

# **The IEEE P2784 standardization process workshop: the collaborative effort to develop a Guide for the Technology and Process Framework for Planning a Smart City**

## **1. SCOPE AND GOALS**

The IEEE P2784 Standardization Process Workshop is based upon the IEEE P2784 Standard Project, currently under development. This workshop is intended to provide a consistent discussion about the subject of this standard, and to identify the opinions, perception and level of knowledge of the participants about Smart Cities. For that, the organizers will base the workshop planning and dynamics on the Delphi Method and also will use dynamic interactive evaluation tools, such as Google Forms and Mentimeter. The objective is not only to present the content and current status of the standardization process to the attendees, but also to collect some suggestions from them. The idea of this workshop is to have a very interactive, participative, and democratic discussion about the content and scope of this Standard Project. The expected outcome is to develop a study based on the insights of the participants as well as the surveys and polling collected before, during, and after the workshop. After the event, all attendees will receive some handouts, including a study guide for the IEEE P2784 standard and the summary of the survey results from this interactive workshop.

This workshop is an opportunity for the attendees of the IEEE ISC2 conference to learn what is involved in the development of a standard that aims to help cities to plan, implement and operate Smart Cities Solutions. This is challenging because it needs to accommodate not only the technology trends and applications in the cities, but also the implications of their deployment as well as the multiple stakeholders involved in this process. From the normative perspective, the standard is required to be aligned with the best practices, comprehending the multiple dimensions involved in the contemporary cities.

## **2. PRELIMINARY PROGRAM**

### **2.1. Invited Talks**

#### **Presentation 1: What are Smart City Drivers, Barriers, and Benefits?**

Presenter: Larissa Paredes Muse, IEEE Smart Cities Community

*Vice-Chair of the IEEE Smart City Planning and Technology Guide Standard P2784*

*Associated research fellow at Brazilian Network for Smart & Human Cities – RBCIH | Atlanta-Brazil relationship*

**Abstract:** The contemporary cities face innumerable problems resultant from the inequity of public policies and the lack of responsible long-term planning. At the same time, the cities witness the digital transformation and the rise and pervasiveness of ICTs. This presentation aims to provide a contextualized overview of the main Smart City drivers, as well as the main barriers and benefits involved in the process of planning, deploy and operate Smart City solutions and technologies.

#### **Presentation 2: Review the five human factors that impact a Smart City**

Presenter: Jim Frazer, ARC Advisory Group

*Chair of the IEEE Smart City Planning and Technology Guide Standard P2784*

*VP Smart Cities – ARC Advisory Group | Chair Illuminating Engineering Society's Roadway Lighting Committee*

**Abstract:** In this presentation, five broad groups of human factors are discussed. They include social, technological, economic, environmental and political groups. Within each of these grouping twenty factors each will be introduced. Additionally, the impact of these factors on sustainability, resilience and the digital transformation of the city ecosystem will be examined.

### **Presentation 3: Examine the nine vertical applications and seven technologies that impact a Smart City**

Presenter: Eduard Fidler, ARC Advisory Group

*Secretary of the IEEE Smart City Planning and Technology Guide Standard P2784*

*Lead Transportation Analyst – ARC Advisory Group*

**Abstract:** The previous two presentations in the workshop address what is driving and inhibiting, as well as the various human factors involved within the development of smart cities. This presentation will introduce and briefly explore the nine vertical applications and seven enabling technologies relevant to smart city planning, establishing a common point of reference for a subsequent discussion of attendee priorities and challenges around each. The verticals consist of the built environment, energy infrastructure, telecommunications systems, transportation, health & human services, water & wastewater, waste management, public safety, and payments & finance. The enabling technologies consist of instrumentation & control, connectivity, interoperability, security & privacy, data management, computing resources, and analytics.

### **Presentation 4: Examine use of the IEEE P2784 Smart City Planning and Technology Guide in envisioning, deploying and managing your Smart City Project**

Presenter: Jim Frazer, ARC Advisory Group

*Chair of the IEEE Smart City Planning and Technology Guide Standard P2784*

*VP Smart Cities – ARC Advisory Group | Chair Illuminating Engineering Society's Roadway Lighting Committee*

**Abstract:** The author introduces the waterfall model as well as an agile scrum approach to smart city planning, deployment, management, operations and eventual decommissioning / retirement of the system. Include in the presentation is specific guidance on:

- How to identify stakeholder communities;
- How to document needs of the communities, and how to build a list of consensus-based needs;
- How to refine consensus-based needs into measurable functional requirements;
- How to develop a request for information (RFI) and request for proposal (RFP);
- How to develop and implement test plans to keep you on track;
- How to manage smart city projects over their entire lifecycle;

#### **2.2. Discussion Panels**

Some discussions in between the presentations and hands-on activities are planned to engage the attendees (Please see the table of the Workshop Dynamics).

#### **2.3. Contributed Papers**

**Title:** The IEEE P2784 Standardization Process Workshop: the use of Delphi Method and Dynamic Interactive Evaluation Tools to identify opinions and perception about Smart Cities

##### **Authors:**

- Larissa Paredes Muse, IEEE Smart Cities Community
- Jim Frazer, ARC Advisory Group
- Eduard Fidler, ARC Advisory Group

#### **2.4. Other Activities**

The other activities include:

- Pre-workshop survey (it will be sent to the registrants by email up to one week before the Workshop<sup>1</sup>)
- Interactive discussions with attendees
- Interactive online polling
- Updates on the IEEE P2784 standardization process Working Group
- Post-event survey

### 3. WORKSHOP DYNAMICS

This part will be done in 3 blocks of 60 minutes as follows:

<b>Presentations</b>	<b>Presenter(s):</b>	<b>Duration:</b>
<b>Introduction of the P2784 standard draft</b>	Jim Frazer	10 minutes
<b>Reading of the pre-work survey results</b>	Eduard Fidler	10 minutes
<b>Presentation 1: What are Smart City Drivers, Barriers, and Benefits?</b>	Larissa Paredes Muse	15 minutes
<b>Q&amp;A / Discussion</b>	Attendees	15 minutes
<b>Interval (10 minutes)</b>		
<b>Presentation 2: Review the five human factors that impact a Smart City</b>	Jim Frazer	20 minutes
<b>Online polling 1</b>	Attendees	10 minutes
<b>Q&amp;A / Discussion</b>	Attendees	20 minutes
<b>Interval (10 minutes)</b>		
<b>Presentation 3: Examine the nine vertical applications and seven technologies that impact a Smart City</b>	Eduard Fidler	15 minutes
<b>Presentation 4: Examine use of the IEEE P2784 Smart City Planning and Technology Guide in envisioning, deploying and managing your Smart City Project</b>	Jim Frazer	10 minutes
<b>Online polling 2</b>	Eduard Fidler	10 minutes
<b>Discussion (polling)</b>	Attendees	15 minutes
<b>Updates on the current status of the standardization process</b>	Larissa Paredes Muse	3 minutes
<b>Invitation to more collaborators for the Working Group</b>	Jim Frazer	2 minutes

### 4. TARGETED AUDIENCE

The main targeted audience are academic and practitioners in the Smart Cities area of expertise; public works personnel, consulting engineers, utility staff, resilience and sustainability experts, planners, community leaders. The general public are also strongly encouraged to attend, in order to bring the citizen perspective.

### 5. OUTCOMES

At the conclusion of the event, all attendees will receive three documents with the results of the workshop, including:

- A post-event surveys
- A study Guide
- A white paper with the survey summary

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<sup>1</sup> For that, we will need authorization from the registrant to allow us to send the pre-workshop survey (Google Docs Form) by email.