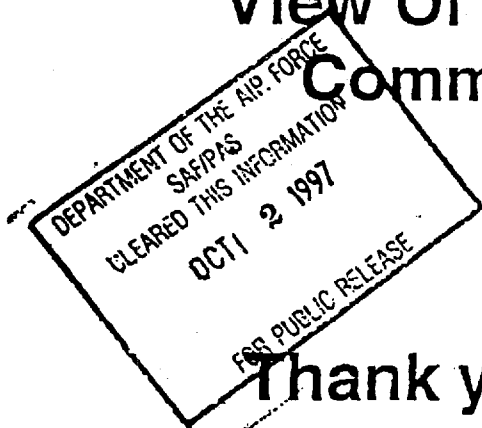


**“Striking A Balance: One Warfighter’s
View Of the Need to Balance National
Commercial and Tactical Source
Acquisition”**



**I thank you Robert for those kind
remarks.**

**I know how hard you have worked to
champion the cause of breaking down
the barriers for the free flow of
information both inside and outside of
the Beltway and the vision you have
about the future of information in the
new millennium.**

**The success of this conference is due
to your dedication. As for those of us in
the Government it is critical that
organizations like OSS and conferences
like this keep us focused on the real
issues.**

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As you know from the introduction, I am the New Assistant Vice Chief of Staff of the Air Force, which is a grandiose title which simply means I'm the Base Commander of the Air Force.

Being the Assistant Vice is very similar to being in charge of a cemetery. There a lot of people below you but you don't always get a great deal of respect.

We have all heard the Beltway "Sound Bytes":

**"Information Warfare",
"Information Dominance",
"Virtual Battlespace" "The
Digital Battle Field."**

But what we are really talking about is revolutionary change in Global Technologies, which demands a revolutionary change in the way we do military operations.

History is full of civilizations that have fallen by the wayside because they became too structured and bureaucratic to meet a changing world. We have all heard that “We perfect the tactics of the last war for the next war’s battles”.

The tragedy of World War I was failure of military leaders to recognize the industrial revolution.

The lethality of weapons: Artillery, Machine gun, Tanks, Airplanes, and Poison gas, were met with the Napoleonic tactics of the previous century.

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The horrendous loss of life in the trenches of Verdun was a costly lesson learned.

In World War II military leaders learned better how to exploit new technology and tactics: Radar and Electronic warfare in the Battle of Britain, and the "Ultra" secret of breaking the German and Japanese codes, resulted in the stunning victory at Midway.

Today the cutting edge of weapons has shifted from ballistics to information. We live in a CNN/INTERNET world. Immediate and "instant replay" information is available world wide 24 hours a day on any conflict. Even before the 1st cruise missile or F-117 precision munitions hit targets in Baghdad, CNN was live with the story.

Unlike in the past the Government and intelligence services no longer holds a monopoly on "Near Real Time intelligence" or information. BDA: Battle Damage Assessment can come from satellites or a live CNN report in ~~from~~ ^{from} of a destroyed Ministry of Defense building.

The distinction between information and intelligence has become almost indiscernible. What does this new world portend for military operations in the 21st Century?

Today's warfare must be lethal, immediate, and accurate.

It demands a revolution in the way we must think. If computer technology doubles every 18 months, is our ability to comprehend these technological changes fact or fiction?

In 1967 we all drove Chevys, Fords, or Plymouths, But...A change was in the winds and Detroit didn't see it or didn't want to see it.

In 1997 ^{many of us} we now drive Hondas, Toyotas and Lexus'. Detroit was pushed to the brink before it accepted that the world had changed and almost passed them by.

In 1967 there was only one phone company "Ma Bell".

- Change was also on the horizon in communication. They fought that change and lost.

Today we are about to embark on another historic and revolutionary turning point. In the next few months at least two New U.S. Commercial Imagery Satellite's will be launched, providing, eventually better than 1 meter of unclassified imagery. I predict many more will follow.

Just think about it, 1 meter unclassified imagery of anything in the world available on the Internet.

How we will adapt to this new information reality is the real question. Will we aggressively embrace this capability and exploit it, or will we wait and become compliant with "business as usual" concepts and become swept away by it?

**Will our answers be found in the
mindset of the General Motors or AT&T
board rooms in 1967?**

Change is difficult

it is traumatic

it is scary

**and it is necessary if we are to
adapt to the next millennium,**

**As critical as it is to provide our
warriors with the technological advances
of stealth, precision munitions, and
situational awareness.**

**We must Match that technology with
the right mindset to embrace these
innovations.**

Well that's the theory now the reality.

**From my perspective as a pilot,
wargamer, and space operator; imagery
to the warfighter presents one of the
greatest technological challenges.**

1st off, a warfighter is defined as someone who lives outside the Beltway.

A warfighter is someone flying an F-18 off the USS JFK in the Gulf or an F-16 from the 555th FS at Aviano Air Base, Italy. Not only is it critical that we get them the imagery of that Iraqi SA-6 site or Bosnia Serb armor movement in a timely manner, but we must insure that this imagery is on their real world mission planning and rehearsal systems such as AFMSS, PowerScene, TAMPS, TOPSCENE, SOFPARS and others.

ensure

That imagery must have certain important characteristics. It must have geographic and topographic accuracy.

- Multiple scenes mosaiced together
- Of this same year and same season
- Be matched with the digital terrain data base
for 3-D Perspectives tailored for what the
Combat Aircrew needs.

But there are limitations – primarily in communications transmissions and computational power. As an example: Imagery of Bosnia alone requires 74 gig-a-bytes of storage at 1 Meter resolution. Which would require 5 ½ days of T-1 communication transmission time.

In a mission from Aviano to Sarajevo he does not need 1 meter resolution for the entire route of flight. What he really needs is a combination of different resolutions. Broad area coverage 10-30 meter resolution to the target area is just fine. Then he or she needs a higher resolution from the IP to target.

This become a manageable computational problem that his squadron level mission planning systems can store and process.

So, where do we get this mix of imagery requirements? I say let's take the proven route we use with military communications – let's exploit our robust and reliable commercial industry.

The United States Air Force is one of the largest Consumers of Commercial Imagery in the world today, thanks to the Aggressive foresight of our young Warfighters.

Use of SPOT and LANDSAT during DESERT STORM was a great success.

Creative uses of Multi-spectral imagery especially in operations in Bosnia has had significant impact.

I know that for a fact. When I was Commander of the Space Warfare Center we worked hard on the combat applications of multi-spectral imagery which has paved the way for us to incorporate hyper-spectral imagery as part of our arsenal.

It was the combat proven use of SPOT and LANDSAT that led us to the creation of the world's 1st Commercial Satellite imagery downlink system "Eagle Vision".

This system has set the standard for the world to follow. This system not only provides direct access for the theater commander, but, the exploitation of advanced virtual reality mission rehearsal systems.

The time from Technology to Tactical Application has been greatly reduced to meet the new realities of the rapidly changing computer environment.

For Example: PowerScene, originally a Navy Mission Rehearsal System, was being evaluated in the Pentagon Theater Battle Arena on 25 July 95. The Air Force Chief of Staff directed that we deploy one to the 31 FW at Aviano Air Base in Italy. 72 hours later, with the help of the Defense Mapping Agency, it was in place and operational. Most of the 1288 Combat sorties flown from Aviano during Operation Determined Forced were "rehearsed" with the use of the PowerScene system. This system was so successful.....

The Problem then became updating the 3-D data base 4000 miles from the Beltway.

We had a 1995 State of the Art, Mission Rehearsal System supported by a 1960s imagery mindset.

Large Area Mosaic Imagery was sent to the contractor in Tyson's Corner Virginia, processed, and then flown to Aviano, Italy where it updated each of the Rehearsal Systems. The Navy flew imagery to Navy Falon and then again into theater for their TOPSCENE systems.

To correct this obvious short coming we invented National Eagle with the National Reconnaissance Office to combine both commercial and national imagery and load PowerScene and AFMSS in theater.

But that success – supporting the Warfighter – led to new customer driven opportunities.

In Bosnian Operations, there was extensive use of US/NATO Tactical Reconnaissance assets such as F-14s, F-16s, F-18s, Mirage, and Jaguar systems.

Another advancement was the incorporation of the ACTD Predator UAV with product broadcast on JBS/GBS systems.

So, the warfighter had lots of imagery collection tools. Now the challenge becomes:

**getting the right imagery,
in the right format,
on the right Mission Planning system,
to the right Warfighter,
Right on time.**

**Warfighter imagery requirements are not a simple answer,
and there is not one single Warfighter requirement.**

A 1st Infantry Division Commander in Tuzia will have a different requirement than a Navy Seal, or B-2 Pilot.

The Warfighter really doesn't care where the imagery comes from:

**National Technical Means
Commercial Satellites (Old and New)
US and Foreign
Tactical Reconnaissance
U-2s
UAVs**

**Warfighters need Information –
Useable form – at the Warfighter location
– In Time to exploit it.**

The 21st Century holds no shortage of sources, only opportunities to take advantage of those sources.

So, My challenge to you here today is Open Source Solutions.

Open Minds to New Ideas and Concepts

Open, Unclassified Information Flow

Open Architectures

Open Competition

Sometimes it is easy inside the beltway to loose sight of our real mission: to provide the best equipment and technology to our brave men and women serving on Active duty in far away, hostile locations.

We need your help and the help of organizations like OSS to insure that we never loose that sight.

Thank you once again Robert, and all of you for your support and your attention. I will now answer any questions that you may have.

Open Source Intelligence: CONFERENCE Proceedings, 1997 Volume IV 6th International Conference & Exhibit Global Security & Global - Link Page

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