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(This section must be signed)

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Thank you for participating,

Gregory Hamilton
President
Aviation Week Network

Acknowledged, agreed, and submitted by

Kim Trost _____ 5/25/2022_____
Nominee's Signature Date

Nominee's Name (please print): Kim Trost _____

Title (please print): Sr. Director, Program Management Office _____

Company (please print): Elbit Systems of America _____

NOMINATION FORM

Name of Program: Command Post Integrated Infrastructure (CPI2) Program

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☒ Customer Approved

- Date: May 18, 2022
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☐ Supplier Approved (if named in this nomination form)

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

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 objective of the U.S. Army's Command Post Integrated Infrastructure (CPI2) Program is to provide mobile and survivable command posts from echelons corps to battalion. As the Army maintains its operational readiness and prepares for all contingencies and future combat operations, more mobile command posts are essential to achieve survivability. Mobile command posts also allow command posts to disperse in greater distances. Elbit America is proud to be a prime contractor on this effort.

In light of observations and lessons learned from the Russia-Ukraine conflict in the 2016 and 2017 timeframe, the Army determined to address the operational risks associated with large and static command posts in major combat operations. Additionally, the Army senior leadership wanted to accelerate capability to its fighting formations. As a result of these observations and needs, the Army issued a Directed Requirement which eventually resulted in a formal acquisition strategy to develop command post capabilities in increments under a program of record called CPI2. In this acquisition process Elbit America was selected to be an industry member to provide prototypes via an Other Transaction Authority (OTA) to a selected Brigade Combat Team (BCT). The scope of our work was to design, integrate, build, and test CPI2 mobile platforms, using government-provided trucks from the Family of Medium Tactical Vehicles (FMTV) with truck-mounted shelters (see Figure 1).

Unique characteristics and properties that qualify Elbit America's execution of the CPI2 program for recognition include our industry leadership in conducting cross-company and inter-company teaming to overcome all challenges. Our goal was to build trust with the customer and provide our Army with a capable solution it needs. This began with Elbit America and our customer undertook an accelerated design schedule consisting of a Systems Requirements Review, Initial Prototype Design Review, and Final Prototype Design Review. As the effort was initiated and executed, we encountered and overcame typical development challenges such as sourcing adequate resources, coordinating activities of disparate groups, and managing scope.

The program also encountered some unforeseen and atypical challenges that posed a risk to the schedule. One of these risks was the impact of COVID-19. The program suffered COVID-driven supply chain issues and two COVID-forced work stoppages during a critical period while the prototypes were being built. To mitigate these impacts, Elbit America quickly developed a plan; assembled and led an industry team to successfully complete the CPI2 shelters on time for initial testing to support Milestone C. The plan included moving integration to work to a subcontractor facility much closer to the customer's test location. Elbit America leveraged the assembly expertise of our subcontractor and brought in additional assemblers that we brought in from our affiliate to supplement our workforce. This plan in its execution saved two weeks of shipping time and reduced the time to complete the labor on each of the platforms.

An additional schedule risk occurred when a Command Post Support Vehicle (CPSV) was severely damaged during commercial shipment to the end customer. This CPSV was critical to successfully executing a test with the unit because it is the communications node at the command post on which all mission command platforms rely on for high-band-width, long range communications. Fortunately, good decisions made during the design review process afforded a standard infrastructure for each shelter. This circumstance provided the ground work for Elbit America to quickly modify one of the remaining shelters to perform the role of CPSV without impact to the testing schedule.

Figure 1. CPI2 CPSV TAC provides the Army a survivable, highly configurable mobile command post.

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

In addition to revenue growth, the value to Elbit America is the capture and successful execution of a program in support of a new customer and expansion into the US Army's C5ISR market. We successfully transferred a technology from our Israeli affiliate to the U.S. Winning this contract als0 doubled the annual business level of our C4I business and created a platform for growth. This program helped us grow closer to our Army customers and end users. We worked diligently to meet schedule milestones and developed strong relationships with Department of the Army employees and Soldiers of the Brigade Combat Team which conducted the operational assessment at Joint Base Lewis-McChord, WA. Our performance on the original contract lead directly to Elbit America being awarded a follow-on effort for the remainder of the prototyping phase of the contract. Winning the prime position on this contract has established a whole new business area for Elbit America. Figure 2 shows the program timeline.

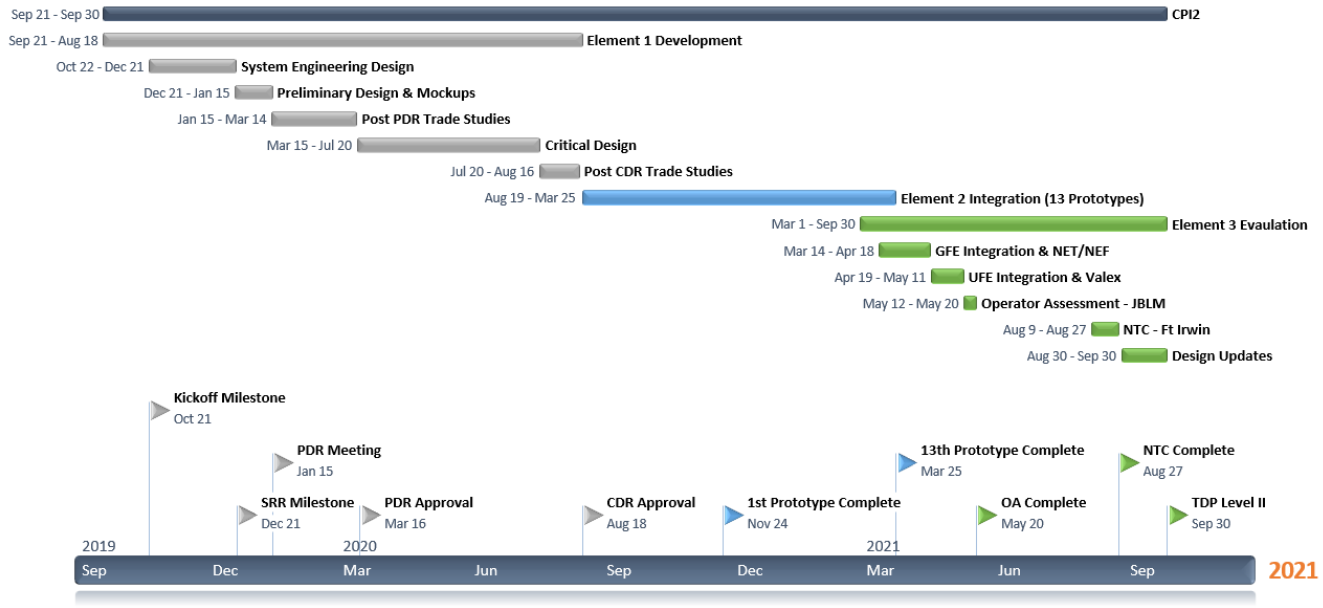

Figure 2. Through effective teaming and thoughtful design, ELBIT AMERICAELBIT AMERICA met the Army's schedule and delivered units for testing ahead of our competition.

The CPI2 program has significantly strengthened our alignment with U.S. market needs and priorities in the area of mobile, survivable shelter systems. While solving command post mobility needs, we have built our expertise in solving other C5ISR problems for the Services. We understand the emplace and displace CONOPS, time requirements, and need to operate equipment for extended periods on the move (OTM). We are ahead of many of our customers' thinking and understanding. By investing in innovations such as OTM generators and ECUs, Elbit America hit all the emplacement and displacement targets and

outperformed our competition. As shown in Figure 3, we also prioritized human factors such as the lighting and angle of the screen so the commander doesn't have to tilt their head to view the display.

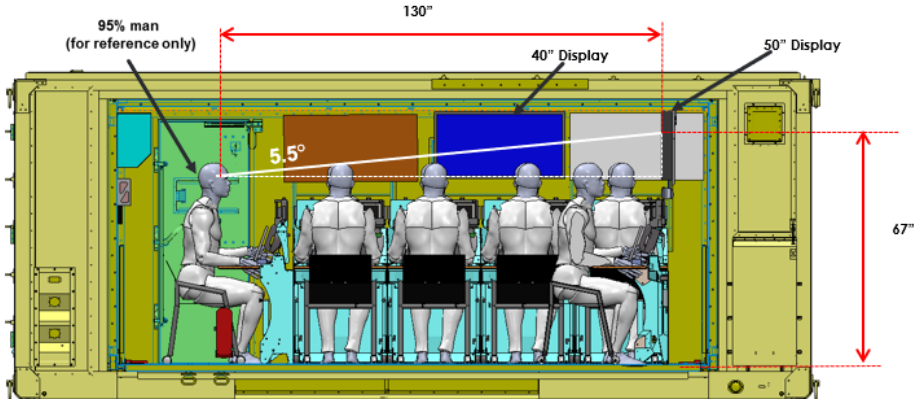

Figure 3. Human Factors Analysis per MIL-STD-1472G enabled ELBIT AMERICA to improve comfort for users.

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

These new command post systems will save American Soldiers while allowing commanders and their staff to conduct mission command during all phases of the operation. Several incidents in recent years have dramatically shown the need for command post modernization. As the Army prepares for potential battles with peer competitors, mobility is critical to survivability of command posts and the soldiers in them.

Elbit America has built trust with the Army program office through our robust execution of the design and integration of the prototype shelter systems. The Brigade Combat learned early they could trust us to train their soldiers, keep the systems running, and help them work through changes. We supported them through the problems with fielding prototype systems and understanding how their Concept of Operations (CONOPS) would have to change to accommodate different command post structures. We delivered completed systems to support the Operational Analysis and the Brigade Combat Team's rotation at the National Training Center.

Elbit America's CPI2 solution resulted in excellent operational assessment performance metrics by providing the Army with intra- and inter-vehicle wireless, a way to deploy their antennas, and maximum dispersion (multiple targets that are farther away from each other and harder for an enemy to take out). We gave them a tenet they weren't trying for and helped them shape their requirements, by showing them they needed generators on all the vehicles to meet emplacement/displacement timelines and human factors for soldiers. They thanked us for adding commonality in the design to their requirements. We proved to the Army the value in a solution configurable by solders after receiving the vehicles, which allowed the Army a lot of flexibility in how they set up the interiors. The CPI2 is a command post on wheels. We designed a total of five interiors, but there are seven different staff sections, each with unique layout requirements. We made sure we could satisfy all of them with a single solution, allowing up to 20 workspaces and maximizing configurability as shown in Figure 4.

Figure 4. The M1087 MCP, with up to 20 workstations, is an example of maximum configurability that Elbit America designed in.

Our showing of the CPI2 M1087 MCP vehicle at the Association of the United States Army (AUSA) trade show led directly to the Army requesting Elbit America travel to the Army/Navy game to showcase the system as an example of PEO-C3T innovation (See Figure 5).

Figure 5. PEO-C3T asked Elbit America to showcase the M1087 MCP as an example of innovation at Army-Navy MetLife Gameday.

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

The CPI2 program embodies our mission at Elbit America: to protect and save lives. To ensure we do the best job of increasing command post and soldier survivability, we have become students of what it takes to design a survivable command post. We have tracked corporately and individually survivability activities in the C5ISR center for the Army Futures Command Network Cross-Functional Team (NCFT) and sent several team members to every technical exchange meeting. In these meetings, the Army has published a set of survivability concerns that we call tenets. We made sure all the people we hired and transferred to our design team developed a complete understanding of the tenets and how they affect soldier and command post survivability. As a result, they are better able to engineer with the goal of survivability. We are proud to be a part of the Army's solution and believe within the constraints of the current program, we have created mobile command post platforms that maximize survivability. This pride in doing our best for the Army and the country is something we will carry with us throughout our careers and lives.

When the CPI2 RFP was released, Elbit America leveraged our foreign affiliate, Elbit Systems C4I and Cyber (ESCC), which had developed the Rhino mobile command post that was in trials with the Israeli Army. We knew the Rhino was capable of OTM operations and likely the most advanced mobile command post in existence. We leaned on the knowledge and direction from the ESCC team to write the winning proposal. We knew we would have to build a mobile command post engineering capacity within Elbit America, perform a transfer of technology, Americanize all the drawings, and deliver a level 3 Technical Data Package (TDP) to the Army.

After winning the program, the team got to work collaborating with our ESCC counterparts. We held frequent WebEx meetings and each team traveled to the other's location to work through Statements of Work, develop communication plans, understand each other's working environment and management structure, and spend time bonding as a team. We knew it would take time to develop the engineering team in the U.S. to take over the TDP, so we relied on ESCC to do the first pass of development engineering of the shelters. They provided the engineering and all parts to build the first set of prototypes. That we took time early in the program to get to know one another professionally and personally made us a more resilient team. Both sides have added and lost people while working through the program, and we had two work stoppages due to COVID-19 quarantines. We have worked together to solve problems and developed a tight-knit, highly skilled, effective cross-site and division team.

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

(12 pt. Times Roman)

As we watch world events and consider America's potential involvement in them, we realize how this program will save U.S. Soldiers' lives in future conflicts. Mobile command posts are harder to neutralize and facilitating their survival also ensure continuity of mission command. The drastically reduced

emplacement and displacement timeframes and potential for dispersion enabled by the CPI2 program will create a much safer command post environment when these systems are fielded across the Army (see Figure 6). While the main purpose of the program was to make Army command posts more survivable, the broader operational result is that the command posts at all echelons are able to command and control subordinate units. Getting all sections of the command post up and running more quickly means the Army will be more efficient for a greater percentage of time, and commanders will have more access to all their decision-making tools.

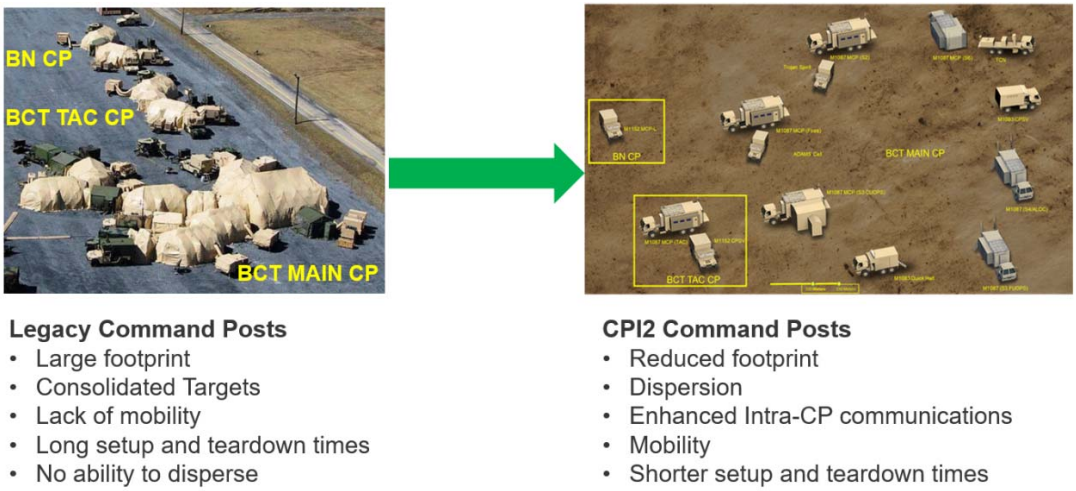

Figure 6. Elbit America increased the mobility, configurability, and survivability of CPI2 command posts to protect and save soldiers' lives.

METRICS (Value: 15 pts)

Please respond to the following prompt:

- What are your predictive metrics?

Elbit America's CPI2 engineering process used key performance metrics to balance competing interests and optimize the overall solution while giving the team confidence when our designs were likely to meet the customer's requirements. These metrics include emplacement timeline, weight roll-up and distribution by axle, occupancy limit, heating/ventilation/air conditioning (HVAC) capacity, and power demand, as shown in Table 1.

Table 1. CPI2 predictive metrics increased confidence in meeting the Army's requirements.

Metric	Purpose	Measure
Emplacement timeline	Minimize set-up time after movement	Minutes
Weight roll-up	Stay within axle weight constraints of given trucks	Pounds
Occupancy limit	Provide adequate accommodations for staff sections	Whole number
HVAC capacity	Maintain suitable climate for people and equipment	Btu/hour
Power demand	Generate sufficient power for continuous operations	Watts

- How did you perform against these metrics?

Our design analysis indicated we would come close to meeting the requirements for crew size, emplacement time, and climate. Developmental testing was curtailed due to the aggressive schedule, so we had to rely on our predictive metrics to gain confidence our solutions would meet the requirements. The analytic basis for tracking these performance metrics allowed us to judge when a solution was adequate and when to focus on another challenge. Verification of our performance by test and

demonstration waited for the Army's operational assessment. The Army allowed 15% variance from their stated performance goals in recognition of the challenges we faced using Army-furnished vehicles and shelters. We expected to perform within that margin. After the Army took delivery of our prototypes, they conducted an operational assessment with real soldiers from the 2/2 ID BCT. Our engineering assessments proved conservative because we met or exceeded all performance requirements without using any of the 15% margin allowed by the customer.

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

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Emplacement timeline: We used our predictive metrics to inform the design team on our progress against the emplacement timeline and identified emplacement tasks on the critical path that needed some innovation to speed up the process. This enabled us to spend design and component capital where it would have the most favorable impact on timelines. This was a key factor in recognizing our trucks needed an OTM-capable generator and ECUs, even though these were not explicitly stated in our requirements from the customer. Installing OTM generators and ECUs led to the ability to keep the shelters climate controlled so all required computer systems are functional along with the shelter temperature the moment we stop to emplace.

Weight roll-up and distribution-by-axle: We knew we were constrained by the axle weight on each of the trucks and maintained a weight roll-up and location of our center of gravity as we added and removed components. This metric allowed us to intelligently select and place equipment so the center of gravity equalized the load on each of the truck's axles according to the rating of each axle. Success negated the need for our customer to run expensive road worthiness testing on the vehicles. If we had not done this, the program would have been penalized for the extra cost and schedule necessary to complete that testing.

Our weight roll-up and distribution-by-axle metrics allowed us to recognize the two CPI2 systems using the M1152A1 HMMWV truck would require an upgrade to the higher axle load variant of the truck already in the Army inventory. We informed the customer of this in time for them to acquire the correct HMMWV trucks for the CPI2 program.

Occupancy limit: Our design analysis indicated we could reasonably fit 12 soldiers into the largest of our prototypes using ergonomic standards from the Department of Defense (DoD), as shown in Table 2. Having that number confirmed by our end users in the 2/2 ID, we were able to set the amount of fresh air ventilation we had to achieve for an occupancy of 12. This fed our predictive metrics on heating and cooling capacity in extreme climates, given the constant flow of fresh air at ambient temperature into the shelter. We used this metric to the same effect on the smaller prototypes with smaller crew sizes.

Table 2. Knowing the maximum number of soldiers enabled us to set fresh air ventilation and fed predictive metrics on heating and cooling capacity.

CPI2 System	Sustained Occupancy
M1087 MCP	12
M1083 MCP	5
M1083 CPSV	3
M1152A1 MCP and CPSV	1

HVAC capacity: HVAC capacity metrics involved creating a view of the thermal loads on the system including those induced by the environment, heat rejecting components, and personnel. We chose from experience with DoD standards the climates our system would be operating in and the temperature range needed within the shelter for uninterrupted operations. With the occupancy limit information, we were able to factor in the amount of fresh air at ambient temperature entering the shelter. This metric allowed us to specify the heating and cooling capacity needed in our HVAC solution. We found efficient, OTM-capable environmental control units that fit in the limited space available on the trucks.

Power demand: For CPI2, power demand is much more than a simple roll-up of components' power needs. Many of our components have fluctuating needs based on states and modes of the system and component. For example, radios use a lot more power when transmitting, and some systems shut off when the truck is moving. Most critical is the amount of power needed to run the HVAC system in extreme climates. Our power metrics were responsive to multiple scenarios in climate and occupancy that affect HVAC and power demand. Applying this metric allowed us to find a generator that was OTM capable, provided the peak power demand, and fit in the tight space available on the truck. There are few generators like this on the shelf. Because we knew exactly what we needed in a generator, our solution met power demands and performed well in operational and NTC testing.

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.

Volatility: After we delivered the prototypes, the M1083 CPSV was destroyed in an accident while the Army was moving the system across the country. No replacement M1083 trucks were available.

Uncertainty: Brigade Combat Teams are given a lot of flexibility in defining their command post layouts to suit their standard operating procedures while maintaining compliance with Army doctrine. This allows variance in what design will best satisfy a given unit's needs, mitigated only by the common doctrine.

Complexity: CPI2 consists of five unique vehicle/shelter/load-out configurations with seven unique setups to cater to seven different staff sections in the M1087 Mission Command Platform (MCP). Each staff section performs a unique command post function with some common and some unique radios, tools, and equipment. Each staff section has its own needs for seating arrangements supporting workstations and collaboration spaces.

Ambiguity: Many of our requirements included integration of Army-furnished equipment not specifically identified in the requirements or provided with interface control documentation. The expectation was the fielding unit would identify these components from their inventory. The unit had real-world missions they were executing, so we were not able to meet with them as early and often as we desired.

- *15 pts:* Explain how your team responded to these challenges.

(12 pt. Times Roman)

Volatility: As shown in Figure 7, we did a quick modification to our M1087 shelter design and implemented it to replace the lost CPSV so the Army could proceed on time with the operational assessment. Without this specific Elbit America response to the situation, the Army would not have been able to complete two rounds of prototype testing with separate Brigade Combat Teams.

Figure 7. By maximizing reconfigurability, Elbit America quickly modified this truck to replace a lost CPSV.

Uncertainty: To address individual preferences in command post layout, we designed a solution that maximized flexibility in workstation arrangement and equipment load-outs. This approach has the advantage of defining one configuration per vehicle/shelter

type that would roll off the production line, while being tailorable to meet their unique needs and preferences of the receiving unit.

Complexity: With limited access to the end user to help us understand layouts during our design phase, our retired Army subject matter expert systems engineer fed our understanding of the layouts typically preferred by each staff section. With this knowledge, we were able to develop a configurable solution that could satisfy each staff section. In our time with the end users, we were able to show them our concepts and get direct feedback to influence our designs. This was a much better use of their time and ours than starting with a clean slate. At the operational assessment, the soldiers in 2/2 IBCT expressed their appreciation for the flexibility our approach gave them and confirmed the solution worked well for all seven staff sections.

Ambiguity: To address ambiguity of Army-furnished equipment, we designed "universal" accommodations, considering all the possible component models the unit may decide to use. We designed to the largest space claims and put mounting plates with multiple bolt hole patterns fitting the breadth of components currently in the Army inventory. This approach worked wonderfully, as we were able to accommodate the equipment the unit decided to use without changing our design.

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 Elbit America team performed rapid prototyping in the creation of full-scale mockups supporting optimal space usage in our layouts and design reviews with the customer (see Figure 8).

Figure 8. Innovative physical mockups give soldiers a feel of the variants early in the design process.

The program team used model-based systems engineering (MBSE) and SysML to link requirements to use cases and elaborate those use cases, thereby capturing a behavioral model of the CPI2 operations. The behavioral model was critical to driving out our performance analysis for timelines and resource stressing during many concurrent activities. This allowed us to focus our effort on designing features that would have the most benefit in being able to meet our requirements. Our models were validated by observations during the operational assessment, showing achievement of our performance objectives. Rather than simply reviewing "paper" designs at the Preliminary Design Review (PDR), we were able to bring soldiers into the physical mock-ups and give them a better understanding of how the space layouts worked, and what the look and feel of the command post designs would be. This led to better decisions earlier in the program and less rework due to late changes.

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

At program launch, Elbit did not have a dedicated engineering team to perform design work for the shelters. We knew we would have to rely on our Israeli design team for the initial prototype, develop an entire program team to transfer the technology to Elbit America, and be ready to manufacture the prototype systems. In the first three months of the program, we hired four engineers with significant vehicle design and integration experience and moved several others onto the program. We hired a very experienced program director and dedicated his time to the program. Each new hire was first trained on the problem, in depth. It was critical that the entire team understood the problem we were trying to solve and their purpose on the program before they hit the ground running. The team was co-led by a strong program manager, and an equally strong Project Engineering Manager. This combined leadership balanced engineering/design excellence and programmatic excellence.

This team was co-located in our Fort Worth facility, and every person on the program was 100% dedicated to it. This purposeful dedication created an extremely high level of focus resulting in the entire team quickly understanding the program and what was needed from them. This led to all team members being highly effective in their positions.

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

(12 pt. Times Roman)

We partnered with Gichner Systems Group for the shelter builds. We brought the Elbit America engineering team to their shop floor, along with skilled labor from Gichner and M7 and additional labor from contractors. By co-locating Elbit America's engineering leadership with these resources at Gichner's plant in Dallastown, PA, we were able to utilize their dedicated workforce, experience, and existing tooling to perform the necessary shelter modifications. Elbit America brought the design insight and intent along with the in-depth understanding of the concept of operation for each of the command post sections. Combining knowledge of how the systems would be used, what the system requirements were, and the design intent along with the Gichner's manufacturing know-how, we reduced the time to build and produced excellent results. Also, by using Gichner, we were able to come up the manufacturing learning curve quickly while implementing our unique design. We dedicated all team members and integrated the teams into shelter-specific work groups, one for each of the vehicle types. Not having to divide their time and deal with multiple programs allowed them to focus on developing and transferring the shelter designs to manufacturing.