



Haryana Space Applications Centre(HARSAC)
(Dept. of Science & Technology, Haryana)

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No. HARSAC/11/676-696

Dated: 18.04.2011

To
The All, Deputy Commissioner

Sub: Implementation of the project on Modernization of Land Records in Haryana under NLRMP scheme

Sir,

This is to inform you that HARSAC has taken up the project on Modernization of Land Records in Haryana under centrally sponsored National Land Records Modernization Program (NLRMP) on request from Revenue Department, Haryana. The project includes digitization of cadastral maps (mussavies), integration with Records of Rights (ROR), management of old revenue documents and training and capacity building. High Powered Purchase Committee (HPPC) has outsourced the work under the project to various vendors as detailed under:

S. No.	Name, Address and contact no. of the representative and Vendor/ Firm	Districts/ work assigned
1	Mr. Ashoka Tomar, Project Manager, M/S RAMTECH Software Solutions Pvt. Ltd, B-2 Sector-59, NOIDA-201307 (UP) Telephone 1. 0120-4730010 Fax no: 1. 0120-4730010 Mobile No: 1. 09818796924 Email: ashoka.taomar@gmail.com	Ambala, Kurukshetra, Mahendergarh, Bhiwani. Primary & Secondary GCPs with monumentation for entire state and Software Development
2	Sh. Virender Sangwan, Project Manager, Rolta India Limited, SCO-840, 2 nd floor, Shivalik Enclave, NAC, Manimajra, Chandigarh-160101 Tel: 0172-2730254/2733728/2730921 Fax: 0172-2730254/2733728/2730921 Mob: 09417214628 Email: virender.sangwan@rolta.com	Faridabad, Palwal, Mewat, Rewari, Sonapat, Panipat
3	Sh. K. D. Sood, Project Manager, Pan India Consultant Pvt. Ltd, D-4 Commercial Area, Vasant Kunj, New Delhi-110070 Telephone: 011-26137657/26137659 Fax no: 011-26138633 Mobile No: 09871091366 Email: nmspl@panindiagroup.com	Gurgaon, Jhajjar, Rohtak, Panchkula, Kaithal and Hisar
4	Mr. Joysule Sastree, Project Manager, Infotech Enterprises Limited, 4 th Floor, 'A' Wing, Plot No. 11, Software Units Layout, Infocity, Madhapur, Hyderabad-500081 Telephone: 040-23124006 Fax: 040- 66624368 Email: cosecy@infotech-enterprises.com	Jind, Sirsa, Yamunanagar and Karnal

The nodal officers identified from HARSAC and Director Land Records (DLR) office are as under:

1. Dr. Sultan Singh, Senior Scientist and Project Coordinator, Haryana Space Applications Centre (HARSAC), CCS HAU Campus, Hisar 125 004.
Tel: 01662-232632, Fax: 01662-225958, Mob: 09416243824,
Email sultan@harsac.org
2. Sh. K.L. Sharma, Assistant Director (Statistics), Directorate of Land Records, Haryana , Bays 25-26, Sector-4, Panchkula, Haryana
Tel: 0172-2560750, Fax: 0172-2561526, Mob: 09417849975
Email: dlr_consol@hry.nic

The project is to be completed in a time bound manner. Project Implementation Guidelines have been approved by Financial Commissioner, Revenue Department, Haryana defining the role and responsibilities of all the parties involved in the project. A copy of the Project Implementation Guidelines is enclosed herewith which may kindly be perusal carefully for ensuring timely implementation of the project.

Information and data as per the list enclosed is urgently required for proper implementation of the project. You are kindly requested to supply the information to HARSAC at your earliest possible.

You are also requested to ensure providing all required information, facilities and assistance to the representatives of HARSAC or the Vendors/ Firms whenever approached with regards the work related to above project.

Thanking you,

Yours sincerely,

(R. S. Hooda)
Chief Scientist

Copy to:

1. Director, Department of Science and Technology cum HARSAC, Haryana for information.
2. Director Land Records Haryana for information.

Details of the information required from DLR under Modernization of land Records of Haryana
(In xls sheet)

1.	No. of mussavies(District-wise)	
2.	<ol style="list-style-type: none"> 1. Village Hadbast no., 2. Village Name(spelling should be proper) 3. Village wise No. Musavis 4. Village wise No. Musavis not available 5. NV Codes 6. No. of shedha village wise(Both big and small size) 	
3.	No. of Parcel information(District-wise)	
4.	<ol style="list-style-type: none"> 1. Village Hadbast no., 2. Village Name(spelling should be proper) 3. No. parcel village wise 4. Within village Musavi wise No. parcel 5. Un-consolidated No. of parcel 6. NV Code 	
7.	Total No. of Revenue villages(District-wise)	
8.	Total area as per Revenue record (District-wise)	
9.	Area in acres((each village -wise)	
10.	Survey –re survey required by Electronics Total Station-ETS /Differential Global Position System -DGPS Survey area may give in acres village wise	
11.	<ol style="list-style-type: none"> 1. Total no of field books village wise 2. Total No. of duplex pages in each field book, 3. Total no of Misale Hakiyat books village wise 4. Total No. of duplex pages in each Misale Hakiyat book 5. Total No. deed books, jamabandi last 12 years (Individual village) with total no. pages 	
12.	ROR data in compatible form with GIS format	
13.	ROR data updating status village wise	
14.	Delivery of mussavi to vendors date and time	
15.	Delivery of updated mussavi date and time period	
16.	District level team: DRO :Name and contact no. lane line and cell no. email id DIO : Name and contact no. lane line and cell no. email id SDM: Name and contact no. lane line and cell no. email id All Tehsildars of district: Name and contact no. lane line and cell no. email id All kanoongo of district: Name and contact no. lane line and cell no. email id All Patwari of district village wise : Name and contact no. lane line and cell no. email id	
17.	Ant other information related to this project	
18.		

Project Implementation Guidelines for “Modernization of land Records of Haryana”



Haryana Space Applications Centre (HARSAC)

***Department of Science & Technology,
Government of Haryana, CCS HAU
Campus, Hisar***

Project Implementation Guidelines for “Modernization of land Records of Haryana”

1.0 Roles and responsibilities

1.1. Selected Vendors

- i. To arrange all necessary hardware (PC, Scanner, Printing, Stationery) & software at the centralized location to be provided by Revenue Department. All expenditure for operating the aforementioned equipment shall be borne by the vendors. Only the space along with required electric connections and water supply will be provided by the Revenue Department. All recurring expenditure on electricity/ water bills etc will be borne by the vendors.
- ii. To deploy the key personnel as described in the RFP document. Record of these personnel will be provided to HARSAC.
- iii. All the four vendors will liaison with concerned Tehsildars/ District Revenue Officers (DRO) to study the system related to cadastral maps and Jamabandis etc. They will also identify requirements across District/ Tehsil to help digitize the cadastral maps in a common manner so that the same can be used by all the concerned offices across the state.
- iv. Based upon the above study all the vendor will collectively prepare Functional Requirement Specifications (FRS) and Software/ system Requirement Specifications (SRS) etc. within three weeks after the award of the contract.
- v. Vendor will execute a confidentiality agreement incorporating that any data/information which will be handled/ shared will be kept in strict confidence and neither the vendor or its associates or channel partners or Vendor’s employees part with the data/information in any form to anybody without prior written consent of the HARSAC, Haryana.
- vi. Each vendor will assign a representative at the tehsil level for interaction with the Tehsil officials. He shall be authorized to collect and deposit all maps/ data, sign the documents/ certificates etc related to the project.
- vii. The vendor will return the maps in the same condition as per the approved schedule, after the scanning activity is completed.
- viii. Vendor has to store the map in a damp free environment to prevent any damage.
- ix. To ensure that the digital vector data is accurate and complete, as per the requirement detailed out in the RFP document. Accuracy is defined in terms of positional correctness, digital vector data and topological completeness, subject to various tolerance limits, as specified in the RFP document.
- x. Project will be deemed to be completed after establishing the completeness of the work in all respects along with accuracy as specified in the RFP document.

- xi. Even, if an error is detected at later stage after the project period & during the maintenance period, the vendors will carry out the correction in the digitized data.
- xii. After successful implementation of project, vendor will handover Technical document as well as a User Manual to HARSAC. This shall be the sole property of the Revenue Department Haryana.
- xiii. The final output should run on HARLIS system already developed and made operational at district headquarters of Haryana by NIC. It should be made operational at all the Tehsil headquarters of the state.
- xiv. Vendors will impart satisfactory training to users after implementing the software. All necessary changes, suggested during training & implementation will be incorporated in the project.

1.2 Revenue and Disaster Management Department

i. Constitution of State Level Monitoring and Review Committee:

A State-level Monitoring and Review Committee shall be constituted in State for the NLRMP under the chairpersonship of the FCPS, Revenue Department. The constitution of the committee may be as under:

FCPS, Revenue and Disaster Management Department	Chairman
FCPS, Finance and Planning Department	Member
FCPS, Science and Technology Department	Member
FCPS, Information Technology Department	Member
All the four Divisional Commissioners	Members
Representative of Department of Land Records, MORD, GOI	Member
Director, Land Records, Haryana	Member
Secretary	
Director, Science and Technology Department	Member
State Informatics Officer, NIC, Haryana	Member
Chief Scientist, HARSAC	Member

The Committee shall monitor and review the progress of implementation of the Programme, facilitate the necessary process re-engineering, and guide the implementation authorities. The Committee will review the work of the project once in a month.

Director Land Records will act as the **State Project Coordinator** and respective **Divisional Commissioners will act as the Divisional Project Coordinators for this project. Divisional Project Coordinator will monitor and review the progress of the work at the Divisional Level and submit a report to the State Project Coordinator once in a month**

ii. Constitution of District-level Monitoring and Review Committee

All the districts need to have a **District-level Monitoring and Review Committee under the Chairpersonship of the respective Deputy Commissioner.** The constitution of the committee may be as under:

Deputy Commissioner	Chairman
Sub-Divisional Magistrate (SDM)	Member
District Revenue Officer (DRO)	Member Secretary
District Informatics Officer, NIC	Member
Senior Scientist, HARSAC	Member

Committee may induct any officer as member as and when required.

The Committee will review the progress of implementation of the Programme at least once in a month and shall submit report to the **Divisional Project Coordinator.**

- iii. Department will arrange to provide funding to HARSAC for outsourcing the work defined in RFP document and for purchase of High Resolution Satellite Imageries (HRSI).
- iv. Department will arrange to provide required space along with required electric connections and water supply to the four vendors at Hisar to establish their Business Process Centre. First floor of the Patwar Training Centre/ Hostel in Azad Nagar, Hisar was jointly inspected by the Technical Committee and the representatives of the vendors and found suitable for this purpose. However, it requires renovation in terms of civil/ electrical and PH work. This needs to be done by the Department at the earliest possible before the vendors start their work.
- v. Department will provide small space at each district headquarter in DC/ DRO office to the concerned vendor for installing his scanning machine. All the mussavies and revenue documents to be scanned will be provided to the vendor at this site after making a proper list of the same. The required maps, documents and any other data shall be made available to the vendors within fixed time schedule.
- vi. Revenue Department representative shall prepare report of all the maps, missing maps and condition of maps in presence of the vendor representative. The Report shall be jointly signed by the Vendor and DLR representative.
- vii. The Department will arrange and collect the maps submitted to different associated department and hand over to the vendor.
- viii. The map related to the each tehsil shall be collected and handed over to the vendor in single lot.
- ix. To arrange the supply of existing RoR Jamabandi data in HALRIS in a compatible format for linking with the digital cadastral maps in a stipulated timeframe.
- x. To conduct field verifications of updated Mussavis as provided by the Vendor.
- xi. To provide space for developing Primary Control Network at each Tehsil level in the state as prescribed in the RFP document.

- xii.** One Kanungo and one Patwari of the concerned District would be required to be deputed at HARSAC for the project period to assist with regards to understanding the cadastral system and its terminologies, reading of mussavies, language etc.
- xiii.** To provide the logistic support to the visiting scientists in the field.
- xiv.** To provide all support and required authorization for supply of required data from various divisions, related departments and other government agencies.
- xv.** To arrange for authorization/ clearances from various departments like Police for conducting un-interrupted field surveys by the vendors.
- xvi.** Director Land Records (DLR) will issue an order to issue only computerized RoRs and ban the issue of manual RoRs where computerization and updation of the land record has been completed villagewise. Thereafter, further mutation and updation of data shall be done in the computerized system on an ongoing basis and only computerized copy of RoR will be issued for that village.
- xvii.** Responsibility of Revenue officials should be fixed to ensure 100% checking, verification and validation of the data entered. The patwari shall carry out 100% checking, and Revenue Inspector/ Kanungo, Tehsildar, SDM/ DRO and Deputy Commissioner should randomly check 50%, 10%, 3% and 1%, respectively, of the data entered, so as to ensure the accuracy of the data entered vis-à-vis the manual records, or as stipulated in the State laws/ manuals. A strict view should be taken where too many errors are found un-checked.
- xviii.** All pending mutations shall be updated and the data entry shall be completed on priority basis. All spatial data shall also be updated and digitized as described below.
- xix.** A half day workshop on rolling out the project will be organized by HARSAC at Kurukshetra in which DCs, DROs and DIOs of the respective districts will be invited.
- xx.** Arrange for wide publicity about the advantages of the Programme at the revenue village, gram panchayat, tehsil, district and State levels, involving elected representatives in different media and fora. Success stories of the Programme may be highlighted through newspapers, radio, television, cinema slides, posters, video films, road shows, publications, literature, etc.

1.3 HARSAC

- i.** HARSAC will prepare a Service Level Agreement (SLA) and submit to DLR/ FCR for approval.
- ii.** To execute the project up to the end through outsourcing to the service providers.
- iii.** The technical Committee already constituted under the Chairmanship of the Chief Scientist, HARSAC will oversee the execution of the project activities in terms of technical aspects and accuracy of mapping and data.

- iv. Vendor will interact with this team for technical guidance.
- v. Approval of Functional Requirement Specifications (FRS) and Software/ system Requirement Specifications (SRS) prepared by the vendors for taking up the project.
- vi. Processing and payment of the bills submitted by the Vendors.
- vii. Purchase of High Resolutions Satellite Imageries (HRSI), wherever required, providing the same to the service provider.
- viii. To check and verify the quantity and quality of the work and authentication of the deliverable to be supplied by the vendor.
- ix. Quality assurance will comprise of the following aspects:-
 - a. Positional Accuracy
 - b. Attribute Accuracy
 - c. Logical consistency
 - d. Completeness
 - e. Mosaicing fit of the data
 - f. Standardization of Spatial information data infrastructure
- x. At each step of the process, adopted for computerization and geo-referencing of the village map, quality check will be applied to ensure error free database generation. However, the following major quality checks are designed to ensure the project objectives:
 - a. Quality check on merged product generation using satellite data (QC 0)
 - b. Quality check for Inventory and coding of the maps (QC 1)
 - c. Quality check on first hardcopy output (QC 2)
 - d. Quality check on softcopy of village maps (QC 3)
 - e. Quality check on final hardcopy output (QC 4)
 - f. Quality check on geo-referenced village maps (QC 5)
 - g. Quality check on mosaic of geo-referenced village maps (QC 6)
 - h. Quality check on final deliverables (QC 7)
- xi. The following criteria for testing digital vector data for completion and accuracy may include:
 - a. Physical Verification of test plot on tracing paper on random sample basis.
 - b. Random checking of features, during which, not more than 10% of points tested should be +/- 0.1% of the original maps.
 - c. Verification of topological correctness by actually constructing the topology.
 - d. Verification of job requirements reflected in design document.
- xii. The digital data failing to confirm these tests will not be accepted. Vendor shall be given an opportunity to rectify errors to the satisfaction of HARSAC within a stipulated time, failing which the work order shall stand terminated. In such a case, HARSAC reserves the right to get the work executed by another Vendor at the cost of defaulting party. For details RFP document may be referred.

- xiii. Standards for data structure for integration with other data defined by HARSAC/ DOS, GOI will be followed.
- xiv. HARSAC will impose penalty on the vendors for non adherence to the specified time frame as per the RFP document.
- xv. HARSAC will carry out the acceptance test for every deliverable. The Vendor has to arrange for demonstration of Digitization & Updating of Cadastral Maps (Mussavis) and Complete Document Management of Old Records project at their own level for undertaking the acceptance test on the date and time fixed by HARSAC, Haryana.
- xvi. HARSAC will have the right to terminate the entire and / or part of the contract by giving one month notice in writing in the event described in the RFP document.

2. Payment

- i. Revenue Department will provide 100% funds for the project to HARSAC in advance. Interest incurred, if any , from the funds remain unutilized with HARSAC will be deposited to the Revenue department.
- ii. The satellite data will be purchased from the National Remote Sensing Centre (NRSC), Hyderabad, being the nodal agency in the country for supply of satellite data. Advance funds will be deposited by HARSAC to NRSC for this purpose as per their terms and conditions for supply of data.
- iii. The payment to the vendors for the work carried out by them will be made as specified in the RFP document.
- iv. For making payment the vendor will raise the bill in the name of Chief Scientist, HARSAC on completion of the task as specified in the RFP document and submit it to HARSAC.
- v. The bill will be sent to Deputy Commissioner concerned for verification. After the verification of concerned Deputy Commissioner, HARSAC will release the payment to the concerned vendor. If found necessary, DLR will check the work on random basis for quality of work and conformity with guidelines so that necessary amendments may be made before final payments are made.
- vi. The payment process will be completed in a time bound manner.

3.0 Man Power/ Infrastructure Requirements

3.1 HARSAC :

3.1.1 Manpower

Following Contractual manpower will be required for HARSAC for the project period to effectively implement various activities of the project. The cost for hiring

the contractual manpower will be born through institutional charges to be made available to HARSAC @ 6% of the total cost of the project.

S.No	Description	No.
1	Retired experienced Revenue Expert as a consultant	1
2	Retired Survey Expert from SOI for monitoring survey work and checking accuracy of the data	1
3	Research Associate, one associated with each vendor (As per HARSAC norms) @ Rs. 18000 +1800 (HRA) per month	4
4	Project Fellow, one associated with each vendor (As per HARSAC norms) @ Rs. 12000+ 1200 (HRA) per month	4
5	Project Assistants, two associated with each vendor (As per HARSAC norms) for field verifications and other spade work	8
6	Secretarial Assistants/ Computer Operators	2
7	Security Personnel for security at the working site	3
8	Office Attendant/ Messenger	1

3.1.2 Software

S.No	Description	No.
1	Arc GIS (Workstation)	5
2	ERDAS Professional	5
3	LPS	1
4	PRIMAVERA SUITE for project monitoring and management	1
5	Auto CAD map	5
6	Database software Oracle	1

3.1.3 Hardware

I. Dual-way Workstation Specifications: One No. (To work as the Server)		
S. No	Item	Specifications
1	CPU	Up to two Intel® Xeon® Dual and Quad core 5600 series Processor(s) with Thermal Design Power up to 130W to be populated with Dual Xeon Six-core X5650 2.66 GHz/ 12 MB L3/ 6.4 GT/s processors or Equivalent/ higher
2	Memory	6 x 4GB DDR3 1333 MHz ECC DDR Memory with 192GB Memory Upgradability
3	DIMM Slots	12 DIMM Slots to facilitate easy upgradability in future
4	Chipset	Intel 5520 Server class chipset/ higher/ equivalent
5	Mother Board	Server Class WS Mother Board with Intel 5520 Chipset having a minimum of 5 I/O slots including PCI-express slots or equivalent/higher
6	HDD	Support up to 8 standard SATA Bays, to be populated with 4*1 TB

		7200 RPM SATA Hot-Swap HDD
7	Disk Controller	Integrated 6 Port SATA controller
8	Form Factor	Maximum 5U
9	Ethernet Interface	Intel Dual-port Gigabit Ethernet LAN Controller supporting Wake-LAN, VLAN, Teaming with Adapter Fault Tolerance & Adaptive Load Balancing in Windows Vista OS.
10	Graphics Controller	Nvidia Quadro FX 5800 / 4 GB / PCI-E x16
11	PCI Slots	1* 32/33 slot (5V); 1* PCI Express x8; 1* PCI Express x4 & 2* PCI Express x16
12	Ports	1 serial port (excluding 1 onboard Serial header), 4+2 USB, Dual Gigabit Ethernet ports
13	Keyboard	107 keys OEM USB KBD
14	Mouse	OEM USB Mouse
15	Monitor	21.5" Wide TFT
16	Optical Drive	22X SATA DVD Writer drive
17	Power Supply	Maximum 700W Non-Redundant SMPS
18	Additional Features	Virtualization technology, Turbo boost and Hyper-threading
19	Security Features	Chassis Intrusion, User password, Supervisor password, TPM (Trusted Platform Module)
20	Mgmt Features	Intel Deployment Assistant, Alert Notification through pop up and E-mail, Hard disk prefailure alerts, drive space and virtual memory size monitoring, Asset monitoring for CPU, memory, HDDs, motherboard, CPU Process utilization, device lock, HDD change alert, Autonomous Hardware Event Logging and power off, Console redirection
21	OS Support	Windows Vista & RHEL 5.x

II. High end desktop-workstations: 10 Nos. (One for each of the 10 districts)		
S.No	Item	Specifications
1	CPU	Intel Xeon W3520 - 2.66Ghz /4.8 GTps/8MB L3 cache or higher
2	Memory	4 DDR3 1066 MHz unbuffered ECC DDR3 Memory, up to 16 GB upgradability
3	DIMM Slots	4 DIMM Slots to facilitate easy upgradability
4	Chipset	Intel X58 chipset or equivalent/higher
6	HDD	500 GB SATA 7200 RPM HDD expandable up to 4 HDD
7	Disk Controller	Integrated 6 Port SATA controller
8	Form Factor	Tower
9	EthernetInterface	Single Gigabit Intel 82567LM Controller
10	Add-on Graphics	Nvidia Quadro FX 5800 / 4 GB / PCI-E x16
11	PCI Slots	2 PCIE x16, 1 PCIE x4, 2 PCIe x1 & 1 PCI slots
12	Ports	8 USB ports, 1 RJ-45 port, 1 IEEE port, 1 S/ PDIF mic in/mic out ports
13	Keyboard	107 keys OEM USB KBD

14	Mouse	OEM USB Mouse
15	Monitor	21.5" Wide TFT
16	Optical Drive	22X SATA DVD Writer drive
17	Additional Features	Virtualization technology, EIST and Execute disable bit
18	Management features	HDMS (HCL Desktop Management Software), SMBIOS v2.5, PCI v2.0, ACPI 2.0, WOL (Wake on LAN), PC health monitoring features
19	Security features	Chassis Intrusion, User password, Boot up password.support
20	Power Supply	Max 500W 80 plus efficient SMPS
21	OS Support	Win XP Proff, Win Vista, Win 7, Ubuntu 8.0.10 (32 bit).

Note: Above configurations may be compared with latest available configuration at the time of final decision and date of procurement.

3.1.4 Other Equipments: UPS-10 KVA (Online) 2 Nos.

The cost of the above software and hardware may be provided by Revenue Department to HARSAC from the project funds. On completion of the project the hardware and software may be shifted to the Revenue Department for use in training to the Revenue Officials on the project on the data to be generated.

3.2 Revenue Department

3.2.1 Manpower

Revenue Department will require at least two GIS Specialist at each district and one GIS Assistant at each Tehsil to continuously update and the geospatial data being created and provide services to the farmers/ citizens/ users related to these revenue records. The brief of these posts may be as under:

Post-I : GIS Specialist

No. : 42 (Two at each district)

Essential qualifications: Ist Class M. Sc./ B. E./ B. Tech. in Computer Science/ Information Technology/ Electronics & Communication/ Civil Engineering/ Remote Sensing/ GIS/ Geoinformatics/ from a recognized university/ institute

Or

Ist Class Master's in Natural Sciences/ Geography with Post Graduate Diploma in Remote Sensing/ GIS from a recognized University/ Institute.

Pay Scale: Rs. 9300-34800, GP-4600

Post-II : **GIS Assistant**

No. : 69 (one at each Tehsil)

Essential qualifications: Ist Class Polytechnic Diploma in Computer Science/
Civil Engineering

Pay Scale: Rs. 9300-34800, GP-3200

Some to the vacant posts of Patwaries may be converted to the post of GIS Assistants to reduce the financial liability on the state. These GIS Assistants should be provided training in GIS immediately after recruitment to enable them handle geospatial revenue data.

Creation/ conversion and recruitment of the above posts may be initiated immediately so that these may be associated with the process of the Modernization of Land Records and get acquainted with the entire process of scanning, digitization, geo-referencing and digital database creation of the land records