

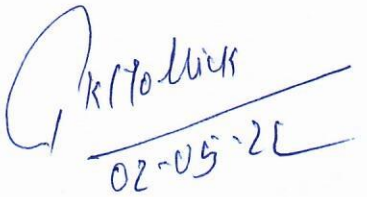
NO. ORSAC / Proj. / 0580 / 2021 (CPA) / 1537 (12) dt. 4/15/22

## OFFICE ORDER

### Empanelment of Agencies Under ORSAC for Geospatial

### DGPS/ETS Survey 2022-2023

As per ORSAC RFA NO19/2021 dt. 31.12.2021 regarding empanelment of eligible firms for the period 2022-2023 to undertake DGPS/ETS survey as per ORSAC defined SOP of Geospatial survey, total 12 nos of Vendors/Agencies are empanelled after due verification of general eligibility, technical eligibility, physical instrument verification, submission of calibration certificates and deposition of security deposit. The list of empanelled Vendors/Agencies is attached. All the selected Agencies/Vendors are directed to sign the MOU/SOP within 7 (Seven) days of publication of this Office Order.

  
02-05-22

CHIEF EXECUTIVE

Annexure-III

FINAL LIST OF EMPANELLED VENDORS TO UNDERTAKE DGPS/ETS GEOSPATIAL SURVEY AS PER ORSAC DEFINED SOP OF GEOSPATIAL SURVEY WITH RESPECT TO RFP/TENDER NO.-19/2021 DATED 31.12.2021		
Sl. No.	NAME OF FIRM	ADDRESS & PHONE NO.
1	M/s ARKITECHNO CONSULTANT PVT LTD	Plot no.-N3/91, IRC Village, Nayapalli, Bhubaneswar, PIN-751015, Ph No.-0674-2554205/2553689, Email- business@arkitechno.com
2	M/s A.S.K. REPROGRAPHICS	Flat No.-206, 3rd Floor, Krishna Mansion, jharpada, bhubaneswar, PIN-751006, Ph No.- 0674-2577815/2577082/9437026021/8249169659
3	M/s CRACKERS INDIA MINING PVT LTD	Flat no.-A-406, Kamala Vihar, rasulgarh, Bhubaneswar, PIN-751010, Ph no.- 06767-275896/ 8895564171, Email- cimpl@theworldgroup.in
4	M/s ENCOMES PVT LTD	Plot No.-1253, Nayapalli ,Bhubaneswar, PIN- 751012, Ph No.- 8847861059, Email- das.madhusmita2012@gmail.com
5	M/s ENVOMIN CONSULTANT PVT LTD	Kharvelnagar, Unit-3, Plot No-58, bhubaneswar-751001, Ph No.-0674-2394518/9437063188, Email- envomin@yahoo.com
6	M/s GAYATRI CONSULTANT	Dahaliabag, P.O- bhanapur, Near Cuttack Sadar P.S., Plot No-117, Ph No.- 0671-2586533/9337791831, Email- nayak_sudha@yahoo.com/ gayatri.cons.ctc@gmail.com
7	M/s GEO INFOTECH	Plot No.-219, bayababa matha raod, Unit-IX, Bhubaneswar-751022, Ph No.- 0674-2543745/2543206/9437010212, Email- mail@geoinfotech.org/ debesh patra@hotmail.com
8	M/s INVENT GRID INDIA PVT LTD	2/2, N2/43, IRC Village, Nayapali, Bhubaneswar-751015, Ph No.- 6370868112/6370868108, Email- info@igdrones.com
9	M/s Odra ASSOCIATE PVT LTD	4th Floor, NSIC Building, Dharmapada Bhawan, Mancheswar Railway Station Road, block-D, Mancheswar Industrial Estate, Bhubaneswar-751007, Ph No.-0674-2952715/9439068176, Email- odraassociates@gmail.com
10	M/s RB TECHNOLOGIES PVT LTD	M-61, Swati Apartment 12, Mother Diary Road, Patparaganj, Delhi-110092, Ph No.- 011-46739214/215/217/219, Email- mail@rbt.ltd.com
11	M/s S3 CONSULTANTS	Plot No.- 916/6595, Palasuni, Rasulgarh, Bhubaneswar-751010, Ph No.- 9438133337/9658691191, Email- s3consultants@gmail.com
12	M/s TOJO VIKASH INTERNATIONAL PVT LTD	Plot No.-4, 1st Floor, Adeleni, NewDelhi-110017, Ph No.- 011-46739214/215/217/219/ 7982068708, Email-mail@tojovikas.com

## **DEED AGREEMENT**

This agreement made on this date the.....2022 between Odisha space applications center (ORSAC), an agency of State government under Science & Technology Department, Govt. of Odisha, with its office plot no.-45/48 (P), Jayadev vihar, Unit-16, Bhubaneswar through its Chief Executive here in after referred as “1st party” on the one part.

And

..... Vendor Name..... whose registered office is at .....address of the vendor... .. (hereinafter referred to as 2nd party) on the second part.

And

Whereas 2nd party, having emerged as the successful vendor, is desirous to undertake DGPS and ETS Geospatial Survey as per ORSAC RFA 19/2021 dated 31.12.2021 and S.O.P of Geospatial Survey (S.O.P attached as Annexure-A).

Therefore, both the parties hereby enter into this agreement to bind themselves to the term and conditions here under spelt out for smooth transaction of the activities described in RFA 19/2021 dated 31.12.2021 & S.O.P..

### **A. SERVICE LOCATION**

Work should be performed under the premises of ORSAC. The 2nd party shall obtain written permission from ORSAC before working in the premises of ORSAC beyond official working hours, at night, weekends and or on holidays. The 2nd party should have a Physically verifiable & Full-fledged Registered Business Office Premise in Odisha for DGPS/ETS survey, IT & GIS solutions and SW Development.

### **B. TIME PERIOD OF EMPANELMENT**

The time period of the empanelment is 1 Year i.e. from 1st May 2022 to 30th Apr 2023.

## **B. CONFIDENTIALITY,**

Except with the prior, written consent of the 1<sup>st</sup> party, the 2<sup>nd</sup> party and the Personnel shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the 2<sup>nd</sup> party and the Personnel make public the recommendations formulated in the course of, or as a result of the Services.

## **C. TERMINATION**

The 1<sup>st</sup> party may terminate this Contract in case of the occurrence of any of the events specified in this Clause as mentioned below. In such an occurrence the 1<sup>st</sup> party shall give a not less than fifteen (15) days written notice of termination to the 2<sup>nd</sup> party.

- If the 2<sup>nd</sup> party does not remedy a failure in the performance of their obligations under the Contract, within fifteen (15) days after being notified or within any further period as the 1<sup>st</sup> party may have subsequently approved in writing.
- If the 2<sup>nd</sup> party becomes insolvent or bankrupt.
- If the 2<sup>nd</sup> party, in the judgment of the 1<sup>st</sup> party has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
- If there is any complain from any of the Govt. Organization agencies and **P.S.U.** s against the vendor and found to be true/satisfied; 1<sup>st</sup> party will take immediate action i.e. Cancellation of the empanelment and forfeiture of Security Deposit.
- If the 1<sup>st</sup> party, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.

## **E. SUB CONTACTING-**

Subcontracting of project will not be permissible in any form. If awarded a contract pursuant to assigned by Govt. organizations, agencies and PSU's; the 2<sup>nd</sup> party shall be responsible for completion of project. Subcontracting of the project will lead to termination of empanelment and forfeiture of Security Deposit.

## **F. DOCUMENTS PREPARED BY THE 2<sup>nd</sup> PARTY TO BE THE PROPERTY OF THE 1<sup>st</sup> PARTY**

- The Intellectual Property Rights/ all ETS/DGPS survey data
- Any documents etc. generated as a part of implementation of project shall solely vest with the 1<sup>st</sup> party
- The 2<sup>nd</sup> party shall not use any map documents and survey outputs for purposes unrelated to this Contract without the prior written approval of the 1<sup>st</sup> party and the agencies / Organization's assigned with.

## **G. GENERAL OBLIGATIONS AND RESPONSIBILITY VENDOR-**

The 2<sup>nd</sup> party shall perform the Services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The 2<sup>nd</sup> party shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the 1<sup>st</sup> party and shall at all times support and safeguard the 1<sup>st</sup> party legitimate interests in any dealings with third Parties.

## **H. GUIDE LINES FOR EMPANELLED VENDORS OF DGPS/ ETS SURVEY.**

- (a) All the empaneled vendors are to identify one Nodal officer and to submit his ID proof Photo and mobile no. at ORSAC for liaison with ORSAC related to verification and authentication of DGPS survey projects i.e. from receiving of known location to final certification of output to be delivered.
- (b) In case of any complain by the User Agency regarding non-execution of assigned work by empaneled vendors, the vendor will be asked to explain the reason. If it is not found satisfactory /or user Agency counter it, then the security deposit of the vendor will be forfeited and blacklisted from empanelment list of **ORSAC**.

## **I. FORCE MAJEURE**

For the purpose of this Article, Force "Majeure" means any cause, which is beyond the control of the 2<sup>nd</sup> party or 1<sup>st</sup> party as the case may be, which such party could not force or with a reasonable amount of diligence could not have foreseen, and which substantially affect the performance of the Contract, such as:-

- War / hostilities
- Riot or civil commotion
- Earth Quake, flood. Fire Tempest, Epidemics, Lightning or other natural physical Disaster, Quarantine restricts and Freight embargoes
- Restrictions imposed by the Government or other statutory bodies, which is beyond the control of the Implementation Partner which prevent or delay the execution of the order by the Implementation Partner.
- If a Force Majeure situation arises, the 2<sup>nd</sup> party is required to promptly notify the 1<sup>st</sup> party in writing of such condition and the cause thereof within a period of three (3) days from the date of happening of such an event requiring invocation of this force majeure article. Unless otherwise directed by the 1<sup>st</sup> party in writing, the 2<sup>nd</sup> party will continue to perform its obligations under this supply order as far as is reasonably practical and shall seek all reasonable alternative means for performances of this order.

## **H. PER FORMANCE BAN K GUARANTEE / SECURITY DEPOSIT**

In the event of the Implementation of projects by the vendor being unable to service the contract for whatever reason, The 1<sup>st</sup> party would invoke the P.B.G./Security Deposit. Notwithstanding and without prejudice to any rights whatsoever of the 1<sup>st</sup> party under the contract in the matter, the proceeds of the P.B.G./Security Deposit shall be payable to the 1<sup>st</sup> party as compensation for the Implementation Partner failure to perform/comply with its obligation under the contract. The 1<sup>st</sup> party shall notify the Implementation Partner in writing of the exercise of its right to receive such compensation, indicating the contractual obligation(s) for which the Implementation Partner is in default.

Before invoking the P.B.G./Security Deposit, the Implementation Partner will be given an opportunity to represent before the 1<sup>st</sup> party. The decision of the 1<sup>st</sup> party on the representation given by the Implementation Partner shall be final and binding.

**J. DELIVERABLES**

The 2<sup>nd</sup> party shall create and maintain all survey documents and would submit the same to the 1<sup>st</sup> party as deliverables as per the agreed Survey time lines. 2<sup>nd</sup> party will prepare a detailed Survey Plan in coordination with the 1<sup>st</sup> party considering the time sensitive boundaries of stake holders and ensuring that the survey time lines as mentioned in the RFP are met. The documents created by 2<sup>nd</sup> party will be reviewed and approved by the 1<sup>st</sup> party.

Signature of the authorized signatory of vendor

Witness

1)

2)

Signature of the Chief Executive

Witness

1)

2)

## **Scope, Standard and SOP of DGPS Survey Works**

Odisha Space Application Centre (ORSAC), Bhubaneswar was identified as the nodal agency to carry out DGPS/ETS survey. The centre is also responsible for verification and authentication of Forest Diversion Proposals (FDP) surveyed through DGPS/ETS by competent empanelled survey agencies on behalf of User Agency regarding “Submission of Geo-referenced Digital data while filing Forest Diversion Proposal for non-forest use” under Forest Conservation Act, 1980 as required by the Govt. of India, Ministry of Forest and Environment vide their circular F. No.11-9/98 dated 08.07.2011. Subsequently it was decided that if any compensatory afforestation project proposal in lieu of Forest Diversion Proposal will be also forwarded by Forest Dept., ORSAC will carry out the verification and authentication of the data. As per the circular of MoEF Govt. of India & State Govt. in F & E Department notification on Forest areas proposed to be diverted for Non-forest use (vide letter no.18393/F&E, dt.13-10-2011); ORSAC (as the nodal agency) is undertaking DGPS/ETS survey and technically authenticate survey undertaken by empaneled DGPS/ETS survey agencies.

Govt. of Odisha has also recognized ORSAC as the Nodal agency for the purpose of DGPS survey to facilitate digitization and geo-referencing of Mining Lease map in 2010 to comply with the IBM (Ministry of Mines, Govt. of India) circular on geo-referencing and DGPS survey of Mining Lease boundary. Accordingly, each Lessee of the individual Mining Lease has to apply ORSAC for DGPS survey for their lease. Further, Steel & Mines Department, Govt of Odisha issued an order in 2014 for joint survey of all Iron & Manganese mines of the state by constituting representatives from ORSAC, Revenue, Forest and Mining Department. The centre is also assigned as nodal agency for DGPS survey exercise for all the Minor Minerals and Sairat sources (sand, stone, morrum quarry etc.) of the State.

### **The following broad tasks shall be undertaken by the empaneled vendors.**

1. All necessary works and deliverables as required by different Departments of Government of Odisha relating to ETS/GPS/DGPS survey.
2. Geo-Referencing of Revenue/Forest Lands in Odisha, using High Accuracy DGPS Survey, Remote Sensing and Modern GIS Technologies.
3. Collection of all types of data, maps and documents relating to Revenue/Forest land records. Such land should include all types of Revenue lands as per Revenue Department records, GA lands, notified forests (RF, PRF, PF, VF), revenue forests (as per cadastral RoR), Sabik forests (Recorded as forest as of 1980, but not being shown as forest in post 1980 settlements), Deemed Forest (Recorded as Non-Forest but containing Forest Growth as per Dictionary meaning of Forest), DLC forest, Forest land diverted for non-forest purpose and Forest land settled under Forest Right Act.
4. Collection of land records and maps to identify and map survey/project areas.
5. GIS-based analysis of land boundaries.



6. Joint field verification as per Government of Odisha notification as per the work order and user department requirement.
7. Identification, Demarcation and Monumentations of all the pillars as per the work order and user department requirement.
8. Survey to be done as Sub-meter Accuracy DGPS Survey, deploying RTK enabled or GBAS / GAGAN SBAS supported dual frequency high sensitivity GNSS / GPS Receiver cum Rover; as per the requirements of ORSAC; and preparation of the required Geo-referenced maps both in paper printed and Web-Map publishing format in Appropriate Scales of variations .
9. Recording the RTK Enabled and differentially corrected DGNSS readings, in RAW and RINEX Format using the Dual Frequency DGPS Receiver cum Rovers (along with source file, all error charts and outputs). The recorded value should have minimum 8 decimal places in degrees for Latitude and Longitude, including height above MSL and HAE in cm and the area and perimeter of the surveyed polygon in Km<sup>2</sup> and Km respectively.

## **10. ESTABLISHMENT OF BASE POINT/POINTS**

ORSAC will provide two known locations to establish point/points to use as BASE POINT/POINTS for further DGPS survey and processing of survey data for the proposal using the co-ordinates of these Base point/points. Vendor can establish as many base points as required in the project area using these two known locations. After the survey for base point/points, the agency would submit the survey data at ORSAC in RAW and RINEX format, to receive the co-ordinates of the point/points. If it is more than one point, all the points should be properly networked (if the required base point is more than one), so that at the time of processing of the submitted data for co-ordinates of base points, the data fulfil all the parameters set by ORSAC for establishment of Principal Control Points (PCP). After processing of surveyed data and receiving requisite processing fee, ORSAC will provide the co-ordinates of base point/points and communicate the same to concerned D.F.O, Tahasildar and Mining Officer (in case of a mine) with the request to depute their representatives to post forest pillars on identified points in the project area to be surveyed and should remain present at the time of survey.

### **1. OBSERVATION GUIDELINES FOR ESTABLISHMENT OF BASE POINT/POINTS**

The PCPs or Base points will be established by simultaneous observation along with two reference points provided by ORSAC by trilateration method in Static mode of observation.

ORSAC has established PCPs (PCPs- Primary Control Points and SCPs (SCPs- Secondary Control Points) network in some of the districts and Reference/Base points for rest of the area of the state. ORSAC will provide PCPs (two reference/base points) nearest to the project area. The DGPS survey will be undertaken with reference to above reference points.

### **12. ESTABLISHMENT OF PCP**

12.1 The PCPs or Base points will be established by simultaneous observation along with two reference points provided by ORSAC by trilateration method in Static mode of observation with following parameters:

Epoch interval	-	05 seconds
Observation hour		02 hours within 10Km distance
		04 hours within 10Km to 50Km distance
		08 hours within 50Km to 200Km distance

- 12.2 All the observations should be carried out through Dual/Multi frequency standard DGPS Instrument.
- 12.3 The triangle of observation preferably should be an equilateral triangle. However, no angle should be less than 30° or more than 120° and would not be acceptable beyond the specified limit.
- 12.4 Point of observation should be open to sky. The sky should be clear up to 15 0 Cut-off angle. There should not be any tower, power transmission line, etc., present nearby to affect the observation reading.
- 12.5 Threshold values of PDOP (Positional Dilution of Precision)/HDOP (Horizontal Dilution of Precision) for each observation should not exceed 05.
- 12.6 The vendor shall collect the geo-coordinates in WGS-84 datum and UTM projection

## **1. SURVEY OF SECONDARY CONTROL POINTS (SCPs)**

- 13.1 RTK (Real Time Kinematic) mode of observation:  
 Distance from PCP - 2 to 5 Km  
 Duration of observation - 15 seconds or more with fixed solutions
- 13.2 Rapid Static/ Fast Static mode of observation:  
 Distance from PCP – within 10 Km  
 Duration of observation - 15 minutes or more with fixed solutions
- 13.3 PPK (Post Process Kinematic) mode of observation:  
 Distance from PCP – within 05 Km  
 Duration of observation - 05 minutes or more with fixed solutions  
 Logging interval - 5 seconds
- 13.4 RTX (Real Time Extended) mode of observation:  
 Distance from PCP – within 05 Km  
 Initialization time at control point (PCP): up to 20 minutes  
 Duration of observation – 10 to 15 seconds with all ambiguity resolved

### 13.5 TOTAL STATION OBSERVATION:

When no or poor satellite signals are available during observation, integrated

Total station is to be used.

Accuracy: same as DGPS standard

## 2. MAP GENERATION

All Revenue forest/Khasara Forest/Village forest/DLC forest/non-forest land recorded as forest as on after 25.10.1980 plots proposed for diversion/compensatory afforestation are to be shown on the geo-referenced cadastral sheets (the drawn plot boundaries in the submitted map should match with corresponding plot boundaries of cadastral sheet) and coordinates of all the boundary demarcation points of the forest plots are to be shown with derived co-ordinates.

The survey points used for geo-referencing of cadastral sheet and the derived co-ordinate points are to be shown in different symbols. For the demarcation of R.F/P.R.F./P.F./D.P.F. patch boundaries proposed for diversion/compensatory afforestation should be carried out only using the DGPS/ETS surveyed points. During map generation the survey agency must compared the allotted area with map/surveyed area and if a variation of more than 5% between allotted area and map area is observed, than the plot wise variation must be brought to the notice of concerned Tahasildar through the user agency for necessary correction and after necessary correction the data should be submitted for verification. All forest areas proposed for diversion should be shown within approved project boundary/corridor (in case of linear projects) and within DGPS surveyed ML boundary for ML areas. After this the data (both survey as well as maps) would be submitted to concerned Divisional Forest Officer for ground verification and verification of required documents. After his due verification, the D.F.O. will forward the required data to ORSAC for verification and authentication.

## 3. DELIVERABLES AT ORSAC

All the survey data should be submitted at ORSAC for verification in both soft and hard copy format.

The vendor shall submit survey data in both RAW and RINEX format. Also the vendor should submit the Base line Report/ Project file/ Point list (used) of survey data and .shp files of survey points.

The vendor shall submit survey data in both RAW and RINEX format. Also the vendor should submit the Base line Report/ Project file/ Point list (used) of survey data and .shp files of survey points.

The co-ordinates of survey points in latitude/longitude and Easting/Northing shall be submitted with up to 5 digits after decimal point, and Elevation Height/Ellipsoid Height with up to 3 digits after decimal point.

Soft copy of geo-referenced cadastral sheets (the cadastral sheet should be copied from mother sheet as it is i.e. without any distortion), .shp files of forest areas proposed for diversion/ C.A.

areas/ .shp files of surveyed points and georeferenced derived points (separately) are to submitted at ORSAC for verification.

Authenticated land schedule from the concerned Tahasildar or equivalent Revenue authority for the project area showing both Hal and sabik kissam (as on 25.10.1980) village wise Revenue Forest plots to be submitted along with other required data. If in any project proposal no sabik kissam forest area is coming then a certificate from District Revenue Administration may obtained and submitted at ORSAC (as decided in 15th. CCI-PMG Review Meeting held on 10.03.2017 under the Chairmanship of Chief Secretary, Govt. of Odisha) should be submitted in this regard. D.L.C. plot list coming in project area should be collected from concerned D.F.O. Also R.F./P.R.F/P.F./D.P.F. areas allotted for the project is to be certified by concerned D.F.O.

The signed format of Forest, Revenue and Mining (in case of mines) officers who remained present during the survey also to be submitted.

Minimum two sets of hard copy maps should be submitted for comparison with soft copy maps and certification. The submitted hard copy map should clearly indicate the name of the Project, map direction, scale, DGPS/ETS survey co-ordinates, derived co-ordinates, comparative area statistics i.e allotted area with map area, legend and the name of the agency with its logo and signature of the authorized person of the agency. If map set consist of more than one map then along with cadastral sheet wise Revenue forest areas and patch wise R.F./P.R.F./P.F./D.P.F area maps, one INDEX map should be submitted showing details of project area with other map information as mentioned above. The right of acceptance or rejection of work/job will rest with ORSAC. In case of rejection, re-observation shall be made by the survey agency.

16. In some cases, GIS mapping of other topographic features referring to satellite image, topo sheets and preparation of Notified forest boundary maps with DGPS boundary coordinates and Generation of DEM can be assigned.
17. To Sanitize, Collate, Homogenize, Quality Checking and Certify the Technical Authenticity of all DGPS Surveyed and Georeferenced Data should be submitted also on on a common “OGC Compliant” Open Sourced based Geodatabase Platform.
18. Any other necessary requirements which is not mentioned in this RFP but may arise in the course of executing the work should be undertaken by the vendor.

End of Notice



**Sd/-**  
**Chief Executive , ORSAC**