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Thank you for participating,

[signature]

Gregory Hamilton
President
Aviation Week Network

Acknowledged, agreed, and submitted by

_____ *Tuvayas Duckworth* _____   __**June 27 2024** __
Nominee's Signature   Date

Nominee's Name (please print): **Tuvayas Duckworth**_____

Title (please print): **Sr Product Owner – Technical Publications** _____

Company (please print): **Delta Air Lines TechOps**_____

NOMINATION FORM

Name of Program: **Electronic Task Card System (ETS)** _____

Name of Program Leader: **Tuvayas Duckworth**_____

Phone Number: **404.245.8971** _____

Email: **Tuvayas.duckworth@delta.com**_____

Postal Address: **1775 M H Jackson Service Rd, Atlanta, GA 30354** _____

_____

☐ Customer Approved

- o Date: _____

- o Customer Contact (name/title/organization/phone): _____

☐ Supplier Approved (if named in this nomination form)

- o Date: _____

- o Supplier Contact (name/title/organization/phone): _____

**PLEASE REFER TO PROGRAM EXCELLENCE DIRECTIONS
AS YOU COMPLETE THIS FORM.**

SECTION 1: EXECUTIVE SUMMARY
Make the Case for Excellence
Value: 10 points
Use 12 pt. Times Roman typeface.

What is the vision for this program/project? What unique characteristics and properties qualify this program for consideration?

[LIMIT YOUR NARRATIVE TO THIS PAGE.]

In 2018 Delta TechOps set out to gain greater operational control over its paper-based job card processes. Job cards are the mechanism by which mechanics are provided work instructions, also known as task instructions or work cards. The cards are used to record description of the maintenance performed including findings, resolution, and signature compliance. The work card process spans all major areas of the TechOps organization: Engineering, where the cards are initially authored; Planning, where the cards are scheduled for work; Maintenance, where the cards are executed, and Records, where the cards are retained after completion.

At the close of the 2010s, there were several operational factors steering Delta's need for adoption of a new digital job card system. The primary driver was the need for greater compliance adherence. Additionally, the existing paper-based process did not allow for efficiencies in progress tracking, workflow hand-offs, simultaneous work completion by multiple mechanics, and analytics. With pressure to respond to growing operational demand, Delta TechOps was ripe for a business program that would spearhead the implementation of a new digital task card system. It is with the aforementioned information and Delta's position as an operator in industry, the Delta TechOps' team submits this nomination to the *Special Projects* category of Aviation Week's 2024 Program Excellence Award.

DIRECTIONS

- **Do not exceed 10 pages in responding to the following four descriptions**.
  - o Allocate these 10 pages as you deem appropriate, but it is important that you respond to all four sections.

- DO NOT REMOVE THE GUIDANCE PROVIDED FOR EACH SECTION.

- Use 12 pt. Times Roman typeface throughout.

- Include graphics and photos if appropriate; do not change margins.

SECTION 2: VALUE CREATION
Value: 15 points

Please respond to the following prompt:

➢ **Clearly define the value of this program/project for the corporation; quantify appropriately**
➢ **Clearly define the value of this program/project to your customer**
➢ **Clearly define the value of this program/project to members of your team; quantify if possible**
➢ **Clearly define the contribution of this program/project to the greater good (society, security, etc.)**

Delta Air Lines operates a diverse fleet of 10 aircraft types and 4 engine types spanning 6 primary OEMs. At the time of program launch in 2021, the diversity in airframe and engine types presented Delta with a unique decision of either acquiring and integrating multiple task card systems from each OEM or building an in-house OEM-agnostic solution. The eventual decision to build the solution internally led to commencement of the new program, the Electronic Task Card System (ETS). ETS is currently in its 3rd year of implementation and used regularly by Line (airport-based) and Cabin Maintenance. The application is soon to be rolled out to the final maintenance department, Base (hangar-based) Maintenance. Once fully implemented, the system will be used by an estimated 7000+ users worldwide.

In the old paper-based environment, role-based controls were manual and retroactively audited. With several hundred daily maintenance visits generating an estimated 50+ pages of work cards, identifying and correcting mishaps during after-the-fact physical paper audits was increasingly unsustainable with downward trending success rates. These issues coupled with inefficiencies tied to tracking and scanning completed paper-based work cards to comply with record retention policies helped pave the way for the business case.

For example, mechanics unqualified to complete certain tasks could improperly take compliance for completion of tasks. Paper was also susceptible to additional human factors negatively impacting compliance adherence: (1) personnel roles inadvertently signing for the incorrect role, such as a Mechanic signing for an Inspector, (2) work instructions left incomplete (3) lack of adequate descriptions of findings and resolutions (4) lost and damaged paperwork, (5) inability to read physical handwriting, (6) lack of status and progress visibility while the visit was actively in-work, and (7) ability to track compliance with record retention policies. Each occurrence of these issues routinely resulted in costly rework, regulatory audit findings, and disruptive follow-ups to investigate whether work had been

completed. These discrepancies carried millions of dollars of added annual operational costs. Implementation of the ETS program addressed each of the above issues, significantly derisking the admin burden on the frontline and back office with the introduction of systematic compliance validation controls. Moreover, the program's proven effectiveness has resulted in millions in operational cost savings. Most proudly, the program further directly contributes to our organization's primary mission – safety! Year after year, Delta Air Lines safely flies the general public to and from their most important origins and destinations with one of the world's most impressive commercial aviation safety records. Compliant-first programs such as the Electronic Task Card program enables TechOps to achieve its paramount objective – providing our customers with a world-class safe travel experience.

Value: 35 points
Use 12 pt. Times Roman typeface

Please respond to the following prompts:

➢ *15 points:* Describe the innovative tools and systems used by your team, how they contributed to performance and why

➢ *10 points:* Define the unique practices and process you used to develop, lead and manage people?

➢ *10 points:* How did you leverage skills and technologies of your suppliers?

Delta's corporate IT organization was also in the midst of a transformation journey adopting the Agile methodology as a means of software delivery. The development of the ETS solution presented the perfect timing for IT and the Business to put the new transformative 'ways of working' into practice. A hybrid team of business and IT SMEs was assembled. Each participant assumed new *Agile* roles. During the initial series of workshops, front-line aircraft mechanic technicians (AMTs)—the eventual end-users of the system, were brought in to define the problem statement and brainstorm desired solutions. Solution discussions included consideration of integration points into their existing tools and contributed to initial wireframe development. The team was eager to embrace fail-fast concepts with quick delivery of initial releases and iterative adjustments as the product matured. More proudly, Delta was thrilled to include the advisement of the FAA and other operators across the industry on all aspects of the development for broader industry-reaching perspectives. This persistent and inclusive feedback loop comprised of internal and external stakeholders help to ward off the potential to miss significant requirements that would have resulted in addressing late, costly compliance and functional gaps. A rapidly growing enterprise-wide Application Programing Interface (API) library was also newly available to the IT teams and heavily leveraged to quickly stand up the solution. An example of this was the speed at which the team was able to incorporate quals validations – tapping into corporate HR systems via the Learning Management System (LMS) APIs.

A gradual change management process helped ease the business into the new era of task card accomplishment with extraordinary success. Excitedly, for the first time in TechOps' history, maintenance visits are now routinely completed entirely on mobile devices – no longer requiring mechanics to step away from the aircraft to workstations or physically carry cumbersome paperwork. A phased rollout ensured effective business continuity, allowing the TechOps business to derisk implementation. This approach has led to 2 of 3 major maintenance divisions successfully fully adopting the new program. The 3rd and final maintenance division is due to adopt the new program on schedule in 3rd Quarter 2024.

(VOLATILITY, UNCERTAINTY, COMPLEXITY, AMBIGUITY, or VUCA)
Value: 25 points
Use 12 pt. Times Roman typeface

Please respond to the following prompts:

➢ *10 points:* Describe UNIQUE areas of VUCA faced by your program and why. (Please avoid the issues surrounding Covid-19 pandemic, which was faced by all programs.)

Deriving clarity in existing compliance challenges and opportunities early in the business case's development has proven integral to the program's success. In the old paper-based environment, role-based controls were manual and retroactively audited. With several hundred daily maintenance visits generating an estimated 50+ pages of work cards, identifying and correcting mishaps during after-the-fact physical paper audits was increasingly unsustainable with downward trending success rates. These issues coupled with inefficiencies tied to tracking and scanning completed paper-based work cards to comply with record retention policies helped pave the way for the business case.

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➢ *15 points:* Explain how your team responded to these challenges. What changes did you make, what were the results?

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Value: 15 points
Use 12 pt. Times Roman typeface

Please respond to the following prompts, where predictive metrics indicate items that provide a view of how yestrday's actions and today's actions will affect the future timeline, cost or other requirement.

Provide charts/graphs that illustrate performance to these metrics:

➢ **What are your predictive metrics?**

➢ **How did you perform against these metrics?**

➢ **How do your predictive metrics drive action toward program excellence? Please provide examples.**

Compliance

Two primary predictive metric categories were established as part of the Electronic Task Card program, (1) Compliance and (2) Operational Efficiencies/Productivity.

Compliance

Measure	Result Change	New Systematic Control
Insufficient qualifications	**100% Compliance**	**Users quals are validated against HR systems at time of accomplishment**
Incomplete (unsigned) Work Instructions	**10% Compliance**	**Users must fully acknowledge all work instructions to fully comply with visit**
Retention Record Adherence	**100% Compliance**	**All completed visits are auto stored in electronic repository upon completion of visit**
Insufficient discrepancy and corrective action documentation	**65% Improvement**	**Standard responses are built into work instructions requiring specific responses within range (radio button selections, etc.)**
Legibility	**100% Improvement**	**All responses are digital, significantly improving 'dirty fingerprint' illegibility**
Completion Status Visibility	**100% Improvement**	**Real-time status is now visible**

Operational Efficiencies/Productivity
Although productivity measures were not baselined prior to program initiation, several notable efficiency gains were indirectly realized through implementation of ETS. Notably, daily labor hours spent by hundreds of Lead Mechanics physically printing physical work card pages prior to shift were eliminated. Time-intensive management of paper records during and after visits (shipping, scanning, etc.), and costs of storage of paper records were also eliminated from the operation.