



**Municipal Corporation of Greater Mumbai**

**Request for Proposal (RFP)  
for  
Identification of Unauthorized  
Development in MCGM jurisdiction &  
detecting changes by procuring &  
customising archived Satellite images &  
procurement of allied softwares.**

Bid Notification No.: <7100206725 >

Issued By

(Removal Encroachment Department)  
Municipal Corporation of Greater Mumbai

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## 1. Glossary

Abbreviations and Acronyms	Description
AMC/CMC	Annual Maintenance Contract/ Comprehensive Maintenance Contract
API	Application Programming Interface
BEC	Bid Evaluation Committee
BoM	Bill of Material
BoQ	Bill of Quantity
CCN	Change Control Notice
CMMi	Capability Maturity Model Integration
COTS	Commercial Off the Shelf Solution
DSC	Digital Signature Certificate
EMD	Earnest Money Deposit
FMS	Facility Management Services
FRS	Functional Requirement Specification
GoI	Government of India
GIS	Geographical Information System
HoD	Head of Department
SI	System Integrator
IT	Information Technology
ISMS	Information Security Management System
LDAP	Lightweight Directory Access Protocol
LoI	Letter of Intent
Last three financial years	2016-17, 2017-18, 2018-19
Last five financial years	2014- 15, 2015-16, 2016-17, 2017-18, 2018-19
MCGM	Municipal Corporation of Greater Mumbai
OEM	Original Equipment Manufacturer
RS	Remote Sensing
SLA	Service Level Agreement
SRM	Supplier Relationship Module
SRS	System / Software Requirement Specification

**MUNICIPAL CORPORATION OF GREATER MUMBAI****Assistant Commissioner (Removal of Encroachment)**

A.C.(RE) /...../...../dated

**E-TENDER NOTICE****Bid No.: - 7100206725**

**Subject: Identification of Unauthorized Development in MCGM authority & detecting changes by way procuring & customizing archived Satellite images & procurement of allied software.**

The Municipal Corporation of Greater Mumbai (MCGM) invites % **basis e- tender** for the aforementioned work from service providers for identification of Unauthorized Development in MCGM jurisdiction & detecting changes by way procuring & customizing archived Satellite images & procurement of allied software from organizations i.e. eminent firm, Proprietary/Partnership Firms/Private Limited Companies/ Public Limited Companies/Companies registered under the Indian companies' act 2013, the contractors registered with the Municipal Corporation of Greater Mumbai, (MCGM) and from the contractors / firms equivalent and superior classes registered in Central or State Government / Semi Govt. Organization / Central or State Public Sector Undertakings/Private sectors etc., will be allowed.

Bidding Process will comprise of THREE stages.

The application form can be downloaded from MCGM's portal (<http://portal.mcgm.gov.in>) on payment of Rs. 8500/-+ Rs. 425/-(GST@5%)=Rs. 8925/-.

The applicants not registered with MCGM are mandated to get registered (Vendor Registration) with MCGM for e-tendering process & obtain login credentials to participate in the online bidding process.

i) To download the application form, for those applicants not having vendor registration, need to apply first for vendor registration at the office of Account Officer (FAR), 3rd floor, Municipal Headquarter.

ii) Followed by SRM login ID and password to be obtained from Central Purchase Department (CPD), Office at Byculla, Bakariadda, Mumbai

iii) For e-Tendering registration, enrollment for digital signature certificates and user manual, please refer to respective links provided in 'Tenders' tab. Vendors can get digital signature from any one of the Certifying Authorities (CA's) licensed by controller of certifying authorities namely, Safes crypt, IDRBT, National informatics center, TCS, CUSTOMS, MTNL, GNFC and e- Mudhra CA.

The technical and commercial bids shall be submitted online up to the end date & time mentioned below.

Sr. No	Description	E-tender Price	Estimated Project cost (Including GST)	Period of Work	EMD	Start date & Time for online Bid Downloading	End date & Time for online Bid Submission
1	Identification of Unauthorized Development in MCGM authority & detecting	Rs. 8500/- + Rs. 425/-(GST	<b>Rs.10,28,61,896/-</b> (Rs. Ten Crores twenty-eight Lakh Sixty-one thousand Eight hundred and Ninety-six only)	4.3 Years (51 Month s)	<b>Rs. 10,28,620/-</b> (Rs. Ten Lakh Twenty-Eight	From 12 .03.21 at 11.00hrs	till 01.04.21 at 11.00hrs

changes by way procuring & customizing archived Satellite images & procurement of allied software's.	@5% = Rs. 8925/-			thousand and Six hundred twenty only)		
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**Note: Last date for online payment of Earnest money Deposit (EMD) is on or before due date & time prescribed.**

In terms of the 3 stage system of e-tendering, a Bidder will be required to deposit, along with its Bid, an Earnest Money Deposit of **Rs. 10,28,620/-** (Rs Ten Lack Twenty-Eight thousand and Six hundred twenty only), (the "EMD"), refundable in accordance to the relevant clause of bid document, from the Bid Due Date, except in the case of the selected Bidder whose Bid Security/EMD shall be retained. The Bidders will have to provide Earnest Money Deposit through the payment gateways while submitting the bids. The Bid shall be summarily rejected if it is not accompanied by the Earnest Money Deposit.

As per THREE Packet systems, the document for Packet A & B is to be uploaded by the bidder in vendors' document online in Packet A, B. Packet A, B & C shall be opened on dates as mentioned in header data. All the responsive and eligible bidders if they so wish can be present at the time of opening of bids, in the office of Assistant Commissioner( Removal of Encroachments) City, F/South ward. The Packet C shall be opened if bids submission in Packet A & B satisfies/includes all the requirements and same are found acceptable to the Authority.

The dates and time for submission and opening the bids are as shown in the Header Data. If there are any changes in the dates the same will be displayed on the MCGM Portal. (<http://portal.mcg.gov.in>). The Applicants interested for the above referred works may contact the Assistant Commissioner( Removal of Encroachments) at the following address on any working day during office hours-- Office of the Asst. Commissioner (R.E.) City, Room No. 44, Third Floor., F/S Ward Building, Dr. B.A. Rd., Parel, Mumbai-12. Email ID – **[ac.recity@mcgm.gov.in](mailto:ac.recity@mcgm.gov.in)** Phone No.- **[24134560](tel:24134560)** (Ext- 313) Fax No.- **[24145028](tel:24145028)**

The pre-bid meeting will be held on 19.03.21 at 11.00, venue of the same is at Office of the Asst. Commissioner (R.E.) City, Room No. 44, Third Floor., F/S Ward Building, Dr. B.A. Rd., Parel, Mumbai-12. The prospective bidder(s) should submit their suggestions/observations, if any, in writing / email minimum 2 days before Pre-bid meeting by dispatch & on email id - **[ac.rews@mcgm.gov.in](mailto:ac.rews@mcgm.gov.in)** Only suggestions / observations received in writing/email will be discussed and clarified in pre-bid meeting and any modification of the tendering documents, which may become necessary as a result of pre-bid meeting, shall be made by MCGM exclusively through the issue of an addendum/corrigendum. The tender uploaded shall be read along with any modification. Authorized representatives of prospective bidder(s) can attend the said meeting and obtain clarification regarding specifications, works & tender conditions. Bidders shall note that any corrigendum issued regarding this tender notice will be published on the MCGM portal only. No corrigendum will be published in the local newspapers. Bidders shall note that any corrigendum issued regarding this tender notice will be published on the MCGM portal only. No corrigendum will be published in the local newspapers. The applicants may obtain details of 24 ward offices of MCGM from Website of MCGM (<http://portal.mcg.gov.in>)

The MCGM reserves the rights to accept any of the application or reject any or all the application received for above works, without assigning any reasons thereof.

---Sd---

**Assistant Commissioner (R.E.) WS**

## **2. Invitation of Bid**

### **2.1 Project Background**

From the time of its establishment in 1888 as Municipal Corporation, numerous non-political groups, NGOs and organizations of citizens have worked closely with the civic body in the fields of education, public health, creation of urban amenities, art and culture, heritage conservation, citizen services etc. where Geospatial technology have proved its remarkable impact in bringing change in the system. Geographical Information System, GPS Technology, Remote Sensing Technology and others are being used extensively in MCGM projects to automate departmental workflows and contribute towards Ease of Doing Business.

MCGM has implemented integrated Desktop, Web and Mobile GIS based solutions in few departments and other departments are working to achieve individual departmental objectives using GIS platform for taking integrated decisions required in critical Central Government missions like Ease of Doing Business as well as common decisions based on more than one departmental GIS data.

The Department for Removal of Encroachments of Municipal Corporation of Greater Mumbai (MCGM) seeks proposal from the interested System Integrator (SI) to bid for the RFP titled “Change Detection, identification of Unauthorized Development in MCGM jurisdiction and 2D mapping of the city using archived Satellite images”. The said project is to be implemented for the entire MCGM administrative limits.

The vision of MCGM is to utilize Remote Sensing (RS), Geographical Information System (GIS) and Information Technology and enhance Effectiveness of Removal of Encroachment initiatives and to reduce dependency on humans using reliable, accurate and timely information.

In this case, the vision statement emphasizes on certain key aspects, which are:

1. Effectiveness of Removal of Encroachment Governance: Aims to improve the administration of removal of encroachment initiatives and assist informed decision making based on authentic past data.
2. Reliable, accurate and timely information: This focuses on streamlining, processing and making the information available on demand to the decision makers in a ready to use formats.

### **2.2 Project Objective**

The vision statement chalks out a clear goal for this project which is ‘to establish a semi-automatic system using historic and current satellite images database as a tool to assist Removal of Encroachment department to take proactive initiatives to deter encroachment by the people and ensure authorized developments within MCGM.’



The context set for the project, demands The Department for Removal of Encroachments, MCGM to achieve following objectives:

1. To procure archive satellite images of Mumbai for different years, process them and prepare various geospatial products as mentioned in detailed in the Scope of work section.
2. Develop, Implement & maintain Enterprise GIS system which has capability to detect changes between different satellite images.
3. Integrate Geospatial data with existing data provided by MCGM and identify unauthorized, illegal constructions & encroachments in Mumbai area.
4. Integrate Geospatial applications with existing IT system from different departments as per the requirements provided by MCGM.

### 2.3 Bid Document Notice

1. This bid Document is being published by Assistant Commissioner (Removal of Encroachment), Municipal Corporation of Greater Mumbai, for selection of System Integrator for **Identification** of Unauthorized Development in MCGM authority and detecting changes by way of procuring and customizing archived Satellite images & procurement of allied software's.
2. Bidder agency are advised to study this bid document carefully before submitting their bids in response to the Bid Notice. Submission of a bid in response to this notice shall be deemed to have been done after careful study and examination of this document with full understanding of its terms, conditions and implications.
3. This bid document is not transferable.
4. The complete bidding document has been published on <https://portal.mcg.gov.in> for the purpose of downloading. The downloaded bidding document shall be considered valid for participation in the electronic bidding process (e-Tendering) subject to the submission of required tender/ bidding document fee and EMD.
5. Bidders who wish to participate in this bidding process must register on <https://portal.mcg.gov.in> → Online Services → Online Vendor Registration.
6. To participate in online bidding process, Bidders must procure a Digital Signature Certificate (Class - II) as per Information Technology Act-2000 using which they can digitally sign and encrypt their electronic bids. Bidders can procure the same from any CCA approved certifying agency, i.e., TCS, Safecrypt, Ncode, etc. Bidders who already have a valid Digital Signature Certificate (DSC) need not procure a new DSC.
7. A Three-envelope selection procedure shall be adopted. i.e., Packet A, B & C
8. Bidder (authorized signatory) shall submit their offer online in electronic formats of technical (including prequalification documents) and financial proposal.
9. MCGM will not be responsible for delay in online submission due to any reason. For this, bidders are requested to upload the complete bid proposal, well advance in time so as to avoid

issues like slow speed, choking of web site due to heavy load or any other unforeseen problems. For queries related to eTender, kindly contact; Tel: 022-24811275, Email: [etendering.it@mcgm.gov.in](mailto:etendering.it@mcgm.gov.in)

10. Bidders are also advised to refer “Bidders Manual Kit” available at <https://portal.mcgm.gov.in>  
→ Tenders → Tenders & Quotations → Tender Manuals for further details about the e-tendering process. **Bidder are requested to fulfill all the pre-requisites mentioned in the User Manual for Vendors – QCBS with percentage rate Bidding Process, etc. before bidding for the RFP.**

#### **2.4 Bid Invitation**

Assistant Commissioner (Removal of Encroachment), Municipal Corporation of Greater Mumbai invites bidders to submit their technical bids and financial offers for the RFP for Identification of Unauthorized Development in MCGM authority and detecting changes by way of procuring and customizing archived Satellite images & procurement of allied software's. in accordance with conditions and manner prescribed in this bid document.

### 3. Pre-Qualification Criteria

Any entity that meets the below defined pre-qualification criteria can participate in the bid process. Entities desirous of participating in the bid process need to pass through the three-stage tender process each with its own qualification criteria.

#	Bidders Qualification Criteria	Documentary Evidence
1.	The Lead Bidder and the consortium member must be a company in India registered under the Company's Act 1956/2013 or a Partnership Firm registered under Indian Partnership Act, 1932 or a Proprietorship firm. Maximum <b>two</b> companies shall be allowed in a consortium including the Lead Bidder.	Certified copy of Partnership Deed/Certified copy of Certificate of Incorporation/ Registration Certificate
2.	The Average Annual Turnover of the last three financial years from GIS/ Remote sensing-based projects/ services should be: <ul style="list-style-type: none"> <li>• For Sole bidder: 3.10 Cr (30% of estimated cost)</li> <li>• For Consortium <ul style="list-style-type: none"> <li>➤ All the members jointly should meet 3.10 Crore Turnover requirements.</li> <li>➤ Lead Bidder should have 55 % of the Turnover i.e.Rs.1.70 Crores individually</li> </ul> </li> </ul>	Copy of the audited Balance Sheet and Profit & Loss Statement of the company and/or Certificate from the Chartered Accountant clearly stating the turnover-from <b>IT Services Business which includes software development, customization, implementation and post implementation support</b> over the last three financial years. Should be verified from the document submitted by the SI.
3.	The Lead Bidder should have positive net worth in last three financial years.	Certificate from the Chartered Accountant clearly stating the positive net worth.
4.	<p>i. Three similar completed works or currently executing three works of similar nature each costing 30% of estimated cost. *</p> <p style="text-align: center;">OR</p> <p>ii. Two similar completed works or currently executing two works of similar nature each costing 40% of estimated cost. *</p> <p style="text-align: center;">OR</p> <p>iii. One completed work or currently executing</p>	<p><u>Completed Projects:</u> Work Order &amp; Work Completion certificate signed by a competent authority of the client clearly stating the scope of the project, completion of the project and contact details of reference person.</p> <p><u>Ongoing Projects:</u> Work Order signed by a competent authority clearly stating the scope of the project and contact details of reference person. Certificate signed by a competent</p>

	<p>one work of similar nature of aggregate 60% of estimated cost. *</p> <p>The value of completed works shall be brought to current costing level by enhancing the actual value of work at the compound rate of 10 % per annum; calculated from the date of completion to last date of receipt of application for tenders.</p> <p>*In case of ongoing works to be considered, the bidder must have received payment bills of 80% of the contract sum for the work/works executed last day of month previous to the one in which bids are invited.</p>	<p>authority clearly stating that the project has reached overall Go-Live stage of the project (not specific module) and 80% of the payment of the total project amount has been released to the vendor.</p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> <li>• Those projects with scope only for supply of COTS GIS/ RS products will not be considered.</li> <li>• Those projects with scope only for Survey will not be considered.</li> <li>• Project experience (National or International) shall include 2D/3D GIS project, Base Map preparation, LULC, Change Detection &amp; GIS Software development and implementation</li> </ul>
5.	The Bidder should have at least 50 technical resources on its payroll as of the date of submission of the bid.	Certificate from HR for the overall count of resources, Complete resumes of the resources required for the project.
6.	Lead Bidder or consortium member should have valid at least CMMI Level 3 or higher and ISO 9001:2015 certification and ISO 27001	Self-attested Copy of valid certificate of CMMI Level 3 or higher and ISO certification for 9001:2015 and ISO 27001
7.	The Bidder should have or shall be ready to set up a project office in Mumbai Metropolitan Region (MMR).	Rental Agreement/ Utility Bill in the name of the company/Sale Deed or Declaration that the office will be set-up within a period of 30 days from the date of issuance of Letter of Intent. Office for customization, data preparation, LULC etc must be setup in MCGM premises as per Geospatial Policy of GOI.
8.	The Bidder should have valid documentary proof of GST registration number and PAN	Self-attested Copy of GSTIN Number and PAN card
9.	The Bidder should have valid submit Income Tax returns for the last three financial years	Self-attested Copy of Income Tax Returns for the last three financial years

10.	The bidder should not have been involved in fraudulent cases or should not have been blacklisted by Central Government or any State Government organization / department in India at the time of submission of the Bid	Declaration by the Bidder as per format given in the bid document.
11.	The Bidder should possess valid registration certificate under E.P.F & M.P, Act 1952	Copy of Registration with EPF

**\*Enterprise GIS based Projects:** Projects involving Geospatial data creation from Satellite/Aerial/ Drone imagery like preparation of DSM, DTM, Contour map, Basemap, Land Use Land Cover (LULC) map, Change Detection maps, Time series map, etc. with development, implementation & maintenance of Enterprise GIS solution for sectors like Municipal corporation, ULBs, Smart City, AMRUT, Water Resource department, Property tax, Land Cadastral mapping, Town/ Regional Planning Authorities, Utilities, Disaster Management, Roads & Highways, or similar.

## 4. Instructions to Bidder

### 4.1 Bid Data Sheet

	<b>Tender Document No.</b>	<b>Bid No. -7100206725</b>
1.	Name of Organization	Municipal Corporation of Greater Mumbai
2.	Name of Project	Identification of Unauthorized Development in MCGM jurisdiction & detecting changes by procuring & customizing archived Satellite images & procurement of allied software's.
3.	Estimated project Cost	Rs.10,28,61,896/- (Including GST and all taxes)
4.	Bid Type	Open Tender via e-Tendering system (QCBS)
5.	Bid Document Price	INR 8500/- + 425/- (5%GST) = INR 8925/-
6.	Earnest Money Deposit (EMD)	<b>Rs. 10,28,620/-</b> (Rs. Ten Lack Twenty-Eight thousand and Six hundred twenty only) <b>i.e., @ 1% of project cost</b>
7.	Bid Download Last Date	01.04.2021 @ 11.00 hrs.
8.	EMD Submission Due Date & Time (Online)	01.04.2021 @ 11.00 hrs.
9.	Bank Solvency Certificate	Rs. _____
10.	Date of issue & sale of tender	12.03.2021 @ 11:00 hrs.
11.	Last date and time for sale of tender & receipt of Bid security deposit	30.03.2021 @ 11:00 hrs.
12.	Submission of Packet-A,B&C(online)	01.04.2021 @ 11:00 hrs.
13.	Date of Pre Bid meeting	19.03.2021 @ 11:00 hrs.
14.	Venue of Pre bid meeting	Office of the Asst. Commissioner (R.E.) City, Room No. 44, Third Floor., F/S Ward Building, Dr. B.A. Rd., Parel, Mumbai-12 Email ID – <b>ac.recity@mcgm.gov.in</b> Phone No.- 24134560 (Ext- 313) Fax No.- 24145028
15.	Opening of Packet-A	03.04.2021 @ 11:00 hrs.
16.	Opening of Packet-B	03.04.2021 @ 11:30 hrs.
17.	Opening of Packet-C	21.04.2021 @ 11:00 hrs.
18.	Address for communication	Office of the Asst. Commissioner (R.E.) City, Room No. 44, Third Floor., F/S Ward Building, Dr. B.A. Rd., Parel, Mumbai-12 Email ID – <b>ac.recity@mcgm.gov.in</b>

		Phone No.- 24134560 (Ext- 313) Fax No.- 24145028 AERE (WS) IC- Shri Sachin Kulkarni – 9324638473
19.	Venue of opening of Bid	Office of the Asst. Commissioner (R.E.) City, Room No. 44, Third Floor., F/S Ward Building, Dr. B.A. Rd., Parel, Mumbai-12 Email ID – <a href="mailto:ac.recity@mcgm.gov.in">ac.recity@mcgm.gov.in</a> Phone No.- 24134560 (Ext- 313) Fax No.- 24145028
20.	Signing of Contract Agreement with MCGM	Within 45 days after the issuance of work order.
21	Bid Validity Period	180 Calendar Days from the Date of Opening of Bid

This tender document is not transferable.

The MCGM reserves the rights to accept any of the application or reject any or all the application received for above subject without assigning any reason thereof.

Assistant Commissioner (R.E.) W.S.

#### 4.2 Purpose of Bid Document

The purpose of this Bid Document is to select the service provider for **Identification** of Unauthorized Development in MCGM jurisdiction and detecting changes by way of procuring and customizing archived Satellite images & procurement of allied software's. as per the scope defined in the subsequent sections and deliver additional solutions as per requirement till the end of the contractual period. This document provides information to enable the bidders to understand the broad requirements to submit their 'Bids'.

#### 4.3 Cost of Bid Document

The cost of bid document, is as mentioned in E-Tender notice.

#### 4.4 Bidder Registration and Instructions

The terminology of e-Tendering is solely depending upon policies in existence, guidelines and methodology adopted since decades. The SAP system to be used in this E-tendering is known as Supplier Relationship Management (SRM). The SRM is only change in process of accepting and evaluation of tenders in addition to manual. SRM is designed and introduced by ABM Knowledge ware Ltd. who will assist MCGM in throughout the tendering process for successful implementation.

**NOTE:** This tendering process is covered under Information Technology ACT & Cyber Laws as applicable

(1) In e-tendering process, some of the terms and its definitions are to be read as under wherever it reflects in online tendering process:

- Start Date read as “**Sale Date**”
- End Date read as “**Submission Date**”
- Supplier read as “**Contractor/bidder**”
- Vendor read as “**Contractor/bidder**”
- Vendor Quotation read as “**Contractors’ Bid/Offer**”
- Purchaser read as “**Department/MCGM**”

**I.** Before entering into online tendering process, the bidder should complete the registration process to get User ID for E-tendering links. For this, the bidder can access through Supplier registration via MCGM Portal.

There are two methods for this registration: **(II and III)**

**II.** Transfer from R3 (registered bidders with MCGM) to SRM

- a. Bidders already registered with MCGM will approach to Vendor Transfer cell.
- b. Submit his details (such as name, vendor code, address, registered Email ID, pan card etc.) to Vendor Transfer cell.
- c. MCGM authority for Vendor Transfer, transfers the Vendor to SRM application from R3 system to SRM system.
- d. Transferred Vendor receives User ID creation link on his supplied Email ID.
- e. Vendor creates his User ID and Password for e-tendering applications by accessing link sent to his Email ID.

**III.** Online Self Registration (Temporary registration for applicant not registered with MCGM)

- a. Vendor fills up Self Registration form via accessing MCGM portal.
- b. Vendor Transfer cell (same as mentioned above) accesses Supplier Registration System and accepts the Vendor request.
- c. Accepted Vendor receives User ID creation Email with Link on his supplied Email ID.
- d. Vendor creates his User ID and Password for e-tendering application.

**IV.** Bidders BIDDING: Applicant will Quote, and Upload Tender Documents as explained below:

1. Access e-tender link of SRM Portal
2. Log in with User ID and Password
3. Selects desired Bid Invitation (he wants to bid)
4. To download tender documents, Bidders will have to pay online Tender fee. The same can be done by accessing Pay Tender Fees option. By this, one will be able to pay Tender fee through Payment Gateway-If transaction is successful, Bidder can register his interest to participate. Without Registration one cannot quote for the Bid/Tender.
5. Applicant will download Tender Documents from purchaser tab by accessing Purchaser document folder through collaboration ‘C’ folder link.



6. Applicant will upload Packet **A** related and Packet **B** related Documents in Packet **A** and Packet **B** folder respectively by accessing these folders through “My Notes” Tab and collaboration folder link.
7. All the documents uploaded must be digitally signed and saved. Bidder can procure their digital signature from any certified agencies in India.
8. Bid security deposit/EMD and ASD, if applicable, should be paid online as mentioned in tender.
9. For commercial details (in Packet **C**), Bidders will fill data in Item Data tab in Service Line Item via details and quotes his “Percentage Variation” (i.e., % quoted) figure. (If entered ‘o’ it will be treated as at par. By default, the value is zero only.
10. Applicants to check the bid, digitally sign & save and submit his Bid Invitation.
11. Applicants can also save his uploaded documents/commercial information without submitting the BID for future editing through ‘Hold’ option.
12. Please note that “Hold” action does not submit the Bid.
13. Applicants will receive confirmation once the Bid is submitted.
14. Bid creator (MCGM) starts Bid Opening for Packet **A** after reaching End Date and Time and Bid Evaluation process starts.

As per Three Packet system, the document for Packet **A & B** are to be uploaded by the bidder in 'Vendor's document' online in Packet A & B. Before purchasing / downloading the tender copy, bidder may refer to post- Qualification criteria mentioned in Section 3.

The bidder shall pay the EMD/Bid Security through payment gateways before submission of Bid and shall upload the screenshot of receipt of payment in Packet ‘A’ instead of paying the EMD at any of the CFC centers in MCGM’s Ward Offices.

The e-tender is available on MCGM portal, <https://portal.mcgm.gov.in>, as mentioned in Section 4.1 of this Bid document. The tender duly filled-in should be uploaded and submitted online on or before the end date of submission. The Packet ‘A’, Packet ‘B’ & Packet ‘C’ of the bidder will be opened as per the time-table mentioned in Section 4.1

The Municipal Commissioner reserves the right to reject all or any of the e-Tender(s) without assigning any reason at any stage. The dates and time for submission and opening the tender are as mentioned in Section 4.1. If there are any changes in the dates, same will be displayed on the MCGM Portal (<https://portal.mcgm.gov.in>).

#### 4.5 Bid Preparation Cost

1. The Bidder is responsible for all costs incurred in connection with participation in this process, including, but not limited to, costs incurred in the conduct of informative and other diligence activities, participation in meetings/discussions/presentations, preparation of bid, in providing any additional information required by MCGM to facilitate the evaluation process, and in negotiating a definitive Contract or all such activities related to the bid process. MCGM will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
2. This bid does not commit MCGM to award a contract or to engage in negotiations. Further, no reimbursable cost may be incurred in anticipation of award. All materials submitted by the Bidder shall become the property of MCGM and may be returned at its sole discretion.

#### 4.6 Pre-bid Meeting

1. MCGM will host a Pre-bid Meeting for queries (if any) by the prospective bidders. Details regarding the date, time and place of the meeting are provided in Section 4.1. A maximum of three representatives of each of the bidder may attend the pre-bid meeting, on the production of authority letter from the applicant at their own cost. The pre-bid meeting may be conducted On-line. All bidders should share their email address with MCGM. MCGM will share the Video-conference call link through email to prospective bidders. The purpose of the pre-bid meeting is to provide a forum to the bidders to clarify their doubts / seek clarification or additional information, necessary for them to submit bid.
2. All enquiries from the bidders relating to this bid must be submitted to the designated contact person as mentioned in section 4.1 of this bid document. The queries should necessarily be submitted in the format as given in Annexure-IX as a Microsoft Word/Spreadsheet document.
3. Authorisation letter in the name of the person attending the pre-bid meeting needs to be submitted on the letterhead of the Bidder during the pre-bid meeting in the format specified in Annexure IX.
4. Queries submitted post the specified deadline, or which do not adhere to the specified format may not be responded to. All the responses to the queries (clarifications / corrigendum) shall be made available on the MCGM website (<https://portal.mcg.gov.in/>) -> Tenders->Tenders/Quotations-> Tenders.

#### 4.7 Amendment of Bid Document

1. At any time before the deadline for submission of bids, MCGM, may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the bid document by an amendment. All the amendments made in the document would be informed to all the participating bidders through Email.

2. The bidders are advised to visit the MCGM website as stated in section 4.6 of this document on regular basis for checking necessary updates. MCGM also reserves the rights to amend the dates mentioned in this bid for bid process. It will be assumed that the amendments have been taken into account by the Bidder in its bid.
3. In order to afford prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, MCGM may, at its discretion, extend the last date for the receipt of Bids.

#### **4.8 Rights to Terminate the Process**

1. MCGM may terminate the bid process at any time and without assigning any reason. MCGM makes no commitments, express or implied, that this process will result in a business transaction with anyone.
2. This bid document does not constitute selection offer by MCGM. The Bidder's participation in this process may result in MCGM selecting the Bidders to engage in further discussions and negotiations towards execution of a contract. The commencement of such negotiations does not, however, signify a commitment by MCGM to execute a contract or to continue negotiations. MCGM may terminate negotiations at any time without assigning any reason.

#### **4.9 Earnest Money Deposit (EMD) and Refund**

1. Bidders shall pay, along with their Bids, EMD amount as mentioned in Section 4.1, and it shall be paid online. As per MCGM Circular Ref No. CA/F/Project/32 of 262015-16 dated 02.11.2015, the bidders shall pay the EMD through online only and should not be paying the EMD in personal.
2. In case a bid is submitted without the EMD as mentioned above then MCGM reserves the right to reject the bid without providing opportunity for any further correspondence to the Bidder concerned.
3. The EMD shall be denominated in Indian Rupees only. No interest shall be paid by MCGM towards the deposited EMD.
4. The EMD of the successful bidder will be discharged when the bidder has signed the agreement and furnished the required EMD. The EMD of L-2 and other higher bidders (L-3, L-4, etc.) shall be refunded immediately after opening of financial bid. In case, the successful bidder becomes non-responsive or successful bidder withdraws the bid or is unwilling to extend the bid validity bid validity period, in such circumstances, if L-2 bidder is agreeable to extend the bid validity period and ready to deposit the requisite amount of EMD to the department within the stipulated time period i.e., 15 days, the department will process further as per normal procedure.

The entire EMD may be forfeited in any of the following cases:

- i. If a Bidder withdraws its bid or increases its quoted prices during the period of bid validity or its extended period, if any
  - ii. In the case of all successful Bidders, if the Bidders fails to sign the Contract or to furnish Performance Bank Guarantee within specified time in accordance with the format given in this bid document
  - iii. During the bid process, if a Bidders indulges in any such deliberate act as would jeopardize or unnecessarily delay the process of bid evaluation and finalization
  - iv. During the bid process, if any information is found wrong / manipulated / hidden in the bid
5. The decision of MCGM regarding forfeiture of the EMD and rejection of bid shall be final and shall not be called upon question under any circumstances.
  6. EMD shall be returned to the unsuccessful bidder within 120 days from the date of opening of the Commercial bid.
  7. EMD of Successful bidder will be returned after the award of contract and submission of the performance Bank Guarantee within specified time.

#### **4.10 Solvency Certificate**

1. A valid Bank Solvency Certificate of minimum solvency amount as governed by Registration Rules in force. Successful bidder shall submit the same after award of contract within Rs. 15,00,000/- that has days.

#### **4.11 Submissions of Bids**

1. Complete bidding process will be online (e-Bidding) in Three packet system. All the notification and details regarding terms and conditions related to this bid notice hereafter will be published online on web site <https://portal.mcgm.gov.in/>.
2. Bidding documents can be seen, downloaded and submitted in electronic format on the MCGM website. The deadline for submission of bid is specified in section 4.1 of this document.
3. Technical bids will be opened as per the details found in section 4.1 of this document.
4. Bidders should submit information and scanned copies of all the documents in PDF format in Pre-Qualification folder (Packet 'A') as mentioned in the Bid Document. Bidder should submit information and scanned copies pertaining to technical offer in PDF format in (Packet 'B') as mentioned in the Bid Document.
5. Bidder may be requested to submit original documents for verification during evaluation of technical bids as and when required.
6. Time and date of opening of financial bid will be informed by Email to technically qualified bidders.
7. An authorized representative of the Bidder should have valid class II / III Digital Signature Certificate (DSC) obtained from any Certifying Authority. The authorized representative of the

Bidder shall digitally sign the original Technical bid and Commercial bid. The authorization shall be in the form of a written power of attorney accompanying the bid or in any other form demonstrating that the representative has been duly authorized to sign.

8. As per MCGM guidelines MGC/F/7867 dated 06.10.2015, on opening the Pre-Qualification folder, if it is found that the Bidder has not submitted required documents as per Pre-Qualification folder (Packet 'A') then the Bidder shall be intimated to comply with the said documents within 3 working days from the intimation from MCGM (through email), otherwise 10% of the EMD paid by the bidder shall be forfeited and bid shall be treated as non-responsive.
9. As per MCGM guidelines MGC/F/7867 dated 06.10.2015, on opening the Technical Bid folder, if it is found that the Bidder has not submitted required documents as per Technical Bid folder (Packet 'B') then the Bidder shall be intimated to comply with the said documents within 3 working days from the intimation from MCGM (through email), otherwise 10% of the EMD paid by the bidder shall be forfeited and bid shall be treated as non-responsive.
10. MCGM reserves the right to accept or reject any or all the Bids without assigning any reason. Moreover, if no intimation is provided by MCGM then the documents submitted cannot be deemed as accepted.
11. No rejections and forfeiture shall be done in case of curable defects. For non-curable defects the 10% of EMD shall be forfeited and bid will be liable for rejection.

**Note:**

1. Curable defects shall mean shortfalls in submission such as:
  - a. Non-submission of following documents:
    - i. Valid registration certificate
    - ii. Valid Bank Solvency
    - iii. GST Registration certificate
    - iv. Certified copies of PAN documents and photographs of individuals, owners, etc.
    - v. Partnership Deed and any other documents.
    - vi. Undertakings as mentioned in the tender documents.
  - b. Non-Curable Defect shall mean:
    - i. Inadequate submission of EMD/ASD amount
    - ii. Inadequacy of technical and financial capacity with respect of Eligibility Criteria as stipulated in the Tender
    - iii. Wrong Calculation of Bid Capacity
    - iv. No proper submission of experience certificates and other documents, etc.

#### 4.12 Site Visit

Bidders are welcomed to visit the site(s) and obtain additional information at their own cost and responsibility. However, a prior appointment with the concerned officials is recommended.

#### 4.13 Language of Bids

1. The Bids prepared by the Bidder and all correspondence and documents relating to the bids exchanged by the Bidder and MCGM, shall be written in English language and any printed literature furnished by the Bidder in another language shall be accompanied by an English translation in which case, for purposes of interpretation of the bid, the English translation shall govern.
2. If any supporting documents submitted are in any language other than English, translation of the same in English language is to be duly attested by the Bidder.

#### 4.14 Bid Submission Format

The entire bid shall strictly be submitted as per the formats specified in this bid.

#### 4.15 Documents Comprising of Bids

1. Following table is provided as the guideline for submitting various important documents along with the bid.

#	Type of Envelope	Documents to be submitted
01	Pre-Qualification Folder (Packet A)	<ul style="list-style-type: none"> <li>✓ Cover Letter with details of E-mail id</li> <li>✓ Bidder's Particulars as per specified format in Annexure I</li> <li>✓ Board Resolution authorizing the Bidder to sign / execute the bid as a binding document and also execute all relevant agreements forming part of bid or Power of Attorney executed by the Bidder in favour of the Principal Officer or the duly Authorized Representative, certifying him/her as an authorized signatory for the purpose of this bid</li> <li>✓ Copy of Certificate of Registration/Certificate of Incorporation/Latest Partnership Deed in case of Partnership</li> <li>✓ Valid Solvency Certificate as specified</li> <li>✓ Copy of the audited balance sheet of the company Or Certificate from Chartered Accountant for last 3 financial years as mentioned in Pre-qualification Criteria (Section-3)</li> <li>✓ Copy of the audited Profit and Loss Statements and Copy of Certificate from Chartered Accountant clearly stating the average annual turnover of at least INR 3.10 crore from GIS/ Remote sensing-based</li> </ul>

		<p>projects/ services over the last three financial years as mentioned in Pre-qualification criteria (Section-3).</p> <ul style="list-style-type: none"> <li>✓ Certificate from the Chartered Accountant clearly stating the net worth as on 31.03.2020.</li> <li>✓ Certificate from HR for the overall count of resources (min 50 nos.on payroll)</li> <li>✓ Complete resumes of the resources proposed for Selection</li> <li>✓ Copies of Certification in specific domain/technology</li> <li>✓ Copy of valid Certificate for CMMi Level 3 or higher and ISO 9001:2015 and ISO 27001:2013</li> <li>✓ Rental Agreement/ Utility Bill in the name of the company/Sale Deed or Declaration that office will be set-up in Mumbai Metropolitan Region (MMR) within a period of 30 days from the date of issuance of Letter of Intent.</li> <li>✓ Copy of GST Registration</li> <li>✓ Copy of PAN card</li> <li>✓ Copy of Income Tax returns for last 3 assessment years as mentioned in Pre-qualification criteria (Section-3).</li> <li>✓ Declaration regarding non-blacklisting in the specified format</li> <li>✓ Copy of Registration with EPF and ESIC</li> <li>✓ Other Documents (as per requirements of the bid)</li> </ul>
02	Technical Bid Folder (Packet B)	<ul style="list-style-type: none"> <li>✓ Technical Bid in the format specified in Annexure II</li> <li>✓ Copy of Work Order and Work completion certificate from client for establishing required experience and signed by a competent authority clearly stating the scope, current status and contact details of the reference person for—</li> </ul> <p>Technical Capacity (Project Experience):</p> <p>The tenderer (s) or SI in their own name should have satisfactorily executed the work of similar are nature MCGM /Semi Govt. /Govt. &amp; Public Sector Organizations/Private sectors during last five (5) years ending last day of month previous to the one in which bids are invited as a prime Contractor (or as a nominated sub-Contractor, where the subcontract had involved similar nature of work which includes software development, customization, implementation and post implementation support)</p> <p>a) Three similar completed works or currently executing three, works of similar nature costing not less than 30 % of estimated cost each.</p> <p>OR</p>

		<p>b) Two similar completed works or currently executing two works of similar nature costing not less than 40% of estimated cost each.</p> <p>OR</p> <p>c) One completed work or currently executing one work of similar nature not less than of aggregate 60% estimated cost.</p> <p>The value of completed works shall be brought to current costing level by enhancing the actual value of work at the compound rate of 10 % per annum; calculated from the date of completion to last date of receipt of application for tenders.</p> <p>*In case of ongoing works to be considered, the bidder must have received payment bills of 80% of the estimated cost for the work/works executed last day of month previous to the one in which bids are invited.</p> <p>✓ Compliance to the Functional Requirements Specifications and Details of manpower presently working and satellite imagery availability.</p> <p>✓ Certificate from HR for all types of resources with experience and complete resumes of the proposed resources. Resources who have completed any certification should submit copy of certificate and link to verify their certification.</p>
03	Commercial Bid Folder (Packet C)	To be submitted online as per format mentioned in clause of Commercial Bid

2. Bidders shall furnish the required information on their Pre-Qualification, technical and financial bids in enclosed formats only. Any deviations in format may make the bid liable for rejection. Disclosure of Commercial information of the bid in Pre-Qualification or Technical Envelope shall be enough grounds for rejection of the bid.
3. Procedure for uploading 'Special Annexure – I'
  - i) While creating structure of three packet e-tenders, bid creator shall create following subfolders in Bidder's folder.
    - A) PACKET A
    - B) PACKET B
    - C) PACKET C
  - ii) While creating structure of two packet e-tenders, bid creator shall create following subfolders in Bidder's folder.
    - A) PACKET A/B
    - B) PACKET C



iii) Bid creators shall note that it is made mandatory to create folder C. Only one folder with name C shall be create and no text other than C shall be used to create folder C.

#### **4.16 Withdrawal of Bids**

1. A Bidder wishing to withdraw its bid shall notify to MCGM by e-mail prior to the deadline prescribed for bid submission. A withdrawal notice may also be sent by electronic means such as e-mail, but it must be followed by a signed confirmation copy, postmarked no later than the deadline for submission of bids. The notice of withdrawal shall
  - a. be addressed to MCGM at the address named in the Bid Data Sheet, and
  - b. bear the Contract name, for Identification of Unauthorized Development in MCGM jurisdiction and detecting changes by way of procuring and customizing archived Satellite images & procurement of allied software's.and < Bid No.>, and the words "Bid Withdrawal Notice." Bid withdrawal notices received after the bid submission deadline will be ignored, and the submitted bid will be deemed to be a valid submitted bid.
2. No bid should be withdrawn in the interval between the bid submission deadline and the expiration of the bid validity period specified in the Bid Data Sheet. Withdrawal of a bid during this interval may result in the forfeiture of the Bidder's EMD.

#### **4.17 Evaluation Process**

1. The evaluation process of the bid proposed to be adopted by MCGM is indicated in this section. The purpose of this section is to provide the Bidder an idea of the evaluation process that MCGM may adopt.
2. MCGM shall appoint a Bid Evaluation Committee (BEC) to scrutinize and evaluate the technical and commercial bids received. The BEC will examine the Bids to determine whether they are complete, responsive and whether the bid format conforms to the bid requirements. MCGM may waive any informality or non-conformity in a bid which does not constitute a material deviation according to MCGM.
3. There should be no mention of bid prices in any part of the bid other than the Commercial Bid.
4. Any attempt by a bidder to influence the bid evaluation process may result in the rejection of Bid.

#### **4.18 Evaluation of Technical Bids**

1. The Technical Bids of only those Bidders, who qualify in the Pre-Qualification stage, shall be considered and will be evaluated as per the evaluation criteria in this clause. The Bid Evaluation Committee (BEC) shall invite each Bidder to make a presentation-cum-demonstration as part of the technical evaluation.

2. MCGM shall appoint a Bid Evaluation Committee (BEC) to scrutinize and evaluate the technical and commercial bids received. The BEC will examine the Bids to determine whether they are complete, responsive and whether the bid format conforms to the bid requirements. MCGM may waive any informality or non-conformity in a bid which does not constitute a material deviation according to MCGM.
3. There should be no mention of bid prices in any part of the bid other than the Commercial Bid. Presence of details regarding commercials in any other section or document would lead to disqualification of the bidder.
4. Bidders should not submit physical copies of the bid to the RE Department. Submission of the same would lead to disqualification of the bidder.
5. The Technical Bids of only those Bidders, who qualify in the Pre-Qualification stage, shall be considered and will be evaluated as per the evaluation criteria in this clause. The Bid Evaluation Committee (BEC) shall invite each Bidder to make a presentation-cum-demonstration as part of the technical evaluation.
6. The BEC may require written clarifications from the Bidders to clarify ambiguities and uncertainties arising out of the evaluation of the Bid documents (to be stated precisely as it should be in MCGM's interest). In order to qualify technically, a Bid must secure a minimum of 70% of total marks in technical evaluation after summing up. Only those Bids which have a minimum score of 70% of total marks in technical evaluation will be considered for opening of their Commercial Bid. However, the BEC reserves the right to lower the minimum required marks if none of the Bidders achieves 70% of the total marks. Only the Bids qualifying the technical evaluation will be considered for commercial evaluation.
7. The bidders' technical solutions proposed in the bid document will be evaluated as per the requirements specified in the Bid document and adopting the evaluation criteria spelt out is below.
  - ❖ Technical Evaluation of the bids would be carried out on 4 broad parameters as given below:

#	Parameters	Marks
1.	Financial Capabilities of the Bidder	20
2.	Bidder Competence and Relevant Experience	25
3.	Quality of Technical Proposal	25
4.	Quality and suitability of manpower proposed as per requirement	15
5.	Technical Presentation	15
	<b>Total Marks</b>	<b>100</b>

Sr. No	Technical Evaluation Parameter	Max. Marks	Point System / Criteria	Supporting
A	Financial Capabilities of the Bidder(s)	20	<p>Average Annual Turnover of Sole Bidder or Consortium jointly from Remote Sensing or GIS based projects/ services of the last three financial years</p> <p>Rs. <math>\geq</math> 3 Crore and <math>\leq</math> 5 Crore – 1 marks</p> <p>Rs. <math>&gt;</math> 5 Crore and <math>\leq</math> 15 Crore – 5 marks</p> <p>Rs. <math>&gt;</math> 15 Crore and <math>\leq</math> 30 Crore – 10 marks</p> <p>Rs. <math>&gt;</math> 30 Crore– 20 marks</p>	Copy of the audited Profit and Loss Statement of the company and Certificate from the Chartered Accountant clearly stating the turnover from Enterprise GIS projects*
B1	Bidder Competence and Relevant Experience: Capability of the Bidder to execute Enterprise GIS projects*	10	<p>Experience of the Lead bidder or Consortium member in executing development, implementation &amp; maintenance of Enterprise GIS projects* in the last five financial years:</p> <ul style="list-style-type: none"> <li>• 1 project matching the above criteria having project cost <math>&gt;</math> 30 crore = (Total 5 marks)</li> <li>• 2 projects matching the above criteria having project cost <math>&gt;</math> 15 crore each = 2.5 marks each (Total 5 marks)</li> <li>• Criteria – Min 2 or 3 similar project</li> </ul>	<p><u>Completed Projects:</u> Work Order &amp; Work Completion certificate signed by a competent authority of client clearly stating the scope of the project, completion of the project and contact details of reference person.</p> <p><u>Ongoing Projects:</u> Work Order signed by a competent authority clearly stating the scope of the project and contact details of reference person. Certificate signed by a competent authority clearly stating that the project has reached overall Go-Live stage of the project (not specific module) and 80% of the payment of the total project amount has been released to the vendor.</p> <p><u>Notes:</u></p>

Sr. No	Technical Evaluation Parameter	Max. Marks	Point System / Criteria	Supporting
				<ul style="list-style-type: none"> <li>• Those projects with scope only for supply of COTS GIS/ RS products will not be considered.</li> <li>• Those projects with scope only for Survey will not be considered.</li> </ul>
B2	Bidder(s) Competence and Relevant Experience: Capability of the Bidder(s) to execute GIS Project	10	<p>Experience of the Lead Bidder or consortium member in executing <u>GIS project using high resolution Imagery</u> Experience – National or International using high resolution Imagery or Aerial Imagery – Photogrammetry of below mentioned value in last Five financial years:</p> <ul style="list-style-type: none"> <li>• At least one project with a value not less than Rs. 5 crores = (Total 10 marks)</li> <li>• 2 projects matching the above criteria having project cost &gt; 2.5 crore each = 2.5 marks each (Total 5 marks)</li> <li>• Criteria – Min 2 or 3 similar project</li> </ul>	<p><u>Completed Projects:</u> Work Order &amp; Work Completion certificate signed by a competent authority clearly stating the scope of the project, completion of the project and contact details of reference person.</p> <p><u>Ongoing Projects:</u> Work Order signed by a competent authority clearly stating the scope of the project and contact details of reference person. Certificate signed by a competent authority clearly stating that the project has reached overall Go-Live stage of the project (not specific module) and 75% of the payment of the total project amount has been released to the vendor.</p>
B3	Certifications	5	<p>Sole bidder Consortium members jointly should have valid CMMI Level 3 or higher – (1 marks)</p> <p>ISO 9001:2015 certification – (2 marks)</p>	<p>Self-attested Copy of valid certificate of ISO 9001:2015 certification and CMMI Level 3 or Higher and ISO 27001. ALL 3 certificates must.</p>

Sr. No	Technical Evaluation Parameter	Max. Marks	Point System / Criteria	Supporting
			ISO 27001 certification (2 marks)	
C	Quality of Technical Proposal	25	<p>Overall approach of the bidder(s) for developing's GIS Application, change detection, encroachment monitoring, development, implementation of Enterprise GIS system &amp; Integration with existing IT systems:</p> <ol style="list-style-type: none"> <li>1. Project Management methodology covering timelines, milestones, envisaged risks, mitigation plan, deployment plan, maintenance &amp; support plan – (5 marks)</li> <li>2. Methodology for creating Vector model of buildings, houses, slums, Major infrastructure projects like Flyover, bridges, Metro, Monorail, Skywalk, etc. using Stereo Satellite imagery – (3 marks)</li> <li>3. Methodology for detecting change detection in two Satellite Imagery, extracting changes in the building structure &amp; creating 2D Vector model – (5 marks)</li> <li>4. Methodology for creation of DSM, DTM, LULC maps, Georeferenced base map, Change detection maps (2D/3D) and time series animation – (5 marks)</li> <li>5. Approach for development, implementation &amp; maintenance of Enterprise GIS applications</li> </ol>	<p>Technical Proposal</p> <p>Project should be time Base.</p> <p>Share the details of existing IT infra and data to be integrated.</p>

Sr. No	Technical Evaluation Parameter	Max. Marks	Point System / Criteria	Supporting
			<p>(Web, Mobile &amp; Dashboards) and integrations with existing IT applications – (5 marks)</p> <p>6. Use of Innovative technology like Artificial Intelligence, Machine learning, automated/ semi-automated classification, automated/ semi-automated feature extraction, etc. – (2 marks)</p>	
D	Quality and suitability of manpower proposed as per requirement	15	<p><b>Experience of Project Manager:</b></p> <ul style="list-style-type: none"> <li>• &gt;12 years = (3 marks)</li> <li>• State/ Central Government Project experience at least 2 projects, Similar experience with reference to Project. = (1 mark)</li> <li>• PMP/ Prince 2/ CompTIA Project+/ CAPM/any relevant GIS Desktop certification = (1 mark) should be desirable but not mandatory.</li> </ul> <p><b>Experience of GIS Analyst:</b></p> <ul style="list-style-type: none"> <li>• &gt; 5 years 10 years= (4 marks)</li> <li>• State/ Central Government Project experience at least 1 project = (1 mark) Similar experience with reference to Project.</li> <li>• Any GIS Desktop or Enterprise certifications / Any Remote Sensing certification = (1 mark)</li> </ul>	<p>Certificate from HR for all types of resources with experience and complete resumes of the proposed resources.</p> <p>Resources who have completed any certification should submit copy of certificate and link to verify their certification.</p>

Sr. No	Technical Evaluation Parameter	Max. Marks	Point System / Criteria	Supporting
			<p><b>Experience of Image Processing / Remote Sensing/Photogrammetry Expert:</b></p> <ul style="list-style-type: none"> <li>• &gt; 10 years= (3 marks)</li> <li>• State/ Central Government Project experience at least 1 project = (2 mark) Similar experience with reference to Project</li> <li>• Any GIS Desktop or Enterprise certifications / Any Remote Sensing certification = (1 mark)</li> </ul> <p><b>Experience of GIS DBA cum System Administrator:</b></p> <ul style="list-style-type: none"> <li>• &gt; 5 years = (3 marks)</li> <li>• State/ Central Government Project experience at least 1 project = (1 mark)</li> <li>• Oracle Database/ SQL database certification / any ArcGIS Enterprise certifications = (1 mark)</li> </ul> <p><b>Experience of GIS software developer:</b></p> <ul style="list-style-type: none"> <li>• &gt;5 years = (3 marks)</li> <li>• State/Central Government Project experience at least 1 project = (1 mark)</li> <li>• Any Development related certifications/ any GIS Desktop/ API or Enterprise certifications =</li> </ul>	

Sr. No	Technical Evaluation Parameter	Max. Marks	Point System / Criteria	Supporting
			(1 mark)	
E	Technical Presentation and clarifications / answers given to the BEC during presentation by the Bidder	15	<p>The bidder shall prepare a presentation on the technical proposal detailing the scope of work, approach, methodology, timelines, compliance with SLA &amp; demo. The Bid Evaluation Committee shall evaluate the presentation based on the following criteria –</p> <ul style="list-style-type: none"> <li>• Understanding of the current scope of work – 2 mark</li> <li>• Project Management methodology covering timelines, milestones, envisaged risks, mitigation plan, deployment plan, maintenance &amp; support plan – (3 marks)</li> <li>• Demonstration of detecting change in Satellite Imagery, extracting changes in the building structure &amp; creating 2D/3D Vector model created/ delivered by the Bidder – (2 marks)</li> <li>• Demonstration of DSM, DTM, LULC maps, Georeferenced base map, change detection maps (2D/3D), time series animation created/ delivered by the Bidder – (3 marks)</li> <li>• Proposing satellite imagery availability <ul style="list-style-type: none"> <li>a. Twelve different years(2000, 2005, 2011,</li> </ul> </li> </ul>	Technical presentation & demo to be given to BEC as per the time slot provided by MCGM.



Sr. No	Technical Evaluation Parameter	Max. Marks	Point System / Criteria	Supporting
			2012,2013,2014,2015, 2016, 2017,2018,2019 and 2020) = 1 marks b. Two different years (1980,1990) = 2 marks c. Minimum one image for the period of (1960s to 1970s series) = 2 marks	
<b>Total Marks</b>		<b>100</b>		

\*Enterprise GIS based Projects: Projects involving GIS data migration, data conversion, data modelling, Satellite/ Drone image acquisition & processing with development, implementation & maintenance of Enterprise GIS solution for sectors like Municipal corporation/ ULBs, Smart City, AMRUT, Water Resource department, Property tax, Cadastral mapping, Town/ Regional Planning Authorities, Utilities, Disaster Management, Roads & Highways, or similar.

Evaluation shall be done based on the information provided in the technical proposal (and subsequent clarification, if any) **and Clarifications / Answers given to the BEC during the Presentation by the bidders.**

#### 4.19 Opening of Technical Bid

1. MCGM shall open the Technical Bids in public, in the presence of Bidders' designated representatives and anyone who chooses to attend, at the address, and at the date and time specified in Section 4.1.
2. Only bids that are opened and read out at the bid opening and whose EMD has been paid online through the Online EMD Application shall be considered further.
3. All the bids shall be opened one at a time, reading out the name of the Bidder, the presence of an EMD, and any other details as MCGM may consider appropriate.
4. MCGM shall prepare a record of the bid opening that shall include, at a minimum: the name of the Bidder and the presence or absence of EMD. The Bidders' representatives who are present shall be requested to sign the attendance sheet.
5. Authorization letter in the name of the person attending bid opening meeting needs to be submitted on the letterhead of the Bidder during bid opening in the format specified in Annexure VI.

6. Once the bids are opened each bid will be checked for pre-qualification criteria.

#### **4.20 Opening of Commercial Bid**

1. The Commercial bids shall not be opened by MCGM until the evaluations of the Pre-qualification and Technical Bids have been completed.
2. After the technical evaluation is completed and MCGM has issued its no objection (if applicable), MCGM shall notify those Bidders whose proposals did not pass the technical evaluation or were considered as non-responsive to the Bid Document and scope of work, that their Financial Proposals will not be opened.
3. MCGM shall simultaneously notify in writing to bidders who have cleared the technical evaluation, the date, time and location for opening the Financial Proposals. The opening date would allow Bidders enough time to make arrangements for attending the opening. Bidders' attendance at the opening of Financial Proposals is optional.
4. MCGM shall prepare a record of the bid opening that shall include, at a minimum: the name of the Bidder and the bid Price, and any other details as MCGM may consider appropriate. The Bidders' representatives who are present shall be requested to sign the attendance sheet. A copy of the record shall be distributed to all Bidders.
5. Financial Proposals shall be opened publicly in the presence of the Technically Qualified Bidders' representatives who choose to attend. The name of the Technically Qualified Bidders shall be read aloud.
6. Commercial Bids from bidders who have failed to qualify in evaluation of the technical bid will not be opened.
7. Only bids that are opened and read out at the bid opening shall be considered further.
8. Authorization letter in the name of the person attending bid opening needs to be submitted on the letterhead of the Bidder during bid opening in the format specified in the bid document.
9. The Commercial Bids will be evaluated by MCGM for completeness and accuracy.
10. Activities and items described in the Technical Proposal but not priced, shall be assumed to be included in the prices of other activities or items.
11. Based on the technical evaluation criteria, only those bidders scoring 80% in the technical evaluation will be shortlisted for commercial evaluation.

#### **4.21 Selection Method**

1. Based on the technical evaluation criteria, only those bidders scoring **80%** in the technical evaluation will be shortlisted for commercial/financial evaluation.

2. The technical score of the bid under consideration will be noted as '**St**' where it represents the net marks scored in the technical evaluation by the bid under consideration.
3. The formula for determining the financial score is as follows.  

$$\mathbf{Sf} = 100 \times \mathbf{Fm}/\mathbf{F}$$
in which **Sf** is a financial score of the bid under consideration, **Fm** is the lowest price across all received bids and **F** is the price quoted for the bid under consideration.
4. The weights given to the **Technical and Financial aspects are 0.8 and 0.2.**
5. The formula for determining the **Net Score (Ns)** of each bid under consideration would be  $\mathbf{Ns} = (\mathbf{St} * 0.8) + (\mathbf{Sf} * 0.2)$  where **St** and **Sf** are the Technical and Financial scores of the respective bids.
6. The bidder attaining the **Highest Net Score**, i.e., **Ns** would be awarded the contract.

#### **4.22 OEM / Implementation Partner Participation Criteria**

1. Firms with common Proprietor/Partner or connected with one another either financially or as principal and agent or as master and servant or with proprietor/partners closely related to each other such as husband, wife, father/mother and minor son/daughter and brother/sister and minor brother/sister, shall not tender separately under different names for the same contract.
2. If it is found that firms have tendered separately under different names for the same contract, all such tender(s) shall stand rejected and tender deposit of each such firm/establishment shall be forfeited. In addition, such firms/establishments shall be liable, at the discretion of the Municipal Commissioner, for further penal action including blacklisting.
3. If it is found that close relatives (as described above) have uploaded separate tenders/quotations under different names of firms/establishments but with common address for such establishments/firms and/or if such establishments/ firms, though they have different addresses, are managed or governed by the same person/persons jointly or severally, such tenders shall be liable for penal and legal action including blacklisting.
4. If after awarding the contract it is found that the accepted tender violated any of the directions pertaining to participation as stated above, the contract shall be liable for cancellation at any time during its validity in addition to penal action including blacklisting against the contractors as well as related firm/establishment.
5. In the case of non-proprietary and proprietary solution, the Bidder will be required to submit a Manufacturer's Authorization Form from the OEM stating that the Bidder in concern would be bidding for implementation/supply. The template for this form can be found in the Annexure II section of this document.

#### **4.23 Rights to Accept/Reject any or all Bids**

Notwithstanding anything contained in this TENDER, MCGM reserves the right to accept or reject any Application and to annul the Bidding Process and reject all Applications / Bids, at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons therefore. In the event that the Authority rejects or annuls all the Bids, it may, in its discretion, invite all eligible Bidders to submit fresh Bids hereunder.

MCGM reserves the right to reject any Application and / or Bid if:

- (a) At any time, a misrepresentation is made or uncovered, or
- (b) The Applicant does not provide, within the time specified by the Authority, the supplemental information sought by the Authority for evaluation of the Application.

In case it is found during the evaluation or at any time before signing of the Agreement or after its execution and during the period of subsistence thereof including the concession thereby granted by MCGM, that one or more of the pre-qualification conditions have not been met by the Bidder, or the Bidder has made any misrepresentation or has given any incorrect or false information, the Bidder shall be disqualified forthwith if not yet appointed as the Successful Bidder(s) either by issue of the LOA (Letter of Approval/Acceptance) or entering into of the Agreement, and if the Bidder(s) has already been issued the LOA or has entered into the Concession Agreement, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this TENDER, be liable to be terminated, by a communication in writing by MCGM to the Bidder, without Bidder being liable in any manner whatsoever to the Bidder and without prejudice to any other right or remedy which MCGM may have under this TENDER, the Bidding Documents, the Concession Agreement or under applicable law. MCGM reserves the right to verify all statements, information and documents submitted by the Bidder in response to the TENDER. Any such verification or lack of such verification by MCGM shall not relieve Bidder of its obligations or liabilities hereunder nor will it affect any rights of MCGM there under.

The bid shall be rejected if the bidder-

- a. Stipulates the validity period less than 180 days.
- b. Stipulates own condition/conditions.
- c. Does not fill and (digital) sign undertaking forms, which are incorporated, in the document.

#### **4.24 Clarification**

Bidder requiring any clarification on the tender may upload the queries on the website. They should send in their queries before the date specified in Section 4.1. MCGM shall Endeavor to respond to the queries within the period specified therein. The responses will be sent by Email. MCGM will forward all the queries and its responses thereto, to all purchasers of the TENDER without identifying the source of queries.

MCGM shall Endeavor to respond to the questions raised or clarifications sought by the Bidder. However, the MCGM reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this Clause shall be taken or read as compelling or requiring the MCGM to respond to any question or to provide any clarification, but not later than the date provided in Section 4.1.

MCGM may also on its own motion, if deemed necessary, issue interpretations and clarifications to all Bidders. All clarifications and interpretations issued by MCGM shall be deemed to be part of the tender. Verbal clarifications and information given by MCGM or its employees or representatives shall not in any way or manner be binding on the MCGM.

#### **4.25 Amendment of Bid Document**

At any time prior to the deadline for submission of Application, MCGM may, for any reason, whether at its own initiative or in response to clarifications requested by any Bidder, modify the tender by the issuance of Addendum.

Any Addendum thus issued will be published on web site or sent in writing or Email to all those who have purchased the tender.

In order to afford the Bidder a reasonable time for taking an Addendum into account, or for any other reason, MCGM may, in its sole discretion, extend the Application Due Date.

#### **4.26 Notifications of awards (LOA) and Signing of Contract**

1. Prior to the expiration of the period of bid validity, the Bidder will be notified in writing or by Email that their bid has been accepted.
2. At the time MCGM notifies the successful Bidders that their bid has been accepted, MCGM will send the Bidders the proforma for Contract, incorporating all clauses/agreements between the parties. The successful Bidder(s) shall sign and date the Contract and return it to MCGM. Draft Format of the contract has been included in the bid document. Final Contract agreement will be provided after due verification from MCGM's legal department.
3. Penalty of Rs.5000/- per day will be applicable in case of no submission of contract agreement within stipulated period of 30 days.
4. In case of pending execution of contract agreement, Payment of 10% of Total contract value will be withheld.

#### **4.27 Security Deposit and Performance Bank Guarantee**

**A. Security Deposit:** - The security deposit shall mean and comprise of I) Contract Deposit and II) Retention Money.

**I) Contract Deposit** – The successful tender, here after referred to as the contractor shall pay an amount equal to two (2) percent of the contract sum shall be paid within thirty days from the date of issue of letter of acceptance.

**II) Retention Money** – The contractor shall pay the retention money an amount equal to five (5) percent of the Contract Sum which will be recovered from the contractors every bill i.e., interim / running / final bill. **The clause of retention money will not be applicable M. & E. Department.**

**Not applicable to this tender.**

**B. Additional Security Deposit** - The additional security deposit will be applicable when a rebate of more than of 12 % at the rate of with no maximum limit. The ASD is calculated as follows:

Additional security deposit =  $(X/100) \times$  office estimated cost,

Where X=percentage rebate quoted above 12%

The ASD shall be paid online in the ASD tab for bidders in e-tendering system before submission of the bid.

**C. Performance Guarantee** - The successful tender, here after referred to as the contractor shall pay in the form of “Performance Guarantee” at different rates for different slabs as stated below:

<b>% quoted</b>	<b>Amount of performance guarantee applicable</b>
For premium, at par and rebate less 0 to 12%	0.92 % of contract sum applicable for rebate of 12% i.e., Rs1,60,000/-
For Rebate of 12.01% and And more	P.G. = {0.92% x contract sum application for rebate of 12%} +(X) x contract sum, where X = percentage rebate quoted more than 12%

Note: Contract sum shall mean amount after application of rebate/premium as quoted by the contractor with contingencies only and excluding price variation.

The PG shall be paid in one the following forms.

- I) Cash (In case guarantee amount is less than Rs.10,000/-)
- II) Demand Draft (In case guarantee amount is less than Rs.1,00,000/-)
- III) Government securities
- IV) Fixed Deposit Receipts (FDR) of a Schedule Bank.
- V) An electronically issued irrevocable bank guarantee bond of any Schedule bank or in the prescribed form given in Annexure.

Performance Guarantee is applicable over and above the clause of Security Deposit. Performance Guarantee will have to be paid & shall be valid till the defect liability period or finalization of final bill whichever is later.

This deposit will be allowed in the form of I to V as mentioned above and shall be paid within 15 days after receipt of Letter of Acceptance.

**D. Refund of Contract Deposit** - The Contract Deposit shall be released within 30 days after completion of 1st year of AMC and after issue of 'Completion Certificate' subject to no recoveries are pending against the said work, provided that the Engineer is satisfied that there is no demand outstanding against the Contractor. No claim shall be made against the Balance Contract Deposit after the issue of Defects Liability Certificate.

**E. Refund of Retention Money** - One-half (50%) of the Retention Money shall be released within 30 days of issue of 'Certificate of Completion' with respect to the whole of the Works. In the event the Engineer issues a Taking-over Certificate for a section or part of the Permanent Works, only such proposition thereof as the Engineer determines (having regard to the relative value of such section or part of the Works) shall be considered by the Engineer for payment to the Contractor.

The balance Retention Money shall be released within 30 days after completion of 1st year AMC provided that the Engineer is satisfied that there is no demand outstanding against the Contractor.

**F. Refund of Additional Security Deposit** - The additional security deposit shall be released within 30 days of issue of 'Certificate of Completion' with respect to the whole of the Works. In the event the Engineer issues a Taking over Certificate for a section or part of the Permanent Works, only such proposition thereof as the Engineer determines (having regard to the relative value of such section or part of the Works) shall be considered by the Engineer for payment to the Contractor.

**G. Refund of Performance Guarantee** - The Deposit on account of performance guarantee shall be released within 30 days of completion of 1<sup>st</sup> year AMC, provided that the Engineer is satisfied that there is no demand outstanding against the Contractor.

Summary of time of Refund of deposit is tabulated as follows:

1. The Bidder shall at his own expense, deposit with Corporation, within fifteen (15) working days of the notification of award of the contract an unconditional and irrevocable Performance Bank Guarantee (PBG) from the list of approved banks (specified in the bid document) as per the format given in this bid, payable on demand, for the due performance and fulfilment of the contract by the Bidder.
2. This Performance Bank Guarantee will be for an amount equivalent to 10% of the total contract value. All charges whatsoever such as premium, commission, etc. with respect to the Performance Bank Guarantee shall be borne by the Bidder.
3. Details on validity of the performance bank guarantee are specified under section 4.1 of this document. The Performance Bank Guarantee letter format can be found in this document.

4. The Performance Bank Guarantee may be discharged/ returned by Corporation upon being satisfied that there has been due performance of the obligations of the Bidder under the contract. However, no interest shall be payable on the Performance Bank Guarantee.
5. In the event of the Bidder being unable to service the contract for whatever reason, MCGM would evoke the PBG. Notwithstanding and without prejudice to any rights whatsoever of MCGM under the Contract in the matter, the proceeds of the PBG shall be payable to MCGM as compensation for any loss resulting from the Bidder's failure to complete its obligations under the Contract. MCGM shall notify the Bidder in writing of the exercise of its right to receive such compensation within 14 days, indicating the contractual obligation(s) for which the Bidder is in default.
6. The 30-day notice period shall be considered as the 'Cure Period' to facilitate the Implementation Agency to cure the breach. The PBG shall be evoked only if the breach is solely attributable to the bidder and the bidder fails to rectify the breach within the 'Cure Period'.
7. MCGM shall also be entitled to make recoveries from the Bidder's bills, performance bank guarantee, or from any other amount due to the Bidder, the equivalent value of any payment made to the Bidder due to inadvertence, error, collusion, misconstruction or misstatement.

#### **4.28 Failure to agree with the Terms and Conditions of the Bid/Contract**

Failure of the Bidder to agree with the Terms and Conditions of the bid/Contract shall constitute sufficient grounds for the annulment of the award of contract, in which event the contract may be awarded to the next most responsive Bidder which means the bidders who has score second highest as per evaluation method. In such a case, MCGM shall invoke the PBG of the most responsive Bidder.

#### **4.29 Terms and Conditions of the Bid**

Bidder is required to refer to the draft Contract Agreement, provided in this bid, for all the terms and conditions to be adhered by the successful Bidder(s) during contract period. Please note that one needs to read the Contract Agreement as a whole document.

#### **4.30 Legal and Stationery Charges**

As per Circular No CA/FRG/05 dated 24.04.2020, the successful bidder will have to bear the legal & stationery charges at revised rates for preparing contract documents against each individual order as specified below:

<b>Contract Value</b>	<b>Legal Charges + Stationery Charges</b>
Up to INR 50,000 /-	Nil
From INR 50,001/- To INR 3,00,000/-	INR 610/-



From INR 3,00,001 /- To INR 20,00,000 /-	INR 1020/-
From INR 20,00,001 /- To INR 1,00,00,000 /-	INR 3930 /-
From INR 1,00,00,001 /- To Any Limit	INR 9770 /- (Maximum)

In case of revision of the above mentioned legal and stationary charges, bidder shall pay revised legal and stationary charges.

#### 4.31 Stamp Duty

1. The stamp duty payable for the contract shall be borne by the selected System Integrator IN WITNESS whereof the parties hereto have signed this on the day, month and year written as part of the agreement.
2. As per the provision made in Article 63, Schedule I of Bombay Stamp Act 1958, stamp duty is payable for “works contract” that is to say, a contract for works and labor or services involving transfer of property in goods (whether as goods or in some other form) in its execution, as under:

Contract Value	Stamp Duty
1. Where the amount or value set forth in such contract does not exceed rupees ten lakh.	Five Hundred rupees stamp duty
2. Where it exceeds rupees ten lakhs maximum	Five hundred rupees plus 0.1% of the amount above rupees ten lakh subject to the maximum of rupees twenty-five lakh stamp duty.

3. The successful bidder shall pay stamp duty on BG as well as extended BG @0.5% of the BG amount as per circular no Ch.E./BM/17800/II dated 07/01/2016.
4. The successful Bidder shall enter into a contract agreement with MCGM within 30 days from the date of issue of Work Order and the same should be passed on judicially for payment of Stamp Duty by the successful Bidder.
5. Further shortfall if any, in amount of stamp duty paid as against prescribed amount for the documents executed in Mumbai City and Mumbai Suburban District be recovered from the concerned work contractors and to deposit the deficit or unpaid Stamp Duty and penalty by two separate Demand Draft or Pay Order in favor of “Superintendent of Stamp, Mumbai” within 15 days from intimation thereof.
6. All legal charges and incidental expenses in this respect shall be borne and paid by the successful Bidder(s).

## **5. Scope of Work**

The vision of MCGM is to utilize Remote Sensing (RS), Geographical Information System (GIS) and Information Technology and enhance Effectiveness of Removal of Encroachment initiatives and to reduce dependency on humans using reliable technology which is accurate and timely information.

In this case, the vision statement emphasizes on certain key aspects, which are:

1. Effectiveness of Removal of Encroachment Governance: Aims to improve the administration of removal of encroachment initiatives and assist informed decision making based on authentic past data.
2. Reliable, accurate and timely information: This focuses on streamlining, processing and making the information available on demand to the decision makers in a ready to use formats.

### **5.1 Goals & Objectives of the Project**

The vision statement chalks out a clear goal for this project which is ‘to establish a semi-automatic system using historic and current satellite images database as a tool to assist Removal of Encroachment department to take proactive initiatives to deter encroachment by the people and ensure authorized developments within MCGM.’

The context set for the project, demands The Department for Removal of Encroachments, MCGM to achieve following objectives:

1. To procure archive satellite images of Mumbai for different years, process them and prepare various geospatial data as mentioned in detailed in the Scope of work section.
2. Develop, Implement & maintain Enterprise GIS system which has capability to detect changes between different satellite images.
3. Integrate Geospatial data with existing data provided by MCGM and identify unauthorized, illegal constructions & encroachments in Mumbai area.
4. Integrate Geospatial applications with existing IT system for different departments as per the requirements provided by MCGM i.e., DP Department (available GIS DATA in .SHP formats) Mention requirement and architecture of current application along with the platform.

In realizing the stated vision and to achieve the goal of the project, the selected SI vender of SI will be responsible to deliver following indicative list of tasks in this project. The tasks are clubbed in four groups created based on the nature of the tasks to be done:

#### **1. Key System Development Components:**

- i) Change detection of urban areas to identify encroachments, illegal constructions
- ii) Procurement and processing of remotely sensed data (Ortho-mosaic Images, Stereo Pairs etc.).

- iii) Development of the Web Application and Dashboard application for the department.
- iv) Integrations with existing business systems of MCGM, viz RETMS, LAND RECORDS OF DP department
- v) For execution of the project, setting up the required infrastructures such as Workstations, Monitors, Hardware specific to stereo pair image processing, other necessary accessories etc. at MCGM. Necessary Hardware and software should be procured by the SI

## **2. Data Creation and Validation:**

- i) Differential Global Positioning System (DGPS) Surveys for collecting the Ground Control Points (GCP)
- ii) Digitization, Georeferencing, Ground-truthing as and when required.
- iii) Quality Assurance & Quality Control (QA-QC) of the generated vector as well as raster data
- iv) 2D Vector Model for Buildings, Houses, Slums, Metro Line, Metro Stations, Flyover, Bridges etc. using Stereo Pair Imagery.
- v) Creation of DSM, DTM, Contour Maps Mention Interval of 1 m, Land Use Land Cover (LULC), and Basemap.

## **3. Adherence to the guidelines:**

- i) Compliance to Cloud Hosting Guidelines for installations and maintenance of requisite hardware, software, databases and services etc.
- ii) Open Geospatial Consortium (OGC) compliant product/ service /application development

## **4. People and Process Enhancements:**

- i) Deployment of competent manpower to work at MCGM.
- ii) Testing and Training - Regression testing of each module & entire application to be conducted. Development of training modules, conducting workshops for Department staff members, and Creating User Manuals.
- iii) Annual Technical and Maintenance Support for Software Licenses Procured (GIS Enterprise Servers, Module Extensions, Databases etc.), Web-GIS Portals (Citizen Portal, as well as Departmental Module), and hardware supplied under this project etc.
- iv) Post Implementation Software Enhancements / Customizations.
- v) Establishment of dedicated GIS cell within the Department to work on the envisaged solution.

## **5.2 Design requirements of the Proposed Web GIS**

From data creation to the development of web GIS applications, from ground-truthing to the integrations with other business systems, the Department of Removal of Encroachments of MCGM will require robust Enterprise GIS implemented. The MCGM already has Enterprise GIS in place which can be leveraged in terms of data (base layers) and services it has to offer.

Following are the estimates of the approximate usage of the envisaged GIS solution:

1. Minimum No. of users on Intranet simultaneously viewing GIS data – 100
2. Minimum No. of users on Intranet simultaneously editing GIS data – 20

Specified above are the indicative need to be sure numbers of users, given to get a fair idea to the prospective bidders on overall usage of the envisaged solution. Bidders is required to propose the system which can be scaled up to higher usage in future. The proposed should be scalable and robust to address future needs.

### **5.3 Detailed scope of the work**

The project will be implemented in three phases.

1. Pre-implementation Phase
2. Implementation Phase
3. Post-implementation Phase

The deliverables under all these phases are elaborated below.

#### **5.3.1 Pre-Implementation Phase**

##### **1) Requirement gathering & System Requirement Specification (SRS)**

- a) The Bidder should study the existing available GIS data, and existing Web GIS modules and prepare detailed observation about the legacy data and application. The Bidder should carry out detailed requirement gathering with the Department of Removal of Encroachments and other concerned departments i.e., DP department towards creation of SRS and SOPs to be designed for the proposed solution. The bidder should study and collect the existing spatial and non-spatial datasets too-as per the requirements furnished in the scope.
- b) The proposed GIS solution/system should seamlessly handshake with the existing Enterprise GIS at MCGM and should bring about a federated GIS system accessible to MCGM administrators. Finally, the bidder shall take into consideration the existing GIS data, existing architecture of the Enterprise GIS at MCGM, the scope of work mentioned in detail in this RFP and the requirements from different departments of MCGM while preparing Software Requirement Specification (SRS).
- c) The bidder should submit the System Design Document (SDD) and data dictionary with well-defined geospatial data model.
- d) The bidder should submit an Inception Report. The inception report should include details on the technical specifications of the existing enterprise GIS system as well as availability of existing data.
- e) The proposed solution should fulfil the requirements specified in the RFP.

##### **2) Setting up dedicated workspace in Mumbai**

- a) The project involves handling of Satellite Images of Mumbai of multiple years & preparing various outputs/deliverable and hence, the bidder is expected to work in dedicated workspace

where only authorized project personnel will have access. The Bidder has to sign a Non-Discloser Agreement as per Geospatial data Policy of GOI

- b) All the project related data processing will be conducted in the dedicated workspace. MCGM will provide premises as far as possible.
- c) MCGM will keep a security guard to guard the dedicated workspace, the cost of which would bear by the bidder. Geospatial data Policy of GOI
- d) Bidder should declare & provide valid ID cards to their resources who would be working on this project. Only resources who have valid ID cards & allocated to the project would be allowed to enter & work in the dedicated workspace. Controlled Environment Under MCGM.
- e) The successful bidder shall assess required infrastructure for this project. The required workstations with relevant accessories, hardware specific to stereo-pair image processing etc. owned by the bidder will need to be brought and set up at the dedicated workspace.
- f) The bidder should use their existing OGC compliant Remote Sensing, GIS, Photogrammetry & Image processing software for project work.
- g) All activities from data creation to data processing to be undertaken at dedicated workspace and to development of web applications can be done at bidder premise or dedicated workspace based on bidder interest.
- h) Bidder to bear the cost of basic infrastructure like Electricity, Fan, AC, LAN, Desks, Chairs etc.in the premises provided by MCGM.
- i) The workstation which are in dedicated workspace should only be connected in LAN for processing the Geospatial data & for carrying out development of Enterprise GIS application. Only one workstation would be connected to Internet, which would be protected by appropriate credentials & would be accessible to project manager/ lead.
- j) Project related raw data, satellite images, any other Geospatial data should not be transferred over internet or any other medium to any other place except MCGM office. Any transfer of data from dedicated workspaces by any means would require prior approval from the client on email/ letter.

### **3) Data Acquisition and allied activities**

- a) Though it is a continuous process which will continue across all the phases of the project, following images will be acquired by the successful bidder for Mumbai City as the Area of Interest (AOI).
- b) The bidder will be required to communicate with relevant agencies such as National Remote Sensing Centre (NRSC) and Maharashtra Remote Sensing Application Centre (MRSAC)-and assist MCGM in the process of acquisition of satellite images, as per the directions. NRSC is the sole agency for procurement of remote sensing Data.

Year or near by year	VHR Stereo Pair Satellite Image	VHR Ortho-mosaic Satellite image	Coarse Resolution Satellite image
1960			Required
1961			Required
1962			Required
1963			Required
1964			Required
1970s			Required
1980s			Required
1990s		Required	
2000		Required	
2005		Required	
2011	Required		
2015	Required		
2020	Required		

Following table indicates the expected outcomes from the images acquired as per the table given above.

#	Description	Spatial Resolution	Expected Outputs
1	For 1960-2009 Period	As per the availability	<ul style="list-style-type: none"> <li>• Orthomosaic map</li> <li>• LULC Map</li> <li>• Change Detection Map year-on-year</li> </ul>
2	For 2010-2020 period, a stereo-pair imagery	30-60 cm (preferable)	<ul style="list-style-type: none"> <li>• Digital Models – DSM, DTM</li> <li>• Contour Map</li> <li>• Orthomosaic map</li> <li>• LULC Map</li> <li>• Change Detection Map year-on-year</li> <li>• vector model of buildings, slums, major infrastructure like Metro, Bridges, Flyover etc.</li> <li>• Basemap (Using 2020 Satellite image)</li> </ul>
3.	Subsequent acquisitions as per the requirement	Same or higher spatial resolution	In addition to the outputs mentioned above, deliverables as per the requirement of the Department.

Notes: If data for specific year is not available, the bidder should suggest suitable date for which year is available along with name of sensor, details of sensor, resolution, type of image, and the costs involved etc. The availability of data is easily available on the website of respective agencies.

### 5.3.2 Implementation Phase

The implementation phase can be completed by dividing the deliverables in two sections. All these deliverables are to be delivered for the entire MCGM limits area.

#### **Section – I: Geospatial Data processing, GCP and Ground truthing**

This section outlines the outputs that will be generated throughout this project. This is an exhaustive list, however during the requirements gathering the MCGM may request for some more additional deliverables. Generally, for all kinds of maps/outputs being created under this project, the map scale should be 1:500/1:1000 and the accuracy should be in +or –1 m/100cm.

##### **a) Pre-processing of the acquired data and Geodatabase Design**

- i) The bidder shall pre-process the acquired data.
- ii) The bidder shall remove the atmospheric as well as geometric errors from the acquired data, if any.
- iii) The bidder shall geo-reference the acquired data, if georeferencing it is not done.
- iv) The bidder shall mosaic the ortho-photos/ Image to create an ortho-mosaic.
- v) Data Model / Data dictionary
  - (1) The Data Model for storing the spatial & Non-Spatial shall be created by the bidder with the help of detailed round of discussion with concerned MCGM departments and officials. While creating a data model for this project, the existing Geospatial (Spatial and Non-spatial) Data model and Geodatabase design should be studied and should be followed to the extent required as approved by the MCGM.
  - (2) The final data model shall be approved by MCGM and before proceeding further the data model needs to be finalized.
  - (3) Once the data model is finalized, the bidder shall give the details of the data model diagram (ER Diagram) to MCGM for future references.
  - (4) The data model shall be created in such a way that all the layers that are already available with MCGM are considered while finalizing the data model. This will be a one step taken in the direction of bringing about a federated Enterprise GIS system.
  - (5) The bidder shall take care of the changes in the Data Model as per the requirements from MCGM users and shall maintain the history of changes for the entire period,

##### **b) DGPS Survey for setting up Ground Control Points**

- i) The bidder shall carry out the DGPS survey to set up a network of GCPs across the MCGM limits.
- ii) The bidder shall carry out surveys and submit a report for each administrative ward.
- iii) The bidder shall support this field reporting with necessary evidences such as photographs, automated reports from total stations etc.
- iv) The horizontal accuracy of the GCPs should be +/- 3 PPM

- v) The bidder should mark GCPs for locations which have been in static position (across Mumbai City area).

**c) Base-map Preparation**

- i) The bidder should prepare a detailed, up to date base map for the latest acquisition i.e., for the images acquired for year 2020 with a scale 1:1000–or with higher resolution, if possible. The bidder shall prepare a base map of all the wards/zones under MCGM authority.
- ii) Base-map should be free from errors related to digitization ~~and georeferencing.~~
- iii) The bidder should discuss the symbology and icons etc. to be set for digitized layers with MCGM team and implement the standards.
- iv) The base map will be prepared in various layers for ease of operation in GIS application. The details of the various layers to be part of the final base map are given as below:

Sr. No.	Layer Name	Vector Representation	Data Source
1.	Municipal Boundary	Polygon	MCGM
2.	Ward Boundary	Polygon	MCGM
3.	Prabhag Boundary	Polygon	MCGM
4.	Road Network	Line	Imagery
5.	Streetlight	Point	ADANI, MSEB ETC
6.	Buildings footprints	Polygon	Imagery
7.	Open Streams/Drainage/Canal	Line	Imagery
8.	DGPS Points	Point	Field Survey
9.	Bridges/ Flyover	Line	Imagery
10.	Parks/ Gardens	Polygon	Imagery
11.	Railway Network	Line	Imagery
12.	Footpath	Line	Imagery
13.	Landmarks	Point	Imagery
14.	Land Parcels	Polygon	Imagery
15.	Farms Parcels	Polygon	Imagery
16.	Contours	Polygon	Imagery
17.	Green Cover	Polygon	Imagery

- v) The preliminary interpreted map should be ground verified and the final map is to be prepared by incorporating the ground truth data.

**d) Generation of Digital Models**

- i) Digital Surface Model (DSM)
- (1) It represents the Mean Sea Level (MSL) elevations of the objects elevated above the “Bare Earth”.
  - (2) For orthophotos, the orientation parameters to be entered properly.
  - (3) Orthorectification should be completed properly and all the steps involved/practiced such as Tie-point generation, subsequent report generation etc. should be recorded for further use.
  - (4) For Stereo-pairs minimum 60% parallax should be observed and then these models DSM, DTM to be prepared.



- (5) The bidder should complete an Accuracy Assessment for the generated DSM.
- (6) The vertical accuracy for the DSM built should be 0.3-3m at 90% (or greater) confidence level.

ii) Digital Terrain Model (DTM)

- (1) It represents the bare earth surface with no objects on it.
- (2) Like DSM, all the relevant data preparation parameters and preferences should be taken care of by the bidder.
- (3) Both DSM and DTM should be created and kept in file formats which can easily be consumed by OSM compliant software/applications.
- (4) The bidder should complete an Accuracy Assessment for the generated DTM.
- (5) The vertical accuracy for the DTM built should be 0.3 - 1m at 90% (or greater) confidence level.

**e) Generation of Contour Maps**

- i) Contour lines are lines connecting points of equal elevation. They help us understand the topography on a 2D/3D map. Once DSM and DTM is generated, contour lines can be generated using them.
- ii) Generally, if the area is covered by buildings, the contour lines generated using the DTM are more useful than the ones generated from DSM. So, for densely populated areas like Mumbai City, generating a DTM will be a helpful for creating a robust contour map.
- iii) Contour lines should be continuous and should follow the terrain undulations properly. In case of broken contour lines, the bidder will have to prepare a new contour map as per the requirement from the MCGM.
- iv) Contours to be mapped at 1m contour interval. However, if high resolution remotely sensed data is available then contours can be mapped at 0.5m.

**f) LULC & Change Detection Map**

- i) LULC Maps (Land Use Land Covered)
  - (1) For both datasets, LULC maps to be created as per the availability of the images. If an image is available for a year, LULC map should be created and so on. The LULC maps can be designed as per the National Urban Information System (NUIS) Design and Standards 2008 guideline.
  - (2) LULC maps can include Urban Clusters, Barren Land, Shadows, Waterbodies, Rivers, Nalas, Forest, Agricultural Land, Mangroves and other protected landmarks
  - (3) The bidder shall be able to create LULC maps using Supervised, Unsupervised, as well as Object Oriented Classification algorithms provided as a part of software module. It will bring about classification of man-made and natural features.
  - (4) Complex areas with intermittent spatial regularity can be mapped on case-by-case basis.

ii) Change Detection Map

(1) For detection of the change, the bidder should primarily focus on Urban Features as well as protected /eco-sensitive zones (Mangroves, Creeks, Defense Areas, Forests/National Parks/Slums/Open Lands etc.) where the actual encroachment happens.

(2) The bidder shall process and update the change detection maps as soon as the remotely sensed data is available.

**g) 2D/3D Vector Model**

i) Photogrammetry techniques: The 2D/3D Vector models should be developed using Stereo Satellite imagery and applying photogrammetry technique.

ii) Image resolution: Submitted 2D/3D vector Models must be developed using imagery resolution 30-60 centimeters whichever is available. 2D/3D Models must be realistic and have accurate exterior 2D/3D representation.

iii) Data type: OGC compliant Vector Model.

iv) All assets covered in the 2D/3D vector Model shall be clearly viable and identifiable. The models must have all the details including all the viable superstructures such as overhead tanks, rooftop structures and parapet walls. The output of the 2D/3D model should be very clean, with minute details.

v) Historical data capturing: To visualize the growth of the city, detect changes over a span of time and compare with the latest data, the bidder must provide 2D/3D vector model of from 2011-2020. Archived stereo imageries are limited in terms of coverage and resolution so the resolution between 30-60 cm for data capturing is acceptable. Hence, historic data must be modelled as per image availability.

vi) Full submission of the Historical data / change detection should be done as per the timelines decided in the timeline section.

vii) Accessibility: The 2D/3D vector data should be light weight and should be accessible on any device like mobile phones, laptop, tablet with around 16 GB RAM.

viii) Streaming: 2D/3D city models should be accessed and streamed on the internet using 4G/LTE or Wi-Fi so various departments in MCGM can access the data.

ix) Default attributes: Every 2D/3D building model should be clickable, with an automated attribute table pop-up providing information such as building ID, height, volume and date of capture.

x) Data output Format: The 2D/3D Model deliverable output shall be GDB/FGDB or Multipatch shape file format or similar OGC compliant file format.

xi) 2D/3D City Model data integration with the Enterprise GIS platform: 2D/3D vector models should be integrated with MCGM existing Enterprise GIS platform for visualization / analysis / planning / stimulation purpose. Carrying out change detection analysis is vertically and horizontally will help the city in Property Tax Management,

Urban Planning, Disaster Management and most important to find the encroachments on the government and private land, vertical illegal constructions on/ above the buildings and to get volume of all kind of constructions in the city.

#### **h) Post-processing of the data**

##### **i) Ground-truthing**

- (1) The ground truthing for the generated outputs for the latest images (Year 2020) shall be completed by the bidder.
- (2) For all outputs mentioned above, 5% features/ attributes should be verified on ground for each administrative ward of MCGM. As the area under MCGM limits sums up to 480 sq.km., the bidder should complete the ground-truthing for 48 sq.km area (10% in each ward).
- (3) The bidder shall submit a Micro-management plan for ground truthing exercise and should submit a detailed report on the completed ground truthing.
- (4) The bidder should highlight if there are any errors or issues in the ground-truthing or in the data or in the outputs generated till now, through this report.

##### **ii) Accuracy Assessment**

- (1) once the high and very high resolution remotely sensed data is going to be used for this project, the bidder should generate all the outputs with minimum accuracy +/- 1m /100cm
- (2) For all the outputs, the relevant accuracy assessment reports should be submitted by the bidder. The reports must contain the supporting representations (screenshots of images etc.) of the accuracy assessments carried out.
- (3) In case of remotely sensed data, the bidder can submit the Root Mean Square Error (RMSE-should be less than 1) considered while georeferencing /similarly, for all other outputs the relevant accuracy assessment reports and parameters should be submitted.
- (4) Apart from RMSE, for the outputs mentioned above other relevant statistical parameters can also be considered for the accuracy assessment.

#### **1) Section – II: Development of Enterprise GIS**

An Enterprise level GIS is a system that is integrated through an entire organization so that multiple users can manage, share, use spatial data and related information to acknowledge and work on varied requirements such as data creation, data updating, data visualization and analysis and data/information dissemination. An Enterprise GIS aims at providing an integrated and interoperable system environment where multiple functions of the same enterprise can work together and at the same time can take care of external collaborations for betterment their core bones functions individually.

Through this project, it is expected that the bidder will design and develop an Enterprise GIS system for the Department of Removal of Encroachment. Along with the data and maps mentioned above, following are the key components that will constitute to an Enterprise level GIS.

**a) IT Infrastructure**

The bidder will have to do appropriate zing as per requirements of MCGM and undertake Supply, Installation & Commissioning, testing, certification and maintenance software licenses and IT infrastructure required for the project implementation. The IT infrastructure will be located at different locations, the workstation for viewing, editing & analyzing the geospatial data would be in MCGM premises. The Remote Sensing Enterprise Server, GIS Enterprise Server, Database server, etc. would be in cloud provided by MCGM. The bidder should include a list of the proposed hardware elements as part of their response to the RFP. would ensure that support and maintenance, backup, performance and up-time levels are compliant with SLAs. To ensure redundancy requirements are met, would ensure that infrastructure procured by the has redundancy built in. would also provide descriptive Deployment Model, Diagrams and Details on the proposed Enterprise Geospatial Implementation.

**b) Installation of GIS, Remote Sensing Imagery Desktop & Server software**

The bidders shall install & configure following OGC compliant software:

#	Software COTS Products	Units
1.	Remote Sensing /Image Processing software – Desktop (OGC Complaint 64bit)	1
2.	GIS software with 2D/3D toolset – Desktop (OGC Complaint 64bit)	1
3.	Remote Sensing Imagery Publishing software (OGC Complaint 64bit)	1
4.	GIS Enterprise Publishing software (OGC Complaint 64bit)	1

The Bidder should install & configure software mentioned in points 1 and 2 on workstation. The specifications of the workstation are provided in Annexure XIII. Software mentioned in points 3 and 4 would be installed in cloud provided by MCGM and should be configured & added to existing MCGM's Enterprise /GIS data center. The specifications of the software-as mentioned in Annexure XI and with 3 years AMC.

**c) Development of Enterprise Geospatial Application (Web & Mobile)**

- i) The selected bidder should develop a web-based GIS application/portal for MCGM. This application will primarily use in viewing, analyzing, & utilizing the image repository and the thematic maps generated in order to find out the changes happening on ground over the period. In short, this system will play a role of Decision Support System (DSS) for Department of Removal of Encroachments and ultimately for MCGM. This will be a departmental module.
- ii) The bidder is expected to follow the complete SDLC for the development of the Enterprise GIS applications.

- iii) This portal as mentioned earlier, will host the repository of all data outputs created. The user will select multiple images which will be viewed in their respective Image viewers with the same zoom levels. These viewers will be geographically linked so that changes for the same location in different periods can be checked. The indicative FRS is attached in the Annexure.
- iv) Along with standard map functions such as zoom in, zoom out, pan, draw, print map etc., this web application will have Swipe, Time Series Analysis / Time Slider tools which will help the MCGM administrators to easily detect the changes. Layer on-off should be provided too.
- v) The portal should use 2D interface for presenting 2D data and 2D/3D interface for presenting 2D/3D data.
- vi) The bidder shall also provide a tool which will be able to process selected 2 datasets on the fly and produce a change detection map on the go.
- vii) The bidder will also have to develop mobile based applications for geo enabled survey and other field-based verifications as well as validation to be done by the MCGM officials. These apps shall be compatible with the existing technology stack of MCGM and shall be platform / OS independent. The functionality will be finalized by MCGM during the requirements gathering.
- viii) Proposed/Developed GIS Applications should follow National Spatial Data Infrastructure (NSDI) meta data standards and should be compatible with NUIS Scheme.
- ix) The applications developed and the data created should also have mobile compatibility for field users of MCGM staff/officials. The bidder should create relevant data formats that can be hosted and accessed from the mobile platforms.

**d) Development of operational dashboards**

- i) The bidder should develop an operational dashboard for the Department of Removal of Encroachments.
- ii) The dashboard should let administrators know, percentage of ward level encroachment.
- iii) Statistics on changed features and their timelines should be mapped properly so that it can be viewed and analyzed using this dashboard.
- iv) This dashboard should also provide a summary of actions taken by the administrators and the subsequent visualizations should be configured.
- v) The functionality will be finalized by MCGM during the requirements gathering.

**e) Integrations with business systems of MCGM**

- i) Presently, the Department of Removal of Encroachment has decided to integrate the proposed web GIS solution with applications of different departments of MCGM such as Development Plan, Building Plan Approval System, Property Tax Management System.

- ii) The proposed system should also integrate and make use of existing Removal of Encroachment Management System available with the department.
- iii) The bidder should develop requisite web services to pull and share the data as and when required with all such business applications of MCGM.
- iv) The functionality will be finalized by MCGM during the requirements gathering.

#### **f) Testing**

The selected System Integrator shall undertake the following activities:

1. Outline the methodology that will be used for testing the system
2. Define the various levels or types of testing that will be performed for system
3. Provide necessary checklist/documentation that will be required for testing the system
4. Describe any techniques, test cases/ scenarios / scripts that will be used for testing the system
5. Describe how the testing methodology will conform to requirements of each of the functionalities
6. Indicate/demonstrate to the department that all applications installed in the system have been tested
7. The selected System Integrator shall provide a workflow for on-off on test deliverables that will be mutually agreed upon by both the parties

RE department from MCGM may issue appropriate acceptance certificate to the selected System Integrator for stabilization of all modules and successful operationalization of the application.

The selected System Integrator shall conduct various types of testing on the new build/package before releasing it for deployment on the production environment according to standard Software Testing Life Cycle (STLC). The testing levels shall include: Unit Testing, Integration Testing, System Testing and Acceptance Testing. These tests levels shall be included such: as security testing, performance testing, Usability testing, Concurrency testing, etc.

In view of the above, different types of testing followed generally as a part of typical Software Development Life Cycle have been mentioned below to understand the exact testing requirements for this project:

- Unit testing - Testing of individual software components or modules. Typically done by the programmer and not by testers, as it requires detailed knowledge of the internal program design and code.

- Integration testing - Integration testing shall be amongst the modules to verify the functionality of data sharing within the application. This shall include integration testing with external applications to verify the combined functionality after integration.
- Regression testing – After implementing a bug fix or new change request, the system shall be tested again by the to check whether any new bug has been introduced or not. Here the application shall be tested as a whole after each update or change in the software. The cost of any automation tools used in this testing shall be borne by the System Integrator.
- Acceptance testing - Normally this type of testing is done to verify if system meets the customer specified requirements. The department will conduct this testing based on the documents submitted by selected agency to determine whether to accept application.
- Usability testing – This is for the User-friendliness check. In this, following areas shall be tested: Application flow, for a new user understand the application early, proper help documented whenever a user is stuck at any point, minimum keyboard entry and maximum use of drop-downs/auto-prompt feature, etc. Basically, system navigation shall be checked in this testing.
- Security testing – This test shall be conducted to check if the system can be penetrated by any hacker. The selected shall conduct security testing to check how well the system protects against unauthorized internal or external access and to check if system database is safe from external attacks.
- Performance testing – This term often used interchangeably with ‘stress’ and ‘load’ testing to check whether system meets performance requirements under different levels of loads and to check the maximum load at which the system performance degrades. For this testing, selected are expected to use different performance and load tools.
- Concurrency testing - Concurrency testing is also known as multi-user testing, performed to identify the defects in an application when multiple user’s login into the application. It helps in identifying and measuring the problems in system parameters such as response time, output, locks/dead locks or any other issues associated with concurrency. They shall carry out proper testing as required to meet the stated performance criteria.

The selected System Integrator shall ensure that the test documentation including test procedures, test data and test results are shared with the department for approval before the testing begins. The selected System Integrator shall also submit Requirement Traceability Matrix (mapping of test cases to requirements) and test plan for approval before testing. The selected System Integrator shall use an open-source defect tracking tool and submit a defect workflow that shall be followed for all defects logged into that system.

Errors / bugs detected during testing are expected to be logged, classified, reviewed, and resolved prior to release of the software. Software error data that is collected and analysed during a development/customization life cycle may be used to determine the suitability of the software product for release and installation. Test reports shall comply with the requirements of the corresponding test plans.

The Acceptance Tests shall demonstrate that the System Integrator has met each requirement specified in the FRS and SRS documents and has delivered an effective operational system.

i. User Acceptance Testing (UAT)

The department shall form different user groups for the purpose of UAT. These user groups would test the application and the results of all the above-mentioned tests submitted by the selected System Integrator will be considered to ascertain the functionality of the application. Once the defined acceptance criteria are completely met, selected System Integrator shall take a formal go off from the group for acceptance of each module. Based on the go off and user feedback, department would issue UAT certification to the selected System Integrator for that module / sub-module. The selected System Integrator shall submit the Test Strategy, Test Plan and test Metrics to MCGM.

The Test Strategy document (prepared once for the project) shall include –

1. Objectives of testing and the activities that will serve to meet these objectives
2. Consistent of the tests (which characteristics are to be tested and which are not)
3. Defining priority levels and severity levels
4. Associated documents (such as the project plan, overall quality assurance strategy, other project documents) being referenced
5. Resource staffing and allocation (hardware/software/personnel) for testing
6. Test stages and cycles
7. Selection of suitable testing methods
8. Test management (defect reporting, defect management & triaging)
9. Release environments and test tools used for testing.

The Test Plan document (prepared for every change/enhancement/patch) shall include –

1. Scope of testing within the context of the project
2. Test systems and objects to be tested with priority levels
3. Impact analysis in the system landscape – This shall include the identification of risks, either positive or negative, analyze the risk, the probability of the risk occurrence and its impact and the plan to control or mitigate the risk
4. Criteria for interrupting and terminating testing, as well as acceptance criteria for each test stage i.e., Entry / Exit Criteria
5. Testing roles and responsibilities



ii. Release Management

The selected System Integrator shall provide a detailed deployment plan, including but not limited to, application version control, and load all application materials, assignment of user rights and security, and verification of correct functionality. It is also expected that selected Implementing Agency shall present a deployment plan to MCGM for their approval from the beginning of the test period.

iii. Periodic Security Audit

The selected System Integrator shall conduct security check / vulnerability tests/ penetration tests on all the applications being developed and maintained and implement the security measures as per analysis.

**g) User Level Training**

The selected System Integrator shall provide training to the application users to efficiently use the system as per requirement during the contract period.

After each training, training completion certificate duly signed by the trainees, trainers, HOD of department shall be maintained by the selected System Integrator.

**h) Audio Visual Training system and Online Help**

- i. In order to asst the users in operating / navigating through the applications and processes, module wise/ section wise training material, Audio-Visual clips may be created for required modules / sub-modules / sections of the concerned application which can be played at any given point of time through the browser.
- ii. Also information in the form of a downloadable PDF format shall be provided to the user who may refer / download it for their own personal reference as and when needed.
- iii. It is required that the downloadable training consistent shall have proper indexing and internal references, mapped with key words, in order to allow any user to search and reach the derived consistent with the help of those key words.
- iv. Any user shall be able to search and read the directions / information for only the part required by him/her rather than looking through the entire PDF document and manually searching for the right consistent.

**5.3.3 Post-Implementation Phase**

Once the implementation phase (Go-Live) is over, the bidder will provide an Annual Maintenance Contract (AMC) for the period of three (3) years. The AMC will cover following tasks:

**1) Annual Maintenance Support (Handholding Support and Data Management):**

- a) Bug Removal – Technical glitches/bugs/issues/errors/gaps in the Web GIS portal, Mobile App or Dashboard or any such solution implemented in this solution will be taken care by the bidder at no additional cost during the O&M phase. The bidder is responsible for maintaining the integrity of the Geo-database as well as codes/programs being written.
- b) System Security and Integrity Checks – The bidder will be responsible to maintain the security and integrity of the system throughout the post-implementation phase.
- c) UI-UX Enhancements – The bidder should do minor UI-UX level enhancements suggested by the MCGM officials as and when required.
- d) Data Acquisition – The bidder should process the order for data acquisition, as done earlier in pre-implementation and implementation phases.
- e) Data Updates and Modifications –
  - i) The bidder shall process the subsequent remotely sensed data collected after implementation phase. The bidder shall also create all the outputs listed in the Section-I of Implementation Phase once the latest images/data is available.
  - ii) The bidder shall host all the processed data (old and new) on the web portal.
  - iii) If the data created in implementation phase is found to be misaligned or some data is found misinterpreted or there are some errors in the data created already, the bidder should correct those as per the requirement of the MCGM. The errors or modifications to be done can be found out in any year out of 3 years of post-implementation phase (AMC), the bidder shall correct it accordingly.
  - iv) Regression testing of each module and entire application to be carried out.
- f) The bidder shall provide unlimited support through online team/ telephone/E-mail/ remote sensing / Video conferencing as and when required.
- g) Any version upgrade of the software / tool / appliance by the bidder to be done after taking prior approval of MCGM and after submitting impact assessment of such upgrade.
- h) Any changes/upgrades to the software performed during the support phase shall subject to the comprehensive and integrated testing by the bidder to ensure that the changes implemented in the system meets the specified requirements and does not impact any other function of the system.
- i) Issue log for the errors and bugs identified in the solution and resolution/ change done in the solution shall be maintained by the bidder and periodically submitted to the MCGM.
- j) The bidder at least on a quarterly bas, shall inform MCGM about any new updates/upgrades available for all software components of the solution along with a detailed action report.
- k) In case of critical security patches/alerts, the bidder shall inform about the same immediately along with his recommendations. The report shall contain the bidder's / 's recommendations on update/upgrade, benefits, impact analysis etc.

## **2) Compliance to SLAs**

- a) The bidder shall ensure compliance to SLAs as indicated in this RFP and any upgrades/major changes to the system shall be accordingly planned by the bidder ensuring the SLA requirements are met at no additional cost to the department.

### **3) Annual Technological Support**

- a) The bidder shall be responsible for arranging for annual technology support for the OEM products by the respective OEMs during the entire project duration.
- b) All patches and upgrades from OEMs shall be implemented by the bidder ensuring customization done in the solution as per the MCGM's requirements are applied. Technical upgrade of the installation to the new version, as and when required, shall be done by the bidder.

### **4) Change and Version Control**

- a) All planned or emergency changes to any component of the system shall be through the approved Change Management process.
- b) For any change, the bidder shall ensure:
  - i) Detailed impact analysis
  - ii) Change plan with roll back plans
  - iii) Appropriate communication on change required has taken place i.e., proper approvals have been received/obtained
  - iv) Schedules have been adjusted to minimize impact on the production environment
  - v) All associated documentations are updated post stabilization of the change
  - vi) Version control maintained for software changes
  - vii) The bidder shall define the Software Change Management and Version control process. For any changes to the solution, the bidder must prepare detailed documentation including proposed changes, impact to the system in terms of functional outcomes/additional features added to the

### **5) Deployment of Geospatial Analyst onsite for Support**

- a) Responsibilities of Geospatial Analyst – Geospatial Analyst would be deployed onsite during AMC period (after Go-Live) for duration of 36months. Following are some of the Responsibilities of Geospatial Analyst during the AMC period:
  - i) Provide onsite technical support in using the Enterprise GIS application developed for the MCGM as part of this project.
  - ii) Provide reports, run analysis, etc. from the Enterprise GIS application deployed at MCGM as per the requirements of the client.
  - iii) Provide help through online virtual conference, phone call or in person to MCGM officers for using the Enterprise GIS application.

- iv) In case of any observed bug, errors, downtime of the application report the issue immediately to AMC support team & seek resolution for the same.
- v) Create presentations, audio-video materials to increase the usage of the Enterprise GIS applications amongst MCGM officers.

#### 5.4 Project Timelines / Milestones

MCGM envisages the completion of the project (the detailed Scope of Work that has been given in the section) within a timeframe of 15 months (Go-Live) from the date of contract signed. After Go-Live the AMC & support is for a period of 3 (three) years. Thus, the total Duration of the project is for 4.3 Years. (i.e., 51 months)

There are three main phases in the Scope of Work namely Pre-implementation, implementation and post implementation phase. There would be some tasks from pre-implementation & implementation phase which would be conducted parallelly (same time). After award of contract, they will immediately order necessary satellite images from NRSC/ others. While the satellite images are being shipped by these organizations, they will start DGPS Survey for setting up Ground Control Points. Similarly, in the Implementation phase there are two sections namely Data & Map generation and Development of Enterprise GIS application which will be started at the same time.

Following is an Indicative Project Timeline:

#	Phase	Tasks	Activity	Completion Timeline (Weeks)
1.	Pre-Implementation	Award of Contract	sign the Contract & Team Mobilization	T
2.		Order of Satellite Images/INDENT	Place an order with necessary organization for procurement of satellite imagery - NRSC	T + 4
3.		System Requirement Specification (SRS)	Requirement gathering & system Requirement Specification (SRS) submission	T + 9
4.		Delivery of Satellite images	Checking the Delivery of all Satellite images	T + 25
5.		Workspace at MCGM	Setting up the dedicated workspace	T + 10
6.	Implementation	Data and Map Generation	DGPS Survey for setting up Ground Control Points	T + 12
7.			Pre-processing of the acquired data and Geodatabase Design	T + 29
8.			Base-map Preparation	T + 35
9.			Generation of Digital Models (DSM & DTM)	T + 40
10.			Generation of Contour Maps	T + 40
11.			LULC & Change Detection Map	T + 44
12.			2D/3D LOD-2 Vector Model for the	T + 53

			city	
13.			Post-processing of the data (Ground truthing & Accuracy Assessment)	T + 55
14.		Development of Enterprise GIS application	Installation of GIS, Remote Sensing Desktop hardware and software	T + 25
15.			Installation of GIS, Remote Sensing Server software	T + 50
16.			Development of Web GIS Application / Portal	T + 55
17.			Development of operational dashboards	T + 60
18.			Integrations with business systems of MCGM	T + 63
19.			UAT, Training & Go-Live	T + 65 (65*7 days = 455 days @ 15 months)
20.	Post-Implementation	Annual Maintenance Support	Bug Removal, System Security and Integrity Checks, Software upgrade, etc.	Three Year from Go-Live

## 5-5 Project Initiation and Management

The selected System Integrator shall adopt the GIS software development life cycle using industry standards best practices and adopting the security constraints for access and control rights in order to achieve the high level of stability and robustness required for the application. The selected System Integrator shall also follow proper assessment, documentation, Version control and other criteria to ensure long term continuity of the project. The major deliverables to be submitted by the are as follows:

### a. Inception Report

The selected shall submit an Inception Report for the allotted project implementation which will serve as a foundation document for the overall project. The Inception Report shall include the overall project plan and the plan for individual phases along with detailed tasks. The acceptance of the inception report by MCGM is essential for proceeding with the implementation of the project. The System Integrator shall plan the project implementation in great details and shall provide a micro level view of the tasks and activities that they are going to be undertaken in consultation with the MCGM User department and RE department. The minimum list of planning related documentation that the System Integrator shall make at the onset is as follows:

- i. **Project Schedule:** A detailed week-wise timeline indicating various activities to be performed along with completion dates and resources required for the same
- ii. **Manpower Deployment List:** List and number of all manpower that will be required along with the task assigned to each. Roles and Responsibilities of every category of manpower shall be mentioned.

- iii. **Resource Deployment List:** List and number of all resources other than manpower those are required.
- iv. **Communication Plan:** Detailed communication plan indicating what form of communication will be utilized for what kinds of meeting along with recipients and frequency.
- v. **Progress Monitoring Plan:** Detailed Daily, Weekly, Monthly Progress Report formats along with issue escalation format. The format will be approved by MCGM to the System Integrator before start of the project.
- vi. **Standard Operating Procedures:** Detailed procedure for monitoring the application performance parameters and implementation progress.
- vii. **Risk Mitigation Plan:** List of all possible risks and methods to mitigate them. The following format will be used for this purpose:

Risk Scenario	Impact on Duration	Impact on Cost	Corrective Action	Responsivity Centre	Completion Date	Status

- viii. **Escalation Matrix and Incident Management:** A detailed list of key contact persons with contact details with escalation hierarchy for resolution of issues and problems. This has to be documented and implemented via an Incident Management system.

#### **b. Detailed Requirement Gathering and Analysis**

The selected System Integrator shall document the requirements in the form of Functional Requirement Specification (FRS) and the solution proposed and identify the gaps for customization, configuration and development. The System Integrator shall visit departmental office(s) to conduct a comprehensive requirement analysis of the system, infrastructure and training needs in discussion with all the stakeholders (MCGM or its representatives).

Activities conducted as part of this task will result in the project deliverable viz. the Survey Report, Software Requirement Specifications (SRS) report, Bill of Material (BoM), Bill of Quantity (BoQ) and Training Needs Analysis (TNA) report, which shall detail the requirements of the complete solution and implementation requirements up to the last possible detail.

#### **c. System Design**

The selected System Integrator shall prepare and submit the complete architecture of the proposed application(s) including the system architecture, solution architecture, hardware deployment architecture and network architecture as per requirement. The selected System Integrator shall ensure all possible and required improvements are incorporated in the solution architecture, as applicable and also ensure that the architecture would not restrict any scalability or enhancements in future. The selected System Integrator shall be entirely responsible for the proposed architecture of

the system implemented to satisfy all features, functions, security etc. as described in this document including system zing. Detailed Technical manual shall be submitted by the selected System Integrator.

#### **d. Documentation and Versioning**

The selected System Integrator shall ensure that complete documentation of the project is provided with comprehensive user manuals and adhere to standard methodologies in software development as per ISO standard and/or CMM models. The following documents will the minimum requirements:

- i. System Requirement Specifications and Solution Design Document
- ii. Traceability Matrix document
- iii. Communication Plan listing all stakeholders in the project, defining their roles and Responsibilities
- iv. All Architecture documents, Design documents, testing and deployment manuals, non-functional requirements, etc.
- v. Quality Assurance Plan stating the planned actions to ensure satisfactory delivery conforming to functional and technical requirements of the project
- vi. Test Plan containing information on the software test environment to be used for independent testing, the test cases to be performed, and the overall testing schedule. This includes: schedule, resources, tools, procedures, environment definition, test cases, and software test results.
- vii. Operations Manual providing instructions for installing the application, troubleshooting, interpreting message logs, and FAQs (Frequently Asked Questions)
- viii. User Manual (online and downloadable consistent) providing detailed instructions in the form of a narrative on how to use the software
- ix. A data dictionary listing out all the data elements shall be prepared
- x. Minutes of Meeting, Agenda, Proceedings and tracking of decisions during the entire implementation period.
- xi. All the documents including, but not limited to the above shall be submitted to MCGM

### **5.6 Compliance with Industry Standards**

The selected System Integrator shall ensure that the Application Solution is web based, Mobile abased and Desktop based as per requirement which should be built on enterprise application platforms with enough flexibility for customization based on department's needs. It should follow the best and latest industry standards while Designing and developing the solutions.

**Language Support:** The applications to be developed during the contract duration should support languages mainly English and/or Hindi & Marathi as optional as per user requirement. In addition, application shall support Unicode formats for text editing, file name, data storage etc.

**Access and Interface:** The application is expected to be user-friendly, intuitive and equipped with

help / support facilities.

**Browser Compatibility:** The applications are expected to support latest Versions of all popular browsers such as Internet Explorer, Chrome, Mozilla Firefox, Netscape etc. at all time. It shall also be multi-channel, compatible to web as well as mobile / handheld devices. The application shall work on various platforms, browsers and resolution. Below mentioned components need to be taken care of while selecting the technology components in the respective applications:

**a. Platform Flexibility**

- i. Web-centric, multi-tier architecture shall be used
- ii. Open Standards and Interoperability shall be considered
- iii. Extensible Mark-up Language (XML) based standard shall be used wherever applicable
- iv. Compliance to Service Oriented Architecture (SOA) and Web-services

**b. Interoperability**

- i. Usage of standard Application Programming Interface (API)
- ii. Service-oriented architecture (SOA) based
- iii. Support for multiple industry standard databases with Oracle Database Connectivity (ODBC), Java Database Connectivity (JDBC) and Unicode compliance

**c. Adherence to various standards**

Applications to be developed are expected to comply with Guidelines for Indian Government Websites. The system shall adhere to applicable IT standards published by the Department of Electronics and Information Technology, Government of India ([www.deity.gov.in](http://www.deity.gov.in)) and other applicable standards as listed in the table as well as the Meta Data and Data Standards (MDDS). The Website shall be validated for HTML, Cascading Style Sheet (CSS), Broken Links, accessibility and mobile friendliness.

### 5.7 Application Hosting

IT department hosts all the applications at third party cloud. The selected System Integrator will have to host and maintain the newly developed applications on the infrastructure provided by IT department during the contract period.

### 5.8 Resource with minimum qualification and experience requirement within the scope of this tender

During the contract period, following types of expert manpower will be required as per requirement:

#	Resource Profile	Minimum Experience (Years)	Roles, Activities and Professional Experience	Minimum Educational Qualification and Professional certification
1	Project Manager	12	○ Experience in GIS domain out of which 10+ years' experience in managing GIS application development projects.	○ PMP/ Prince 2/ CompTIA Project+ /



			<ul style="list-style-type: none"> <li>○ Development Exposure to different GIS technology platforms like ArcGIS, ERDAS Apollo, Open-Source GIS etc.</li> <li>○ Experience in development technologies like Java, JavaScript, Python etc.</li> <li>○ Experience in documentation including FRS, SRS, Architecture Design, Test Plan, Deployment, Release etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ CAPM/ PG/Graduate – Earth Science/Engineering/Computer Science &amp; Geo-Informatics.</li> </ul>
2	GIS DBA cum System Administrator	5	<ul style="list-style-type: none"> <li>○ Experience as GIS DBA using ArcGIS platform using Oracle / SQL Database Design, development and maintenance</li> <li>○ Implementation of database file structure and functional capabilities, Database security, Backup, Archival and Recovery</li> <li>○ Experience in Versioning and replication</li> <li>○ Knowledge of System Hardware and Software</li> </ul>	<ul style="list-style-type: none"> <li>○ TOGAF/ COBIT/ ITIL/ any-six sigma</li> <li>○ PG/Graduate – Earth Science/Engineering/Computer Science &amp; Geo-Informatics.</li> </ul>
3	GIS Software Developer	5	<ul style="list-style-type: none"> <li>○ Experience in application development/Data handling and processing on GIS technology platforms mainly ArcGIS, ArcGIS (PFA), ERDAS, ENVI, etc.</li> <li>○ Development technologies: Oracle, ArcGIS (Server, JavaScript API), JEE (Servlet, Spring), ArcSDE, ArcObjects, Python, Android, iOS etc.</li> <li>○ Experience in drafting FRS, SRS, Architecture Design, UAT, Deployment etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Any Development related certifications/ API or Enterprise certifications</li> <li>○ PG/Graduate – Earth Science/Engineering/Computer Science &amp; Geo-Informatics.</li> </ul>
4	GIS Analyst	5	<ul style="list-style-type: none"> <li>○ Experience in GIS data handling /Digitization Tools mainly ArcGIS Desktop and others like Auto CAD, MapInfo, Geomedia etc.</li> <li>○ GIS data QA/QC</li> <li>○ Exposure to Spatial and linked attribute Data Management and Digital Image Processing</li> </ul>	<ul style="list-style-type: none"> <li>○ Enterprise certifications / Any Remote Sensing certification</li> <li>○ PG/Graduate – Earth Science/ Engineering/ Computer Science &amp; Geo-Informatics.</li> </ul>
5	Image Processing / Remote Sensing Expert	5	<ul style="list-style-type: none"> <li>○ Experience in performing digital image processing operations, change detection, Image Georeferencing, DEM generation, Stereo pair and mono images handling, photogrammetry using ERDAS, ENVI, eCognition software etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Enterprise certifications / Any Remote Sensing certification</li> </ul>
6	GIS QA Lead	5	<ul style="list-style-type: none"> <li>○ Experience in: <ul style="list-style-type: none"> <li>▪ Identification of testing scope and documentation</li> <li>▪ Designing test lifecycle</li> <li>▪ Manual testing</li> <li>▪ Drafting test cases</li> <li>▪ Execution of test cases</li> <li>▪ Generation of test reports</li> </ul> </li> <li>○ Collaboration with developers and Project Manager to improve overall product/solution quality by emphasizing defect prevention throughout the</li> </ul>	<ul style="list-style-type: none"> <li>○ Any Software Testing certification/ Enterprise certifications</li> <li>○ PG/Graduate – Earth Science/Engineering/Computer Science &amp; Geo-Informatics.</li> </ul>

			<p>development process enabling them with Unit Testing tools and framework.</p> <ul style="list-style-type: none"> <li>○ Participation in all release planning and relevant internal testing meetings to ensure critical SDLC/Agile deliverables, testing deliverables and project risks are proactively managed and communicated to key stakeholders.</li> <li>○ Expertise in recommendation and evaluation of new tools to improve productivity, efficiency and Quality.</li> <li>○ Experience in GIS domain</li> </ul>	
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Note:

1. Vendor must have the required resources continuously working in the associated areas on company's rolls. If the vendor intends to recruit/ hire the required resources as per RFP conditions, they should be immediately deployed once the project is awarded.
2. The deployed staff shall be responsible for problem management, continuous system improvement, Version control and Version validation, risk management, etc.
3. The selected bidder shall plan the deployment of resources according to the implementation plan and not all resources will be required from day one.
4. During the contract, if it becomes necessary to replace any of the Key Personnel, the selected bidder shall forthwith with due approval from the department, provide as a replacement, a person of equivalent or better qualifications and experience than the resource being replaced or proposed in the bid. Failure to replace personnel with the required qualifications shall result in a penalty as per the SLA defined in the contract.

Human Resources replacement – Guidelines.

## 5.9 Operation and Maintenance guidelines

### a. Work timings

The selected System Integrator shall ensure onsite support and services for minimum Eight (8) hours [MCGM working hours] on all MCGM's working days for development, monitoring, operation and maintenance of applications, Backup and Restoration, security monitoring, reporting services etc.

In addition to regular working hours, the selected agency should ensure support onsite or over telephone/ virtual meeting anytime as and when needed after working hrs. or on holidays.

### b. Support / Incidents Management

The selected System Integrator shall ensure proper set up of application for logging the incidents using open-source technologies. The support service shall serve all application related incidents, information and service requests, grievance redressal, resolution and tracking status of incidents. The incident logging application should be ensured to function in 24 x 7 x 365 days mode.

The scope of work shall include:

- a. Facility for providing assistance to all types of users regarding appropriate information
- b. To provide a support facility to receive incidents through various channels viz.:
  - i. Through Email
  - ii. Through Phone Numbers
  - iii. The application
  - iv. SMS
  - v. WhatsApp

The onsite support service shall undertake the following activities:

- a. Log issues / complaints / Grievances related to Application
- b. Assign severity level to each issue / complaint / Grievance
- c. Track each issue / complaint / Grievance to resolution
- d. Escalate the issues / complaints / Grievances, to MCGM Authorities if necessary as per the escalation matrix.
- e. Provide feedback and resolution to the user
- f. Follow up and record general feedback / complaints on the services provided
- g. Make the incident reports available to the concerned IT authority

The selected System Integrator shall set-up the support system at facility provided by MCGM.

#### **5.10 Source Code Rights**

The rights of the source code of the customized Version of the COTS product and/or the bespoke application shall lie with MCGM. In case any subsystem is completely developed, the rights of the source code shall also be with MCGM. The source code needs to be transferred within three months of successful Operational Acceptance. All the costs associated with the transfer of source code shall be borne by the System Integrator. The following protocol shall be followed for the transfer of source code to MCGM:

- a. The System Integrator shall submit detailed documentation for each module of the application to the department. This includes all the modules deployed. The list of the documents to be submitted are as follows:
  - i. Functional Specification Document
  - ii. Technical Specification Document
  - iii. Software architecture Documentation
  - iv. User Manuals
  - v. Training Manuals
  - vi. Test Plan , Test Cases and Results
  - vii. Release Notes
  - viii. User Guide to install, configure and use the module

All the documents shall be updated as per the last release of that module. The documents shall be reviewed by the department or agency appointed by the department. System Integrator shall ensure that any disparity / lacunae found in the documents are rectified and revised documents are submitted for further review. The transfer of documentation to be considered as complete after the department issues the completion certificate for the task.

- b. Transfer of all the source code files, supporting libraries, database scripts, libraries and metadata dictionary, procedures and supporting software components. Source Code to be exact replica of the department application live on the production server.
- c. Documentation of step-by-step procedure for recompilation of the application shall be submitted by System Integrator. The documentation shall enable MCGM (or any third party appointed by MCGM) to install, configure and recompile the application.
- d. While submitting the Source Code files, System Integrator shall submit the declaration that the Source code is of the same Version which is on Production Environment and used for live operations. shall provide the environment to recompile the source code and provide access to the application to confirm that the Source Code is of the latest Version and is same as that on the Production Environment.
- e. System Integrator shall conduct the necessary Knowledge Transfer sessions to the technical staff provided by the of MCGM. The success criterion of training will be that IT team provided by MCGM is able to recompile successfully the entire application on the test server independently.
- f. The transfer of source code shall be an on-going exercise. As and when, a new Version of the application is deployed in production; the source code of the changed modules shall be transferred as per the above protocol to the department. At the end of contract period or at the end of the complete development and deployment of all the change requests provided by the department within the contract period or whichever is later, the entire source code shall be transferred in the same way.
- g. The department may conduct (a) Software architecture and code review and (b) Security Audit of the application, and necessary compliances are carried out before handing over the source code during exit management. Timelines for this compliance shall be jointly decided between the department and System Integrator.

## 6. Annexure I: Instructions for Pre-Qualification Bid

### 6.1 Pre-Qualification Cover Letter

Date: dd/mm/yyyy

To

<Insert complete postal address>

**Sub :** <Project Name>

**Ref :** Bid No: <No> Dated <DD/MM/YYYY>

Dear r,

Having examined the bid, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to provide the professional services as required and outlined in the bid for the <insert Name of the bid/project>

We attach hereto our responses to pre-qualification requirements and technical and commercial bids as required by the bid. We confirm that the information contained in these responses or any part thereof, including the exhibits, and other documents and instruments delivered or to be delivered to Municipal Corporation of Greater Mumbai, are true, accurate, verifiable and complete. This response includes all information necessary to ensure that the statements therein do not in whole or in part mislead the Corporation in its short-listing process.

We fully understand and agree to comply that on verification, if any of the information provided here is found to be misleading the selection process, we are liable to be dismissed from the selection process or termination of the contract during the project, if selected to do so.

We agree for unconditional acceptance of all the terms and conditions set out in the bid document and also agree to abide by this bid response for the bid validity period as mentioned in the RFP. We hereby declare that in case the contract is awarded to us, we shall submit the contract performance guarantee bond in the form prescribed in the bid.

We agree that you are not bound to accept any bid response you may receive. We also agree that you reserve the right in absolute sense to reject all or any of the products/ services specified in the bid response.

It is hereby confirmed that I/We are entitled to act on behalf of our company/ corporation/ firm/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.

signature of Authorized signatory (with official seal)

Name :  
 Designation :  
 Address :  
 Telephone :  
 Email address :

### 6.2 Format to share Bidder's Particulars

Sr. No.	Description	Details (to be filled by the responder to the Bid)
1.	Name of the company	
2.	Official address	
3.	Phone No.	
4.	Corporate Headquarters Address	
5.	Phone No.	
6.	Web site Address	
7.	Details of Company's Registration (Please enclose copy of the company registration document)	
8.	Name of Registration Authority	
9.	Registration Number and Year of Registration	
10.	ISO/CMMi certifications and its validity	
11.	CST/LST/VAT registration No.	
12.	Service Tax /GST Registration No.	
13.	Permanent Account Number (PAN)	
14.	Company's Revenue for last 3 years (Year wise)	

Please submit the relevant proofs for all the details mentioned above along with your bid response.

Contact Details of officials for future correspondence regarding the bid process:

Details	Authorized signatory	Secondary Contact
Name		
Title		
Company Address		
Phone		
Mobile		
Email		

### 6.3 Format for Declaration by the Bidder for not being Blacklisted / Debarred

(To be submitted on Stamp Paper of ₹ 500)

#### **DECLARATION CUM-INDEMNITY BOND**

Date: dd/mm/yyyy

I, \_\_\_\_\_ of \_\_\_\_\_, do hereby declared and undertake as under.

- 1) I declared that I have submitted certificates as required to Executive Engineer (Monitoring) at the time of registration of my firm / company \_\_\_\_\_ and there is no change in the contents of the certificates that are submitted at the time of registration.
- 2) I declared that I \_\_\_\_\_ in capacity as Manager / Director / Partners / Proprietors of \_\_\_\_\_ has not been charged with any prohibitor and /or penal action such as demotion, suspension, black listing / de-registration or any other action under the law by any Government and / or Semi Government and/ or Government Undertaking.
- 3) I declared that, I have perused and examined the tender document including addendum, condition of contract, specification, drawings, bill of quantity etc. forming part of tender and accordingly, I submit my offer to execute the work as per tender documents at the rates quoted by me in capacity as \_\_\_\_\_ of \_\_\_\_\_.
- 4) I further declared that if, I am allotted the work and I failed to carry out the allotted work in accordance with the terms and conditions and within the time prescribed and specified, MCGM is entitled to carry out the work allotted to me by any other means at my risk and cost, at any stage of the contract.
- 5) I also declared that I will not claim any charge / damages / compensation for non-availability of the for the contract work at any time.
- 6) I Indemnify Municipal Commissioner and the other officers of MCGM or their agents for any Damages, Loss, or Injury, any legal suit, proceeding or legal action whatsoever that may be caused at any time by me or any other staff of \_\_\_\_\_ company, for the work undertaken and all such damage, damages, injury or loss, legal suit, legal action, I shall be solely responsible in individual as well as official capacity and such loss, damages,

injury shall be made good and/ or as the case may be shall be paid immediately by me / Company to the satisfaction of the MCGM.

Dated \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

Identified by me

Before me

Advocate

**6.4 Performance Bank Guarantee Format**

(For a sum of 10% of the value of the contract With Stamp duty of 0.5 % on the total amount)

Ref. No. :  
Date :  
Bank Guarantee No. :

To

<Insert complete postal address>

THIS INDENTURE made this ----- day of -----20---- BETWEEN THE -----  
-----BANK incorporated under the English / Indian Companies Acts and carrying on  
business in Mumbai (hereinafter referred to as ‘the bank’ which expression shall be deemed to  
include its successors and assigns) of the first part -----  
-----

inhabitants carrying on business at -----  
-----  
-----

in Mumbai under the style and name of Messers -----  
-----  
-----

(hereinafter referred to as ‘the contractors’) of the second part Shri-----  
-----  
-----

<Name of the Hon’ble Mun. Commissioner>, THE MUNICIPAL COMMISONER FOR GREATER  
MUMBAI (hereinafter referred to as ‘the Commissioner’ which expression shall be deemed, also  
to include his successor or successors for the time being in the said office of Municipal  
Commissioner) of the third part and THE MUNICIPAL CORPORATION OF GREATER MUMBAI  
(hereinafter referred to as ‘the Corporation’) of the fourth part WHEREAS the contractors  
indemnify and keep indemnified the Corporation against any loss or damage that may be caused  
to or suffered by the Corporation by reason of any breach by the contractors of any of the terms



and conditions of the contract that will be entered subsequently (within 15 days) and/or in the performance thereof against Letter of Intent number ----- dated -----  
 ----- for the project <insert project name> of ----- department having  
 tender No. <<>> tender amount ₹----- and the terms of such tender /  
 contract require that the contractors shall depot with the Commissioner as earnest money and/  
 or the security a sum of ₹----- (Rupees-----  
 -----) AND WHEREAS if and when any such tender is accepted by the  
 Commissioner, the contract to be entered into in furtherance thereof by the contractors will  
 provide that such depot shall remain with and will be appropriated by the Commissioner towards  
 the Security Depot to be taken under the contract and be redeemable by the contractors, if they  
 shall duly and faithfully carry out the terms and provisions of such contract and shall duly satisfy  
 all claims properly chargeable against them thereunder AND WHEREAS the contractors are  
 constituents of the Bank and in order to facilitate the keeping of the accounts of the contractors,  
 the Bank with the consent and concurrence of the contractors has requested the Commissioner to  
 accept the undertaking of the Bank hereinafter contained, in place of the contractors depositing  
 with the Commissioner the said sum as earnest money and/or the security as aforesaid AND  
 WHEREAS accordingly the Commissioner has agreed to accept such undertaking. NOW THIS  
 AGREEMENT WITNESSES that in consideration of the premises, the Bank at the request of the  
 contractors (hereby testified) UNDERTAKES WITH the Commissioner to pay to the  
 Commissioner upon demand in writing, whenever required by him, from time to time, so to do, a  
 sum not exceeding in the whole ₹----- (Rupees-----  
 -----) under the terms of the said tender  
 and/or the contract. The B.G. is valid up to-----  
 -----  
 -----

We agree that the decision of the Corporation, whether any breach of any of the terms and conditions of the contract and/or in the performance thereof has been committed by the Bidder and the amount of loss or damage that has been caused or suffered by the Corporation shall be final and binding on us and the amount of the said loss or damage shall be paid by us forthwith on demand and without demur to the Corporation.

“Notwithstanding anything what has been state above, our liability under the above guarantee is restricted to ₹----- only and guarantee shall remain in force up to --  
 -----unless the demand or claim under this guarantee is made on us in  
 writing on or before-----all your right under  
 the above guarantee shall be forfeited and we shall be released from all liabilities under the  
 guarantee thereafter”.

IN WITNESS WHEREOF

WITNESS (1) -----  
 Name and -----

Address -----  
-----

WITNESS (2) -----  
Name and ----- the duly constituted Attorney Manager  
Address -----  
-----

the Bank and the said Messrs-----  
----- (Name of the bank)

WITNESS (1) -----  
Name and -----  
Address -----  
-----

WITNESS (2) ----- for Messrs -----  
Name and ----- (Name of the contractor)  
Address -----  
-----

Have here into set their respective hands the day and year first above written.

## 7. **Annexure II: Instructions and Technical Bid Document Formats**

### 7.1 **General Instructions for the Technical Bid**

Bidders have to submit a very structured and organized technical bid, which will be analysed by the Technical Evaluation Committee for different compliances with regards to the requirements of the project. Since the cut-off marks for Technical bid Score is 80 marks out of 100 technical marks, the quality and completeness of the information submitted by the Bidder will matter a lot.

Bidder is expected to divide its Bid in following sections / documents:

#### **A) Bidder's Competence to execute the project**

This document should bring about the capability of the firm to execute this project. Some of the required documents are as follows:

- Financial Capability of the Bidder in required formats and supporting documents
- Experience of Bidder of implementing similar/same applications or in supply of similar/same hardware components if applicable
- Experience of Bidder in India in required formats and supporting documents
- Quality of GIS + IT and domain experts available with the firm

#### **B) Proposed Team for delivery of the project & for maintenance**

As specified in the Technical Bid Evaluation Framework, the department would like to give importance to the desired / right people proposed for deployment. Bidder may propose different people for different skill-sets required and different Responsibilities (during Maintenance Support and Project Implementation). Following documentation is expected in this section:

- Summary Table giving Qualification, Experiences, Certifications, Relevance
- Detailed CVs in the format attached
- Escalation Chart for the entire Project Duration

#### **C) Technical Solution Proposed for the Project**

Broad areas to be covered in the Technical Solution documentation are given below:

1. Clearly articulate the Strategy and Approach and Methodology for the work to be executed by the resources in line with the scope of services expected.
2. Approach and Methodology for Management of SLA Requirements specified in the bid. Bidder is required to clearly articulate how the SLA requirements would be adhered to.
3. Detailed Project Plan with timelines, resource allocation, milestones etc.
4. Clearly mention the risk and mitigation plan.
5. Annexure # complying the specifications of the GIS & Remote software which is proposed for carrying out the scope of work mentioned in this RFP.
6. **Clearly mention the capability of procuring historical satellite images from the period of 1960 to 2020. Theos bidders who are competent to supply or procure satellite imagery more in number (i.e. years and Sq Kms) will be eligible, and only those bids will be consider for financial bid open (Packet – C) .**

## 7.2 Bidders turnover & net-worth over last 3 Financial Years

Date: dd/mm/yyyy

To,  
The Assistant Commissioner (Removal of Encroachment)  
Municipal Corporation of Greater Mumbai  
Mumbai

r/Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Document.

I hereby declare that below are the details regarding Turnover, Net Worth and Profit and Loss of our company from GIS/ Remote Sensing-based projects / services from 01/04/2016 till 31/03/2019.

#	Details	FY 2017-18 (in crores) i	FY 2018-19 (in crores) ii	FY 2019-20 (in crores) iii	Average Annual Turnover (i+ii+iii)/3
1	Turnover				
2	Net Worth				

An accountant's certificate must be attached.

Contact Details of officials for future correspondence regarding the bid process:

Details	Authorized signatory	Secondary Contact
Name		
Title		
Company Address		
Phone		
Mobile		
Fax		
E-mail		

I further certify that I am competent officer in my company to make this declaration.

Yours Sincerely,

### 7.3 Compliance to specifications of the GIS & Remote Sensing software

Attach the Annexure # GIS, Remote Sensing Imagery Desktop & Server software specifications duly filled & certified (stamped).

### 7.4 Manufacturer's Authorization Form from OEMs

To,  
The Assistant Commisioner (Removal of Encroachment)  
Municipal Corporation of Greater Mumbai  
Mumbai

**Sub: Authorization of <company name of Bidder> to Provide Services Based on Our Product(s)**

r,

This is to certify that I/We am/are the Original Equipment Manufacturer in respect of the products/solutions listed below. I/We confirm that <name of Bidder> have due authorization from us to provide services to MCGM, that are based on our product(s) listed below as per Request for Proposal for Change Detection, identification of Unauthorized Development in MCGM jurisdiction and 2D/3D mapping of the city using archived Satellite images. We further endorse the warranty and contracting terms provided by bidder to MCGM.

I/We also undertake that we will provide support to MCGM in quality of deliverables and in ensuring that the solution is implemented in the best of ways by exploiting all the capabilities offered by the solution, to meet the requirements of MCGM.

We herewith certify that the equipment / software products quoted by us are not end of the life and we hereby undertake to support this equipment / software for the duration of minimum 5 years from the date of Submission of the Bid.

S. No.	Product Name	Remarks

Yours faithfully,

Authorised signatory

Designation

OEM's company name

CC: Bidder's corporate name

### 7.5 Format to share Project Details

Name of the Project	
<b>General Information</b>	
Client for which the project was executed	
Name of the client contact person(s)	
Designation of client contact person(s)	
Contact details of the client contact person(s)	
<b>Project Details</b>	
Description of the project	
Scope of work of the Bidder	
Deliverables of the Bidder	
Technologies used	
Current Status of the project	
<b>Other Details</b>	
Total cost of the project	
Total cost of the services provided by the Bidder	
Duration of the project (number of months, start date, completion date, current status)	
Other Relevant Information	
Mandatory Supporting Documents: <ul style="list-style-type: none"> <li>• Work order / Purchase order / Contract for the project</li> <li>• Client Certificate giving present status of the project and view of the quality of services by the Bidder</li> </ul>	

**Note:** The Bidder is required to use above format for all the projects referenced by the Bidder for the pre-qualification criteria and technical bid evaluation.

### 7.6 Details of Manpower Resources Proposed

#	Name of the Resource	Proposed Role	Highest Qualification	Total Experience (in years)	Total Relevant Experience for the proposed portion (in years)

**CV of the Manpower proposed to be submitted in the following format:**

1	Name of the Staff																			
2	Current Designation in the Organisation																			
3	Proposed Role in the Project																			
4	Proposed Responsibilities in the Project																			
5	Date of Birth																			
6	Education	<ul style="list-style-type: none"> <li>▪ Degree / Diploma, College, University, Year of Passing</li> <li>▪ Degree / Diploma, College, University, Year of Passing</li> </ul>																		
7	Summary of Key Training and Certifications	<ul style="list-style-type: none"> <li>▪</li> <li>▪</li> </ul>																		
8	Language Proficiency	<table border="1"> <thead> <tr> <th>Language</th> <th>Reading</th> <th>Writing</th> <th>Speaking</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Language	Reading	Writing	Speaking														
Language	Reading	Writing	Speaking																	
9	Employment Record (For the total relevant experience)	<table border="1"> <tbody> <tr> <td>From / To:</td> <td></td> </tr> <tr> <td>Employer:</td> <td></td> </tr> <tr> <td>Potion Held:</td> <td></td> </tr> <tr> <td>From / To:</td> <td></td> </tr> <tr> <td>Employer:</td> <td></td> </tr> <tr> <td>Potion Held:</td> <td></td> </tr> <tr> <td>From / To:</td> <td></td> </tr> <tr> <td>Employer:</td> <td></td> </tr> <tr> <td>Potion Held:</td> <td></td> </tr> </tbody> </table>	From / To:		Employer:		Potion Held:		From / To:		Employer:		Potion Held:		From / To:		Employer:		Potion Held:	
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Potion Held:																				
10	Total No. Of Years of Work Experience																			

11	Total No. Of Years of Experience for the Role proposed	
12	Highlights of relevant assignments handled and significant accomplishments (Use following format for each project)	Name of assignment or project:
		Year:
		Location:
		Client:
		Main project features:
		Positions held:
		Activities performed:

**Important Note:**

Bidders need to submit the soft copies of following along with the complete resume:

1. Certificates of educational qualifications
2. Experience certificates issued by all their employers
3. Copies of professional certificates such as PMP, TOGAF, ArcGIS Enterprise, etc. as per respective profile.
4. Authorized person submitting the bid needs to sign the above as in the case of other bid submission related documents.

**7.7 Requirement for adherence to standards**

The following Technology and standards should be used while developing and implementing the overall solution for MIDC:

Application	Standard
Workflow Design	WFMC/BPEL or Equivalent Standard
Web Portal	W3C / WCAG Standard
Information access / Transfer Protocols	SOAP, HTTP/HTTPS, UDDI, WSDL
Interoperability	Web Services, Open Standard
Photograph	JPEG, JPG, TIFF, PDF, etc (minimum resolution 640 x 480 Pixels)
Scanned Documents	TIFF (Resolution of 600 x 600 dpi) / PDF, etc.



Information Security	ISO 27001 Certified System
Operational Integrity & Security Management	ISO 17799 Certified System
Operation	ISO 9001 Certified
IT Infrastructure Management	ITIL / EITM specification
Service Management	ISO 20000 specification or latest
Project Documentation	IEEE/ISO specifications for documentation
Data & Localization Standards	All-important data entities would be in line with standards published by DIT ( <a href="http://egovstandards.gov.in">http://egovstandards.gov.in</a> )
Open Geospatial Consortium (OGC)	All applications, file format, web services, APIs, Desktop & Server software would comply with standards published on <a href="https://www.ogc.org/standards">https://www.ogc.org/standards</a>
Government standards	GIGW compliant solution

## **8. Annexure III: Commercial Bid Formats**

### **8.1 Commercial Bid Cover Letter**

Date: DD/MM/YYYY

To,  
The Assistant Commissioner (Removal of Encroachment)  
Municipal Corporation of Greater Mumbai  
Mumbai

**Sub: RFP for identification of Unauthorized Development in MCGM jurisdiction and detecting changes by way of procuring and customizing archived Satellite images & procurement of allied software's.**

**Ref** : Bid No: <No>      Dated <DD/MM/YYYY>

Dear r,

We, the undersigned Bidders, having read and examined in detail all the bidding documents in respect of **identification of Unauthorized Development in MCGM jurisdiction and detecting changes by way of procuring and customizing archived Satellite images & procurement of allied software's** do hereby propose to provide services as specified in the bid referred above.

#### **1. PRICE AND VALIDITY**

- All the prices mentioned in our bid are in accordance with the terms as specified in the bid documents. All the prices and other terms and conditions of this bid are valid for a period of 180 calendar days from the date of opening of the Bids.
- We hereby confirm that our bid prices include all taxes. Taxes are quoted separately under relevant sections, as specified in the bid formats.
- We have studied the clause relating to Indian Income Tax and hereby declare that if any income tax, surcharge on Income Tax, Professional and any other Corporate Tax in altered under the law, we shall pay the same.

#### **2. PERCENTAGE RATES**

We have mentioned percentage above below in the relevant enclosed.

#### **3. DEVIATIONS**

We declare that all the services shall be performed strictly in accordance with the bid documents and there are no deviations.

**4. QUALIFYING DATA**

We confirm having submitted the information as required by you in your Instruction to Bidders. In case you require any other further information/documentary proof in this regard before evaluation of our bid, we agree to furnish the same in time to your satisfaction.

**5. BID PRICE**

We declare that our Bid Price is for the scope of the work as specified in the bid document. These prices are indicated in the subsequent sub-sections of this Section.

**6. CONTRACT PERFORMANCE GUARANTEE BOND**

We hereby declare that in case the contract is awarded to us, we shall submit the contract Performance Bank Guarantee in the form prescribed in the bid.

We hereby declare that our bid is made in good faith, without collusion or fraud and the information contained in the bid is true and correct to the best of our knowledge and belief.

We understand that our bid is binding on us and that you are not bound to accept a bid you receive. We confirm that no Technical deviations are attached here with this commercial offer.

Thanking you,

Yours faithfully,

(signature of the Authorised signatory)

Name:

Designation:

Seal.

Date:

Place:

Business Address:

## 8.2 Commercial Bid Format and Instructions

The Bidder must quote the rate in the BoQ Spreadsheet available online with this bid. Details to be filled up for price bid are as below. **The fees shall be inclusive of Goods & Service Tax (GST) as applicable under the relevant Laws of India.** Should there be a change in applicable taxes, the actual taxes on the date of billing would prevail.

### 8.2.1 Special Annexure –I (To be Submitted Along with Packet-C)

**All the tables in the commercial Bid format are exclusive of GST**

#### Summary of all Cost Components

Sr.No.	Item	Total Price (INR) (including all taxes)
<b>1</b>	<b>Capital Cost</b>	
1.1	Satellite Imagery Cost	
1.2	Geospatial Data processing, GCP and Ground truthing	
1.3	IT Infrastructure Cost	
1.4	Software License Cost	
1.5	Software Implementation Cost	
1.6	Training and Capacity Building Cost	
	<b>Total Capital Cost [1] = [1.1 + 1.2 + 1.3 + 1.4 + 1.5+ 1.6]</b>	
<b>2</b>	<b>Operational Cost for 3 Years</b>	
2.1	Annual Maintenance Contract	
2.2	Online training & Support	
	<b>Total Operational Cost [2] = [2.1 + 2.2]</b>	
<b>Grand Total [1 + 2]</b>		
<b>Percentage quoted (+ or -)</b>		
<b>Net offer by Bidder in Rs.</b>		

**Sign & Seal of Bidder**

**[1.1] Satellite Imagery Cost**

#	Satellite Imagery for Year	Satellite Imagery Rate per Sq. Km (INR) (A)	Area (Sq.km) (B)	Satellite Imagery Cost (INR) (C=A*B)
1	1960		480	
2	1961		480	
3	1962		480	
4	1963		480	
5	1964		480	
6	1970s		480	
7	1980s		480	
8	1990s		480	
9	2000		480	
10	2005		480	
11	2011		480	
12	2012		480	
13	2013		480	
14	2014		480	
15	2015		480	
16	2016		480	
17	2017		480	
18	2018		480	
19	2019		480	
20	2020		480	
<b>Total Cost [1.1]</b>				

**[1.2] Geospatial Data processing, GCP and Ground truthing**

#	Description	Unit Rate (INR) (A)	Quantity (B)	Total Cost (INR) (C=A*B)
1	DGPS Survey for setting up Ground Control Points			
2	DSM, DTM, Contours, Basemap, LULC map, Change Detection map, etc. for relevant Satellite images			
3	2D/3D vector model of buildings, slums, major infrastructure like Metro, Bridges, Flyover etc. for relevant Satellite images			
4	Ground Truthing (5% of Total Area of Mumbai)			
<b>Total Cost [1.2]</b>				

**[1.3] IT Infrastructure Cost**

#	Description	Unit Rate (INR) (A)	Quantity (B)	Total Cost (INR) (C=A*B)
1	Workstations for Desktop GIS & Remote Sensing Imagery application		1	
<b>Total Cost [1.3]</b>				

**[1.4] Software License Cost**

#	Description of COTS Products	Unit Rate (INR) (A)	Quantity (B)	Total Cost (INR) (C=A*B)
1	Remote Sensing Imagery Desktop software (OGC Complaint 64bit)		1	
2	GIS Desktop software with 2D/3D toolset (OGC Complaint 64bit)		1	
3	Remote Sensing Imagery Publishing software (OGC Complaint 64bit)		1	
4	GIS Enterprise Publishing software (OGC Complaint 64bit)		1	
<b>Total Cost [1.4]</b>				

**[1.5] Software Implementation Cost**

#	Description	Unit Rate (INR) (A)	Quantity (B)	Total Cost (INR) (C=A*B)
1	Development of Enterprise Geospatial Application (Web & Mobile)		1	
2	Integrations with existing IT application of MCGM		1	
<b>Total Cost [1.5]</b>				

**[1.6] Training and Capacity Building Cost**

#	Description	Unit Rate (INR) (A)	Quantity (B)	Total Cost (INR) (C=A*B)
1	Functional Training		20	
2	Administrative Training		15	
<b>Total Cost [1.6]</b>				

**[2.1] Annual Maintenance Contract**

#	Description	AMC /ATS Percentage	AMC/ATS Cost Per Unit	Total Cost for Year 1 (A)	Total Cost for Year 2 (B)	Total Cost for Year 3 (C)	Total Amount (D=A+B+C )
1	IT Infrastructure Cost						
2	OGC Complaint 64bit Remote Sensing Imagery Desktop software						

3	OGC Complaint 64bit GIS Desktop software with 2D/3D toolset						
4	OGC Complaint 64bit Remote Sensing Imagery Publishing software						
5	OGC Complaint 64bit GIS Enterprise Publishing software						
6	Development of Enterprise Geospatial Application (Web & Mobile)						
7	Integrations with existing IT application of MCGM						
<b>Total Cost [2.1]</b>							

### **[2.2] Onsite Support**

#	Description	Unit Rate (INR) (A)	Man-months (B)	Total Cost (INR) (C=A*B)
1	Geospatial Analyst		36	
<b>Total Cost [2.2]</b>				

### **Notes:**

- GST and other state levies/cess which are not subsumed under GST will be applicable. The bidder shall quote inclusive of all taxes. It is clearly understood that MCGM will not bear any additional liability towards payment of any Taxes & Duties.
  - Wherever the Services to be provided by the bidder falls under Reverse Charge Mechanism, the price Quoted shall be exclusive of GST, but inclusive of Taxes / Duties / Cess other than GST, if any.
  - Rates accepted by MCGM shall hold good till completion of work and no additional individual claim shall be admissible on account of fluctuations in market rates; increase in taxes/ any other levies/ tolls etc. except that payment/ recovery for overall market situation shall be made as per price variation.
  - The successful bidder shall submit an Irrevocable undertaking on stamp paper regarding GST rates in the prescribed format as attached. (Annexure XII).
1. The Bidder should submit only the 'Summary of the Commercial Format' on the e-Tendering portal. The formats for detailed commercial bids to be as per formats defined in his RFP.
  2. The bidders may visit the site and obtain additional information at their own cost and responsibility.
  3. All the prices are to be entered in Indian Rupees ONLY.
  4. Prices indicated in the schedules shall be inclusive of all taxes, levies, duties etc. It is mandatory to provide breakup of all Taxes, Duties and Levies wherever asked for.

5. During the payment stage, MCGM reserves the right to ask the Bidder to submit proof of payment against any of the taxes, duties, levies indicated.
6. The Bidder needs to account for all Out-of-Pocket expenses due to Boarding, Lodging and other related items. No additional/separate payment shall be made regarding the same.
7. For the purpose of evaluation of Commercial Bids, MCGM shall make appropriate assumptions to arrive at a common bid price for all the Bidders. This however shall have no co-relation with the Contract value or actual payment to be made to the Bidder.
8. The Contract Price shall be firm and not subject to any alteration.
9. The System Integrator should be deemed to have satisfied itself as to the correctness and sufficiency of the resource's contract price, which shall, except as otherwise provided for in the contract, cover all its obligations under the contract.
10. Wherever present, the items mentioned as Lump Sum in above table will have quantity as 1 in the BoQ available online via e-tendering. However, the bidder should conder the same as Lump Sum and submit the commercials.



## 9. Annexure IV: Draft Contract Agreement

On a Stamp Paper of Rs.500/- for contract value up to Rs.10,00,000/- and 0.1% of the amount above Rs.10 lakh subject to maximum Rs.25 Lakhs)

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### CONTRACT AGREEMENT

Bid No: - \_\_\_\_\_

Sanction No. & Date: \_\_\_\_\_

Contract Cost: \_\_\_\_\_

This Contract Agreement (hereinafter referred to as "CA") is made and entered into at Mumbai this \_\_\_\_\_ day of \_\_\_\_\_ Two Thousand Nineteen

### BETWEEN

The Municipal Corporation of Greater Mumbai, a body corporate having perpetual succession and common seal constituted by the Mumbai Municipal Corporation Act, 1888, hereinafter referred to as "MCGM"

### REPRESENTED BY

Shri. \_\_\_\_\_, Assistant Municipal Commissioner (\_\_\_\_\_), having its office at \_\_\_\_\_, hereinafter referred to as "AMC (\_\_\_\_)" (which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include the successor or successors for the time being holding the office of the Deputy Municipal Commissioner (\_\_\_\_\_) of the First Part;

### AND

M/s. \_\_\_\_\_, a company incorporated under the provisions of the Companies Act, 1956 and having its registered office at \_\_\_\_\_ through Shri. \_\_\_\_\_, (Authorized signatory); hereinafter referred to as "System Integrator" (which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include its successor or successors and assigns) of the Second Part;

**WHEREAS** the Municipal Commissioner of MCGM has inter alia deputed under Section 56 of the Mumbai Municipal Corporation Act, 1888 his powers, functions and duties to the Assistant Municipal Commissioner (\_\_\_\_\_) for signing and executing this Contract Agreement on behalf of MCGM.

**AND WHEREAS** M/s. \_\_\_\_\_, by its Resolution under No. \_\_\_\_\_ dated \_\_\_\_\_ have authorized Shri \_\_\_\_\_ (Authorized signatory), to sign the present Contract Agreement, on behalf of the said Company.

**AND WHEREAS** the MCGM has invited RFO for Change Detection, identification of Unauthorized Development in MCGM authority and 2D/3D mapping of the city using archived Satellite images; hereinafter referred to as "the contract work". The System Integrator has submitted the Tender for the said contract work.

**AND WHEREAS** the Standing Committee vide its Resolution under no. \_\_\_\_\_ dated \_\_\_\_\_ has accorded sanction to \_\_\_\_\_, as Implementation

Agency **for Change Detection, identification of Unauthorized Development in MCGM authority and 2D/3D mapping of the city using archived Satellite images**, for a period of \_\_\_\_\_ years, at total cost of Rs. \_\_\_\_\_/- (including 18% GST) on the terms and conditions mentioned therein.

**AND WHEREAS** the System Integrator has agreed to comply with the terms and conditions hereinafter appearing and are desirous of recording the same subject to compliance of which the contract as previously mentioned has been agreed to be granted by the MCGM in favor of the Implementation Agency.

**NOW THIS CONTRACT AGREEMENT WITNESSETH AND IT IS HEREBY AGREED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:**

1. The parties hereto agree that the recitals enumerated herein above shall be deemed to form an integral and operative part of this Contract Agreement as if the same were specifically set out and incorporated herein.
2. The following documents are and shall be deemed to form part of this Contract Agreement and shall be read and construed to be part of this Contract Agreement as if they were incorporated in this Contract Agreement.
  - (i) Corrigendum document published by MCGM subsequent to the Bid for this contract work.
  - (ii) Bid Document of MCGM issued for this contract work under no. \_\_\_\_\_
  - (iii) Standing Committee Resolution no. \_\_\_\_\_ dated. \_\_\_\_\_
  - (iv) Letter of Acceptance issued under no. \_\_\_\_\_ dated. \_\_\_\_\_
  - (v) Special Conditions of Contract
  - (vi) General Conditions of Contract

### **9.1 Definitions, Interpretations and Other Terms**

- a. **“Bid”** means the bid process conducted by MCGM including all clarifications/addendums, explanations and amendments issued by the Corporation in respect thereof and the technical and commercial bids submitted by the successful Bidder, along with the subsequent clarifications and undertakings, if any.
- b. The **“Contract”** shall mean the tender and acceptance thereof and the formal Agreement if any, executed between the Bidder, Commissioner and the Corporation together with the documents referred to therein including these conditions and appendices and any special conditions, the specifications, Designs, drawings, price schedules, bills of quantities and schedule of rates. All these documents taken together shall be deemed to form one Contract and shall be complementary to one another.
- c. The **“Bidder”** shall mean a person or corporate body who has desired to submit Bid to carry out the Works, including routine maintenance till the tender process is concluded.
- d. **“Arbitrator”** means the person or persons appointed by agreement between MCGM and the Bidder to make a decision on or to settle any dispute or difference between the MCGM and the

Bidder referred to him or her by the parties pursuant to General Conditions of Contract amended up to date.

- e. **“Contract Cost”** means the Contract Sum plus Price Variation. This cost shall be included in the letter of acceptance.
- f. **“Excepted risks”** are risks due to riots (otherwise than among Bidder’s employees) and civil commotion (in so far as both these are uninsurable), war (whether declared or not), invasion, act of foreign enemies, hostilities, civil war, rebellion, revolution, insurrection, military or usurped power, any act of government, damage from aircraft, acts of god, such as earthquake, lightning and unprecedented floods and other causes over which the Bidder has no control and accepted as such by the Commissioner or causes solely due to use or occupation by the Municipal Corporation of the works in respect of which a certificate of completion has been issued or a cause solely due to faulty municipal Design of work.
- g. The **“Corporation”** or the **“Municipal Corporation”** shall mean the Municipal Corporation of Greater Mumbai, constituted under the M.M.C. Act 1888 as amended up to date.
- h. The **“Annexure”** referred to in these conditions shall mean the relevant annexure appended to the tender papers issued by the Municipal Corporation.
- i. The **“Works”** shall mean the Permanent Works and the Temporary Works or either of them as appropriate to be executed in accordance with the contract or part(s) thereof, as the case may be and shall include all extra or additional, altered or substituted works as required for performance.
- j. **“Temporary Works”** shall mean all Temporary Works of every kind required in or about execution, completion or maintenance of the work also Temporary Works are works Designed, constructed, installed, and removed by the Service Provider that are needed for construction or installation of the Works of the contract as found necessary as per suggestion of the MCGM.
- k. **“Permanent Works”** means the permanent works to be executed and installation of machineries in accordance with the Contract at specified required site and location.
- l. **“Drawings”** means all the drawings, calculations and technical information of a like nature provided by the MCGM to the Service Provider under the Contract and all drawings, calculations, samples, patterns, models, operation & maintenance manual and other technical information of like nature submitted by the Service Provider and approved by the MCGM.
- m. **“Approved”** shall mean approved in writing including subsequent confirmation of previous verbal approval and “approval” shall mean approval in writing including as previously mentioned.
- n. **“Specification”** means the specification referred to in the tender and any modification thereof or addition or deduction thereto as may from time to time be furnished or approved in writing by the MCGM.

- o. **“Tender”** means the Bidder’s priced offer to the MCGM for the execution and completion of the Works and the remedying of any defects therein in accordance with the provision of the Contract, as accepted by the Letter of Acceptance.
- p. **“Commencement Date”** means the date upon which the Bidder receives the notice to commence, issued by the MCGM.
- q. **“Time for Completion”** means the time for completing the execution of and passing the Tests on Completion of the Works or any Section or part thereof as stated in the Contract calculated from the Commencement Date.
- r. **“Certificate of Taking-Over/ Take-over Certificate”** shall mean the certificate issued by MCGM after completion of Works in all respects.
- s. **“Letter of Acceptance”** means the letter of formal acceptance, given by MCGM, of the Letter of Bid, including any annexed memoranda comprising agreements between and given by both Parties. If there is no such letter of acceptance, the expression “Letter of Acceptance” means the Contract Agreement and the date of issuing or receiving the Letter of Acceptance means the date of signing the Contract Agreement.
- t. **“Cost”** means all expenditure properly incurred or to be incurred whether on or off the site including overheads and other charges properly allocable thereto but does not include any allowance for profit.
- u. **“Confidential Information”** means all information including MCGM Data (whether in written, oral, electronic or other format) which relates to the technical, financial, business affairs, customers, suppliers, products, developments, operations, processes, data, trade secrets, Design rights, know-how and personnel of each Party and its affiliates which is disclosed to or otherwise learned by the other Party in the course of or in connection with this CA (including without limitation such information received during negotiations, location visits and meetings in connection with this CA).
- v. **“Customers”** mean all citizens and business organization and users who use the MCGM services.
- w. **“Deliverables”** means all the activities related to the setting up and operations of the infrastructure, technical documents, Software Applications, customized Source Codes, as defined in the bid and subsequent Corrigendum (if any), based on which the technical bid and commercial bid was submitted by the Bidder and as required as per this CA.
- x. **“Effective Date”** means the date on which the Purchase Order or Letter of Intent is issued to System Integrator.
- y. **“CA”** means this Contract Agreement, together with the recitals and all schedules and the consistents, requirements, specifications and standards of the bid (as may be amended, supplemented or modified in accordance with the provisions hereof) and the bid. **In the event of a conflict between this CA and the Schedules, the terms of the CA shall prevail; with overriding effect.**

- z. **“Performance Security”** means the irrevocable and unconditional Bank Guarantee provided by the System Integrator from by any of the approved banks as specified in Annexure V of this RFP document in favor of “Municipal Corporation of Greater Mumbai” for an amount equivalent to 10% of the total contract value i.e., ₹..... (Rupees..... only).
- aa. **“Proprietary Information”** means processes, methodologies and technical and business information, including drawings, Designs, formulae, flow charts, data and computer programs already owned/licensed by either Party or granted by third parties to a Party hereto prior/ subsequent to the execution of this CA.
- bb. **“Required Consents”** means the written consents, clearances and licenses, rights and other authorizations as may be required to be obtained by the System Integrator, for all tasks/activities/software/hardware and communication technology for this project; from all the concerned departments/agency, etc. as the case may be.
- cc. **“Service Level(s)”** means the performance standards, which will apply, to the services delivered by selected System Integrator.
- dd. **“Service Level Requirement(s)”** means the timelines and the quality levels to be adhered to by the System Integrator for delivering various services under the contract.
- ee. **“Services”** means the consistent and services delivered and to be delivered to the customers or the offices of MCGM by the System Integrator, and includes but not limited to the services specified in the bid document or as may be specified and incorporated in the subsequent Agreement(s) under Contract Agreement.
- ff. **“Users”** means the departmental staffs or any other MCGM officials having access to application including its System Integrator, technology vendors, corporations and agency and their employees, as the context admits or requires.
- gg. **“Day”** means Calendar day.
- hh. **“Month”** means Calendar month of the Gregorian calendar.
- ii. **“GCC”** means General Conditions of Contract.
- jj. **“Foreign Currency”** means currency of a country other than that in which the works are to be located, approved by Govt. of INDIA/Reserve Bank of INDIA.
- kk. **“Writing”** means any hand written, type-written, or printed communication including telex and facsimile transmission, electronic and digital media.
- ll. **“Country”** means the country in which the site is located.
- mm. **“Variation”** means a change to the: -
- i. Specification and /or Drawings (if any) which is instructed by the MCGM
  - ii. Scope in the Contract which is instructed by the MCGM
  - iii. Price in the Contract which is instructed by the MCGM
- nn. **“Specification”** shall mean the specification referred to in the tender and any modification thereof or addition or deduction thereto as may from time to time be furnished or approved in writing by the MCGM.

- oo. **“The Start Date/Commencement Date”** is given in the Contract Data. It is the date when the Service Provider shall commence execution of the Works. It does not necessarily coincide with any of the site Possession Dates.

## 9.2 Interpretations

- a. References to any statute or statutory provision include a reference to that statute or statutory provision as from time to time amended, extended, re-enacted or consolidated and to all statutory instruments made pursuant to it.
- b. Words denoting the singular shall include the plural and vice-versa and words denoting persons shall include firms and corporations and vice versa.
- c. Unless otherwise expressly stated, the words “herein”, “hereof”, “hereunder” and similar words refer to this CA as a whole and not to any particular Article, Schedule. The term Articles, refers to Articles of this CA. The words “include” and “including” shall not be construed as terms of limitation. The words “day” and “month” mean “calendar day” and “calendar month” unless otherwise stated. The words “writing” and “written” mean “in documented form”, whether electronic or hard copy, unless otherwise stated.
- d. The headings and use of bold type in this CA are for convenience only and shall not affect the interpretation of any provision of this CA.
- e. The Schedules to this CA form an integral part of this CA and will be in full force and effect as though they were expressly set out in the body of this CA.
- f. Reference at any time to any agreement, deed, instrument, license or document of any description shall be construed as reference to such agreement, deed, instrument, license or other document as the same may be amended, varied, supplemented, modified or suspended at the time of such reference.
- g. References “roll out” includes, unless the context otherwise requires, Design, development, implementation, engineering, procurement, delivery, transportation, installation, processing, fabrication, acceptance testing, certification, commissioning and other activities incidental to the construction or roll out, and “construct” or “roll out” shall be construed accordingly.
- h. Any word or expression used in this CA shall, unless defined or construed in this CA, bear its ordinary English language meaning.
- i. The damages payable by a Party to the other Party as set forth in this CA, whether on per diem basis or otherwise, are mutually agreed genuine pre-estimated loss and liquidated damages likely to be suffered and incurred by the Party entitled to receive the same and are not by way of penalties.
- j. This CA shall operate as a legally binding agreement specifying the master terms, which apply to the Parties under this agreement and to the provision of the services by the System Integrator,

- k. The Corporation may nominate a technically competent agency/individual(s) for conducting acceptance testing and certification of the various requisite infrastructure to ensure a smooth, trouble free and efficient functioning of the Scheme or carry out these tasks itself.
- l. The agency/individual nominated by the Corporation can engage professional organizations for conducting specific tests on the software, hardware, networking, security and all other aspects.
- m. The agency/individual will establish appropriate processes for notifying the System Integrator of any deviations from the norms, standards or guidelines at the earliest instance after taking cognizance of the same to enable the System Integrator to take corrective action.
- n. Such an involvement of and guidance by the agency/person will not, however, absolve the System Integrator of the fundamental responsibility of Designing, installing, testing and commissioning the application and the infrastructure for efficient and effective delivery of services as contemplated under this bid.
- o. The following documents forming this Contract Agreement are to be taken as mutually explanatory of one another. The following order shall govern the priority of documents constituting this Contract Agreement, in the event of a conflict between various documents, the documents shall have priority in the following order:
  - i. This Contract Agreement;
  - ii. Standing Committee Resolution No. \_\_\_\_ dated. \_\_\_\_\_; (hereby annexed as Annexure I)
  - iii. Purchase Order or Letter of Acceptance issued under no. \_\_\_\_ dated. \_\_\_\_ issued by MCGM to the System Integrator; (hereby annexed as Annexure II)
  - iv. Clarification & Corrigendum Documents published by MCGM subsequent to the Bid Document for this work (hereby annexed as Annexure III)
  - v. Bid Document of MCGM for this work (hereby annexed as Annexure IV)
  - vi. System Integrator's "Technical Proposal" and "Commercial Proposal" submitted in response to the Bid

### **9.3 Term of the Contract Agreement**

- (a) The term of this CA shall be a period of 4 (Four) years from the date of issue of Letter of Acceptance/ Purchase Order i.e., \_\_\_\_\_. This includes the time required for Selection of Agency to implement Change Detection, identification of Unauthorized Development in MCGM jurisdiction and 2D/3D mapping of the city using archived Satellite images.
- (b) In the event of implementation period getting extended beyond the stipulated time, for reasons not attributable to the System Integrator, MCGM reserves the right to extend the term of the Agreement by corresponding period to allow validity of contract from the date of successful go live.
- (c) MCGM also reserves the right to extend the contract at its sole discretion, beyond the initial four (4) years contract period with approval of the competent authority, and not otherwise.

#### **9.4 MCGM's Decisionon**

Except where otherwise specifically stated, Assistant Commissaroner (Removal of Encroachment), MCGM will decide contractual matters between MCGM and the Bidder in the role representing the MCGM. However, if MCGM's representative is required under the rules and regulations and orders of the MCGM to obtain prior approval of some other authorities for specific actions, he will so obtain the approval, before Communicating his decision to the Bidder.

Except as expressly stated in the Contract, MCGM's representative shall not have any authority to relieve the Contractor of any of his obligations under the contract.

#### **9.5 Delegation**

MCGM's representative, with the approval of the MCGM Authority, may delegate any of his duties and Responsibilities to other person(s), except to the Adjudicator, after notifying the Bidder, and may cancel any delegation after notifying the Bidder.

#### **9.6 Scope of Work**

As mentioned in Section 5.0 Scope of Work

#### **9.7 Communication**

All certificates, notices or instructions to be given to the Bidder by MCGM shall be sent on the address / Email Address or contact details given by the Bidder of Bid. The address and contact details for communication with the MCGM shall be as per the details given in Contract Data. Communications between parties that are referred to in the conditions shall be in writing. The Notice sent by electronic means shall be effective on confirmation of the transmission. The Notice sent by Registered post or Speed post shall be effective on delivery or at the expiry of the normal delivery period as undertaken by the postal service.

#### **9.8 Personnel**

The Service Provider's personnel shall appropriately be qualified, skilled and experienced in their respective trades or occupations. MCGM shall have authority to remove, or cause to be removed, any person employed on the site or works, who carries out duties incompetently or negligently.

If MCGM asks the Service Provider to remove a person who is a member of the Service Provider's staff or work force, stating the reasons, the Service Provider shall ensure that the person leaves the site within seven days and has no further connection with the Works in the Contract.



## **9.9 MCGM's and Service Provider's Risks**

MCGM carries the risks which this Contract states are MCGM's risks, and the Service Provider carries the risks which this Contract states are Service Provider's risks.

### **9.10 MCGM's Risks**

The MCGM is responsible for the excepted risks which are:

- a. in so far as they directly affect the execution of the Works, the risks of war, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot, commotion or disorder (unless restricted to the Service Provider's employees) and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive, or
- b. a cause due solely to the Design of the Works, other than the Service Provider's Design.

### **9.11 Service Provider's Risks**

All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks, are the responsibility of the Service Provider.

### **9.12 Management Meetings**

MCGM may require the Service Provider to attend a management meeting. The business of a management meeting shall be to review the plans for progress of the Works.

MCGM shall record the business of management meetings and provide copies of the record to those attending the meeting. The responsibility of the parties for actions to be taken shall be decided by MCGM either at the management meeting or after the management meeting and stated in writing to all those who attended the meeting.

### **9.13 Tests**

The Service Provider will have to perform the mandatory tests as prescribed in the specifications. The Service Provider shall be solely responsible for:

- a. Carrying out the mandatory tests prescribed in the Specifications, and
- b. For the correctness of the test results, whether preformed

If MCGM instructs the Service Provider to carry out a test not specified in the Specification / Quality Assurance Handbook to check whether any work has a Defect and the test shows that it does, the Service Provider shall pay for the test and any samples. If there is no defect, the test shall be a compensation event.

The cost of testing shall be borne by the Service Provider even if the result of the sample confirm or do not confirm to the relevant specifications.

All expenditure required to be incurred in testing shall be borne by the Service Provider himself.

#### **9.14 Variations**

MCGM shall, having regard to the scope of the Works and the sanctioned estimated cost, have power to order, in writing, Variations within the scope of the Works he/she considers necessary or advisable during the progress of the Contract. Such Variations shall form part of the Contract and the Service Provider shall carry them out and include them in updated programmes produced by the Service Provider. Oral orders of MCGM for Variations, unless followed by written confirmation, shall not be taken into account.

#### **9.15 Payment for Variations**

If rates for Variation items are specified in the Bill of Quantities, the Service Provider shall carry out such work at the same rate.

#### **9.16 Operation and Maintenance Manuals**

If Drawings and /or operation and maintenance manuals are required, the Service Provider shall supply them by the dates stated in the Contract Data.

If the Service Provider does not supply the Drawings and /or manuals by the dates stated in the contract Data, or they do not receive the MCGM's approval, MCGM shall withhold the amount stated in the Contract Data from payments due to the Service Provider.

#### **9.17 Compliance with Labour Regulations**

During continuance of the Contract, the System Integrator shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority.

Furthermore, the System Integrator shall keep MCGM indemnified in case any action is taken against the MCGM by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If MCGM is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/ bye laws/ Acts/ Rules/ regulations including amendments, if any, on the part of the System Integrator, MCGM shall have the right to deduct any money due to the System Integrator including his amount of performance guarantee. The MCGM shall also have right to recover

from the System Integrator any sum required or estimated to be required for making good the loss or damage suffered by MCGM.

The System Integrator shall require his employees to obey all applicable laws, including those concerning safety at work. The entire responsibility of the employees of the System Integrator, shall be of the System Integrator alone and under no circumstances the employees of the System Integrator shall be treated as the employees of the MCGM at any point of time.

### **9.18 Official Secrecy**

The Service Provider shall of all the persons employed in any works in connection with the contract that the India Official Secrets Act 1923 (XIX of 1923) applies to them and will continue to apply even after execution of the said works and they will not disclose any information regarding this contract to any third party. The Service Provider shall also bring into notice that, any information found to be leaked out or disclosed the concern person as well as the Service Provider will be liable for penal action; further the Corporation will be at liberty to terminate the contract without notice.

### **9.19 Subsequent Legislation**

If on the day of submission of bids for the contract, there occur changes to any National or State stature, Ordinance, decree or other law or any regulation or By-laws or any local or other duly constituted authority or the introduction of any such National or State Statute, Ordinance, decree or by which causes additional or reduced cost to the Service Provider, such additional or reduced cost shall, after due consultation with the Service Provider, be determined by the concerned authority of MCGM and shall be added to or deducted from the Contract Price with prior approval of competent authority and MCGM shall notify the Service Provider accordingly. MCGM reserve the right to take decision in respect of addition/reduction of cost in contract.

### **9.20 Patent, Rights & Royalties**

The Service Provider shall save harmless and indemnify the Corporation from and against all claims and proceedings for or on account of infringement of any Patent rights, Design trademark or name of other protected rights in respect of any constructional plant, machine work, or material used for or in connection with the Works or any of them and from and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto. Except where otherwise specified, the Service Provider shall pay all tonnage and other royalties, rent and other payments or compensation, if any, required for the works.

### **9.21 Payment, Taxes & Claims**

#### **➤ The limit for unforeseen Risks**

Under no circumstances whatever the Service Provider shall be entitled to any compensation from MCGM on any account unless the Service Provider shall have submitted a claim in writing to MCGM within One (1) month of the case of such claim occurring.

➤ **No interest for delayed payments due to disputes, etc.**

It is agreed that the Municipal Corporation of Greater Mumbai or its representative or Officer shall not be liable to pay any interest or damage with respect of any money or balance which may be in its or its representative's or officer's hands owing to any dispute or difference or claim or misunderstanding between the Municipal Corporation of Greater Bombay or its representative or Officer on the one hand and the Service Provider on the other, or with respect to any delay on the part of the Municipal Corporation of Greater Bombay or representative or Officers in making periodical or final payments or in any other respect whatever.

### **9.22 Proprietary data**

All documents and other information supplied by the Authority or submitted by a Service Provider to MCGM Authority shall remain or become the property of MCGM Authority. Service Provider to treat all information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their Application. MCGM Authority will not return any Application or any information provided along therewith.

### **9.23 Taxes**

- a) G.S.T. and other state levies / cess which are not subsumed under GST will be applicable. The tenderer shall quote inclusive of all taxes. It is clearly understood that MCGM will not bear any additional liability towards payment of any Taxes & Duties.
- b) Wherever the services to be provided by the Tenderers falls under Reverse Charge Mechanism, the price quoted shall be exclusive of GST, but inclusive of Taxes/ Duties/ Cess other than GST, if any.
- c) Rates accepted by MCGM shall hold good till completion of work and no additional individual claim shall be admissible on account of fluctuations in market rates, increase in taxes/ any other levies/ tolls etc. except that payment/ recovery for overall market situation shall be made as per price variation.

### **9.24 Contract Execution**

All required documents for execution of the contract shall be submitted within 30 days from the date of issue of letter of acceptance. If the documents are not submitted within the stipulated time a penalty of ₹ 5000/- per day will be applicable to the Bidder. All contract documents need to be duly affixed with stamp duty properly gned along with evidence/proof of payment of security/contract depot/ within 30 days from the date of letter of acceptance received by him.

If the amount of the Contract Depot to be paid above is not paid within 30 days from the date of issue of Letter of Acceptance, the Tender / Contractor already accepted shall be considered as cancelled and legal steps be taken against the Bidder for recovery of the amounts.

The amount of Performance Bank Guarantee (PBG) retained by the MCGM shall be released after expiry of period up to which the contractor has agreed to maintain the work in good order is over. In the event of the contractor failing or neglecting to complete the rectification work within the period up to which the contractor has agreed to maintain the work in good order, the amount of Performance Bank Guarantee (PBG) retained by MCGM shall be adjusted towards the excess cost incurred by the Department on rectification work.

In case of pending execution of contract agreement, Payment of 10% of Total contract value will be withheld.

#### **9.25 Contract may be rescinded and Performance Bank Guarantee (PBG) forfeited for bribing a public officer or if contractor becomes insolvent**

If the contractor assigns or sublets his contracts or attempt so to do, or become insolvent or commence any proceeding to get himself adjudicated and insolvent or make any composition with his creditors, or attempt so to do or if bribe, gratuity, gift, loan, perquisite, reward or advantage, pecuniary or otherwise, shall either directly or indirectly be given promised or offered by the contractor or any of his servants or agents through any public officer, or person in the employ of MCGM / Govt. in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract the Engineer In-charge may thereupon, by notice in writing rescind the contract and the Performance Bank Guarantee (PBG) of the Contractor shall thereupon stand forfeited and be absolutely at the disposal of MCGM and the same consequences shall ensure as if the contract had been rescinded under above clause hereof; and in addition the contractor shall not be entitled to recover or be paid for any work therefore actually performed under the contract..

#### **9.26 Fees**

The fees to be paid to the System Integrator for the execution of this Contract for the resources types mentioned in the below table for the contract period.

The fees shall be inclusive of GST, Value Added Tax or Sales Tax, Service Tax, Income Tax, duties, fees, levies, charges, and commissions as applicable under the relevant laws of India. Should there be a change in applicable taxes, the actual taxes on the date of billing would prevail.

## 9.27 Work Completion Timelines / Project Milestones

MCGM envisages the completion of the project (the detailed Scope of Work that has been given in the section) within a timeframe of 15 months (Go-Live) from the date of contract signed. After Go-Live the AMC & support is for a period of 3 (three) years. Thus, the total Duration of the project is for 4.3 Years. The details milestones of each phase can be referred in Section 5.4 of the RFP.

## 9.28 Payment Terms

The payment terms are directly related to the commercial bid format provided in section 8.2 of the RFP. Each payment term mentioned below in the table are directly related to the relevant commercial section [#] mentioned in square brackets.

Payment term – Against Deliverables

#	Description	Weightage
1.	Successful delivery of Satellite Imagery to MCGM [1.1]	100%
2.	Successful completion of DGPS Survey for setting up Ground Control Points [1.2]	100%
3.	Successful delivery of DSM, DTM, Contours, Basemap, LULC map, Change Detection map, etc. for relevant Satellite images [1.2]	80%
4.	Successful delivery of Vector model of buildings, slums, major infrastructure like Metro, Bridges, Flyover etc. for relevant Satellite images [1.2]	80%
5.	Successful Ground Truthing (5% of Total Area of Mumbai) & Accuracy assessment for all outputs [1.2]	80%
6.	4 Equal installments of 5% for the remaining 20% of [1.2] after Go-live (4 quarters)	20%
7.	Installation & commissioning of Workstations for Desktop GIS & Remote Sensing application [1.3]	90%
8.	2 Equal instalments of 5% for the remaining 10% of [1.3] after Go-live (Half yearly)	10%
9.	Installation & configuration of all GIS & Remote Sensing software [1.4]	90%
10.	2 Equal instalments of 5% for the remaining 10% of [1.4] after Go-live (Half yearly)	10%
11.	Submission of System Requirement Specification (SRS) [1.5]	5%
12.	Development of Enterprise Geospatial Application (Web & Mobile) [1.5]	80%
13.	Integrations with business systems of MCGM [1.5]	80%
14.	UAT & Go-Live [1.5]	20%
15.	4 Equal installments of 5% for the remaining 20% of [1.5] after Go-live (4 quarters)	20%
16.	Training and Capacity Building Cost [1.6]	100%
17.	Quarterly payments [1.7]	100%
18.	Annual Maintenance Contract (12 equal quarterly instalments of total AMC cost) [2.1]	8.3 %
19.	Onsite Support utilized [2.2]	Quarterly Billing

**Notes:**

- Performance of work undertaken by the System Integrator will be diligently monitored by the RE Department and it will be evaluated with respect of success of the contract from time to time. The System Integrator shall submit the requisite deliverables and satisfactorily perform work as specified under the contract to the MCGM. The requisite payment will be released by the MCGM upon acceptance of the deliverables and satisfaction with work performed by the System Integrator and submission of acceptance report/ satisfaction certificate.
- If the deliverables submitted/ work performed by the System Integrator is not acceptable to the MCGM, payments shall not be released to the System Integrator. This is without prejudice to the MCGM's right to levy any Penalties based on the Service levels agreed between the MCGM and the System Integrator. In such case, the payment will be released to the System Integrator only after it re-submits the deliverable/ performs work and which is accepted by the MCGM.
- The System Integrator shall mark the Attendance in the Attendance Register kept at the office of Assistant Commissioner (Removal of Encroachment) Department, situated at \_\_\_\_\_, which will be considered while processing the payments.
- The System Integrator shall also mark attendance in the biometric attendance system installed at MCGM office.
- Adherence to timelines is critical for the success of the assignment
- No advance payment shall be made for any activity
- If the selected System Integrator is liable for any penalty as per the SLA (refer to the related clause of this agreement), the same shall be adjusted from payments due to the selected System Integrator
- RE department will release the payment within 30 days of submission of valid invoice subject to the condition that invoice and all supporting documents produced are in order and work is performed as per the scope of the project and meeting the SLA Criteria. MCGM shall be entitled to delay or withhold the payment of a disputed invoice or part of it delivered by selected System Integrator, when MCGM disputes such invoice or part of it, provided that such dispute is bonafide.
- Payment will be made by RE department
- It is mandatory for the successful selected bidders to open a bank account in any of the banks approved by MCGM (Specified in Annexure V of the bid document) for easy and quick payments. All payments under the contract will be made only in this bank account through Electronic Clearing System/RTGS/NEFT/CBS
- MCGM at its own discretion may decide to release the partial payment (up to 30%) for specific milestones, acceptance of which got delayed for reasons not attributable to the selected System Integrator. In such cases the remaining 70% shall be released on full acceptance of that particular milestone by MCGM
- No leaves are permitted within the scope of this tender

## 9.29 Service Level Agreements

- The purpose of this Service Level Requirements/Agreement (hereinafter referred to as SLR/SLA) is to clearly define the levels of service which shall be provided by the System Integrator to the Corporation for the duration of this contract period of the Project.
- Timelines specified in the above section (**Work Completion Timelines and Payment Terms**) shall form the Service Levels for delivery of Services specified there-in.
- All the payments to the System Integrator are linked to the compliance with the SLA metrics specified in this document.
- The project Service Level Agreement are proposed to be performance based. For purposes of Service Level Agreement, the definitions and terms as specified along with the following terms shall have the meanings set forth below:

1. “Uptime” shall mean the time period for which the specified services / components with specified technical and service standards are available for the application. Uptime, in percentage, of any component (Non-IT and IT) can be calculated as:

$$\text{Uptime} = \{1 - [(\text{System Downtime}) / (\text{Total Time} - \text{Planned Maintenance Time})]\} * 100$$

2. “Downtime” shall mean the time period for which the specified services / components with specified technical and service standards are not available for the Users, the scheduled outages / Planned Maintenance time planned in advance for application and related infrastructure. The planned maintenance time / scheduled downtime will include activities like software upgrades, patch management, security software installations etc.
  3. The selected System Integrator will be required to schedule ‘planned maintenance time’ with prior approval of MCGM. This will be planned outside working time. In exceptional circumstances, MCGM may allow the selected System Integrator to plan scheduled downtime in the working hours.
  4. “Incident” refers to any event / abnormalities in the functioning of the application, Infrastructure and services that may lead to disruption in normal operations.
  5. O&M Support shall mean the support for minimum 8 hrs. per day as per MCGM’s working days, availability over telephone / mobile for 24 x 7 x 365 days and anytime support during exigencies and shall handle Fault reporting, Trouble Ticketing and related enquiries during this contract.
  6. “Response Time” shall mean the time incident is reported to the “O&M Support team” and concerned expert is assigned for the issue / call.
  7. “Resolution Time” shall mean the time taken (after the incident has been reported at the O&M Support team), in resolving (troubleshooting and fixing) or escalating (to the second level) getting the confirmatory details about the same from the selected System Integrator and conveying the same to the end user), the services related troubles during the first level escalation.
- The resolution time shall vary based on the severity of the incident reported at the O&M Support. The severity would be as follows:



1. **Critical / High:** The application is down impacting critical business functions or multiple modules/functions down impacting users on daily operations or any module /functionality deemed as highly critical by MCGM.
2. **Medium:** One module/functionality down impacting critical business functions having major impact on daily operations.
3. **Low:** Loss of business functionality for less than 10 users impacting day to day operations or minor functionality down impacting less than 10 users.

The SLAs have been logically segregated in the following categories:

1. Pre-implementation phase & Manpower availability
2. Data & Map generation
3. Development & Implementation of Enterprise GIS application
4. Issues Resolution
5. Other Factors
6. Application Response Time Performance Criteria

Commencement of SLA: The SLA shall commence from implementation period itself for adherence to the implementation plan for new requirements. The penalty will be deducted from the next payment milestone during the implementation period.

Pre-implementation phase & Manpower availability				
Sr. No.	Parameter	Metric	Bas	Penalty
1.	Adherence to planned implementation schedule. <ul style="list-style-type: none"> <li>• Award of Contract &amp; team mobilization</li> <li>• Order required Satellite Images</li> <li>• Software Requirement Specification (SRS)</li> <li>• Delivery of Satellite images</li> <li>• Workspace at MCGM</li> </ul>	The delay for each milestone as per the planned schedule should not exceed more than a week without a justified reason agreed and approved by MCGM. Thereafter penalty will be levied on daily bas.	Per day	₹ 1,000 per day up to maximum 10% of contract value post which MCGM may invoke annulment of the contract.
2.	Mobilisation of the team for commencement of work	As per the defined timeline mentioned in section 5.4	Per Occurrence	In case the proposed resource is not available for continuous 7 working days, the penalty of ₹. 10,000 per week per resource will be imposed during and after 7 days.
3.	Manpower Availability & Readiness during Implementation	100% as per requirement timelines	Daily	In case the proposed resource is not available for continuous 7 working

				days, the penalty of ₹ 10,000 per week will be imposed during and after 7 days.
4.	Replacement of resources during project execution	Within 15 days of release of existing resource initiated either by RE dept. The resource should be of equivalent or higher qualification and experience.	Per occurrence	₹ 5,000 per week of delay for deployment of equivalent or higher qualification and experienced alternate resource.  In the event if selected fails to replace the resource or as per the directions given by RE dept. from time to time, RE dept. reserves the right to procure similar services from market as alternate sources at the risk, cost and responsibility of. Before taking such a decision, RE dept. shall serve a notice period of 1 month to.

### Data & Map generation

Sr. No.	Parameter	Metric	Bas	Penalty
1.	Adherence to planned implementation schedule. <ul style="list-style-type: none"> <li>• DGPS Survey for setting up Ground Control Points</li> <li>• Pre-processing of the acquired data and Geodatabase Design</li> <li>• Base-map Preparation</li> <li>• Generation of Digital Models (DSM &amp; DTM)</li> <li>• Generation of Contour Maps</li> <li>• LULC &amp; Change Detection Map</li> <li>• 2D/3D Vector Model for the city</li> <li>• Post-processing of the data (Ground truthing &amp; Accuracy Assessment)</li> </ul>	The delay for each milestone as per the planned schedule should not exceed more than a week without a justified reason agreed and approved by MCGM. Thereafter penalty will be levied on daily bas.	Per day	₹ 1000 per day up to maximum 10% of contract value post which MCGM may invoke annulment of the contract.
2.	DGPS ground control	The DGPS point accuracy	Per Point	Rs. 5000 for every

	point accuracy	should be <0.5 m.		inaccurate point. And a resurvey.
3.	Geo-referencing of the satellite image	The average RMS error shall not exceed 1.0.	Per Satellite image	0.1 % of the basemap creation cost.
4.	Basemap Digitization	100% features to be digitized as per the approved data model.	Per Satellite image	Rs. 5000 for every missed feature in the output map.
5.	Creation of DSM, DTM, Contours, LULC map, Change Detection map, etc. for relevant Satellite images	Should have 99% recorded data to be correct in every sense.	Per delivery output of each satellite image	1000 Rs for every incorrect value found in random sampling.
6.	Creation of 2D/3D (vector model of buildings, slums, major infrastructure like Metro, Bridges, Flyover etc. for relevant Satellite images	Should have 99% recorded data to be correct in every sense.	Per 2D/3D vector model in each satellite image	1000 Rs for every incorrect value found in random sampling.

### Development & Implementation of Enterprise GIS application

1.	Submission of deliverables as relevant to the individual milestones/stages Various deliverables such as <ul style="list-style-type: none"> <li>• Inception Report</li> <li>• Survey Report</li> <li>• Project Plan</li> <li>• Quality Plan</li> <li>• Design Documents</li> <li>• SRS as applicable</li> <li>• Test Cases and results</li> <li>• User Manuals</li> <li>• Training Manual</li> <li>• Technical Documents etc.</li> </ul>	Submission within 10 days of the completion of the individual milestone.	Per day	₹ 10,000 per day up to maximum 10% of contract value post which MCGM may invoke annulment of the contract.
2.	Application Uptime <ul style="list-style-type: none"> <li>• Database Server Uptime</li> <li>• Application Server / Web Server Uptime</li> <li>• GIS Server Uptime</li> </ul>	>= 99.95%	Per occurrence. This will be calculated on monthly bas during O&M	₹ 5000 per instance, subject to a maximum of 10 % of the total contract value, post which MCGM may invoke Annulment of the contract.

### Issues Resolution

Sr. No	Parameter	Target	Bas	Penalty
1.	<b>Severity 1 Issue (Critical)</b>	<b>Resolution Time:</b> <= 8 Hrs. from the time the	Daily	₹ 5000 for the first day and ₹10000 per

		issue is logged by end user.		day every subsequent day, subject to a maximum of 10 % of the total contract value, post which MCGM may invoke Annulment of the contract.
2.	<b>Severity 2 Issue (Medium)</b>	<b>Resolution Time:</b> <= 2 Days from the time the issue is logged by end user.	Daily	₹ 3000 for the first day and ₹ 6000 per day every subsequent day, subject to a maximum of 10 % of the total contract value, post which MCGM may invoke Annulment of the contract.
3.	<b>Severity 3 Issue (Low)</b>	<b>Resolution Time:</b> <= 5 Days from the time the issue is logged by end user.	Daily	₹ 2000 for the first day and ₹ 4000 per day every subsequent day, subject to a maximum of 10 % of the total contract value, post which MCGM may invoke Annulment of the contract.

#### Other Factors

Sr. No.	Parameter	Metric	Bas	Penalty
1.	Application Security Cyber Crime / Hacking /Data Theft / Fraud attributable to the service Provider	Per occurrence	Per occurrence	Depending on the type of Incident and its impact, a penalty of 10% on the entire contract value or in case of severe issues (as defined by MCGM) such breach may lead to termination of contract

#### Application Response Time Performance Criteria

Response time: Response time is the time interval between the instant at which the LAN user / Internet user at a terminal enters a request for a response from the Database server and the instant at which the response is received completely at the terminal.

User Activity	LAN Users/Internet User (App Server to DB)
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	90% of cases	All
Menu Navigation – To display the menu as per the defined user role and profile	< 4 sec	< 6 sec
Screen Opening – To display the selected data entry screen from the menu chosen	< 4 sec	< 6 sec
Field Navigation – To navigate between the data entry fields in the Screen	< 7 sec	< 10 sec
Look up response time – To display items from List of Values	< 10 sec	< 12 sec
Look up response time – To display the required GIS & map data	< 10 sec	< 15 sec
Screen Navigation – Time taken to navigate from one screen (tab page) to another which does not involve processing in earlier screen	< 5 sec	< 7 sec
Map Navigation- Time taken in map rendering with all visible layers including 2D/3D (with scale dependency) on using navigation tools.	< 6 sec	< 10 sec
Transaction Commit – Response time taken to commit a simple transaction	< 10 sec	< 15 sec
<b>Query Retrieval Response Time</b>		
simple query	< 8 sec	< 15 sec
Medium complexity query	< 15 sec	< 20 sec
High Complexity query	<20 sec	< 30 sec
<b>Reports Generation Response Time</b>		
simple Report	< 10 sec	< 20 sec
Medium Complexity report	< 45 sec	< 90 sec
High Complexity report	< 90 sec	< 3 min

1. Non-adherence to the above-mentioned response time would be considered as a bug and the penalty would be levied as per the table for the Issue Resolution. Support service shall be available 24 \* 7.
2. Bidder shall provide a software to measure the performance for the above-mentioned SLAs.
3. The successful bidder will have to maintain strict Privacy and confidentiality of all the data it/its staff gets access to. Adequate provisions to be made to not to allow unrestricted access to the data to people in the organization who have not got the necessary permissions. Successful Bidder cannot sell or part with any data in any form. Penalty of Rs. 1,000/- to Rs. 100,000/- would be charged on default of this service condition. The exact amount of the penalty will be decided by SKDCL based upon severity of the default.

Applicable SLAs and Penalties for issues resolution:

- The down time will be calculated on monthly bas. Non-adherence to any of the services as mentioned below will lead to penalty as per the SLA clause and will be used to calculate downtime. The downtime calculated shall not include the following:
  - Down time due to hardware / software and application which is owned by MCGM at their premises
  - Negligence or other conduct of MCGM or its agents, including a failure or malfunction resulting from applications or services provided by MCGM or its vendors.
  - Failure or malfunction of any equipment or services not provided by the Bidder.

However, it is the responsibility / onus of the selected Bidder to prove that the outage is attributable to MCGM. The selected Bidder shall obtain the proof authenticated by the MCGM's official that the outage is attributable to the MCGM.

- The Agency shall deploy enough manpower suitably qualified and experienced in shifts to meet the SLA. Agency shall appoint as many team members as deemed fit by them, to meet the time Schedule and SLA requirements.

Notes:

- a) The maximum penalty will be up to 10% of total project cost as per the Commercial Bid submitted by the System Integrator.
- b) The System Integrator shall deploy sufficient manpower suitably qualified and experienced to meet the SLA. The System Integrator shall appoint as many team members as deemed fit by them, to meet the time Schedule and SLA requirements.
- c) Once a maximum penalty of 10% of the contract value is reached, MCGM has the right to call for the annulment of contract.

### **9.30 Professional Project Management**

1. The selected System Integrator shall deploy resources / execute the project with complete professionalism and full commitment to the scope of work and the prescribed service levels. System Integrator shall attend regular Project Review Meetings scheduled by MCGM and shall adhere to the directions given during the meeting. Following Responsibilities are to be executed by the System Integrator in regular manner to ensure the proper management of the project:
  - Finalization of the Project plan in consultation with MCGM and its consultant. Project Plan should cost of Work plan, Communication matrix, Timelines, Quality Plan, Configuration Management Plan, etc.
  - Plan and deploy the resources in conjunction with the Project Plan and to execute roles and Responsibilities against each activity of the project plan
  - Preparation and regular update of the Risk Register and the Mitigation Plan. Timely communication of the same to all the identified project stakeholders
  - Submission of Weekly Project Progress Reports
  - Monthly Compliance report, which will cover compliances to Project Timelines, Project Team, Hardware (if applicable) and Software delivered, SLAs, etc.

### **9.31 Use and Acquisition of Assets during the term**

The selected System Integrator shall:

1. Take all reasonable and proper care of the entire hardware and software, network or any other information technology infrastructure components used during the project and other facilities leased/owned by the System Integrator exclusively in terms of the delivery of the services as per this CA (hereinafter the "Assets") in proportion to their use and control of such Assets which will include all upgrades/enhancements and improvements to meet the

needs of the project arising from time to time

2. Term "Assets" also refers to all the hardware / Software / furniture / data / documentations / manuals / catalogues / brochures / or any other material procured, created or utilized by the System Integrator.
3. Keep all the tangible Assets in good and serviceable condition (reasonable wear and tear excepted) suitably upgraded subject to the relevant standards as stated in the bid to meet the SLAs mentioned in the contract and during the entire term of the Agreement
4. Ensure that any instructions or manuals supplied by the manufacturer of the Assets for use of Assets and which are provided to the System Integrator will be followed by the System Integrator and any person who will be responsible for the use of the Asset
5. Take such steps as may be recommended by the manufacturer of the Assets and notified to the System Integrator or as may be necessary to use the Assets in a safe manner
6. To the extent that the Assets are under the control of the System Integrator, keep the Assets suitably housed and in conformity with any statutory requirements from time to time applicable to them
7. Not, knowingly or negligently use or permit any of the Assets to be used in contravention of any statutory provisions or regulation or in any way contrary to law
8. Use the Assets exclusively for the purpose of providing the Services as defined in the contract
9. Ensure the integration of the software with hardware to be setup and the current Assets in order to ensure the smooth operations of the entire solution architecture to provide efficient services to MCGM of this Project in an efficient and speedy manner
10. System Integrator shall not use MCGM data to provide services for the benefit of any third party, as a service bureau or in any other manner

### **9.32 Security and safety**

1. The System Integrator will comply with the directions issued from time to time by MCGM and the standards related to the security and safety as far as it applies to the provision of the Services
2. Adherence to bac eGovernance Guidelines and Standards for data structure (if any) shall be adhered to.
3. System Integrator shall also comply with MCGM / Government of Maharashtra's / Government of India's information technology security and standard policies in force from time to time as applicable. MCGM shall share the relevant guidelines and standards to the System Integrator upon signing of the CA.
4. System Integrator shall use reasonable endeavors to report forthwith in writing to all the partners / contractors about the civil and criminal liabilities accruing due to any unauthorized access (including unauthorized persons who are employees of any Party) or interference with MCGM's data, facilities or Confidential Information.
5. The System Integrator shall upon reasonable request by MCGM or his/her nominee(s) participate in regular meetings when safety and information technology security matters are reviewed.
6. System Integrator shall promptly report in writing to MCGM any act or omission which they

are aware that could have an adverse effect on the proper conduct of safety and information technology security at MCGM.

### **9.33 Indemnity**

The System Integrator agrees to indemnify and hold harmless MCGM, its officers, employees and agents (each an “Indemnified Party”) promptly upon demand at any time and from time to time, from and against any and all losses, claims, damages, liabilities, costs (including reasonable attorney’s fees and disbursements) and expenses (collectively, “Losses”) to which the Indemnified Party may become subject, in so far as such losses directly arise out of, in any way relate to, or result from:

1. Any miss-statement or any breach of any representation or warranty made by the System Integrator or
2. The failure by the System Integrator to fulfill any covenant or condition contained in this Agreement, including without limitation the breach of any terms and conditions of this Agreement by any employee or agent of the System Integrator. Against all losses or damages arising from claims by third Parties that any Deliverable (or the access, use or other rights thereto), created by System Integrator pursuant to this Agreement, or any equipment, software, information, methods of operation or other intellectual property created by System Integrator or sub-contractors pursuant to this Agreement, or the SLAs:
  - i) infringes a copyright, trade mark, trade Design enforceable in India,
  - ii) infringes a patent issued in India, or
  - iii) constitutes misappropriation or unlawful disclosure or use of another Party’s trade secretes under the laws of India (collectively, “Infringement Claims”); provided, however, that this will not apply to any Deliverable (or the access, use or other rights thereto) created by:
    - (A) to Offer GIS based Services in MCGM by itself or through other persons other than System Integrator or its sub-contractors;
    - (B) Third Parties (i.e., other than System Integrator or sub-contractors) at the direction of MCGM, or
3. Any compensation / claim or proceeding by any third party against MCGM arising out of any act, deed or omission by the System Integrator or
4. Claim filed by a workman or employee engaged by the System Integrator for carrying out work related to this Agreement. For the avoidance of doubt, indemnification of Losses pursuant to this section shall be made in an amount or amounts enough to restore each of the Indemnified Party to the financial potion it would have been in had the losses not occurred.

Any payment made under this Agreement to an indemnity or claim for breach of any provion of this Agreement shall include applicable taxes.



### 9.34 Third Party Claims

1. Subject to Sub-clause (2.) below, the System Integrator (the “Indemnified Party”) from and against all losses, claims litigation and damages on account of bodily injury, death or damage to tangible personal property arising in favor or any person, corporation or other entity (including the Indemnified Party) attributable to the Indemnifying Party’s performance or non-performance under this Agreement or the SLAs.
2. The indemnities set out in Sub-clause (1.) above shall be subject to the following conditions:
  - i) The Indemnified Party, as promptly as practicable, informs the Indemnifying Party in writing of the claim or proceedings and provides all relevant evidence, documentary or otherwise;
  - ii) The Indemnified Party shall, at the cost and expenses of the Indemnifying Party, give the Indemnifying Party all reasonable assistance in the defense of such claim including reasonable access to all relevant information, documentation and personnel. The indemnifying party shall bear cost and expenses and fees of the Attorney on behalf of the Indemnified Party in the litigation, claim.
  - iii) If the Indemnifying Party does not assume full control over the defense of a claim as provided in this Article, the Indemnifying Party may participate in such defense at its sole cost and expense, and the Indemnified Party will have the right to defend the claim in such manner as it may deem appropriate, and the cost and expense of the Indemnified Party will be borne and paid by the Indemnifying Party.
  - iv) The Indemnified Party shall not prejudice, pay or accept any proceedings or claim, or compromise any proceedings or claim, without the written consent of the Indemnifying Party.
  - v) System Integrator hereby indemnify and hold indemnified MCGM harmless from and against any and all damages, losses, liabilities, expenses including legal fees and cost of litigation in connection with any action, claim, suit, proceedings as if result of claim made by the third party directly or indirectly arising out of or in connection with this agreement.
  - vi) All settlements of claims subject to indemnification under this Article will:
    - (a) be entered into only with the consent of the Indemnified Party, which consent will not be unreasonably withheld and include an unconditional release to the Indemnified Party from the claimant for all liability in respect of such claim; and
    - (b) include any appropriate confidentiality agreement prohibiting disclosure of the terms of such settlement.
  - vii) The Indemnified Party shall take steps that the Indemnifying Party may reasonably require to mitigate or reduce its loss as a result of such a claim or proceedings and
  - viii) In the event that the Indemnifying Party is obligated to indemnify an Indemnified Party pursuant to this Article, the Indemnifying Party will, upon payment of such

indemnity in full, be subrogated to all rights and defenses of the Indemnified Party with respect to the claims to which such indemnification relates.

- ix) In the event that the Indemnifying Party is obligated to indemnify the Indemnified Party pursuant to this Article, the Indemnified Party will be entitled to invoke the Performance Bank Guarantee, if such indemnity is not paid, either in full or in part, and on the invocation of the Performance Bank Guarantee, the Indemnifying Party shall be subrogated to all rights and defenses of the Indemnified Party with respect to the claims to which such indemnification relates.

System Integrator will defend or settle third party claims against MCGM solely attributable to the System Integrator's infringement of any copyrights, trademarks or industrial Design rights alleged to have occurred in respect of System Integrator branded hardware/software/deliverables etc. (together "deliverables") supplied by the System Integrator. The System Integrator shall pay all costs, damages and attorney's fees that a court finally awards.

MCGM shall provide the System Integrator with prompt notice of such claim and extend full cooperation and assistance, information and authority reasonably necessary to defend or settle such claim. The System Integrator will have adequate opportunity to control the response thereto and the defense thereof.

Further as an exclusion, the System Integrator shall have no obligation for any claim of infringement to the extent arising from use of the deliverables in a way not indicated in the statement of work or in any specifications or documentation provided with such deliverable.

### **9.35 Publicity**

Any publicity by the System Integrator in which the name of MCGM is to be used should be done with the explicit written permission of The Municipal Commissioner, Assistant Commissioner (Removal of Encroachment), Municipal Corporation of Greater Mumbai.

### **9.36 Warranties**

1. The System Integrator warrants and represents to MCGM that:
  - i) It has full capacity and authority and all necessary approvals to enter into and to perform its obligations under this Agreement.
  - ii) This Agreement is executed by a duly authorized representative of the System Integrator.
  - iii) It shall discharge its obligations under this Agreement with due skill, care and diligence so as to comply with the service level agreement.
2. In the case of the SLAs, the System Integrator warrants and represents to MCGM, that:
  - i) The System Integrator has full capacity and authority and all necessary approvals to enter into and perform its obligations under the SLAs and to provide the Services

- ii) The SLAs shall be executed by a duly authorized representative of the System Integrator
- iii) The Services will be provided and rendered by appropriately qualified, trained and experienced personnel as mentioned in the bid
- iv) System Integrator has and will have all necessary licenses, approvals, consents of third Parties free from any encumbrances and all necessary technology, hardware and software to enable it to provide the Services
- v) The Services will be supplied in conformance with all laws, enactments, orders and regulations applicable from time to time
- vi) System Integrator will warrant that the solution provided under the contract is new, of the most recent higher Version /models and incorporate all recent improvements in Design and materials unless provided otherwise in the contract
- vii) The System Integrator shall ensure defect free operation of the entire solution and shall replace any such components, equipment's, software and hardware (if applicable) which are found defective and during the entire contract period the System Integrator shall apply all the latest upgrades / patches / releases for the software after appropriate testing. No additional costs shall be paid separately for the warranty other than what are the costs quoted by the System Integrator and as specified in the contract.
- viii) If the System Integrator uses in the course of the provision of the Services, components, equipment's, software and hardware manufactured by any third party and which are embedded in the Deliverables or are essential for the successful use of the Deliverables, it will pass-through third-party manufacturer's Warranties relating to those components, equipment, software and hardware to the extent possible.

The System Integrator will repair/correct the warranty defect in the System Integrator branded hardware/software, or correct a material non-conformance to specifications in accordance with the terms and conditions mutually agreed between the parties during the agreed warranty period and in accordance with the terms of the respective OEMs/Software vendors. Further, System Integrator will not be responsible for any breach of warranty or support resulting from unauthorized changes made to the software/hardware supplied by it.

Notwithstanding what has been stated elsewhere in this Agreement and the Schedules attached herein, in the event the System Integrator is unable to meet the obligations pursuant to the Implementation of the project, Operations and Maintenance Services and any related scope of work as stated in this Agreement and the Schedules attached herein, MCGM will have the option to invoke the Performance Guarantee after serving a written notice of thirty (30) days to the System Integrator.

### **9.37 Force Majeure**

The System Integrator shall not be liable for forfeiture of its Performance Guarantee, imputation of liquidated damages or termination for default, if and to the extent that its delay in

performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure. For purposes of this Clause, “Force Majeure” means an event beyond the “reasonable” control of the System Integrator, not involving the System Integrator’s fault or negligence and not foreseeable. Unforeseen circumstances or causes beyond the control of the System Integrator include but are not limited to acts of God, war, riot, acts of civil or military authorities, fire, floods, accidents, terrorist activity, Epidemic, Pandemic, strikes or shortages of transportation facilities, fuel, energy, labor or material.

For the System Integrator to take benefit of this clause it is a condition precedent that the System Integrator must promptly notify MCGM, in writing of such conditions and the cause thereof within five calendar days of the arising of the Force Majeure event. MCGM, or the consultant / committee appointed by MCGM shall study the submission of the System Integrator and inform whether the situation can be qualified one of Force Majeure. Unless otherwise directed by MCGM in writing, the System Integrator shall continue to perform its obligations under the resultant Agreement as far as it is reasonably practical, and shall seek all reasonable alternative means for performance of services not prevented by the existence of a Force Majeure event.

In the event of delay in performance attributable to the presence of a force majeure event, the time for performance shall be extended by a period(s) equivalent to the duration of such delay. If the duration of delay continues beyond a period of 30 days, MCGM and the System Integrator shall hold consultations with each other in an endeavor to find a solution to the problem.

Notwithstanding anything to the contrary mentioned above, the decision of MCGM shall be final and binding on the System Integrator.

### **9.38 Resolution of Disputes**

MCGM and the System Integrator shall make every attempt to resolve dispute amicably, by direct information, negotiations of any disagreement or dispute arising between them under or in connection with this Agreement. All differences disputes arising under and out of these present, or in connection with this Agreement shall be referred to the Municipal Commissioner of MCGM and the decision of the Municipal Commissioner shall be final and binding on both the Parties.

### **9.39 Risk Purchase Clause**

In the event, selected System Integrator fails to execute the project as stipulated in the CA, or as per the directions given by MCGM from time to time, MCGM reserves the right to procure simillar services from the next selected / eligible Bidder or from alternate sources at the cost of

the System Integrator. Before taking such a decision, MCGM shall serve a notice period of one month to the System Integrator.

The 30 days' notice period shall be considered as the 'Cure Period' to facilitate the System Integrator to cure the breach. The provision for Risk Purchase shall be evoked in the event the System Integrator fails to correct the breach within the 'Cure Period'. Further, the System Integrator's liability to pay shall be set as 25% of the value of the undelivered services.

#### **9.40 Limitation of Liability towards MCGM**

The System Integrator's liability under the resultant Agreement shall be determined as per the Law in force for the time being. The System Integrator shall be liable to MCGM for loss or damage occurred or caused or likely to occur on account of any act of omission on the part of the System Integrator and its employees, including loss caused to MCGM on account of defect in goods or deficiency in services on the part of System Integrator or his agents or any person / persons claiming through or under said System Integrator.

selected System Integrator's aggregate liability in connection with obligations undertaken as a part of this contract regardless of the form or nature of the action giving rise to such liability, shall be at actual and limited to the amount paid by MCGM for:

- i) services provided during the twelve (12) months immediately preceding the date of the claim that in each case is the subject of the claim.

This limit shall not apply to damages for bodily injury (including death) and damage to real property and tangible personal property for which the System Integrator is legally liable.

#### **9.41 Conflict of Interest**

The System Integrator shall disclose to MCGM in writing, all actual and potential conflicts of interest that exist, arise or may arise (either for the System Integrator or its team) in the course of performing the Services as soon as it becomes aware of such a conflict. System Integrator shall hold MCGM's interest paramount, without any consideration for future work, and strictly avoid conflict of interest with other assignments.

#### **9.42 Data Ownership**

All the data created within the scope of this contract shall be owned by MCGM. The System Integrator shall take utmost care in maintaining security, confidentiality and backup of this data. Access to the data / systems shall be given by the System Integrator only to the personnel working on the projects and their names and contact details shall be shared with MCGM in advance. MCGM / its authorized representative(s) shall conduct periodic / surprise security reviews and audits, to ensure the compliance by the System Integrator to data / system security.

The ownership of the application and the data shall rest with MCGM.

### **9.43 Fraud and Corruption**

MCGM requires that System Integrator must observe the highest standards of ethics during the execution of the contract. In pursuance of this policy, MCGM defines, for the purpose of this provision, the terms set forth as follows:

- i) “Corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of MCGM in contract executions.
- ii) “Fraudulent practice” means a misrepresentation of facts, in order to influence a procurement process or the execution of a contract, to MCGM, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificially high or non-competitive levels and to deprive MCGM of the benefits of free and open competition.
- iii) “Undesirable practice” means:
  - (a) establishing contact with any person connected with or employed or engaged by MCGM with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or
  - (b) having a Conflict of Interest; and
- iv) “Restrictive practice” means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Selection Process.
- v) “Coercive Practices” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the execution of contract.

If it is noticed that the System Integrator has indulged into the Corrupt / Fraudulent / Undesirable / Coercive practices, it will be an enough ground for MCGM for termination of the contract and initiate black-listing of the vendor.

### **9.44 Exit Management**

#### **i. Exit Management Purpose**

This clause sets out the provision, which will apply during Exit Management period. The Parties shall ensure that their respective associated entities carry out their respective obligations set out in this Exit Management Clause.

The exit management period starts, in case of expiry of contract, at least 6 months prior to the date when the contract comes to an end or in case of termination of contract, on the date when the notice of termination is sent to the System Integrator. The exit management period ends on the date agreed upon by MCGM or three months after the beginning of the exit management period, whichever is earlier.

#### **ii. Confidential Information, Security and Data**

System Integrator will promptly, on the commencement of the exit management period, supply to MCGM or its nominated agency the following:

- a. Information relating to the current services rendered and performance data relating to the performance of the services; documentation relating to the project, project's customized source code; any other data and confidential information created as part of or is related to this project;
- b. Project data as is reasonably required for purposes of the project or for transitioning of the services to its replacing successful Bidder in a readily available format.
- c. All other information (including but not limited to documents, records and agreements) relating to the services reasonably necessary to enable MCGM and its nominated agency, or its replacing vendor to carry out due diligence in order to transition the provision of the Services to MCGM or its nominated agency, or its replacing vendor (as the case may be).
- d. The System Integrator shall retain all of the above information with them for 30 days after the termination of the contract, post which the provider has to wipe/purge/delete all information created or retained as part of this project.
- e. System Integrator will sign a Non-Disclosure Agreement with MCGM RE Department. The format for the same has been included in Annexure VII.

### **iii. Rights of Access to Information**

At any time during the exit management period, the System Integrator will be obliged to provide an access of information to MCGM and / or any Replacing Vendor in order to make an inventory of the Assets (including Hardware / Software / Active / passive), documentations, manuals, catalogs, archive data, Live data, policy documents or any other material related to implementation of the application for MCGM.

### **iv. Exit Management Plan**

Successful selected agency shall provide MCGM with a recommended "Exit Management Plan" within 90 days of signing of the contract, which shall deal with at least the following aspects of exit management in relation to the SLA as a whole and in relation to the Project Implementation, the Operation and Management SLA and Scope of work definition.

- a. A detailed program of the transfer process that could be used in conjunction with a Replacement Vendor including details of the means to be used to ensure continuing provision of the services throughout the transfer process or until the cessation of the services and of the management structure to be used during the transfer
- b. Plans for the communication with such of the successful bidder, staff, suppliers, customers and any related third party as are necessary to avoid any material detrimental impact on Project's operations as a result of undertaking the transfer
- c. Plans for provision of contingent support to the implementation of hosted Project and Replacement Vendor for a reasonable period (minimum one month) after transfer
- d. Exit Management Plan shall be presented by the System Integrator to and approved by MCGM or its nominated agency
- e. The terms of payment as stated in the Terms of Payment Schedule include the costs of the System Integrator complying with its obligations under this Schedule
- f. During the exit management period, the System Integrator shall use its best efforts to deliver the services
- g. Payments during the Exit Management period shall be made in accordance with the Terms of Payment Schedule

## **9.45 Termination of contract**

MCGM may, without prejudice to any other remedy under this Contract and applicable law, reserves the right to terminate for breach of contract by providing a written notice of 30 days stating the reason for default to the System Integrator and terminate the contract either in whole or in part:

- If the System Integrator fails to deliver any or all of the project requirements / operationalization / Operational Acceptance of project within the time frame specified in the contract, or
- If the System Integrator fails to perform any other obligation(s) under the contract.

Prior to providing a notice of termination to the System Integrator, MCGM shall provide the System Integrator with a written notice of 30 days instructing the System Integrator to cure any breach/default of the Contract, if MCGM is of the view that the breach may be rectified.

On failure of the System Integrator to rectify such breach within 30 days, MCGM may terminate the contract by providing a written notice of 30 days to the System Integrator, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to MCGM. In such an event the System Integrator shall be liable for penalty imposed by MCGM.

In the event of termination of this contract for any reason whatsoever, MCGM is entitled to impose any such obligations and conditions and issue any clarifications as may be necessary to ensure an efficient transition and effective continuity of the services which the System Integrator shall be obliged to comply with and take all available steps to minimize the loss resulting from that termination/ breach, and further allow and provide all such assistance to MCGM and/ or succeeding vendor, as may be required, to take over the obligations of the System Integrator in relation to the execution /continued execution of the requirements of this contract.

## **9.46 Miscellaneous**

### **a. Confidentiality**

“Confidential Information” means all information including Project Data (whether in written, oral, electronic or other format) which relates to the technical, financial and operational affairs, business rules, citizen information, Design rights, know-how and personnel of each Party and its affiliates which is disclosed to or otherwise learned by the other Party or its subcontractors (whether a Party to the contract or to the SLA) in the course of or in connection with the contract (including without limitation such information received during negotiations, location visits and meetings in connection with the contract or to the SLA) or pursuant to the contract to be given subsequently.

Except with the prior written permission of MCGM, the System Integrator (including all partners) and its Personnel shall not disclose such confidential information to any person or entity not expected to know such information by default of being associated with the project, nor shall the System Integrator and its Personnel make public the recommendations formulated in the course of, or as a result of the project. In matters pertaining to privacy of data, the System Integrator (including all partners) shall not use any data for analytical/commercial reasons whatsoever.



The System Integrator recognizes that during the term of this Agreement, sensitive data will be procured and made available to it, its Sub contractors and agents and others working for or under the System Integrator. Disclosure or usage of the data by any such recipient may constitute a breach of law applicable causing harm not only to the Department whose data is used but also to its stakeholders. The function of MCGM requires the System Integrator, its Subcontractors and agents to demonstrate utmost care, sensitivity and strict confidentiality. Any breach of this Article will result in MCGM and its nominees receiving a right to seek injunctive relief and damages, from the System Integrator.

The restrictions of this Article shall not apply to confidential information that:

- i. Is or becomes generally available to the public through no breach of this Article by the Recipient; and
- ii. Was in the recipient's possession free of any obligation of confidence prior to the time of receipt of it by the Recipient hereunder; and
- iii. Is developed by the Recipient independently of any of discloser's Confidential Information; and
- iv. Is rightfully obtained by the Recipient from third Parties authorized at that time to make such disclosure without restriction; and
- v. Is identified in writing by the Discloser as no longer proprietary or confidential; or
- vi. Is required to be disclosed by law, regulation or Court Order, provided that the recipient gives prompt written notice to the Discloser of such legal and regulatory requirement to disclose so as to allow the Discloser reasonable opportunity to consists such disclosure.

To the extent that such disclosure is required for the purposes of this Agreement, either Party may disclose Confidential Information to:

- i. Its employees, agents and independent contractors and to any of its affiliates and their respective independent contractors or employees; and
- ii. Its professional advisors and auditors, who require access for the purposes of this Agreement, whom the relevant Party has informed of its obligations under this Article and in respect of whom the relevant Party has informed of its obligations under this Article has used commercially reasonable efforts to ensure that they are contractually obliged to keep such Confidential Information confidential on terms substantially the same as set forth in this Article. Either Party may also disclose confidential Information or any entity with the other Party's prior written consent.

The provisions of this Article shall survive the expiration or any earlier termination of this Agreement.

#### **b. Standards of Performance**

The System Integrator shall provide the services and carry out their obligations under the Contract with due diligence, efficiency and professionalism/ethics in accordance with generally accepted professional standards and practices. The System Integrator shall always act in respect of any matter relating to this contract. The System Integrator shall abide by all the applicable Provisions / Acts / Rules / Regulations, Standing orders, etc. of Information Technology as prevalent in the country. The System Integrator shall also conform to the standards laid down by Government of Maharashtra or

Government of India from time to time. Such standards and guidelines shall be shared with the System Integrator by MCGM up on signing of the Contract.

#### **c. Sub Contracts**

Sub-contracting is not permitted within the scope of this tender.

#### **d. Care to be taken while working at MCGM Office**

System Integrator should follow instructions issued by concerned Competent Authority from time to time for carrying out work at Designated places. System Integrator should ensure that there is no damage caused to any private or public property. In case such damage is caused, System Integrator shall immediately bring it to the notice of concerned organization and MCGM in writing and pay necessary charges towards fixing of the damage. System Integrator shall ensure that its employees/representatives don't breach privacy of any citizen or establishment during the course of execution or maintenance of the project.

#### **e. Compliance with Labour regulations**

The System Integrator shall pay fair and reasonable wages to the workmen employed, for the contract undertaken and comply with the provisions set forth under the Minimum wages Act and the Contract Labour Act 1970. The salary of the manpower working on MCGM project should be paid using ECS / NEFT / RTGS. A record of the payments made in this regard should be maintained by the System Integrator. Upon request, this record shall be produced to the appropriate authority in MCGM and/or Judicial Body. If complaints are received by MCGM (or any appropriate authority) appropriate action (Liquidation of Security Depot, Blacklisting, etc.) may be initiated as deemed necessary against the System Integrator. The employees of the System Integrator in no case shall be treated as the employees of the MCGM at any point of time. Since the employee working on project are employee s of the System Integrator, the payment of salary/ compensation if any shall be entire responsibility of. Under no circumstances the MCGM shall be liable to pay the same.

#### **f. Independent Contractor**

Nothing in this Agreement shall be construed as establishing or implying any partnership or joint venture or employment relationship between the Parties to this Agreement. Except as expressly stated in this Agreement nothing in this Agreement shall be deemed to constitute any Party as the agent of any other Party or authorizes either Party:

- (i) to incur any expenses on behalf of the other Party,
- (ii) to enter into any engagement or make any representation or warranty on behalf of the other Party,
- (iii) to pledge the credit of or otherwise bind or oblige the other Party, or
- (iv) to commit the other Party in any manner whatsoever in each case without obtaining the other Party's prior written consent.

#### **g. Waiver**

A waiver of any provision or breach of this Agreement must be in writing and signed by an authorized official of the Party executing the same. No such waiver shall be construed to affect or imply a subsequent waiver of the same provision or subsequent breach of this Agreement.

#### **h. Notices**

Any notice or other document, which may be given by either Party under this Agreement, shall be given in writing in person or by pre-paid recorded delivery post. In relation to a notice given under this Agreement, any such notice or other document shall be addressed to the other Party's principal or registered office address as set out below:

MCGM:

Municipal Commissioner,  
Municipal Corporation of Greater Mumbai, Municipal Head Office,  
Mahapalika Marg, Fort, Mumbai – 1

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Tel: -----

System Integrator:

---

Tel: -----

Any notice or other document shall be deemed to have been given to the other Party when delivered (if delivered in person) between the hours of 9.30 A.M and 5.30 P.M. at the address of the other Party set forth above or on the next working day thereafter if delivered outside such hours, and seven calendar days from the date of posting (if by letter).

#### **i. Personnel/Employees**

- i. Personnel/employees assigned by selected System Integrator to perform the services shall be employees of System Integrator, under no circumstances will such personnel be considered as employees of MCGM. selected System Integrator shall have the sole responsibility for supervision and control of its personnel and for payment of such personnel's employee's entire compensation, including salary, legal deductions withholding of income taxes and social security taxes, worker's compensation, employee and disability benefits and the like and shall be responsible for all employer obligations under all laws as applicable from time to time. MCGM shall not be responsible for the above issues concerning to personnel of System Integrator.
- ii. selected System Integrator shall use its best efforts to ensure that enough System Integrator personnel are employed to perform the Services, and that, such personnel have appropriate qualifications to perform the Services. MCGM or its nominated agency shall have the right to require the removal or replacement of any System Integrator personnel performing work under this Agreement. In the event that MCGM requests that any System Integrator personnel be replaced, the substitution of such personnel shall be accomplished pursuant to a mutually agreed upon schedule and upon clearance of the personnel based on profile review and personal interview by MCGM or its nominated agency as per defined SLAs. The System Integrator shall depute quality team for the project and as per requirements MCGM shall have the right to ask System Integrator to change the team.
- iii. Management (Regional Head / VP level officer) of System Integrator needs to be involved in the project monitoring and should attend the review meeting at least once in a month.
- iv. The profiles of resources proposed by System Integrator in the technical bid, which are considered for Technical bid evaluation, shall be construed as 'Key Personnel' and the System

Integrator shall not remove such personnel without the prior written consent of MCGM. For any changes to the proposed resources, System Integrator shall provide equivalent or more experienced resources in consultation with MCGM.

- v. Except as stated in this clause, nothing in this Agreement will limit the ability of System Integrator freely to assign or reassign its employees; provided that System Integrator shall be responsible, at its expense, for transferring all appropriate knowledge from personnel being replaced to their replacements. MCGM shall have the right to review and approve System Integrator's plan for any such knowledge transfer. System Integrator shall maintain the same standards for skills and professionalism among replacement personnel as in personnel being replaced.
- vi. Each Party shall be responsible for the performance of all its obligations under this Agreement and shall be liable for the acts and omissions of its employees and agents in connection therewith.

**j. Variations and Further Assurance**

- a. No amendment, variation or other change to this Agreement or the SLAs shall be valid unless made in writing and signed by the duly authorized representatives of the Parties to this Agreement.
- b. Each Party to this Agreement or the SLAs agree to enter into or execute, without limitation, whatever other agreement, document, consent and waiver and to do all other things which shall or may be reasonably required to complete and deliver the obligations set out in the Agreement or the SLAs.

**k. Survivability and Waiver**

- vi) If any provision of this Agreement or the SLAs, or any part thereof, shall be found by any court or administrative body of competent jurisdiction to be illegal, invalid or unenforceable the illegality, invalidity or unenforceability of such provision or part provision shall not affect the other "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of MCGM in contract executions.
- vii) "Fraudulent practice" means a misrepresentation of facts, in order to influence a procurement process or the execution of a contract, to MCGM, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificially high or non-competitive levels and to deprive MCGM of the benefits of free and open competition.
- viii) "Undesirable practice" means:
  - (c) establishing contact with any person connected with or employed or engaged by MCGM with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or
  - (d) having a Conflict of Interest; and
- ix) "Restrictive practice" means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Selection Process.
- x) "Coercive Practices" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the execution of contract.

If it is noticed that the System Integrator has indulged into the Corrupt / Fraudulent / Undesirable / Coercive practices, it will be an enough ground for MCGM for termination of the contract and initiate black-listing of the vendor.

- i. of this Agreement or the SLAs or the remainder of the provisions in question which shall remain in full force and effect. The relevant Parties shall negotiate in good faith in order to agree to substitute for any illegal, invalid or unenforceable provision a valid and enforceable provision which achieves to the greatest extent possible the economic, legal and commercial objectives of the illegal, invalid or unenforceable provision or part provision within seven working days.
- ii. No failure to exercise or enforce and no delay in exercising or enforcing on the part of either Party to this Agreement or the SLAs of any right, remedy or provision of this Agreement or the SLAs shall operate as a waiver of such right, remedy or provision in any future application nor shall any single or partial exercise or enforcement of any right, remedy or provision preclude any other or further exercise or enforcement of any other right, remedy or provision.

### **1. Survivability**

The termination or expiry of this Agreement or the SLAs for any reason shall not affect or prejudice any terms of this Agreement, or the rights of the Parties under them which are either expressly or by implication intended to come into effect or continue in effect after such expiry or termination.

#### **9.47 Bank Guarantee**

The System Integrator shall furnish a Bank Guarantee of Rs. \_\_\_\_\_/- (Rupees \_\_\_\_\_ only) on the execution of these presents as Security Depot for due performance of the terms and conditions of this Contract Agreement and the same shall remain with the MCGM as a depot until the expiry of the term of this Contract Agreement. This Bank Guarantee shall be forfeited by the MCGM, in the event of the System Integrator committing any breach in the observance and performance of these terms and conditions and this Contract Agreement which shall then stand terminated automatically. If the System Integrator shall have duly and faithfully observed the terms and conditions of this Contract Agreement and have satisfied all claims properly chargeable against them hereunder up to the date of completion of Contract Agreement, the said Bank Guarantee will be released to the System Integrator. The System Integrator shall not be entitled to any interest on the said Bank Guarantee. If the PBG is not submitted within the stipulated time a penalty of Rs 5000/- per day will be applicable to the Bidder.

#### **9.48 Applicable Law**

The contract shall be governed by the laws and procedures prescribed by the Laws prevailing and in force in India, within the framework of applicable legislation and enactment made from time to time concerning such commercial dealings/processing. All legal disputes are subject to the jurisdiction of Mumbai courts only.

**9.49 Jurisdiction of Courts**

In case of any claim, dispute or difference arising in respect of this contract, the cause of action thereof shall be deemed to have arisen in Mumbai and all legal proceedings in respect of any such claim, dispute or difference shall be referred to the Competent Court in the City of Mumbai.

**9.50 Stamp Duty Payment & Legal charges**

The Legal Charges and Stamp Duty including incidental expenses and charges of this Agreement shall be borne and paid by the System Integrator.

signed, sealed and delivered

By -----

-----,

For and on behalf of Municipal Corporation of Greater Mumbai

signed, sealed and delivered

By -----

For and on behalf of the "System Integrator",

-----

Witnesses:

(1)

(2)

**Attachments to the Agreement:**

- i. Scope of Services for the System Integrator
- ii. Detail Commercial bid of the System Integrator accepted by MCGM
- iii. Corrigendum Document(s) published by MCGM subsequent to the bid for this work
- iv. Bid Document of MCGM for this work
- v. LoI issued by MCGM to the successful Bidder
- vi. The successful Bidder's "Technical Bid" and "Commercial Bid" submitted in response to the bid

## 10. Annexure V: List of Approved Banks

The Earnest Money Deposit (EMD) / Performance Bank Guarantee (PBG) issued by branches of approved Banks beyond Kalyan and Virar can be accepted only if the said EMD / PBG is countersigned by the Manager of a Branch of the same Bank within the Mumbai City limit categorically endorsing thereon that the said EMD / PBG is binding on the endorsing Branch of the Bank within Mumbai limits and is liable to be enforced against the said Branch of the Bank in case of default by the System Integrator furnishing the Banker's guarantee.

<b>State Bank of India and its subsidiary Banks</b>		
State Bank of India.		
<b>Nationalized Banks</b>		
Allahabad Bank.	Andhra Bank.	Bank of Baroda.
Bank of India.	Bank of Maharashtra.	Canara Bank.
Central Bank of India.	Corporation Bank.	
Indian Bank.	Indian Overseas Bank.	Oriental Bank of Commerce.
Punjab National Bank.	Punjab and Sind Bank.	Syndicate Bank.
UCO Bank.	Union Bank of India.	United Bank of India.
<b>Private Sector Banks</b>		
Axis Bank Ltd.	Bank of Rajasthan Ltd.	Catholic Syrian Bank Ltd.
City Union Bank Ltd.	23. Development Credit Bank Ltd.	Dhanalakshmi Bank Ltd.
Federal Bank Ltd.	HDFC Bank Ltd.	ICICI Bank Ltd.
IndusInd Bank Ltd.	ING Vysya Bank Ltd.	30. Jammu and Kashmir Bank Ltd.
Karnataka Bank Ltd.	Karur Vysya Bank Ltd.	Kotak Mahindra Bank Ltd.
Lakshmi Vilas Bank Ltd.	Nainital Bank Ltd.	Ratnakar Bank Ltd.
37. SBI Commercial International Bank Ltd.	South Indian Bank Ltd.	39. Tamil land Mercantile Bank Ltd.
Yes Bank Ltd.		
<b>Scheduled Urban Co-op. Banks Licensed to issued Bankers Guarantee</b>		
41. Abhyudaya Co-Op. Bank Ltd.	42. Bassein Catholic Co-Op. Bank Ltd.	Bharat Co-Op. Bank Ltd.
44. Bombay Mercantile Co-Op. Bank Ltd.	45. Citizen Credit Co-Op. Bank Ltd.	46. Dombivli Nagari Sahakari Bank Ltd.
47. Greater Mumbai Co-Op. Bank Ltd.	48. Janakalyan Sahakari Bank Ltd.	Janata Sahakari Bank Ltd.
50. Kalyan Janata Sahakari Bank Ltd.	Kapol Co-Op. Bank Ltd.	Mahanagar Co-Op. Bank Ltd.
53. Mumbai District Central Co-Op. Bank Ltd.	NKGSB Co-Op. Bank Ltd.	New India Co-Op. Bank Ltd.
56. Parsik Janata Sahakari Bank Ltd.	57. Punjab & Maharashtra Co-Op. Bank Ltd.	Rupee Co-Op. Bank Ltd.
59. Sangli Urban Co-Op. Bank Ltd.	Saraswat Co-Op. Bank Ltd.	61. Thane Bharat Sahakari Bank Ltd.
62. Thane Janata Sahakri Bank Ltd.	63. The Cosmos Co-Op. Bank Ltd.	64. The Shamrao Vitthal Co-Op. Bank Ltd.

<b>65.</b> The Zoroastrian Co-Op. Bank.		
<b>State Co-op. Banks</b>		
<b>66.</b> The Maharashtra State Co-Op. Bank.		
<b>Foreign Banks</b>		
ABN Amro Bank N. V.	<b>68.</b> Abu Dhabi Commercial Bank Ltd.	<b>69.</b> American Express Banking Corporation.
<b>70.</b> Antwerp Diamond Bank N. V.	Arab Bangladesh Bank.	Bank International Indonesia.
Bank of America.	<b>74.</b> Bank of Bahrain and Kuwait BSC.	Bank of Ceylon.
Bank of Nova Scotia.	<b>77.</b> Bank of Tokyo-Mitsubishi Ltd.	Barclays Bank Plc.
BNP Paribas.	<b>80.</b> China Trust Commercial Bank.	Shinhan Bank.
Citi Bank N.A.	Calyon Bank.	Deutsche Bank.
DBS Bank Ltd.	<b>86.</b> The Hongkong and Shanghai Banking Corporation Ltd. (HSBC)	J.P. Morgan Chase Bank N.A.
<b>88.</b> Krung Thai Bank Public Company Ltd.	Mashreq Bank psc.	Mizuho Corporate Bank Ltd.
<b>91.</b> Oman International Bank S.A.O.G.	Societe Generale.	Sonali Bank.
Standard Chartered Bank.	State Bank of Mauritius Ltd.	



**11. Annexure VI: Authorization letter for attending pre-bid meeting / bid opening**

(to be provided on the letter head of Bidder)

No.....

Date.....

To  
The.....  
Municipal Corporation of Greater Mumbai,  
Mumbai.

Sub: Bid No..... due date.....

Sir,

We here by authorize Mr. / Ms. ....as our authorized representative, to represent us on the following occasion: -

- Pre-bid Meeting to be held on.....at.....A.M./P.M.
- Bid Opening on..... At..... A.M. /P.M.

Kindly permit him/her to attend the same.

Yours faithfully,

Signature:

Name of signatory:

Designation:

Rubber Stamp:

## **12. Annexure VII: Draft Non-Disclosure Agreement**

(To be submitted on a ₹ 100 Stamp Paper)

This Non-Disclosure Agreement (“Non-Disc”) is made and entered into \_\_\_\_\_ day of \_\_\_\_\_ month \_\_\_\_\_ year (effective date) by \_\_\_\_\_ and \_\_\_\_\_ between \_\_\_\_\_ (“Department”) and \_\_\_\_\_ (“Company”).

Whereas, Department and Company have entered into an Agreement (“Agreement”) \_\_\_\_\_ effective \_\_\_\_\_ for \_\_\_\_\_; and

Whereas, each party desires to disclose to the other party certain information in oral or written form which is proprietary and confidential to the disclosing party, (“CONFIDENTIAL INFORMATION”).

NOW, THEREFORE, in consideration of the foregoing and the covenants and agreements contained herein, the parties agree as follows:

**1. Definitions.** As used herein:

- a) The term “Confidential Information” shall include, without limitation, all information and materials, furnished by either Party to the other in connection with citizen/users/persons/customers data, products and/or services, including information transmitted in writing, orally, visually, (e.g. video terminal display) or on magnetic or optical media, and including all proprietary information, customer and prospect lists, trade secrets, trade names or proposed trade names, methods and procedures of operation, commercial or marketing plans, licensed document know-how, ideas, concepts, designs, drawings, flow charts, diagrams, quality manuals, checklists, guidelines, processes, formulae, source code materials, specifications, programs, software packages, codes and other intellectual property relating to the disclosing party’s data, computer database, products and/or services. Results of any tests, sample surveys, analytics, data mining exercises or usages etc. carried out by the receiving party in connection with the Department’s information including citizen/users/persons/customers personal or sensitive personal information as defined under any law for the time being in force shall also be considered Confidential Information.
- b) The term, “Department” shall include the officers, employees, agents, consultants, contractors and representatives of Department.
- c) The term, “Company” shall include the directors, officers, employees, agents, consultants, contractors and representatives of Company, including its applicable affiliates and subsidiary companies.

**2. Protection of Confidential Information:** With respect to any Confidential Information disclosed to it or to which it has access, Company affirms that it shall:

- a) Use the Confidential Information as necessary only in connection with Project and in accordance with the terms and conditions contained herein;
- b) Maintain the Confidential Information in strict confidence and take all reasonable steps to enforce the confidentiality obligations imposed hereunder, but in no event take less care with the Confidential Information that the parties take to protect the confidentiality of its own proprietary and confidential information and that of its clients;

- c) Not to make or retain copy of any commercial or marketing plans, citizen/users/persons/customers database, Bids developed by or originating from Department or any of the prospective clients of Department except as necessary, under prior written intimation from Department, in connection with the Project, and ensure that any such copy is immediately returned to Department even without express demand from Department to do so;
  - d) Not disclose or in any way assist or permit the disclosure of any Confidential Information to any other person or entity without the express written consent of the other party; and
  - e) Return to the other party, or destroy, at Department's discretion, any and all Confidential Information disclosed in a printed form or other permanent record, or in any other tangible form (including without limitation, all copies, notes, extracts, analyses, studies, summaries, records and reproductions thereof) immediately upon the earlier to occur of (i) expiration or termination of either party's engagement in the Project, or (ii) the request of the other party therefore.
  - f) Not to discuss with any member of public, media, press, any or any other person about the nature of arrangement entered between Department and Company or the nature of services to be provided by the Company to the Department.
3. **Onus.** Company shall have the burden of proving that any disclosure or use inconsistent with the terms and conditions hereof falls within any of the foregoing exceptions.
4. **Exceptions.** These restrictions as enumerated in section 1 of this Agreement shall not apply to any Confidential Information:
- a) Which is independently developed by Company or lawfully received from another source free of restriction and without breach of this Agreement; or
  - b) After it has become generally available to the public without breach of this Agreement by Company; or
  - c) Which at the time of disclosure to Company was known to such party free of restriction and evidenced by documentation in such party's possession; or
  - d) Which Department agrees in writing is free of such restrictions.
  - e) Which is received from a third party not subject to the obligation of confidentiality with respect to such Information;
5. **Remedies.** Company acknowledges that:
- a) Any actual or threatened disclosure or use of the Confidential Information by Company would be a breach of this agreement and may cause immediate and irreparable harm to Department;
  - b) Company affirms that damages from such disclosure or use by it may be impossible to measure accurately; and
  - c) Injury sustained by Department may be impossible to calculate and remedy fully.

Therefore, Company acknowledges that in the event of such a breach, Department shall be entitled to specific performance by Company of Company's obligations contained in this Agreement. In addition, Company shall indemnify Department of the actual and liquidated damages which may be demanded by Department. Moreover, Department shall be entitled to recover all costs (including reasonable attorneys' fees) which it or they may incur in

connection with defending its interests and enforcement of legal rights arising due to a breach of this agreement by Company.

6. **Need to Know.** Company shall restrict disclosure of such Confidential Information to its employees and/or consultants with a need to know (and advise such employees of the obligations assumed herein), shall use the Confidential Information only for the purposes set forth in the Agreement, and shall not disclose such Confidential Information to any affiliates, subsidiaries, associates and/or third party without prior written approval of the disclosing party.
7. **Intellectual Property Rights Protection.** No license to a party, under any trademark, patent, copyright, design right, mask work protection right, or any other intellectual property right is either granted or implied by the conveying of Confidential Information to such party.
8. **No Conflict.** The parties represent and warrant that the performance of its obligations hereunder does not and shall not conflict with any other agreement or obligation of the respective parties to which they are a party or by which the respective parties are bound.
9. **Authority.** The parties represent and warrant that they have all necessary authority and power to enter into this Agreement and perform their obligations hereunder.
10. **Dispute Resolution.** If any difference or dispute arises between the Department and the Company in connection with the validity, interpretation, implementation or alleged breach of any provision of this Agreement, any such dispute shall be referred to the Hon. Municipal Commissioner, MCGM.
  - a) The arbitration proceedings shall be conducted in accordance with the (Indian) Arbitration and Conciliation Act, 1996 and amendments thereof.
  - b) The place of arbitration shall be Mumbai.
  - c) The arbitrator's award shall be substantiated in writing and binding on the parties.
  - d) The proceedings of arbitration shall be conducted in English language.
  - e) The arbitration proceedings shall be completed within a period of 180 days from the date of reference of the dispute to arbitration.
11. **Governing Law.** This Agreement shall be interpreted in accordance with and governed by the substantive and procedural laws of India and the parties hereby consent to the exclusive jurisdiction of Courts and/or Forums situated at Mumbai, India only.
12. **Entire Agreement.** This Agreement constitutes the entire understanding and agreement of the parties, and supersedes all previous or contemporaneous agreement or communications, both oral and written, representations and under standings among the parties with respect to the subject matter hereof.
13. **Amendments.** No amendment, modification and/or discharge of this Agreement shall be valid or binding on the parties unless made in writing and signed on behalf of each of the parties by their respective duly authorized officers or representatives.
14. **Binding Agreement.** This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and permitted assigns.
15. **Severability.** It is the intent of the parties that in case any one or more of the provisions contained in this Agreement shall be held to be invalid or unenforceable in any respect, such provision shall be modified to the extent necessary to render it, as modified, valid and

enforceable under applicable laws, and such invalidity or unenforceability shall not affect the other provisions of this Agreement.

- 16. **Waiver.** If either party should waive any breach of any provision of this Agreement, it shall not thereby be deemed to have waived any preceding or succeeding breach of the same or any other provision hereof.
- 17. **Survival.** Both parties agree that all of their obligations undertaken herein with respect to Confidential Information received pursuant to this Agreement shall survive till perpetuity even after any expiration or termination of this Agreement.
- 18. **Non-solicitation.** During the term of this Agreement and thereafter for a further period of two (2) years Company shall not solicit or attempt to solicit Department’s employees and/or consultants, for the purpose of hiring/contract or to proceed to conduct operations/business similar to Department with any employee and/or consultant of the Department who has knowledge of the Confidential Information, without the prior written consent of Department. This section will survive irrespective of the fact whether there exists a commercial relationship between Company and Department.
- 19. **Term.** Subject to aforesaid section 17, this Agreement shall remain valid up to .... years from the “effective date”.

IN WITNESS HEREOF, and intending to be legally bound, the parties have executed this Agreement to make it effective from the date and year first written above.

**For Department**

Name:

Title:

WITNESSES:

- 1.
- 2.

**For Company**

Name:

Title:

WITNESSES:

- 1.
- 2.

### 13. Annexure XIII: Sample Change Control Note

Change Control Note Initiation	CCN Number
Details of proposed change:	
Title:	
Originator:	
Date of Initiation:	
(To include reason for change and appropriate details/specifications. Please append attachments if any)	
Authorized by MCGM Name: Signature: Date:	Received by SI Name: Signature Date:
Change control note evaluation and acceptance	CCN Number
To include the following: 1. A description of the change; 2. A list of deliverables required for implementing the change; 3. A timetable for implementation; 4. An estimate of any proposed change; 5. Any relevant acceptance criteria; 6. An assessment of the value of the proposed change; 7. Material evidence to prove that the proposed change is not already covered within the scope of the project, SLAs.	
Request for Authority to proceed	
Approved	
Rejected	
Requires Further Information (as follows or as attachments)	
For MCGM	For selected SI
Signature	Signature
Name	Name
Title	Title
Date	Date

#### 14. Annexure XI: Pre-Bid Query Format

Bidder requiring specific points of clarification may communicate with Home Department during the specified period using the following format:

<b>BIDDER 'S REQUEST FOR CLARIFICATION</b>	
<b>&lt;&lt;Name of Organization submitting query / request for clarification&gt;&gt;</b>	
<b>&lt;&lt;Full formal address of the Organization including phone and Email points of contact&gt;&gt;</b>	Tel:
	Email:

<b>Sr. No.</b>	<b>Page No.</b>	<b>Section No.</b>	<b>Point No.</b>	<b>Existing Clause</b>	<b>Clarification/Query of Bidder</b>

Please prepare the table in Excel Format as shown above. Any other form shall not be entertained.

**15. Annexure XII: Irrevocable Undertaking regarding GST**

(On INR 500/- stamp paper)

I Shri / Smt. .... aged, ..... years Indian Inhabitant. Proprietor/ Partner / Director of M/s..... resident at do hereby give Irrevocable undertaking as under;

1. I say & undertake that as specified in section 171 of CGST Act, 2017, any reduction in rate of tax on supply of goods or services or the benefit of input tax credit shall be mandatorily passed on to MCGM by way of commensurate reduction in prices.
2. I further say and undertake that I understand that in case the same is not passed on and is discovered at any later stage, MCGM shall be at liberty to initiate legal action against me for its recovery including, but not limited to, an appeal to the Screening Committee of the GST Counsel.
3. I say that above said irrevocable undertaking is binding upon me / my partners / company / other Directors of the company and also upon my / our legal heirs, assignee, Executor, administrator etc.
4. If I fail to compliance with the provisions of the GST Act, I shall be liable for penalty / punishment or both as per the provisions of GST Act.

Whatever has been stated here in above is true & correct to my / our own knowledge & belief.

Solemnly affirmed at

DEPONENT

This day of

BEFORE ME

Interpreted Explained and Identified by me.



## 16. Annexure XI: GIS, Remote Sensing Imagery Desktop, Server Hardware & Software specifications

### 16.1 Hardware Specification for Workstation (PC):

Parameters	Specifications
CPU speed	2.2 GHz minimum; Hyper-threading (HHT) or Multi-core recommended
Platform	x64 with SSE2 extensions
Memory / RAM	16 GB or higher
Display	21-inch LED monitor, 24-bit color depth
Screen resolution	1024x768 recommended minimum at normalize (96 dpi)
Disk space	1 TB or higher
Video/Graphics adapter	4 GB RAM or higher dedicated Graphics Card
Keyboard & Mouse	Standard Multi-media Keyboard & Mouse
Operating System	Windows 10 Pro

### 16.2 GIS, Remote Sensing Imagery Desktop and Server Software specifications

The bidders need to fill the specifications Compliance column with (Yes/No). Bidders need to provide valid working Website link / document reference clearly stating the specification/ functionalities specified. The software proposed by the bidder would be evaluated during technical evaluation. If any functionalities are not marked with Compliance (Yes/No) and Website link then the GIS, Remote Sensing Imagery Desktop and Server Software specifications section would be considered as incomplete & the bid may get rejected.

#### General Specifications of the GIS & Remote Sensing Imagery Software:

#	Specification / Functionalities	Compliance (Yes/No)	Website link / Document reference
1	The Enterprise GIS, Remote Sensing Imagery Desktop & Server software should have been in existence since last 10years		
2	The latest Version of the Enterprise GIS, Remote Sensing Imagery Desktop & Server software should be OGC compliant		
3	The Enterprise GIS, Remote Sensing Imagery Desktop & Server software should support 64-bit Operating System & Workstation/Server		
4	The Enterprise GIS, Remote Sensing Imagery Desktop & Server software should have following online		

	documentation: 1. Online Help 2. Functionalities offered 3. Installation guide 4. Deployment guide 5. Online user community, etc.		
5	The Enterprise GIS, Remote Sensing Imagery Desktop & Server software should have Product Development Road Map for at least next 2 years.		
6	Cross platform support/Platform agnostic - The GIS, Remote Sensing Imagery application server and database servers must be supported on both Windows & Linux platform.		
7	The Enterprise GIS, Remote Sensing Imagery Desktop & Server software should support on-premises and cloud environments.		
8	The Enterprise GIS, Remote Sensing Imagery Desktop & Server software should support latest virtualization technologies/platforms.		

#### OGC Complaint 64bit GIS Enterprise Publishing software specifications:

#	Specification / Functionalities	Compliance (Yes/No)	Website link / Document reference
1	Enterprise GIS software must be highly scalable. It must have architecture deployment flexibility such as single machine, multiple machine, cluster-based environment Active-Active, Active-Passive, multiple sites deployment.		
2	Enterprise GIS Server software should support Security, Authentication and Authorization using - Web-tier authentication (IWA, PKI)		
3	Web GIS Editing Application Functionalities like simultaneous Feature editing, isolated editing in separate versions, Undo/Redo operations, snapping by layer, snapping to new geometry, settable snapping, modify, merge, split features, specify an Exact X, Y location, modify and create attribute values, maintain attribute values through defined rules (Domain) etc. should be supported by the GIS system.		
4	GIS Server Software ecosystem should have Mobile/apps for Field, Office, community and Application developers. The application should provide an out-of-the-box, configurable mobile GIS application on Android, IOS & windows etc., that allows dynamic query and update server data remotely. GIS system must provide a mobile app for field data collection from the field that dynamically updates data in to central server.		
5	The mobile application should be able to integrate with external GPS devices. This also support online/off-line data collection from the field and sync with the centralized application & database.		

6	GIS systems must support and provide capability to work offline that one can download maps for use when devices go offline. Users must be able to display maps, get routes & directions, edit and sync data, perform analysis with search & query.		
7	GIS system should be capable of managing maps, satellite images, GIS data of various points of interest, information, infrastructure and assets etc.		
8	GIS system should have a portal for administration that lets administrators to add, update, manage and maintain city GIS data and user management, Content Sharing and capability to build various GIS applications		
9	It should have ready to use apps for Field, Office etc.		
10	It should provide access to free Online 2D, 3D, Street, Base map, imagery services as a reference		
11	Log events of interest such as who is publishing services for the Logging and Auditing purposes.		
12	Server application should record various service statistics, such as total requests, average response time, and timeouts, and reports this information in Manager console for better monitoring and performance optimization of services		
13	Server Software should support Dynamic map service		
14	Server Software should support Geoprocessing service and run custom geoprocessing models		
15	Should be capable of Content Management (like, Manages content locations and marks relevant content as Authoritative) and Organization User Management (eg. User can manage all aspects of inviting and managing User, including adding to groups and resetting passwords) for Managing content for different projects and role-based access management.		
17	Should have built in user management along with Active Directory and LDAP		
18	Should have Web Editing Application Functionalities like simultaneous Feature editing, isolated editing in separate versions, Undo/Redo operations, snapping by layer, snapping to new geometry, settable snapping, modify, merge, split operations, specify an Exact X,Y location, modify and create attribute values, maintain attribute values through defined rules (Domain) etc.		
19	Should support multiple number of Editing and viewing by desktop, web browser and mobile clients.		
20	Should support Open Geospatial Consortium (OGC) and open web services: including Map, WMS, WFS, WCS, KML and GeoJSON and support OGC services such as WMS 2.0, WFS 2.0 and WPS.		
21	Should support server-side geoprocessing tasks		
22	Should support the option to use Enterprise Logins - Integrate with a SAML 2.0 Identity Provider (IdP) to provide Web Single Sign On		
23	Should support Tile layer from Vector and Raster layers for better performance and fast accessibility		
24	Should support to centrally managed data, models, tools, maps, and applications		
25	Should support Web-tier authentication by the web server such as Integrated Windows Authentication or even leverage an organization's existing Public Key Infrastructure (PKI)		
26	Software should have option to create dynamic dashboards which can easily be configured using widget minimizing customization.		

27	Software should have the feature to create web sites using template or wizard. It should support adding widgets which can easily be configured minimising customisation.		
28	Software should support a Service Oriented Architecture (SOA) (GIS on the enterprise service bus).		
29	Software should support Cloud Environments like Amazon Web Services (AWS) or Microsoft Azure		
30	Software should support deployment in clustered environments: Active-Active, Active-Passive.		
31	Software should support to encrypt data-in-transit by enabling HTTPS		
32	System tools can analyse patterns and aggregate data in the context of both space and time -Space-time (spatiotemporal) analysis		
33	The application should provide an out-of-the-box, configurable mobile application that allows dynamic query and update server data remotely. The mobile application should be able to integrate with GPS devices.		
34	The GIS server should be highly scalable		
35	The server should have the capability to query across multiple map services.		
36	The Server software should support Replication across multiple commercial databases in connected and disconnected environments		
37	The software should provide open API to visualize the published Services		
38	The software should provide SDKs to build and deploy native applications on a variety of popular platforms and devices including Android, iOS, Java, .NET, QT etc.		
39	Enterprise GIS system must share 3D services and embed 3D analysis tools. Interact with 3D data to gain insights that aren't possible in 2D. Visualize raster, vector, and lidar data for 3D feature, terrain, subsurface, and volumetric views.		
40	GIS system must support analysing GIS data in true 3D space with tools that perform complex surface, volumetric, and visibility analyses, including analysing terrain, modelling subsurface and atmospheric features, and optimizing site selection.		
41	Enterprise GIS server to publish a web scene once it's created and configured using desktop software. It also allows users to publish an elevation layer.		

#### OGC Complaint 64bit GIS Desktop software with 2D/3D toolset specifications:

#	Specification / Functionalities OGC Complaint 64bit	Compliance (Yes/No)	Website link / Document reference
1	GIS Desktop System should be based on 64-bit multithreaded architecture. Desktop system must convert between 2D and 2D/3D in the click of button & link 2D and 2D/3D views. One can view 2D & 2D/3D view		

	simultaneously in the display area and can compare the geography. While moving and panning geography in one view (2D or 2D/3D) should automatically change the respective view of other view (2D or 2D/3D).		
2	GIS solution must support 2D/3D city modelling for urban planning, should support in creation of realistic 2D/3D context and should be able to share these various planning environments on the web as a scene.		
3	GIS system should support 2D/3D city modelling and should have easy to use desktop editing tools for quick sketching and texturing of 2D/3D building models		
4	Desktop system must support animations and space time pattern mining. It must provide Artificial intelligence machine learning & deep learning toolsets. Desktop system must support 2D/3D interpolation		
5	It should provide access to free Online 2D, 2D/3D Street, Base map, imagery Services for location reference in desktop system. It will also be able to access the GIS web services on the desktop system for map data information and performing analysis.		
6	View GIS data on a 2D/3D globe. View 2D & 2D/3D view simultaneously in the display area and compare maps and geography. Line of sight analysis to see if and where the view of the nearby locations (such as river, other buildings, roads etc.) is obstructed from a proposed new building. Use interactive tools to make 2D/3D queries, such as measuring heights inside 2D/3D.		
7	Security camera placement visibility analysis. Optimal placement of camera to cover the maximum visibility by them. The solar radiation analysis to map and analyze the effects of the sun over a geographic area for specific time periods. For placement of solar roof top panel and development planning. One must publish 2D/3D maps as a scene on the web. Also, to see the effect of sunlight shadows on building by defining the day and month.		
8	GIS Software should have streamlined GUI with pre-defined layout configurations, tabbed windows which can be freely arranged and full drag-and-drop support. Pre-defined navigation schemes allow easy configuration of the mouse navigation mode.		
9	GIS Software should have a comprehensive toolset to design and edit urban layouts with streets, blocks and parcels. Street constructions such as roundabouts or block sub-divisions are controlled via parametric interfaces, giving immediate visual feedback.		
10	GIS Software should have wizard i.e., generate a procedural 2D/3D city. Create and generate whole cities from pre-defined templates with only a few mouse clicks.		
11	GIS Software should support modelling to generate and texture detailed 2D/3D buildings and street geometries out of 2D data. Driven by rules, it can leverage your own textures and 2D/3D assets, and the use of predefined styles makes it easy to change rule settings in just a few clicks.		
12	GIS Software should support easy-to-use editing tools for the quick sketching and texturing of 2D/3D building models. The resulting 2D/3D geometries.		
13	It should support raster-based terrains and height maps can be imported, edited or exported as a polygon mesh. Arbitrary image/raster maps can be used to control selection, parametric streets and blocks, or the		

	rule-based models' generation		
14	GIS system should Support Importing GIS data, such as streets, building footprints and parcels, from Shapefile (.shp) format. Feature attributes can also be imported and used to drive the city rules.		
15	GIS system must support exporting 2D/3D object layers as scene layer files to upload it on the web, where a 2D/3D streaming service is created and hosted. Once published, the resulting 2D/3D scene layer can then be viewed or combined with other web layers.		
16	GIS Software should Support Customized rule-based reports that can be generated to analyse 2D/3D urban Designs, including the calculation of important urban properties such as GFA (Gross Floor Area), FAR (Floor Area Ratio), etc. Reports are updated automatically and instantaneously.		
17	GIS Software should Support Interactively author building facade rules out of an image or an existing textured model. The rules can be early extended with more detailed window models, as well as provide summary information for reports		
18	GIS system must support Import and export of data in Google's Keyhole Mark-up Language (.kml/.kmz) allows for the exchange of geo-referenced 2D/3D models		
19	GIS system must Support Streamline repetitive or pipeline-specific tasks with the integrated Python programming interface. For example, automatically create different levels of detail in batch mode.		
20	It must support BIM (IFC) & KML (KMZ) interoperability support. LIDAR classification, feature extraction and editing. It must support dynamic 2D/3D streets & blocks. Virtual reality with 360 VR		
21	It should support creating 2D/3D objects, geometric shapes, Snap to scene layers and able to apply rules on it.		
22	GIS software must environment and effects with respect to atmosphere, sun, moon, day lightning shadows and time. GIS system must support animation to 2D/3D views and able to export video out of it with predefined bookmarks or presentations.		
23	GIS system must support animation for static and dynamic story telling. GIS system must Create and analyze surfaces and other 2D/3D data & Import 2D/3D feature data from multiple sources.		
24	Conduct visibility analysis with 2D/3D feature and surface data and Use TINs as an elevation source. It must evaluate geometric properties and relationships between three-dimensional features. GIS system must Provide tools for creating and managing terrain, TIN, and LAS datasets.		
25	Software should Calculates distance and additional proximity information between the input features and the closest feature in another layer and tool should be there to write results to a new stand-alone table and supports finding more than one near feature		
26	Software should have a provision for generation of time bound geo spatial database license. This license should enforce export and time restrictions to the file geo spatial database data you send to clients or other agencies		
27	Software should have advance cartographic tools like simplify Building, simplify Polygon, Create Cartographic Partitions and Collapse Dual Lines to Centreline		

28	Desktop system must have and support: Animations and space time pattern mining 2D/3D interpolation Line of sight analysis Interactive tools to make 2D/3D queries, such as measuring heights inside 2D/3D GIS software must environment and effects with respect to atmosphere, sun, moon, day lightning shadows and time.		
29	It must provide Artificial intelligence machine learning & deep learning toolsets.		
30	On-the-fly automatic labelling, multi-labelling, interactive labelling, rotation of labels from an attribute field, interactive label placement, predefined label styles & finally saves labels as a data layer		
31	Create spherical 2D/3D visualizations, fly-throughs, and animations		
32	Build and visualize surface, subsurface, terrain, and draped features		
33	Manage 2D/3D GIS data by editing in a 2D/3D view		
34	View and create KML and view LIDAR data		
35	Import Collaborative Design Activity (COLLADA), SketchUp®, 2D/3D Studio, and OpenFlight files		
36	Use free 2D/3D globes and imagery from online services.		
37	Calculate surface area (terrain).		
38	Ability to visualize a TIN, Raster and terrain surface from multiple viewpoints.		
39	Software should be able to convert 2D features into 2D/3D features.		
40	Run 2D/3D analysis and geoprocessing tasks.		
41	Use interactive analysis tools, such as Line of sight.		
42	Should be able to create realistic perspective imaging.		
43	Should be able to examine the visual impact of building new structures.		
44	Should be able to analyze atmospheric, surface, and subsurface pollution dispersion.		
45	Should be able to digitize 2D/3D shapes.		
46	Should be able to create contours using surface data.		
47	Ability to identify steepest path.		
48	Creation of line of sight.		
49	Classifies ground points in LIDAR data		
50	LAS toolset should include features like Locate LAS Points By Proximity, LAS Point Statistics By Area, and Classify LAS By Height.		
51	Extracts LAS files that overlay the clip features or extent.		
52	Tool should Classify building rooftop points in aerial LIDAR data		
53	tool should create tiled LAS files that conform to a regular tiling scheme		
54	Tool should Create polygon footprints representing the two-dimensional area of multipatch features		
55	Detect and clasfy overlapping scans from aerial LIDAR.		

56	Software should able to Create new LAS files with RGB and infrared values using existing LAS files and imagery.		
57	Calculates statistics about the distribution of elevation measurements of vegetation points captured in LAS data.		
58	Creates new LAS files which contain a subset of LAS points from the input LAS dataset using Python script.		
59	Software able to updates the z-coordinates of 2D/3D feature vertices using a surface.		
60	Enable XYZ editing grid in 2D/3D scenes to displays any coordinate system in a local scene with Z values.		
61	It should able to perform 2D/3D interactive exploratory analysis (Line of sight, Viewshed, and View Dome tools) in 2D/3D scenes view.		
62	Software should Visualize and analyze imagery in the stereo viewer, and accurately compile 2D/3D feature data in in stereoscopic mode.		
63	Display subset by using query and filtering into 2D/3D scenes.		
64	Create point cloud scene layers from LAS, ZLAS, LAZ data as well as LAS dataset layers in 2D/3D scenes.		
65	Define and consume pop-ups for point cloud scene layers in 2D/3D scenes.		
66	Software should support polyline compression algorithm to correct distortions in building footprint that have common boundaries.		
67	Software should support advanced raster and image analysis workflows for machine learning and feature extraction		
68	Software should support stereo mapping capability to compile 2D/3D feature data in a stereo viewing and mapping system		
69	Software should support displays and to manipulates stereo image pairs from satellite, aerial, and drone sensor platforms.		
70	Software should enable viewing and working with oblique imagery in perspective mode		
71	Software should support dynamic operations that apply on-the-fly processing directly to the image pixels in the display		
72	Software should support Image Analyst function and geoprocessing including classification, conditional, trigonometric and logical maths and statistical functions and tools. The software should support weighted sum functions and raster overlay analysis tools.		

**OGC Complaint 64bit-Remote Sensing Image Publishing software specifications:**

#	Specification / Functionalities	Compliance (Yes/No)	Website link / Document reference
1	Software should serve very large volumes and numbers of raster to a large range of client applications		



	using effortless distribution.		
2	Directly publish large image collections without pre-processing.		
3	Minimize data duplication while maximizing the amount of imagery products that can be created because image processing and serving has been combined.		
4	Remove the reliance on static mosaics and allow users to request custom imagery with client-controllable parameters.		
5	Dynamically mosaic images in different projections, formats, locations, and pixel zes		
6	Create multiple image products from a single source on-the-fly.		
7	Provide imagery access with dynamic mosaicking and on-the-fly processing		
8	Aggregate thousands of datasets together as a single seamless layer using Virtual mosaic		
9	Should allow clients to view metadata information for each raster in a mosaic dataset.		
10	Support for deriving useful imagery products from raw imagery with on-the-fly processing like orthorectification, pan sharpening, rendering, enhancement, filtering, and map algebra capabilities.		
11	Support server-de geoprocessing for more than 700 plus geoprocessing tools		
12	Support overlapping imagery and explore temporal changes using the advanced image serving capabilities		
13	Support to publish and Catalog OGC web services. Automatically harvest metadata from services and layer descriptions		
14	Should support Terrain analysis on the web (client end) to generate slope, aspect, shaded relief		
15	Processing of scientific data (NetCDF, GRIB, HDF) on the web		
16	Should support multi-dimensional WMS services		
17	Animation of time enabled data on the web for spatio-temporal analysis		
18	Update passwords for registered and managed databases. This allows your feature services published to the managed database, and your existing map, feature, and image services published from registered databases to continue working.		
19	Chain together multiple server object interceptors (SOIs) for an image service		
20	Support for cloud services (Amazon, Azure)		
21	Distribute large volumes of geospatial imagery to thousands of users from a single server.		
22	Deliver imagery to thousands of users via high performance streaming Protocol or tiled delivery		
23	Ealy integrate with third-party GIS software		
24	Catalog, manage, and deliver large volumes of distributed spatial and non-spatial data; including raster, vector, LAS, terrain, and digital object or business data		
25	Automatically provion data for optimized end-user consumption, including pyramid, thumbnail and tile generation		
26	Support for Clip, Zip, and Ship workflow		
27	Support for on demand spatial analysis		

28	Should support taking measurements from the image service using mensuration tools		
29	Reduce data duplication by support for formats like JPEG2000, Geotiff, tiff, img formats		
30	Support multiple views using the original imagery		
31	Support collections of imagery or lidar data as image services		
32	Support for selective Caching		
33	Should support rendering on server de and rendering of WCS services on the client de by applications.		
34	Application should support industry standard apis like Python API and REST API		
35	System tools can analyze patterns and aggregate data in the context of both space and time -Space-time (spatiotemporal) analysis		
36	Software should have capability to host cached services including map caches, image or raster caches, elevation and terrain caches, and vector tile caches		
37	Server Software should support Geoprocessing service and run custom geoprocessing models		
38	Software should support simple scripting syntax to control feature rendering, label text etc. that can be used across the platform		
39	Should support Web-tier authentication by the web server such as Integrated Windows Authentication or even leverage an organization's existing Public Key Infrastructure (PKI)		
40	Should have geoprocessing framework, geoprocessing tools, core analysis functionalities		
41	Server Software should be capable of running advanced geoprocessing tools		
42	Software should support to create offline map areas with a pre-determined extent		
43	Software should have capability to dynamically aggregate large data sets on the fly		
44	Software should have capability to search, discover, and work with imagery in integrated workflows for analysis and exploitation.		
45	Software should have streamline image-based workflows		
46	Software should have de-by-de visualizations		
47	Software should have capability to create imagery projects and guide to user task based workflow		
48	Software should have image annotation, drawing, mensuration and exporting to presentation format.		

#### OGC Complaint 64bit Remote Sensing Imagery Desktop software specifications:

#	Specification / Functionalities	Compliance (Yes/No)	Website link / Document reference
1	Software should be user friendly & GUI based menus & Interface		
2	Software should able to Float Individual software modules Licenses across network		
3	Software should support native 64-bit application		
4	Software should send view or map directly to Ms-office PowerPoint		
5	Software should support On-the-fly resampling		

6	Software should have Image histogram modification tools		
7	Software should save and reload multiple Views		
8	Software should provide magic wand vector tools for auto digitization based on threshold values		
9	Software should overlay multiple data types (Unlimited data layers)		
10	Viewer should support Visual change detection with Swipe / Blend / Flicker/ Portal option		
11	Software should have Measurement tools on the Viewer.		
12	Software should open Open street maps/ Customized Maps within viewer and link to that viewer		
13	Software should provide the download satellite data option within the viewer from following agencies like EOSDIS Worldview, GRiD Map, NASA EarthData, Open Topography, Plant Explorer, Capella Space, Sentinel Open Access Hub, USGS Earth Explorer, USGS National Map		
14	Software should have DRA (Live Update) works with all Stretch types		
15	Software should have Image Subset tool for spatial and spectral subset both, Text editor, Layer information tools, View meta data		
16	Software should support the below mentioned Sensors: Cartosat-1, IRS (fast & super structure), ResourceSat-1 (Fast & Super Structured), ResourceSat-2 (HDF5), Deimos-1 & 2, Gaofen-1&2, UK-DMC 1/ 2, DMC ALSAT-1, ENVISAT AATSR/ MERIS, EO-1 ALI (HDF4), DubaiSat-1 (RAW) & 2, Landsat 4, through Landsat 5, TM, 7 ETM+, 8 (OLI & TIRS), Landsat NLAPS, Landsat MRLC, RASAT, NPP VIIRS, Proba-V, TIMS, Sentinel-2, SkySat-1 & 2, Google Skybox, Ziyuan-1-02C & 3A, SeaWiFS, QuickBird, Worldview 1 – 2 & 3, VNREDSat-1, , Beijing-1, NigeriaSat-1 & 2, GeoEye, IKONOS, ADS40, ADS80 (tiff), AlSat-2A (TIFF), ALOS Level-1B2 AVNIR-2, ALOS Level-1A and 1B1 AVNIR-2, ALOS Level-1A and 1B1 PRISM, ALOS Level-1B2 PRISM, ASTER Level-1A and 1B (HDF-EOS), ASTER Level-2 & Level-3 (HDF-EOS), AVIRIS, COSMO-SkyMed Level-1A SCS, 1B DGM, 1C GEC, 1D GTC (HDF5), FormoSat-2 & 5, Göktürk-1 and Göktürk-2 (GeoTIFF), KOMPSAT-2,3,3A, MODIS level-1B, Orbview-3, PeruSat-1, Planetscope, Pleiades, PRISMA, Rapid Eye- Basic (Level 1-B) & Ortho (Level 3A and 3B), Sentinel-3, SPOT, Triplesat, Zhuhai-1		
17	Software should support the below mentioned video formats: Adobe Flash (f4v, flv), SWF, GIF, MOV, AVI, Google WebM Matroska (WEBM), Matroska Video (mkv), Motion JPEG (mjpeg, mjpg), Motion JPEG2000 (mj2), MPEG (mpeg, mpg, mp1, m2v, ts, mp2, mpg2, mpeg2, mpv, m2v, 3gp, 3g2, h264, mp4, mpeg4, mpg4), Raw		
18	Visualization options: Support for files over 2 GB in size, Geographic linking & Sync Views, Dynamic North Arrow & Scale Bar, Geo-Point tool, image histogram modification tools, Filtering for thematic images (Neighborhood Analysis), Visual change detection between any data types, Swipe / Blend / Flicker/ Portal, Inquire cursor and inquire box, including MGRS support, Interpolation techniques: linear or non-linear rubber sheeting, Create an unlimited number of JPEG2000 compressed images from input images with either export or direct-write.		
19	Transformation:		

	Adaptive Coherence Estimator (ACE), Decorrelation Stretch, Forward and Inverse Independent Components Analysis (ICA), Forward and Inverse Minimum Noise Fraction (MNF), PCA, Inbuilt Band Ratio: Burn Area Index, Clay Minerals Ratio, Ferrous Minerals Ratio, Iron Oxide Ratio, Normalized Burn Ratio, Normalized Burn Ratio Thermal 1, Normalized Difference Built-Up Index, Normalized Difference Snow Index, WorldView Built-Up Index. WorldView New Iron Index, WorldView Non-Homogenous Feature Difference, WorldView Soil Index, Ligning index, Anthorcyanin index		
20	Pre-processing & Calibration: Apply Gain & Offset, Bad Band Identification, Bad Line Replacement, Bad Pixel Replacement, Cross-Track Illumination Correction, Dark Subtraction, Destripe Data, Empirical Line Calibration, ERS and Radarsat Data Calibration, Emissivity calculation, Flat Field Calibration, Ignore Pixel Value, Internal Average Relative Reflectance correction, Calibration, Log Residuals, MODIS Bowtie Correction, Thermal Atmospheric Correction		
21	LIDAR Data Processing: Visualize, Analyse, and manage your point clouds, Allow you to view point clouds in 2D,3D; Style points by return, elevation, intensity, Create high resolution topographic surface, Viewer for LiDAR data, Increase or decrease Z-scale		
22	Vector GIS Functionalities: Drag/Drop GIS Layers, GIS Layer Attribute Viewing, Attributes: Create, Edit, Query Vector Attributes, Import from Shapefiles, ASCII, Burn-in Vectors on Raster Image, Import from file GeoDatabase, Save Vectors to File GeoDatabase, Vector to Raster Conversion, magic wand tool for auto digitization		
23	Spectral Libraries for Advance Imager Processing Software should be able to inbuilding USGS Version 1, Version 2, JPL and Aster standard spectral library, minimum 5500+ spectral libraries available in Agri, mineral, material, concrete and other man made spectral library etc.		
24	Classification: Adaptive Coherence Estimator (ACE), Constrained Energy Minimization (CEM), Decision Trees, Independent Components Analysis (ICA), Orthogonal Subspace Projection (OSP), Mixture Tuned Target-Constrained Interference - Minimized Filter (MTTCIMF), Supervised Classifications: Binary Encoding, Maximum Likelihood, Spectral Information Divergence (SID), Support Vector Machine (SVM), TERCAT (Terrain Categorization), Target-Constrained Interference-Minimized Filter (TCIMF), Post Classification Analysis: Kappa Coefficient, Confusion Matrix, Class Statistics, Receiver Operating Characteristic (ROC) Curves: Find Optimal Classification Thresholds, Receiver Operating Characteristic (ROC) Curves: Decrease False Classifications		
25	Software should be able to ingest external DEM for Ortho-correction		
26	Software should allow to add multiple data frames containing one or more data layers each		
27	Software should able to show the preview of small area before final mosaic, Advanced color balancing and matching capabilities to produce seamless mosaics, Stitch multiple		

	images with: Differing or like resolution (pixel sizes) Differing or like projection system Geometrically calibrated images, Color balancing, Manual or semi-automated, Define abnormal areas for exclusion from processing, Surface-fitting removes spatially varying illumination effects like Hot spots. Histogram matching, Use existing lookup tables (LUTs) to perform color balancing, Automatic seam lines / Manual editing of seam lines, Preview images, its outlines, overlap areas and cut lines, Display the image names within the footprint for easier identification, Full control over the algorithm applied at each image overlap region, Specify output projection cell size and data type, Quick Mosaic		
28	Software should support various Resolution merging techniques (Panchromatic & Multispectral)		
29	Software should support on the fly topographic shading analysis tools like, Slope, interpolation, Aspect, Shaded relief & Viewshed Analysis		
30	Software should support Multiple CPU support (Multiprocessing) and batch processing		
31	Software should allow the user to access hyperspectral imagery from which they wish to quickly extract material mapping information with the minimum of user interaction and extracted used the ground spectra values		
32	Software should support Serial / parallel processes to run simultaneously for each Image Processing software license. Multiple floating licenses of Image Processing software may be accessed to go far beyond four parallel processes and run the task-based workflow on background		
33	Software should support automated task-based workflow.		

## **17. Fraud and Corrupt Practices**

The Bidder and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process. Notwithstanding anything to the contrary contained herein, the Authority may reject an Application without being liable in any manner whatsoever to the Bidder if it determines that the Bidder has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process.

Without prejudice to the rights of the Authority under relevant Clause hereinabove, if an Bidder is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, such Bidder shall not be eligible to participate in any tender or RFQ issued by the Authority during a period of 2 (two) years from the date such Bidder is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.

For the purposes of this clause, following terms shall have the meaning hereinafter respectively assigned to them:

### **A. “corrupt practice” means**

the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process (for avoidance of doubt, offering of employment to, or employing, or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly, with the Bidding Process or the LOA or has dealt with matters concerning the Concession Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process) or

save and except as permitted under the relevant sub clause, engaging in any manner whatsoever, whether during the Bidding Process or after the issue of the LOA or after the execution of the Concession Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Concession Agreement, who at any time has been or is a legal, financial or technical adviser of the Authority in relation to any matter concerning the Project,

**B. “fraudulent practice”** means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process,

**C. “coercive practice”** means impairing or harming or threatening to impair or harm, directly or indirectly, any person or property to influence any person participation or action in the Bidding Process,

**D. “undesirable practice”** means (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process or (ii) having a Conflict of Interest; and

**E. “Restrictive practice”** means forming a cartel or arriving at any understanding or arrangement among Bidder with the objective of restricting or manipulating a full and fair competition in the Bidding Process.

**F.** If MCGM determines that the Bidder has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then MCGM may, after giving 14 days’ notice to the Bidder, terminate the Bidder employment under the Contract and expel him from the Site, and the provisions of relevant Clause shall apply as if such expulsion had been made.

**G.** Should any employee of the Bidder be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Works, then that employee shall be removed in accordance with relevant Clause.

For the purposes of this Sub-Clause:

**i.** “corrupt practice” is the offering, giving, receiving to soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party,

**ii.** “another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes Financer staff and employees of other organizations taking or reviewing procurement decisions,

**iii.** “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation,

**iv.** “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party,

**v.** “coercive practice” is impairing or harming, or threatening to impair or harm

## **18. Special Annexure –I (To be Submitted Along with Packet-C)**

**Name of Project:**

#	SAC/ HSN Code	ITEM DISCRIPTION	AMOUNT INCLUSIVE OF ALL TAXES & DUTIES	BIDDER TO INDICATE THE AMOUNT OF APPLICABLE TAXES THESE SHALL NOT BE TAKEN INTO CONSIDERATION									
				CGST		SGST		IGST		Other Taxes if any		TOTAL AMOUNT OF TAXES	
				%	Amount	%	Amount	%	Amount	%	Amount		

**Sign & Seal of Tenderer**

## **19. Disclaimer**

The information contained in this e-tender document or provided to Bidder(s), whether verbally or in documentary or any other form, by or on behalf of the Municipal Corporation of Greater Mumbai (MCGM), hereafter also referred as “The MCGM Authority “, or any of its employees or advisors, is provided to Bidder(s) on the terms and conditions set out in this e-tender and such other terms and conditions subject to which such information is provided.

This e-tender includes statements, which reflect various assumptions and assessments arrived at by the Municipal Corporation of Greater Mumbai (MCGM) in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This e-tender may not be appropriate for all persons, and it is not possible for the Municipal Corporation of Greater Mumbai (MCGM), its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this e-tender. The assumptions, assessments, statements and information contained in this e-tender may not be complete, accurate, adequate or correct. Each Bidder should therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this e-tender and obtain independent advice from appropriate sources.

Information provided in this e-tender to the Bidder(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The Municipal Corporation of Greater Mumbai (MCGM) accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed here.



The Municipal Corporation of Greater Mumbai(MCGM), its employees and advisors make no representation or warranty and shall have no liability to any person, including any Bidder or Bidder, under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this e-tender or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the e-tender and any assessment, assumption, statement or information contained therein or deemed to form part of this e-tender or arising in any way with pre-qualification of Bidders for participation in the Bidding Process. The Municipal Corporation of Greater Mumbai (MCGM) also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this e-tender.

The Municipal Corporation of Greater Mumbai (MCGM) may, in its absolute discretion but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this e-tender.

The issue of this e-tender does not imply that the Municipal Corporation of Greater Mumbai (MCGM) is bound to select and short-list pre-qualified Applications for Bid Stage or to appoint the selected Bidder or Concessionaire, as the case may be, for the Project and the Municipal Corporation of Greater Mumbai (MCGM) reserves the right to reject all or any of the Applications or Bids without assigning any reasons whatsoever.

The Applicant shall bear all its costs associated with or relating to the preparation and submission of its Application including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by The Municipal Corporation of Greater Mumbai (MCGM) or any other costs incurred in connection with or relating to its Application. All such costs and expenses will remain with the Applicant and the Municipal Corporation of Greater Mumbai (MCGM) shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by an Applicant in preparation or submission of the Application, regardless of the conduct or outcome of the Bidding Process.