

7 DR. THOMAS CELLUCCI: Good morning. As we promised
8 yesterday, today we're going to talk in more detail
9 about some of the things we're attempting at Homeland
10 Security in the area of commercialization. By way of
11 background, it didn't take literally more than two days
12 after joining the department to find out that there were
13 literally thousands upon thousands of private sector
14 entities, national labs, universities, trying to push
15 solutions onto DHS. In other words, people had
16 solutions looking for problems. And very early on I had
17 the opportunity to work closely with the secretary, the
18 deputy secretary, and what we call the gang of seven,
19 the leaders of the seven operating components. I said,
20 now, I know I'm just this person from the private
21 sector, but it would seem to me, because I like to keep
22 things simple and make them easy, as I mentioned
23 yesterday, that it would be much more effective for
24 everyone involved, and efficient, if we took the time to
25 write detailed requirements and then put that out to the
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1 private sector. And a lot of the senior executives of
2 the department said, you mean we're not doing that
3 today? And it was very interesting to me. This -- what
4 we're going to talk about is now used as a case study.
5 We get invited by more business schools and government
6 schools than you can imagine on a weekly basis. For
7 those of you in the audience and in our internet
8 audience, if you go to the DHS website, you will see two
9 very detailed presentations that involve effecting
10 change in government. And let me just tell you in a
11 forthright manner that it's not easy, and I'll comment
12 on that. But I think some of the issues that we just
13 heard from my colleagues in Europe are being addressed
14 by the commercialization model and the innovative
15 public-private partnership programs that we've
16 developed. I'm very proud to say they were developed in
17 science and technology, but they are now being mandated
18 not only through the Department of Homeland Security,
19 but I now work with President Obama's chief technology
20 officer to talk about how this could be spread across
21 the federal government in the United States.

22 So to continue with the story, I also, as my friend just
23 commented, was dealing with a lot of frustration from
24 the private sector who said, we don't need your money.
25 We just want to know exactly what you want and what are

1 the opportunities. So basically commercialization
2 started out with a simple premise, that the private
3 sector would be ready, willing and able to assist the
4 department if we gave them two things. Neither of them
5 were money. The first were detailed operational
6 requirements. Now, we talked yesterday about what I
7 would call high level requirements in a requirements
8 hierarchy, which are generated from the capstone
9 integrated product teams. And those were capability
10 gaps. But if you've really dealt with requirements,
11 these tend to be very broad. Detailed operation
12 requirements tend to be things that take some time to
13 develop. If you look on our website you'll see that our
14 typical operational requirements documents are 40 to 50
15 pages in length, compared to capability gaps which may
16 be a sentence or two long. And basically, if one really
17 wants to develop a product or a service, many people
18 will argue, and I think quite effectively, that you need
19 these detailed requirements. So the first thing we
20 needed to do is to develop the capability within DHS to
21 articulate our detailed needs. That is to say, to
22 articulate detailed requirements. The second thing that
23 would be of value to the private sector would be a
24 conservative estimate of the potential available market.
25 As we said yesterday, it's been my experience that the

1 majority of applications for the Department of Homeland
2 Security are for widely distributed products. We talked
3 about the three major stakeholders for DHS: The
4 operating components which are funded; the large base of
5 first responders, who by the way get funding from FEMA,
6 about 3 billion U.S. a year; and the critical
7 infrastructure key resource owners and operators within
8 the private sectors, 18 sectors that comprise the
9 economy. So by offering both pieces of information the
10 private sector would have the information it needed to
11 make a business case. And basically what we found is
12 that indeed the private sector, and as you'll learn even
13 the university community's national labs, very much want
14 to help, and they'll do it with their own resources to
15 share in the imprimatur of the DHS, as you'll see, as
16 well as being able to look at medium and long-term
17 opportunities. So I'd like to give you a brief overview
18 of commercialization, talk about the initiatives at DHS
19 in a case study format, and hopefully you can see what
20 we have learned so far in this experiment.

21 The commercialization office is involved in four primary
22 activities. The first is a requirements development
23 initiative. I did not come to the department to write
24 the five books we have in the last year, and I wouldn't
25 have believed that unless I lived there, but we did need

1 to learn a lot about defining, generating and vetting
2 detailed operational requirements. You know, I thought
3 everyone was Italian at DHS like me, because when I
4 would ask people what do you mean by interoperability,
5 they would do this (gesturing). What do you mean by
6 situation analysis? Depending who you talked to on what
7 day of the week, you would not get a similar answer.
8 And we'll talk a little bit about that because this
9 involves the need to measure things and to look at
10 performance measurements, and I learned a long time ago,
11 if you can't measure it, you can't manage it. And as I
12 mentioned yesterday, not an excuse for the Department of
13 Homeland Security, but just an observation: It's a
14 young organization. It just celebrated its sixth
15 anniversary. And just like when a child is starting
16 primary school, things get a little harder. We expect
17 the child to go home with homework and do it, et cetera.
18 Well, this is what is happening at DHS. We developed a
19 commercialization process and, simply stated, I loved
20 what the Minister of Defense for Sweden said yesterday.
21 He said sometimes the answer is right in front of you.
22 And it was so clear to us at Homeland Security that when
23 you talk about widely distributed products, that begs
24 the discussion for commercialization versus the
25 acquisition model that is typically used in the

1 Department of Defense, used by other government
2 agencies. The acquisition model is quite useful when
3 you're building one-off custom systems. And we all can
4 agree the total potential available market in terms of
5 units of any given year of an aircraft carrier is quite
6 small. In that case government needs to pay the private
7 sector to divert its valuable resources to make that
8 one-off custom product. But when you're talking about
9 thousands, if not millions, of potential units across
10 all of these stakeholders, this gets the private sector
11 excited. And it is true that it's fragmented, but we
12 have now built segmentation maps to guide the private
13 sector to help them navigate the waters, which we'll
14 talk about. How do you take these commercialization
15 models and make them real? This is through our
16 innovative public-private partnerships. And finally we
17 do global private sector outreach, which has been quite
18 successful. There has been a lot of attention paid to
19 commercialization, as I mentioned. It is working. Of
20 the eight detailed operational requirements that we have
21 now on our website, there are 43 companies building
22 products and services for DHS at no cost to DHS. This
23 saves the taxpayer money. It creates a speed of
24 execution for the department. And it makes the private
25 sector happy. And, again, I learned a long time ago, if
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1 all participants in a program or a model or a system
2 have the benefit to succeed, the probability of success
3 goes up rampantly and rapidly. This is a typical chart
4 that you don't see in government. This is what you call
5 a market potential template, and what you can see is
6 that if we segment DHS into the seven operating
7 components, further segment into major applications and
8 put dollar signs and unit symbols next to these, we can
9 build potential market maps. And this is exactly what
10 we do. And as I said, one of the largest stakeholders
11 for DHS is the seven operating components: TSA,
12 Customs/Border Protection, the Secret Service, Coast
13 Guard, et cetera. We've added science and technology
14 because we buy prototypes, et cetera, and then we put in
15 a catch-all other category, but realize that we are
16 conduits from a marketing standpoint to the first
17 responder community through FEMA, through
18 nongovernmental markets through the office of
19 infrastructure protection. We talked about the 18
20 sectors comprising our economy. And just as an example,
21 this is a market segmentation of the first responder
22 community, so it is fragmented, but you have to
23 understand the fragments. And some of these fragments
24 alone are very enticing to the private sector because
25 they can be quite large. So these are the major

1 segments and subsegments of what we call the first
2 responder community.

3 Not to make you dizzy, but to make a point, these are
4 the sectors comprising the key infrastructure and key
5 resource owners and operators. So there are the 18
6 sectors and the major segments within those sectors.
7 When you build these market maps you will see quite
8 readily that the numbers get large. This is very
9 exciting. So I'm very proud to say that the private
10 sector has not been positive, they've been ecstatic
11 about coming to us. Our issue today at DHS is we have
12 so many people waiting to see more detailed operation
13 requirements being added. We currently have 40 more
14 detailed operation requirements that are being generated
15 and vetted. As I said, the first eight, we have 43
16 companies now developing products and services for the
17 department.

18 So the idea, to use the word of the Minister of Defense,
19 is right in front of you. Keep it simple. Make it
20 easy. So we publish in an open and transparent way
21 solution-agnostic detailed requirements with potential
22 available market. We say to the private sector, you are
23 solution providers. You provide solutions from what we
24 consider technology readiness levels five or above,
25 which Luigi showed in the product realization chart.

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1 And we will sign -- let me repeat this -- we will sign a
2 one-page agreement that our lawyers have developed. I
3 always have to thank the Office of General Counsel. It
4 doesn't need to be a 5,000 page document. And in that
5 way this cooperative research and development agreement
6 allows us to work with the private sector or other
7 entities to develop products and services and
8 technologies as you'll see. And this increases the
9 speed of execution. This increases the net realizable
10 budget for the Department of Homeland Security. And
11 another interesting story, Secretary Napolitano talks
12 about three operational thrusts, what I would call
13 operational thrusts for the department. And I very much
14 agree with those thrusts. They're efficiency,
15 partnership, and one DHS. And I think you'll see, when
16 I briefly describe these public-private partnerships,
17 that these are good examples of all three of those
18 operational thrusts. And for those of you in the
19 private sector, I had the opportunity as I said many
20 times to interact with the secretary, the deputy
21 secretary, and I asked a question of them. I said, I
22 have come from a world where it's not only good enough
23 to execute, but the speed of execution is critical.
24 Where would speed of execution be more important than
25 protecting the citizens of our country and the property
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1 of our country? That was what not only let them support
2 these programs; they embraced them. So the Secure
3 program is a certification program as I described. We
4 put out detailed operational requirements, conservative
5 estimate of the market, and we get back in most cases
6 many, many potential solutions from the private sector.
7 This is not a procurement activity. We create a
8 clearing house, and every ORD has many solution
9 providers. This is organized at the discretion of the
10 program manager, and as I said, in the next year there
11 will be probably around 43 products released from the
12 department based on just eight ORDs. And as President
13 Obama recently said in a speech to the Congress, he
14 said, show me a program where there's competition and
15 choice, and I'll show you effectiveness. And this is
16 precisely what we're doing. And why would the private
17 sector be interested? We're trying to make it easy.
18 We're trying to keep it simple. We then certify their
19 product or service. They actually get a seal as you see
20 here, which let's them share in the imprimatur. As I
21 mentioned yesterday, I've been a first responder for
22 over 30 years. A lot of junk has been sold to first
23 responders. They need the assurance that the product
24 works or the service works. This is worth gold, as we
25 would say in the United States, to the companies who are
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1 involved.

2 Now, of course when you have successful programs the
3 first things that happen are people say, well, what
4 about us? And this happened with the university
5 community, and a lot of people have asked the question,
6 how can we help if we're working on research? We are
7 not interested, we do not have the core competency, to
8 commercialize products. The good news is is we have
9 developed a program which we want to share with you
10 called Future Tech. The idea here, it's analogous, it's
11 the sister program to Secure. Where Secure has as its
12 ultimate objective to deliver products and services to
13 meet the detailed needs of the DHS stakeholders, the
14 Future Tech program is targeted towards the university
15 community, the national labs where we will certify a
16 technology at technology readiness level six. This is
17 what I would call the sweet spot for technology that
18 could be ultimately transferred or transitioned to one
19 of the operating components or to the public sector.
20 And, again, you share in the imprimatur, it makes an
21 entity's technology much more valuable on the open
22 market.

23 So these are two public-private partnerships. Why are
24 they working? They're working because, as I said, every
25 participant wins. The taxpayer wins, the private sector

1 wins, and the public sector wins. Now, change is not
2 easy. Just ask President Obama. And I was a change
3 agent before that became popular in the United States.
4 People often ask me, what's the biggest challenge in
5 doing commercialization in the federal government? The
6 biggest challenge is analogous to losing weight. If
7 you've ever tried to lose weight, the hardest part is
8 the middle. And so getting the not only support but
9 embracement of these kinds of programs from the senior
10 executives of government actually was quite easy,
11 because you can't argue with things that are good for
12 the taxpayers, the public sector, the private sector.
13 But there's differences in culture, and many people in
14 government have spent their whole careers in building
15 large groups of people and money, and it's
16 counterintuitive to them to right away embrace something
17 like this. The good news is that you can change things.
18 It takes time, but that's been our experience, that the
19 challenge is not working with the universities, the
20 national labs or the private sector. It's working
21 internally to create a commercialization mind set in
22 government. The cultures are different. One is not
23 better than the other. In the private sector, which is
24 geared to more financial, results oriented, speed of
25 execution processes, versus the government which in many

1 cases is much more difficult. In many cases it's much
2 easier in the private sector to prioritize programs and
3 projects because it's mainly based on financial factors.
4 In the government there are other factors that are
5 involved. So that has been the challenge. The good
6 news is it's happening. It will not happen overnight,
7 but the reality is, as I said, we now have 50 or so ORDs
8 that we've generated and now are vetting throughout the
9 process. And so there is hope, and as I said we're
10 working to look at how this can be spread.

11 There are undoubtedly cross-cutting requirements that
12 the Department of Defense, Department of Homeland
13 Security, the Department of Energy can look at together.
14 And in fact we are starting to use technology. Those of
15 you familiar with what people call Web 3.0 or the
16 Semantic Web think about a day when we can actually put
17 the framework of detailed requirements in an open and
18 transparent way to let the private sector, the venture
19 capital, the angel community and potential users build
20 it up to build a solution-agnostic ORD with millions of
21 people interacting on it so that you can get all that
22 positive input. The internet was used quite
23 successfully in the recent elections campaign cycles to
24 generate money, ideas, et cetera. Why not do this for a
25 global community to develop the future detailed

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1 operational requirements? With that I'd like to thank
2 you for your attention and just also mention that all of
3 these materials are available on the DHS website. Thank
4 you.