 202 E-mail: smwai@synergeticenergy.co.ke
Address: 6th Floor, Daykio Plaza, Ngong Rd. P.O. Box 14236 – 00100 Nairobi		No of Staff-Months; Duration of Assignment: 1 Month
Start Date (Month/Year): Apr, 2021	Completion Date (Month/Year): May, 2021	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Ground Penetrating Radar (GPR); GNSS Software: Radar Studio, AutoCAD Civil 3D		
Description of Project: Training of 6 Engineers on Underground Utility Scanning and Survey using Ground Penetrating Radar (GPR) and EziCAT 200 equipment.		
Description of Actual Services Provided by Our Staff: The project scope entailed training of 6 Synergetic Engineers on applications of Ground Penetrating Radar (GPR) and EziCAT 200 equipment in underground utility scanning, mapping and survey to locate buried water pipes, electric cables, tanks and other utilities; the GPR data post-processing was done using Radar Studio software; GPR 3D data presentation on Google Earth and AutoCAD Civil 3D. Other areas covered include parts of a GPR and their uses, maintenance and serving of a GPR etc.		
Origin of Funding: Synergetic Energy Partners Co. Ltd.		

8. NAIVASHA WATER AND SANITATION CO. (NAWASCO)


Project Name: Provision of Engineering Survey and Technical Services for Proposed Parkview, Mirema and Kayole Water Extensions in Naivasha		Client's Country of Origin: Kenya
Name of Client: Naivasha Water and Sanitation Company		Professional Staff Provided by your Firm/Entity (profiles): 6
Project Location within the Country: Naivasha, Kenya		Client Representative: Name: Mr. Henry Munyaka Phone: +254 725 797171 E-mail: henry.munyaka@gmail.com
Address: Kenyatta Avenue, P.O. Box 321 Naivasha, Kenya		No of Staff-Months; Duration of Assignment: 2 Months
Start Date (Month/Year): Jan, 2021	Completion Date (Month/Year): Apr, 2021	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Topcon Total Station, Auto Level and GNSS/RTK Software: Field Genius, AutoCAD Civil 3D 2021, ArcGIS Desktop		
Description of Project: Provision of the Technical Services for Proposed Parkview, Mirema and Kayole Water Infrastructure and Pipeline Extensions.		
Description of Actual Services Provided by Our Staff: The project entailed Provision of Engineering Survey Technical Services for Proposed Parkview, Mirema and Kayole water infrastructure and pipeline extensions. The work entailed overseeing the detailed ground topographical and levelling survey as well as staking/setting out works using Topcon total station and levelling using Topcon AT-B3 Auto level machine. Other notable activities/tasks were creation of water distribution maps (using ArcGIS) for the three (3) zones; installation of water tanks, laying of water distribution pipes and provision of other water-related engineering services.		
Origin of Funding: Naivasha Water and Sanitation Company (NAWASCO)		

9. NAKURU WATER SEWERAGE & SANITATION CO. (NAWASSCO)

Project Name: Training of 10 Engineers on Underground Utility Scanning and Survey to Locate Buried Water Pipes		Client's Country of Origin: Kenya
Name of Client: Nakuru Water Sewerage and Sanitation Company		Professional Staff Provided by your Firm/Entity (profiles): 3
Project Location within the Country: Nakuru, Kenya		Client Representative: Name: Mr. Erastus Maina Phone: +254 724 051308 E-mail: erasmaish92@gmail.com
Address: Government Rd, NAWASSCO Plaza P.O. Box 16314 – 20100 Nakuru.		No of Staff-Months; Duration of Assignment: 2 Weeks
Start Date (Month/Year): Apr, 2021	Completion Date (Month/Year): Apr, 2021	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Ground Penetrating Radar (GPR), EziCAT 200 Software: Radar Studio, AutoCAD Civil 3D and ArcGIS		
Description of Project: Training of 10 Engineers on Underground Utility Scanning and Survey using Ground Penetrating Radar (GPR) equipment to Locate Buried Water Pipes and Tanks.		
Description of Actual Services Provided by Our Staff: The scope of the project entailed training of 10 NAWASSCO Engineers on applications of Ground Penetrating Radar (GPR) equipment in underground utility scanning, mapping and survey to locate buried water pipes and tanks; GPR data post-processing using Radar Studio software; GPR 3D data presentation on Google Earth and Civil 3D. Other areas covered include parts of a GPR and their uses, maintenance and serving of a GPR etc.		
Origin of Funding: Nakuru Water Sewerage and Sanitation Company		

10. FLUX DESIGN LTD.		
Project Name: GPR Underground Utility Scanning and Survey to Locate Underground Pipes and Manholes		Client's Country of Origin: Kenya
Name of Client: Flux Design Kenya		Professional Staff Provided by your Firm/Entity (profiles): 3
Project Location within the Country: Nairobi, Kenya		Client Representative: Name: Mr. Michael Ngare Phone: +254 700 641308 E-mail: ngare@flux-design.co
Address: 3 rd Floor, Greenhouse Building, Ngong Road Nairobi		No of Staff-Months; Duration of Assignment: 2 Months
Start Date (Month/Year): Aug, 2020	Completion Date (Month/Year): Jul, 2021	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Ground Penetrating Radar (GPR), EziCAT 200 Utility Scanner Software: Radar Studio, AutoCAD Civil 3D & ArcGIS		
Description of Project: GPR Underground Utility Scanning and Survey to Locate Underground Pipes and Manholes.		
Description of Actual Services Provided by Our Staff: The scope of the project entailed the creation of equidistant ground scan lines; use of a Ground Penetrating Radar (GPR) equipment to undertake underground utility scanning, mapping and survey to locate buried water pipes, power cables, manholes and other utilities; the GPR data post-processing using Radar Studio software; GPR 3D data presentation on Google Earth and AutoCAD Civil 3D among others.		
Origin of Funding: Flux Design Kenya		


11. COPPERBELT UNIVERSITY

Project Name: Advanced GIS Training of Five (5) PhD Students from Copperbelt University, Zambia		Client's Country of Origin: Zambia
Name of Client: Copperbelt University, Zambia		Professional Staff Provided by your Firm/Entity (profiles): 3
		
Project Location within the Country: Nairobi, Kenya		Client Representative: Name: Mr. Xavier Takam (Ph.D) Phone: +260 76 2845322 E-mail: xaviertakam@gmail.com
Address: Jambo Drive, Riverside, P.O. Box 21692, Kitwe, Zambia		No of Staff-Months; Duration of Assignment: 9 Months
Start Date (Month/Year): Mar, 2020	Completion Date (Month/Year): Jan, 2021	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: <i>Garmin eTrex 10 GPS</i> Software: <i>ERDAS Imagine, ArcGIS 7 Fragstats, EpiCollect App</i>		
Description of Project: Training on Application of GIS in Land use/ Land Cover Change Modelling; Suitability Analysis, Environmental Management using ERDAS Imagine, ArcGIS and Fragstats.		
Description of Actual Services Provided by Our Staff: The project entailed offering advanced GIS and Remote Sensing training to Five (5) PhD students from Copperbelt University, Zambia on applications of Geospatial technologies in various realms such Land use land cover (LU/LC) change modelling, land fragmentation using Fragstats, spatial multi-criteria evaluation (SMCE), suitability analysis. The training on drone/UAV technology was also conducted as well use of EpiCollect for mobile data collection. The training helped students undertake their Research Thesis with ease!		
Origin of Funding: World Bank Group & University of Zambia		

12. ENGINEERS WITHOUT BORDERS

Project Name: Control, topographical and engineering survey for the design of a 5 Km water pipeline.		Client's Country of Origin: Kenya
Name of Client: Engineers Without Borders, Kenya		Professional Staff Provided by your Firm/Entity (profiles): 3
Project Location within the Country: Kisii, Kenya		Client Representative: Name: Eng. Martin Aluga Phone: +254 729 882693 E-mail: ewbs.ke@gmail.com
Address: Ring Road, Westlands Off Waiyaki Way		No of Staff-Months; Duration of Assignment: 2 Weeks
Start Date (Month/Year): Jan, 2021	Completion Date (Month/Year): Jan, 2021	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Stonex S800A and KQ Geo GNSS Software: Field Genius, Maps.ME, AutoCAD Civil 3D & ArcGIS		
Description of Project: Control, topo and engineering survey; staking/setting out; alignments & profiles; levelling works		
Description of Actual Services Provided by Our Staff: The 5 Km water pipeline project at Ichuni locality in Kisii county entailed organizing for stakeholder meeting, sensitization of the locals on the scope of the project. In a broader perspective, the following tasks were successfully accomplished: Establishment of local GCPs and BMs using Stonex 800A and KQ Geo GNSS; topographical and engineering survey works for a 50-metre water pipeline corridor including 2 schools where water will be supplied to, levelling works was also done; data processing using AutoCAD Civil 3D. A detailed topographical map/layout and profiles were generated including project report which were handed to the client.		
Origin of Funding: Engineers Without Borders, Kenya		


13. DIGIREG CONSULTING

Project Name: Collection of Data (X,Y,Z) on Ground Control Points (GCPs) for Orthorectification of Aerial photographs covering Mombasa County		Client's Country of Origin: The Netherlands
Name of Client: Digireg Consulting, The Netherlands 		Professional Staff Provided by your Firm/Entity (profiles): 3
Project Location within the Country: Mombasa, Kenya		Client Representative: Name: Mr. Silas Afwamba Phone: +31 6 87361738 E-mail: silla.afwamba@digireg.nl
Address: Schoolstraat 7, 5961 EE Horst, The Netherlands		No of Staff-Months; Duration of Assignment: 3 Weeks
Start Date (Month/Year): Jul, 2020	Completion Date (Month/Year): Aug, 2020	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Stonex S800A GNSS Software: Field Genius, Google Earth Pro and ArcGIS Pro		
Description of Project: Collection of Data (X, Y & Z) on GCPs for orthorectification of Aerial Photos in Mombasa County		
Description of Actual Services Provided by Our Staff: The project entailed using Stonex S800A GNSS connected to Continuously Operating Reference Stations (CORS) spread across Mombasa County to pick coordinates of identifiable features on the aerial photos such as road edges, buildings, trees etc and their corresponding location on the ground e.g., edge of the street or building structure, streetlights, electricity poles, man holes etc. The UTM coordinates in Arc1960 datum obtained were utilized in orthorectification of aerial photos covering the whole of Mombasa County. The accuracy of the coordinates was 0.01m in x, y and 0.03m in z. The project final report was prepared and submitted.		
Origin of Funding: Digireg Consulting, The Netherlands		


14. CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Project Name: Customized Design & Production of Cluster Maps for various Countries in Africa		Client's Country of Origin: Kenya
Name of Client: The Church of Jesus Christ of Latter-Day Saints, Kenya <div style="text-align: center;"> THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS </div>		Professional Staff Provided by your Firm/Entity (profiles): 4
Project Location within the Country: Malindi, Kenya		Client Representative: Name: Mr. Joseph Poche Phone: +254 722 716262 E-mail: pochejo@ChurchofJesusChrist.org
Address: Ring Road, Westlands Off Waiyaki Way		No of Staff-Months; Duration of Assignment: 4 Months
Start Date (Month/Year): Jun, 2020	Completion Date (Month/Year): Sep, 2020	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Laptops and PC Software: ArcGIS 10.8, Google Earth Pro, Google Maps, Nitro PDF.		
Description of Project: Design and Production of various soft copy Cluster Maps in different countries in Africa.		
Description of Actual Services Provided by Our Staff: The project entailed engagement with the client (The Church of Jesus Christ) to understand the scope of mapping works. The scope of the project entailed the design of AO map layouts in ArcGIS, adding map layers, working & alignments of map graphics and labels including annotations. The outputs of the maps were softcopy jpg, pdf and ppt as well as the web maps. Here is a link to some of the sample maps produced: https://bit.ly/3qlkPXn . The countries covered include but not limited to: Kenya, Uganda, Tanzania, DRC, Congo Brazzaville, Central Africa Republic, Cameroon, Gabon and many more.		
Origin of Funding: The Church of Jesus Christ, Kenya		

15. ENERGITCOTEL, RWANDA

Project Name: Consultancy for Topographical and Engineering Survey for the Construction of Lihanda Hydro-power Generation Plant		Client's Country of Origin: Rwanda
Name of Client: Energicotel Ltd., Rwanda 		Professional Staff Provided by your Firm/Entity (profiles): 3
Project Location within the Country: Siaya, Kenya		Client Representative: Name: Honoré Mugiraneza Phone: +250 787 562 236 E-mail: hmugiraneza@epcafrica.com
Address: Gasabo – Gacuriro, KG 436St Plot No:6A Kigali, Rwanda		No of Staff-Months; Duration of Assignment: 3 Weeks
Start Date (Month/Year): Mar, 2020	Completion Date (Month/Year): Apr, 2020	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Stonex S800A and KQ Geo GNSS Software: Field Genius, Maps.ME, AutoCAD Civil 3D and ArcGIS		
Description of Project: Consultancy for Topographical and Engineering Survey for the Construction of Lihanda Hydro-power Generation Plant in Lihanda, Siaya County.		
Description of Actual Services Provided by Our Staff: The scope of work entailed execution of the topographic survey on acceptable scale clearly showing the intake, the canal, the forebay, the penstock, powerhouse and the line route to the nearest substation. The placement of benchmarks and as well as computation of the gross head and net heads. Additionally, terrestrial laser scanning (TLS) using Leica BLK360 laser scanner was done along the channel, penstock and access roads to the site. Execution of the aerial LiDAR of all the surrounding area at a scale of 1:1000 including placement of Ground Control Points (GCPs) and Benchmarks along key project infrastructure positions; intake weir, channel, forebay, penstock, powerhouse and all access roads. The generation of detailed topographical/contour maps and layouts (X-section and longitudinal) we done including preparation and presentation of project reports.		
Origin of Funding: Energicotel Ltd., Rwanda		

16. POLYPHASE SYSTEMS

Project Name: Topographical, Land and Engineering Survey for Construction and Installation of Solar Power Plant in Malindi.		Client's Country of Origin: Kenya
Name of Client: Polyphase 		Professional Staff Provided by your Firm/Entity (profiles): 3
Project Location within the Country: Malindi, Kenya		Client Representative: Name: Mr. Kuttu Kutu Phone: +254-722-207218 E-mail: kuttu@polyphase.co.ke
Address: Ring Road, Westlands Off Waiyaki Way		No of Staff-Months; Duration of Assignment: 8 Months
Start Date (Month/Year): Nov, 2019	Completion Date (Month/Year): Dec, 2020	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Stonex S800A and KQ Geo GNSS Software: Field Genius, AutoCAD Civil 3D and ArcGIS etc.		
Description of Project: Topographical and engineering survey; staking/setting out; alignments & volumes; levelling works		
Description of Actual Services Provided by Our Staff: The project entailed establishment of local GCPs and BMs using Stonex 800A and KQ Geo GNSS; Topographical & engineering survey works, levelling and computation of tables; computing of OGL levels (As-designed & As-built); setting out of solar panel structures columns, proposed solar power site, computation of volumes, alignments etc. AutoCAD Civil 3D 2020 was used for drafting the cross sectional and longitudinal sections and the computations. Here are some of the project photos: https://photos.app.goo.gl/oNKZPcoxopX8NEnA9		
Origin of Funding: Polyphase Systems, Kenya		


17. EDDIE STEMMET BOUERS BK, SOUTH AFRICA		
Project Name: Engineering Survey and Setting-out/Staking for a Construction of Winery and Resort in Naivasha.		Client's Country of Origin: Kenya
Name of Client: ESB BK, South Africa		Professional Staff Provided by your Firm/Entity (profiles): 6
Project Location within the Country: Naivasha, Kenya		Client Representative: Name: Mr. Robert De Bruin Phone: +254-714-346609 E-mail: robert@esbou.co.za
Address: 46 Joubert St, Bergsig, Montagu, 6720, S. Africa		No of Staff-Months; Duration of Assignment: 4 Months
Start Date (Month/Year): Sep, 2019	Completion Date (Month/Year): Mar, 2020	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Stonex S800A and Pentax Q6 GNSS Software: Field Genius, AutoCAD Civil 3D and ArcGIS		
Description of Project: Consultancy for Detailed Engineering and Topographical survey, Establishment of GCPs, Staking and levelling works.		
Description of Actual Services Provided by Our Staff: The project entitled 'Leleshwa Resort and Winery' entailed establishment of GCPs for topographical & eng. survey, levelling works; setting out utilities and infrastructure e.g., roads, powerlines, building structures, water pipelines, sewer etc.; AutoCAD Civil 3D was used Computations of Volumes, CUT & FILL etc; Large scale Topographical maps of scale 1:200 were also generated which were used for planning of ideal location of the utilities and infrastructure e.g., dam, recreation sites etc. Here are some of the project photos: https://photos.app.goo.gl/Dx8fvZvqDRf9UKjz8		
Origin of Funding: ESB BK, South Africa		

18. USAID, GAMBIA		
Project Name: Training of Five (5) USAID, Gambia on Application of GIS on Health Information Systems		Client's Country of Origin: Gambia
Name of Client: USAID & HRH 2030, Gambia 		Professional Staff Provided by your Firm/Entity (profiles): 4
Project Location within the Country: Nairobi, Kenya		Client Representative: Name: Dr. Dorothy Onyango Phone: +220-2458567 E-mail: donyango@hrh2030program.org
Address: Kanifing Institutional Lay Out, Kanifing, Gambia		No of Staff-Months; Duration of Assignment: 1 Month
Start Date (Month/Year): Aug, 2019	Completion Date (Month/Year): Sep, 2019	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: <i>Phantom 4 Pro Drone, Smartphones</i> Software: <i>ArcGIS, NetLogo, EpiCollect & DHS</i>		
Description of Project: Training of USAID staff on Application GIS on Health Information Systems and Modelling of Health Data using Netlogo etc.		
Description of Actual Services Provided by Our Staff: The project entailed training of five (5) staff from USAID Gambia on Application of GIS and Remote Sensing on Health Information Systems as well as modelling of health data e.g., spread of Ebola epidemic using Netlogo software. Training of DHS platform was also done on mobile data collection using EpiCollect app, upload to DHS platform i.e., Spatial Data Repository and analysis to produce infographs and spatial maps for Gambia. Here are some of the training photos: https://bit.ly/38GQQDk		
Origin of Funding: USAID, Gambia		

19. UNHCR, RWANDA		
Project Name: GIS & Mapping Training Services to Six (6) UNHCR Staff members from Rwanda		Client's Country of Origin: Kenya
Name of Client: UNHCR, Rwanda 		Professional Staff Provided by your Firm/Entity (profiles): 6
Project Location within the Country: Nairobi, Kenya		Client Representative: Name: Name: Mr. Dieudonne Muhire Phone: +250 788 226 343 E-mail: MUHIRE@unhcr.org
Address: KG 9 Av 60 Nyarutarama Road, Kigali RWANDA		No of Staff-Months; Duration of Assignment: 4 Months
Start Date (Month/Year): Sep, 2019	Completion Date (Month/Year): Mar, 2020	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: <i>Phantom 4 Pro Drone, Smartphones</i> Software: <i>ArcGIS, ENVI, EpiCollect, ODK etc.</i>		
Description of Project: Creation of Rwanda Refugee Maps; GIS Training on Mapping and Mobile Data Collection using EpiCollect5 App to six (6) UNHCR Staff from Rwanda.		
Description of Actual Services Provided by Our Staff: The project entailed Creation of Refugee Maps for UNHCR, Rwanda. The training of 3 Rwandese on GIS Mapping; Mobile data collection using EpiCollect 5 and ODK; GIS database development and cartographic map design was also done. Drone/satellite imagery acquisition; Georeferencing and digitization of refugee camps was also done. Other tasks encompassed project planning and management; Refugee Movement GIS Model development, testing and deployment, GIS report writing, map production including training and capacity development in the area of Geospatial Artificial Intelligence and Big Data Analytics.		
Origin of Funding: UNHCR, Rwanda		

20. RURAL ELECTRIFICATION & RE-ENERGY CORPORATION		
Project Name: Powerline Route Survey, Mapping and Wayleave Acquisition for Rural Electrification Programme.		Client's Country of Origin: Kenya
Name of Client: REREC, Kenya 		Professional Staff Provided by your Firm/Entity (profiles): 8
Project Location within the Country: Kisumu, Machakos, Meru, Busia, Siaya and other Counties in Kenya		Client Representative: Name: Mr. Stanley Muturi Phone: +254-720-226582 E-mail: smuturi@rerec.co.ke
Address: KAWI House, South C P. O. Box 34585 – 00100, Nairobi Kenya		No of Staff-Months; Duration of Assignment: 6 Years
Start Date (Month/Year): Nov, 2014	Completion Date (Month/Year): Feb, 2020	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: <i>Garmin Map 64S GPS</i> Software: <i>Survey123, AutoCAD Civil 3D, MS Excel, and ArcGIS</i>		
Description of Project: Powerline Route Survey, Mapping and Wayleave Acquisition for Rural Electrification Programme.		
Description of Actual Services Provided by Our Staff: The project entailed acquisition of Registry Index Maps (RIMs); Georeferencing and digitizing of RIMs, Identification of Project Affected Persons (PAPs); Signing of Consents by PAPs; Powerline Wayleave acquisition, Powerline Route Survey using Handheld GPS (Garmin Map 64S); Plotting and drafting of the powerline routes, overlying the route survey on cadastral layers, location of transformers and electricity poles and mapping them; delineating of wayleave acreage of affected land parcels using AutoCAD Civil 3D; GIS database creation; report writing and submission.		
Origin of Funding: Rural Electrification Authority, Kenya		

21.TADE GROUP LLC, USA		
Project Name: GIS Mapping and Analysis of PEPFAR Funded Health Facilities in Kenya's 47 Counties		Client's Country of Origin: United States (USA)
Name of Client: Tade Group LLC 		Professional Staff Provided by our Firm/Entity (profiles): 15
Project Location within the Country: All 47 Counties		Contacts: Name: Dr. Fred Mairura Phone: +254-722-997898 E-mail: fredm@tadegroup.com
Address: P.O. Box 49712 - 00100, Nairobi, Kenya		Duration of Assignment: 4 Months
Start Date (Month/Year): Nov, 2017	Completion Date (Month/Year): Feb, 2018	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: <i>Garmin Map 645 GPS, Smartphones</i> Software: <i>MS Excel, Leaflets JS, Postgres & ArcGIS</i>		
Description of Project: Mapping and Analysis of all PEPFAR Funded Health Facilities across the 47 Counties in Kenya. The map of the facilities can be accessed here: http://www.orbital.co.ke:82/		
Description of Actual Services Provided by Our Staff: The objective of this project was to "Carry out the Mobile Data Collection, Mapping and Analysis of all PEPFAR Sites across the 47 Counties in Kenya" with an approximate number of nine thousand (9,000) sites. This included training of 47 GIS data collectors on how to use GIS Cloud mobile app to collect location of PEPFAR sites. Additionally, the spatial, statistical analysis of all sites was conducted together with map creation and report writing. Amongst other deliverables, the geographic mapping (geospatial analysis) was also carried out to determine the location of each PEPFAR site in relation to other health facilities (PEPFAR related and/or not) to have a better comparative analysis of the sites in proximity to others. A final product included GIS analysis maps, an online interactive map of all PEPFAR sites (www.orbital.co.ke:82) including a final project report.		
Origin of Funding: TADE Group LLC, USA		

22. PCI GLOBAL		
Project Name: Creation of Kenya's Arid Areas GIS Layers and Maps for AfriScout Mobile App		Client's Country of Origin: Kenya
Name of Client: PCI Global		Professional Staff Provided by your Firm/Entity (profiles): 4
Project Location within the Country: Kajiado, Turkana, Isiolo, Marsabit, Samburu, West Pokot, Garissa, Wajir and Laikipia		Client Representative: Name: Ms. Hellen Mutogoh Phone: +254-718-615636 E-mail: hmutogoh@pciglobal.org
Address: P.O. Box 21691 – 00200, Nairobi, Kenya		No of Staff-Months; Duration of Assignment: 2 Years
Start Date (Month/Year): Aug, 2017	Completion Date (Month/Year): On-going	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: <i>Software: ArcGIS desktop; Nitro PDF; Open Street Maps (OSM) and Google Maps</i>		
Description of Project: Creation of GIS Maps and Layers for AfriScout Mobile App: https://www.pciglobal.org/afri scout/		
Description of Actual Services Provided by Our Staff: The project entailed project planning and management; creation of administrative and topographical maps; digitizing of grazing areas; Georeferencing; creation of shapefiles; mapping; training and capacity development; reporting and support in configuring the GIS layers in the AfriScout mobile application (https://www.pciglobal.org/afri scout/) used for pastoralists in identifying the grazing areas in their locality using the smartphones.		
Origin of Funding: PCI Global, Kenya		


23. HYDROBOX KENYA

Project Name: Engineering & Topo Survey for Identification of the Ideal Location of Hydro Power Generation Sites		Client's Country of Origin: Kenya
Name of Client: Hydrobox Africa		Professional Staff Provided by your Firm/Entity (profiles): 4
Project Location within the Country: Murang'a, Kenya		Client Representative: Name: Ms. Alice Mumbi Phone: +254-727-442700 E-mail: alice@hydroboxkenya.com
Address: P.O. Box 2691 Murang'a, Kenya		No of Staff-Months; Duration of Assignment: 2 Months
Start Date (Month/Year): Jan, 2019	Completion Date (Month/Year): On-going	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: <i>Garmin 645 GPS, Stonex S800A</i> Software: <i>AutoCAD Civil 3D, MS Excel, and ArcGIS</i>		
Description of Project: Topographical survey, levelling works and computing of OGL levels; Setting-out of various structures on site and Production Topo Maps and Generation of CAD files.		
Description of Actual Services Provided by Our Staff: The project entailed establishment of local GCPs; topographical survey, levelling and computing of OGL levels for ground structures, rivers, proposed hydropower generation site, spot heights, existing powerhouse, water pipes etc. Contouring and creation of Digital Terrain Model (DTM) was done in AutoCAD Civil 3D. Topographical maps of scale 1:500 was also generated which were used for planning of ideal location of water intake, water pipes routes, new power house among others. Here are some of the project photos: https://photos.app.goo.gl/2dqTLoSA746T6oG19		
Origin of Funding: Hydrobox, Belgium		

24. POWERGEN-RE KENYA		
Project Name: Digitizing 80,000 Buildings from Open Street Maps (OSM) in Countries of Niger and Benin		Client's Country of Origin: Kenya
Name of Client: PowerGen Kenya 		Professional Staff Provided by your Firm/Entity (profiles): 20
Project Location within the Country: Approx. 100 Villages and Towns in Republics of Niger and Benin		Client Representative: Name: Mr. Brian Jaoko Phone: +254-723-529079 E-mail: bjako@powergen-re.com
Address: P.O. Box Karen, Nairobi, Kenya		No of Staff-Months; Duration of Assignment: 5 Months
Start Date (Month/Year): Feb, 2019	Completion Date (Month/Year): On-going	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: <i>Software: ArcGIS desktop; MS Excel, Nitro PDF; Open Street Maps (OSM) and Google Maps</i>		
Description of Project: Digitizing 80,000 Buildings from Open Street Maps (OSM) using high resolution Satellite images or Basemaps from Bing, Esri, MapBox and Google. The focus countries were Niger and Benin.		
Description of Actual Services Provided by Our Staff: The project entailed planning and training of GIS Mapping team; creation of OSM online accounts; digitizing the polygons of building/polygons in villages/town centres using defined lat./long. coordinates; categorizing the building structures; uploading the digitized buildings to OSM servers; quality control/quality assurance including accuracy assessment of digitized buildings; generation of a report showing digitized buildings; errors assessment reports; presentation of final project report.		
Origin of Funding: PowerGen, Kenya		


25. NIS FOUNDATION, SOMALIA		
Project Name: Training of 25 Engineers on Operation of Total Station, AutoCAD Civil 3D and Topo Survey		Client's Country of Origin: Somalia
Name of Client: NIS Foundation 	Professional Staff Provided by your Firm/Entity (profiles): 3	
Project Location within the Country: Mogadishu, Somalia		Client Representative: Name: Mr. Mohamed Mohamud Nur Phone: +252 616 462 985 E-mail: eng4.somalia@nis-foundation.org
Address: Airport Rd, Wadajir District, Mogadishu SOMALIA		No of Staff-Months; Duration of Assignment: 3 Weeks
Start Date (Month/Year): Oct, 2018	Completion Date (Month/Year): Nov, 2018	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Topcon GTS Total Station Software: AutoCAD Civil 3D and MS Excel		
Description of Project: Training of 25 Engineers from NIS Foundation on Operation of Topcon GTS 1002 Total Station, AutoCAD Civil 3D Software and Topo Survey Works.		
Description of Actual Services Provided by Our Staff: The project entailed training of 20 Civil Engineers from NIS foundation and 5 from Municipal Council of Mogadishu on the operation of Topcon GTS 1002 total station. The participants were also trained on use of AutoCAD Civil 3D software; field data processing; creation of profiles; topo maps as well as alignments. The training also focused on how to use total station to pick coordinates, distances and angles. Final project report was done and submitted as well as participants' certificates. Here are some of the project photos: https://photos.app.goo.gl/e4N3R999C7KKbxWZ8		
Origin of Funding: NIS Foundation, Sweden		

26. URBAN GREEN CONSULTANTS

Project Name: Drone/UAV Mapping in Kiambu County		Client's Country of Origin: Uganda
Name of Client: Urban Green Consultants, Uganda 		Professional Staff Provided by your Firm/Entity (profiles): 6
Project Location within the Country: Kiambu County		Client Representative: Name: Mr. Amrish Shah Phone: +254-713-380549 E-mail: amrish@ugcafrica.com
Address: P.O. Box 39676 - 00623 Nairobi, Kenya		No of Staff-Months; Duration of Assignment: 1 Month
Start Date (Month/Year): Nov, 2018	Completion Date (Month/Year): Jan, 2019	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: <i>Equipment: Stonex S800A, Phantom 4 Pro Drone Software: AutoCAD Civil 3D, MS Excel, and ArcGIS for Desktop.</i>		
Description of Project: Drone Mapping on a 17-Acre Piece of Land in Kiambu County, Kenya		
Description of Actual Services Provided by Our Staff: The project entailed project planning and management; flight planning using Drone Deploy and Phantom DJI mobile software; field data collection (RTK/GNSS) and drone mapping using Phantom drone. The generation of a 3cm resolution Orthomosaic, a DEM, DTM, DSM, digital Contours and a topographical map; report writing and map production. <ul style="list-style-type: none"> ❖ View Sample Orthomosaic here: http://www.orbital.co.ke:8080/geoexplorer/viewer/#maps/4 ❖ View here some sample project photos: https://photos.app.goo.gl/mgbMCn8f69zggETo7 		
Origin of Funding: Urban Green Consultants, Uganda		


27. TECHNOBRAIN GROUP, INDIA		
Project Name: GIS-Based AspMap Training to 15 Staff Members from Centre for Geoinformatics Application in Rural Development (CGARD)		Client's Country of Origin: India
Name of Client: TechnoBrain Group, Kenya 		Professional Staff Provided by our Firm/Entity (profiles): 2
Project Location within the Country: Antananarivo, Madagascar		Client Representative: Mr. Waweru Gichuhi Phone: +254-724-400648 E-mail: waweru.gichuhi@technobraingroup.com
Address: P.O. Box Antananarivo, Madagascar		Duration of Assignment: 2 Weeks
Start Date (Month/Year): Jan, 2018	Completion Date (Month/Year): Feb, 2018	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Hardware: Servers Software: MS Visual Studio, .NET; AspMap, Notepad ++		
Description of Project: To design and develop Geospatial Technology Applications using AspMap Software tools for Rural Development sector and develop the capacity, skills and knowledge levels of functionaries at different organizational levels.		
Description of Actual Services Provided by Our Staff: Orbital Africa through TechnoBrain Group, offered AspMap training services to CGARD with an aim of assimilating all the strengths of geospatial technology in GIS, Remote Sensing, Global Positioning System, ICT, and allied sectors, for potential application development for the rural development in emerging areas for scientific, optimum, productive, sustainable, environmental compliant, knowledge-based decision support, timely and need based decision support, for faster development of rural areas and people. The tasks entailed project planning and management; design of customized GIS-based AspMap training materials; offered training to 15 staff members drawn from different departments.		
❖ View sample training photos here: https://bit.ly/2XA2pWz ❖ Client's Reference Letter here: https://www.orbital.co.ke/downloads/TechnoBrain.pdf		
Origin of Funding: National Institute of Rural Development, INDIA		


28. RAINTS INTERNATIONAL

Project Name: Topo Survey for Construction of Buildings in USA Embassy, Juba – S. Sudan		Client's Country of Origin: South Sudan
Name of Client: Raints International Ltd.		Professional Staff Provided by your Firm/Entity (profiles): 2
Project Location within the Country: Juba, South Sudan		Client Representative: Name: Ms. Betty Nyoike Phone: +254-708-593282 E-mail: bnyoike@raints.com
Address: P.O. Box 2691 – 00621, Nairobi, Kenya		No of Staff-Months; Duration of Assignment: 2 Months
Start Date (Month/Year): Feb, 2019	Completion Date (Month/Year): Mar, 2019	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Stonex S800A, Total Station Software: Field Genius, AutoCAD Civil 3D, MS Excel & ArcGIS		
Description of Project: Topographical survey, levelling works and computing of OGL levels; Setting-out of various structures on site and Production Topo Maps and Generation of CAD files.		
Description of Actual Services Provided by Our Staff: The project entailed establishment of local GCPs; topographical survey, levelling and computing of OGL levels for building structures, water pipelines, Manholes, roads and pathways, underground electric cables and water pipelines; trees, property boundaries. Generation of longitudinal and cross-sectional profiles, contouring AutoCAD Civil 3D. Topographical maps of scale 1:500 was also generated which were used for excavation and laying out of the pipes.		
Origin of Funding: Raints International Ltd, USA		

29. LAFEY CONSTRUCTION COMPANY

Project Name: Bridge Construction Survey Works		Client's Country of Origin: Kenya
Name of Client: Lafey Construction Ltd. 		Professional Staff Provided by your Firm/Entity (profiles): 4
Project Location within the Country: Baringo County, Kenya		Client Representative: Name: Mr. Kefah Nyakundi Phone: +254-723-393724 E-mail: nyakundikefah8@gmail.com
Address: P.O. Box 66437 - 00100, Nairobi, Kenya		No of Staff-Months; Duration of Assignment: 1 year 6 Months
Start Date (Month/Year): Jul, 2018	Completion Date (Month/Year): Jan, 2020	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Stonex S800A, Total Station Software: AutoCAD Civil 3D, Surfer & ArcGIS desktop		
Description of Project: Topographical Surveys, levelling works, Setting out of piers, embankments, road centerline		
Description of Actual Services Provided by Our Staff: <p>The project entails setting out of the 100-metre bridge in Baringo county. The scope of works includes setting out design data i.e., the road diversion, bridge CL & chainages, embankments, pile caps and pile coordinates among others.</p> <p>Here are some of the project photos: https://photos.app.goo.gl/bptSWsXbeKDHE2Nn9</p>		
Origin of Funding: Lafey Construction, Kenya		

30. WRIGLEY/DEXTEROUS LTD		
Project Name: Water Pipeline Setting out Works in Athi River		Client's Country of Origin: Kenya
Name of Client: Wrigley/Dexterous Ltd. 		Professional Staff Provided by your Firm/Entity (profiles): 2
Project Location within the Country: Athi River, Machakos County		Client Representative: Name: Mr. Ezekiel Bosire Phone: +254-722-971407 E-mail: ezekielogao@gmail.com
Address: P.O. Box 5082, Nairobi, Kenya		No of Staff-Months; Duration of Assignment: 2 Months
Start Date (Month/Year): Mar, 2018	Completion Date (Month/Year): May, 2018	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used:		
Equipment: <i>Topcon Total Station</i> Software: <i>AutoCAD Civil 3D and ArcGIS desktop</i>		
Description of Project: Topographical survey, levelling works and computing of OGL levels for pipeline route surveys		
Description of Actual Services Provided by Our Staff: The project entailed topographical survey, levelling and computing of OGL levels for water pipeline route surveys for 15 Km stretch. The longitudinal and cross-sectional profiles for the water pipeline route were prepared in AutoCAD Civil 3D. Topographical maps of scale 1:500 was also generated which were used for excavation and laying out of the pipes. Here are some of the project photos: https://photos.app.goo.gl/bmF8Zxy47gWFRjaL8		
Origin of Funding: Wrigleys, Kenya		

31. UN-HABITAT, KENYA		
Project Name: Kawangware Slum Mapping		Client's Country of Origin: Kenya
Name of Client: UN-HABITAT 		Professional Staff Provided by your Firm/Entity (profiles): 2
Project Location within the Country: Nairobi County		Client Representative: Name: Mr. Dennis W. Mutiso Phone: +254-721-991506 E-mail: dennis.mutiso@unhabitat.org
Address: P.O. Box 30030 – 00100 Nairobi, Kenya		No of Staff-Months; Duration of Assignment: 3 Months
Start Date (Month/Year): Feb, 2017	Completion Date (Month/Year): May, 2017	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: <i>eTrex 10 handheld GPS</i> Software: <i>ArcGIS 3D; Arc Scene and City Engine</i>		
Description of Project: Mapping and Development of a GIS Model to predict Urban growth and changes in Kawangware Slums and its environs.		
Description of Actual Services Provided by Our Staff: The project entailed field survey and mapping; satellite imagery acquisition; Georeferencing and digitization of building structures. Development of slum growth prediction model in 30 years to come. Also entailed project planning and management; model development, testing and deployment, GIS database development; report writing, map production including training and capacity development in the area of GIS.		
Origin of Funding: UN-Habitat, Kenya		

32. ELDAS CONSTITUENCY		
Project Name: Mapping of Facilities in Eldas Constituency		Client's Country of Origin: Kenya
Name of Client: Eldas Constituency 		Professional Staff Provided by your Firm/Entity (profiles): 4
Project Location within the Country: Wajir County		Client Representative: Name: Mr. Mohamed Bule Phone: +254-722-558523 E-mail: mohamed.bule@gmail.com
Address: P.O. Box 3453 Wajir, Kenya		No of Staff-Months; Duration of Assignment: 1 Month
Start Date (Month/Year): Jun, 2018	Completion Date (Month/Year): Jul, 2018	Approx. Value of Services (in equivalent KSh): N/A
Name of Associated Consultants, If Any: None		No of Months of Professional Staff Provided by Associated Consultants: None
Survey Equipment, Software and Technology Used: Equipment: Smartphones, Garmin handheld GPS Software: ArcGIS desktop and portal, EpiCollect5 App		
Description of Project: Mapping and Development of a GIS Database of projects funded by Eldas Constituency Development Fund.		
Description of Actual Services Provided by Our Staff: The project entailed project planning and management; field data collection and mapping using the EpiCollect5 mobile App (https://five.epicollect.net/project/eldas-constituency-mapping/data); Scanning of boundary and admin maps; Georeferencing and digitization of boundaries. Development of GIS database of mapped facilities. Creation of an interactive web mapping application using LeafletJS and GeoJson frameworks; report writing and map production.		
Origin of Funding: Eldas Constituency Fund		

H. SOFTWARE AND SURVEY EQUIPMENT

No	EQUIPMENT/TOOLS/ SOFTWARE	MODEL	MANUFACTURER	QUANTITY/ NO. OF LICENSES
1.	Fieldwork Vehicle	RAV 4	Toyota	1
2.	Fieldwork Vehicle	Landcruiser	Toyota	2
3.	Laptops	Acer 4349Z and HP ProBook	Acer and HP	4
4.	Desktop Computers	HP	HP	6
5.	External Hard Disk for Data Backup (2TB Storage)	WD, EHD 500GB	WD	5
6.	Printers	Epson 545	Epson	1
7.	Plotters	HP Designjet T1300	HP	1
8.	Handheld GPS	Garmin eTrex 10 & 20; Trimble TDC 100; Stonex S4.	Garmin, Trimble & Stonex	3
9.	Geodetic GPS (RTK)	Stonex A800 (1 Base and 2 Rovers)	Stonex	3
		KQ Geo (1 Base and 1 Rover)	KQ Geo	2
10.	Digital Levels	Stonex DL100 & Topcon AT-B4	Stonex and Topcon	4
11.	Total Station	i. Topcon GTA 1000 ii. Stonex R1+	Topcon Stonex	3 2
12.	Digital Camera	Sony CyberShot DSC W610	Sony	1
13.	Scan Station	Leica Scan Station 4	Leica	1
14.	Drones for Aerial Survey	Phantom 4 RTK	Phantom	2
		eBee SQ	SenseFly	1
15.	Ground Penetrating Radar (GPR)	GPR-Q5 Series	US Radar	1
16.	Software Packages	- ERDAS Imagine 15 - AutoCAD Civil 3D - Surfer 11 - ENVI 4.6 - ArcGIS Desktop - SuperGIS Server 10 - MapInfo Pro - Global Mapper - Google Earth Pro - Microsoft Office	Integrapp Autodesk Golden Software Inc. Harris Geospatial Esri SuperGeo MapInfo Professional Blue Marble Geographics Google Inc. Microsoft Inc.	2 2 5 4 2 2 4 5 6 10

TOOL/EQUIPMENT	NAME AND MODEL	DESCRIPTION AND USE
	Garmin eTrex 10 Handheld GPS	<p>The eTrex 10 handheld GPS can be used to pick general GIS data which does not require high accuracy e.g., the location of football pitches, schools, trees etc. It has 2-5-meter accuracy and expandable external memory for extra data storage. This GPS is easy to use and is capable to collection ready-to-use data (in GPX format) in GIS and Google Earth platforms.</p>
	S4 II Handheld GPS	<p>S4 II which offers 1 metre accuracy is the newest generation of GNSS handheld mapping devices introduced by Stonex. Designed for GIS data collection and mapping, the S4 II integrates an open operating system and built-in communications. The Compact and lightweight, S4 II is a complete, easy to use mapping solution for real-time collection of 1-meter accurate data.</p>
	Topcon GTS 1002 Total Station	<p>This equipment comes with Bluetooth technology ensuring easy data transmission. It has long battery life and advanced features for angle and distance measurement. This equipment can be used during topographic survey (traversing and levelling) including data collection in X, Y and Z.</p>
	Stonex Total Station (R1+)	<p>The Nikon total station is another powerful survey equipment in our possession. The equipment shall also be used in field data collection during topographic survey and mapping projects. It has high accuracies of up to +1mm+1ppm. The equipment is also bundled with field and office software.</p>

	Stonex Differential RTK GPS (S800)	<p>S800 is the most cost-effective dual-frequency network RTK rover. S800 solutions include the new Ashtech rugged GNSS receiver running Windows Mobile 6.5 operating system, the comprehensive Ashtech FAST Survey field software and the new Atlas (L1/L2 GNSS) antenna. The equipment can be used where it is difficult to collect data using the total station.</p>
	Stonex Scan Station	<p>Stonex Scan Stations deliver highest quality 3D data and HDR imaging at an extremely fast scan rate of 1 million points per second at ranges of up to 270 metres. Unsurpassed range and angular accuracy paired with low range noise and survey-grade dual-axis compensation form the foundation for highly detailed 3D colour point clouds mapped in realistic clarity. The scanner is often used to collect site data in 3D (X, Y & Z).</p>
	Stonex Auto Level & Levelling Staff	<p>Stonex digital levels ensures up to a 50% time saving when compared with conventional levels. The main reasons are the faster data capture preparation as well as the shorter time and safer means of data preparation, thanks to saving measured data on storage devices. Adjustable tolerance checks for the measured data add safety to the measurements taken.</p>
	eBee SQ Drone Mapper	<p>More time is saved by using a survey-grade eBee RTK drone. Such GNSS/RTK receiver systems are effectively flying rovers, capable of receiving data corrections streamed from a base station or via VRS to achieve absolute X, Y, Z accuracy of down to 3 cm (1.2 in) – without needing any Ground Control Point (GCP)!</p>

	Phantom 4 Pro v2	<p>Featuring a 1-inch CMOS sensor that can shoot 4K/60fps videos and 20MP photos, the Phantom 4 Pro V2.0 grants Surveyors absolute creative freedom. The OcuSync 2.0 HD transmission system ensures stable connectivity and reliability, five directions of obstacle sensing ensures additional safety, and a dedicated remote controller with a built-in screen grants even greater precision and control.</p>
	US Radar Q5 Ground Penetrating Radar (GPR)	<p>At Orbital Africa, we combine the knowledge with expertise in using the latest technology, including Ground Penetrating Radar (GPR) equipment. This non-destructive method uses electromagnetic radiation in the microwave band such as (UHF/VHF frequencies) of the radio spectrum, and detects the reflected signals from subsurface and underground structures e.g., water pipes, sewer lines, electric cables etc.</p>
	Leica BLK 360 3D Terrestrial Laser Scanner	<p>The Leica BLK360 captures the world around you with full-colour panoramic images overlaid on a high-accuracy point cloud. Simple to use with the single push of one button, the BLK360 is the smallest and lightest imaging laser scanner of its kind. Using Leica Cyclone FIELD 360 mobile-device app, the BLK360 streams image and point cloud data to an iPad/Tablet or final project data to Cyclone REGISTER 360 or Cyclone REGISTER 360 (BLK Edition) via Wi-Fi.</p> <p>Technical Specifications:</p> <ul style="list-style-type: none"> • Allows you to scan in high, standard and fast resolutions • Weighs 1 kg / Size 165 mm tall x 100 mm diameter • Less than 3 minutes for full-dome scan (in standard resolution) and 150 MP spherical image generation • 360,000 laser scan setpoints per second • High-Dynamic Range (HDR) and thermal imaging

	Toyota 4 Wheel Drive	<p>During the project, we shall put in place vehicles which will be used to avail the staff to the project sites. The vehicles will also be used to carry the project tools and equipment hence facilitating easy movement to and from the field thus ensuring that the project is done and completed within the stipulated timeframe.</p>
	HP Plotter	<p>The Plotter will be used in printing large scale maps, survey plans and topographical designs (both A0s, A1s, A2s, A3s etc) obtained from either AutoCAD or ArcGIS. The plotter can print at a resolution of more than 1200 dpi hence quality map output.</p>
	Epson Printer	<p>The printer shall be used in printing project documents such as reports and A3/A4 maps during the project execution process.</p>
	Large Format Scanner	<p>The scanner is used to scan large scale maps e.g. A4s so that they can be used in digital environment during digitization process in the software such as AutoCAD and ArcGIS. Its Ultra-fast scan-to-disk capabilities make it the perfect link between your Context scanner and popular software for graphics, reprographics, GIS, CAD, DTP and Archival.</p>

I. APPENDICES

SAMPLE PHOTOS OF KEY PROJECTS

A. DRONE SURVEY & MAPPING



B. GEOSPATIAL TRAINING SERVICES



C. TOPOGRAPHICAL SURVEY SERVICES



D. BATHYMETRIC SURVEY SERVICES

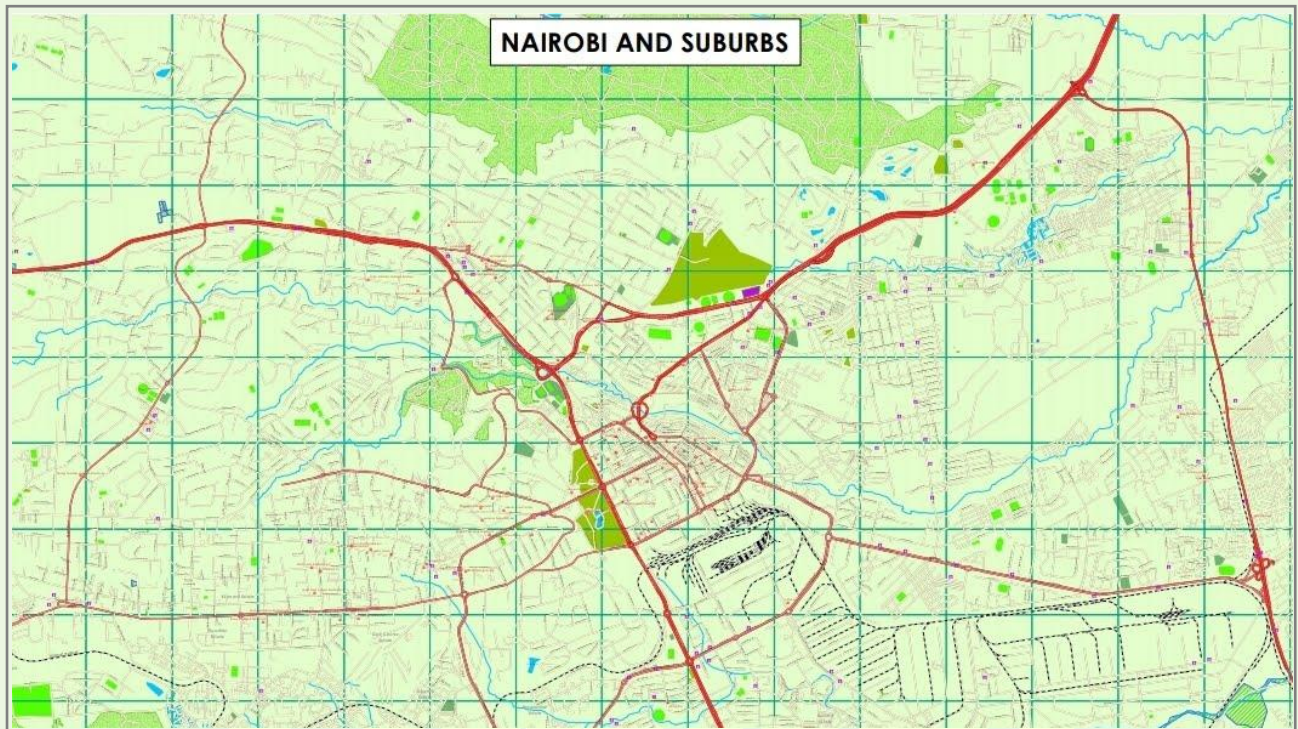


E. ENGINEERING & CONSTRUCTION SURVEY SERVICES



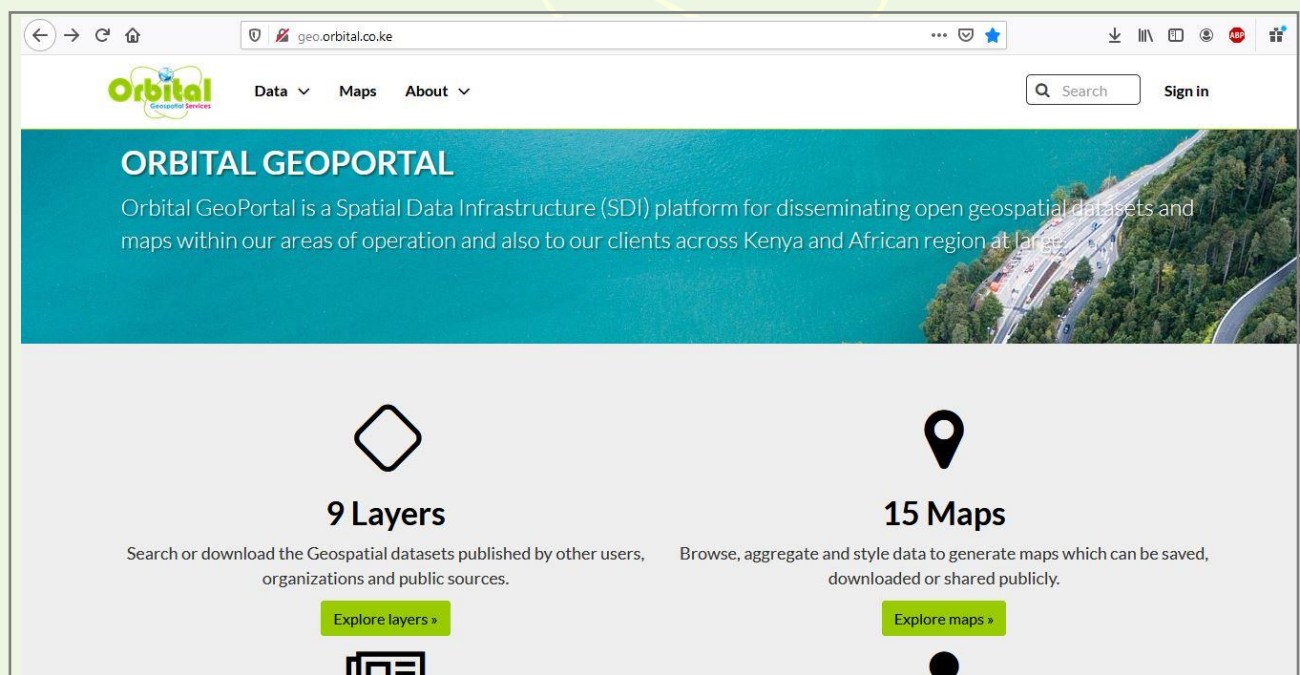
F. MAP DESIGN AND PRODUCTION SERVICES

Maps: www.orbital.co.ke/map



Our GeoPortal: <http://gis.orbital.africa:4040>

Geospatial Services





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