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Individuals **outside your company**, including the companies listed above and other third parties, potentially including your competitors and others in your industry, may receive and/or review award submissions. All information submitted should address the program's management, leadership, and processes in a manner that you are comfortable sharing with third parties freely and without restriction, and may not include any classified or proprietary information or materials. Do not include any materials marked Confidential or Proprietary or bearing any similar legend. All responses and other submissions, whether in whole or in part ("Submissions"), shall be deemed not to be confidential, proprietary, and/or nonpublic information of any sort for any purpose.

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Thank you for participating,

Gregory Hamilton
President
Aviation Week Network

Acknowledged, agreed, and submitted by

Patrick J Tucker _____ 31 May 2022

Nominee's Signature Date

Nominee's Name (please print): Patrick "Jason" Tucker

Title (please print): Program Manager

Company (please print): Elbit Systems of America

NOMINATION FORM

Name of Program: T-38 Head Up Display (HUD) Up Front Control Panel (UFCP) Redesign Program

Name of Program Leader: Patrick "Jason" Tucker

Phone Number: 256-480-2247

Email: patrcick.tucker@elbitsystems-us.com

Postal Address: 108 Allen Street, Talladega, AL 35160

☒ Customer Approved: **APPROVED**

- Date: 31 May 2022
- Customer Contact (name/title/organization/phone): Grant Ellis, Major, T-38 Program Manager, T-38 Program Manager, 801-777-6646

☒ Supplier Approved (if named in this nomination form)

- Date: 31 May 2022
- Supplier Contact (name/title/organization/phone): Stephanie LaVallee, T-38 Deputy Program Manager, Boeing Global Services, 314-810-6228

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

EXECUTIVE SUMMARY: Make the Case for Excellence *(Value: 10 pts)*

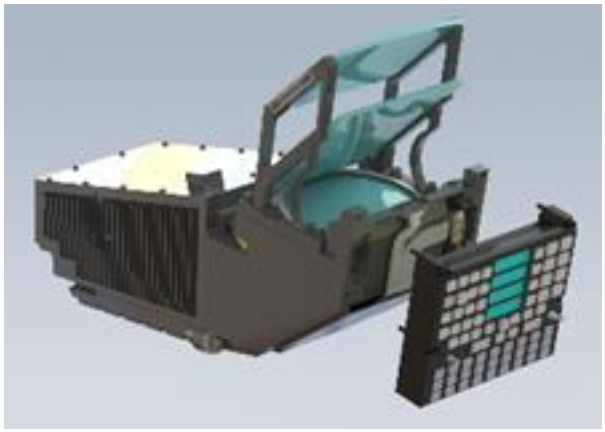
What is the vision for this program/project? What unique characteristics and properties qualify this program for consideration?

(12 pt. Times New Roman) LIMIT YOUR NARRATIVE TO THIS PAGE.

The U.S. Air Force approached Boeing to address the sustainment and obsolescence mitigation of the T-38C Head Up Display (HUD) and Up-Front Control Panel (UFCP). The T-38C training aircraft prepares U.S. Air Force student pilots, to transition to the more complex combat aircraft like the F-15 Eagle, F-16 Falcon, A-10 Warthog and F-22 Raptor.

Boeing, who has the prime U.S. Air Force contract for the T-38 Avionics Component Integration (AvCI) Program, teamed with Elbit America- Talladega Operations to provide an update to the legacy system. Our Vision was to enhance the legacy electronics to increase sustainability, without requiring a redesign of the current chassis, while eliminating any impact to the Optical Elements and Up-Front Control Panel.

The program is a collaborative effort between multiple Elbit divisions, both CONUS and abroad, in support of Boeing's T-38 AvCI Program. Production efforts for 472 HUD kits (1 HUD and 2 UFCPs) began in late 2019, and we have delivered 462 kits through March 2022



We have entered this program in the Supplier System Sustainment category because of its challenging international supplier base. The production phase requires focused oversight and coordination to assure timely delivery to the customer. The team has demonstrated agility, technical proficiency, and tenacity while coordinating scheduling with production, engineering support, and ever-changing logistics under the COVID-19 pandemic. The team was driven to succeed, knowing this program is key to future Air Force pilots being able to train with the same cutting-edge technology in the cockpits of their airplanes.

We have achieved program excellence through focus on four major areas:

1. Embracing the Integrated Product Team concept to strengthen the team and awareness of the program process, milestone accomplishments, roadblocks, and issues.
2. Sharing quick and honest feedback with the Boeing and communicating their position to every member of the team.
3. Regularly meeting with suppliers to share understanding and manage use of components, timing of delivery, development issues, progress of production, and costs.
4. Allocating resources to the appropriate phase to ensure on-time delivery and no wasted costs.

The T-38 HUD and UFCP is a cost-effective, value-added solution that supports upgrade and longer life to the legacy airframe. Boeing and the USAF will continue to see the cost advantages and sustainability of its equipment many years to come.

Do not exceed 10 pages in responding to the following four descriptions; 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.

VALUE CREATION *(*Value: 15 pts*)*

Please respond to the following prompt:

- Clearly define the value of this program/project for the corporation

The team implemented processes and systems to assure all team members were working in the right place, on the right thing, at the right time. The team was able to overcome substantial schedule risk, due to the negative impact of the COVID outbreak, by allocating personnel from other programs in combination with implementing flexible shift changes. As there were various phases in the production cycle, it was critical that resources were allocated to the appropriate phase to ensure on-time delivery and no wasted costs.

- Clearly define the value of this program/project to your customer

The T-38 HUD/ UFCP upgrade provided a low-cost, effective, obsolescence mitigation solution to both Boeing and the Air Force trainer fleet. By updating the electronics to meet the modern needs of the U.S. Air Force, while reusing the legacy optics and chassis, we significantly reduced the cost, which facilitated the program award to Boeing. Utilizing as much of the current parts configuration, ensured the updated HUD would fit within the cockpit envelope, mitigating a potential risk that ESA dealt with on another HUD redesign program. It also helped with the qualification process in that ESA/ELOP, could focus on qualifying only the new electronics, while not effecting the currently qualified and field proven optics.

Our approach leveraged new, state-of-the-art commercial off-the-shelf (COTS) components ridding the unit of obsolescence. At the same time, greatly reduced power consumption, aids in increased mean time between failures (MTBF), and drives down heat-related failures, saving the customer Operational and Maintainability costs.

- Clearly define the value of this program/project to members of your team

The team never lost site of the end goal and company vision – to protect and save lives. With each step in the process, each team member understood the criticality of their role in developing the end product. The sustainment business has much working history with the U.S. Air Force, which allowed quick and honest feedback on progress and issues as they arose. We passed this communication to every member of the team so everyone was aware of the customer's position. The fluctuating work force gained valuable on the job training in support of the program, while learning new repair techniques and technical skills, which enhanced the overall capabilities of the site.

- Clearly define the contribution of this program/project to the greater good (society, security, etc.)

(12 pt. Times Roman)

The T-38C is key to the training of the Next Generation of America's Fighter pilots. Our technical and cost-effective solution to this program, was key to reducing the time to market, without further interruption to the training pipeline. Every minute a student pilot spends training in a cockpit, with the same cutting-edge technology that awaits them, improves time-to-train, reduces cockpit orientation and

transition. Upon graduation, these aspiring U.S. Air Force Pilots, will be tasked to guarantee the future safety and security of not only the United States, but the world as a whole.

METRICS (Value: 15 pts)

Please respond to the following prompt:

- What are your predictive metrics?

During the production phase of the contract, multiple world-wide component deliveries, had to be accurately forecasted, so kitting, assembly and quality resources were readily available. Program Management utilized our BAAN ERP system to track all phases and transactions throughout the process flow. This data was then extracted into various reports, which were distributed to all functional team leads, which lead to the assignment and successful completion of action items during weekly status meetings. As units were fielded, the T-38 HUD/ UFCP upgrade team, employed a failure reporting, analysis, and corrective action system (FRACAS). This software provides a means for reporting, classifying, analyzing failures, and planning corrective actions. Collecting this information through all levels of maintenance, and utilizing the software spine to link it all back to the original failure provides critical information for designers, logisticians, and users. We used it to manage multiple failure reports, and produce a history of failure and corrective actions. For example, during a regular review of the data, the T-38 HUD/UFCP upgrade team saw an increase in the use of High Voltage Power Supplies (HVPS). We were then able to share this data, with the vendor, which allowed them to make a change in the production of the HVPS that increased its reliability.

- How did you perform against these metrics?

This program was unique in that we depended on Boeing to send legacy HUDs for upgrade, as we were reusing the optics assembly and chassis. To Jumpstart this process, Elbit commissioned the manufacture of 30 new chassis, which allowed for the buildup of the electronics portion of the HUD and stocking it into supply. This effectively created a rotatable spares pool for the electronics assemblies. This process afforded us the ability to receive a legacy HUD from the field, inspect the optics, remove the existing chassis with the legacy electronics, and install a refurbished chassis with new electronics in about one man-day. The legacy chassis moved to another production line for cleaning and populating with new electronics. Then we placed it into supply, ready to support another retrofit. The quicker we were able to return the upgraded kit to service, the quicker Boeing could send another HUD. This process led to early delivery successes, but were later diminished by personnel quarantines and logistics resource constraints related to the global pandemic.

	2019		2020												2021												2022	
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
Kits Required	0	0	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	12	0	0	0
Kits Delivered	15	6	12	12	25	28	15	21	21	22	23	20	19	13	18	12	18	18	8	9	25	11	16	8	22	24	3	8
Cummulative Kit Total	0	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	452	452	452	452

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

(12 pt. Times Roman)

For several years prior to 2016, ESA operated under a CLS for the legacy T-38 HUD and UFCP. As ESA has worked various programs with the U.S. Air Force, we have gained valuable customer insight and alignment to those metrics most important to our customer. The effective and constant communication between the Customer and Program Manager, streamlined early identification of issues, problem

resolution and minimized schedule risk to the program. After discussions about the fore mentioned High Voltage Power Supply failure issues, the Team effected a timely process change that effected the build of the power supply, that led to an increased mean time between failure, which was well received by the end user.

DEALING WITH PROGRAM COMPLEXITY (VOLATILITY, UNCERTAINTY, COMPLEXITY, AMBIGUITY, OR VUCA) *(*Value: 25 pts*)*

Please respond to the following prompts:

- *10 pts:* Describe areas of VUCA faced by your program and why.

The T-38 HUD/ UFCP upgrade program brought on various challenges. First, the multiple countries that comprised our global supply chain, created import and export issues, along with the ambiguity associated with language, communication and cultural barriers. Second, the global pandemic created a multi-layered complexity that few programs ever experience, to include work force quarantines, shipping delays and constantly shifting epidemic spikes. While the HUD components were designed in Israel and manufactured in Romania, the UFCP development and build occurred in Italy, by Leonardo SpA. The Engineering team at ESA and ELOP worked closely with the Boeing team, to eliminate and overcome any ambiguity in the development phase. This working relationship, we fostered in the Development Phase was critical when we reached the production phase at the height of the pandemic. The Supply Chain was a critical component of the T-38 HUD teams' success. Electro-Optics (ELOP) was the largest supplier, and worked alongside ESA in resolving any challenges with the customer.

ESA had an early problem with brightness of the UFCP alphanumeric display and the push button backlight. Display brightness was the one complaint pilots has with the legacy panel, and the new design was even dimmer, making it hard to use. This was a unique challenge since these items are built in Italy, minimizing the options available to the ESA team.

- *15 pts:* Explain how your team responded to these challenges.
- *(12 pt. Times Roman)*

Through a series of phone calls between ESA, ELOP, and Leonardo, were able to provide three options to Boeing on how to correct the brightness issue. After agreeing the best course of action was to have Leonardo adjust the calibration scheme for the brightness, the next challenge was to get two updated panels delivered to Boeing so flight qualification testing could resume (at Edwards AFB in California). This was easier said than done due to the complexity of import/ export constraints in Italy, Leonardo was unable to ship 2 additional panels without receiving the nonconforming parts in return. By engaging Boeing, we were able to coordinate the return of the faulty items and receive the new updated panels with two days to spare. This allowed ESA to test the panels before sending on to Boeing. ESA verified these panels were within specifications and sent them on to complete flight testing. Two weeks later, ESA received the notice to proceed from Boeing and the Air Force, as the new system successfully passed testing in the aircraft.

ORGANIZATIONAL BEST PRACTICES AND TEAM LEADERSHIP *(*Value: 35 pts*)*

Please respond to the following prompts

- *15 pts:* Describe the innovative tools and systems used by your team

The team's vision echoes our corporate vision: "Provide products and services that protect and save lives." The accountability we place in our efforts, ourselves, and our suppliers reflect this vision. Our company employs a high percentage of veterans who understand the importance of delivering a quality product to the ultimate end user, the warfighter. Within Elbit Systems of America (ESA), the company holds a quarterly One Company meeting where the CEO briefs the employees on quarterly news and events. During this time, the CEO gives examples of how the programs supported by ESA truly protect

and save lives. Throughout each of the ESA sites, one will find posters displaying the importance of our mission.

- *10 pts:* Define how you developed, led and managed people

This program operates well because of the dedication of all the team members, including our partners within ELOP and our external suppliers. We performed value stream mapping to minimize waste and employed our "daily disciplines," which are driven by 5-S and lean mentality, to execute the program. Our daily disciplines are a set of tasks performed every day, which put us in a routine of paying attention to detail. While some may see them as small tasks, like inputting time into the timekeeping system, and continually keeping your work area free of foreign objects or debris (FOD), we believe these tasks help focus our floor personnel on all details of the task at hand, minimizing mistakes. ESA embraced the IPT concept before it became the industry standard. All relevant departments participated in regular discussions about the program to identify and resolve any issues. If regular meetings did not find solutions, the stakeholders would set up separate meetings to quickly solve any problem.

ESA believes in providing their people with every opportunity possible to grow within the organization. From industry standard practices like on the job training to ESA unique items such as lunch-and-learns led by leaders in the company, we understand home-grown talent is essential to our success.

In evaluating team-member satisfaction, management ensures each member is treated as though they are the most important member of the team. Employees use their technical and interpersonal skills to contribute to each area of the production process. To ensure a continuous learning environment, employees are rotated to different stations on the production floor. This produces a better informed, more knowledgeable team member and also allows for substitution if another team member is absent. Employees are encouraged to participate in the team's daily stand-up and are ensured that their voices are heard up to the management level.

In addition, the program team leveraged best practices through the centralized Program Management office within ESA. This allowed the team to ensure they were complying with the common tools and training throughout the organization.

The team embraced the Integrated Product Team concept. Members of the team were diverse in their background and experiences. However, it was extremely critical that all members were aware of the program process, milestone accomplishments, roadblocks, and issues. Regular team meetings transferred the appropriate level of knowledge and made each member feel a critical member of the team.

- *10 pts:* How did you leverage skills and technologies of your suppliers?

(12 pt. Times Roman)

Supplier relationships were critical in this program, particularly with ESA's parent company, ELOP. Timing of delivery, development issues, and progress of production were of utmost importance in our regularly-scheduled meetings with our suppliers. As soon as a unit was received, it automatically had a place in the production process. Excess materials were not common in this program as the team understood the importance of no excess costs. ESA's Supply Chain continually reviews pricing with our vendors. As volumes increased, long-term pricing agreements and supplier partnerships allowed ESA to decrease unit costs over time. Suppliers often visited the facility to observe how their parts were used in the production process and were critical members of the IPT.

ESA brings technology from our affiliate companies worldwide to the U.S. market. We were able to take field-proven technology and modify it to benefit the U.S. military. The partnership between ESA and our ELOP business unit in Israel has been successful in this endeavor and has led to HUD upgrade programs on several platforms. Many challenges exist when working with our foreign partners in language, culture, and sharing of technology. These did not hamper the team in program execution. Much logistic planning

facilitated all piece parts being available to build the next run of electronic units. The planning and efforts of ELOP and our Supply Chain were key as ELOP and ESA shared the Bill of Material for this build.