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# Multi-Domain Deterrence Table Top Exercise Summary

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Multi-Domain Deterrence Table Top Exercise  
Livermore, CA, United States  
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# Multi-Domain Deterrence Table Top Exercise Summary

October 25, 2017

Lawrence Livermore National Laboratory  
Prepared by Craig Wuest

## Introduction to the Table Top Exercise

The Lawrence Livermore National Laboratory (LLNL) Office of Defense Coordination (ODC), with support from the Center for Global Security Research (CGSR), hosted a one-day multi-national table top exercise (TTX) that presented over 80 participants with an increasingly challenging set of four vignettes<sup>1</sup> centered on North Korea (Democratic People's Republic of Korea or DPRK) aggression in Northeast Asia and the Western Pacific. An overarching "road to crisis" set the scene for participants and key questions for each vignette were then posed in a facilitated/guided discussion.<sup>2</sup>

Prior to beginning the TTX, short presentations were provided on cyber defense and offense, strategic deterrence, and strategic attack. In particular, the definition of strategic attack was presented along with the U.S. National Security Interests as stated in the 2015 U.S. National Military Strategy.

The four TTX vignettes, with differing degrees of aggression in multiple domains, allowed participants to examine pros and cons for a variety of response options. These options would likely be provided to senior military and government leaders, in order to arrive at a fully informed decision on a response. Additionally, the vignettes allowed participants to begin to explore a number of key concepts that will certainly be in play in the event of hostilities breaking out in any contested region. In developing these concepts, key questions to be answered include:

- How do we establish consensus among the U.S. and its allies regarding red lines and thresholds?
- How do we determine the best U.S. responses to aggression in order to restore deterrence and to reassure allies?
- Do we understand and agree on what constitutes "strategic attack?"
- What are the response options in the event of nuclear use short of a successful attack on U.S. and/or allied interests?

The participants were provided the definition of strategic attack as follows: "An attack defined by intentional or actual effects, not means, that: renders a potentially decisive effect on the outcome of a conflict affecting vital national security interests; renders catastrophic effects on civilian infrastructure/population; renders significant impact on U.S. power/prestige."

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<sup>1</sup> Vignettes were not based on or derived from any U.S. Government Intelligence Community analyses or products. The events described in the vignettes were inspired by actual incidents as reported openly in various media over the last decade. Dates and some details were modified to facilitate discussion about multi-domain deterrence dynamics using an entirely unclassified scenario extrapolated from real world events.

<sup>2</sup> The views summarized here should not be attributed to the U.S. Government, LLNL, or any other organization.

U.S. National Security Interests were clearly outlined as:

- The survival of the Nation.
- The prevention of catastrophic attack against U.S. territory.
- The security of the global economic system.
- The security, confidence, and reliability of our allies.
- The protection of American citizens abroad.
- The preservation and extension of universal values.

This report summarizes the vignettes, key questions, and a sampling of perspectives and insights from the participants. The TTX was conducted under the “Chatham House rule,” therefore no comments are attributed to specific participants.

### **Setting the Stage – The Road to Crisis**

The *road to crisis* provided TTX participants with a combination of real-world DPRK events as reported in the news media in a time period of about 2011 through 2017 together with postulated events occurring sometime in the near future. The events occurring through 2017 included space launches; internal leadership purges and assassinations; DPRK cyberattacks; progress on submarine launched ballistic missiles; multiple underground nuclear tests exhibiting increasing yield, culminating a so-called hydrogen bomb test in 2017; and increasingly capable ballistic missile launches, including a launch with projected intercontinental capability to strike the U.S. mainland and launches over-flying Japan. These events occurred despite increasingly harsh international economic and diplomatic sanctions imposed on the DPRK regime.

Beginning sometime in 2018, the following events are postulated for the purpose of setting the stage for the vignettes detailed in later sections of this summary.

Rather than leading the regime to reconsider its nuclear programs, ongoing sanctions have severely affected food supplies, leading to rationing and have resulted in the regime threatening the United States. Cyberattacks against the regime were conducted, including personal messages against Kim Jong Un (KJU) and lower levels of leadership. During this time the DPRK arrested two non-governmental organization (NGO) charity workers (possibly abducted south of the demilitarized zone (DMZ)). These workers were tried and sentenced to 20 years of hard labor, leading to unexpectedly harsh international condemnation and forced KJU to retaliate internally by executing his Minister of Information.

KJU increased his belligerence in a series of televised speeches and began conducting drone and cyber operations against South Korea (Republic of Korea or ROK), including a significant attack on financial institutions. Nuclear attack was threatened with the statement, “Is the U.S. willing to trade Honolulu for Seoul?” Soon after, a missile aimed at the north of Hawaii was launched, but it broke up in-flight. DPRK stated that the missile achieved its objectives and was purposely blown up in flight, however the U.S was taken by surprise and called for further international actions against the DPRK.

Increasing food shortages led the DPRK to send fishing fleets south, accompanied by military escorts after being repelled earlier by ROK Coast Guard forces. A DPRK submarine attacked a

ROK frigate and the situation escalated over the next day with ROK cruise missile attacks against the North and limited artillery exchanges. Force mobilization commenced on both sides leading to DPRK threaten Seoul and U.S. forces stationed in ROK and Guam. International citizens in ROK began to evacuate. The U.S. forward-deployed a B-1 squadron to Guam and moved a second aircraft carrier strike group into position in the region (planned to arrive in two weeks).

An explosion was reported near KJU's motorcade in Pyongyang, with many casualties, but KJU survived. Reports of unusual troop movements around Pyongyang were made. Later that day, a new, more sophisticated wave of cyberattacks against U.S. and ROK financial institutions forced suspension of banking operations. KJU went on live TV to threaten demonstration of his full missile and nuclear capabilities.

Intelligence community assessments suggested with moderate confidence that DPRK had the capability to deliver a nuclear-armed ballistic missile and with moderate-to-high confidence that DPRK would preemptively attack militarily against the U.S., ROK, and/or Japan.

U.S. presidential guidance included measured statements regarding deterring DPRK, while not overreacting to the situation.

### **Vignette #1 – Cyber Event**

On the evening of January 21, 2018, the Yeongheung coal-fired power plant on the outskirts of the greater Seoul metropolitan area experiences an abrupt shutdown when several generators catastrophically fail, resulting in injuries and fatalities of the operations and maintenance staff. This causes a cascading failure across the electric power grid supporting Seoul and its surrounding area. A second similar failure is experienced at the Incheon Airport causing havoc with field operations when two taxiing aircraft collide in darkness, leading to injuries and fatalities numbering in the hundreds. Statements from the DPRK don't take responsibility for the cyberattack, but indicate the regime's happiness with the events that have beset the ROK. There is widespread suspicion that DPRK was indeed responsible for this event.

### **Guided Discussion:**

The questions posed to the TTX participants were:

- What is it the DPRK was trying to do?
  - Why cyber?
  - Was a threshold exceeded for DPRK that caused them to take this action? Was their action exceeding our threshold for response?
- Using our strategic attack definition as a bar – would the United States call this a strategic attack?
  - If the ROK had the same definition, would they call it a strategic attack? Why?
- The Intelligence Community (IC) assesses moderate to high confidence that DPRK launched this cyberattack.
- Would it matter if this attack emanated from another country?
  - Russia? China?
- Is a response required? What is the objective? Do we want to deter further aggression?

- If we were to go back in time and knew the DPRK was going to do this, what could we have done 6-12 months ago to deter?

Key discussion points are summarized below:

**Assessing the Situation:**

- Signaling – the DPRK is willing to use cyber assets to warn others that there is more where this came from.
- Paralysis by analysis – what is our best understanding of the situation and how should we respond? Is it a strategic attack or something less? Keep in mind of the context – there already have been artillery exchanges in addition to cyberattacks on the regime – the intent of DPRK in response to this should be considered.
- What’s going on in other domains? Other domain actions should be considered in formulating an appropriate response. DPRK’s cyberattack may have been calculated by their leadership as a proportional response to international sanctions and other actions taken against the DPRK people and the regime.
- The cyberattack can be equated with kinetic sabotage or to a limited conventional strike on a critical node. We should focus on the actual effects in determining the response.

**Red Lines and Thresholds:**

- A threshold (loss of life) has been crossed – leaders need to understand response thresholds and plan response options ahead of time.
- One participant opined that there is no expression of a red line that has been crossed. This needs to be discussed more closely with ROK – do they think a red line has been crossed? Are they responding appropriately and in consultation with the U.S.? The whole world will be watching how the U.S. responds in concert with its ROK ally.
- Conversely, a separate participant asserted that killing people is an obvious red line – an act of inadvertent escalation and therefore not preventable by means other than defense against cyberattack.
- Impacts include those on the U.S. military in addition to impacts on the civilian population. This forces the U.S. to be involved and could lead to rapid escalation. Would a red line have helped to deter DPRK cyberattack? Red lines should be tied to the effect of any attack and not explicitly related to the mode of attack.
- U.S. history of restraint in responses can embolden adversaries, or lead to misperceptions of what the U.S. is willing to suffer, leading to unintended response.
- The international community would be interested in seeing a U.S. response for deterrence and assurance, but the U.S. should avoid specifics of response options in the articulation of red lines.

**Implications, Next Steps and U.S. Responses:**

- Given this event, we would likely assess that our deterrence strategies have failed. We need to discuss with ROK and Japan how to seriously/properly respond in order to suppress further action.
- Attribution issue – plausible deniability and others not convinced it was a DPRK attack – leading to UN Security Council action or lack of action.

- Consequences of the DPRK cyberattack may be underestimated. It is possible that a cyberattack will lead to significant global reaction, e.g., capital flight from ROK and the region. Impact on the international community in ROK would be significant, potentially leading to people leaving the country for fear of escalation.
- The global cyber defense community will be motivated to as a result of this attack and will be working to mitigate against potential additional attacks. If this had been a kinetic attack, we would have likely developed an appropriate response by now – possibly including escalation to prevail on terms favorable to the ROK and U.S., but how much is enough to break this cycle without driving DPRK to escalate further?
- U.S. and allies need to think through what state of the world we want to live in. Does loss of life require us to respond in kind? Should we only go after the “cyber warriors?”

### **Vignette #2 – WMD Event**

Early on the evening of January 21, 2018, DPRK artillery emplaced in the Kaesong Heights releases a single volley of fire targeting the ROK’s Ministry of National Defense in downtown Seoul. Approximately one dozen rounds of ordnance strike on or near the Ministry of National Defense building. It quickly becomes apparent that some of the rounds were loaded with chemical munitions determined to be Sarin gas. Not all rounds fall within the Ministry of National Defense complex.

Initial reports indicate fatalities number over 100 with the majority being ROK civilians along with a few ROK military personnel. A small number of U.S. military personnel were also killed. Injuries total over 300, again with the majority being ROK civilians and military, but also U.S. and foreign personnel. Large-scale panic ensues in Seoul leading to additional injuries to the population.

### **Guided Discussion:**

The questions posed to the TTX participants were:

- What is it the DPRK was trying to do – intent?
  - Why chemical?
  - Was a threshold exceeded for DPRK that caused them to take this action? Was their action exceeding our threshold for response?
- Do we have an attribution problem?
- Why do/don’t chemical weapons exceed a threshold?
  - What if you had the same effects, but through conventional attacks?
- Using our strategic attack definition as a bar – would the United States call this a strategic attack?
  - If the ROK had the same definition, would they call it a strategic attack? Why?
- Is a response required? What is the objective? Deter further aggression?
- If we were to go back in time and knew the DPRK was going to do this, what could we have done 6-12 months ago to deter?

Key discussion points are summarized below:

**Assessing the Situation:**

- There are differences between this scenario and the prior scenario: more military involvement; attribution is different and much less ambiguous; and deliberate timing of attack to maximize casualties and generate panic.
- The use of chemical weapons is different – there is a broader understanding that this mode of attack crosses thresholds requiring significant response. Psychological impact is greater in chemical attack, leading to mass panic and potential for significant population movement out of the affected areas.
- Context again matters, given troop movements and other actions prior to the attack, what is the DPRK trying to do?
- In this scenario, we may still be in the realm of limited DPRK provocations to achieve specific ends, perhaps based on the DPRK’s sense that the U.S. is now deterred because of new capabilities to threaten the U.S.

**Red Lines and Thresholds:**

- Is this a “strategic attack?” It doesn’t matter, but it is a red line that has been crossed in the eyes of ROK. Any country attacked in this way would react to curtail any future attack in any manner possible.
- Thresholds: Pre-conflict actions may have driven DPRK to act, however this use of WMD and the ensuing global reaction calls for a response in order to deter future WMD attacks on other allies. Even if there weren’t any casualties, a response would be needed to deter and assure.
- Regarding thresholds, response is hard to plan if the U.S. and ROK don’t have a good idea of what thresholds demand response. Distinguishing between “attack” and “strategic attack” may help drive thinking on what threshold should be applied for response.

**Implications, Next Steps and U.S. Responses:**

- This is an opportunity to catalyze action in a way to deal with this threat now and in the future.
- Regarding attribution, the experience in Syria will likely lead to push back from Russia, China, and others, bolstering a DPRK denial strategy that could be effective and lead to uncertainty in ROK and U.S. response.
- The ROK will want to hit back hard. The U.S. will be more restrained – wanting to manage this crisis to the earliest possible resolution with minimal cost. Japan may want to consider evolution of its position, including potential response if Japanese thresholds are crossed.
- Because the DPRK must have known their action would provoke a response, they must have calculated that they could accept the cost based on their understanding of ROK and U.S. behavior. A punishing U.S. and ROK response needs to show DPRK that they were wrong in their calculation, in order to reestablish deterrence.
- There is a need to signal U.S. support to the region without directly threatening the regime, e.g., deliberate movement of forces outside and inside theater as a means of escalating in a measured way.



- Are there attack responses that might be identified that don't threaten the regime's survivability and reestablish deterrence? While the U.S. may be willing to accept a new status quo, the ROK may not be willing to.
- Timeliness of response may be more important than in the case of cyberattack because of the clear use of chemical agent and the recognition of the ROKs right of self-defense in light of this attack. Still uncertain regarding U.S. and ROK coordination on response.
- Is DPRK intending to drive U.S. and ROK apart through their actions and how would other allies view this in light of U.S. extended deterrence and assurance?
- Depending on whether we are on the precipice of war, our response may be different. E.g., is DPRK showing "restraint" or intending to escalate? They also may have different risk tolerances than we do.
- China will likely play a major role in trying to prevent escalation to the point that the DPRK is in danger of collapse, leading to refugee flows into China.

### **Nuclear First Use**

Prior to introducing Vignettes 3 and 4, a short discussion was held regarding what constitutes "nuclear first use." Cases discussed included (in approximate order of strategic impact):

- Underground Nuclear Test
- Launch and Nuclear Detonation over Adversary's Own Territory
- Nuclear Detonation in Space
- Nuclear Detonation over International Waters
- Nuclear Detonation over Allied Territorial Waters
- Nuclear Detonation over Allied Territory
- Nuclear Detonation over U.S. Territory

It was expected that the last two cases, would exceed any definition of red lines, requiring a significant U.S. and allied response. For the first five cases, the discussion of thresholds and what constitutes nuclear first use were less clear, with some participants suggesting nuclear detonation of any kind as meeting the criterion of nuclear first use, while others were more circumspect, suggesting that nuclear attack would be the threshold for determining nuclear first use. Discussion of two nuclear vignettes followed.

### **Vignette #3: Nuclear First Use – Demonstration Shot**

At 0100 on January 21, 2018, U.S. national technical means detect the launch of a single ballistic missile from the DPRK on the Korean peninsula. The launch correlates to an announced DPRK test. A previous closure area and notice to airmen and mariners (NOTAM) was issued by the North Korean government.

The missile flies a similar profile to earlier North Korean test launches, achieving an altitude of 3,000 km and traveling a little over 400 km. The estimated impact point is within the DPRK's territorial waters in the Sea of Japan and the flight time is 37 minutes.

At 0136, U.S. national technical means detect an atmospheric nuclear detonation over the estimated impact point. The reported yield is less than 15 kilotons (kt) at an altitude of 30,000 ft.

At this altitude and yield, the detonation will not produce any fallout, nor will there be any blast or thermal effects on the ground. Electromagnetic pulse (EMP) will be minimal and of short duration.

This event confirms DPRK demonstrated ability to launch a nuclear-armed intermediate range ballistic missile (IRMB) with the ability to target Guam or Alaska.

### **Guided Discussion:**

The questions posed to the TTX participants were:

- What was the DPRK was trying to do – intent?
- Why would they conduct a test or demonstration like this?
- What are related concerns? The fact that DPRK detonated a nuclear warhead over the Sea of Japan (means), the DPRK’s intent over the demonstration, and/or the consequences of the detonation?
  - Was a threshold exceeded for DPRK that caused them to take this action? Was their action exceeding our threshold for response?
- Using our strategic attack definition as a bar – would the United States consider this a strategic attack?
  - What about U.S. National Security Interest #4 as it applies to U.S. assurance to allies?
- Would you consider this “nuclear first use?”
- Does it matter where the detonation occurred?
- Is a response required?
  - Nuclear?
- What is the DPRK’s objective?
  - Strengthening their own deterrence posture?
- If we were to go back in time and knew the DPRK was going to do this, what could we have done 6-12 months ago to deter?

Key discussion points are summarized below:

### **Assessing the Situation:**

- This is not first use in a military sense.
- We need to understand the DPRK’s rationale for this event, which inflicted minimal damage/no loss of life, but seemed to be a demonstration of DPRK resolve meant to provide U.S./ROK with an off-ramp to deescalate.
- Contrast the massive existential threat posed to the U.S. from Russia’s nuclear arsenal with the DPRK threat. Despite U.S. concerns regarding non-strategic nuclear weapons, bilateral treaties governing strategic nuclear weapons have been effective in ensuring a stable strategic deterrence relationship. No rules-based relationship exists between the U.S. and DPRK, which leads to uncertainty, enhanced threat assessment, and uncertainty of response.

- DPRK is indeed trying to create an off-ramp for the U.S., using this process of limited escalation to “wake up” the U.S. to the fact this is not a fight worth fighting, i.e., this is a compelling act.
- DPRK has just demonstrated U.S. cannot depose the regime without incurring unacceptable cost.
- Should there be a military response? A diplomatic response? Some response is warranted, but what?

### **Red Lines and Thresholds:**

- While this was not a nuclear attack, it has crossed a threshold for response, with significant political implications for U.S. and its allies.
- Does this require U.S. to cross its own nuclear threshold in response?

### **Implications, Next Steps and U.S. Responses:**

- Both ROK and Japan will look to the U.S. to understand if we “have their back” – concern that ROK and Japan may be motivated to seek their own nuclear deterrent if we don’t.
- This event provides an opportunity for the U.S. to react by taking the moral high ground and pursuing policies for the Korean peninsula that were not possible prior to DPRK nuclear use. This nuclear use hasn’t changed the strategic calculus much.
- ROK will watch to see if the U.S. is confident that it can defend itself from DPRK and will be looking for a strong response from the U.S., while not decoupling the ROK from the U.S. There is the possibility of U.S. strengthening ROK capacity/capability as a means of reassurance.
- There are deficiencies in consultative process (the software) as opposed to the discussion of technical aspects of response (the hardware). We need to make sure ROK and others have a seat at the table, which can degrade the impact the overall deterrence value.
- Military response in the immediate term could include deploying significant non-nuclear forces to counter future launches, deploying additional nuclear capabilities to theater, and strengthening missile defenses in the theater.
- Having the ROK “go nuclear” doesn’t solve their broader security needs because of constraints accepted as a signatory of the NPT and likely negative impacts on relations with U.S., and negative impacts on their economy if they were to choose this path.
- Posturing defenses for preempting the next launch could be construed as preparing for regime change.
- A strong statement needs to be made by the U.S. to China to make the case for them to help prevent further DPRK aggression (and to Russia, also).
- We need to avoid a knee-jerk reaction to this latest provocation. We need to steadily strengthen our deterrence posture in partnership with allies in the region.
- We need to remind the DPRK regime that the U.S. can act in an unpredictable manner, which strengthens our deterrence posture.

### **Vignette #4: Nuclear First Use – Ballistic Missile Attack**

At 0628 on January 21, 2018, U.S. national technical means detect the launch of a single ballistic missile from the DPRK on the Korean peninsula. The launch does not correlate to any announced

DPRK tests and no closure areas and NOTAMs have been issued by the North Korean government.

The missile's trajectory is toward Guam, with an estimated impact within the island's defended area. Missile defense assets are on station and ready to engage. Weapon Release Authority has been granted and the Aegis ship USS Vella Gulf, approximately 425 nautical miles northwest of Guam launches a salvo of Standard Missile-3 (SM-3) surface-to-air missiles.

The SM-3 missiles successfully intercept the incoming DPRK IRBM at an altitude of approximately 950 km (i.e., in the exo-atmosphere). Immediately following the intercept, U.S. national technical means detect a low-yield nuclear detonation and report that the SM-3 kinetic intercept of the DPRK IRBM caused an inadvertent nuclear detonation of the DPRK warhead. A moderate amount of space debris has been generated and radiation belt pumping is possible, potentially impacting the operation of low earth orbit satellites for an extended period of time.

### **Guided Discussion:**

The same set questions posed in Vignette #3 above were discussed for Vignette #4. Key discussion points are summarized below:

### **Assessing the Situation:**

- This is now considered a nuclear attack by most participants. Given the circumstances, the DPRK cannot credibly suggest this was meant to be a nuclear test and not an attack.
- If DPRK were to suggest this was a “preemptive-defensive” attack, this would not be considered credible.
- What are the factors that need to be brought to the president in order for a decision to be made?

### **Red Lines and Thresholds:**

- It is possible that the U.S. and allies can choose to do nothing, since no “red line” is crossed in terms of actual targets hit and casualties inflicted. This puts DPRK on notice that the cost and risks are now too high/not calculable. In effect, the U.S. can call DPRK's bluff.

### **Implications, Next Steps and U.S. Responses:**

- ROK and Japan will be challenged to respond to what is construed to be a strategic attack against the U.S.
- ROK will likely come out with a response and U.S. will be challenged to work with ROK to form a suitable consensus. Japan will debate whether to authorize dispatch of forces under the United Nations flag.
- If a strategic response is required, would this necessarily require a nuclear response from the U.S.? Some say we absolutely need to have a nuclear response; if not, allies would not be assured that the U.S. extended deterrence is credible.
- The ROK would not necessarily want a nuclear response, in part, because of the need to maintain a reasonable chance of reunification.

- A conventional response will likely lead to significant damage to Seoul; a heavier conventional response to take out even more DPRK military capability would lead to even greater damage.
- If DPRK starts the war, China is likely to stay out of the conflict. However, China may come in on DPRK's side if U.S. were to start the war.
- The U.S. president will have to answer to the citizens of Guam. A non-response option is not the option – we need to identify the proper escalatory response to inflict cost on DPRK in order to prevent any future attack.
- If U.S. doesn't respond with a nuclear response, will this lead to proliferation concerns as other countries seek their own nuclear deterrent? The U.S. will need to work closely with allies in order to assure them regardless of the response.
- Proliferation concerns may hinge on international perceptions that DPRK was successful in its actions, particularly if its leadership stays in place.
- There is concern that U.S. response might somehow discount ROK security needs in favor of U.S. interests.
- The confirmed DPRK nuclear-armed missile overflight of Japan may lead to calls for Japan to seek its own nuclear deterrent, however, the political resistance will remain significant in Japan.
- U.S. response will shape other's actions, particularly Iran, China, and Russia. A conventional response may confirm adversary views that we are self-deterred from using nuclear weapons.
- What else might be done in other domains? Economic, information operations, blockades, etc., in lieu of military options?
- Key question for the U.S. president – What are you going to do to make sure this never happens again?

### **Wrap-up discussion:**

The following concluding points were noted during the wrap-up discussion of the TTX:

- Discussion of deterrence concepts begs the question: What does multi-domain deterrence add to our toolkit for response options? Additional domains increase the tools, in particular, cyber and space, but they may add to crisis instability for more near-peer adversaries, i.e., the temptation to “go first” because you don't get to go second.
- Cyber and space domains are generally “black” domains, with classification restrictions on information sharing leading to challenges for integration with other domains. Leadership also will be reluctant to use alternative domains because of the complexity of use and the challenges of fully integrating and coordinating actions across domains and with allies. Multi-domain response options have to be easily understood by decision makers. They also need to be agile and implementable at the time needed. Options also need to identify and manage risks intelligently.
- Deterrence calculus includes our adversaries' calculus and how we influence it. How does the DPRK assess our and our allies risk-taking propensities, and vice-versa? There is a concern that we are on a path with DPRK similar to what occurred when Pakistan acquired its nuclear weapons in 1998 and then, arguably, was emboldened to act offensively, leading to the Kargil conflict with India.

- How do we measure the success of any messages we are sending to DPRK? Messaging seems not to be working based on DPRK's continued provocations.
- There are multiple pathways to escalation – intentional, inadvertent, accidental. The vignettes today showed how different pathways can interact. The first three vignettes had the potential to lead to U.S. escalation, which would not have been expected by our adversaries.
- Incentives for restraint exist, up to the point of a nuclear attack. Messaging should be clear in this regard. We need to avoid sending signals that would suggest U.S. willingness to preemptively attack DPRK. However, U.S. credibility in messaging that we are not seeking regime change is made difficult because of past U.S. actions that resulted in regime removal in Iraq and Libya.
- If we cannot convince DPRK that we are not looking for regime change, we should switch from a deterrence-by-punishment campaign to a deterrence-by-denial campaign. The presence of U.S. troops in ROK complicates the perception that we don't want regime change (or reunification on DPRK terms). ROK's policy is for peaceful reunification, however, ROK is an existential threat to DPRK. DPRK's policy of acquiring nuclear weapons may be part of a larger strategy to improve the quality of life within DPRK. Should we accept peaceful coexistence with a nuclear DPRK along the lines of how we've accepted other countries' nuclear capabilities? Are we ready to accept the possible challenges it would pose to the global non-proliferation regime?
- The four vignettes were useful in exploring how to restore deterrence after it has failed. The language of escalation management is difficult, unhelpful, too simplistic. The interactions of red (adversaries), blue (U.S.), and green (U.S. allies) interests, thresholds, and strategies are all connected. We cannot act independently from our allies when confronting these challenges for restoring deterrence. First, we need to understand the requirements of our allies – an alternative hypothesis is that our allies will act on their own. Allies will likely require regime removal to end things in an optimal manner – status quo ante is simply hitting the “reset button.” Second, we should try to understand DPRK strategies, red lines, and interests. When will the regime perceive they are at risk? Is KJU more predisposed to act in self-defense when challenged or will he lash out if he perceives to be cornered with no other options? Lastly, we analyze our thresholds from a technical/operational perspective based on our national interests. But we tend to discover our interests only when they are put at risk. None of the response options we've explored, including doing nothing, will be attractive and all will lead to outcomes with varying degrees of success to move beyond the status quo ante.
- We were provided with a good definition of strategic attack, but how do we fit allies into the framework, particularly as it applies to U.S. vital interests, power, and prestige? If there are situations where U.S. vital interests are not at risk, but allies' interests are at risk, this will have an impact on the equation. We also need a definition of strategic conflict and strategic response – a broader vocabulary.
- We need to continue to explore vignettes such as these with our allies, particularly, Japan and ROK, to continue to look at response options for our collective leadership.

## **Conclusions and Next Steps:**

In the discussions outlined above some generalizations can be made. Foremost – there are no easy military response options to potential hostile actions by DPRK. Each military option, including inaction, entails risks and potential costs for U.S., its allies, and global order. Any action taken must be weighed against, on the one hand, the need to avoid inadvertent escalation, and on the other hand, requirements of longer-term stability and security on the Korean Peninsula.

The context matters. For example, consider what led to DPRK’s hostile action – sanctions, misperceptions regarding regime change, etc., is important. Could the U.S. and allies have avoided it or been better prepared to respond through better understanding of the impacts of their own actions? Also, whether any particular form of U.S. response to hostile actions would be perceived as justified and sufficient by U.S. public and U.S. allies, would be context-dependent.

The significant differences in the degree of responses that could or should be applied for the different situations were drawn out in the different vignettes. For example, ambiguity in attribution led to uncertainty in response in the case of cyberattacks. This ambiguity would not be present in a kinetic response to a kinetic attack. In the case of chemical use, a stronger response was felt to be warranted because of the psychological impact and public perceptions regarding chemical use. However, there was concern about provoking escalation if DPRK miscalculated that U.S./Allies and global response to chemical use would be aimed at regime change.

In the case of nuclear use, response options ranged from doing nothing to overwhelming nuclear attack on the DPRK despite the likely impacts on ROK and potentially on other allies in the region. Thresholds and red lines need to be better articulated and understood by all sides. Participants recognized that red lines and thresholds for the U.S. are likely not the same as those for ROK or other regional allies. The lack of mutual understanding could lead to difficulties in coordinating responses and demonstrate a lack of cohesion between U.S. and its allies during the actual crisis. This could have damaging consequences for U.S. alliance relationships in the region.

It was also noted that appropriate responses should be considered and weighed in the multi-domain context. In the first two vignettes, response options to cyberattack and chemical attack, while each having similar impacts on casualties, were quite different and potentially involved different domains in order to achieve the necessary effect while minimizing risk of escalation. In the nuclear vignettes, response options were more likely to involve nuclear options, although the appropriate magnitude of the response was in debate.

This TTX allowed participants the freedom to consider a wide range of responses to hostile actions. Many commented on the usefulness of the vignettes for this purpose. Others commented that there continues to be a need for additional work on multi-domain deterrence and that TTXs should continue to be conducted together with international partners using a variety of regional scenarios. CGSR and ODC plan to host more of these events in the coming year to explore both the policy implications as well as the implications for military response options in the context of multi-domain deterrence and integrated strategic deterrence.