William (Frank) Moore Remarks at the Sixth Royal United Services Institute (RUSI) Missile Defence Conference in London, UK

William (Frank) Moore
Sector Vice President and General Manager
Northrop Grumman Corporation

On Wednesday, November 17, 2004, Northrop Grumman Corporation Sector Vice President and General Manager William (Frank) Moore delivered remarks at the 6th RUSI Missile Defence Conference in London, UK. Below are his delivered remarks.

"Mutual" in Mutually Assured Protection

Thanks, all of you, for this warm welcome – I'm happy to be here at RUSI, to take part with my co-panelists in a discussion of what is, without question, a critical issue at a critical time.

As Don Winter said at lunch, our common goal is nothing less than Mutually Assured Protection: The ability to defend against missiles not only by means of multiple-layer missile defenses -- but to amplify and enhance our defensive capabilities through a multiple-partner system as well.

My focus this afternoon goes right to the "Mutual" in Mutually Assured Protection: How we can make cooperation and collaboration meaningful, and drive our efforts towards a world where the whole of our collective defenses is greater than the sum of our separate systems.

Whether we call it cooperation, collaboration or internationalization, "mutuality" makes sense – and not only because of the strengths we bring to a common enterprise.

Acting in concert is precisely what our adversaries most fear: Even if the ultimate intentions of the world's rogue regimes are always something of a mystery to us, it's clear enough that our enemies will look for ways to segment our capabilities – to use whatever destructive means they're able to develop to divide us, with the aim of weakening our will to respond.

As our CEO Ron Sugar said this summer at the International Missile Defense Symposium in Berlin: Missiles tipped with nuclear weapons -- or any other weapons of mass destruction -- are designed to hold the democratic nations of the world hostage, split our alliances, and deter us from responding to regional dangers.

The only way to counter this threat is to collaborate, cooperate and otherwise enhance the inter-operability of the systems we develop and deploy.

Even an initial missile defense capability begins to change the calculus of proliferation.

Any would-be proliferator understands that his significant investment in an offensive capability can be negated.

And as missile defenses become more capable, the incentive to build missiles to deliver weapons of mass destruction decreases.

MISSILE DEFENSE CENTERS

With that big picture in mind, we can see the urgency for the North Atlantic Alliance and our partner nations to create Missile Defense Centers in their own right -- as has been done right here in Great Britain.

We hope the UK facility is simply the first of several Missile Defense Centers we'll see established in the near future, as the best way to give institutional structure to a truly international missile defense system.

Simply put, if our goal is missile defense collaboration, we're going to need integrated and interconnected agencies to advance an integrated and inter-operable program.

That said, there's no single blueprint for building a Missile Defense Center. It's the capability that matters: whether it's unified or co-located -- or virtual, with each node networked together.

The key is providing a setting – physical or virtual – where missile defense leaders from Allied and partner countries can come together to work out shared problems, identify issues of interface and cooperation, and, generally, to spur technological cooperation and assure interoperability of systems and command and control.

As we pursue those goals, we've got a great model to measure ourselves against – as NATO is now developing a federated missile defense test bed, linking the Alliance's commonly-owned facilities with national capabilities.

For many of our friends and allies, interconnected Missile Defense Centers are the most economical first step toward fully integrated missile defense systems for two reasons:

First, they can help build understanding and political support before decisions involving major investments are necessary...

…And second, an early investment in an MDC helps ensure that later – and larger – investments in real system hardware and operational software deliver maximum defensive capability.

By permitting Allied and partner-country planners and operators to test how their systems' operations will be affected by – and interface with – the capabilities of other nations, Missile Defense Centers will help each country better understand how its systems could work jointly to defeat the missile attack scenarios we're most likely to face.

With such critical feedback in hand, we can optimize systems to increase compatibility, and decrease the chances that any missile launched against one of us will penetrate our mutual defenses.

In the early stages, a system of networked Centers will allow us to illuminate key policy and operational issues - educating not just the technology community, but the political and military commanders who will authorize and use the system.

With policy and operational guidance, the development community can conduct with more confidence trade studies on architecture and algorithms.

Further downline, MDCs will enable us to move through design, development and testing, then to training, including common operational exercises -- and ultimately, to crisis management in support of truly multi-lateral coalition efforts.

What we're talking about here is a logical progression from an almost totally modeled and simulated system representation to a system representation integrating more and more real system components...

- From low-fidelity human-in-the-loop interactions to support CONOPS development…
- Through threat discrimination and other performance-critical algorithms to support the evaluation of competing BMD architectures…
- To software-in-the-loop simulations -- with real communications messages to support software development and evaluation…
- On to hardware-in-the-loop, to support system performance evaluation, experiments and exercises combining real and simulated components…
- ...and finally full circle to high-fidelity human-in-the-loop interactions, with operational communications networks and traffic, to create "reality-based" training and operational exercises.

Enabling and advancing this kind of collaboration is an area, where my company, Northrop Grumman, has considerable expertise – and in which we've made a considerable investment.

This is reflected in the capabilities embodied in the JNIC facility in Colorado Springs, Colorado -- the Joint National Integration Center – which Northrop Grumman is privileged to manage for the Missile Defense Agency.

Against the background of the constantly-evolving missile defense environment – where technology and the threat matrix seem to change almost daily -- JNIC is the place the Director of the MDA can go for real answers to hard questions.

THE VALUE OF "WHAT IF…?"

JNIC gives us something critical to the strategist: something I call "What If?" capability.

Imagine a scenario – and we can game it out.

How will sea-based and land-based interceptor systems work together to achieve multiple shots at a given incoming missile threat?

How will target tracking and discrimination capabilities work to achieve seamless hand-off from one interceptor system to another in these engagements?

How will one nation's system address a threat – and how will that response be enhanced by the collaborative participation of a partner nation?

There's a huge difference between this kind of "What If?" capability and a paper-based exercise, or a power point presentation of what a multi-component missile defense system might look like and how it would work.

If a still picture is worth the proverbial 1,000 words – a dynamic, interactive "movie" that factors our responses into each stage of a conflict all the way to its outcome – and includes real operational hardware and software – well, that ought to be worth 10,000 words or more.

At JNIC, officials from other countries can come to experience IMS – our unclassified missile defense war-game – to better shape our understanding of the interplay of threat and response.

We can even customize our model to allow a partner nation to "plug in" their own missile defense component, to see how it performs in a given threat scenario, and capture a country-specific performance assessment that can shape system design, and ensure that the architectures of each partner can truly interact – inter-operate – in a meaningful sense.

At a higher level, there's MDWAR – the most sophisticated war-gaming system in existence today, which allows us to put operators in the loop, giving an individual a chance not simply to observe but to sit in the chair, and participate in the war-gaming exercise.

With the recent deployment of the GMD system, JNIC takes on added importance – not just in terms of modeling and simulation, but in terms of system architecture and design, BMC-squared issues and the like.

JNIC gives us the capability to address system compatibility issues upfront:

…Not to look at inter-operability as something we must "bolt on" at the end of the assembly line, as it were…

…but as something we "build in" to the process of development itself.

And that's critical – because when it comes to a threat of this magnitude, when we're faced with the prospect of a missile tipped with a nuclear warhead -- there is no margin for error:

Mission assurance is essential.

We must be confident that our systems work – the first time.

Since our actual systems verification tests will always be limited, JNIC is critical to our ability to grow that confidence through high-fidelity simulation and war gaming.

A WORK IN PROGRESS

The advantages I've sketched out this afternoon are not just notional.

We're already moving forward, first within the Alliance -- through its Integration Test Bed -- and then, if not quite yet to actual interconnected Missile Defense Centers, certainly with what might be called "MDC-like" capabilities with a number of countries.

These agreements for "MDC-like capabilities" foster two specific activities:

(1) Government-to-Government decision maker discussions of program and technical issues; and

(2) Bi-lateral analysis of technical issues in a modeling and simulation environment. Specifically, the modeling and simulation area is of great interest because of its contributions to overall systems testing, its relatively low cost, and the availability of analysis and computer tools in many countries.

The expected benefit of these agreements is a more comprehensive understanding by friends and Allies of the potential for bilateral participation in a global, layered BMDS. This, in turn, sets the foundation for Industry-to-Industry agreements that would follow.

The U.S. has an MOU in place with the UK, which was signed the summer of 2003…

We're nearing agreement on an MOU with Australia.

We're pursuing government frameworks with Canada

Japan (agreement is in its final stages and expect it shortly)

Italy

Poland…

We have an agreement with Russia that's non-specific to missile defense, which we hope to make more specific over time…

Germany has expressed interest, as have the Baltic States as well as South Korea.

In each case, these Alliance and nation-to-nation discussions point to a growing consensus on the value of a common defense, and constitute a key enabler for industry-to-industry efforts…

And while these discussions are bilateral right now, nothing precludes bridging out from bilateral to multi-lateral arrangements that truly network whatever capabilities – common or complementary -- that we develop.

Turning from government-to-government to business-to-business, my company has MOUs in place with BAE and EADS in Europe, and with Mitsubishi and Sumitomo in Japan.

Other companies are doing the same – even as we are in talks with several companies in several other countries to expand our opportunities for company-to-company collaboration.

SUMMARY & CONCLUSION:
TOWARD MUTUALLY ASSURED PROTECTION

If there's one message I want to drive home today, it's that we're serious about international cooperation: All of us at Northrop-Grumman are convinced that broad-based industrial participation is the right thing to do.

After all, if our aim is to form coalitions with other like-minded nations dispersed geographically around the globe, we know we must have the ability to protect our coalition partners from missile threats -- particularly if we expect such coalitions to stand together against the forces of intimidation.

Without question, a constellation of Missile Defense Centers constitutes key elements in the coordinated capability that remains our ultimate goal.

For our part, we stand ready to build the bridges – the commercial and technological bridges – to make cooperation meaningful and effective, so that we might move together from the clear and present dangers of today, to a world of Mutually Assured Protection, with the peace and security it can bring.

Thank you.