

MR. DE LIPKOWSKI: Thank you so much for inviting me. This is a very nice and interesting session. It's not often that we are talking about those issues, and I am glad that we can do it here in this place that I like very much because I used to come often some years ago.

First of all, I would like to introduce myself. So, I am the Space Attaché and CNES which is a French space agency representatives in the US. To say a little bit briefly what I'm doing, I'm sort of a countryside doctor of space, French space, in the US and dealing everyday with most of your permanent administration here, NASA of course, which could be a sort of ministry of space in the US NOAA, as well as Department of State, Department of Defense, the White House and many, many other institutions that I forget including the scientific community.

We have a very large corporation which is not known between France and the US versus Europe. France is the first space nation in Europe. We have an equivalent capability to the US even if we are much more smaller, but we developed a certain system called Ariane 5 that everybody knows, and we are as well the first sharing, we have the first share of European Space Agency as the first country leader. And we are a major contributor to the European Union, and I am very happy to see someone from the European Commission who I'm used to working for five years at the Space Policy Task Force years ago.

Now, Europe and the European Commission has a capability to deal with space since the new Treaty of Lisbon has been signed. So, this is very good news. It will have the resources for, the European Space will, and it will give a sense of leverage that we didn't have before.

Roughly speaking, Europe in space size is a little bit more than \$10 billion, let's say \$11 billion if you put together the European Space Agency, the European Union capability which are much more the funding for Galileo and the navigation system because European Union is much more focused on for the moment, of course, on application systems and as well you put together all the national budgets of the different national space agencies including the military.

On the other side, we have the United States of America who has roughly a budget of \$60 billion, \$62 billion a year, if you put together Department of Defense including NASA and NOAA and everybody. To say so we have very strong ties with the US on space. We are very interdependent.

The European Space Agency is dealing with everything about science in human space flight. For example, I could say that 20 percent of the International Space Station is, ten percent of the International Space Station is European, but we funded other ground systems and so on. So, to say, so the American space program is also a driver for us and for our scientists. Every day, I travel within the US, every day I meet people in the NASA institute or in certain industries. I encounter French, Italian, German engineers and scientists who are part, more or less, of the US space program.

So, and we are friends and allies. My country bring back into the central command of NATO this year. We are dealing in many issues, and we don't forget that we are fighting together in Afghanistan in a very difficult war. I had the privilege to serve with the men and the women in the uniform in this country. I know what I am talking about.

To say so about export control and to give you a little bit of our perspective and our perception of export control, well a little bit mixed I could say so. I will concentrate my speech on space because this is the thing I know, and I will be not very useful on the other arena and other issues.

The export control regime is important for us because it is protecting what we are developing. Every development has a cost, influence, and an outcome. Of course, we don't like that if we develop a certain technology, somebody else is doing this technology as a prosecutor as Pelak said and use it in bad ways for himself and then make the economy of investing in his own development and so on. So, we have to protect our economy.

I could say that for the French side, which I know better, we are very good to protect the American technology because our regime may be a little bit tougher than yours. We are very reluctant to re-export certain kind of technology who could be subject to reverse engineering and who could be used especially when it deals with military technology. So, there is a security problem with, an issue with the export control regarding the military technology.

The other side is the economic problem of export control. Sometimes, it comes to the option. It's good to protect our technologies and to

protect US technology against any risk of reverse engineering, any risk of, I could say, industry espionage. The problem is that this regime was put in place 1992, if I remember, or 1993, I don't remember exactly, the new regime, 1999, so it is already 11 years old, and it is a Cold War model of dealing with technology. It doesn't take in account the development that could be conducted by common parties from the US and from Europe, for example. I will tell you an example that gives you an idea.

In part, we must protect our discoveries, you must protect your investments, your American company must protect their investment. We know that, and we are very in favor of that, as well. But, on the other side, how could you use export control to give a better economic leverage to the export control is clearly, for a big part, an obstacle to economic leverage especially if you have co-development.

I will give you an example. I think examples are speaking themselves. You had a US company, I won't say who it was, two years ago, who's building an observation satellite. Then, they ordered it from EADS Astrium, a spectrometer. The spectrometer arrived from Germany, and it didn't work. So, they would like to re-send the spectrometer to EADS and have a new one that works. It was impossible because this piece of machinery, it was not built in the US, was subject due to transit to the US to export control. So, this example gives a certain weight to the people against export control.

What we would like is that there will be a reform of export control, an adaptation of export control. Maybe we have to think about export control is

with why, to ask this question, with who, and how. Why are you doing export control today? Why are you doing export control in the world where, more or less, everything is transient and therefore information is transient?

My predecessor was talking about the problem of sharing information. If you don't share any information in the industry, if you don't share any information in the scientific world today, you go nowhere. But, the problem is where to put the limit of the shared information. Nobody talks about this.

What is really today in 2010, exportation of technology where most of the things are available on the web. You can go on www I don't know and you can develop a technology yourself. If you go to the proceedings of, most of you are prominent scientists, if some people have the money, they want to develop I don't know, a new plastic whatever, they go to your proceedings, and maybe they can use it and nobody knows.

So, we don't know the characterization of technology of exportation, and I think we have to work together on that. That drives me to the discrimination problem. Do you consider that a chip, who is in use for 20 years which is completely useless for this beautiful iPhone, is today available to be in the list of ammunition. And, I'm sure there is some product that were on the list of ammunition that you don't find anymore because they're obsolete.

So, discrimination has to be addressed but maybe the reform who is now leading by the Secretary of Defense in the US of the export control regime could be also done with consulting your friends and allies to see what is useful for the economy, what has to be completely protected. What I notice in our world

of space is that we are dealing very well between competition and cooperation. You could co-develop a certain product between EADS and Boeing could work on a certain product, and they could fight until death on the market for another product.

I think the future, and especially our economic shrinkage for the public, the future of our industry, our world, on the two sides of the ocean will be more and more co-development, especially on space. If we are going to this huge space exploration program that the Obama administration is proposing to us, we will have to co-develop stuff. If we want to build new propulsion types or whatever, the new launcher, the heavy launcher, it is absolutely necessary that we co-develop things, and there is no law, there is no legal boundaries to know what we're going to do if we have co-development. So, more or less, we have to review and this is not us, this is also you Americans. You have to review and to put in place a governance, a governance of export control.

If I take an example of the most stupid export control strategy that, it was never done, was Napoleon, during his war against the Russians because he was fighting for blockage against the English. So, he tries to shut off all the boundaries on all the harbors of Europe from the South of Spain, Portugal to the whole France then to Holland into Russia because the principle heart of economy for Russians was England where Russia was exporting its goods. At the end, the intent to shut off and impose this export control against the British went to a complete mistake, and Napoleon and the French Empire collapsed completely.

So, export control, if I could say, is a good and a bad thing. Just before leaving the floor because everybody is staying on to have a coffee, I just want to say that I was very interested about what many of my predecessors said. Certainly money is key, but the problem is that today, we are short of money. I come from a state that is going to do dramatic savings, and we are going to shut most of our programs because we have a flat economy.

The other problem is enforcement. I think if we want to do a good job for protecting our technology, we would have to have cooperation in enforcement for the people who are stealing our technology so that the extreme has prosecution. Is there any Interpol strategy for that? Is there any treaty between countries to pursue the people who are stealing technology? I don't know.

Also, education is a very important thing. I will just give you, before leaving, an example. Years ago, when I was working in the European Commission, there was a bunch, every week you know there is a bunch of French top CEOs, all graduated from the best schools in France or even in the US, who are taking the TGV which is the bullet train between Paris and Brussels, and inside the train there was the French counterespionage and the gentlemen colleagues. And, they used their simple laptop and they kept most of the information in the laptop of the receivers who were walking and speaking freely on the phone about what they want to do, what will be their strategy, and stuff. So, I think there could be a lot of savings in the information prevention.

So, more or less, I am coming to the end of what I wanted to say. I hope it was clear. For me, export control is common sense. So, we have to work on that. Maybe export control is reflecting the problem of our society to take risks. Modern society doesn't, well they don't like to take risk anymore. They have big problems to dealing and to take risks. So, this is also an issue that we would think about. Thank you so much, and Godspeed for all of you for the summer.