



Ministry of Housing
and Urban Affairs
Government of India



GUIDANCE NOTE

MODEL RFP 2.0

FOR IMPLEMENTATION OF ICCCC/ ICT PROJECTS

Jun 2021

SMART CITIES
MISSION

DISCLAIMER

This document is advisory in nature and aims to provide guidance to cities on use of the **Model RFP 2.0 for Integrated Command and Control Centre (ICCC)/ICT projects**, based on good industry practices and applicable guidelines.

This Model RFP document, comprising three volumes (Volume I, II & III) for on-boarding of a Master System Integrator / System integrator, has been prepared based on existing Central Government Guidelines, feedback from Ministry of Electronics and Information Technology (MeitY), Bureau of Indian Standards (BIS), Cert-IN, NASSCOM and Data Security Council of India (DSCI).

It is, however, possible that the implementing Authority may have their own specific procurement guidelines which may or may not be consistent with the proposed clauses or sections of the Model RFP document. Hence, it is recommended to refer to applicable procurement rules/ policies of the Authority while finalizing the RFP.

It may be noted that these documents do not substitute or overrule any approvals currently required by the Authority for finalization of the RFP. Accordingly, it is advised that all necessary approvals be taken from appropriate authorities, before publishing of the RFP.

The use of the term Authority in the RFP means “(Name of the Smart City SPV)” or any Government entity for the purpose of this project.

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CHAPTER 1: EXECUTIVE SUMMARY

1.1 Need for the Model RFP 2.0

- Indian Cities have undertaken several initiatives to make their cities 'smart'. Projects being implemented by the cities include ICT interventions that aim to leverage the digital infrastructure in urban governance.
- One such initiative is **Integrated Command and Control Centre (ICCC)** under the Smart Cities Mission, being set up in cities which is envisioned to help address the needs of citizens in a holistic manner, thus channelizing citizen-centric governance and act as a decision support system for city officials.
- ICCC platform is perceived as a 'System of Systems' which integrates various smart cities sensors, systems, applications, and devices to achieve convergence and integration across the urban domains.
- The integration of urban services and backend operations on a single ICCC platform at the city level is an important dimension of city governance and administrative function. It caters to achieve unified integration of systems, processes and citizen services
- ICCC platform design, procurement and implementation is a complex activity, due to factors such as;
 - Diverse Technology Solutions
 - Standards and Guidelines
 - Integration of Heterogeneous Domain specific Solutions
 - Products Specifications
 - Cyber Security Implications
 - Procurement Models
 - Cost-effective Innovative Solutions on-boarding
- India's Smart Cities, guided by the Ministry of Housing and Urban Affairs, have already set-up 70+ such ICCCs (as of June 2021). Most of these were successfully repurposed into Covid-19 War-Rooms to manage the pandemic. The country will potentially see all the 100 Smart Cities under the Mission with an ICCC each, making this the most ambitious public roll out of this kind of infrastructure in the world.
- With cities Inviting RFPs for setting up ICCCs, within the limited capacity of expert resources and latest technological know-how, it is observed that there is lack of consistency over relevant standards, guidelines published by various government bodies, and various operating models across published ICCC RFPs. It has also been observed that while procuring goods and services for ICT, different criteria are being adopted by various cities.

Issues faced by cities during various phases of ICCC Implementation

 <p>Design Stage</p>	<ul style="list-style-type: none"> • Limited capacity at the city level / third-party validation ecosystem during conceptualization and design stage • Inadequate feasibility & viability assessment of proposed solutions/ technology/devices • Lack of clarity in RFPs over functional requirements. • Limited understanding of standards and need for Open, Secure, Interoperable and Scalable Architecture • Lack of proper maturity assessment of IT readiness
 <p>Procurement Stage</p>	<ul style="list-style-type: none"> • Inadequate compliance to various applicable government standards and local procurement policies • Limited exposure to Indian Standards for various products and services. • Concerns on restrictive product/ vendor specific requirements
 <p>Implementation & Maintenance Stage</p>	<ul style="list-style-type: none"> • Limited capacity and competencies to integrate proposed core utilities and systems with ICCC outlined under RFP. • Issues related to sign off over requirements, design and solutions related issues due to lack of expertise at the city level. • Limited capacity to drive onboarding of line departments under Municipal Corporation/State Government to integrate their systems/ solutions with ICCC. • Need for enhanced focus for citizen engagement and communication • Limited local ecosystem over adoption of innovative solutions

- It has also been frequently observed that System Integrators and/or consortium partners have been raising concerns over restrictive product specifications/vendor specific requirements in ICCC RFPs. Some clause(s) are perceived as a deterrent to a level playing field for bidders, including domestic players.
- It is imperative that the Procuring Entity initiating a procurement process clearly understands the monetary impact on the assigned/planned budget and hence should adopt certain threshold values for various types of systems integration procurements, as well as the common procurement methods mapped to them.

- In the past 6 years, Smart Cities Mission has received inputs and suggestions from various stakeholders regarding design, structure, and specifications of ICCC RFPs published by Smart Cities.
- Moreover, since the implementation of the first ICCC in 2017, there have been a lot of learnings from field level deployments. Moreover, need has been felt for improving standardization in the implementation process, wider adoption of PPP-MII guidelines, use of emerging technologies and focus on data driven governance.

Keeping all this in mind and to help cities plan the infrastructure judiciously, an updated Model RFP 2.0 for ICCC/ICT is being released with an intent to help cities expedite ICCC implementation and build awareness on mission guidelines/ advisories, standards & best practices.

This will also help in managing the concerns faced by city government from consultants, MSIs, Technology service providers leading to a balanced approach to address issues at both ends.





1.2 Why this Guidance Note

This Guidance note '**Model RFP 2.0 for Implementation of ICCC/ICT projects**' has been prepared with a purpose of providing easy navigation to cities during the process of assimilating various volumes of the Model RFP for ICCC/ICT (Vol I, II & III). The Guidance note will also provide a snapshot to the smart cities team involved in bid preparation & management, for effective use during preparation of the ICCC/ICT RFPs.

The Guidance Note will help city officials and other relevant stakeholders with a holistic understanding of the Model RFP documents. It also explains various processes and preparations that the city needs to undertake, before and during the RFP process. This document is envisaged to help cities expedite the implementation of ICCCs through vendor / technology agnostic functional requirements with higher transparency, while encouraging wider participation from the industry.

1.3 Target Audience

The Model RFP document sets the stage for smart cities to enhance the functional aspects of smart urban solutions/services aligning with the outcomes to be achieved. This will guide cities and pave the way for identifying benefits for achieving wider goals while catering to the functional requirements of the required solutions. The Model RFP is targeted for use by the following key stakeholders:

 <p>Procuring Authority vis. Smart city SPV</p>	<p>The procuring Authority will get an insight into systemic functional requirements, city operations and smart governance, decision response mechanisms. This will help them develop city specific requirements and fast track their procurement process for on-boarding of MSI /SI ICCC/ICT system. This will also sensitize the city SPVs on various processes & preparations, and applicable advisories/ guidelines which should be complied with in the RFP.</p>
 <p>Project Management Consultants (PMCs) working in Cities</p>	<p>The consultants/PMCs of cities can use this document to finalize the city requirements in coordination with SPV officials and prepare the RFP document for bidding purpose. It will also help them in evaluation process for shortlisting of MSI/SI.</p>
 <p>Master Service integrator (MSI / SI)</p>	<p>MSI/SI can refer to this document for better understanding of various provisions of contractual and technical aspects of ICCC/ICT system. This will help them better prepare to submit a competitive bid that complies with various provisions and guidelines/advisories.</p>
 <p>Technology Providers & Vendors</p>	<p>The smart city solution provider, vendors and technology partners involved in the urban ecosystem will be able to align their solutions in line with city objectives.</p>

1.4 Key Highlights from Model RFP 2.0

The following key aspects have been looked into more specifically while developing the Model RFP 2.0 document to achieve uniformity in design, implementation, operations and outcomes of the city ICCC. These are detailed in Chapter 4 of this document.

Background Information	Encouraging PPP-MII guidelines	Milestone based Payment
Bid evaluation criteria	MSME and Start-ups inclusions in procurement and implementation	Functional requirements based design
Focus on data management	Focus on cybersecurity	Alignment with ICT standards
Incorporation of e-Governance standards	Inclusion of criteria for Deemed acceptance	Key clauses in Master Service agreement such as Indemnity, Event of default, Termination, etc.

CHAPTER 2: APPROACH TAKEN TO DEVELOP MODEL RFP

The Model RFP document is the outcome of a collaborative & consultative process conducted by Smart Cities Mission, thus ensuring comprehensive inputs from Government and industry stakeholders.

- The Ministry of Electronics & Information Technology (MeitY), Government of India has provided vital inputs and recommendations on various e-gov standards and technology aspects related to, and not limited to, ICT architecture, Data Centers (DC), Disaster Recovery Centers (DR), Cyber security, GIS etc.
- Bureau of Indian Standards (BIS), through its LITD 28 sectional committee comprising of industry players, think tanks, practitioners from diverse fields, provided linkages to various ICT standards developed by BIS and technical inputs on numerous sections of Volume II – Scope of work.
- National Association of Software and Service Companies (NASSCOM) as the leading industry body has provided pragmatic market inputs from its experience and knowledge. Several consultative workshops with stakeholders were held within the working group. These valuable recommendations/ inputs and insights are captured and incorporated in the Model RFP document.
- CERT-in and Data Security Council of India (DSCI) provided directions for development of enhanced cybersecurity framework with focus on “How to” which helped build a comprehensive cyber security framework.

Last but not the least, inputs from various Smart cities from time to time including contribution for formulation of [ICCC maturity assessment framework \(IMAF\)](#) helped in incorporating various provisions for wider industry participation with focus on citizen centric functional, technological, and governance aspects.

CHAPTER 3: STRUCTURE OF MODEL RFP 2.0

The Model RFP is divided into 3 volumes. Key changes from existing RFPs are highlighted in the section below.

3.1 Volume I: Information to the Bidders

The **Information to bidders** document comprises detailed clauses for Bidding process, criteria for pre-qualification, technical & financial evaluation aspects and standard bidding formats.

Description	Existing Provision(s)	Proposed Now
RFP EVALUATION METHODOLOGY	Evaluation on QCBS basis with 70/30 weightage for technical and financial marks	Least cost (L1) basis (with 65% min qualifying marks in technical round), to get best value for money
MILESTONE BASED PAYMENT	Substantial CAPEX Payment only on complete Go-Live of all provisioned services	Milestone based payment on phase-wise services rollout, to better tackle interdependencies, site approvals etc.
ENCOURAGING PPP-MII GUIDELINES	Not adequately covered	Provision for applicability of GoI directives of 2017 for PPP-MII guidelines and subsequent revisions

3.2 Volume II: Scope of Work

The **scope of work** document comprises scope of work and functional requirements of various solutions being proposed in the smart cities.

Description	Existing Provision(s)	Proposed NOW
FUNCTIONAL REQUIREMENTS BASED DESIGN	Functional + Product Specification based requirements	Vendor/Technology agnostic functional requirements based approach.
DATA MANAGEMENT	Inadequately covered due to vendor specific protocols/interfaces	Specific emphasis on data management as a process, across multiple silos to drive DataSmart Cities Initiatives
CYBER SECURITY	Existing framework is more generic & subject to interpretation	Suggestion of CERT-in and DSCI incorporated provisions with in-depth implementation guidelines
ALIGNMENT WITH ICT STANDARDS	No Indian Smart Cities ICT standards Prevailing	15 nos. of standards (Developed in association with BIS) being incorporated now to enhance harmonization, composability & interoperability among various sub-systems.
DEEMED ACCEPTANCE	No such time limit on acceptance of the system. Moreover, the acceptance is on full go-live	Included the provisions for deemed acceptance with time limit, once the system goes-live

Volume II comprises of 3 sections:

- Section-1: Scope of work and functional requirements for **Core Infrastructure**
- Section-2: Scope of work and functional requirements for **Smart Urban Services**
- Section-3: Scope of work and functional requirements for **Smart Components**

Note: The cities will have flexibility to choose from variety of smart urban services and Smart Components from section-2 and Section-3 respectively

3.3 Volume III: Master Service Agreement

The Master Service Agreement (MSA) document focuses on contractual obligations of the MSI while implementing and providing O&M services for the ICCC.

Description	Existing Provision(s)	Proposed Now
TERMINATION CLAUSE	Covers only circumstances leading to termination by the Authority	<ul style="list-style-type: none"> ● Provision of Cure Period of 60 days for defaulting party to rectify or cure the breach after issuance of “Notice of Intention to Terminate” ● Provision for MSI to terminate the Agreement in case of non-payment after 90 days of serving the invoice to Authority, only if deliverables/ milestone is approved & payment is undisputed
CONDITION PRECEDENT	Obligations only for MSI/ Vendor to fulfil condition precedent.	<ul style="list-style-type: none"> ● Added condition precedents that need to be fulfilled by Authority with regard to right of way approvals
PAYMENT MILESTONES	Poor cash flow for MSI. Significant payments get held up even on supply of material	<ul style="list-style-type: none"> ● Improved cash flows with adequate safeguards for Authority
INDEMNITY	One sided Indemnification clause with only the MSI indemnifying the Authority for any loss or damage.	<ul style="list-style-type: none"> ● Indemnification clause made more balanced as per best practices and adopted from updated MeitY model document to make it more comprehensive and balanced.
APPOINTED DATE	No provision	Appointed date to be mutually arrived at for fulfilment of conditions precedent by the Authority and the MSI/Vendor

CHAPTER 4: KEY HIGHLIGHTS FROM MODEL RFP 2.0

4.1 Background Information

The cities are recommended to ensure that the RFP document contains the following information, at the minimum, before issuing the RFP for bidding. The cities are encouraged to ensure that 'As-Is' and 'To-be' details are provided and are as accurate as possible.

4.1.1 Project Details

City issuing the RFP should clearly mention what are the dependencies and AS-IS information related to the project, such as:

- Clearly defined primary objective of the project and citizen benefits.
- Availability/provision of certain information/infrastructure or people that could affect the deliverables or timelines
- Fund approval and its availability for project
- Buy-in requirements from other Stakeholders (define the stakeholder & area of buy-in required).
- Sign offs required at relevant stages from stakeholders

4.1.2 Stakeholder Involvement Details

The following Stakeholder(s) and corresponding involvement details should be provided:

- Publish responsibility matrix and ownership of core project responsibility to support the implementation of the project at all stages.
- Designated stakeholders who would be driving the project and those who would be impacted by its outcomes
- Definition of stages and levels of stakeholder dependent deliverable approvals and the involvement of stakeholders at various levels of sign offs and final payments
- Designated stakeholders for QA and review of deliverables

- Provide detailed matrix table of roles and responsibilities for all stakeholders
- Designated stakeholders involved in change requests
- Map owners for each milestone and outline clear expectations from each stakeholder

The above would help ensure that the MSI coming on board will be clear on its role and responsibilities for delivering the services/solutions and would also know what level of stakeholder buy-in would be required.

4.1.3 Existing Details

Cities are recommended to Identify existing city resources/systems/equipment and utilize them as far as possible in the RFP to control cost of the project.

a. Existing City Infrastructure

- Existing City Infrastructure,
- Latitude-longitude of existing infrastructure in city jurisdiction if any,
- Current User Volume for the given service (like user demand, footfall if any), on daily/weekly/monthly basis
- Existing Technology details,
- Relevant Policy details, if any.

b. Details of Current/ envisioned Business Model/Revenue stream

c. City Governance Model

d. Existing Project Details

The Authority should clearly mention what are the dependencies in the current project, such as:

- Availability/ provision of certain information/ infrastructure or people that could affect the deliverables or timelines
- Fund approval and its availability for project
- Buy-in requirements from other Stakeholders (define the stakeholder & area of buy in required)
- Sign offs required at relevant stages from stakeholders

e. Contact Details

4.1.4 Core Challenges

The cities to identify;

- a. Challenges faced by Citizens
- b. Challenges faced by City Government
- c. Challenges faced by Businesses
- d. Challenges faced by Other Stakeholders if any

Note: The challenges should be identified clearly by the Authority against which the RFP will contain the detailed requirements and scope of work to be delivered by the MSI.

4.1.5 Site Information for Smart City SPV

- a. Location of services required/proposed
- b. Layout of various sites with dimensions, Lat/Long
- c. Site photographs

Note: ICC location sizing should be in line with envisaged future expansion.

4.2 Encouraging PPP-MII guidelines

Cities should ensure that RFP issued contains provisions for applicability of GoI directives of 2017 for PPP-MII guidelines and subsequent revisions.

Public Procurement (Preference to Make in India) [PPP-MII] Order 2017 vide the Department for Promotion of Industry and Internal Trade (DPIIT) Order No. P-45021/2/2017-B.E.-II dated 15.06.2017 and subsequent revisions vide Order No. 45021/2/2017-PP(BE-II) dated 28.05.2018, 29.05.2019, 04.06.2020 and 16.09.2020 to encourage 'Make in India' and to promote manufacturing and production of goods, services and works in India with a view to

4.3 Functional requirements-based design

Cities are recommended to ensure that RFP issued is use-case and benefit-driven focusing on solving local urban issues.

The Requirements specified in the RFP should be vendor/ technology agnostic functional requirements (Following OM dated 3rd April 2018 and Advisory # 18 released by Smart Cities Mission).

The Functional requirements defined should meet the overall solution required by the city. The RFP should be use-case and outcome driven therefore city shall clearly define city-specific use cases & SoPs in RFP, as deliverables from MSI.

The RFP clauses and terms should encourage wider industry participation and innovation. Cities are also recommended to identify requirements of future integrations and include them in the RFP.

The Bill of Material (BoM) line items may be specified for each integration.

4.4 Handling Deviations

The bidders may be allowed the flexibility to provide deviations to the RFP terms and conditions. It may be noted that once the deviations are provided, the bidder would not be allowed to withdraw the deviations submitted. The Proposal Evaluation Committee appointed by the city should evaluate each of the deviations proposed by the bidder and classify them as “**Material Deviation**” or “**Non-Material Deviation**”. In case of Material Deviations, the Committee may decide to assess its monetary impact, which has to be added to the price bid submitted by the bidder or may reject the bid. The bidders should be informed on the Committee’s decision on the deviation, prior to the announcement of technical scores.

4.5 Inclusion of MSME in project Delivery

This clause has been introduced to provide perceptible and quantifiable skill and economic advantage to the local community/regional economy and help in the development of skills and competency in that region. The inclusion of MSMEs shall also be exercised in the socio-economic interests of the local community.

The Ministry of Micro, Small and Medium Enterprises (MSME) has notified procurement policy under section 11 of the Micro, Small and Medium Enterprises Development Act, 2006. (GFR 2017, Rule 153 Reserved Items and other Purchase /Price Preference Policy)

The MSME policy dated 23.3.2012 should be adhered to, which mandates that the Central and State Governments shall procure a minimum of 20% of their annual value of goods & services from Micro and Small Enterprises.

Bidders for larger contracts are required to submit an MSME Inclusion Plan that includes quantitative information on employment, investment and other impacts and comment on their local industry engagement in supply chains.

Bidders should consult the relevant Government agency(ies) (Central/State/Local) for the purposes of developing their local industry engagement strategies and identifying potential suppliers. This will also help to refresh knowledge of industry and supplement lists of suppliers.

4.6 Designing 1st Stage Evaluation: Pre-Qualification (PQ) Criteria



The eligibility/ pre-qualification (PQ) criteria aim to invite proposals from the genuine contenders and solution providers. The criteria should be set so as to encourage competition and quality responses/ bidding.

The guidelines to keep in mind when establishing a set of Eligibility Criteria are:

- Ensure that the PQs criteria or conditions to participate in the bidding process are fair, inclusive, and practical.
- PQs have direct and perceptible linkage with scope of work, project's financial worth and risk
- PQs are focused towards quality of solution and bidder competence
- Address any concerns raised during Pre-bid stage regarding PQ criteria

It is suggested to refer to various advisories issued by MoHUA from time to time (The same are placed as annexures in Volume II) to prevent the eligibility criteria from becoming restrictive in nature.

4.7 Relaxation in PQ criteria for start-ups

For all public procurement, the Smart City/central Ministries /Department have to ensure that the criterion of prior turnover and prior experience for all start-up is relaxed subject to their meeting of quality and technical specifications. (Kindly refer D/o Expenditure Office Memorandum No. F20/2/2014-PPD(Pt.) dated 20.09.2016)

Extract from Rule 173 Transparency, competition, fairness and elimination of arbitrariness in the procurement process.

i) The condition of prior turnover and prior experience may be relaxed for Startups (as defined by (DPIIT) subject to meeting of quality & technical specifications and making suitable provisions in the bidding document. However, there may be circumstances (like procurement of items related to public safety, health, critical security operations and equipment's etc.) where procuring entities may prefer the vendors to have prior experience rather than giving orders to new entities. For such procurement wherever adequate justification exists, the procuring entities may not relax the criterion of prior experience /turnover for the Startups

4.8 RFP Evaluation Methodology

The RFP evaluation methodology defines the process that would be adopted to select the most competent bidder with the best value solution offering. The contract should ordinarily be awarded to the lowest evaluated bidder whose bid has been found to be responsive and who is eligible and qualified to perform the contract satisfactorily as per the terms and conditions incorporated in the corresponding bidding document.

A hybrid model where the bids are evaluated as Quality-cum-Least cost as the basis of selection is adopted in the Model RFP. The Selection of MSI / SI shall be through a two stage Least Cost System (LCS) with the first stage consisting of pre-qualification and technical criteria evaluation.

The minimum qualifying marks for the first stage would be 65 out of 100 marks. The second stage would be evaluation of the financial bid and the technically qualified bidder with L1 bid will be selected based on Total Price (Capex + Opex).

4.9 Technical Evaluation Criteria

Technical Evaluation Criteria are the bid response parameters on which the evaluation is carried out to arrive at a final (technical) score for each qualified agency/bidder. Hence, the Technical Evaluation Criteria should:

- be as objective as possible, breaking the scoring down to individual identifiable components;
- have direct and perceptible linkage to the nature and scope of work;
- use the most relevant scoring /weighting scheme to evaluate, weighting should be based on their importance to the project's outcomes. The weightings must be disclosed in the RFP document;
- establish the scoring guidelines prior to release of the RFP. Then, when the proposals are received, score them based on the criteria established in the RFP by the authority;
- have scoring for each component of the solution rather than an overall score for the solution;
- provide weights / maximum marks for each technical evaluation criterion; weights should be as per their importance to the project or project's outcomes and must be disclosed in the RFP document; and
- in case of a software solution, evaluate the coverage of or degree of match to functional and technical requirements by the solution.

Based on the above, the evaluation criterion by the Authority has to be chosen very carefully, as it defines the filtering criterion on which the MSI is to be shortlisted. Indicative Evaluation Criteria along with their marks is mentioned in Volume I.

MSI, if required, should showcase proof of concept / technical demonstration of the proposed solution for achieving city business outcomes as per use cases provided by the authority.

During the Demonstration/Proof-of-Concept (PoC) at the technical evaluation stage, the Evaluation Committee should give special attention to verify the quality, robustness and appropriateness of the proposed solution/ equipment(s). PoC shall be on the same product and equipment stack as proposed in RFP response to verify solution’s robustness and cover end to end data flow from identified domain system to ICCC and alert-based SOP implementation.

4.10 Key Personnel Criteria

ICCC projects are driven by manpower and skill. Cities need to ensure that key profiles are included in the RFP Vol 1 to adequately cover project objectives. The cities must also augment their own team for conducting RFP evaluation and for running city’s management & operations in the areas of data and cybersecurity.

The cities are advised to include an adequate number of personnel, each responsible for a specific role while preparing the RFP. The cities shall provide a clear definition of the role and responsibility of each individual personnel. The city is recommended to ensure that the requirement of qualified and experienced minimum manpower is defined based on the project requirements.

An indicative list of personnel based on similar kind of projects experience is placed below for reference.

#	Criteria	Man-months Required (indicative nos.)	On-Site Deployment
1.	Project Manager		95%
2.	Data Center Expert		95%
3.	Solution Architect		90%
4.	ICCC application expert		95%
5.	Data Management expert		95%
6.	Cyber Security Infrastructure Specialist		95%

7.	GIS expert	City to specify as per the project requirements	95%
8.	Network Architect		90%
9.	Server Storage/ Database Expert		90%
10	AI/ML expert		90%
11	IoT expert		90%
12	Urban Domain Specific Expert- as per project requirements		90%
13	...Add/Modify....		

However, the Authority, based on scope of the project; its complexities; may include additional manpower in RFP to support successful implementation and operation of the system. The SLA should be clearly defined - for deploying manpower during implementation phase and O&M period.

4.11 Alignment with ICT Standards

Cities are experiencing constraints due to change in technological trends, lack of common framework and architecture for ICT which cannot be solved without having clearly defined standards which are broad-based, consensus driven, mature, and interoperable. The essential requirements of interoperability, security, usability, universal design and reduction in cost can only be achieved through standardization and the use of standards.

The promotion of adoption of [smart cities standards](#) will help in harnessing the potential of enormous data that is generated daily in the smart cities, to drive innovative applications, data economy, embracing emerging technologies such as Internet of Things, Big Data, and Artificial intelligence.

The Bureau of Indian Standards (BIS) is developing various [Indian standards](#) for Information and Communication Technologies (ICT) in coordination with the Smart Cities Mission. Some of the smart city ICT and e-governance standards have already been released and many others are in the pipeline.

The details are given in relevant sections of the Model RFP Volume II documents (Section I, 2 and 3). A list of these standards is placed as annexures in Volume II. Cities must ensure adherence to [national Smart City standards](#) (as per their applicability) and government guidelines that have been published from time to time.

4.12 Incorporation of e-Governance Standards and Policies

E-governance standards prescribe a set of rules, conditions or requirements that play an important role in building the architecture of a 'Smart' city for equitable e-governance service delivery and interoperable & harmonized e-governance data.

The Authority should ensure that the solution requested adheres to the published e-governance standards, frameworks, policies and guidelines available on <http://egovstandards.gov.in> and <https://bis.gov.in> (updated from time-to-time).

4.13 Focus on Data Management

Data is a valuable asset in any city. Data in a city is generated in a variety of applications, operating across a host of departments and organizations working towards a common goal of building and running city infrastructure to better serve the citizens. However, this multiplicity of data owners often causes problems related to accuracy, consistency, and accessibility of right data at the right time.

Cities are recommended to ensure that city level data management architecture requirements are well imbibed in the RFP document, thus aligning ICCC initiative *vis.* DataSmart Cities Initiative, City Data Policies and published standards on Data Management.

4.14 Focus on Cybersecurity

Authority shall develop and implement the Cyber Security and Privacy Framework and Policy which is aimed at building a secure and resilient cyberspace for citizens and stakeholders of the city. The Framework shall be designed to protect cyberspace information and infrastructure; build capabilities to prevent and respond to cyber-attacks; and minimize damages through coordinated efforts of institutional structures, people, processes, and technology.

The Authority shall ensure that cyber security & privacy requirements are captured and implemented through ICCC/ ICT RFP. The cities are encouraged to establish an appropriate

governance structure with defined roles and responsibilities and a budget to ensure cyber security initiatives are implemented.

A Model framework document # K- 15016/61/2016-SC-1, Government of India, and Ministry of Urban Development (Refer Annexures in Volume II Section 1) was released in Year 2016 which has now been detailed out in Model RFP 2.0 with inclusion of “How To” in the Volume II Section-1.

4.15 Cloud Offerings

When cities start exploring solutions for their requirement for Data Center and/or DR there is always an option to choose between Cloud (with options of IaaS, PaaS, SaaS Models) OR on-premises solution, OR Hybrid model. It is recommended that Cities shall evaluate the impact on key performance indicators (KPIs) to decide upon one OR the other option OR even explore a hybrid approach.

Once the decision is taken, a careful analysis is also required to be done in regard to the cloud option to be chosen from, with variety of the options available as IaaS, PaaS, SaaS and/or a Mix. The cities may also explore such options when deliberating for centralized infrastructure (on Cloud) for multiple sites.

It is safe to assume that these options have their own merits and limitations. The Authority may make an appropriate choice based on parameters such as Total Cost of Ownership (TCO), Scalability, user access, security, speed of deployment, manageability, impact on Key Performance Indicators (KPIs) etc.

Cloud computing has the advantage of provisioning resources on-demand. It has another advantage of cost savings by providing resources (compute, storage, network etc.) from a pool of shared resources which can be quickly provisioned and scaled as needed.

In order to utilize and harness the benefits of Cloud Computing, the Government of India has embarked upon a very ambitious and important initiative – “GI Cloud” which has been coined as ‘Meghraj’. The focus of this initiative is to evolve a strategy and implement various components including a governance mechanism to ensure proliferation of cloud services in government.

Cities are encouraged to leverage the cloud offering available through Meghraj or other MeitY empaneled and audit compliant private cloud service providers (CSPs) under the Meghraj initiative for smart city infrastructure.

For more details, refer to <https://www.meity.gov.in/content/gi-cloud-meghraj>.

4.16 Change in Products

Ideally, the successful bidder (MSI) should not be allowed to provide hardware/software different from what was proposed in the bidder's bill of material (BOM) at the time of proposal submission. However, if for reasons beyond the control of the bidder, the same is untenable during the project term, the MSI may be allowed to provide alternate hardware, provided the hardware should meet/better all RFP requirements, without any cost escalation subject to following restrictions:

- OEM shall remain the same;
- Product meets all functionalities listed in the RFP.
- OEM must provide a representation that the new product is a newer version of the proposed product.

Change in OEM, if inevitable (such as Company closure, OEM is no longer in market with the similar product, etc.), may be allowed with approval of the Authority.

4.17 Deemed Acceptance

Cities are recommended to include the provisions for deemed acceptance with a time limit, once the system goes live. Cities may refer to Volume II, Section 1 clause 2.5 for more details.

4.18 Other Key Clauses in Master Service Agreement

The Master Service Agreement (MSA) document focuses on contractual obligations of the MSI / SI while implementing and providing O&M services for the ICC. Several provisions such as Indemnity, Event of default, Termination, etc. have been introduced/modified to safeguard MSIs while providing necessary guardrails for the cities. Cities may refer to Article 3.1, 54 and 55 in Volume III for details on Indemnity, Event of Default and Termination clauses.

The indicative services and smart components are given in the Model RFP volume II. The Authority may incrementally add more services in due course.

CHAPTER 5: HOW TO USE MODEL RFP 2.0

One of the core principles of Smart Cities Mission is

“More from less: Smart Cities strive to generate more impact and outcomes from use of less resources- energy, finance and others”

- The Model RFP 2.0 may be considered as a template and can be customized further to meet city specific requirements.
- It is recommended that a modular approach is taken by cities while developing RFP for ICCC/ICT RFPs. Volume II scope of work is thus divided into 3 sections. Cities can choose to start with minimum technology interventions to meet the core requirements (as provided in Volume II, section 1) and pick and choose smart urban solutions and smart components from section 2 and section 3 respectively based on city needs and objectives.
- The Integrated Command and Control Center (ICCC) being the “nerve center” for operations management, day-to-day exception handling and providing multi-faceted urban services to citizens, therefore, the cities must also explore integrations with smart components (including the one already in use in city and/or being implemented by other line departments) rather than the smart components themselves.
- Technology is to be treated as the means to achieve the end outcomes i.e., quality of life, economic ability and sustainability. The cities are encouraged to have a KPI, use case and SoP based approach while planning the infrastructure. Indicative Functional requirements of some of the Smart Urban Services and Smart Components are mentioned in the Volume II of the Model RFP documents. The cities are encouraged to develop the RFP, taking such aspects into account.

People:

It's important to study (& address) needs of citizens and communities. Equally important is how we design the system to empower internal stakeholders to deliver quality services to citizens & businesses.

Process:

Technology is just a facilitator. Cities should use these interventions to carry out business process re-engineering to bring convergence across different departments/city level organizations.

Platforms:

Technology infusion needs to be planned to create a decision support system and deliver a better quality of life. Cities have to adopt platform thinking, and avoid siloed solution approaches.

- Cities are also encouraged to refer to [ICCC Maturity Assessment framework \(IMAF\)](https://smartnet.niua.org/sites/default/files/resources/iccc_maturity_assessment_framework_imaf.pdf) document so as to familiarize with ICCC platform capabilities and incorporate the same appropriately in the RFP across Functional, Technological, Operational and engagement dimensions. Doing this, cities will be able to improve data-driven governance and move towards the achievement of outcomes that were intended to be part of the cities' ICCC. The [IMAF](https://smartnet.niua.org/sites/default/files/resources/iccc_maturity_assessment_framework_imaf.pdf) will also help in conducting gap assessment and finalizing use cases for the city. For more details, please refer: https://smartnet.niua.org/sites/default/files/resources/iccc_maturity_assessment_framework_imaf.pdf
- Design Principles are the foundation on which good products/solutions are built. While implementing technology solutions in our cities, it is important to lay down the considerations on which such products or solutions are built. Cities are hence advised to refer to the guiding design principles from National Urban Innovation Stack (NUIS) digital blueprint while developing city specific RFPs to avoid duplication of efforts, provide equitable access and successfully achieve convergence. Guiding design

principles of NUIS should be imbibed in spirit in all technology projects to promote the adoption of the stack approach at all levels. For more details, please refer:

https://smartnet.niua.org/sites/default/files/resources/national_urban_innovation_stack_web_version.pdf

- Linkages to [applicable standards](#) for smart cities are provided in Volume II, Section 1 – System Architecture. Cities are advised to ensure that the solution provided by the bidder adheres to the principles and techno-functional requirements as captured in the national smart cities standards. Cities are also encouraged to conduct industry consultations during the course of preparation of the RFP document. This will help in refining the city’s requirement and boosting interest of the industry for participation in city’s ICCC/ICT project.

CHAPTER 6: STEPS RECOMMENDED TO DEVELOP CITY SPECIFIC RFP

ICT/ICCC Projects involves procurement of consulting services, works, goods, plants etc., by various cities, among other activities. The success of the projects largely depends upon an efficient and fair procurement process, and it is, therefore, essential that such procurement processes are robust yet transparent, effective and fair, achieve required competitiveness, value for money, equal opportunities and economy of scale, which are core building blocks of a good procurement system.

The stages of developing the ICCE/ ICT RFP involve “defining scope of work with functionality and outcome aspect’ as primary & key driving factors.

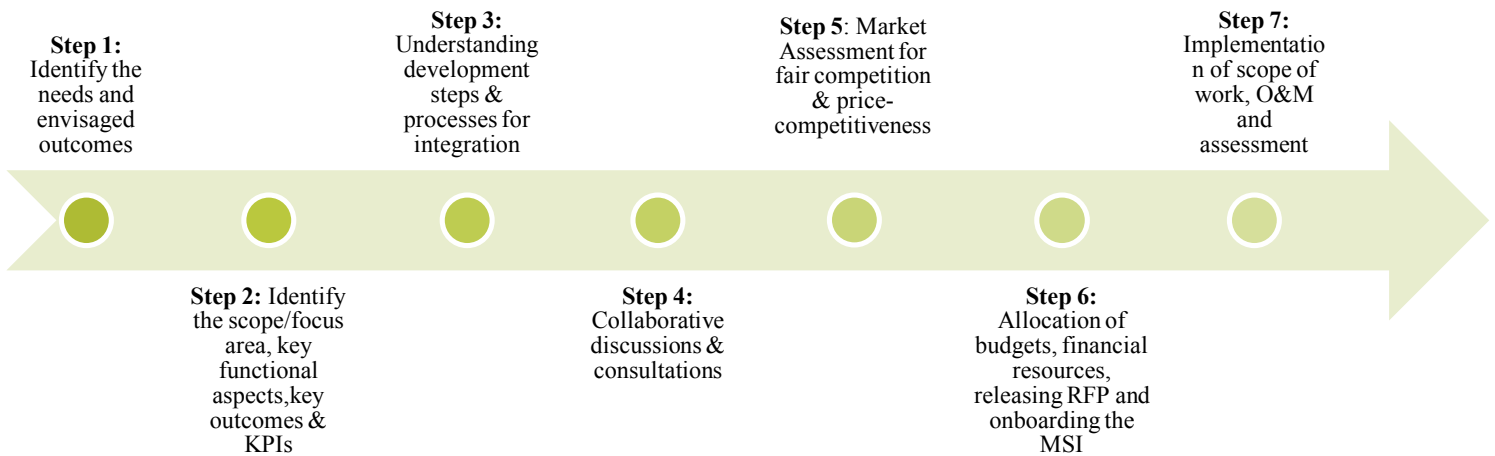
6.1 Key Considerations

To prepare the ICT/ICCC RFP, the Authority should keep the following aspect in mind in order to develop clarity on the city’s requirements:

- o **Why** are we doing this?
- o **What** results do we need to achieve?
- o **How** will the services be delivered?
- o **How well** – what quality and standards apply?
- o **How much** – what business/process reports, knowledge, insight, output is required?
- o **Where** will the services be delivered?
- o **When** will the services be delivered – term of contract?
- o **Who** will be involved in the delivery - Supplier/ other line departments etc.?

6.2 Indicative Steps during design of ICCC/ ICT Projects

The city are recommended to consider following indicative aspects for preparation of the ICCC /ICT RFP:



Step 1: Identify the needs and envisaged outcomes

- Document stakeholder challenges
- Clearly define the primary objective of the project.

Step 2: Identify the scope/focus area and key functional aspects, key outcomes and key performance indicators (KPIs) to be achieved.

Step 3: Understand the development steps and processes for integration.

Step 4: Collaborative discussions and consultations: within SPV, with other city stakeholders, PMC, Vendors and solution providers, and finalize the requirements considering the existing systems, projects being implemented, future integration aspects.

Step 5: Market Assessment to ensure RFP being designed and developed would generate a fair competition & the Smart City would get best economical deal

- Assess the capability and maturity of the market by capturing details on the likely number of interested suppliers and solutions.
- Try to identify around eight (08) potential interested MSI /SIs – this would ensure that eventually three to five would bid for the RFP.

Step 6: Allocation of budgets, financial resources, releasing RFP and onboarding the MSI

Step 7: Provision for Implementation of the scope of work, O&M and assessments

- Proposed solutions should be focused on solving key city challenges across diverse domains.
- Implementing city specific use cases and SoPs. The cities may refer [IMAF](#) doc for detailed understanding on use cases and key aspects of an ICCC solution. The IMAF document is available at
https://smartnet.niua.org/sites/default/files/resources/iccc_maturity_assessment_framework_imaf_.pdf
- Ensuring capacity skill sets, capacity building in Smart City SPV/ULBs to oversee the operation.
- Timely review and assessment of ICCC maturity and enhancements regularly and proceed with the steps and phasing accordingly for MSI / SI

A typical RFP, as researched and developed from study of international and domestic procurement best practices, should have a structure as represented here, at a minimum:

S. No.	Request For Proposal Sections / Clauses	Desirability
1.	Fact Sheet	Mandatory
2.	Invitation for Request for Proposal (RFP)	Mandatory
3.	Background Information	Mandatory
4.	Instructions to Bidders	Mandatory
5.	Pre-Qualifications (PQ) / Eligibility Criteria	Mandatory
6.	Evaluation Methodology	Mandatory
7.	Scope of Work, functional requirements, use cases	Mandatory
8.	Deliverables	Mandatory
9.	Timelines	Mandatory
10.	Payment Schedules	Mandatory
11.	Commercial Bid Template	Mandatory
12.	Legal Terms & Contract Conditions	Mandatory

13.	Service Level Agreement	Mandatory
14.	Skills Required	Mandatory
15.	Outcomes of Scope of Work	Mandatory
16.	Exit Criteria	Mandatory
17.	Deliverable Approval Mechanism/Process	Mandatory
18.	Change Request Mechanism	Mandatory
19.	Funds Available for the Project	Recommended
20.	Project Extension	Optional

Note: Mandatory: Necessarily should be included in the RFP Document

Optional: Should be included depending on the specific bid. As a best practice, it should be included

6.3 Bundling/ Unbundling of RFP

It is quite common to club the entire Scope of Work into one RFP document. The benefit being that there is only one MSI who would be responsible for ensuring the end-to-end solution. However, the flip side is if all the scope of work is clubbed together without defining the clear requirement by the city, the output received is often a sub-optimal one.

It is difficult to get sufficient bidding organisations, who have expertise on all aspects of ICCC solution and its key components. This happens due to reasons such as:

- The bidder may not be an expert in procuring and/or delivering anything distant from its area of core business/competence (Sensors/IoT devices, ICCC components, civil constructions, generator, data entry etc.). For e.g., if GIS and /or ERP solution to be provided by the successful bidder, who has better expertise on Data Centers/ ICCC software platform / CCTV projects etc., he would generally face issues in getting the quality solution for GIS/ERP etc. Moreover, the GIS and/or ERP type of solutions are more complex in nature demanding intense involvement of the city officials. It has also been seen that Bidders are not very comfortable in forming bigger consortium to address this due to complex contractual and operational aspects.
- The prices which would be available to bidders for such products may not be based on bulk purchase due to being a non-core activity, hence, there may be no real price advantage.

- There is lesser ownership of the concerned officer (may be at a junior level) for specific modules of the project or incomplete knowledge of modules related to localization. However, if the GIS and/ or ERP agency is selected through a separate RFP process by complete ownership of the officer responsible for GIS and/ or ERP, it would have a better chance of “owning” the quality of implementation, operation and expected outcome.

Before deciding on the scope of work for a particular RFP, there should also be an evaluation / analysis done on how the MSI can provide cost effective deliverable for activities which are not core to their profile, for e.g. GIS/ERP, System Integration for various Smart Services, Site preparation, Training, O&M etc.

Further in case the decision is to have separate RFPs, the agency selected can be scoped to assist the Authority in the Bid Process Management for other component, including integration requirements.

6.4 Issuance of the RFP

The RFP should be ISSUED by the city under the following circumstances:

- Scope of work and deliverables are standard, reasonably well known and/or can be clearly specified. This typically involves time bound delivery of the identified products and services and during change request process along with roles and responsibilities
- Budget is approved and availability of funds is assured.
- It generates adequate market participation by ensuring competition amongst at least three to five bidders.

An RFP should NOT be published by the Smart City if:

- Scope of work and deliverables are not well known or not clearly defined.
- There’s lack of assured budget
- There is only one vendor which has the requisite skills to deliver the project
- When already a rate empanelment has been done by the Authority responsible for executing the project. In this case, the empaneled agencies may be contacted directly and evaluated on the basis of a presentation & profiles of resources proposed to be deployed in the engagement. However, the scope of work and Agreement documents (as per Volume II and Volume III of this Model RFP 2.0) can be used for defining the contract.

6.5 Additional considerations During Procurement Process

The cities are requested to strengthen their procurement system for wider participation from the industry as well as various stakeholders of the respective city without interrupting possibilities of creativity and innovations.

The General Financial Rules, 2017 (GFR), Manual of Procurements issued by the Central Government, and other similar document of State Governments / Authority can provide necessary guidance on threshold values of procurement planning and helping decision makers on how to proceed with financial due diligence in the RFP/tendering process. The cities are required to refer above while developing RFP for ICCC projects.

Cities are encouraged to explore outsourcing of services for requirements such as Telecom Network connectivity (Tripartite agreement may be explored for telecom Network connectivity), data center/DR /cloud services/ Wi-Fi etc.

The cities are further advised to develop a robust procurement mechanism and within such a system, to identify best practices developed/ adopted by various government departments in their respective cities, such as Public Works Department (PWD), Department of Information Technology (DIT) and other line departments. The procurement system may be aligned with relevant Government's notifications, released from time to time. MoHUA/MeitY advisories and guidelines, where applicable, should be followed.

6.6 Explore Revenue Generation

To build long-term sustenance of the ICCC infrastructure in the city, the Authority along with MSI may identify and implement a revenue generation/monetization strategy for various IT infrastructure being procured, based on the feasibility and viability, continuity strategy and timelines. The Authority may develop a strategy for revenue generation options from the ICCC and implement smart solutions such as information products. The Authority should study various options for revenue generation from the scope and elements defined for smart solutions implemented. New innovative products or solutions by which revenue can be generated can be explored. Some of the sources of such revenue generation opportunities are listed below.

- Information products for public and institutions
- Data monetization
- Advertisement
- Laid telecom/OFC network monetization

- Wi-Fi data
- Data Center services as IaaS, PaaS, SaaS for city start-ups

CHAPTER 7: CITY ONBOARDING

The Model RFP will undergo iterations in future as per changing city needs to incorporate suggestions /learnings/feedback from the cities and other stakeholders. An outreach program with help cities get better insight to the Model RFP will be undertaken which will encompass knowledge sessions and workshops with the cities.

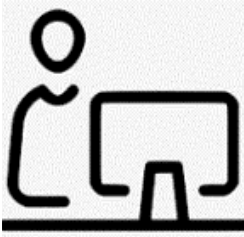


Webinar with city SPVs

- Organizing webinar with city authority for deeper understanding of the Model RFP document.
- The cities will be encouraged to involve their Project management consultants and other relevant city officials.

Discussion forums with sector experts

- The representation from MeitY, BIS, NASSCOM, Industry, academia and smart cities SPVs will be sought from time to time.



Central helpdesk

- Handholding team availability on need basis to provide insight to the Model RFP document.

CHAPTER 8: THE WAY FORWARD

The cities are encouraged to strengthen their digital infrastructure and expedite implementation of Integrated Command Control Centers (ICCC) / ICT projects to achieve the goals of improving quality of life of the citizens and sustainability of such infrastructure through enhanced urban service delivery.





SMART CITIES MISSION
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