



## Memorandum of Understanding

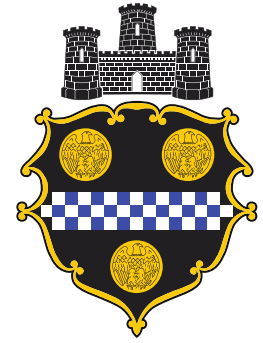
Between

Carnegie Mellon University

Metro21 Initiative

and

The Honorable Mayor of the City of Pittsburgh



This Memorandum of Understanding (MOU) sets forth the terms and understandings between the named parties to pursue their mutual interest to research, develop, deploy and evaluate technology and analytically based solutions to the problems facing the systems and infrastructure that serve the quality of life and economy of the City of Pittsburgh and other communities, cities, counties and metropolises around the globe.

### Background

Carnegie Mellon University (CMU) is establishing the Metro21 Initiative to connect problems in the community to research and educational projects that might help solve them. The Mayor has clearly emphasized the City's willingness to be a test bed for innovation to achieve more effective and efficient government and improve the lives of Pittsburghers. Both parties wish to show-case the City as a vibrant, innovative and sustainable community while developing technologies, methods, and models for use across the country and around the world. Both parties also wish to create a pathway for students to remain in and contribute to Pittsburgh after graduation.

### Purpose

The primary purpose of this MOU is to ensure the communication and coordination necessary to implement research and educational projects agreed upon by the parties. This MOU does not represent a commitment on behalf of either party to pursue specific projects or partnerships. Future projects may require subsequent agreements between the parties and may be subject to Council approval.

### Process

This purpose will be accomplished through the following process:

1. The Mayor and the Vice President for Research of the University shall both designate a lead person on behalf of the organization.
2. The Mayor and his lead will identify problems that University research and/or educational projects might address;
3. The University and its lead will identify research and/or educational projects that might help address City problems;
4. The Mayor's and University's lead will meet on a regular basis to discuss the potential projects identified by the Mayor and/or the University and:
  - a. Reaching agreement on which projects to pursue;
  - b. Concurring on a plan for implementation for each agreed upon project;
  - c. Monitoring progress and prospects for each project.

- d. Coordinate mutual support for fundraising from third parties in support of agreed upon projects.

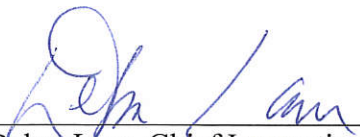
A secondary purpose is to mutually pursue partnerships with other parties to expand our knowledge and pursue research, development and deployment projects with multiple communities.

**Funding**

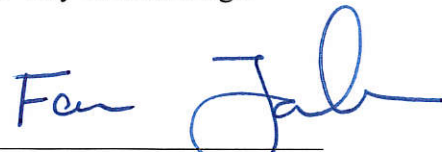
This MOU is not a commitment of funds to either party on behalf of the other party. When funding is needed by either party to pursue an agreed upon project, then the expectation is that the funding may be pursued by one party with the endorsement and support of the other.

**Duration**

This MOU is at-will and may be modified by mutual consent of authorized officials from CMU or the Mayor's Office. This MOU shall become effective upon signature by the Chief Innovation & Performance Officer of the City of Pittsburgh and the Vice President for Research of CMU.

  
Debra Lam, Chief Innovation & Performance Officer  
of the City of Pittsburgh

Date: 8/29/2014

  
Dr. Farnam Jahanian  
Vice President for Research, Carnegie Mellon University

Date: 8/28/2014



ALLEGHENY COUNTY  
AIRPORT AUTHORITY

**Memorandum of Understanding**  
between  
The Allegheny County Airport Authority  
and  
Carnegie Mellon University



This Memorandum of Understanding (“MOU”) sets forth the understandings between the named parties to pursue their mutual interest to expand current research and educational collaboration by providing opportunities to explore solutions to the problems facing airport systems that serve communities, cities, counties and metropolises around the globe.

**Background**

The Allegheny County Airport Authority (the “Airport Authority”), like other airport operators, faces complex challenges involving the optimization of movement, creation of efficiencies, improvement of the customer experience, and generation of revenue at the Pittsburgh International Airport (“PIT”). Carnegie Mellon University (“CMU” or “the University”) within the scope of its mission, has various established educational and research opportunities for CMU students, faculty, and staff and is interested in offering these opportunities in relation to the challenges facing the Airport Authority.

The Airport Authority seeks to have PIT serve as an innovation center for research projects related to air service/travel. CMU seeks educational and research opportunities that would be afforded it by involvement in such an air service/travel innovation center. Both parties to this MOU wish to develop a streamlined process for facilitating communications with PIT to enable educational and research activities that could further their mutual interests.

**Purpose:** The primary purpose of this MOU is to ensure the communication and coordination between the parties needed to explore potential research and educational projects between the parties. This MOU is non-binding and does not represent a commitment on behalf of either party to pursue specific projects, (which may include but not be limited to research projects, educational student projects, workshops, etc.). Any projects that the parties decide to pursue would require separate written mutually acceptable agreements to be negotiated and executed between the parties.

**Role and Responsibilities;**

In furtherance of this purpose, the parties agree that the roles and responsibilities are as follows: For both parties:

1. The Airport Authority and the University shall each designate a lead person to act as liaison between the parties to help facilitate activities under this MOU.
2. The Airport Authority and University, including their respective designated lead person agree to collaborate to identify and explore ideas for research and/or educational questions and/or problems that might be of mutual interest to both parties.
3. The Airport Authority lead and the University lead will meet periodically, based on availability to discuss the projects identified by the Airport Authority and the University. Any such projects would require separate written mutually acceptable project agreements between the parties.

For Airport Authority:

The Airport Authority intends to provide the following resources for the University researchers and/or students as may be needed when working on mutually agreed research and/or educational projects:

1. Access to PIT facilities, where and when applicable in order to use PIT as a subject of research.
2. Access to data, including facilitating the acquisition of data from business partners, such as airlines, the Transportation Security Administration, and Airmall USA.
3. Workspace in the airside terminal of PIT designated for CMU student and researcher use.
4. Airport Authority staff resources, on an as needed basis and as agreed to by both parties.

**Intellectual Property**

No intellectual property rights, including but not limited to, licenses, or rights under any patents, copyrights or trademarks are granted or are to be implied by this MOU. It is the intention of the parties that any intellectual property terms and conditions would be specified in the future project agreements that would be negotiated between the parties.

**Funding**

This MOU is not a commitment of funds to either party on behalf of the other party.

**Duration**

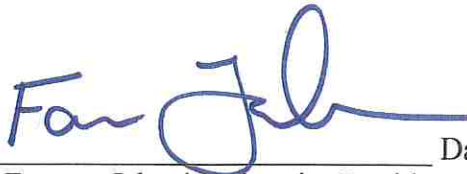
The MOU is terminable at will by either party. This MOU may be modified from time-to-time by mutual written consent of authorized officials from CMU and the Airport Authority. This MOU shall become effective upon signature by the representatives of the Airport Authority and CMU.



03/26/18

Date: \_\_\_\_\_

Christina A. Cassotis, CEO  
Allegheny County Airport Authority



Date: 3/27/18

Dr. Farnam Jahanian, Interim President  
Carnegie Mellon University



**Memorandum of Understanding**  
Between  
Carnegie Mellon University  
Metro21 Initiative  
and  
The County of Allegheny



This Memorandum of Understanding (MOU) sets forth the understandings between the named parties to pursue their mutual interest to research, develop, deploy and evaluate technology and analytically based solutions to the problems facing the systems and infrastructure that serve the quality of life and economy of Allegheny County and other communities, cities, counties and metropolises around the globe.

**Background**

Allegheny County (“the County”), like other urban counties around the country, faces complex challenges involving interacting infrastructure systems such as transportation, water and sewer, communications, buildings and public services. Carnegie Mellon University (“CMU” or “the University”) has established the Metro21 Initiative to connect problems in the community to research and educational projects that might help solve them. The County, through its Chief Executive, seeks to have the County be an incubator for innovation to achieve more effective and efficient government and improve the lives of County residents. Both parties wish to showcase the County as a vibrant, innovative and sustainable community while developing technologies, methods, and models for use across the country and around the world. Both parties also wish to create a pathway for students to remain in and contribute to the Pittsburgh region after graduation.

**Purpose**

The primary purpose of this MOU is to ensure the communication and coordination necessary to implement research and educational projects agreed upon by the parties. This MOU does not represent a commitment on behalf of either party to pursue specific projects or partnerships. Future projects may require subsequent agreements between the parties and may be subject to County Council approval.

**Process**

This primary purpose will be accomplished through the following process:

1. The County’s Chief Executive and the Provost of the University shall both designate a lead person on behalf of each party.
2. The County’s Chief Executive and his lead will identify problems that University research and/or educational projects might address.
3. The University and its lead will identify research and/or educational projects that might help address County problems.

4. The leads of both parties will meet on a regular basis to discuss the potential projects identified by the County's Chief Executive and/or the University with the primary goals of:
  - a. Reaching agreement on which projects to pursue;
  - b. Concurring on a plan for implementation for each agreed upon project;
  - c. Monitoring progress and prospects for each project; and
  - d. Coordinating mutual support for fundraising from third parties in support of agreed upon projects.

A secondary purpose of this MOU is to mutually pursue partnerships with other parties to expand knowledge and pursue research, development and deployment projects with multiple communities.


**Funding**

This MOU is not a commitment of funds to either party on behalf of the other party. When funding is needed by either party to pursue an agreed upon project, then the expectation is that the funding may be pursued by one party with the endorsement and support of the other.

**Duration**

This MOU is terminable at-will by either party. This MOU may be modified from time-to-time by mutual consent of authorized officials from CMU or from the County Manager. This MOU shall become effective upon signature by the County Manager and the Vice President for Research of CMU.

 Date:  
William D. McKain, Allegheny County Manager

 Date:  
Dr. Farnam Jahanian  
Provost, Carnegie Mellon University



**Memorandum of Understanding**  
between  
The Pittsburgh Water and Sewer Authority  
and  
Carnegie Mellon University

This Memorandum of Understanding (“MOU”) sets forth the understandings between the named parties to pursue their mutual interest to expand current research and educational collaboration by providing opportunities to explore solutions to the problems facing municipal water utilities.

**Background**

The Pittsburgh Water and Sewer Authority (PWSA) serves over 80,000 residential and commercial customers throughout the City of Pittsburgh and neighboring communities, providing safe, reliable drinking water that meets rigorous water quality standards while maintaining extensive infrastructure spread across the PWSA service area. Carnegie Mellon University (“CMU” or “the University”) within the scope of its mission, has various established educational and research opportunities for CMU students, faculty, and staff and is interested in offering these opportunities in relation to the challenges facing PWSA.

CMU has established Metro21: Smart Cities Institute (“Metro21”), whose mission is to research, develop and deploy 21st century solutions to the challenges facing metro areas. PWSA seeks to be a model for urban water utilities looking to find innovative ways to manage physical assets, address regional environmental challenges, and deliver efficient, high-quality service. Metro21 seeks educational and research opportunities that would be afforded it by working closely with PWSA. Both parties to this MOU wish to develop a streamlined process for facilitating communications to enable educational and research activities that could further their mutual interests.

This MOU is not exclusive to PWSA and CMU and does not prevent either party from pursuing similar arrangements with other parties not herein named.

**Purpose:** The primary purpose of this MOU is to enable and ensure the communication and coordination between the parties needed to explore potential research and educational projects between the parties. This MOU is non-binding and does not represent a commitment on behalf of either party to pursue specific projects, (which may include, but not be limited to, research projects, educational student projects and workshops). Any projects that the parties decide to pursue would require separate written mutually acceptable agreements to be negotiated and executed between the parties.

**Role and Responsibilities;**

In furtherance of this purpose, the parties agree that the roles and responsibilities are as follows:  
For both parties:

1. PWSA and Metro21 shall each designate a lead person to act as liaison between the parties to help facilitate activities under this MOU.

2. PWSA and Metro21, including their respective designated lead person agree to collaborate to identify and explore ideas for research and/or educational questions and/or problems that might be of mutual interest to both parties.
3. PWSA lead and Metro21 lead will meet periodically, based on availability to discuss the projects identified by PWSA and Metro21. Any such projects would require separate written mutually acceptable project agreements between the parties.

For PWSA:

PWSA intends to provide the following resources for Metro21 researchers and/or students as may be needed when working on mutually agreed research and/or educational projects:

1. Access to PWSA facilities, where and when applicable and agreed by both parties in order to use PWSA as a subject of research.
2. Access to data, including facilitating the acquisition of data from partner organizations, including the City of Pittsburgh and ALCOSAN.
3. PWSA staff resources, on an as-needed basis and as agreed to by both parties.

### **Intellectual Property**

No intellectual property rights, including but not limited to, licenses, or rights under any patents, copyrights or trademarks are granted or are to be implied by this MOU. It is the intention of the parties that any intellectual property terms and conditions would be specified in the future project agreements that would be negotiated between the parties.

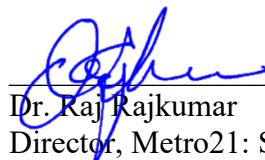
### **Funding**

This MOU is not a commitment of funds to either party on behalf of the other party.

### **Duration**

The MOU is terminable at will by either party. This MOU may be modified from time-to-time by mutual written consent of authorized officials from CMU and PWSA. This MOU shall become effective upon signature by the representatives of PWSA and CMU.

William J. Pickering Date: 9/18/2020  
Will Pickering, Executive Director  
Pittsburgh Water and Sewer Authority

 Date: 09/16/2020  
Dr. Raj Rajkumar  
Director, Metro21: Smart Cities Institute, Carnegie Mellon University





## **Memorandum of Understanding**

between

**Regional Industrial Development Corporation**

and

**Carnegie Mellon University**

This Memorandum of Understanding (“MOU”) sets forth the understanding between the named parties to pursue their mutual interest to expand current research and educational collaboration by providing opportunities to explore solutions for the challenges facing the development of industrial properties in Southwestern Pennsylvania.

### **Background**

Regional Industrial Development Corporation (“RIDC”) is a major force in economic development in Southwestern Pennsylvania, transforming properties that were a part of the region’s past into homes for companies that are driving the economy of the future, ranging from robotics to manufacturing, from home-grown start-ups to large multi-national corporations. RIDC catalyzes and supports economic growth through high quality job creation, real estate development and financing of projects that advance the public interest – developing real estate to capture emerging and existing growth opportunities across diverse industry sectors.

CMU has established Metro21: Smart Cities Institute (“Metro21”). The mission of Metro21: Smart Cities Institute at Carnegie Mellon University is to research, develop and deploy 21<sup>st</sup> century solutions to the challenges facing metro areas. As part of its mission, Metro21 has established various educational and research opportunities for Carnegie Mellon University students, faculty, and staff to address the practical needs of communities and institutions in the region.

Both parties to this MOU wish to develop a streamlined process for facilitating communications to enable educational and research activities that could further their mutual interests. This MOU is not exclusive to RIDC and Metro21, and does not prevent either party from pursuing similar arrangements with other parties not named herein.

### **Purpose**

The primary purpose of this MOU is to ensure the communication and coordination between the two named parties needed to explore potential joint research and educational projects. This MOU is non-binding and does not represent a commitment on behalf of either party to pursue specific projects, (which may include but not be limited to research projects, educational student projects and workshops). Any project(s) that the parties decide to pursue would require separate written mutually acceptable agreements to be negotiated between the parties and executed by authorized representatives of the parties.

### **Roles and Responsibilities**

In furtherance of the above purpose, the parties agree that the roles and responsibilities are as follows:

For both parties:

1. RIDC and Metro21 shall each designate a lead person to act as the liaison between the parties to help facilitate activities under this MOU.
2. RIDC and Metro21, including their respective designated lead persons, agree to collaborate in identifying and exploring ideas for research and/or educational questions and/or problems that might be of mutual interest to both parties.

The RIDC and Metro21 lead persons will meet periodically, based on availability to discuss the projects identified by RIDC and Metro21. Each such project will require separate written mutually acceptable project agreements signed by authorized representatives of the parties.

For RIDC:

RIDC intends to provide the following resources for Metro21 researchers and/or students as may be needed when working on mutually agreed research and/or educational projects:

1. Access to RIDC facilities, where and when applicable and agreed to by both parties, in order to use RIDC as a subject of research.
2. Access to data, including facilitating the acquisition of data from partner organizations, as needed and upon mutual agreement signed by authorized representatives of both parties.
3. RIDC staff resources, on an as-needed basis and as agreed to by both parties.

**Intellectual Property**

No intellectual property rights, including but not limited to, licenses, or rights under any patents, copyrights or trademarks are granted or are to be implied by this MOU. It is the intent of the parties that any intellectual property terms and conditions will be specified in any future project agreements that would be negotiated between the parties.

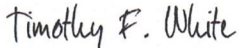
**Funding**

This MOU is not a commitment of funds to either party on behalf of the other party.

**Duration**

The MOU is terminable at will by either party. This MOU may be modified from time-to-time by mutual written consent of authorized officials from Carnegie Mellon University and RIDC. This MOU shall become effective upon signature by the representatives of RIDC and Carnegie Mellon University.

DocuSigned by:

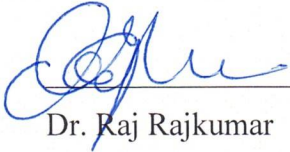


3/23/2021

Date: \_\_\_\_\_

Timothy F. White, Senior Vice President

Regional Industrial Development Corporation of Southwestern Pennsylvania



Date: 3/24/2021

Dr. Raj Rajkumar

Director, Metro21: Smart Cities Institute, Carnegie Mellon University