

DOT Data Modernization – Position Points

The following document provides a point-by-point comparison of the issues dealing with the proposed DOT Data Modernization project for Origin and Destination information that must be reported to the Department of Transportation by air carriers.

The issues are presented in the order of Proposed Process, Current Process, and the A4A position as it relates to this new process proposal, followed by the author's comment on the A4A position. The A4A position as reflected herein may or may-not accurately reflect the true A4A goal. It is based on information obtained from various sources within A4A, the government, and airline representatives. It is further summarized for readability.

The issues are provided in the same order as in the video; with the addition of two points not mentioned in the video inserted at the end.

This summary paper has been prepared by Richard Eastman of The Eastman Group, Inc.

Comments and/or re-statement of positions by qualified individuals can be sent to reastman@eastmangroup.com. This document will be modified and expanded to reflect those comments as appropriate; with contributions attributed to the owner. A4A is actively encouraged to re-state their positions if not accurately described herein.

Viewers and contributors are encouraged to review the accompanying videos, *["Data Modernization Overview"](#)*

<< [http://www.eastmangroup.com/2 Data Modernization Overview.html](http://www.eastmangroup.com/2>Data%20Modernization%20Overview.html) >> and *["How the Prototype Works"](#)*

<< [http://www.eastmangroup.com/2 Prototype Process Highlights.html](http://www.eastmangroup.com/2/Prototype%20Process%20Highlights.html) >>; particularly before submitting contributions or comments.

The purpose of this document is to provide an open and honest discussion of the issues.

#1 ... O&D Costs

DOT Proposed Process

Proposed DOT solution eliminates almost all of the current airline costs. Since 100% of the data is collected at the time of operations, all of the statistical modeling to reconstruct travel patterns is eliminated as well. The proposed solution requires no storage or subsequent human intervention for compiling or delivery of reports to the government

DOT Current Process

Airlines currently fund staff time, computer space, computer CPU time, and software maintenance and/or services fees to implement data reconciliation and reconstruct 1-in-10 sampling for reporting purposes. These costs vary by airline. The costs are somewhat disproportionate to airline size since larger carriers have more extensive reporting requirements encompassing consolidation of data from other carriers.

A4A Position

A4A advocates at 30% increased sampling size; but continued use of the current process.

Comment: In addition to current costs, airlines would fund development of software and systems to implement a new proposed 30% sampling system. 30% sampling will be more costly to implement than 100% reporting because of the additional staff and computer programming necessary to reconcile coupons held by other carriers that must be included in the reports to the government. In addition, many carriers have intensive manual processes to prepare the data for the reporting period. Increasing the sample size will increase these reporting costs accordingly.

#2 ...T100 Costs

DOT Proposed Process

Proposed DOT solution will eliminate most of the current airline costs. In some cases, T100 reporting costs would go away. Unknown at present are cost savings related to issues of T100 cargo and mail reporting. These aspects have not been tested.

DOT Current Process

Airlines fund data collection, storage, and data transmission costs; and related staff costs of the T100 reports. The data must be transferred from existing airline operational data resources and translated into specific formats for reporting to the government.

A4A Position

The industry trade groups have not commented on how T100 data would meld into their proposed alternative.

Comment: Still, A4A seems to seek to continue the current process, and thus, it is likely that airlines would continue to incur the costs of data collection, storage, conversion to report forms, and data transmission; and related staff costs current incurred in providing T100 data.

#3 ... Sharing of Data

DOT Proposed Process

The need to share data with other carriers goes away.

DOT Current Process

The current system is designed for compatibility with printed coupon "lift-based" accounting systems. A "lift-based" accounting system assumes that the operating carrier has the best information. No carrier uses a "lift-based" accounting system anymore. Thus, the reporting carrier must obtain pertinent information from the carrier that sold the ticket. As a result, airlines must share data with other carriers to provide their respective reports to the government. In addition, under the current system, major carriers generally report for regional and smaller carriers. This often forces same-market carriers to share competitive information with each other.

A4A Position

A4A seems to only seek an expansion of the current process to include more reporting carriers.

Comment: Some data collection costs shift from major carriers to regional carriers under the concept that there would be more reporting carriers. However, if the sampling base were expanded to 30% of travelers, the costs of reconciling the sample base between carriers would grow disproportionately as airlines revised their existing systems to evolve the new reporting model. In addition, many small carriers have never operated with the obsolete accounting systems used by most reporting carriers. To mimic the old system accounting rules will add costs to small and low-cost carriers; and such reporting would be distorted by the adoption of the "mimic-the-old-system" rules required to make the newer accounting solutions work.

#4 ... Control of Data

DOT Proposed Process

Airlines have the option to remove data not required by law or regulation from transmitted messages.

DOT Current Process

All relevant data on coupon is submitted carrier-to-carrier; and then passed to government for reconciliation processes due to the sampling nature of the process.

A4A Position

Unknown until A4A proposal is submitted.

Comment: Assuming the current sampling process were continued, any sampling model of any sort requires extensive redundant data tracking and submissions of data between airlines to ensure reconciliation. Airlines have no control over the data submitted once it leaves the controls of their internal systems.

#5 ... Accurate Data

DOT Proposed Process

Data collected under the proposed DOT solution will include 100% of all qualifying flights

DOT Current Process

10% sampling requires reconstruction of travel by reporting carrier; which is not always available, let alone, accurate. Individual airline business rules result in variances in the way the data is collected and reported. Further, sampling requires statistical models to reconstruct travel patterns. One error by an airline or a statistical reconstruction of assumed travel patterns compounds itself 10X times in final data. Sampling also precludes reporting of true Origin and Destination of all travelers due to limitations and inconsistent PNR (Passenger Name Record) usage. And there is no relationship at all for travelers using separate carriers in combined one-way travel scenarios.

A4A Position

30% sampling provides adequate statistical validity.

Comment: Sampling still requires reconstruction of passenger travel by reporting carrier as noted above. The larger sample will reduce sampling errors but compound individual airline business rule errors. 30% sampling increases staff and computer time and related costs two-fold. Further, any sampling model precludes the accurate reporting true Origin and Destination of all travelers due to PNR constraints also noted. Correcting PNR sharing to ensure accurate tracking of all O&D travel becomes prohibitively expensive in a sampling structure. 100% data capture is much less expensive in today's digital world.

#6 ... Personally Identifying Information

DOT Proposed Process

Personally Identifying Information (PII) is removed from all data sent to the new proposed DOT solution. PII is replaced by an encrypted digital token that cannot be de-encrypted. Each token then represents each traveler. The encryption process enables the software to track individual travelers throughout all related travel modes without disclosing any actual traveler identifying information or other competitive data.

DOT Current Process

The sharing of Personally Identifying Information (PII) is inherent in the current system when the ticketing carrier must share the record of the ticket sale with the reporting carriers, a part of the reconciliation process. While carriers believe that this systems is secure, it is secure only to the extent that one carrier can "trust" another carrier.

A4A Position

A4A seeks to use the current process.

Comment: Under the 30% sampling process proposed by the A4A, the sharing of PII would continue to be necessary during the reconciliation processes. And, under this scenario, more reconciling carriers would have access to even more competitive PII than in the 10% sampling model currently used due to the increased volume of tickets being processed.

#7 ... Better Analytics

DOT Proposed Process

O&D data is used by airlines and analysts for aircraft purchase decisions, financial investment projections, market development considerations, and other industry related analytical research. Under the proposed DOT system, the data would be more accurate and timelier than is currently available; improving both the accuracy and relevance of analytics made using this core industry resource.

DOT Current Process

O&D data is currently reported quarterly. Due to the sampling nature of the reporting process, data is often not collected in the quarter in which the travel took place. As a result, final reports used for analysis can be six to nine months out-of-date; sometimes a full year in arrears. Planners must use these old data constructs to guestimate current changing markets. The tardy data problem is compounded by subsequent statistical modeling errors based on 1960's regulated-era travel patterns; making the resulting reports virtually irrelevant for contemporary business management needs.

A4A Position

A4A seems to have proposed 30% sampling and monthly reporting in lieu of quarterly reporting as its solution to this problem.

Comment: Monthly reporting should be a considerable improvement. However, the compounded costs of the manually intensive data gathering would skyrocket ... to be further compounded by the manual intervention of auditing ongoing sample process. Under any sampling structure, the cost to obtain more timely reporting compounds logarithmically as a function of the reporting period. In addition, the proposed monthly reporting will also precludes analytical assessment of week-day related events; Easter Holiday travel, hurricane/volcano disruptions, etc. – information important to both airlines and other stakeholders.

#8 ... Oversight

DOT Proposed Process

Under the proposed DOT solution, an oversight team of airline and other stakeholders would be formed to ensure compliance with laws, regulations, and rules that pertain to the airline reporting requirements; and to protect against the release of data deemed competitive by some airlines.

DOT Current Process

Under the present system, reporting airlines must collect data from other carriers. There is no control over what the reporting carriers do with the data they see from other carriers during this collection process. Data submitted to the government is in 1960's formats including information that can be used for competitive advantage by carriers with access to the data.

A4A Position

Unknown.

Comment: Until the A4A proposal is made, it is not possible to know what sort of oversight might be included in their solution. However, if expanded sampling and the current reporting carrier

model is maintained, then it will be necessary to share PII and other competitive information with other carriers to reconstruct or reconcile the samples collected for specific travelers.

#9 ... Funding

DOT Proposed Process

Funding is linked to the entity that owns the initial database process; i.e. the capture, processing, and automated reconciliation of passenger travel with fare related data. Initially, the intent was that the DOT would fund the process. Apparently, A4A has expressed concerns that such data is now technically "government data". So the industry trade group seems to prefer that a carrier consortium fund and own the data-reconciliation processing solution. The DOT does not object to this scenario. However, the only data allowed into the data-reconciliation database is scrubbed of all personally identifying information and related competitive information. The only data received in the data base is that already reported; that required by law, rule or regulation. Therefore, it remains unclear why the government should not fund the process. Still, if airlines elect to fund the data collection process, it still will be necessary for the government to collect sufficient information to reflect the needs of all industry stakeholders. Thus, even under a scenario where an industry consortium funds the data-reconciliation process, the cost-benefit of DOT proposed collection process remains much greater than any sampling models suggested A4A.

DOT Current Process

The current process dates back to a period preceding modern digital technology; when reporting was a function of manually counting paper coupons. While much of the counting process has been automated over the years, the business model and process remains essentially the same. This model still requires extensive human intervention by both reporting and responding carriers. The business model is no longer economically viable in a knowledge-based era of digital information processing and management. Nor is it necessary.

A4A Position

The industry trade group would propose to expand the current outdated sampling business model from 10% sample to a 30% sample; and report monthly instead of quarterly.

Comment: As noted above, this compounds the costs to the airlines by multiple factors. Further, it compounds the costs to the government; since new statistical models must be constructed and implemented.

Additional benefits noted in the video

#10 ... "On Time" Reporting

DOT Proposed Process

While not a part of the original O&D/T100 proposal, the new proposed DOT O&D data collection process inherently allows the capture of airline flight "on time" performance. This will eliminate the need for separate "on-time" reporting; should the airlines agree to this.

DOT Current Process

Currently, airlines may opt-in to provide on-time reporting. Each airline must then compile and submit this data to the government in the government-mandated format. These are costs which could be eliminated using the proposed DOT solution; should the airlines opt to take this path.

A4A Position

It is unknown if the A4A is even aware of this additional cost saving opportunity. No one at A4A has even reviewed the prototype.

#11 ... EAS Reporting

DOT Proposed Process

While also not a part of the original O&D/T100 proposal, the new proposed DOT solution will inherently capture EAS (Essential Air Services) information. To the extent that the relevant airlines agree, the current burdensome EAS reporting costs can be eliminated.

DOT Current Process

EAS (Essential Air Services) reports are captured, reconstructed, and reported on a monthly basis. These reports are provided mostly by small carriers where the time, labor, and reporting of this data is a measurable cost.

A4A Position

It is also unknown if the A4A is even aware of this additional cost saving opportunity; or even consider it relevant; since few members of A4A are challenged with EAS reporting.

Additional benefits/issues NOT noted in the video

#13 ... Timely Data

DOT Proposed Process

The proposed DOT solution will collect data as a function of daily operations, eliminating the need for airlines to store and reconcile data for reporting

DOT Current Process

Airlines currently must collect and store all related travel data pending the quarterly reporting period. Reporting carriers must then reconcile that data, including the need to obtain data from other carriers flown on the same coupon number. The staff and computer time to reconstruct travel of the 10% of used coupons far exceeds the cost of 100% data capture at the time of use as proposed in the new solution.

A4A Position

The costs incurred in the current process more than doubles under the proposed 30% sampling model proposed by the industry trade group as a function of the expanded sampling. These expanded operational costs do NOT include the amortization costs to airlines for developing the new software to collect and report the sampling results; or managing this process.

#14 ... Single Point of Delivery

DOT Proposed Process

Under the proposed DOT solution, all reporting would be automated using operational digital messages currently in use by airlines. Copies of these messages, with data not required by law omitted at the airline's option, would be sent to a single data reporting point where the system would parse and reconstruct the data into a working relational knowledge base.

DOT Current Process

Under the current system, data must be stored by each airline in its revenue accounting system until the quarterly reporting period comes up. At that point, all "zero" coupons must be retrieved and their itineraries validated. Reporting carriers must obtain data from issuing carriers for when travel spans multiple carriers, since the issuing carrier has all of the "amount paid" information. The data must then be reconciled. Carriers reporting from regionals and small carriers must validate lift with those carriers. Zero coupons that cannot be reconciled due to timing or other problems must be held over to the next reporting period. Different airline business rules play a role in the collection and reconciliation process, further distorting the data.

A4A Position

The alternative solution proposed by the industry trade group seems to suggest a process similar to the one currently in use. Until the complete plans for this alternative solution are known, it is not possible to know how data reconciliation would take place. However, given that the alternative solution continues to advocate sampling, significant human intervention costs can be assumed, since sampling precludes inherent automated reconciliation of data across differing airline business processes.

#15 ... Other A4A Issues

DOT Proposed Process

A4A claims that the proposed DOT solution will not work. The DOT has built a prototype of the proposed solution using industry standard messages to validate that the proposed solution will work. There is concern by the industry trade group that the new process will not get the sales data from a significant number of foreign carriers. The reality is that such information is not currently available under the current system; nor would it be available under the industry trade group proposed alternative solution. Participation by foreign carriers is a function of bilateral agreements; not the data-reporting model used to collect the data. The proposed process seeks only to reduce the costs of collecting information that is currently reported for both airlines and the government; while improving the accuracy and reporting timeliness of the data collected.

DOT Current Process

A4A concurs that the current process is outdated, inaccurate, needs timely reporting, and is otherwise unreliable and unsustainable.

A4A Position

It would seem that A4A proposes to expand the current outdated sampling business model to 30% and would consider monthly reporting.

Comment: This would leave in place the inaccurate statistical modeling used to reconstruct travel patterns and airline business-rules skewed fare reporting models. It would greatly expand the individual and collective airline costs to deliver the data to the government. Further, airlines

would incur the expense of building the new reporting solution. The industry solution does not address the need to capture true Origin and Destination of travelers using one-way combined fares on low cost and/or legacy carriers. At this point, the industry proposed solution does not appear to address the issues of other O&D user/stakeholders needs; including accurate collection of PFCs (Passenger Facility Charge) and related tax distributions and/or information needed to better understand special event/crisis management problems.

A4A (Airline for America) seems to have taken a position that neither reflects the reality of the prototype nor accurately reflects to airlines what the proposed platform can do for airlines. Airline CEO's need to focus on this issue or it is very likely to cost the airlines ... the traveling public and the industry in general ... significant and unwarranted costs.

#15 ... Other A4A Issues

DOT Proposed Process

A major constraint and driver in the development of the new process were airline comments to the 2005 NPRM (Notice of Proposed Rulemaking); which universally expressed concern over the proposed model for collecting data. The original NPRM model was an expansion of the existing program; and essentially what A4A now advocates. The development team demonstrated to the DOT why the NPRM proposed model could not work. What the DOT originally proposed ... and what will not work ... is virtually the same model now proposed by A4A.

In fact, the new proposed business process addresses virtually all of the data collection process concerns expressed in the 2005 NPRM airline comments. In addition to significant cost reduction, it eliminates the risk issues such as the need for airlines to share data with one another, provides airlines with greater control over their own data, expands the airline reporting base, and improves both the accuracy and timeliness of the data.

DOT Current Process

The current process remains in effect, more than 15 years since DOT itself recognized the need to change the data collection process; and more than 7 years since the NPRM designed to fix it was issued. The current process does not work. The data provided is so unreliable that the government itself cannot use the data; and airline analysts simply twist the data to fit whatever message they want it to say.

A4A Position

Yet, even as this proposal is being discussed with A4A, A4A has decided that cost is no longer the issue. During the months that the DOT has been attempting to get airlines to participate in testing and validating the new process, A4A has gone from an "it costs too much" argument to an argument that says the "problem is too much risk." Yet what "risk" remains unclear. A4A position seems to think that only it knows what the risks are.

Comment: The A4A's newest position is bogus! A4A is confusing its responsibilities for protecting the airline industry from "mission-creep" regulatory expansion by the government with its responsibility to minimize the footprint and costs of government regulation.

For starters, the proposed new system process was designed by an experienced airline industry technology innovation team – a team familiar with airline management and industry “risk” issues. The process was NOT designed by the government or government-contractors.

The system uses the industry’s own secure systems to minimize the risk of data exposure – not just to the government, but even to other airlines. The system uses an innovative secure encryption processes to eliminate exposure of traveler PII or other airline competitive information. The system acquires no information other than that required by law, rule, or regulation. And to the extent that any given airline desires, an airline can exclusively inhibit the delivery of its data without impacting any other carrier. The system gives carriers the independence and control that A4A claims to seek on their behalf. But because it “wasn’t their idea”, A4A won’t even allow airlines to invest the time to prove or disprove the system.