Items in red are instructions.

**PROJECT TITLE:** Modeling Methodology and Simulation of Port-of-Entry Systems

**PROJECT PI:** Benjamin Melamed, Rutgers University

**MONTHLY PROJECT PERFORMANCE REPORT FOR:** \_ \_ / \_ \_ \_ \_

[MM/YYYY covered by this report]

#### A. tasks

Use one of the following symbols to fill out the appropriate cells in the status column:

O = In progress

V = Accomplished as planned

V\* = Accomplished with delays

X = Past due

**Table 1.** Task List

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Task Title | Due Date | Status |
| T.1 | Validate the simulation model of the Bridge of the Americas (BOTA) POE | 7/17 – 7/17 |  |
| T.2 | Meet project champion (by phone/skype or in person) | 8/17 |  |
| T.3 | Write user manual for BOTA and deliver the BOTA simulation to CBP | 8/17 – 8/17 |  |
| T.4 | Perform usability assessment of POESS for BOTA | 9/17 – 9/17 |  |
| T.5 | Develop a detailed prototype simulation model design, including structure, user interface and other features of the Peace Arch POE | 9/17 – 12/17 |  |
| T.6 | Meet project champion (by phone/skype or in person) | 1/18 |  |
| T.7 | Code the design and produce the prototype simulation model program of the Peace Arch POE | 1/18 – 4/18 |  |
| T.8 | Meet project champion (by phone/skype or in person) | 4/18 |  |
| T.9 | Verify the simulation model of the Peace Arch POE | 5/18 – 6/18 |  |
| T.10 | Meet project champion (by phone/skype or in person) | 6/18 |  |

**A.1. Explanation of any changes from the initially approved work plan (if applicable)**

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A.2 Were there any challenges that have been addressed? \_\_\_ YES / \_\_\_ NO

If yes, list them and explain how each was addressed.

1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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A.3 Are there any challenges that require to be addressed? \_\_\_ YES / \_\_\_ NO

If yes, list them and explain the plan to address them (include the type of assistance needed from the BTI Institute, if any).

1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### B. Milestones

[Fill out the appropriate cells in the status column as in Table 1]

**Table 2.** Milestone List

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Milestone Description | Due Date | Status |
| M.1 | Completion of simulation model validation and tests of the Bridge of the Americas (BOTA) POE | 8/17 |  |
| M.2 | Completion of usability assessment of POESS for BOTA, thereby completing the BOTA project | 9/17 |  |
| M.3 | Completion of model information gathering and data collected of the Peace Arch POE | 12/17 |  |
| M.4 | Completion of data models identification and preliminary parameterization of the Peace Arch POE | 1/18  |  |
| M.5 | Completion of prototype model design and coding of the Peace Arch POE | 5/18 |  |
| M.6 | Completion of model verification and tests of the Peace Arch POE | 6/18 |  |

**B.1. Explanation of why milestones were not reached (if applicable).**

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B.2 Were there any challenges that have been addressed? \_\_\_ YES / \_\_\_ NO

If yes, list them and explain how each was addressed.

1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B.3 Are there any challenges that require to be addressed? \_\_\_ YES / \_\_\_ NO

If yes, list them and explain the plan to address them (include the type of assistance needed from the BTI Institute, if any).

1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### C. Performance Metrics

[Fill out the appropriate cells in the status column as in Table 1]

**Table 3.** Performance Assessment

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Description** | **Quantitative Performance Target** | **Achieved by** | **Status** |
| P.1 | Usability metric of the simulation program’s user interface. We will recruit up to 15 but not less than 10 potential users who will run the software in one session. They will then fill out the usability questionnaire (on a Likert scale of 1-7) in (Lund, 2001).  | Average satisfaction rate > 75% through a test-retest process. | 6/18 |  |
| P.2 | POE crossing time response curve to a range of increasing traffic congestion for sets of fixed service resources | Monotonically increasing response curve | 6/18 |  |
| P.3 | POE crossing time response curve to a range of increasing service resources for sets of fixed traffic congestions | Monotonically decreasing response curve | 6/18 |  |

**C.1. Explanation of any changes from the original plan (if applicable).**

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C.2 Were there any challenges that have been addressed? \_\_\_ YES / \_\_\_ NO

If yes, list them and explain how each was addressed.

1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C.3 Are there any challenges that require to be addressed? \_\_\_ YES / \_\_\_ NO

If yes, list them and explain the plan to address them (include the type of assistance needed from the BTI Institute, if any).

1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### D. Project Deliverables (Outputs)

[Fill out the appropriate cells in the status column as in Table 1]

**Table 4.** Deliverables List

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Description** |  **Type** | **Due Date** | **Status** |
| D.1 | Delivery of the simulation program of the BOTA POE in the public archive FIGSHARE | So | 8/17 |  |
| D.2 | User manual of the simulation model of the BOTA POE | So | 9/17 |  |
| D.3 | Report on the usability assessment of the POESS BOTA model | R |  |  |
| D.4 | Technical report of model description of the Peace Arch POE  | R | 12/17 |  |
| D.5 | Technical report describing the parameterized models of traffic and service processes for the Peace Arch POE | R | 5/18 |  |
| D.6 | Annual report, to be delivered to BTI, primary project champion, and archived in arXiv. Elements of this project will be targeted for publication in peer-reviewed journals and presentation in peer-reviewed conferences. | R | 6/18 |  |

List of types of Deliverables for reference:

|  |  |  |  |
| --- | --- | --- | --- |
| A: Algorithm | B: Brief | Co: CONOPS | C: Course |
| D: Dataset | H: Hardware Prototype | P: Publication (Conference / Journal) | Pr: Protocol |
| R: Report | So: Software (executable and source code) | Su: Survey - Validated Instrument | V: Video |

**D.1. Explanation of why outputs were not reached (if applicable).**

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D.2 Were there any challenges that have been addressed? \_\_\_ YES / \_\_\_ NO

If yes, list them and explain how each was addressed.

1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

D.3 Are there any challenges that require to be addressed? \_\_\_ YES / \_\_\_ NO

If yes, list them and explain the plan to address them (include the type of assistance needed from the BTI Institute, if any).

1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**E.1 Publications, Conference Papers, and Presentations**

Were any publications produced by this project during the month covered by this report (published, in press, under review, or in preparation)?

\_\_\_ YES / \_\_\_ NO

[If a previously reported publication has changed status (e.g., under review to accepted), include the update.]

If YES, list these publications below.

[The bibliographic style should be similar to those associated with the disciplines related to work (I.e., engineers and IEEE). Include a URL link to each publication if possible. Example:

1. Student, A. and Doe, J. An article about this project. *A Peer-Reviewed Journal*. 13:45-54, 2016. Available at: <http://www.website.edu/URL/article.PDF>
2. Student, B. and Doe, J. A follow-up article about this project. *Another Peer-Reviewed Journal*. 23:15-51, 2017. Available at: <http://www.website.edu/URL/article.PDF>

Please attach one electronic copy (PDF) of a near-final pre-publication draft (PDF) to this report and send an electronic copy of the final document (PDF) at the time of publication to the BTI Institute. DHS has an interest in publications generated from DHS-funded research for program awareness for the purpose of make them publicly available in a manner consistent with copyright law.

As a reminder, all publications generated by this project should carry the following acknowledgment/disclaimer text (replace <<insert project title>> and <<insert project institution>> in the text as appropriate):

This material is based upon work supported by the U.S. Department of Homeland Security under Grant Award Number 2015-ST-061-BSH001. This grant is awarded to the Borders, Trade, and Immigration (BTI) Institute: A DHS Center of Excellence led by the University of Houston, and includes support for the project <<insert project title>> awarded to <<insert project institution>>. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Department of Homeland Security. ]

**E.2 Websites or other Internet Sites/News items**

Are there any key new dissemination activities to report for the month covered by this report?

\_\_\_ YES / \_\_\_ NO

[It is not necessary to include the publications already specified above in this section.]

If YES, list these activities below.

[List the URL for any new (as of this month) Internet site(s) that disseminate(s) the results of the research activities. A short description of each site should be provided.]

**E.3 Inventions, patent applications, and/or licenses**

Are there any inventions, patent applications with date, and/or licenses that have resulted from the research during the month covered by this report?

\_\_\_ YES / \_\_\_ NO

If YES, list below.

[Identify inventions, patent applications with date, and/or licenses that have resulted from the research during the month covered by this report. Submission of this information as part of an interim research performance progress report is not a substitute for any other invention reporting required under the terms and conditions of an award.]

#### F. Additional Info

[Please use this section to provide any other additional information for this period (month) that you feel is pertinent to report.]