

**ACL Remarks to AIA and House Aerospace Caucus
2168 Rayburn House Office Building, The Gold Room
Washington, D.C.
June 12, 2008, Noon – 1:30 pm**

“Inseparably Bound”

I would like to thank the Co-Chairs of the House Aerospace Caucus — Congressman Dicks and Congressman Weldon — for hosting this forum, and I commend Marion Blakey and the Aerospace Industries Association for their leadership on this most critical issue.

It’s fitting that we meet today in the Rayburn House Office Building. Sam Rayburn was a man who understood the need for leadership when it came to the big issues. In a time when most people never traveled more than a few miles from home, he championed the construction of America’s Route 66 in order, he said, “to connect the frost belt with the sun belt.”

We’ll need Mr. Rayburn’s “can do attitude” to tackle one of the most critical issues of our times: global climate change. I’d like to speak today about how the aerospace industry can be part of the process, taking the lead in building a comprehensive climate monitoring system. Taking the lead in developing solutions for a secure world.

First, I applaud Vice Admiral Lautenbacher and Colin Powell who spearheaded the creation of The Group on Earth Observations, GEO. Seventy-three worldwide members and more than 50 organizations have come on board, committed to creating a “Global Earth Observation System of Systems” approach — GEOSS. A global problem demands a global solution. Extreme weather knows no national boundaries.

If GEOSS is to become a reality, America must lead. In doing so, we will regain our respected position among the international community.

My optimism in America’s ability to be a force of inspiration is grounded in personal experience. The Greece of my youth, reeling in the aftermath of World War II, found

security and prosperity in no small part thanks to the Marshall Plan. That farsighted American gesture profoundly impacted my life and those of millions of people across Europe. And it was President Kennedy's call to conquer space that inspired me to leave my home and study here in the New Frontier. I believe our country will inspire many others across the planet by fully focusing resources and energy on this issue.

I'd like to applaud this Congress for its leadership and spirit of bipartisanship on the issue of global change. Global climate change will impact all Americans, the apple farmer in Washington State, the lobstermen in Maine and even our national assets at Cape Canaveral. Of course, you can't put a value on the lives that will be saved by comprehensive climate monitoring. But climate-sensitive industries across this country contribute a third of our GDP — almost \$3 trillion. The economic benefits of better forecasting and modeling would be substantial.

Utilities would better manage and distribute energy. Weather-related aviation delays would be reduced. Better prediction of hurricanes, tornadoes and wildfires would yield substantial savings in damage to property and land. Farmers would be better able to protect crops. Insurers would be better able to assess risk.

Saving lives and preserving economic security across all 50 states. A comprehensive global climate monitoring system will truly benefit all Americans.

Architecture of a Comprehensive Global Climate Monitoring System

So what would the system look like? The interplay of factors affecting Earth's climate is complex. So far the Earth observation community has identified 26 key variables that must be monitored to get an accurate picture of what's going on. The operational monitoring systems scheduled for deployment by NOAA in the next 10 years will cover more than half of these.

We need to commit to comprehensive and sustained monitoring with a full complement of science instruments. On the Space Shuttle, NASA employs over 200 sensors to monitor the health and safety of our seven astronauts and their spaceship. Given the importance of such

information, shouldn't we monitor all essential variables for the safety of our country's 300 million people? Our planet's 7 billion people?

A comprehensive climate monitoring system would require placing sensors on the ground and sea, in the air on airplanes, balloons and unmanned aerial vehicles, all the way up into space. Truly global climate information can only be delivered from space-based satellites. Space is the ultimate high ground.

This architecture allows the system to collect data globally — that defines environmental conditions regionally — to support decision makers locally. Decision support centers are a key component. Here, data is collected, modeled and tailored for specific applications at locations throughout the country. This is actionable information that will be used to save lives and money.

The aerospace industry can bring experience, innovation and entrepreneurial spirit to this big, complex project. We've designed, built and coordinated elements of this system at each level. Lessons learned in defense and restricted work can be brought to bear.

We are not starting from scratch. The foundation of GEOSS, the efforts of NOAA and NASA, are all invaluable. But we still have work to do. The climate monitoring sensors already in place can be more fully coordinated and integrated. The science community has identified the needs for additional computing capacity. These and related advancements will enable our country to continue to improve forecast modeling methods and capabilities.

Carbon Monitoring System

Scientific consensus exists on the relationship between increased greenhouse gasses and global warming. But the full nature of the relationship is not understood. What parts of our Earth naturally create greenhouse gasses and which capture them? Which industries are contributing to the problem and to what extent? Accurate, objective data on carbon levels is essential for better understanding this phenomenon. As such, a carbon monitoring system will be an essential part of the overall climate monitoring system.

Any voluntary or regulatory carbon cap and trade systems will depend on accurate monitoring. According to Richard Sandor, CEO of Chicago Climate Exchange, the carbon market in Europe is around \$80 billion, and U.S. market has potential to be three times that size. But we need more certainty in the monitoring process.

Current carbon monitoring is at an early stage. Ground-based stations offer localized coverage. Much of Earth including Africa, India, and Siberia has few if any monitoring stations. Space-based resources like NASA's Orbiting Carbon Observatory, and future plans for NOAA's CarbonTracker are on the way toward providing atmospheric and oceanic measurements. Future land imaging through USGS is also important for carbon monitoring.

Moving forward, we need a comprehensive system of sensors and platforms to deliver high precision data. We need to move from research to operational faster and more effectively. And we have to be flexible and innovative. Compact satellites with proven technology can be a cost-effective way to fill gaps in coverage and get more complete monitoring sooner.

What's Next?

Our industry, along with government and the academic community, can work in concert to create a climate monitoring system that is comprehensive, coordinated and provides sustained capability. But we need a national plan, including an associated blueprint for our monitoring system, to guide our path moving forward.

We in the aerospace industry must support a National Climate Service that will focus planning, resources and budget power in one entity under NOAA to deliver key information to decision makers across the country.

We must support NASA's important role in climate monitoring research and development and international cooperation. We must support NASA research missions and expedite moving scientific research and technology development to future operational status.

The importance of planning can't be overstated. We must not repeat the mistakes of the past. Industry has to use lessons learned and think creatively moving forward. Our partners in government must know we are committed to doing this right. We have to be realistic and

rational when it comes to what can be delivered and when. A conspiracy of hope, where government and industry become partners in a process with impossible expectations, must be avoided. We can't hope for the best. But we can plan for it.

We share a common goal: continuous monitoring enabled by a steady stream of data from sensors and platforms, delivered on schedule, on budget, that work as promised. Executing on our programs has to be our top priority.

Delivering the necessary precision science instruments requires an experienced, high caliber work force that is current in their trade. We can enable that by sustained production, along with well-documented and benchmarked processes for building science-quality instruments.

Our industry must bring all our experience, creativity and entrepreneurial spirit to this task. But I know we are not alone in our desire to act. We can tap the deep reservoir of dedicated people who are looking for ways to contribute, including our National Academies, our universities, our think tanks, and other industries. We must be open to new ideas wherever we find them. We must create an effective coalition — a public/private partnership, with leadership from the aerospace industry. This is a national security issue and U.S. national security companies have the experience and expertise to lead.

Industry is committed. It was an aerospace executive of the last century who gave voice to the relationship between technology and the natural world. Before he became an executive at TWA and a committed environmentalist, Charles Lindbergh had made a bit of a name for himself as a pilot. And it was on that solo flight from New York to Paris, an adventure by an American that electrified the world, when Lindbergh mused: "I owned the world that hour as I rode over it, free of the Earth, free of the mountains, free of the clouds, but how inseparably I was bound to them."

Thank you.