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**SPECIAL DEPARTMENT OF DEFENSE NEWS MEDIA BRIEFING  
WITH BRIGADIER  
GENERAL RICHARD DAVIS, DEPUTY DIRECTOR, BALLISTIC  
MISSILE DEFENSE  
ORGANIZATION, DEPARTMENT OF DEFENSE, 3:00 P.M. EST  
TUESDAY, MARCH 10, 1998**

**STAFF:** Good afternoon, and thank you for coming for the Theater, Air and Missile Defense Program update. I'm Major Co Woods with the Ballistic Missile Defense Organization Public Affairs Office.

I want to do two things very quickly this afternoon, and that is to introduce the briefer and to establish the ground rules for this afternoon's briefing.

The briefer for this update is Brigadier General Richard Davis. General Davis is the deputy Theater, Air and Missile Defense Ballistic Missile Defense Organization -- General Davis was a founding member of the Strategic Defense Initiative. In his current position, he's responsible for all Department of Defense theater, air, and missile defense activities. General Davis has held this position since August of '97.

If you need more information about the general, I'd ask that you refer to the press packets that have a bio of him.

At the conclusion of the briefing, General Davis will open it up for questions. After being recognized and prior to asking your questions, if you would, please identify yourself and your news organization.

General Davis?

**GEN. DAVIS:** Thank you very much.

It's really a pleasure to be here. I asked if I could have an informal meeting with the press so we could sit and get to know each other and talk about some of your issues. I guess this is the way we have an informal meeting in the Pentagon. I hope that this stage does not prevent some of the type of dialogue I'd like to get started.

What I hope to do today is introduce you to the concept of a joint mission acquisition, where I think you're very familiar with our individual programs. But what I'd like to talk about is how we treat those programs as a family of systems and some of the necessities for interoperability, so that we can get the true effectiveness of those systems.

So I put a few charts together. I'll walk through those, and hopefully those will help stimulate some of the questions that we can get into later on.

When I talk about the family of systems, specifically the ballistic missile family of systems is sort of the immediate family, and then I'm going to expand upon that and talk about an expanded mission area, where we're going to talk about theater area missile defense, where we include cruise missiles and air breathers as well.

But if you use this chart, I think you're all familiar that we have several programs to help provide a capability for ballistic missile defense. Our lower-tier programs are the Navy area lower tier and the Patriot program. For our upper-tier capability, we're talking about a Navy theater-wide and a THAAD program that the Army is pursuing; the Navy theater-wide, of course, is the Navy program. We have an international program called the Medium Extended Air Defense System, MEADS, and we have boost phase intercept, through the airborne laser program, that, although not funded by BMDO, is part of our overall architecture.

Key to make this architecture work is space surveillance sensors that give us the cueing that a launch has occurred. And the only way we can get CON connectivity is to have command and control capability; that is the glue that ties all of these different systems together. And I'm going to talk a little bit more about the command and control in a few minutes.

(To staff.) Next chart, please.

This is just to show you, for those individual family members, where they operate. As I mentioned, the airborne laser is a boost phase capability.

The Navy theater-wide system -- actually, you would have the ship position in three different locations, depending on where you're trying to intercept. But if you're in the ascent phase, you're in this phase. If you're trying to kill in the terminal phase, you're in this part of the exo-atmospheric. It is an exo-atmospheric only, which means it cannot operate where you have atmospheric conditions.

We do have a THAAD program that can operate both exo-atmospheric and within the atmosphere.

And then we have our terminal systems, the Navy Area, the Patriot, and the MEADS that operate in the lower atmosphere as well.

As you can see, we're trying to have systems that occupy the entire battle space, because in some cases, this amount of time is only five to seven to 10 minutes.

(To staff.) Next chart.

Our goal is to have a tool set that our operators can use to handle whichever environment they're exposed to. We really have an evolving set of capabilities that must be interoperable and have the capabilities so that our CINCs can select and deploy the systems to meet the theater needs and keep pace with the threat.

Currently, our fielded capability, as you know, is the PAC-2. We are developing a capability to have a PAC-3 by the 1999 time period. We are going to have a User Operational Effectiveness System with the THAAD Program just beyond the year 2000, and we are going to have a Navy Area capability in the 2001, 2002 time

period. Our goal is by incrementally fielding those, we'll have a growing capability that can respond to a growing threat, both in terms of how far that they operate, as well as the capability of that threat.

A key aspect, as we look at exercises where we use each of these systems with a war-fighter forum, we discover that if we don't have the command and control, we don't approach the overall effectiveness that we could achieve if we just add up the individual capabilities of the systems; that is, it's like playing tennis and not having an agreement beforehand with your partner as to when you swing and when you don't swing. We have sometimes where we have fratricide, where we are killing the wrong systems, and other times, when we have multiple missiles go after the same threat. So a key part of our family of systems is the command and control that allows us to use those families efficiently and effectively.

Next chart.

So, because of the importance of the command and control, we are trying to treat the family of systems in the command and control as a disciplined acquisition program that allows us to maximize the leverage of each of those existing programs and establish a program plan to define the desired capabilities, set goals and funding and schedules for those, and allows for incorporation of new technologies and threats. A key challenge for us is to establish the extra criteria for each of those systems in terms of, "What do we mean by interoperability?"

Currently, each of the operational requirement documents for these systems talk about a threshold level of interoperability, where we have an ability to communicate with each other; that is, one system can tell the other system, "I have just shot at that particular target." And another system says, "Okay. I'll hold off and not go after it."

It also, as an objective level, says, "I need to start sharing data so I can have a synergistic relationship and have one radar possibly cue one of my other weapons systems; having the Navy Area and the Army systems working very cooperative so they can take advantage of the lessons learned. The Navy's done some great work in this in what they call the Cooperative Engagement Capability, where they've linked the radars of various ships so they are actually getting information from one radar that is affecting the display on another ship, as it fuses the radar information that it has, as well.

So one of our goals is, "Can we develop testing criteria to assess each of our major defense acquisition programs and make sure it has the interoperability necessary so that it would be part of our overall family of systems?" And then we must be able to monitor and evaluate progress against that plan and the funding we put into that plan.

One of the problems we face is we are developing -- we have some legacy systems. We have the Patriot Program that's currently fielded. We are upgrading that with the Patriot 3 -- Capability Three Program. The Navy Area is going to have a different milestone in terms of when it's delivered. So we have got to ensure that the individual Theater Missile Defense building blocks have a capability of plug-and-play.

Think of this as you have your Internet system. You want to make sure each of the computers you tie onto that Internet is capable of being effective in that Internet. I know I have problems at home that when I plug mine in, it doesn't always work the way I want to. But we want to make sure that, as we develop each of these new capabilities, that they can be part of this overall family of systems.

Next chart, please.

You often will hear -- in terms of information timeliness, we have something called a Joint Planning Network that allows us through the Global Command and Control System, to have mission definition, theater planning, intelligence data coming in. When we're starting to talk about Ballistic Missile Defense, we are talking about time periods where seconds are critical, and in some cases, subseconds. So we are talking about execution phases, where we are trying to get coordination and execution and information flowing that will actually affect our firing units and our tactical commanders. So the acronyms that we tend to use is the Joint Data Network and the Joint Composite Tracking Network.

The Joint Data Network, we use the Link 16, where basically that is message sets that are being exchanged to say that, "There is a threat coming over, and I am going to fire at that threat."

The next level of detail that we can get into, and the next level of importance, is the Joint Composite Tracking Network. That is basically what the Navy talks about in terms cooperative engagement, where I am sharing measurement data that'll allow me to take radar information from one ship and use that to cue and fire a missile from another ship. And that's where we want to go and have a capability of -- think of it as reading each other's mind. If you're 50 miles away and if I can see through your eyes, that gives me a tremendous advantage in terms of the overall footprint that I can establish.

(To staff.) Next chart.

Now there's a lot of acronyms on this chart. I don't hope for you to understand them all.

The important point I want to get across is for us to be able to assess and test our family of systems, we must have modeling and simulation capability, we must have something called hardware in the loop, where we take our individual radars and the battle management associated with those, and we distribute those across the country. And we have at the National Test Facility in Colorado Springs the capability of bringing those all together and testing their interoperability with real hardware, real-time simulation, at the Joint Data Network level. And we've done that successfully, and we continue to modify that, so we can take all this acronym soup over here and have a capability of showing that our systems can in fact be interoperable.

And then we go through exercises, like at Roving Sands where we actually have the fielded units run by troops and see how they do in real wartime-type situations, in terms of interoperability.

And then, after we get all the lessons learned from that, we talk about live-fire tests, where we put all the components together and we actually fire a missile, as we did in an exercise called Willow Dune in 1997. And we're talking about a major demonstration in the year 2000, where we will have a live-fire test and determine if the modeling simulation that we conducted has -- is in fact valid.

An example is what happens if I go after one missile with THAAD, and the debris from that -- can I still get the capabilities with the Patriot if I miss with my THAAD program?

(To staff.) Next chart, please.

That's what we're doing with our ballistic missile.

At the same time we have started a process that we call the Joint Theater Air and Missile Defense activities, where we're not just talking to active defense for ballistic missiles, but we're talking about active defense for cruise missile and air defense, and what can we do, in terms of attack ops, to reduce the number of missiles coming in at us, and what can we do to make sure that we know where the missiles are going to land, so we have passive defense to protect our populations, and what's the command and control that is required for us to support this entire family of systems, surveillance, engagement, and kill, and detection of those threats.

(To staff.) Next chart.

When you start adding these pieces of the puzzle together, we have formed a process that we call the Joint Theater Missile Defense Process, that includes the BMDO organization, the Joint Theater Air and Missile Defense Organization, where they're looking at requirements. We have representations from each of the CINCs, the services, and agencies. And our goal is an integrated requirements and acquisition process that allows us to basically have working groups that define the requirements, that develop the operations and architecture, and develop a master plan that, for a given threat, we can show what the capabilities of this family of systems is and what the cost and what demonstrations have to take place.

Now this was something that we briefed about a month ago, talking about this new process with the Joint Theater Air and Missile Defense Organization, called JTAMDO. We're in the process right now of coming up with our second master plan, where we will have investment strategies and recommendations leading to the Department of Defense '00 POM.

So in conclusion, we see this as our approach to having Joint Vision 2010: operational concepts that are enabled by network- warfare, where we have an information grid, a sensor grid, and an engagement grid. And we are taking advantage of this family of systems through the Joint Planning Network and the Joint Data Network and the Joint Composite Tracking Network, to allow us to get to that interoperability of sensors and communications, to most effectively use those individual missile systems.

(To staff.) Next chart.

And this is a cartoon of the fact that the warfare of tomorrow requires us to have surveillance, combat identification, fire control and weapons and communications operating in symphony with each other, as a family of systems.

To do that, we have the Theater Air and Missile Defense as a joint mission area. Because all the services are represented in the individual components, we are working together as a team to allow us to have that mission area acquisition. And the management is in place through JTAMD analysis process for us to execute those programs.

So again, I wanted to give you the flavor of what we mean by a family of systems. And I'd be happy to answer any of your questions at this time.

**(Q)** I have a question about the THAAD program. After the last failure in the test, what did you do to go back and tweak the program?

**GEN. DAVIS:** There was an extensive independent review team that had both contractors as well as government personnel and independent consultants. As a result of that review team, the analysis indicated that we must get much more quality control and much more testing both in terms of modeling simulation, hardware in the loop, and ground testing before you execute a test.

I would say that I have been actively participating with Lockheed, and we've had both government contractor evaluations and reviews of the progress.

And the reason why the most recent test has been delayed until the May-June time period is because we are now putting quality control -- and we are discovering problem areas in the ground -- and you want to do that, as opposed to in the flight. You want to get much more of the analysis done to verify what the issues are in the modeling simulation. The hardware in the loop is like taking a seeker and exposing it to a threat scenario in a variety of ways. And you can do that and see where the bugs are and where the problems are, as opposed to actually doing the flight test.

It's because of the regimentation now that has been incorporated into the program that we have a much higher -- we feel the risk for the next test is going to be lower. We have much higher confidence that we're going to be successful in the next intercept. And the problems that we saw -- the communication transponder that was a problem -- it was not that it was a bad system, but it was out of variance with the specs. And instead of taking a risk, they removed that and replaced it and then retested that communication transponder; and the same thing with the flight control that was a problem. As they saw it was out of spec, they took it apart and had to retest.

They are doing it through a very rigorous process now, which was the principal recommendation that came from the Independent Review Group.

**(Q)** Yeah. And I don't fully understand it. Granted this is a very complicated thing to try to develop in the first place, you would have thought that they were exercising the highest quality control from the beginning. Evidently, they were not?

**GEN. DAVIS:** I think there was a desire to proceed with some flight tests. And in the process of expecting to have successes, they did not go through the same

rigor that they now are going through as a result of assessing their program; that the feeling is that some of the lessons learned that we see in the Patriot Program, where we have a very extensive series of ground tests taking place, that we feel that that's the right thing to do and that, as a result of that, they can be a major player in this family of systems that we have referred to. They are doing it right, now, and they are doing that very conscientiously.

Yes?

**(Q)** Yes. Okay, let's take a 3-year-old threat to American forces in the Persian Gulf, to the Israelis, by Scuds we know that Iraq has; also by a longer-range missile that the North Koreans have helped the Iranians build. What do we have in theater? And what's the capability of taking out Scuds over and above the performance of '91 with the Patriot?

**GEN. DAVIS:** As you know, we have Patriot units in theater. Those Patriot systems have been upgraded from the ones that you saw in Desert Storm.

We have a chart actually looking at our Patriot forces. As you know, we do have a foreign sales program, so that we do have units in Israel. We have three fire units that are configuration one. Kuwait has five fire units. Saudi Arabia has 20 fire units. By configuration one, we mean that these are upgrades from the previous -- they still have the Patriot 2 missile, but the radars have been improved, the software has been improved, and we have some improvements in terms of the fuse itself so that we get more lethality for those systems, plus we have a remote launch capability, so we have a larger footprint associated with those programs.

So we have made progress and we do think that those will be -- and the other good news is, as we look at the modeling simulation for these systems, we see that although they were not designed to handle the type of threats, the longer-range threats, we do believe that they will have some capability; not as much as we would like. That's why it's so important to have that upper-tier program like the THAAD and the Navy theater-wide because those are particularly designed to go after those longer-range threats.

So the good news is we do think that the Patriot is going to be more capable than originally expected. One the other hand, it still does not -- we still must have the upper-tier capability to go after those longer-range threats.

**(Q)** And the Patriot, then, is capable of taking down the Scuds, the Scud threat? That's what you're meeting the Scud threat with? And what about command and control? Are we sharing with the Israelis, for example?

**GEN. DAVIS:** The interoperability of our systems is an area that's going through a lot of discussions right now. Our goal is to make them completely interoperable. As we look at the details, sometimes the software changes that occur require a little bit more discussions in terms of making them completely interoperable. But we do want to make sure that we can communicate, and we're in the process of working that right now.

This shows you some of the changes that have gone into place. The Patriot lessons learned from Desert Storm was better lethality, increased radar detection

and increased footprint. Part of that increased footprint is because we can move the launchers a certain distance away from the command and control that we couldn't before, and that gives us an extra 10 to 20 kilometers in terms of effective footprint capability. So we do think this is a step forward. We want to get the PAC-3 missiles out there because we think that will improve things even further. But we're taking one step at a time.

Yes?

**(Q)** The last couple of weeks, Navy officials have told two different congressional committees that, given more money, the Navy's theater-wide program could be fielded by 2002. Has BMDO given any kind of an accelerated plan by the Navy, with an associated amount of dollars that would be needed to get it fielded by 2002?

**GEN. DAVIS:** Obviously, the Navy program is going to be a key player in the family of systems, and the only concern is how much risk do we want to put into the program. Currently, we have \$419 million that is in our '98 budget. I think what you're referring to is in the '99 budget, we're at \$190 million.

In my mind, the Navy is doing things very, very well because they're doing risk reduction right now. They're spending most of that -- a significant amount of that money trying to understand what are the technical risks that I must be able to overcome before I go into production and before I go into the engineering phase. I think after we get past some of the key risk reduction activities and we see -- we still are in the process of meeting a Defense Acquisition Board, and that looks like it's going to be in the springtime, like the April time period, where they lay out their program and the capabilities of the program. Then we can look more seriously at where we want to go. But we don't want to make a mistake where we put too much risk into the program and not be able to deliver a product.

So I think the real question is, we're talking about a 2006 time period right now for the first unit equipped; we would have a first flight in the '99 time period, and the first intercept in the '99 time period, but deployment would occur out here in the 2005, 2006 time period. If, in fact, we get some very significant risk reduction and demonstrations, then we should talk about what we should do in terms of accelerating. But what we don't want to do is make a mistake and put too much risk up front until we know really what the technology issues are. And I think they're doing it in a very logical way, and we are continually reviewing this program in terms of what makes sense in terms of how one might accelerate it if in fact all the test comes out the way it should.

**(Q)** So have you ever seen anything on paper? Have they given anything, BMDO, on paper; and if you wanted to get it fielded by 2002, here's how we would actually do it?

**GEN. DAVIS:** I believe that the programs that -- as you know, the CNO said in a congressional testimony, when's the earliest you could do this, and he said "probably 2002".

I think if you asked the -- in fact, when John Douglas gave testimony just a few days ago --

(Q) It was about a week ago.

**GEN. DAVIS:** -- about a week ago, he said he probably wouldn't recommend trying to even get the 2002, that he'd look more at the 2003, 2004. So, what you have right now is, what's the investment you want to put into something, and what's the legitimate amount of risk, and that's part of the job that the Pentagon gets involved with on a regular basis.

In a budget-constrained environment, we have to look at all of our options, and I think that, as I said, right now the program is being well executed, because they're doing the risk reduction up front with this amount of money, which will allow us to have some of the answers of where we want to go.

(Q) Do you know, at all, sir could it be balanced with the fact that the amount of money that's going to the THAAD program, also.

**GEN. DAVIS:** We must look at the budget from a family of systems, because, just like you all have families, you have to support all members of that family and decide what the right allowance should be for each of the family members.

(Q) Kerry Yates from Aerospace Daily. Two questions. Follow up on the budget: Every year, Congress does seem to put in extra money for these programs. What would be your top priorities and where could extra dollars go if that happens again this year, and also, from your briefings I didn't see anything particularly new about the TMD programs, other than, you raised the issue of interoperability. Are there some problems that surfaced, or some issues that weren't thought about in the past, concerning interoperability?

**GEN. DAVIS:** I think it's the fact that, currently, we only have a PAC-3 program, and so interoperability there is amongst the PAC-3 systems. As we start developing the other families -- family members -- we must make sure that those family members can communicate with each other so they can be most effectively utilized. So, I don't think it's something that we haven't thought about, but it's something that is growing in importance as we develop more family members. And, as we go through our analysis, we see that our capability of responding to threat, especially in evolving theaters, is very much strongly dependent upon our command and control; that we get real synergism when we have our family members talking to each other, as opposed to the family members not communicating at all.

That's why it's important for us to come to grips with the investment necessary for the command and control, and when we look at exercises where we do training of our troops and when we look at what we call our CINC exercises, where we bring -- do a war game -- we discovered that the importance of the command and control is very high. That if we don't have that interoperability, then we're not using our systems, both in terms of inventory and overall capability, as effectively as they could be. So certainly, an investment priority is to make sure we have that interoperability; it applies not just to ballistic missile defense, but the air defense and just the ability to execute programs.

I think that is the essence of where we're going with the Joint Vision 2010, that we're going to have this information grid and sensor grid, and that's where I would

say we are probably ahead of most other nations in our ability to take advantage of the information highway and the revolution occurring in information affairs.

With regard to the investment strategy, I think that it is very important to make sure that we get some programs fielded for our war-fighters to give them the capability in the near term, and that -- that's probably all I can say right now.

Thank you.

**(Q)** About two or three programs could use extra dollars?

**GEN. DAVIS:** I think if you look at the budget submission for 1999, we came in with \$3.6 billion. That compares with basically our '98 budget of about \$3.6 billion. And in the quadrennial review, a lot of effort was made to try to make sure that our budgets were going to be capable of getting us fielded systems. And I think at this time I will back off from any other recommendations, so I can be up here next time and talk to you. Okay? (Laughter.)

Yes?

**(Q)** General, Frank Tissen (sp) with BMD Monitor.

Could you give the status of the Arrow and Field Programs and our programs with Israel?

**GEN. DAVIS:** We've had some very successful international cooperation programs with the Israelis. The Arrow Program, as you know, is jointly funded. BMDO has put the majority of the funding into missile development. The Israelis have been cooperative on that and a key player in they've had the responsibility for the radar systems. We have had a couple of excellent intercepts. We have some more key tests coming up over the next year. The Israelis are very happy with where we're going on the Arrow Program, so I think that's on track.

We want to make sure that -- I think their air force has said that there's a certain number of intercepts required before they would give the go, no-go on the program. But we're very comfortable with our relationship with the Israelis, and we think it's on track.

I can't comment on the THEL Program. It's not in my area of responsibility, so let me just back off. And if there's some questions you'd like answered, we can probably get some answers for you on that. Okay?

(Pat ??)?

**(Q)** Colin Clark with Defense Week.

To use the family analogy, hopefully, for the last time -- (laughter) --

**GEN. DAVIS:** (Laughs.) If you have a better term, I'll be happy to use it.

(Q) It would seem from your presentation that MEADS was something of an orphan now. (Laughter.) Are you going to fund it in the outyears? Are you going to come up with a new combination of PAC-3 missiles, MEADS launcher, CEC? What's it look like?

**GEN. DAVIS:** I think the MEADS Program is a special case. It is an international program, as you know, with the Germans and Italians.

It's been called the model of where we want to go with international programs. And certainly we've gotten excellent dialogues with the Germans and Italians in terms of the next phase of that program.

We are working with the Germans in terms of the memorandum of agreement. We have put enough money in to have the preliminary design validation part of the program fully funded, and we are going through the normal budgetary process right now looking at the sources of funds that allow us to continue into the next phase, of that program. We plused-up the '99 budget so that we would be able to complete the preliminary design validation phase. The requirements have been well-stated; they are real. When General Lyles went to Europe and talked to the CINCs, they reiterated the importance of a mobile program. What the exact configuration is, I think we should let the process determine what the right missile is and what the right command and control, and the radar and launcher should be.

The key issue here is I need much more mobility than I have right now. I want to be able to keep up with the troops, hit key choke points, and -- you mentioned the command and control. The MEADS program is being designed to have, at a minimum, interoperability of the Joint Data Network, but with the compatibility of the Joint Composite Tracking Network, which means it can take off-board sensors to cue it and we can do a fire and forget, with this particular system, both for cruise missile defense as well as ballistic missile defense.

So it has all the characteristics we're looking for that future vision, and right now the question is, do we have the funding to support that? And it's being looked at both through the JROC process -- the Joint Requirements Process -- as well as through the acquisition process. And I would expect as part of '00 POM build, we'll be getting a decision on that issue. But again, the requirement is real and it's being looked at very seriously across the Pentagon.

Yes?

(Q) Jay Chen with Central News Agency of Taiwan. Can you tell me what the level, if any, of participation in the development by Far Eastern countries? And what are the prospects for the deployment of such system in the Far East, either by U.S. troops in the region or by countries there?

**GEN. DAVIS:** If you'll go back to the map for a second on the PAC-3 deployment. Again, from the United States' standpoint, the reason why we have deployable systems is they can be put to defend our troops and our population and our allies wherever necessary. We do have in Japan 32 fire units of the Patriot type. And you can see where we are with the Middle East and with Europe.

At this point, I don't have knowledge of cooperative programs with the Asian community, and I'd say I'd be happy to get back with our international folks and would be able to answer. I don't have the answer to that myself.

**(Q)** You want to let me off easy? (Laughter.)

**GEN. DAVIS:** (Laughs.) No. Okay.

**(Q)** Brett Davis with the Huntsville Times. I don't want to sound pessimistic, but what will occur if the next THAAD test is not successful? Are there any plans?

**GEN. DAVIS:** Yeah, I'm glad you asked that, because we're talking about a very difficult technology. We're trying to hit a bullet with a bullet. And we should not be looking at -- I think Dr. Gansler brought this up in his testimony -- we shouldn't be looking at these as final exams. We learn a lot what was not mentioned is I came from a laboratory background. I ran two of the Air Force labs over the last -- four years, and so I'm used to doing risky things. I'm used to doing experiments. And if you're not allowed to get as much information out of an experiment as possible, you're not doing your job.

I would say that we have to look at these on a case-by-case basis. I think that we're going to get a tremendous amount of information out of our next THAAD test. And to say that if we happen not to hit the target, you have to look at why didn't we hit the target. And we should not be looking at these as a final exam, because this is very high-risk, and we're doing a very difficult job, and I think the program is doing it in the right way at this time. So I agree with Dr. Gansler that we shouldn't look at these as a final exam.

Yes.

**(Q)** General, on the one chart, on the family of systems management, mentioning here that establishing a program plan and then coming up with some goals and schedules, could you give us kind of a timeline on that? Do you have an idea when the program plan will -- is that something that's being worked on and written right now, or is there something that --

**GEN. DAVIS:** Yes.

As part of our POM -- as part of our budget process, because of the importance of the interoperability across the board, each of the services do in fact have programs to improve the interoperability of their systems. What we're looking for is: "are there holes in those programs", and is there some way of assessing how close we are to establishing an exit criteria that says, "Yea, verily, these are interoperable," that these have met the Good Housekeeping Seal of Approval, and that we can, in fact, go through the final exam in terms of interoperability, to know that when we plug these in, they're going to operate properly.

We're putting together a budget in the BMDO program to support some of the testing of these activities. And again, I'll give you the example that we have the theater missile defense simulation exerciser, where we have components from each of our major programs -- the Navy area, the THAAD, the Patriot and the ABL -- all linked across the Internet, tied to an exerciser in Colorado Springs, where we do

hardware tests and we verify where there are problems with some of the software. That costs money, and so we're putting a budget together to show what is necessary to that particular acquisition program, and that will be part of our '00 POM.

Also, we have the vision in the Joint Theater Air and Missile Defense to have a single integrated air picture. What's required to get to that single integrated air picture? I think that's the other area where we need a formalized acquisition -- or not a formalized, but we need an acquisition plan to identify what new investments we must make to get to that vision that we talked about in 2010, where we have that sensor grid and we have the com grid. And so we're preparing that right now. And so that will be part of our POM -- our budget submission for next year.

Yes?

**(Q)** General, these efforts that have not been funded in the past -- will this be a new line in the budget, or would they fall under individual programs? Just kind of clarify that.

**GEN. DAVIS:** It currently is in a budget line that we call theater air/missile defense, and it's a joint theater missile defense budget line. And it is an area that has gone through some growth, actually, in '99. We have some plus-ups in that arena. And it is consistent with our recommendations of growth opportunities. And I can't say anything more until we go through our budget review process.

**(Q)** Do you have any estimate on about -- on any ballpark figure on what type of money you're looking at?

**GEN. DAVIS:** Let me get back to you in terms of what the '99 budget submission was in that particular area. I think we can give that to you.

Yes?

**(Q)** Does anybody else have questions? Okay. Let me go back to -- now to Japan and Korea and ask much the same question.

It has been said by those in this DOD that the Patriot-2s that are abundant in Japan cannot take out the most advanced North Korean missile; they are not proper for defending against the -- what is this -- I think it's the Nodong, or it may have been Rodong.

**GEN. DAVIS:** Okay.

**(Q)** But in any event, whenever the North Koreans have a strategy to hit Japan - in the event that they would make any moves against South Korea and the U.S. there, they would go against our bases in the cities. So let me ask you, once again, are you confident that there is a missile defense against the Korean threat currently in Japan and South Korea?

**GEN. DAVIS:** Let me answer that a little bit differently and say that we are developing with the Navy area and with the -- let me come back. Both the Patriot, PAC-3, and Navy area, as we look at their capabilities, let me talk about

Congressman Weldon and Impact '97, because one of the questions is what are our capabilities going to be against this evolving threat, especially if it's a longer range.

One of the things in responding to Congressman Weldon is that we thought that both the Navy area and the Patriot, the PAC-3 programs, would have some capability against a longer-range threat, even though they weren't designed against that threat. We recommended that -- and although that's based on modeling and simulation, it would be worthwhile to do tests against a longer-range threat, and in fact we're looking at opportunities to do threats with those systems against a longer-range threat.

That doesn't eliminate the fact that a Navy theater-wide or a THAAD program are specifically designed to go against that threat. And so let's go and make sure that we develop the capability that that is designed for and look seriously at Navy theater-wide and the THAAD program as defenses against that longer-range threat, which has a higher velocity of reentry, of course, and that makes the endgame much more difficult.

**(Q)** And so at present there is no missile counter to the longer-ranged, medium-ranged, more -- faster reentering missiles that the North Koreans have; there's not a defense in place. And when would it be in place?

**GEN. DAVIS:** No, I didn't say that, because I don't know if the PAC-2 does not have some capability. What happens -- as the higher velocity comes in, your footprint decreases substantially, and so it means you must be located much more precisely in terms of those areas that you're trying to defend.

Whether the fuse for the Patriot-2 program -- one of the reasons we went to the guidance enhanced munitions is to improve the fusing and give it a capability against a higher-velocity threat.

You're in a regime, though, where we have not demonstrated that capability, and so I can't answer one way or the other because we haven't tried it. But as you remember during Desert Storm, the Patriot that was used in Desert Storm was not designed against those threats, but yet it had a capability against those threats.

**(Q)** I see. But there's not yet a comprehensive system in place. How long would it be before you get the Navy system linked to the Patriot system to give a more comprehensive --

**GEN. DAVIS:** Certainly when we talk about when we're going to have our operational units, let me talk about the backup charts for the schedule for a second. We have the theater air missile defense. The next flight is on the third quarter of '98, as you know, and the first unit equipped is going to be 2006. But we will have the UOES, the user operational effectiveness, of 40 missiles that we can use.

So again, this is sort of the lower tier that we talked about. The PAC-3 is certainly going to be available in the '99 time period. Our next flight, as you know, is we're talking third quarter '98. With the Navy Area, our next flight is second quarter of '99, and the first unit equipped is going to be in fiscal year '02.

In terms of our upper-tier system, although our first unit equipped is 2006, we are talking about a 40-missile capability in the 2002 time period. So that's not that far down the road, and that gets us some interim capability.

This now has been quantified to be May of '98, and so I'm very anxiously awaiting that particular shot as well.

Navy Theater, we're talking about a control flight in the fourth quarter of '98, first intercept in the '99 time period, and block one in the 2006 time period as well.

Those, of course, are designed to go after that very long threat.

To say that we don't have a capability right now I think is not accurate because we do have some fielded systems. We have not demonstrated those systems against the long-range threat in any of our tests at this time.

Yes?

**(Q)** Are you convinced at this point that each of the services ought to be pursuing its own system, however much you may be integrating them at the end?

**GEN. DAVIS:** Well, as you know, we use the services to execute the programs, and I think they do a very good job of executing those programs. That's where the expertise is to program manage it. I think that what I've tried to get across here is the message that joint mission area acquisition is very important when you have a family that must be working together and be used in an interoperable way. Interoperability is really key to success when you talk about fielding multiple systems in an environment, and that you must have a process to clarify the requirements and the space that's going on.

So I think the relationship where you have the Ballistic Missile Defense Office serving as the single voice and the architect on the family of systems, and you have the execution agents be the services where that expertise of actually running programs really exists, that's the type of marriage we should be having.

Yes?

**(Q)** Let me just follow-up. It's not exactly -- unless I misunderstand the process, with BMDO conceiving this and assigning the services as the executors, I mean, you have them lobbying you and everybody else as hard as they can to accept their concepts and their system.

**GEN. DAVIS:** And what's your question?

**(Q)** Well, I mean, that sounds more like BMDO sort of refereeing rather than really leading this process.

**GEN. DAVIS:** Well, I would say I look at it as a coach where you're making sure -- part of our job is making sure the best practices, that what we learn from the THAAD activities are shared with all the other programs; that you look at the test activities, and the fact that we're using similar seekers -- if you look at the Arrow program, some of the seeker measurements that were done in the Arrow Program,

that information was shared with the THAAD program and it will be shared with the Navy program.

There are opportunities where we have infrastructure, by having that infrastructure run by one organization and allowing multiple services to use that infrastructure, there is synergism there as well.

And then architecturally, to make sure that we're not developing each of these programs in a vacuum, but that we're looking at what they must do to make themselves interoperable. An example is, I might be able to use cueing from the THAAD radar to enhance the footprint of my Navy area. That type of improvement from a family of systems could have a significant impact on my coverage in an overall theater.

Having these systems work together, as opposed to being completely autonomous, I think is part of the job that BMDO has that's fairly unique, and it's the wave of the future as we look at marrying more and more of our sensors to our battle management philosophies.

Yes?

**(Q)** Greg Schneider from the Baltimore Sun. I was going to ask along those lines, aren't we going about this a little bit backwards?

Instead of having all the pieces and then coming in at the last minute and trying to figure how to make sure they don't shoot each other down, shouldn't we have devised the system first and then created the pieces that satisfy?

**GEN. DAVIS:** Yeah. In a perfect world, that's exactly where you'd like to be. If you go back to the chart that I showed on legacy systems, the fact that we have systems that were developed because there was no other capability of responding to that threat -- and so you have Patriot developed. And then we said: "Well, Navy, I have an Aegis cruiser. I already have the infrastructure. All I have to do is modify the radar and some of the software, and then I can use my vertical launch systems to go after ballistic missiles, as well as the cruise missiles that they are designed for."

So it's a fact of life that if you could design your Internet from scratch right now for your computers, you'd probably be able to develop a little more efficient system than the fact that you had accommodate some legacy systems.

We are in the process right now of generating something called a capstone requirement document. This is being done by U.S. Atlantic Command. It's going through the JCS process right now, where that capstone requirement document is trying to define what the capabilities of this family of systems should be. Within that, we'll then be able to look at each operational requirement document for our individual systems and see what the contribution of each family member should be.

So what I am saying is we are now getting the overall capstone requirement document put together. We are getting the interoperability defined so that all future upgrades to the programs will be done within that family context. So it's the fact of life that you live with legacy systems, but at the same time you have a vision of

where you want to go. That vision is going to be based on the capstone requirement document that's coming out of our USACOM right now. Okay?

Yes?

**(Q)** Frank Wolfe Defense Daily.

General, just in terms of (you know ?) going back to THAAD and if it fails, is there any talk --

**GEN. DAVIS:** Do we have any optimists at the table? (Laughter.)

**(Q)** (Inaudible.) (Laughter.)

**GEN. DAVIS:** Where's my guy from Huntsville -- (inaudible).

**(Q)** If it does fail -- well, even if it doesn't fail, is there any possibility that Navy Upper Tier will satisfy all of the theater requirements, that you wouldn't have to build THAAD and --

**GEN. DAVIS:** Are you saying the lower tier, because THAAD is an upper-tier program?

**(Q)** Well, that's what I am saying. Maybe --

**GEN. DAVIS:** Okay. What I didn't get into is if we show you the coverage -- the problem with lower-tier systems is they are very good for point defense; they're very good for protecting critical assets. But they are not as good as you'd like them to be as protecting the population centers, especially against weapons of mass destruction.

So if you want to have an ability to cover a large area, as in an entire country, our major areas that are exposed, you'd want to bring an Upper Tier system in.

It makes tremendous sense to have an Upper Tier capability, especially if there's a threat of weapons of mass destruction where you don't know where he's going to be shooting. Right now all of our ballistic missile terminal phases have been critical asset defense where we knew that the enemy was going to go after a port or an airfield or something that has military value. Where you start getting into problems is if you have to protect an entire country you'd like to have a capability of going after the longer-range threats and the threats that might have weapons of mass destruction and destroy those so they cannot affect your population centers. And that's where the Upper Tiers really become advantageous and why you must have those.

**(Q)** Why have both? Why have THAAD and the Patriot?

**GEN. DAVIS:** I think first of all we want to make sure we have something, and that's where the Patriot and the Navy Area become -- because we still have military requirements to protect critical assets and we want to make sure we protect those at very high fidelity. At the same time, you'd like to have some population coverage, and that's where the Navy Area and -- I'm sorry, that's where the Navy Theater and

the THAAD programs really come into play. And a few of those -- and again, it's not just the population defense, but the fact that those were designed to go after higher velocity reentry vehicles, which are the long-range threat that you were referring to, that are the evolving threat. And so I really do need the mixture of systems, one to go after the evolving threat, and the other is to start protecting myself against weapons of mass destruction and protecting the population.

Yes.

**(Q)** Hi. Chris -- (last name inaudible) -- Fox News. The question I think we're all sort of dancing around is for each of these areas, the terminal phase or the Upper Tier or whatever, you've got several systems in development that do the same thing or do similar things. Is that on purpose to diversify the risk? If something doesn't work you have something that does work? And to what extent is this like a healthy competition between systems within a certain area? Is that part of the plan?

**GEN. DAVIS:** Yes and yes. You're just right on. I think in one case having that type of healthy competition allows us to have some options. And it's the type of acquisition that you want to be able to look at a variety of options to solve a particular problem. At the same, on the maturity scale we can't go off and buy one of these right now. We're still in a very high risk development program, and there are some key issues.

Each of these are looking at a different area of intercept. They're involving different threats. And I come back to this chart in that it's different physics to kill something up here where you don't have any atmosphere as opposed to the window heating problem when you have it down here. And, oh, by the way, right now the Patriot has a semi-active radar that's getting cued from a radar. And my Navy Area, in fact, has an IR sensor on it. So we have different phenomenologies in terms of our end game. And as we start going to hit-to-kill systems we're trying to actually be able to intercept the warhead within a meter, certainly, so that we have enough energy there to cause -- if we do have weapons of mass destructions in there, we want to make sure that those are destroyed before they have a chance of hitting the ground. So we have --

**(Q)** (Off mike) -- suppose you're just sort of diverting it and --

**GEN. DAVIS:** Tumbling down and hitting, because if you're not careful, you might tumble it and it'll hit a city even though it was going for something else. So another criteria we don't talk about very much is we have some minimum altitudes that we try to achieve with some of our systems so that if there is a chemical or biological weapon on there it is dispersed and does not cause damage on the ground. So ground effects become very critical in terms of some of our assessments.

But to answer your question, right now, until we get some of these to the level that we have a high degree of maturity and we know we can just buy them, it's premature to make a down-select decision because it's just too high a risk when the threat is so critical to respond to.

It's sort of like if you don't have a shirt at all, buying the first shirt is very important. After you get a couple of shirts, then the fifth or sixth, you have more discretion. But right now, we're trying to get capability both to go after the high-

velocity, long-range systems as well as the shorter-velocity systems coming in. And certainly programs like the airborne laser give us another advantage because it gives us a capability of killing something in the boost phase so that some countermeasures, such as cluster munitions, you can be responsive to those, and it reduces the inventory that would be coming down here as well.

**MAJOR WOODS:** Sir, we have time for one more.

**GEN. DAVIS:** Okay. The lady in red, and if she does it fast, we can have one more. (Laughter.)

**(Q)** (Inaudible.) Last November, the House passed a bill to help Taiwan to develop materials for a missile defense system. Are you confident that -- or let me put it this way: How can this system or how can this program contribute to the stability across the Taiwan Straits?

**GEN. DAVIS:** Well, the systems we're developing are being developed so that they can be deployed anywhere in the world and protect our allies and friends. I don't know the specifics of any of the bills with Taiwan, so I have to defer that and get an answer back to you.

But you had a question.

**(Q)** A very quick one, yes. My name is Lisa. I'm from "Inside the Navy." Also this is a follow-on to Tom's question earlier about theater -- Navy theater-wide. Seems that of all of the systems we've discussed today with the exception of MEADS, that this is the orphan. We're talking FY -- I guess fielding date, FY-09, if I'm reading this chart correctly?

**GEN. DAVIS:** The MEADS chart?

**(Q)** No, the challenge -- BMDO challenge.

**GEN. DAVIS:** That was meant to be more of a generic chart. If you're looking at an IOC, I prefer to give you that -- which system are you talking about?

**(Q)** Theater-wide.

**(Q)** No, I'm talking about Navy theater-wide. My question is could you just give me a ballpark figure in terms of funding that would be required to bring it in, to accelerate the program to even as late as '04, '05 -- FY-04?

**GEN. DAVIS:** Well, I think we are talking about '06 right now for the first unit equipped. And I guess until after we look at the DAB -- the Defense Acquisition Board -- and see the numbers coming in, I do know they're looking at two options. One is with the current funding profile, when can you deliver? And the other is if you want to accelerate, what type of money is required. And I --

**(Q)** (Off mike) -- estimates?

**GEN. DAVIS:** I don't have them right now.

**(Q)** Okay, thanks.

**GEN. DAVIS:** Okay, thank you very much.

**END.**