



# Installation neXt QUANTICO SYMPOSIUM REPORT





## MESSAGE FROM THE COMMANDER, MARINE CORPS INSTALLATIONS COMMAND



Installation neXt Participants and Partners,

I am writing to thank each of you for the outstanding participation in this year's Installation neXt event.

Marine Corps installations are moving out on incorporating profound technology changes to arm and protect our force generating platforms in the face of increasingly complex challenges. A dynamic problem set such as this requires the re-examination of all readiness assumptions and capability portfolios to manage risks on or to our installations. Past ways of thinking, organizing, and executing are limiting the Marine Corps' ability to keep pace with technology and increasingly bold adversaries.

As the Commander for Marine Corps Installations Command (MCICOM), it is my task to ensure the adaptability and viability of protection programs to enhance operational readiness and protect life and property aboard Marine Corps installations.

I intend to harness the collective passion and motivation of innovators and makers, industry partners, government organizations, and members of Congress to catalyze innovation across our organization. This symposium report highlights the value of bringing together disparate entities who are committed to leveraging existing and emerging technologies and processes to modernize the way our installations are operated and managed.

The contributions made at Installation neXt Quantico will help shape an Installation neXt operating concept that will set a vision for the next generation of installations.

Thank you again for your ideas and energies. I am excited to engage this audience again soon.

Semper Fidelis,


A handwritten signature in black ink, reading "Vincent G. Coglianese".

Vincent G. Coglianese  
Major General, U.S. Marine Corps  
Commander, Marine Corps Installations Command  
Asst. Deputy Commandant, Installations & Logistics (Facilities)



# INSTALLATION NEXT QUANTICO SYMPOSIUM REPORT



 QUANTICO, VA | 25-27 SEPTEMBER, 2018

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## INTRODUCTION

Installation werX (I-werX), a supporting branch to Marine Corps Installations Command (MCICOM) Office of Modernization and Development (G-7), hosted Installation neXt Quantico at Marine Corps Base Quantico (MCBQ) on 25-27 September 2018. The three-day event brought together visionary leaders from the military, government, private industry, and academia to focus on the topic of Installation Protection through the exchange of ideas, sharing of experiences, and integration of concepts to transform today's bases and stations into tomorrow's smart installation.



Figure 1: Quantico Train Station Working Group Developing Solutions

This symposium report captures the results of the event and provide insights for future I-werX and MCICOM initiatives. This document will serve as a baseline to support the development of an Installation neXt operating concept. It also compiles input provided by attendees through event feedback forms, as well as facilitator feedback, to garner overall successes and lessons learned.

## Installation neXt Vectors



Marine Corps installations are integral to the readiness and resilience of our force, as well as the security of the Nation, but they are outdated and require modernization. Our next generation Marine Air Ground Task Force (MAGTF) requires next generation installations. Installation neXt, as a concept, leverages the power of ideas to imagine and re-imagine bases of the future.

These vectors, shown above, highlight the eight challenge areas of Marine Corps installations. Installation neXt Symposiums will be incubators for idea generation and concept development that lead to solutions to these challenges.



## SYMPOSIUM OVERVIEW

At the Installation neXt Symposium, attendees had the chance to hear from Marine Corps leadership, connect with like-minded leaders, gain perspective, and provide insight on the areas where protection initiatives can enhance and optimize Marine Corps installations. Attendees helped the Marine Corps envision installations of tomorrow through four facilitated working groups focused on Grid Security, Quantico Train Station, Entry Control Point, and Quantico Town.

The Installation neXt objective is to provide a collaborative environment where disparate entities and organizations can generate ideas to develop new and emerging concepts for design, operation, and maintenance aboard Marine Corps installations, now and in the future. By creating these innovative working environments, we are able to leverage expertise and experience that will accelerate protection capabilities that improve Marine Corps installation readiness and ultimately support the warfighter.

Tasks include developing relationships and potential partnerships for future collaboration, exploring new methods of planning, and identifying optimized alternatives to current methods and functions of Installation Protection.



Figure 2: Entry Control Check Point

## WORKING GROUPS OVERVIEW

### METHODOLOGY

Participants were divided into four simultaneous working groups to analyze the current state of Installation Protection and identify areas for improvement. Each group leveraged subject matter experts (SME's) - a mix of participants from military, government, private industry, and academia. SME's were led through a collaborative design process facilitated by Design Thinkers from Booz Allen Hamilton and Marine Corps Continuous Process Improvement (CPI) staff, with the ultimate task of designing a strategy to enhance protection for each topic area - Grid Security, Quantico Train Station, Entry Control Point, and Quantico Town

A breakdown of participants is highlighted in the chart.

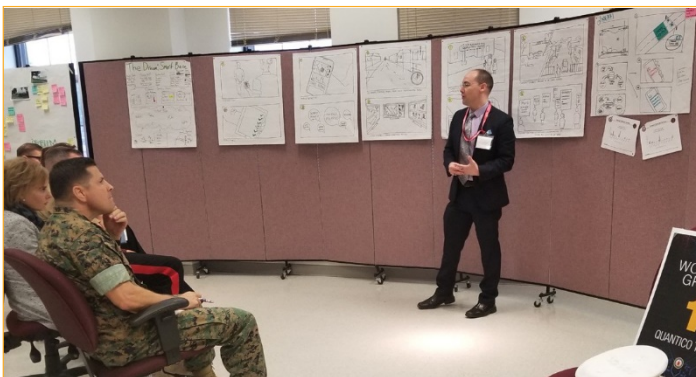
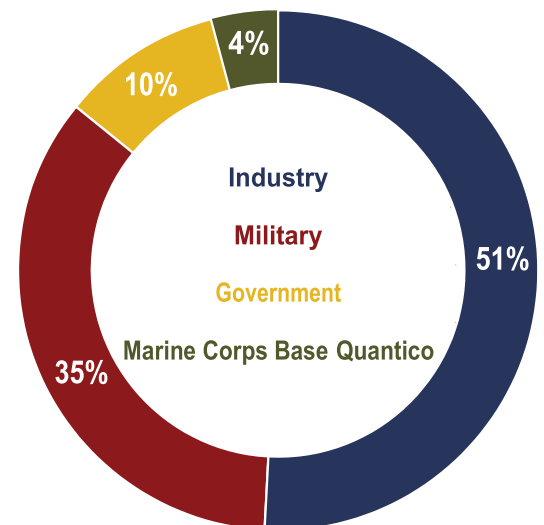


Figure 3: Distinguished Visitors Listening to Quantico Town Working Group Presentation



Installation neXt Quantico Attendees

## KEY FINDINGS

### GRID SECURITY

Facilitators: Michael Bostrom and Major Christine Taronto

Presenter: Jeromy Range

When approaching the problem of grid security and what the future looks like for Marine Corps installations, the Grid Security Working Group provided a realistic environment to assess Marine Corps grid security and protection capabilities. After discussing the issue and potential remedies in depth, the following problem statement was developed: MCBQ is not prepared for, nor does it possess the ability to recover from energy disruptions that impact continuity of operations of installation core missions following a disruptive "event."

### NEAR, MID, AND FUTURE SOLUTIONS

To appropriately develop a viable solution and resilience framework for the near, mid, and long term, the Working Group leveraged the knowledge and expertise of its members and evaluated the problem through a variety of small group discussions, design activities, and storyboard mapping. The following solutions were developed:

**Near-term:** Marine Corps installations must first consider improving the reliability of their existing electrical distribution system. Currently, a primary cause of outages on some Marine Corps installations is the lack of reliability of the existing base electrical distribution system. Critical missions will continue to experience outages if the reliability associated with the base's electrical distribution system is not addressed. In order to address reliability at the base level, Marine Corps installations must know when and where system failures or outages are occurring. This information is important to mitigate reliability issues and inform investments in distributed or centralized energy resilience solutions.

**Mid-term:** Mid-term solutions focus on policy changes. The policy elements that should be considered include:

- (1) aligning mission and energy resilience requirements;
- (2) designing and installing energy resilience systems, infrastructure, equipment, and fuel;
- (3) operations, maintenance, and testing (OM&T) of installed energy resilience systems; and
- (4) appropriately justifying business case decisions to execute energy resilience projects (whether paid for with appropriated or alternative financing).

**Long-term:** Develop a business case framework to compare different energy resilience solutions. This would analyze tradeoffs between life cycle costs and the availability of a baseline (backup generators, micro grid, etc.).



Figure 4: Grid Security Problem Statement

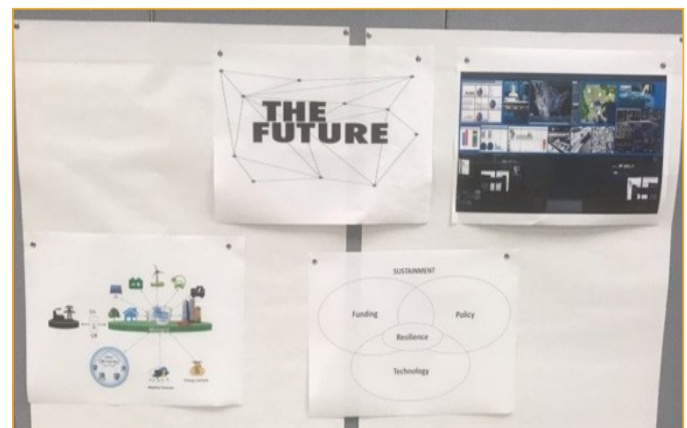


Figure 5: Grid Security Future Solutions



## QUANTICO TRAIN STATION

Facilitators: Nathan Lucy and Julie Naga

Presenter: Bernard Hess

The Train Station Working Group tackled the unique situation of having both commercial and passenger rail running through MCBQ with no control over either platform.

The Working Group considered potential threats and vulnerabilities of having a passenger rail station centrally located within the confines of MCBQ as it pertained to the potential for exiting passengers to bring harm. Additionally, the group considered the potential contamination that could be caused by commercial rail line cargo. The group formulated a problem statement based on data collected from a tour of the installation and input from attendees. Problem statement: Commander, MCBQ does not have the holistic awareness of train passengers or cargo, nor ability to mitigate vulnerabilities created by the presence of a commercial rail line running through the base.

The group formulated ideas, concerns, and questions regarding threat reduction at MCBQ and determined issue areas of focus to apply the problem statement to, including: train cargo (unknown hazmat, no control of cargo), people (no oversight on passengers or carried items), parking lot, track (open track access, frequent stops on base, train obscurity/visibility), and communications (lack of communication with train operators and rail companies).

The group sub-divided into four subject matter expertise areas and conducted solution inquiry panels. Individual work was done to create “How Might We...” questions that were then posed to the various panels to pull possible solutions in a collaborative and organized way.

## NEAR, MID, AND FUTURE SOLUTIONS

The Working Group developed numerous ideas and provided near-term, mid-term, and long-term implementation of their concept, the Phased Schematic Roadmap.

The Phased Schematic Roadmap rolls out the following solutions:

**Near-Term:** The near-term solution addresses enhanced information and communication sharing mechanisms to offer better situational awareness. The first element includes better use of video surveillance programs and existing cameras at the passenger train station, in conjunction with a Memorandum of Agreement (MOA) with the train companies for visibility into the railway bills and manifests. The second element includes the use of a response command center, manned by civilian and military personnel, that can use the information from multiple sensors to act communally, communicate to concerned parties, and learn from actions taken together.

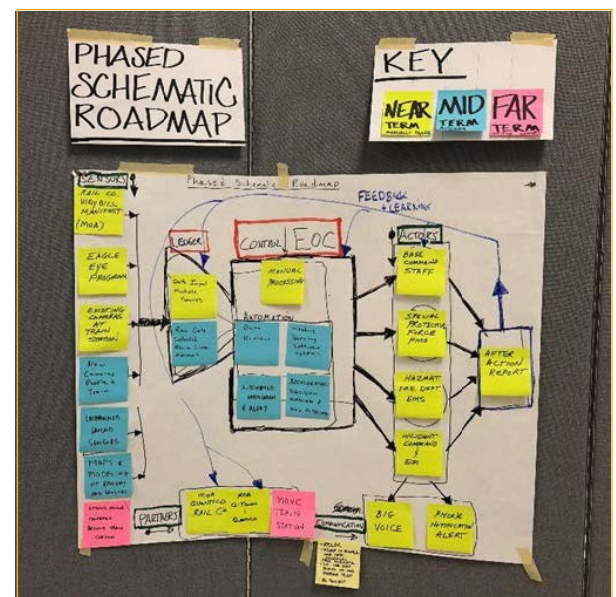


Figure 6: Quantico Train Station Group Schematic Roadmap



**Mid-Term:** The mid-term solution offers the same cycle and mechanisms but expands on it by incorporating simple sensors (e.g., unmanned ground sensors, maps, and modeling) to provide additional information and automated processing to speed the process of potential threat alerts.

**Long-Term:** The long-term solution focuses on enhanced information, communication, and collaboration regarding threat monitoring and situational awareness but introduces artificial intelligence to monitor trends and make recommendations. Another long-term solution, to eliminate the threat of having an open rail station on MCBQ, would be to work in conjunction with the natural life cycle of the train station. When the time comes to rebuild or spend significant investment to improve the structure itself, the recommendation would be to move the station itself off the grounds and reroute the pieces of needed track. This would eliminate a threat over which MCBQ has little control.

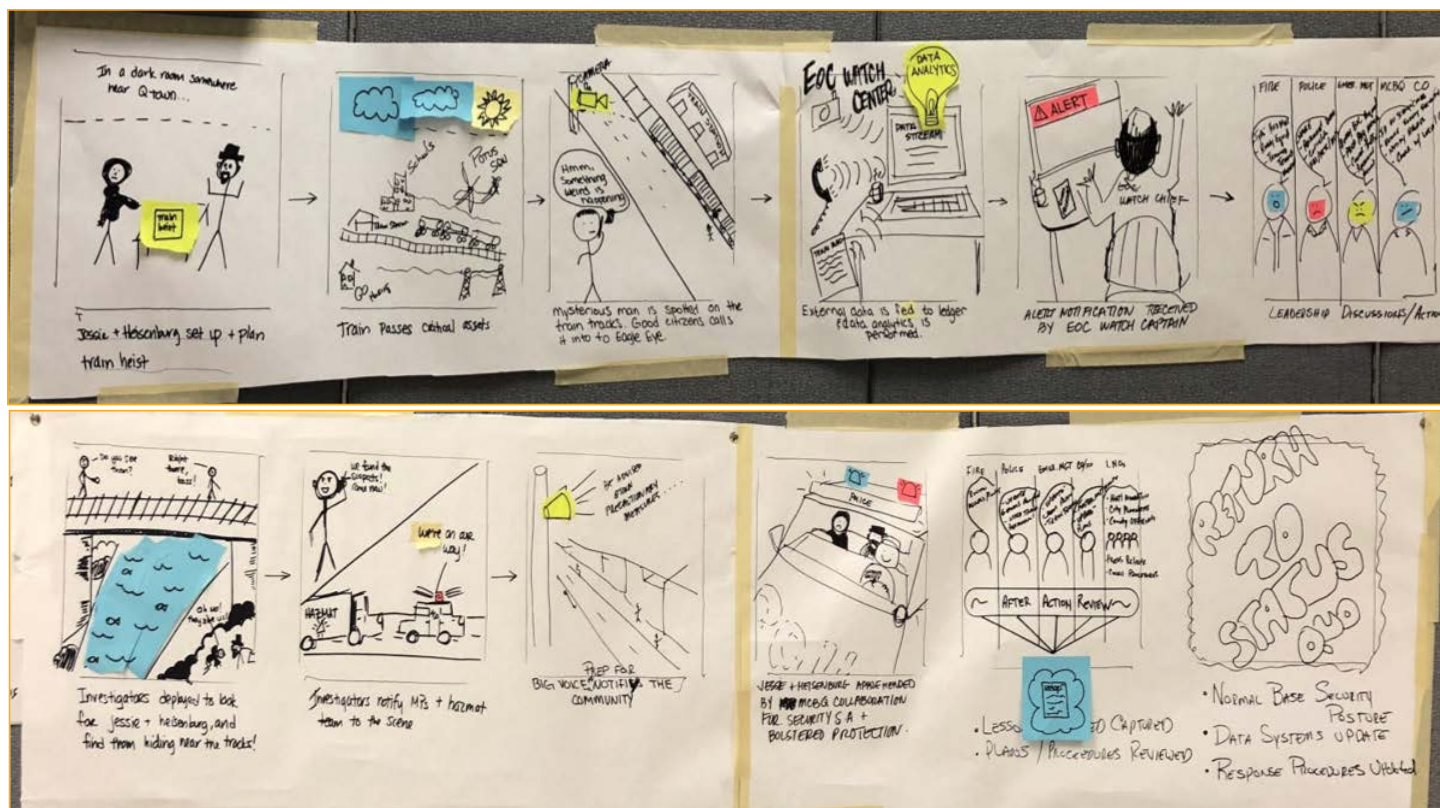


Figure 7: Quantico Train Station Storyboard



## ENTRY CONTROL POINTS (GATE SECURITY)

Facilitators: Dmitri Reavis and Laura Michael

Presenter: Joseph Riley

As the Entry Control Point (ECP) Working Group envisioned future gate and Installation Protection solutions, participants focused on solutions applicable to MCBQ challenges with scalability to the entire Marine Corps. Key challenges specific to MCBQ included: reduced efficiency at gates during rush hours (morning commute traffic), resulting in security gaps; access to and from the base through Quantico Town, resulting in lack of understanding of who is on base at any given moment throughout the day; and the Marine Corps' ability to adhere to DOD vetting requirements.

The ECP Working Group began with the problem statement: "Installation Commander cannot obtain and maintain 100 percent accountability of who enters and exits installation" and revised it's problem statement to read: "Gate inefficiencies must be addressed in order to meet DoD vetting requirement."

## NEAR, MID, AND FUTURE SOLUTIONS

The proposed solution set included innovation in the following categories:

1. Pre-Arrival Visitor Vetting & Lane Categorization – Visitors on base would be routed into "Flow, Slow, and Stop" lanes at gates to sort traffic by pre-authentication level. This element will optimize traffic flow at peak times of day, allowing security personnel to focus on the highest risk, least "known" visitors.

**FLOW.** DoD Employees and daily commuters who work on base opt in to pre-authentication via mobile device and biometrics to "Flow" through the gates without stopping, similar to an EZ-Pass construct.

**SLOW.** Infrequent visitors to base visit a web/mobile site to pre-authenticate prior to visiting, so that they can use the "Slow" lanes, showing their authentication (license plate number, QR code, facial recognition, retinal scan, etc.) and moving through quickly.

**STOP.** Visitors to base who choose not to pre-authenticate use the "Stop" lanes, showing proof of identity.

2. Geo-fencing – Every area on base would be categorized by its level of security requirement using virtual geo-fences, cameras, and mobile notifications. Individuals with higher levels of security access will be identified by facial recognition, vehicle, and/or CAC certificates. When individuals without access permissions cross a virtual fence line outside of their permissions, law enforcement is immediately notified, allowing for a real-time response. When individuals pre-authenticate via a mobile application, they will have access to mobile alerts if they cross into areas outside of their permissions.

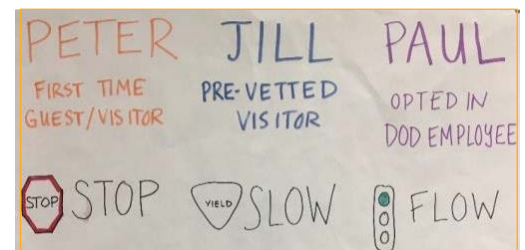


Figure 8: Entry Control Point Storyboard Pg. 1

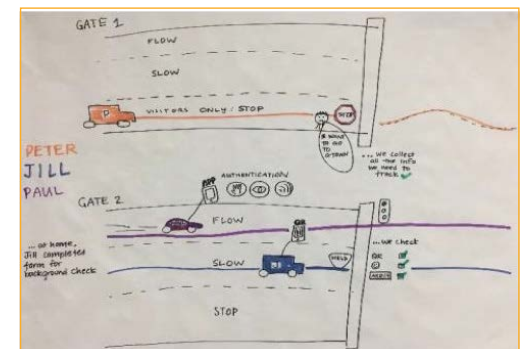


Figure 9: Entry Control Point Storyboard Pg. 2

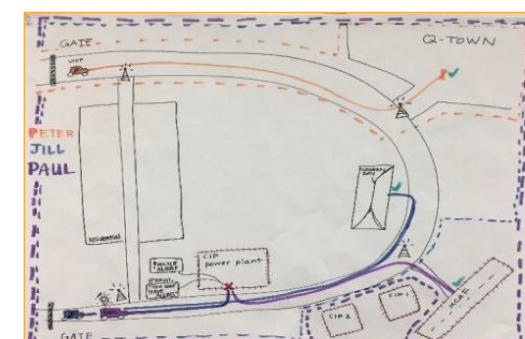


Figure 10: Entry Control Point Storyboard Pg. 3

To achieve the next generation installation, the Working Group developed a staged approach:

**Near-term:** The near-term solution towards improved gate security could include changes to the lanes at the gates to increase flow for “stop” visitors and better signage to direct this new flow of traffic at peak incoming traffic times, as well as an initial pre-vetting process for base visitors.

**Mid-term:** The mid-term solution could include providing radio-frequency identification (RFID) tags or placards on vehicles for tracking while on base, sensors at base intersections (e.g., track access by vetted vs. non-vetted visitors for that particular area), and the development and piloting of a mobile application to pre-authenticate visitors and provide on-base mobile alerts.

**Long-term:** The long-term solution could include the full integration of sensors and cameras on base to perform facial recognition, geo-fencing, and awareness of personnel accessing secure areas on base, along with the intermediate steps noted in the short- and mid-term solutions.

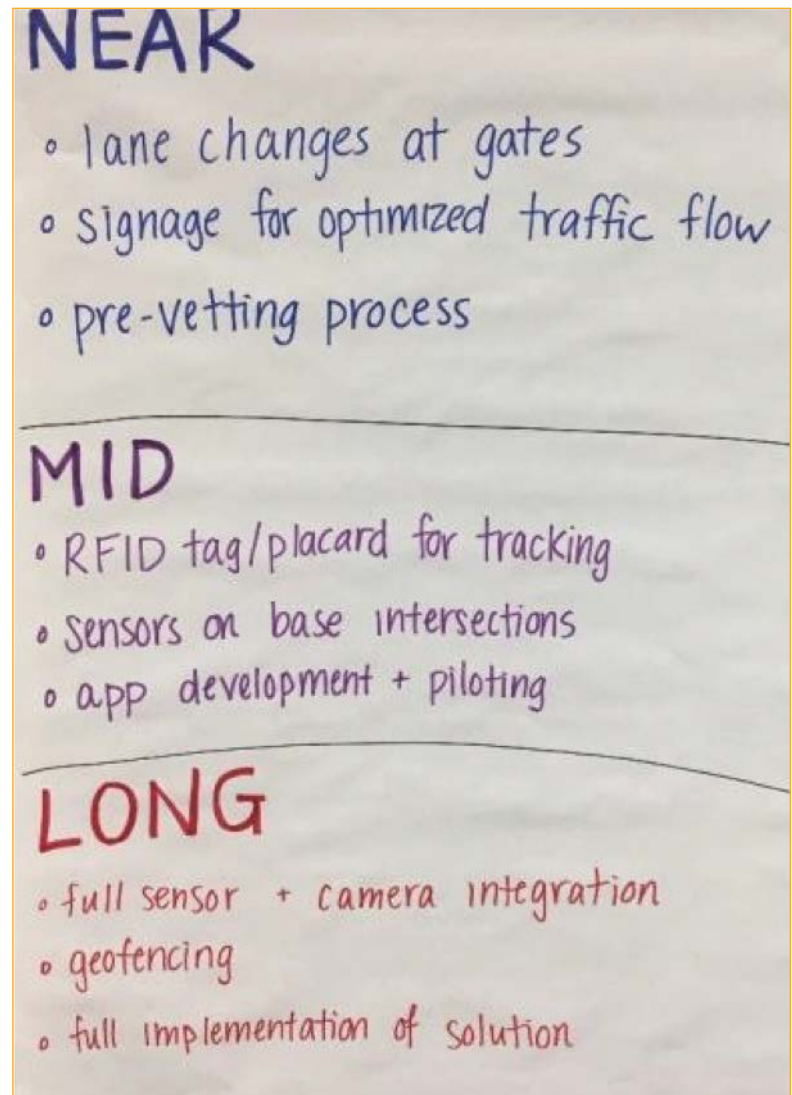


Figure 11: Entry Control Point Near, Mid, and Future Solutions



## QUANTICO TOWN

Facilitators: Gina Bryant and Ellie Eberts

Presenter: Jason Dorvee

Quantico Town presents a unique challenge as it is the only public municipality that resides within the confines of a military base. The Quantico Town Working Group envisions improvements to security and protection of Quantico Town through a comprehensive community engagement plan, public-private partnership, and tools that enhance overall

The Working Group discussed the initial problem statement at length, finally landing on a broader problem statement: “Given limits on access control to and from areas such as Quantico Town, how do we protect MCBQ with limited resources and manpower?” The reframe centered around a discussion that MCBQ base protection efforts do not want to prevent *people*, like those in Quantico Town, they want to prevent *actions*. Those actions could originate from Quantico Town residents, but they could just as easily originate from any authorized base visitor. The group did acknowledge, however, that Quantico Town access does increase opportunities for threats

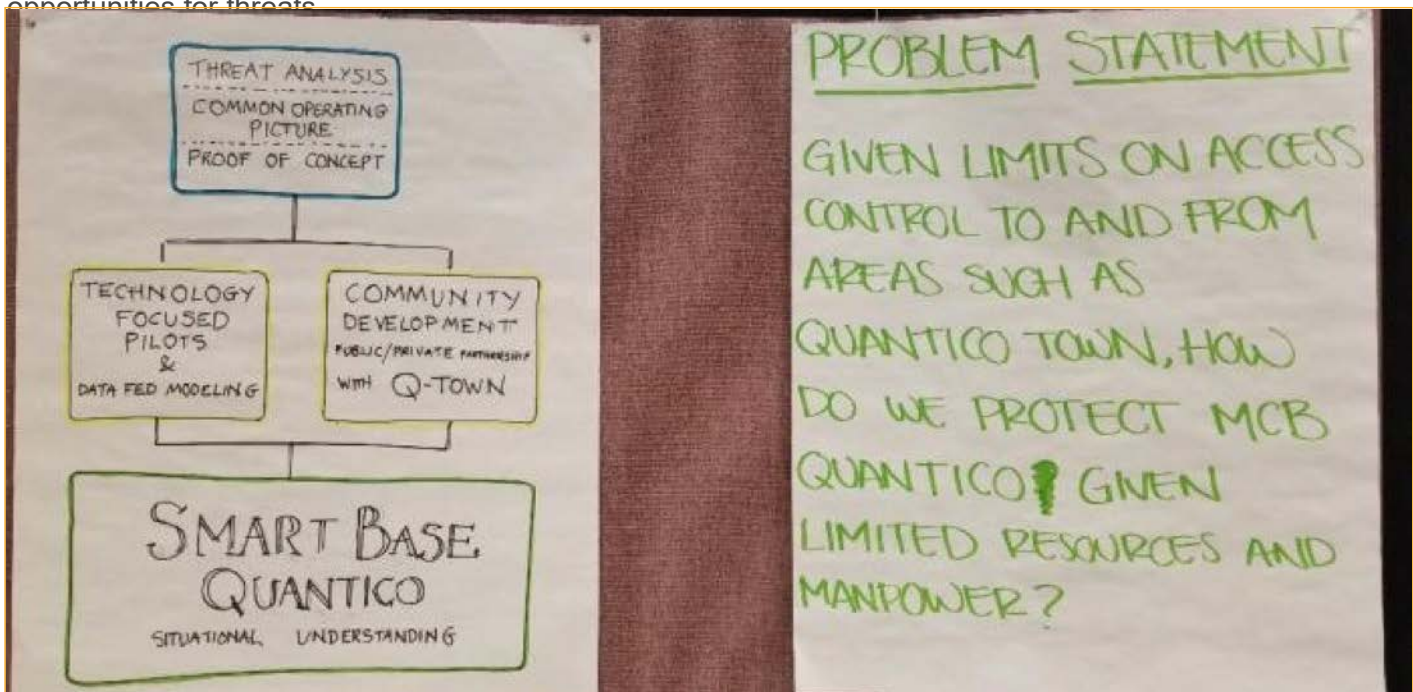


Figure 12: Quantico Town Problem Statement

## NEAR, MID, AND FUTURE SOLUTIONS

To achieve the next generation installation, the working group developed a phased approach:

**Near-Term:** As a proof of concept, the near-term solution includes a data-driven threat analysis system to create a common operating picture. This pilot focuses on a license plate capture and monitoring system. Pictures of each licence plate, along with the entry and exit time, would be collected and stored. The system would check against registries of stolen vehicles and look for inconsistent patterns of travel, which would be flagged immediately and sent to gate security personnel hand-held devices for immediate action. Data captured in the virtual database would be combined with other local data, studies, surveys and open source data to run a vulnerability and threat assessment for all vehicles entering MCBQ.

**Mid-Term:** The mid-term solution hinges on data collection and creating a valued relationship with Quantico Town by providing use of base facilities, such as the movie theater, to build trusted coordination between base and Quantico Town residents. Implementation of sensors across MCBQ form the foundation for the next generation installation by developing a 3D virtual model of a fully instrumented section of base to generate informed decisions and test future monitoring models.

**Long-Term:** The next generation installation would enable full situational awareness to manage threats, reduce operating costs, inform decisions, manage limited resources and staff, and secure Quantico Town. Using utility monitoring sensors, license plate readers, and strategically placed cameras across base, alongside human reported information from an expanded community watch, social media, and a tip line, information would flow into a virtual base. This combination of data, models, predictive analytics, and artificial intelligence would provide a clear operating picture of the base. Visual dashboards of infrastructure, security, and facilities maintenance would provide base leadership with a clear view of the operating and protection status. The next generation installation would identify and intercept threats before they happen to mitigate both accidental and intentional incidents. The next generation installation would optimize staff time and reduce personnel, facilities, operations, and security costs. A clear operating picture would provide for informed decisions about personnel scheduling, facility improvements, accounting, and response planning. Finally, a next generation installation would ensure valued public-private partnership and reduction of risk posed by local civilians and visitors at all bases, including Quantico Town.

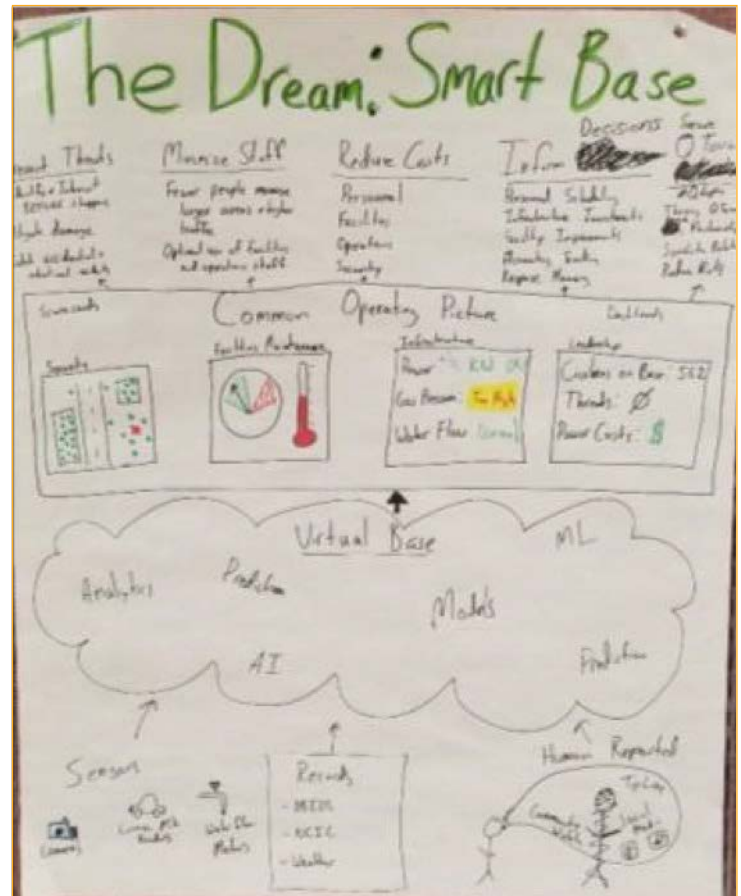


Figure 13: Quantico Town Next Generation Installation





## LESSONS LEARNED

We polled attendees to understand overall satisfaction with the event and lessons learned as we look to improve Installation neXt events in the future. Of the 15 participants that completed the evaluation form, the following results were captured:

Overall, how satisfied were you with Installation neXt QUANTICO?



How satisfied were you with the format of the working groups?



■ Very satisfied 
 ■ Satisfied 
 ■ Neutral 
 ■ Dissatisfied 
 ■ Very dissatisfied

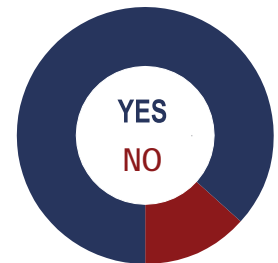
- "I felt the blend of private sector and government bodies worked really well."
- "Given the time constraints, I thought the organization of ideas/thoughts/conversations were captured well and organized in a cohesive workable solution."
- "The facilitators were very organized and professional."

Is there any information that you'd like to see at the next Installation neXt event?

- "I'd like to know the reactions to the proposals by stakeholders."
- "A condensed summary of the four groups' processes and the findings."
- "I would really like to continue to collaborate with interested participants."
- "Clearer problem statements identified earlier in the process."

Would you recommend attending an Installation next event to your colleagues?

- "Yes, but sadly we are too small and too busy to send more than one person – and even that's a stretch."
- "Yes, it allowed me to truly understand the issues at hand and to meet differing and supportive views."
- "No, we didn't get a chance to network with non-group members enough."



Are there groups or SME's you did not see represented that you think could add value at the next Installation neXt event?

- "I would have liked to see more representation from the hosting Marine Corps base."
- "Innovation experts, energy engineers from the private sector."
- "More sociologists, human resources, psychologists, and civilian-facing companies, etc."

Additional comments:

- "I would have liked to know more about how last year's symposium went and what came out of it as inspiration for this one."
- "More thought as to how to divide participants to have a good blend of skills and experience in each group."
- "More direct communication with prospective participants would be helpful."
- "Loved the startup demo!"



## DISTINGUISHED VISITORS

LAST NAME	FIRST NAME	ORGANIZATION
Beyer	Phyllis	Asst. Secretary of the Navy
Coglianesse	Vincent	Commander MCICOM
Bentley	William	Commander MCB Quantico
Goodman	Sherri	Woodrow Wilson International Center
Thompson	John	Office of Asst. Secretary of the Army (IE&E)

## INSTALLATION NEXT QUANTICO STAFF

LAST NAME	FIRST NAME	ORGANIZATION
Bolden	Ché	Asst. Chief of Staff MCICOM G-7
Calamug	Albert	MCICOM (Installation-werX)/The Columbia Group
Gupta	Rathi	MCICOM Social Media/Booz Allen Hamilton
Hart	Olivia	MCICOM Social Media/Booz Allen Hamilton
Huntley	Amanda	MCICOM (Installation-werX)/ Booz Allen Hamilton
O'Reilly	Jess	MCICOM (Installation-werX)
Rose	Edelina	MCICOM (Installation-werX)/The Columbia Group

## WORKING GROUP: QUANTICO TOWN

LAST NAME	FIRST NAME	ORGANIZATION
Bryant	Gina	Working Group Facilitator, Booz Allen Hamilton
Eberts	Ellie	Working Group Facilitator, Booz Allen Hamilton
Alfaro	Carlos	MCICOM GF-1
Alymer	Jay	Tag Team Group Limited
Baskin	Michael	Marine Corps University
Birch	Gabriel	Sandia National Laboratories
Black	John	Blueforce Development
Brundage	Heather	Synapse
Clark	John	AT&T
Crawford	Seth	LE/EOF FPID CD&I
Dorvee	Jason	US Army ASA IE&E and ERDC





## WORKING GROUP: QUANTICO TRAIN STATION

LAST NAME	FIRST NAME	ORGANIZATION
Lucy	Nathan	Working Group Facilitator, Booz Allen Hamilton
Naga	Julie	Working Group Facilitator, Booz Allen Hamilton
Butters	William	Provost Marshall
Fitzgerald	Ryan	DoN
Fleckner	Karen	Artesion, Inc.
Gomes	Luciano	SYNCADD Systems Inc
Guttromson	Ross	Sandia National Labs
Hess	Bernard	Law Enforcement, Investigations and Corrections Branch, PS, PP&O
Holt	Mark	Tag Team Group Limited
Ivey	Jeffrey	HQDA, ACSIM, SIG
Lewis	John	Synapse Product Development
Newell	Brandon	MCICOM G-7
Sciupac	Maia	Booz Allen Hamilton
Singh	Glady	PrecisionHawk
Stark	Chris	SOFWERX

## WORKING GROUP: ENTRY CONTROL POINT

LAST NAME	FIRST NAME	ORGANIZATION
Michael	Laura	Working Group Facilitator, Booz Allen Hamilton
Reavis	Dmitri	Working Group Facilitator, Booz Allen Hamilton
Coglianesse	John	Sciath Group UAS
Ellis	Paul	Marine Corps Logistics Base Albany
Lach	Nicole	Booz Allen Hamilton
Putney	Jonathan	Attollo LLC
Riley	Joseph	PD MCB Quantico
Samuel	Roosevelt	BMNT Partners
Smith	George	US Army
Stone	David	Marine Corps Warfighting Lab
Stubbs	Jaclynn	Sandia National Laboratories
ter Heide	Roger	SIM-CI
Trechter	Raymond	Sandia National Laboratories
Trimble	Alphonso	Marine Corps Logistics Base Albany
Turner	Daniel	TRAXyL, Inc.
Wieland	Joseph	PdM Force Protection Systems



## WORKING GROUP: GRID SECURITY

LAST NAME	FIRST NAME	ORGANIZATION
Bostrom	Michael	Working Group Facilitator, Booz Allen Hamilton
Taranto	Christine	Working Group Facilitator, Booz Allen Hamilton
Douquet	Gregory	SIM-CI
Hall	Brad	Ernst & Young
Jackson	Pamela	Marine Corps Logistics Base Albany
Leinberger	David	HQ Army - ACSIM
McKernan	Bryan	Consortiq
Meyer	Marty	U.S. Customs and Border Protection
Miller	Kimberly	Rath Miller Public Affairs
Monohan	Randy	MCICOM GF-1
O'Connell	Rich	NEC Corporation of America
OMalley	Svetlana	MCICOM
Parks	Zachary	MCICOM G-3
Pelland	Jim	MCWL
Range	Jeromy	Marine Corps Base Quantico
Stehn	Mike	Deloitte Consulting LLP
Turner	Phillip	TRAXyL, Inc.





## INSTALLATION NEXT HAWAII

Join us 29-31 January 2019 for Installation neXt Hawaii



In their current state, Marine Corps installations lack the ability to generate, store, and distribute energy and water. Installation neXt Hawaii, focused on resilience, seeks to leverage attendee expertise and experience to explore ways installations can independently provide water and energy for at least 14 days in order to sustain and conduct military operations.

Register at: <https://installationnexthawaii.eventbrite.com>