

Call for Research Proposal



Surveying and Developing Smart City Solutions in Oman

Smart City Platform
2018

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Introduction

Oman Smart City Platform (SCP) is a knowledge-sharing consortium to drive smart city initiatives in Oman. The objective of the platform is to provide a knowledge-sharing, collaborative and networking environment between smart city stakeholders. The platform functions as an enabler and facilitator for smart city innovations through funding research and hosting innovations' competitions.

Smart City Platform aims to:

- Provide a platform for knowledge sharing, collaboration, and networking between stakeholders
- Facilitate and enable smart city innovations
- Promote and test smart solutions targeting city challenges
- Build awareness on the importance of smart city solutions
- Enable a path towards a national smart city vision & strategy.

The platform is managed by a Steering Committee (SC) and run by an executive team. The SC is chaired by HE Eng. Sultan Hamdoon Al-Harhi, Supreme Council for Planning.

Founders and Founding Partners of SCP

- The Research Council
- Muscat Municipality
- The Supreme Council for Planning
- Information Technology Authority (ITA)
- Omantel
- Omran
- Nama Holding

Background

Smart City is both medium and outcome of state-of-the-art smart solutions, a web of sensors, real-time data, ICT integration and coordination between public and private institutions. Researchers define smart cities as city initiatives that aim to “provide more efficient services to citizens, to monitor and optimize existing infrastructure, to increase collaboration amongst different economic actors and to encourage innovative business models in both private and public sectors” (Marsal-Llacuna et al., 2015, p. 618). In general terms, the smart city can be defined as “a local entity - a district, city, region or small country -which takes a holistic approach to employ[ing] information technologies with real-time analysis that encourages sustainable economic development” (IDA, 2012).

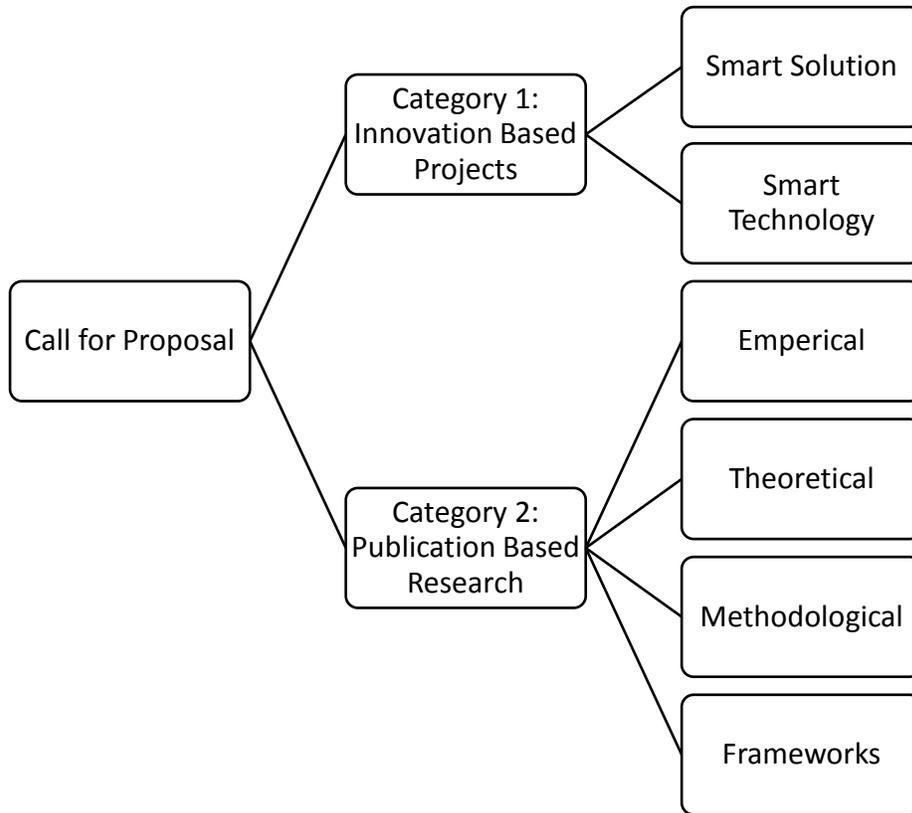
While smart city initiatives and projects have dramatically flourished around the world (e.g., PlanIT Valley in Portugal, Songdo in Korea, Masdar City in UAE...etc.), we know too little about existing smart solutions in Oman, smart city ecosystems, the challenges and opportunities towards building sustainable smart city as well as potential solutions that can be developed to fuel the next generation cities.

Aims and Scope

The motivation of this call is to bring together researchers, academics, and scholars to develop full research and/or a new smart solution. Therefore, the current call targets two categories of contributions.

- Category 1: Innovation Based Projects: The aim is to pilot and/or develop a smart solution, smart technology, or analytical-based solution at organizational level, community level, city level, or country level (e.g., logistics mobility, people mobility, public safety, geospatial solutions, energy efficiency.... etc.) that can be applied in Oman.
- Category 2: Publication Based Research: The aim is to investigate lessons and exemplary best practices learned from public and private institutions in Oman currently employing smart city solutions or organizational level smart solutions. The goal is to conduct a nation-wide survey about existing solutions, existing opportunities and challenges for building a smart

sustainable city, and how can existing solutions fuel towards smart city development.



Important Dates

- Proposal Submission deadline: November 8th, 2018
- Announcing Accepted Proposals: December 10th, 2018

Eligibility to Apply

The applicant (i.e. Principal Investigator (PI)) must be a full-time academician or a researcher with a minimum Masters Degree qualification or equivalent. The PI has to be hosted by an Omani-based research/academic institution at the time of submission of the research proposal. The PI must also assign a peer Co-PI who is delegated to lead the research project in the absence of the PI. The Co-PI is required

to hold a minimum Masters qualification and have to be hosted by an Omani-based research/academic institution. Individual innovators and entrepreneurs can submit a research proposal but they must collaborate with a PI. Full accountability of the research project rests on the PI and the hosting research/academic institution. Proposals submitted with a joint collaboration between a PI and international scholars, private/public organizations, entrepreneurs, Small and Medium enterprises are highly recommended.

Proposal content (For both categories)

Title

Abstract: Describe the proposed research, the aim of your research project, and briefly discuss the methods you will be using. (~ 300 words).

Background and Specific Aims:

Briefly outline the background leading up to the present application, critically evaluate existing knowledge, and specifically identify the gaps that the project is intended to fill. State what you intend to achieve with your proposed research. Link the specific aims of this particular research project to broader, long-term objectives. (~ 700 words).

Research Design and Methods

Describe the research design, framework, procedures, and methodologies, to be used to accomplish the specific aims of the project. (~ 700 words).

Significance/ Impact

State the importance of the research and the impact it is going to make in the country. (~ 300 words).

Expected Research output

Explain what is the expected output of the research activity. Example of expected output for Category 1 includes proof-of-concepts, prototypes, patents, product

development publications. Examples of expected output for Category 2 include conference proceedings, technical reports, and journal publications. (~ 300 words)

Timeline

Provide a tentative sequence or timetable for the project with expected deliverables. The maximum execution duration of projects in both categories is One year after receiving the funds.

Budget

Provide a fully itemized budget of all expenses related to the project and give an appropriate explanation for all items on the budget that are not self-explanatory. The funds requested should not exceed R.O 10,000 for Category 1 and R.O. 4,000 for Category 2. List all other funds that have been sought and/or awarded for this research. The fund should not be used for salaries/stipends for investigators. Observe the below budget caps when submitting the budget.

Item(s)	Caps, R.O
Equipment & facilities	No cap
Research Assistants	No cap
Project-related Travel	1000
Subcontract/consultation/collaboration. Only 25% of the total budget can be used outside the country.	2000
Subscriptions and registrations	200
Administration cost	500

Please note that the full amount requested will be released in a single installment after signing the research contract.

Research Themes

General themes

- Smart Environment
- Smart Mobility
- Smart Governance
- Smart Building and Living

- Smart People
- Smart Economy
- Smart Energy, Water, and Waste
- Smart Health
- Smart Education
- Smart Tourism

Possible topics (but not limited to) for the conceptual/theoretical/empirical research

- Surveying existing solutions (showcases), existing opportunities and challenges for building a smart sustainable city
- Understanding open data and transparency, smart city governance, and smart collaboration and engagement
- Understanding the status-quo of smart city solutions in Oman and to examine existing challenges and opportunities for building a sustainable and smart city
- Examining the role of smart and connected devices, smart sensors, IoT, wearable devices, open data, big data analytics.
- Surveying existing and potential approaches that help to increase efficiency, effectiveness of public services as well as commercial and civic services (cost reduction, timeliness, evidence-based decisions)
- Examining smart initiatives that help to increase people's health, well-being, sustainability, waste management, traffic congestions, etc.
- Developing framework for building smart communities and smart living

Possible smart solutions (but not limited to)

- Mobility, travel, and transport (city logistics, mobility)
- Smart living (e.g. entertainment, public safety, relational and social capital, healthcare, wellbeing, smart health 2.0)
- Environment & energy (e.g. waste management, public lighting, pollution control, waste management, etc.)

- Citizen e-participation and engagement
- Big Data analytical solutions
- ICT infrastructure and IoT
- Smart buildings (e-facilities and services, energy)
- Smart education and economy (entrepreneurship, digital education)
- eMarketing approaches (delivering services compatible with smart city approach)
- Experimenting or developing a smart solution that can fuel smart sustainable city or organization
- Developing and improving smart mobility, city logistics, smart building, smart water management

Evaluation Criteria

Once research proposals have been submitted, they will be reviewed by the Smart City Platform Steering Committee (SC). The proposals will be evaluated based on eligibility and based on the evaluation criteria. There will be a one-time review process and the decision will be made accordingly. Please refer to Appendix A and Appendix B for Category 1 and Category 2 respectively. Please use the evaluation criteria (Appendix A or Appendix B) to craft your proposal.

Reporting Form

1. Category 1: Innovation Based Project (Smart Solution/Technology)

For the accepted proposals and funded innovations

- A progress report must be submitted mid-way of the project
- A Final report must be submitted after the completion of the project.

2. Category 2: Publication Based Research

- a. Prior publication, research grant offered by Oman Smart City platform must be acknowledged in the manuscript.
- b. Summary of final research must be submitted to SCP

How to Apply?

All proposals should be submitted through the electronic submission system at the Research Council Website <https://rims.trc.gov.om/>

Contact Details:

Email: info@smartoman.org

References

IDA Singapore, “iN2015 Masterplan” (2012).

<http://www.ida.gov.sg/~media/Files/Infocomm%20Landscape/iN2015/Reports/realisingthevisionin2015.pdf>.

Marsal-Llacuna, M. L., Colomer-Llinàs, J., and Meléndez-Frigola, J.

(2015). Lessons in urban monitoring taken from sustainable and livable cities to better address the Smart Cities initiative. *Technological Forecasting and Social Change*, 90(B): 611-622.

Appendix A: Evaluation Criteria – Category 1: Innovation Based Projects

SN	Evaluation Criteria	Earned Points	Max Points
1	Problem (Opportunity) Identification Clearly defined; Rationality; <i>current state</i> (context) and how the proposed project will improve the <i>desired future state</i>		15
2	The novelty of the proposed project Innovativeness; Originality; potential patents		20
3	Potential Impact Capable of providing efficient services to citizens; optimize existing infrastructure (practice); the proposed project has a direct positive impact on at least one of the following categories (environment, mobility, smart living, economy, education, health...etc)		30
4	Adaptability & Marketability Compatibility with market/industry/citizen needs; competitive advantage; scalability; sustainability; diffusibility & adaptability; relative advantage; simplicity and accessibility		20
5	Collaboration The project is executed and/or funded in collaboration with entrepreneurs. SMEs, the private sector, social society, NGOs, public sector, etc... The project involves both local and international partners.		15
Total			100

Appendix B: Evaluation Criteria – Category 2: Publication Based

SN	Evaluation Criteria	Earned Points	Possible Points
1	Research Experience Academic background, publications, and relevant research experience of the research team		20
2	Statement of the problem Problem identification, the rationality of the proposed research		20
3	Potential impact & contribution (Research & Praxis) Potential scholarly contribution (publication); practical implications (changing existing rules, policies or imposing new policies pertinent to the smart city (ICT, IoT, big data, open data, sustainability & environment, health, transportation etc.); proposed research has a potential to overcome social, economic, and developmental challenges		50
4	Relevance to the local context The proposed research is relevant to the local setting (Omani environment); Oman institutional practices, sample or case study is based in Oman.		10
Total			100