



Date: May 20, 2022

To: Interested Technology Solution Providers

Subject: Request for Information (**RFI**) 052022: Truck Experience

Measurement Solutions

Purpose for this Request for Information:

The Northwest Seaport Alliance is issuing a request for information on vendor capabilities and comparative costs for a solution to measure truck experience within the gateway. This includes measures pertaining to truck volumes, turn times, and other characteristics for truck visits to our NWSA gateway in both Seattle and Tacoma harbors. This information will be used for strategic planning, budget planning, and to inform us about available solution capabilities as we consider procurement and implementation options for a potential future solution.

Background:

Formed in 2015, The Northwest Seaport Alliance (**NWSA**) is a marine cargo operating partnership of the ports of Tacoma and Seattle. The NWSA is the fourth-largest container gateway in North America. To learn more about the NWSA, visit www.nwseaportalliance.com.

To measure truck volume and truck turn times at each of the NWSA international container terminals, the NWSA currently utilizes a Radio Frequency Identification (**RFID**)-based solution that requires each truck to have a RFID tag. The tags are read throughout the marine terminal using strategically placed hardware. Data collected by the sensors is sent to the respective terminal operator's servers. A copy of this data for a subset of locations is sent from the terminal operators to the NWSA. An algorithm is applied per terminal layout/configuration to calculate truck volume, as well as three truck turn time components: queue time, in-terminal time, and total experience time. For definitions refer to the Glossary attached. These metrics are calculated in near real-time for public display on the NWSA's website, in addition to being used for historical reporting and future analysis. See Attachment A for a description of the NWSA's current Truck Experience Measurement solution.

The most notable challenge the NWSA faces with the current solution is the lack of central ownership for the end-to-end solution. This includes hardware, infrastructure, data sharing agreements, metric calculations, and public facing display. Multiple vendors and stakeholders are involved in the end-to-end solution, including relying on infrastructure owned and maintained by the terminal

operators. The NWSA is seeking a less complex solution that provides a streamlined and low-maintenance approach that fulfills the capabilities specified below.

Desired Solution Capabilities:

We expect to develop detailed solution requirements following the review of responses to this RFI and will be included in a possible RFP to be issued later. Below is a high-level list of representative capabilities that are desired in a Truck Experience Measurement solution. This is not intended to be a comprehensive list of all system requirements. Rather, it is meant to be a guide to the perceived needs of our internal and external stakeholders.

Overall Technical Support Capabilities

- Easy to install, maintain, and update end-to-end solution consistent at specified NWSA terminals that fulfills requirements. This currently consists of six international container terminals in Tacoma (Husky, WUT, and PCT) and Seattle (T5, T18, and T30). This may include other terminals or locations where truck experience needs to be measured in the future.
- Full-service singular support for all terminals to install, update, and maintain required infrastructure. Currently, infrastructure is owned and maintained by the respective marine terminal operator (MTO), and the NWSA is required to troubleshoot issues through separate parties, depending on the location of the issue. In the future, the NWSA is seeking a singular party to operate and support the end-to-end solution.
- The ideal solution would not require attachment of any devices to the trucks or installation of any software on mobile phones used by truck drivers.

Truck Experience Visibility Capabilities

- Provide visibility to how long the wait is for a truck to enter a terminal (“queue time”) and how long it takes for the terminal to process a truck (“turn time”)
- Provide visibility into the number of trucks that are waiting to enter a terminal, how many trucks are currently on the terminal, and how many trucks were processed in a given time frame (“truck volume”)
- Optionally, provide visibility to truck movements within other areas of the NWSA properties
- Optionally, provide visibility into the characteristics of the truck visiting the terminal. Characteristics may include, but are not limited to, license plate, trucking company, truck/engine model, and/or whether the transaction was a reefer transaction (“truck characteristics”)

Reporting and Database Capabilities

- Provide a reporting database of collected information, refreshed at least daily, to allow NWSA staff to complete data analysis using Microsoft

Power BI. Reporting data should include turn times, truck volume, and truck characteristics per terminal.

- Provide near real-time reporting solutions to show aggregated turn times and truck volume to external stakeholders, updated at least every 15 minutes. This information should be able to be embedded and/or linked to from the NWSA public website.
- Provide historical reporting solutions to show truck turn times, truck volume, and truck characteristics for individual trucks
- Ability for external users to query curated data to create reports

Configuration Capabilities

- Solution should be easily configurable for the following events:
 - Add/remove a new terminal
 - Changes to existing terminal layout
 - Changes to near real-time reporting requirements
 - Changes to start times depending on applied business rules
- Ability to define and preserve previous configurations. For example, any time a configuration change is made, previous configuration is saved for historical context and data analysis.

Response Requirements:

In responding, please provide the following:

- A summary of your business and your firm's qualifications
- A description of the solution you would provide, including:
 - The operational functions managed, and how the solution would satisfy the high-level capabilities outlined in the **Desired Solution Capabilities** section
 - The technical architecture/design and technology components utilized
 - Considerations or concerns for using your solution with the physical environment at the NWSA terminals (See Attachment B)
 - The degree to which the solution is standards based, flexible, and customizable
 - The capabilities of your solution that differentiate it from other similar solutions
- Pricing Model and associated costs for your solution:
 - Implementation/One Time Costs
 - Recurring/Annual Costs

Questions:

Firms are encouraged to be creative and candid in their responses. Should you have any questions, please submit them by 5:00 PM PDT **June 1, 2022**). Questions received after this date cannot be considered. Questions are to be submitted electronically to: procurement@portoftacoma.com (include ATTENTION Michelle Walker in subject line).

Response date:

Interested firms must provide their responses, by electronic means in Adobe PDF format, by 12:00 PM (noon) PDT, on **June 17, 2022**). Responses are to be submitted electronically to procurement@portoftacoma.com (include ATTENTION Michelle Walker in subject line).

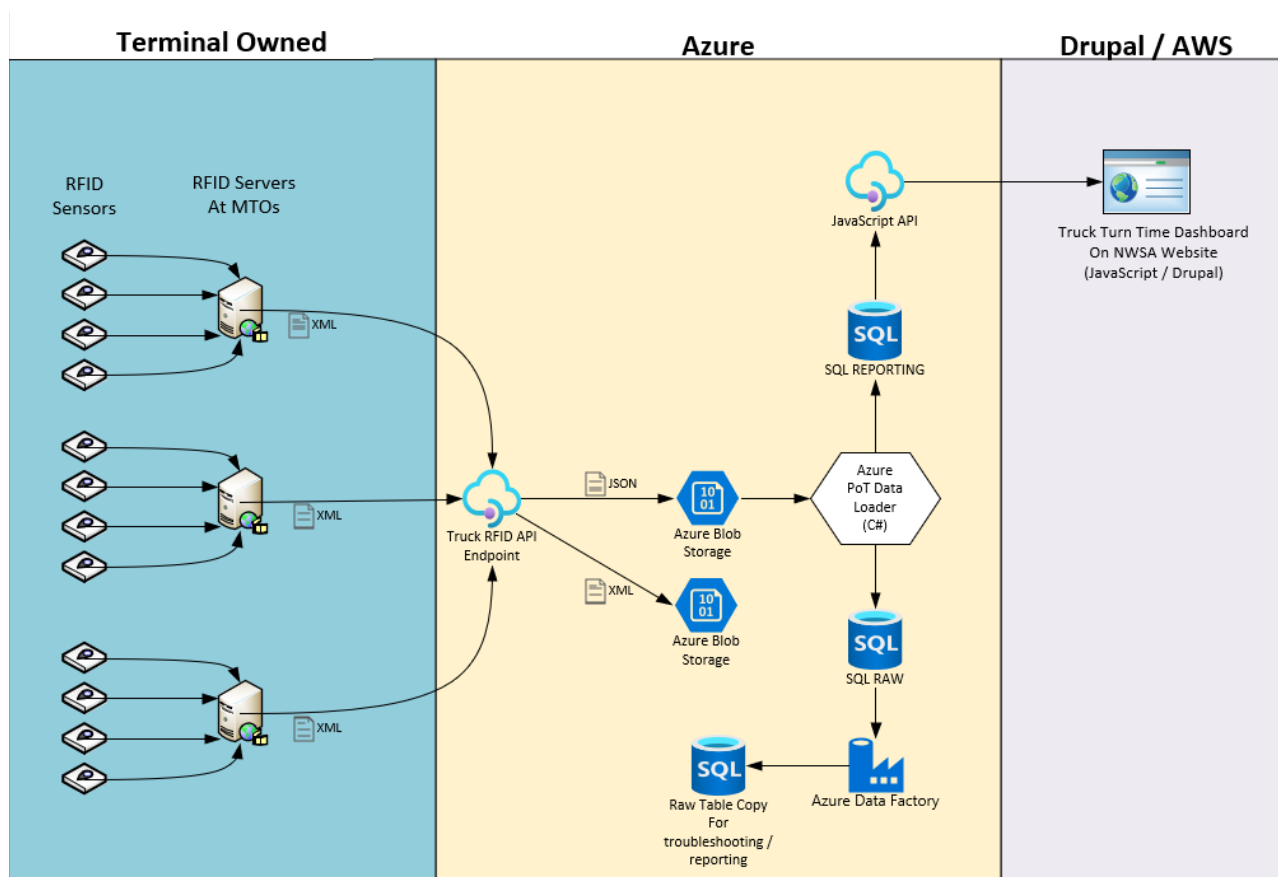
NOTE: ALL COST INFORMATION IS FOR BUDGETARY PURPOSES ONLY AND NO CONTRACT OR PURCHASE ORDER WILL BE ISSUED AS A RESULT OF THIS RFI. SHOULD ANY OF YOUR RESPONSE BE CONSIDERED A TRADE SECRET OR OTHERWISE NOT FOR PUBLIC DISEMINATION PLEASE ANNOTATE YOUR RESPONSE ACCORDINGLY.

ATTACHMENT A: NWSA Current Truck Experience Measurement Solution

The current solution used by the NWSA for measurement of truck experience at our six international container terminals in Seattle and Tacoma is RFID based.

The infrastructure for this solution is mostly owned and maintained by terminal operators (MTOs) that operate each terminal. Relevant truck movement event information is sent from the MTO RFID servers to the NWSA via an API. This information, along with additional information from NWSA-owned RFID infrastructure is aggregated into a data source that is used to provide truck queue, in-terminal, and/or total experience times for display on our public website (<https://www.nwseaportalliance.com/cargo-operations/cameras-truck-turn-times>).

High-Level Truck Experience Information Flow Diagram



ATTACHMENT B: NWSA Current Terminal Reference Maps

In this attachment see the following items at the respective links:

- Seattle Trucker's Guide and Harbor Map:
 - [Seattle Harbor Truckers Guide 03.31.22.pdf](#)
- Tacoma Trucker's Guide and Harbor Map:
 - [Tacoma Harbor Truckers Guide Aug 2021.pdf](#)
- Seattle and Tacoma Terminals Trucker Routes:
 - [Terminal Reference Maps | Northwest Seaport - Port of Tacoma \(nwseaportalliance.com\)](#)

ATTACHMENT C: Glossary of Terms (based on current solution)

- **Marine Terminal Operator (MTO):** Private companies that run port terminal operations
- **Truck volume:** the total number of trucks that completed an action in a specified timeframe at a specified terminal(s). For example, 30 trucks finished processing at Husky Terminal between 3:00p – 4:00p.
- **Truck turn time:** the total number of minutes it takes for a single truck to complete a transaction from start to finish
 - **Queue time:** the total number of minutes between staging lot/area entry and exit
 - **In-terminal time:** the total number of minutes between terminal entry and exit
 - **Total Experience time:** the total number of minutes between staging entry and terminal exit
- **RFID Tag:** Electronic tag mounted to trucks visiting NWSA international container terminals.