Remarks by Deputy Secretary Work on Third Offset Strategy

As Delivered by Deputy Secretary of Defense Bob Work, Brussels, Belgium, April 28, 2016

Thank you all for being here this afternoon. The Deputy Secretary of Defense is the number two in the U.S. Department of Defense. The Secretary is the CEO, the Chief Executive Officer, and the Deputy Secretary is the COO, our Chief Operating Officer in the Department. The way that is defined is if you think of the movie *Jurassic Park*, I am the tethered goat.

I stay in the Pentagon most of my time. I tried to avoid getting eaten. And the many times I can escape the game preserve, it's a wonderful thing. Today, it's especially wonderful because I've never been to Brussels before. This is my first time here. It's a beautiful city. I really enjoyed my time and I'm looking forward to talking to you this afternoon and answer any questions you might have.

The Secretary has said, "We believe very strongly that we're an infliction point in the strategic landscape, much different than the last 25 years." In fact, when he came aboard, he said, "what I want to think about is how the next 25 years is going to differ from the last 25 years and that is what I really want to focus as the Secretary of Defense." Part of that strategic landscape, and by extension, NATO, is facing pressures from South, from the East, from the North, and from within. These challenges are very difficult but they have to be addressed with vigor, determination, and most importantly, collaboration across the Atlantic and within the European Union.

So what I want to talk about today is two things. People ask me all the time, how do you sleep at night with everything going on in the world? And I say, "Well, I sleep like a baby, I wake up crying every two hours." The two things that keep me up at night, a lot is the threat of terrorism and the challenges that we have with Russia. Both of these are going to require a new 21st century approach and both of these threats and our responses to them, both nations and as alliances, are going to define European security for quite some time as well as the character of the Trans-Atlantic community.

I'd like to start by talking about the challenge of terrorism. So first if all to everyone here, and to all the citizens of Brussels, and the people of Belgium, I'd like to express my deepest sympathy, and those of Secretary Carter, and the entire Department of Defense to the lives lost and those injured last month in the horrific attacks that took place just a very short distance from here. This was an attack not only on Belgium, but on civilization as we know it, and the entire European community.

As President Obama and Secretary Carter said, "the United States pledges it's full cooperation

of support in our shared commitment with Belgium, and all of European nations to help defeat the scourge of terrorism, primarily through intelligence sharing on the continent but by attacking the perpetrators of terrorism and attack infections wherever they are found around the world." That is why it is absolutely necessary to our union and as Secretary is testifying right now as we speak before the Senate Armed Services Committee of the United States.

We intend to destroy Daesh in Syria and Iraq. To destroy it, the ultimate focus of our efforts there right now are at Raqqa in Syria, and Mosul in Iraq because they constitute Daesh's military, political, economic, and ideological centers of threat. Our campaign plan involves collapsing Daesh's control over these two cities and I want to thank Belgium and the government of Belgium for its early important and continuing contributions to the coalition which is raging the fight there.

Now the relentless nature of our campaign is finally starting to bear fruit. People just don't understand that when you decide to attack a scourge like Daesh, by with and through partners, it will take a long time, longer than you expect. There will setbacks, it will be harder than we know.

The United States and NATO just invaded these two countries and try and put an end to the terrorists who were there. We believe strongly that, that will cause more problems than it would solve. So we believe that our campaign of working by, with, and through partners is now starting to gain strength. We're continually improving our targeting of Daesh from the air, in the cyber domain, and on the ground.

We have attacked their oil infrastructures. We've bombed their banks and monetary depositories cutting their financial resources. We've hounded their leaders wherever they go, we go after them. We recently killed two of their ranking cabinet members and captured their primary chemical weapons specialist. Anywhere they go, they are under threat of either being killed or captured.

Now, we have empowered local forces. In Iraq they've taken Ramadi. We've empowered our local forces in Syria. They've taken areas like the Tishreen Dam and Kabani and Shadadi.

And as a result, we have shrunk the total amount of territory you guys patrol by 44 percent in Iraq and 16 percent in Syria. This cuts off other sources of income they have, such as taxes and extortion among the people that they control. We recently launched a cyber campaign, which is going after their online presence and their use of social media to communicate, propagandize and recruit.

And as President Obama announced earlier this week, we are increasing the number of American soldiers, sailors, airmen and Marines in Iraq very modestly. What that will do is will allow us to accompany a brigade at the battalion level, which is a little bit lower than we're doing today. And in Syria, we're expanding our special operation forces to help train and equip local forces. And also, many of our partners are bringing in special operations forces and these will help to incorporate them into the fight.

Now, I just want to say on behalf of the United States, the contributions of European countries and NATO and other of our Gulf partners has been outstanding. The United Kingdom continues to be a strong member of the coalition and is making significant contributions to the air campaign and the advise and assist and training aspects. Italy has been providing key enablers, also to help operate against ISIL's ship over to Libya.

The French continue to battle ISIL and other terrorist groups across the Sahara. And as well as in Iraq and Syria. And European nations, including Germany, the Netherlands, Belgium, Spain and many, many others are contributing to the coalition and the fight since the battle intensified.

It has accelerated its operations since the attack in Brussels and we will continue to accelerate our operations. And we have to do more and we're asking NATO to consider doing more. NATO, the alliance, especially in the area of training Iraqis security forces in three primary areas. One, police. Two, logistics and three, border security.

So in addition to the bilateral agreements that we have with our allies, we're asking NATO to step up also. Now, the lasting defeat of Daesh and other extremist groups is a global undertaking because they're a global threat. And the U.S. and NATO can handle this away game.

We're not recommending that NATO get involved within the internal security of the countries on the cockpit. We're asking all governments to act to disrupt, dismantle and destroy extremist capabilities, recruiting and finances within their own border. And that means at the broadest sense, if we want to improve our ability to gather intelligence, we want to improve our ability to share intelligence among all nations.

We want to improve counter-terrorism cooperation and partnerships. And we want to enhance the training of our security forces. And the United States stands ready to help whenever asked. Those barbaric attacks on innocence that occurred in Brussels only renewed our determination to deliver them a lasting defeat.

And I am absolutely confident that as is Secretary Carter, that we are on our way to doing so. Now, I'd like to turn my attention to another challenge that is facing NATO and that's the challenge that emanates from the east with a resurgent Russia. It also is manifesting itself in the north again from a resurgent Russia.

And if you look at the some of the things they're doing in the maritime domain, it even provides a threat to the west. Moscow continues to use its political, economic and military power to challenge a vision of a Europe whole, free and at peace. It's modernizing its military capabilities, rattling its nuclear saber.

It's seeking to annex Crimea. It's destabilizing Ukraine. It seeks to undermine NATO's solidarity and it's turning Leningrad into an armed enclave in the Baltic Sea. Just recently, we've seen unprofessional and unsafe activities by Russian aircraft which are operating dangerously close to U.S. ships operating in international water against Swedish aircraft, against U.S. aircraft.

And all of these are operating in either on the open sea or in the skies above the sea. And these intercepts are incredibly reckless. The level that the aircraft, for example, approached the USS Donald Cook, the U.S. Destroyer, was extremely low at high speeds, just above the surface of the ocean.

Any type of mishap on that aircraft would have resulted in that aircraft spiraling into the sea. And if that had happened, would Russians have believed that Donald Cook had not engaged them? Well, we don't know. But we don't want to take that chance. And so we ask Russia to moderate the reckless behavior and to operate safely in the seas, on the seas and in the air above it.

Now, in the face of Russian aggression and antagonism, NATO and the European community once again, have to respond together to ensure that we maintain peace and stability on the commons. Earlier today I had an opportunity to discuss this challenge with NATO Secretary General Stoltenberg, as well as representatives from the 28 allied nations at the North Atlantic Council, which I think you all know is NATO's principle decision making body.

I conveyed first that our FY '17 budget submission will have $3.4 billion in something we call the European Reassurance Initiative (ERI). And our next steps are to have a heel to toe rotation. In other words, every time a brigade comes in, moves out, another brigade will come in. And we refer to this as heel to toe rotations.

That means that an armored brigade combat team will be on European territory 24 hours a day, seven days a week, 365 days a year. By the end of September 2017 a little bit more than a year from now, we will have a full division of U.S. troops in Europe all the time with an airborne brigade in Italy, a Stryker brigade in Germany an armored brigade that is rotating in constantly and that will be backed up by preposition set of equipment for another armored brigade combat team.

And I would just like to thank the government of Belgium and the people of Belgium who have said they will welcome that set of equipment back into the areas that they used to be. And this helps us quite a lot. So, in the event of crisis, we'd also be able to bear an enormous array of advanced aircraft, naval forces, special operations forces, intelligence, surveillance and reconnaissance assets and special operations.

And we're also going to support ongoing NATO address initiatives. To begin addressing some of the land forces imbalances in Europe with enhanced forward presence along the eastern edge of NATO and the western edge of Russia.

Now, we're taking these steps to strengthen deterrence. That's what this is all about -- a concept that NATO really hasn't thought about since the end of the Cold War. We argued this morning, as we've been arguing privately and publicly, that NATO needs to think anew about such concepts about conventional deterrence because responding effectively to Russian aggression and confrontation will require the exercise of strategic muscles that as an alliance, we haven't really exercised in quite some time.

Indeed, a resurgent Russia on the European continent, and a rising China in the Far East has ushered in what we consider to be a new era of great power competition. And the absolute worst thing that could happen in the global system is to have two great powers go to war with each other. The risks of something like that are just too terrible to imagine.

And that's why we must think constantly about how we prevent that from happening. Now, in doing so, we should think back 100 years ago. World War I, a war that everyone thought was going to be very, very short. But 100 years ago this month, it was in its third year of war, the battle of Verdun was underway, and in just a few months, the battle of Somme would begin not far from here.

So I mention this again to say there is absolutely nothing more dangerous than a collision of great powers, especially nuclear-armed great powers. We haven't had such a collision for over 70 years. It's in the interests of the United States and NATO to make sure it does not happen again.

And we believe the best way to do that is to maintain strong nuclear and conventional deterrence. We think of this in terms of comprehensive stability, having strategic deterrence in which both Russia and the United States have strategic parity; and have enough nuclear arms to devastate each other. And that, over a long period of time, nuclear deterrence is the best way to make sure that there is not a nuclear escalation.

But now underhanging that, we have to think more and more about conventional deterrence. And that is why we're looking at the capabilities being developed by both Russia and China, two great powers, not because we think we're going to go war with them. We're not planning for any war. What we're planning to do is preserve peace.

And so we look at capabilities that they are developing. We want to make sure that we have overmatching capabilities to make the chance of us having a war infinitesimally small. Both Russia and China, they are improving daily in their ability to operate on the sea, in the air, on land their special operations forces. And they're also becoming quite good in cyber, electronic warfare and in space.

In some cases, they're developing weapons and ways of war that seek to achieve their objectives very quickly in their respective areas of operation, before the U.S. and its Allies would be able to respond. So we're becoming more and more focused, and we're urging NATO to think the same way, to start thinking about increasing our margin of technological superiority that unquestionably has been eroding over the last 20 years.

If that happens, then crisis instability increases. You increase the cost of any potential conflict. And you undermine deterrence. I probably should – make that that differently -- you undermine deterrence first; you increase crisis instability, and if something does happen, you really have a problem.

And that's why we're exploring the third offset strategy. It is combinations of technology, operational concepts, and organizational constructs -- different ways of organizing our forces, to

maintain our ability to project combat power into any area at the time and place of our own choosing. And I want to again emphasize that the third offset is about preserving the peace, not fighting wars. And the best we believe to preserve the peace is to have a very strong conventional deterrent to convince any nation that turning to the force of arms to achieve their objectives is folly.

So let me briefly explain what we mean by an offset strategy. "Offset" means that we will never try to match our opponents or our competitors tank for tank, plane for plane, person for person. It's just not economical. And it's not right for democracies to have such large standing forces that you might need to deter a potential enemy.

So what we do is we seek ways in which to offset our potential adversary's advantages. And this is exactly what we did do in the Cold War twice, because we were vastly outnumbered by the Soviet Union and Warsaw Pact in conventional forces. And it made no sense for democracies to maintain an armed state, so we looked for ways to offset their strength.

The First Offset Strategy was in the 1950s. The United States enjoyed nuclear superiority, and what we did is we used tactical nuclear weapons, battlefield nuclear weapons, for conventional deterrence. We told the Soviet Union that if they attacked, we would respond with tactical nuclear weapons. And it was very effective. We know from the historical record.

Now, in the '70s and '80s, the Soviet Union achieved strategic parity with the United States. So for us and NATO to threaten we were going to use nuclear weapons no longer made any sense. Our conventional deterrent was no longer credible.

So in 1975, the United States, as a matter of national policy, decided to go after conventional guided munitions, and the battle networks that would employ them. And I'll talk about battle networks in just a second.

And by 1984, we convinced the Soviet general staff that they could not achieve their conventional objectives because -- and we would not have to employ tactical nuclear weapons. It completely unsettled their strategic thinking and contributed to conventional deterrence. It really reduced the likelihood of war in Europe.

So we believe now, because of what we see happening around the world, it's time for a Third Offset Strategy. We're bringing together new technologies, which I'll talk about in just a second. We're trying to figure out new innovative ways to employ them. We're talking about new innovative organizations that would use them because we want to maintain conventional deterrence.

Now, we quickly realized this is going to be fundamentally different however than in the Cold War. In the Cold War, there was one competitor, the Soviet Union. And almost everything that was happening in technology in terms of military was coming from the governments.

Government R&D structures developed Stealth and precision-guided munitions, and new sensors. It wasn't coming from the commercial. It was coming primarily from government pull.

But today, almost all of the technology that is of importance in the future is coming from the commercial sector, and all of the technology base is global. So that means any competitor and any adversary is going to have access to these types of technologies, and they can quickly mimic even the most powerful state.

So we believe we're in a world of what we call "fast followers." And as the Deputy Secretary of Defense, I'm okay with that. I just want to make sure that the United States and NATO are the fast leaders. And if people -- if adversaries try to copy us, we will always want to be ahead of what they're trying to do.

And we believe this is the key aspect. If you think about it, the first offset, the technological sauce of the first offset was miniaturization of nuclear components, being able to take a 5,000 pound bomb and make it into the 150 pound bomb.

The technological sauce of the second offset was digital microprocessors, information technologies, new sensors, stealth.

And we believe quite strongly that the technological sauce of the Third Offset is going to be advances in Artificial Intelligence (AI) and autonomy.

Those are going to allow us to develop what we call joint and combined -- "joint" meaning including the United States' the Army, the Marine Corps, the Navy and the Air Force working together jointly, and combined U.S. forces being able to work with our allied forces.

And there will be joint and combined collaborative human-machine battle networks. The human is always first because our conception of these battle networks is that A.I. and autonomy will be used only to empower humans not to make individual or independent decisions on the use of lethal force.

Now, a battle network is a very simple concept. First of all, you have a sensor grid. So let's think back to World War II and the blitz on London. The British put together what we would argue to be the first modern battle network. It had a sensor grid, radar and lookouts. They had one sensor grid to tell you what's going on in the environment.

Then you have a command, control communications and intelligence grid. This grid takes all of the information, decides how to achieve something on the battlefield, and then communicate it to the forces and control the forces -- command and control. So you have command, control, communications and intelligence grid.

And the final thing you have is an effects screen. So the British, their C3-I network was extremely advanced, underground command post, connected by telephone and wire, different sector operation centers. And they were all able to mass -- they could say we need to mass our fighters against German bombers at this place and time.

And then the effects grid is the thing that actually achieves effects on battle fields. That would be a Spitfire and a Hurricane, radar control, antiaircraft weapons, barrage balloons.

So you have a sensor grid, a C3-I grid and an effects grid. A.I. and autonomy put inside these battle networks is going to allow collaborative human-machine operations to absolute new levels, allowing machines to do what they do best, and the humans to do what they do best, in what we call human-machine symbiosis.

It's being driven by revolutions in AI computer processing power, what we call deep-learning machines, autonomous control systems. Now, people always have said, we're right around the corner from AI. AI, artificial intelligence, it's going to be the next big thing. And it always seems to be just around the corner.

But now we can see it in our daily lives and what has happened. And our defense science board, among the smartest people we can put together said that we have turned that corner. And you are in a competition, whether you know it or not. And the competitors that can use AI and autonomy in a smart way are going to be the competitors that have a very big operational advantage in the future.

Now looking at the commercial, just think about the developments in self-driving cars. In just a few years we've gone from cruise control. Everybody knows about cruise control. That is artificial intelligence and autonomy that you have delegated to the car the authority to keep a certain speed.

And it is narrow, artificial intelligence and the car does it very, very well. It's very narrow. Then we added things like back up warning, to remember all -- the auditory response -- you know, ding, ding, ding. You were getting close to something, you're going to bang into it. Again, that is narrow AI. We've delegated authority to the machine to warn you and you take action afterwards.

Now there's lane departure warnings. Well now we have a button and we press a button for parking. We press the ‘I believe’ button and close our eyes. We have delegated authority to the car to make the decisions it needs to self-park and we trust the car to do so.

Well, that's all we're talking about here, using AI and autonomy in ways which help the human, not to create Terminator or Skynet, now this is to allow humans to operate better or without a human. And soon, we're going to have self-driving cars. Google is already on its way. And I would like to say that DARPA, the Defense Advanced Research and Development agency, they actually helped spur this by having a Grand Challenge of vehicles that could navigate, you know, 200 miles across desert and across relative sediment.

But now it’s Google and Facebook and all sorts of commercial companies that are doing this. And they're really going into deep learning systems in which deep neural networks train themselves with little or no input by humans to teach themselves and learn. And this is the same approach that allowed Google's AlphaGo program to defeat a Go grand master.

This is something we didn't was going to happen for several years. Go was the last game in which humans could routinely defeat machines. Just recently, a machine beat a human grand master four out of five times.

So, DOD is -- we are going to leverage AI technology, particularly in things like cyber defense, electronic warfare defense, missile defense. But what's also clear to us that we need to go huge new levels of human-machine symbiosis, allowing each to do what the other does -- which do what they do best.

And the world is moving in this direction. When I talk to audiences in the United States, I just talk about thermostats that automatically think and determine exactly when you're coming in. In finances now, banks can tell exactly who is logging on because of patterns of behaviors. This is in our daily lives.

And just like what happened in the rifle, telegraph and railroad revolution, these were things that were changing society and they ultimately changed the way war occurred. The same thing is going to happen with AI and autonomy.

So again, whenever we talk about this, usually I hear killer robots come up. I want to emphasize that this third offset strategy is about making the human better. It's about making the human operate better. Humans in the United States' conception will always be the ones who make decisions on lethal force, period. End of story.

Now, there may be times where you're under attack in the case of missile defense. You've got 60 missiles coming at you. There's no way that a human is going to be able to sort all that out. The human will make the decision, but the machine protects. And with that going on, the machine will do exactly what it is programmed to do.

But when it comes to a weapons system that goes out on the battlefield, surveys a bunch of people and says, oh, I think I'm going to shoot at this person right here -- That's not the way this will work.

Now, in human machine collaboration and machine learning and newer machine collaborations and what's really focused is this -- our global counter-terrorism effort that we put together for the last year -- people say well, this all about high-end warfare. No, it's not. It's completely applicable across the entire range of operations.

Human learning, deep learning is going to help any operator, whatever they're doing. If they're chasing terrorists, we're going after a hybrid threat. This is going to help. We have a process called find-fix-finish -- it's going to assess and disseminate. Well, you can have machines help in every single one of those steps.

And the targeting is secondary to the understanding of network and then picking the targets which would collapse the network. We're also looking at learning machines for early morning reconnaissance we all think or talk about the little green men problem.

That is nothing more than a big data analytics problem. We can go right now. We should - we know for example that Russian troops, just like troops all over the world, they have a habit of posting selfies to social media. You can't stop them. You tell them how you can't do this, they ignore it and they start posting selfies.

And it just happens to tell them. You can date-stamp it, you know where they are. And they like to post next to big things like tanks and airplanes and missile batteries, so you know exactly what they're doing, but all the time.

And if you have a deep learning system, let me tell you what we can do. I recently went to Silicon Valley, Ca. -- and they have an algorithm that looks through millions and millions of Twitter feeds, YouTube videos, all sorts of different things. And they posted a storybook.

They have a Twitter shot of a MH17 taking off. There's a small thing at the bottom that says, God's speed and MH17. Then they have a picture, time-dated and stamped near the town in which the shoot down occurred. There is a Russian SA-11 mobile missile battery with all of the missiles on its rails.

Then there is a picture of contrail posted to Twitter, showing a contrail rising up from that very same spot. Then there is a picture of the exact same SA-11 battery with the same serial number leaving the area and then there's a fifth picture, again, on something else, which shows that exact same missile battery costing into Russia.

They did it entirely through open-source. They did it because deep learning machines were able to literally go through millions and millions and millions of social media. Now, imagine, when you hear Facebook propaganda and say, oh, you didn't shoot it down. You'd be able to say, well, how do you explain this?

This is the thing that learning machines are going to help us all do. Now ultimately, the Third Offset -- if you think this is all about technology, you're wrong. AI and autonomy is the technological sauce, but it's designed to achieve effects and make our armed forces more effective. So there's going to be new organizations and new different, operational constructs.

And when you see that, you're really going to start to see how this is playing out. Now, we learned from the second offset strategy the importance of NATO participation. The cooperation and capability of the NATO alliance has been incredibly effective as a deterrent in the past. And we're absolutely confident it will be so in the future.

The alliance hasn't really focused on highly capable adversaries for a long time. I worry about our proficiency in highly integrated, joint fire and maneuver, which is the basis for deterrence in many cases. And we have to be able to fight on an incredibly lethal battlefield when called upon to do so.

So, we need to be thinking and long and hard about how we'll be able to do this. And NATO has been here before. In the late 1970s and the early 1980s, there was a pervasive sense that the Soviet Union had conventional superiority.

And the choice was either to have a huge conventional build up or to do something different. And starting in 1979, the staff of Supreme Allied Commander – Europe, the supreme allied commander, Gen. Bernard Rogers, came up with the concept that was derived from U.S. Army and Air Force AirLand Battle and it became known as Follow on Forces Attack.

We here argue that this is time for another NATO, an essential reawakening and what is the next follow on forces attack? We have to examine how we can deploy and sustain very highly, agile, lethal formations in the face of all of these conventional guided munitions, UAVs, cyber, electronic warfare.

And we think that NATO for example, might consider standing up a new operational fire source. A network of fires with artillery, rockets and ballistic missiles and conventional, armed ballistic missiles, IMF compliant.

That are any soldier operating anywhere in NATO would be able to call in the fires. They think this will be an incredibly important way to improve deterrence, because it is inherently defensive and will also, hopefully, convince any Russian military planner that they would not be able to succeed.

So, just as the United States increases its focus on investments, on conventional deterrence, we hope that NATO allies will start to do the same. The United States urges all NATO members to remain on the current upward trajectory of modernizing their forces and reversing recent declines in defense spending.

And in our defense budgets, our planning, our capabilities and our actions, we have to demonstrate to any folk -- not folk, let me say competitors -- strategic competitors, that if they start a war, we have the capability to win it on our terms. And that is the best way to underline and strengthen traditional deterrence.

I look forward to your questions. And as I said, it is time for organization, a strategic inflection point. And it is time for all of us in NATO and in the United States to think long and hard about these problems and how we might address these together. Thank you.