

F. No.18014/13/2010-LRD (Part-I)
Government of India
Ministry of Rural Development
Department of Land Resources

NBO Building, Nirman Bhawan
New Delhi

Dated: 31st August, 2016

To

- 1) All the Members of the CTAG (Annexure-I)
- 2) List of the participants (Annexure-II)
- 3) All the Principal Secretaries/Secretaries, Revenue Department of the States/
UTs
- 4) All the Commissioners, Survey & Settlement of the States/UTs

Subject: Record of discussion of the "Core Technical Advisory Group (CTAG)" meeting on re-fixation/revision of rates of survey & re-survey component of DILRMP held under the Chairmanship of Secretary (LR) on 11th August, 2016.

Sir,

The undersigned is directed to forward herewith a copy of the record of discussion of the "Core Technical Advisory Group (CTAG)" meeting on re-fixation / revision of rates of survey & re-survey component of DILRMP held under the Chairmanship of Secretary (LR) on 11th August, 2016 at 11.00 AM in the Committee Room of the Department of Land Resources, G-Wing, NBO Building, Nirman Bhawan, New Delhi for information and necessary action.

Yours faithfully,



(Vipin Kumar Bansal)
DIG (LR)

Copy for information to:

- 1) PPS to Secretary (LR)
- 2) PPS to OSD (LR)
- 3) PPS to SS (LR)
- 4) PS to JS (LR)

Record of discussion of the Core Technical Advisory Group (CTAG) meeting held on 11.08.2016 at 11:00 AM under the Chairmanship of Secretary (LR) in the Committee Room of Department of Land Resources, Nirman Bhawan, New Delhi.

Secretary (LR) welcomed the members of CTAG for an important discussion on re-fixation / revision of rates of survey & re-survey component of DILRMP. List of participants is annexed. He requested Joint Secretary (LR) to deliver points on the issue.

2. Joint Secretary (LR) referred to the earlier meeting of CTAG held on 16-02-16 where in detailed discussions were held on the issue of revision of rates for Survey/Resurvey by various methods. Shri Pankaj Mishra in his presentation during that meeting had stated that Sol had undertaken a number of works on large scale mapping for Departments like Mining, Forest, Water Resources etc., and based on the actual quotation by different vendors, Survey of India had arrived at rates for these activities. Shri Mishra had also mentioned about the four main activities for Survey-Resurvey viz (1) Establishment of Primary, Secondary & Tertiary GCP, (2) Database generation, (3) Data capturing & (4) Field Validation, which could be undertaken by a single agency or multiple agencies. He also mentioned that if the work is given to number of agencies for the different activities, the rates may be higher by 10 to 20% than, if, the work is awarded to a single agency for all the activities.

3. Shri Mishra of Survey of India had mentioned that the rates proposed by Sol is based on 9000 numbers of features in the survey maps which may be different for survey of land in case of DILRMP. JS (LR) had stated that for the purpose of survey-resurvey in Land Records Management, a maximum 500 to 1000 features are likely to be required, based on the experience of the survey-resurvey works in some of the States like Gujarat, Bihar, Haryana and Odisha. Hence, rate of data capturing validation procedures and other activities can be modified accordingly. Chairman during the discussion in previous meeting had suggested that LR Division to give the total nos. of features required for DILRMP and Survey of India, who would in turn give the appropriate rates for the same, after which the final rate can be arrived at. It was also decided that proceedings dated 16/02/2016 of the Committee will be considered complete when these issues are addressed.

4. The details of features to be captured during land parcel survey had been provided to Survey of India after obtaining from State Governments. It was also decided that approval of Chairman of PS & MC Committee would be taken on the rate of survey resurvey work after Sol submits suggestions on the point of reduction of rates due to; requirement of less number of features in the cadastral map and economy of scales in awarding works of various sub activity against serial no. (1),

(2), (3) & (4) of the schedule of rate analysis chart. Shri Pankaj Mishra of Sol has sent the details in this regards by mail dated 22-02-2016, where by, it has been stated that "it is expected that 10% reduction in the rates can be estimated or expected for reduced number of the features requirement as per the data model of the DoLR for the gross scale revenue mapping requirements of the DoLR in DILRMP".

5. For expenditure on sundry items which was mentioned at SI No. 7 of the rate analysis table that includes expenditure of printing of various registers/farms like receiving of application/grievances, field visit for redressal of complaints, corrections of maps & Hard copy generations, printing of village maps (which is different than printing of maps of A0 size), printing of RoRs for promulgation, printing of registers, hardware charger etc. a rate of Rs. 3300 /- was considered against the proposed 7700/- by Sol based on the actual expenses in the field.

6. Briefing on the activities done thereafter, Joint Secretary (LR) informed that after obtaining the probable rates on survey & re-survey from Survey of India, the Department had detailed discussions with Sol and others stakeholders engaged in the work and arrived at the rates for various components of survey/resurvey work as per the details shown in the Power Point Presentation which after discussion got approval of all concerned.

7. At this point of time the Chairman informed about use of two latest technology for survey & re-survey namely LiDAR and Drone. He wanted to assess the feasibility and advantages of these technologies if used under DILRMP.

8. The representatives from Sol while explaining about LiDAR and Drone technology informed that SOI is also carrying out some pilot exercise to explore the feasibility of the use of Drone technology for large scale mapping and the findings of the same can be shared with the DoLR/CTAG. It was also explained that Drone technology would ideally suit for small areas as it offers the advantages of less turnaround time and relatively reduced cost vis-i-vis Aircraft based Aerial data capturing. Drone platform offers a limited load carrying capacity hence high end cameras for very accurate data may not be compatible to it.

9. It was also explained by the SOI representative that LiDAR technology basically has advantages in deriving elevation products viz Digital Elevation Model (Bare earth surface) because of its capability to penetrate through canopy. The DEM (Bare Earth surface) derived from Aerial photographs have to be manually/semi-automatic corrected for vegetation errors with some incremental resource allocations. As far as DILRMP project is concerned, the requirement of planimetric details viz Roads, Parcel boundaries, etc can be met by Aerial camera being necessarily coupled with LiDAR sensor to extract the features required under DILRMP project. However, LiDAR sensor may be coupled with higher resolution

cameras as Medium Format Camera may have a disadvantage associated of more ground control requirements that may be reflected in the accuracy of the final product. Clearly, for 3D City Modelling of urban areas & Settlements, LiDAR technology with photography with multiple oblique cameras is most advantageous technology.

10. As per discussion, the committee recommends revision of rates for survey and resurvey activities for all the three methods, as under:

(Figures in Rs.)

| Sl. No | Component of Survey & Re-survey | EXISTING RATE | | | Rates proposed by Sol | NEW RATES APPROVED | | |
|--------|---|---------------|--------|----------|-----------------------|--------------------|--------|----------|
| | | HRSI | AERIAL | ETS/DGPS | For aerial survey | HRSI | AERIAL | ETS/DGPS |
| 1 | Establishment of Primary, Secondary and Tertiary GCP & Integration of primary control points with Geodetic network of India & documentation of primary, secondary and selected tertiary control points. | 2000 | 2000 | 2000 | 5000 | 5000 | 5000 | 5000 |
| 2 | Satellite database generation – (Acquisition of HRSI satellite data, geo-referencing, ground trothing and Ortho image generation) | 8000 | 9000 | 12000 | 25000 | 22200 | 25000 | 33,300 |
| 3 | Feature capturing – Vectorization of parcel boundary - Point / Line / Polygon feature extraction | 2500 | 2500 | 1000 | | | | |
| 4 | Field Validation – (Upto 25% ground validation, corrections and final hard copy / soft copy generation) | 1500 | 1500 | 1500 | 5000 | 1600 | 1600 | 1600 |
| 5 | Printing of Maps (A0-Rs.300/-, A1-Rs.150/-, A4-Rs.5/-) (Assuming 100 Land parcels in 1 sq.km.) Average printing cost per sq.km | 500 | 500 | 1000 | 1600 | 800 | 800 | 800 |

| | | | | | | | | |
|---------|---|-------|-------|-------|--------------|---------------|---------------|---------------|
| 6 | Integration of textual details with maps (Rs.5 per record) (Assuming 100 land parcel/sq.km.) | 500 | 500 | 500 | 300 | 300 | 300 | 600 |
| 7 | Generation and Serving of Notices along with Land Parcel Details with maps and dimensions to land owners | 500 | 500 | 500 | 800 | 800 | 800 | 800 |
| 8. # | Sundry expenditure including various registers | 500 | | | 7700 | 3300 | 3300 | 3300 # |
| | Total | 16000 | 16500 | 18500 | 45400 | 34000 | 36,800 | 45,400 |
| 9 | 10% reduction due to less number of features (if the vendors are separate for activities 1 & 2,3 and 4) | | | | | 30,600 | 33120 | 40,860 |
| 10 | 15% less if the activities 1 & 2,3and 4 above are given to a single agency. | | | | | 25500 | 27600 | 34050 |

| Component | Existing rates | Proposed activities under the main component | Rate proposed by Sol | Rate considered by CTAG |
|--|----------------|--|----------------------|-------------------------|
| Sundry expenditure including various Registers | 500 | Receiving application/grievances (20%) (1 person/day salary Rs. 600/- per day) | 600 | 600 |
| | | Filed visit for redressal of complaints (Field visit to 40 parcels, 2 person for 2 days) | 2400 | 1000 |
| | | Corrections of maps & Hard copy generations) (1 person/day) | 600 | 600 |
| | | Printing of village map | 200 | 200 |

| | | | | |
|---------------------------------|--|--|-------------|-------------|
| | | Printing of RoR for promulgation (Assuming 200 Land parcels in 1 sq.k.m.) | 1600 | 400 |
| | | Printing of Registers | 1500 | 00 |
| | | Hardware charges | 800 | 500 |
| Total (Rate/sq.km.) | | | 7700 | 3300 |

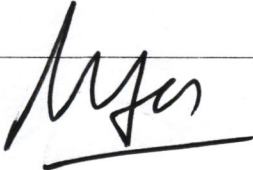

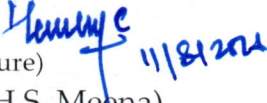



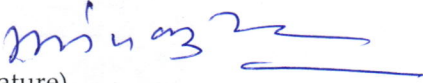
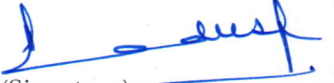
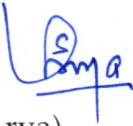

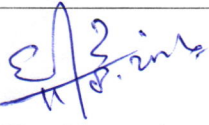
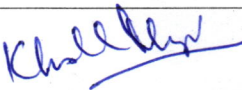
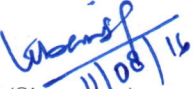

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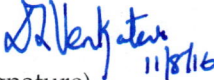
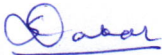

Based on the above discussion, study of Survey of India and inputs from State Governments etc., the Committee recommends following rates for the three methods of survey and resurvey:-

(i). Survey/resurvey rates when activities mentioned under serial No. (1), (2), (3) & (4) i.e. Establishment of Primary Secondary and Tertiary GCP, Satellite Database Generation, Feature Capturing & field validation are given for execution to different agencies, then rate per square kilometres will be Rs. 30,600, Rs. 33,120 and Rs. 40,860 for HRSI, Hybrid Aerial photography and ETS/DGPS methods respectively.

(ii). When the single agency executes all the four components, then the survey/resurvey rates will be Rs. 25,550, Rs. 27,600 and Rs. 34,050 per sq.km. for HRSI, Hybrid Aerial photography and ETS/DGPS methods respectively.

The meeting ended with vote of thanks to the Chair.

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| <p>(Signature)  (Shri Vijay Shankar Madan) Secretary, DoLR</p> | <p>(Signatures)  Signature) (Shri K.P. Krishnan, Spl. Secretary) DoLR</p> |
| <p> (Signature) (Shri H.S. Meena) Joint Secretary, DoLR</p> | <p> Signature) (Ms. Asima Mishra) Joint Director, C-DAC</p> |
| <p>(Signature)  (Shri D.C. Misra) DDG, NIC Headquarter</p> | <p>(Signature)  (J C Sharma) Spl. C.S, Revenue, Hyderabad</p> |
| <p> (Signature) (Shir Manoj Kumar) Deputy Registrar General, ORGS MHA</p> | <p> (Signature) (Shri S. P. Kadupatil) Settlement Commissioner & Dir (LR), Pune, Maharashtra</p> |
| <p>(Signature)  (Dr. V.S. Arya) Chief Soil Survey Officer, Soil & Land Use Survey of India</p> | <p>(Signature)  (K. V. Rudesha) Joint Director of Land and Policy</p> |
| <p>(Signature)  (Dr. Kandhai Singh) Research Officer (Map) The Registrar General, India</p> | <p>(Signature)  (Smt. Mirza) Scientist 'E' ISRO, DoS, Lok Nayak Bhawan</p> |
| <p> (Signature) (Shri V. K. Bansal) DIG, DoLR</p> | <p> (Signature) (Shri S.K. Sinha) Director, Survey of India</p> |

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|--|--|
|  Signature) (Shri D.N.Pathak) DSG, Survey of India |  Signature) (Shri P. Misra) SS, Survey of India |
|  (Signature) (Shri S. Sengupta) STD, NIC Headquarter |  (Signature) (Shri D.S. Venkatesh) Scientist-D, LRISD, NIC Headquarter |
|  (Signature) (Shri Ghansham Khamker) Dy. Director of Land Records, SC, Pune |  (Signature) (Shri K.V.Rudresha) Joint Director, Survey and Settlement, Karnataka |
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List of Core Technical Advisory Group (CTAG) Members

| <u>Sl. No</u> | <u>Name/Designation</u> | <u>Address</u> | <u>Tel/Mob/E-mail</u> |
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| 1. | Secretary, | Department of Land Resources Nirman Bhawan | 23063927 23063183 Secy-lr@nic.in |
| 2. | Additional Secretary | Department of Land Resources Nirman Bhawan | 23062460 aslr@nic.in |
| 3. | Chief Controller of Accounts | Ministry of Rural Development, 5 th Floor, Kristi Bhawan, New Delhi | 23382521 9868266056 Gpgupta10@yahoo.com |
| 4. | Director General, National Informatics Centre (NIC) | A Block, NIC Building, CGO Complex, Lodhi Road | dash[at]nic[dot]in Tel-011-24361504, 011- 24361447 Fax-011-24364873 |
| 5. | Surveyor General of India, | Hathibara Kala Estate, Uttarakhand Dehradun | 0135-2743331 (F) 0135-2744268 (4350) |
| 6. | Director General Forest Survey of India | Kaulagarh Road, P.O. IPE Dehradun- 248195 Uttarakhand (India) | Tel- (91) 0135 - 2756139 Fax- (91) 0135 - 2759104 dgfsi@fsi.nic.in |
| 7. | Director General, C-DAC | First and Second Floors E - 25, Hauz Khas Market New Delhi - 110016 | Phones:+91-11- 26510221 Fax: +91-11-26510207 |
| 8. | The Registrar General of India, or his representative | Ministry of Home Affairs, 2/A, Man Singh Road, New Delhi | Tel-23383761, 23070629,23381623, 23381917,2338481 Fax No : +91-11- 23389278, 23383145 |
| 9. | Chief Soil Survey Officer (Incharge), Soil and Land Use Survey of India (HQs) | IARI Building, Pusa, Delhi- 110012 | |
| 10. | Director, Representative of the National Remote Sensing Centre | CRF Colony, Bala Nagar, Hyderabad, Andhra Pradesh | director@nrsc.gov.in 91-40-23884000 & 4001 Fax-91-40-2387 7210 |
| 11. | Defence Secretary, Representative of Ministry of Defence | South Block, New Delhi | 23012380/23010044(F) defsecy@nic.in |
| 12. | Secretary, Representative of Department of Electronic & Information & Technology | Electronic Niketan, 6, CGO Complex, Lodhi Road, New Delhi: 110003 | 24364041/24363134 secretary@deity.gov.in |
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| | | | |
|-----|--|--|---|
| 14. | Principal Secretary | Revenue Registration, L-Block, 7th Floor, Govt. of Andhra Pradesh, Hyderabad-500022. | Office : 040-23452759 Fax No : 040-23453687 Email-Id : prlsecy_rev_regn@ap.gov.in |
| 15. | Additional Secretary, | Karnataka State Cooperative Marketing, Federation Government of Karnataka, NO. 8 Cunningham Road, Bangalore-560 052 | rajeev-chawla- ias@karnataka.gov.in rajeevchawla ^{ias} @gmail.com om Fax : 040-22265096 Tel- 22253968 22255091 |
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| 17. | Board of Revenue | Government of Gujarat | |
| 18. | Settlement Commissioner | Gujarat Government of Gujrat Dr. Jivraj Mehta Bhawan, Block No.13, 3rd Floor, Gandhinagar | 9978405324 |
| 19. | Director of Land Records Government of West Bengal | CM Secretariat Writers Building, Kolkata-700001 | PH-033-22143206 maitreyi.banerjee@nic.in |
| 20. | Director of Land Records & Surveys | Harabala Path, Ulubari, Guwahati, Assam | |
| 21. | Director | Department of Land Resources Nirman Bhawan | 011-23062456 |

List of participants in the records of discussions of CTAG meeting held on 11.08.2016 under the Chairmanship of Secretary (LR) in the Committee Room of Department of Land Resources, Nirman Bhawan, New Delhi.

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| 2 | Dr. K.P Krishnan, Spl. Secretary | Department of Land Resources | 011-23062460 |
| 3 | Shri H.S. Meena Joint Secretary, | Department of Land Resources | 7079000000 |
| 4 | Shri V. K. Bansal DIG, | Department of Land Resources | 011-23062698 |
| 5 | Shri Prashant Roy, Section Officer | Department of Land Resources | 011-23044627 |
| 6 | Shri S. P. Kadupatil Settlement Commissioner & Dir (LR), | New Admin Bldg Pune, Maharashtra | 9422072799 |
| 7 | Shri Gham Khamker Dy. Director of Land Records, SC, Pune | New Admin Bldg Pune, Maharashtra | 9822423958 |
| 8 | Ms. Asima Mishra Joint Director, C-DAC | C-DAG, Pune | 9881001249 |
| 9 | Shri D.C. Misra DDG, | NIC Headquarter | 011-24360563 |
| 10 | Shri S. Sengupta STD, | NIC Headquarter | 9915772864 |
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| 13 | Shir Manoj Kumar Deputy Registrar General, ORGS, | ORGS, MHA 2A Mam Singh Road New Delhi | 9910876189 |
| 14 | K. V. Rudesha, Joint Director | Survey & Resettlement and Land Record, Bengaluru, Karnataka | 9835508048 |
| 15 | Dr. Kandhai Singh Research Officer (Map) | The Registrar General India, New Delhi | 9868973657 |
| 16 | Smt. Khushboo Mirza Scientist 'E' | ISRO, DoS, Lok Nayak Bhawan | 9871106478 011- 24694745 |
| 17 | Shri S.K. Sinha Director, | Survey of India | 9899144232 |
| 18 | Shri D.N.Pathak DSG, | Survey of India | 9899144232 |
| 19 | Shri P. Misra SS, | Survey of India | 8527453934 |