

MTO WRAP-UP

Now you see why I called it a microSYSTEMS revolution!

We're about to enter a period of technological change that will be at least as exciting and fast-paced as the years following the invention of the first integrated circuit.

Remember: the transistor had been around for more than 10 years before Jack Kilby and Bob Noyce figured out how to integrate just two devices on a single semiconductor substrate.

Do you really think they had any idea that this invention would help send an American to the moon? Create the entire PC industry? Give us cell phones... with cameras?

Do you think they were even able to imagine the internet? Or MRI's? No one had any idea how that first, primitive integrated circuit, would open entirely new markets, dramatically restructure business and industry, and change the very fabric of our society

This morning, you've heard how we are pushing on technologies like microelectronics, MEMS and photonics.

Scaling them and integrating them in ways never before possible- opening the field of integrated microSYSTEMS.

Try to imagine where this might take us!

Our Deputy Office Director, John Zolper described how this technology will open communications links that operate over multi-GHz of bandwidth and give us absolutely astounding data throughput and interoperability.

Giving us shipboard radar that lets us stay far offshore and still detect, track, and discriminate missiles launched hundreds of miles inland.

John Carrano showed how his SUVOS program is developing an all optical-based biosensor with response times on the order of a few seconds; high sensitivity; high reliability; low cost; small form factor; and, low power consumption.

And Clark Nguyen is taking the conventional thinking about MEMS and turning it on its head.

He's already demonstrated vibrating mechanical resonators with frequencies on the order of 1.5GHz and Q's exceeding 10,000.

This has revolutionary implications for the RF front-ends in military communications.

This would give us communications devices with remarkable jamming-resistance and robustness, and give us overwhelming dominance of the battle space.

You know, DARPA research helped the Army to "Own the Night."

Mark Rosker thinks he can own the weather! Our work in THz imaging could allow us to see through the rain, fog, even the blanket of a sandstorm.

It will provide phase information and might allow us to do ranging and 3D processing.

You've heard about the challenges we face and we really want to hear your ideas.

I've touched on just a few of our programs, but I think you can see that they have one thing in common: they all leverage the coming revolution of the integrated microSYSTEM.

Our Program Managers have driven a tremendous set of accomplishments and advancements.

And if you haven't already met them this week, here they are!

Stop by our booth.

LEMNWRP5.TXT

You'll see our legacy.

It's one of accomplishment, transition, and impact.

In just two days you all are invited to the First DARPA Grand Challenge: Dr. Tether's bold charge to the community to launch the ideas that will move the U.S. military into a new era of autonomous and decisive robotic platforms.

Likewise, I invite you to join with us in MTO as we launch the era of the integrated microSYSTEM.

The microSYSTEM revolution starts today!

□