NIOP Agency ID Assignment and Coordination

Version 2.0

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Introduction

A vital component to achieving nationwide Electronic Toll Collection (ETC) interoperability is ensuring for compatibility of toll transponders as much as possible. One of the steps to meet this goal is the coordination of Agency ID (also known as Agency Code) assignment, which are identifiers assigned to entities (agencies and vendors), for the primary purpose of issuing transponders. All transponders issued are guaranteed to have a unique serial number (Transponder Serial Number or TSN) within each Agency ID because only one entity is responsible for overseeing issuance of transponders for each Agency ID. Assigning a unique Agency ID to each entity allows each entity to simultaneously issue transponders without having to coordinate every serial number. The unique combination of Agency ID and TSN are what uniquely define a transponder and, hence, a specific customer/vehicle.

With the TDM, SeGo, and 6C protocols identified for nationwide interoperability by US tolling regions, E-ZPass, Central (CUSIOP), Southeast, and Western (WRTO), a goal was identified to make Agency IDs the same (to the extent possible) across all protocols. This would ensure toll systems can route transactions to the transponder's issuing agency in a similar fashion to when they were under a single protocol environment regardless of the protocol used by transponders on toll facilities. This is especially advantageous with the rise of multi-protocol transponders when toll systems may not read the same protocol on an individual transponder as vehicles drive through multiple plazas on the same trips.

Therefore, the purpose of this document is to capture the coordination process started in 2017 for assigning Agency IDs between the tag issuers of the 6C, TDM, and SeGo protocols. Toll operators rely on Protocol User Groups (PUG) for issuance of Agency IDs; E-ZPass for TDM, 6C Coalition for 6C, and Texas/Florida in conjunction with TransCore for SeGo. These PUGs have established frameworks for overseeing protocol standards, equipment certification, and issuance of Agency IDs. This document only covers coordinating Agency ID assignment between protocols and is not intended to change how individual protocols are managed by their respective PUGs. PUGs have the ultimate decision on how Agency IDs are assigned, and transponders are programmed for their protocol.

Process for Agency ID Assignments

The process for assigning Agency IDs coordinated between the TDM, 6C, and SeGo PUGs is broken into four steps. These steps are request, evaluate, deliberate and response, as shown in Figure 1.
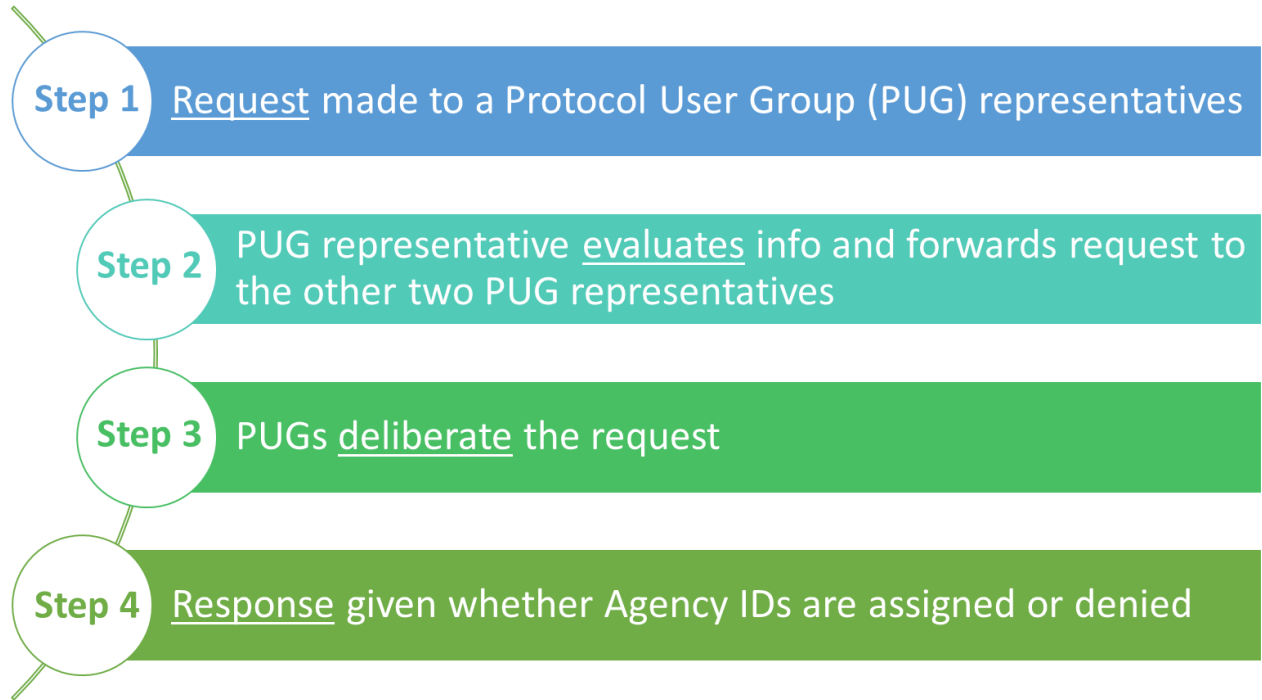
Step 1 Request made to a Protocol User Group (PUG) representatives

Step 2 PUG representative evaluates info and forwards request to the other two PUG representatives

Step 3 PUGs deliberate the request

Step 4 Response given whether Agency IDs are assigned or denied

Figure 1 Steps for processing Agency ID requests

Step 1. Request

Request for Agency IDs can from public toll operators (i.e. DOTs, toll authorities), private toll operators (i.e concessionaires, privately held toll roads), and 3rd Party Payment Service Providers (i.e. private fleet account management companies, toll integrators). The requestor may already have an existing Agency ID for one of the protocols or is looking to get a new one issued that is coordinated between the TDM, 6C, and SeGo protocols. Requests can be initiated to any of the PUGs and will be handled by the PUG's representative. Requestors may need to provide justification for an Agency ID, such as customer base size, support from toll operators, support by PUG members, or timeline for implementation. Each PUGs will have their own processes for handling Agency ID requests and is beyond the scope of this document or purview of this Agency ID coordination process.

Step 2. Evaluation

The basic evaluation steps are that the PUG representative is responsible for consulting the list of assigned Agency IDs for their protocol and on the Coordinated NIOP Master List. The PUG representative will take into consideration the following when assembling a proposal to address the requestor's needs:

- Does the requestor already have Agency IDs assigned to them?
- Does the requestor need Agency IDs for all protocols, two, or only one?
- Does the requestor operate multiple toll facilities in different tolling regions (connect with different NIOP hubs, operator in different states, takes advantage of local discount programs)?

- How many transponders are they planning on issuing? Is it more than 16.8 million transponders, since there is a current TDM and SeGo limitation on the number of Transponder Serial Numbers associated with an Agency ID.
- Public toll operators may be given higher priority for lower numbered Agency IDs given TDM's limitations on Agency ID combination of less than 128.
- Does the requestor intend to use an Agency ID for tolling purposes?

Within 4 weeks, the PUG representative then forwards the Agency ID request with a proposed Agency ID scheme for the other two PUGs to consider.

Step 3. Deliberation

PUG representatives will have 45 days to deliberate the forwarded request. PUG representatives may need to check with their PUG members regarding the appropriateness of the request with respect to their own protocol. PUG representatives may ask clarifications from the requestor. Possible Agency ID outcomes from the deliberations include:

- Issued a single common Agency IDs for all three protocols (i.e. WSDOT is assigned Agency ID 77)
- Issued multiple common Agency IDs for different tolling regions (i.e. an operator may have an Agency ID for a toll facility in Virginia and a separate Agency ID for a toll facility in Texas)
- Only issue a single protocol (i.e. an operator will only issue transponders in a particular protocol)

Step 4. Response

Once the PUG representatives have deliberated and agreed on a response, the PUG representative originally approached by the requestor will inform the requestor if Agency IDs have been assigned or if the request has been denied. Newly assigned Agency IDs are published on the Coordinated NIOP Master List within 2 weeks of acceptance by the agency. If a requestor does not agree with the response, requestor can appeal directly to individual PUGs for reconsideration. Requestor should be advised that issuance of Agency IDs only address technical programming of Agency IDs and does not guarantee tolling interoperability. Tolling interoperability is subject to agreements and approval by toll operators and their respective tolling regions.

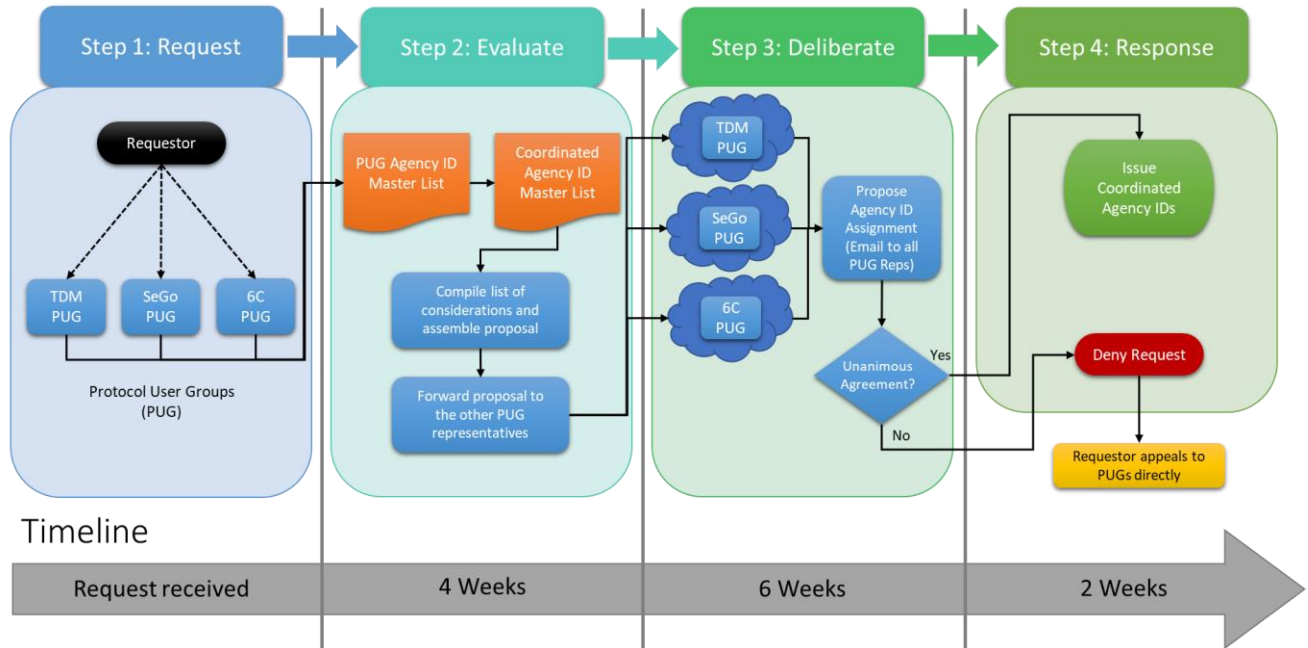A high-level process flow for these four steps is shown in Figure 2.

Figure 2 High level process flow for Agency ID assignment

Coordinated NIOP Master List

Each PUG maintains their separate list of assigned Agency IDs according to their own processes; therefore, an authoritative list of the Agency IDs for any given protocol is the sole responsibility of each PUG. With regards to Agency IDs coordinated for NIOP usage, a Coordinated NIOP Master List of Codes is currently available on the IBTTA website:

- Under the Interoperability Committee: https://www.ibtta.org/ibtta-interoperability-committee-iop
- Within Appendix C of the National Interoperability Interface Control Documentation (ICD): https://www.ibtta.org/sites/default/files/documents/Interoperability/NIOP2019/NIOP%20ICD%20Appendix%20C%20-%20RELEASED%2020210218.pdf

Appendix A: PUG Representatives

6C Protocol:
Tyler Patterson, WSDOT
pattert@wsdot.wa.gov, (206) 755-5879
Website: http://6c-toc.com/

TDM Protocol:
Michael Kolb, Gannett Fleming
mkolb@gfnet.com, (914) 489-0998
Website: https://e-zpassiag.com/

SeGo Protocol:
Michael Hurm, FDOT
Michael.Hurm@dot.state.fl.us, (407) 704-9539
Website: N/A

Appendix B: Frequently Asked Questions

1. What are Agency IDs and why are they important?

Agency IDs are identifiers, assigned to entities (agencies and vendors), for the primary purpose of issuing transponders. All transponders issued are guaranteed to have a unique serial number within each Agency ID because only one entity is permitted, currently, to issue transponder within the set. Assigning a unique Agency ID to each entity allows each entity to simultaneously issue transponders without coordinating every serial number.

2. What is the goal?

The goal is to ensure that all transponders are unique and that the Agency IDs are the same (to the extent possible) across all protocols.

3. What is the process for assignment?

Each protocol has its own application process. If an agency is applying for membership within the IAG (oversees the TDM protocol) or the 6C Coalition, the Agency ID assignment is incorporated into that process. If the agency is using the SeGo protocol, the Agency ID assignment process will need to be coordinated with TransCore. Once an application is received, Tyler Patterson (6C Coalition), Michael Kolb (IAG), and Michael Hurm (SeGo) work together to assign the codes.

4. Are we going to run out of Agency IDs?

At this time (January 2022), there are roughly 20 available codes within the TDM supported range. They are currently only able to support 128 Codes (0-127). The IAG is planning to expand this capacity. The 6C Coalition can support 4,096 Codes (0-4095). The SeGo capacity theoretically exceeds 65,000 codes, by combining the agency and region fields because we no longer need the region field.

The toll industry typically adds 2 or 3 agencies per year, but this has accelerated recently. There are two issues: the constraint on serial numbers and the emerging number of 3rd Party Vendors.

a. Serial Numbers

Currently, some installations are only able to support 16.8 million (16,777,215) transponder serial numbers (TSN). Since the entities issue unique transponders, they issue all of these TSNs and request another Agency ID when they run out. In October of 2018, a NIOP working group recommended that all installations increase their maximum TSNs accepted to 268 million (268,435,455) by January 1, 2023. At this time, it is expected that all IAG and 6C installations will comply and will be ready to read and process these tags.

b. Third Party Vendors

In recent years there has been a growing demand by third party vendors to enter the market. Currently, the small coordination group (Patterson, Kolb, and Hurm) distributes Agency IDs only within the IAG accepted range (0-127) as needed. Requests from airports and other entities are provided numbers outside this range.

5. Where is the master list stored?

The 6C Coalition maintains a list of 6C assignments on their website. Likewise, the IAG publishes the list of TDM assignments on its website. Michael Kolb maintains the NIOP master list – contained within Appendix C of the National Interoperability Interface Control documentation.

- This list is available on the IBTTA website in the following location: https://www.ibtta.org/ibtta-interoperability-committee-iop
- The specific NIOP list in Appendix C may be found here: https://www.ibtta.org/sites/default/files/documents/Interoperability/NIOP2019/NIOP%20ICD%20Appendix%20C%20-%20RELEASED%2020210218.pdf