

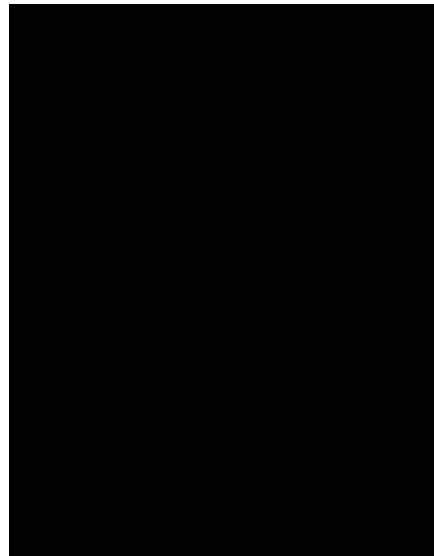
# Maximizing the Societal and Commercial Opportunities of the Coming Era of Geospatial Imaging and Information

by Thomas M. Lillesand, ASPRS President

## Introduction

It is indeed an honor to assume the office of president of ASPRS. I do so having been a member of the Society for nearly 30 years now. I first joined the Society in 1969 as a fledgling graduate student at the University of Wisconsin-Madison (more about how and why I joined the Society in a bit). For now, let me simply say that I've probably attended no fewer than 20 of these annual award ceremonies over the years. As a consequence, I've had the pleasure to witness literally hundreds of talented, deserving individuals receive awards both as aspiring and highly experienced and respected leaders of our field. The accomplishments of these individuals—both the young, and the more young-at-heart, continue to be a great source of pride in our profession—and today's winners are no exception to this source of pride. I reiterate my sincere congratulations to each and every one of you for your awards and emphasize our collective thanks for your contributions to our profession and to ASPRS.

I also have to extend my congratulations to the "Energizer Bunny" – Gail McGarry MacAulay (and her husband, Rick), Dale Hamby, and the whole cast of other ASPRS characters who worked so hard to make this conference such a success. The User Group meetings, social outings, and technical program have set a new standard for program excellence and vitality. It's going to be a real challenge for next year's conference chair to live up to this standard. But as you might know, the chair for next year's meeting is none other than outgoing President Roger Crystal. Sometimes I question how much punishment



Roger's willing to bear! But all I can say, Roger, is we all appreciate everything you have done and continue to do for this organization. Your leadership, your fortitude, and your service to the Society have provided the recalibration and the foundation necessary for the development of our "New Vision" for ASPRS and the myriad of benefits that vision will provide. We can't thank you enough for your service over the past three years. And, I'm very pleased to be able to work with you this coming year in your capacity as immediate Past-President. At the same time, I'm equally excited about working with the other members of our officer team – Mike Renslow and Alan Mikuni, our Board, our new Executive Director Jim Plasker, and all the other members of the Society who make the organization work.

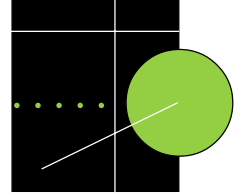
## Scope of this Presentation

This brings me to the topic at hand, namely what the program lists as an

"inaugural address." The term "inaugural address" sounds a bit too glitzy for my Midwestern style and outlook on life. Remember that in the hinterland where I come from, the bigger the head one gets, the more cheese it takes to cover it! Besides, I'm not here to espouse "Ask not what your professional society can do for you, but rather, ask what you can do for your professional society." Neither, will I attempt to wow you with an "I have a dream" speech about what I hope to accomplish in the next year. As the saying goes, "when all is said and done, there's certainly more said than done" by any given President in a single year. In fact, making major changes in a 64-year-old professional society like ASPRS is often equated with turning a battleship. Based on my experience over the past two years, it's really more like moving a cemetery. It can be done, but it is a convoluted process. It takes a long time, and you hope you don't make too many grave mistakes!

Seriously, what we (the Officers, the Board, and the other key leaders of the Society) are attempting to accomplish in formulating a New Vision for ASPRS is far from a one-person, one-year effort. Rather, this is a collective, multi-year effort to launch the Society into a new mode of operation in light of the new realities we face in the present and the opportunities we see before us in the near-term future.

I'd like to briefly outline my view of the new vision under four broad headings, namely: 1) The Good Old Days, 2) The Current Realities, 3) Our Big-Picture Challenges and Opportunities, all leading to 4) What the New



Vision Is All About. It is the philosophy and principles embedded in the New Vision that I hope we can discuss, refine, and continue to implement during my term of office over the next year. I also hope to convince you that we must keep the visioning process moving on a "rolling horizon" basis on into the future.

### The Good Old Days

So, let's start by going back to "the good old days." For this purpose, I'd like to return roughly to the era when I entered ASP (without the RS) as a graduate student. Vietnam and Earth Day were sources of passion, activism, patriotism, and ferment all at the same time. Reaching the Moon was paramount on the national agenda. Computers were getting faster card readers and desk top calculators and slide rules were being replaced with a brand new devise—the hand-held calculator. HP came out with a calculator that would do trig functions and everything for only \$495! ASP was the source of technical information on photogrammetry. ASP members gave of their time freely, and usually with the blessing, support, and outright encouragement and expectation of their employers.

The Washington Hilton Grand Ballroom was the site for the regular black tie dinners and dances held during the annual conference. During the meeting, only the biggest of emergencies would create a "no-show" in the technical program. Even then, that individual's paper would likely be read aloud from the proceedings of the meeting by the session moderator. Regions would compete like cats and dogs to host the Fall semi-annual meeting. Large, optical mechanical plotters and precise theodolites filled the exhibit hall.

Professors and employers encouraged and stressed the importance of joining and participating in ASP. They themselves were active in the Society; they were role models and mentors for the young members of the Society.

In short, volunteerism and passion for the profession was rampant. Roles were simple and well defined. Univer-

sities taught and did basic research; governmental agencies had major in-house mapping programs; and private firms did local governmental and "private work." Remote sensing was a brand new term, ERTS (now Landsat) hadn't been launched, but the dreams behind the EROS program were soon to become a reality (complete with the RBV mapping workhorse having to take a back seat, of necessity, to the MSS—a digitally-based research imaging system).

It was pretty much a post-Camelot and post-Ozzie and Harriet era for everything. Families were a unit. Few in the US played soccer. And, business was pretty much as usual. People found work, stayed put for a long time with one employer, got a gold watch, and retired.

### The Current Realities

Now, fast forward the clock to the current era. Who here lives the Ozzie and Harriet life today? Whose job and way of doing business today are the same as even 5 years ago? Is the mission of your organization the same? When you are being asked to "do more with less," are you encouraged to spend your "spare time" volunteering for a professional organization? Ever feel like you are constantly going through a reorganization and/or a computer upgrade? Can you keep up with the daily e-mail "rat race"? Isn't incredible the rate at which people expect you to respond to the most recent communication!

What do you think—are the respective roles of government, academe and the private sector changing? Is there any question that we have migrated from a manufacturing-based economy to an information-based economy? Are we in a global economy? Is there some connection between economic vitality and environmental quality? Is global climate variation (whether natural or human-enhanced) greater than in the good old days? Are our demographics changing? Are our family structures and social values like those of the good old days?

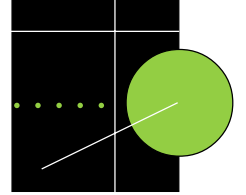
Does the fact that the planet's hu-

man population is expected to double in the next 30-50 years have implication for the need and value of our profession? What is the implication of the depletion of petroleum reserves over the same time frame? How about the diminishing quantity and quality of farmable lands? Do these challenges also represent opportunities for our profession and ASPRS to make a real difference?

At the risk of sounding trite in framing these questions, I think you would agree that we are in a period of unprecedented global technological, environmental, and sociological change. The stark reality is "the only constant from now on is change." The fundamental question facing professional associations in general today, not just ASPRS, is whether they are recognizing and responding to these new realities, or simply watching them happen with little to no regard for their influence on the organization's structure and programs.

Let's ask some other fundamental questions about who we are as an organization and what we do. Irrespective of membership numbers, is our membership diversity what it should be? Also, are we doing an adequate job of mentoring our young, talented, idealistic, and highly productive members toward assuming leadership roles in the Society? I believe our lack of diversity in ASPRS is a real issue—one we have to attack on all fronts. I hope to put a "mentoring initiative" in place during this next year whereby participants at our next annual meeting can express their interest in mentoring, or being mentored, as part of their activity at that meeting.

Other major initiatives for this next year will be the continued review and change of the Society's entire administrative structure begun by Past-President Crystal. Similarly, I hope to begin a "history initiative" within the Society. After 64 years of existence, the Society has a rich history that is worthy of documentation. This effort will clearly take more than a year, but beginning to document our past, in my view, is critical to charting our future



into the next millennium. I hope we also can increase our attention during the next year in the area of outreach, from K-12 exposure, to more precise definition of our government affairs program, to public relations in general.

There are several other questions to continue to address during this next year as well. For example, are we ready for the legal and ethical issues that we will potentially face in the next era of high resolution remote sensing form space? Do we need better "brand identity" for ASPRS? Are we using images effectively in our promotional literature? Is our Web presence what it should be? Are we a source of inspiration for the young and a source of pride for those of us who are less young? Does our Code of Ethics reflect this inspiration and our professionalism? Is there room for improvement in the Society's service to our individual members and our Sustaining Members? Are we sufficiently global in our long-range thinking?

Let me also ask, does our current name reflect who we are, what we are about, and what we want to be as we enter the next century? I don't mean is our name understandable by us. Rather, would your typical neighbor, school child, or elected official, search the Web using the terms "photogrammetry" or "remote sensing?" Probably not. In this light, earlier this week I asked the ASPRS Board to consider adding a tag line to the ASPRS moniker—one that the rest of the world would relate to much more directly. I suggested, for example, *ASPRS: The Geospatial Imaging and Information Society*. While we did not arrive at a decision on a specific tag line, the Board voted overwhelmingly in favor of this concept and will be discussing this matter electronically over the next few months. Somehow, we want our name to convey to the rest of the world that "Images Are Us," "Spatial Information Is Us," and "Making the World a Better Place in Which to Live Is Us."

Supporting such initiatives as a name change (really only a name elaboration) is but one indication

that the Officers and Board of Direction are patently aware of the need for a new vision for ASPRS to help address all of the types of questions I asked earlier. And we are all working hard to develop, focus, articulate, and implement this new vision in everything we do. For example, in the format, content, and excitement of this very meeting you are beginning to get the new "look and feel" of the next era for ASPRS. In Roger's earlier remarks, and throughout the week, you have heard about some of the sweeping changes being made or considered in our structure and operations. These are not just top-down changes. We're listening to those we are trying to serve and attract. We are asking all of you for your reaction to this new vision and your personal help in making it happen. We hope you, and each and every member, will become fully *engaged* in this process. We want you to feel the pride and the value of membership and personal service to the organization. Maybe our slogan should be "Every Member Get a Member," or "Just Say Yes to ASPRS." Just picture it: campaign buttons, bumper stickers, signs on the sides of buses and the backs of taxi cabs, billboards, Super Bowl ads (with the victorious Green Bay Packers in the background) — all saying, "Just Say Yes to ASPRS."

### Our Big-Picture Challenges and Opportunities

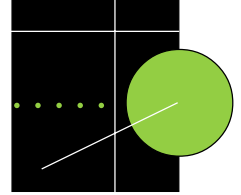
Well folks, now that we see our way clear to how we are going to boldly market our new vision, what are we going to say when someone asks, "What is the New Vision?" What's the real substance behind the catchy phrase? Answering that fundamental question—with your help—and continuing to help guide the attendant changes associated with this vision is what I hope to continue over the next year.

When I agreed to stand for election as Society Vice-President (now over two years ago), I sought the wisdom of several past officers I know and respect. To the person, they advised me that one can't do much of

anything in one's single presidential year of any enduring value. They highlighted the need to start putting plans in motion long before the actual year of presidential service. They also underscored the desirability of having *all* the officers "on the same page" with any major initiative. In this regard, let me reiterate that this "New Vision" is a team undertaking. We don't always agree on everything, but the chemistry, conviction, and commitment among the recent and current Officers is amazing—as has been the support of the Board and others in setting the Society's agenda for the future.

I'll return to describing my personal view of the new vision in a moment. But first, please let me highlight what a truly wonderful period of opportunity I believe we are entering as individuals and as an organization. At a very fundamental level, just think about the human importance of time and space, and how long we have been able to personally, conveniently, accurately and collectively measure time (and not location)—and how society is organized around things temporal. With technologies like GPS, GIS, and telecommunications we have only recently entered an era wherein we can personally, conveniently, accurately, and collectively deal with the spatial dimension of human experience. Just think how *aspatial* or how "spatially challenged" the conduct of the science, government, and business has been up to now. Consider how profoundly different the present is becoming and the future will be in this regard. "Precision agriculture" and "business geographics" are merely emblematic tips of the icebergs of such opportunities for the future. In tomorrow's world the "geophyte" will be a truly endangered species. The "spatial literacy" and the explicit "spatial dependency" of the world will increase tremendously. This is a trend that we as a Society, in a positive sense, must exploit.

Many other factors make this a wonderful period of opportunity. Among these are the continued developments in softcopy photogrammetry, the sub-



stantial global markets attendant to the commercial high resolution satellite era, and the scientific progress that will ensue from the EOS era.

In the midst of all this optimism about opportunity, let me focus for just a minute on what I see as a major challenge we must confront. That is the currently inadequate capacity to educate and train the current and next generation of practitioners in our industry and profession. Over the past two years, I have had the pleasure to travel a fair amount to participate in Regional and Chapter ASPRS meetings and ask about issues confronting our membership. Over and over, I have heard our members express deep concern about the critical lack of an adequate workforce from which to draw on in our field. This need spans the spectrum from the GIS or photogrammetric technician, to the Ph.D. in photogrammetry or remote sensing, and everything in-between. This is another area of concern on which I hope to spend some effort during the year ahead. The last thing we need is to have our new vision restricted by a workforce of limited size and/or education and training. Clearly, we need to initiate and/or encourage formal assessments of the current and anticipated educational needs in the broad field of geospatial information. We must also be creative in the way universities partner with industry and government to fashion relevant academic degree programs at the undergraduate and graduate levels, as well as creating much improved continuing education opportunities throughout the profession. We must emphasize our collective commitment to education and continue to support such educational innovation as the Remote Sensing Core Curriculum the Society now maintains.

Returning to the subject of major opportunities for our field, we know it is a changing world when leaders such as Vice President Al Gore are challenging NASA to develop a global Earth Channel—a concept premised on pairing a high definition television camera with an 8-inch telescope to provide

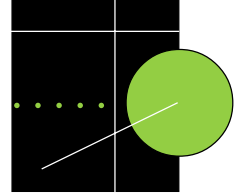
round-the-clock views of Earth. Vice President Gore has also recently given a speech entitled, “The Digital Earth: Understanding Our Planet in the 21<sup>st</sup> Century.” This is the Vice President of the United States using terms like “georeferenced”, “geospatial”, “Landsat”, “multi-resolution”, “3-D visualization”, “digital terrain data”, “hyperlinks”, “value-added information services”, “commercial high resolution satellite imagery”, “computational science”, “terabit networking technology”, “interoperability”, “the Open GIS Consortium”, “the FGDC”, and even “metadata!” And beyond this, he underscores that, “The applications that will be possible with broad, easy access to global geospatial information will be limited only by our imagination.... We have an unparalleled opportunity to turn a flood of raw data into understandable information about our society and our planet. This data will include not only high-resolution satellite imagery of the planet, digital maps, and economic, social, and demographic information. If we are successful it will have broad societal and commercial benefits in areas such as education, decision-making for a sustainable future, land-use planning, agriculture, and crisis management. The Digital Earth project could allow us to respond to manmade or natural disasters — or to collaborate on the long-term environmental challenges we face.”

Vice President Gore goes on to say that, “In the months ahead, I intend to challenge experts in government, industry, academia, and non-profit organizations to help develop a strategy for realizing this vision. Working together, we can help solve many of the most pressing problems facing our society, inspire our children to learn more about the world around them, and accelerate the growth of a multi-billion dollar industry.”

We’ve certainly come a long way from the days when we were defending the national investment in the Landsat program! No matter what your political persuasion might be, having geospatial information this

high on the national agenda, or even on the radar-scope at the national level, is but another indication that we as a profession and a Society have the opportunity to be front and center when it comes to contributing to, and cashing in on, the future of geospatial information technology. Our field is the current analog to reaching the moon in “the good old days” I mentioned earlier.

In short, the question for ASPRS is, “How do we maximize our opportunities in the coming milieu?” For starters, I believe we have to more fully exploit the value of the range of interests present in our membership. Granted, having members from across the governmental, commercial, and academic sectors sometimes complicates and introduces a bit of tension in what we do. Similarly, our mix of theory and technology “developers,” along with technology “users,” often creates a challenge in planning our activities. But from my perspective, this diversity of membership has historically been a great *strength* of ASPRS. We have to do a better job of recognizing that the various segments of the Society (and profession and industry) are not *independent* and/or loosely related elements. We have to more fully view these various segments of ASPRS as highly *interdependent* systems whose viability and success are not mutually exclusive. This might be viewed as what I call an “enterprise philosophy” to Society management, akin to the notion of a corporate enterprise. Yet another way to express this philosophy is “maximizing progress through partnership.” I for one believe we have to do a better job at viewing ASPRS, and the geospatial industry and profession as a whole, not as a disjointed collection of parts. The worst mistake we could make right now is to increase the real or perceived competition among the governmental, private, and academic sectors in our field and organization. Our collective professional potential will only be realized when we focus less on “turf” and more on “common ground.” I am very optimistic that we



will continue to clarify the appropriate roles of all segments of our profession and the Society and move forward collectively from here through adoption of the aforementioned enterprise philosophy.

Lest I overstay my time and your attention, let me quickly move on to summarizing another aspect of the "New Vision" I see for ASPRS. Namely, to maintain and enhance the relevance of the Society to our members and other "customers" of ASPRS, we must be viewed as a valued resource for framing our collective preferred future. That is, we have to have a vision for ASPRS that reflects where we want our collective profession or industry to be in say 5 to 10 years. This is not simply a vision based on linear extrapolation from the present. It is a *preferred* future, one in which our individual and sustaining (corporate) members, and the world, will be better off than if we maintain the status quo. This vision must be clear, focused, compelling, inspirational, and anticipatory with respect to technological and institutional change.

In this regard, I believe we have a certain amount of historical inertia we need to transform into momentum for the future. The inertia part of this equation is the tendency by some to view the focus of our industry or profession as primarily, if not exclusively, on primary data acquisition and mapping. I don't mean to diminish the importance or value of these activities. My point here is that the momentum we hope to realize for the future is tied to the fact that "data" and "maps" tend to be viewed as inherently raw and static. I challenge us all to "look beyond primary data collection and mapping." We have to move up the "information food chain." The real excitement in our future is in the extraction of *information* from the data, and the use of the resulting information in a *decision support context*, a context that cuts across an ever increasing realm of application areas. Further, that context is key to meeting the long-term challenges faced by world soci-

ety. ASPRS can, and I trust will, help make the world a better place in which to live. That fact, coupled with commercial opportunity, has to be part of our "New Vision."

### What the New Vision is All About

So, finally, I would like to summarize the essence of the New Vision as I see it. It is recognition that:

*Geospatial imaging, particularly when employed in concert with other forms of geospatial information collection and analysis is rapidly becoming a global, pervasive force throughout science, government, and industry. Ways that individuals live and institutions work are changing dramatically in light of the current geospatial information revolution. These changes are not only creating substantial commercial opportunities, but they simultaneously hold the potential to aid world society in meeting the long-term challenges it will face in the future.*

*ASPRS, as a leading geospatial imaging and information society, must be a focus for the development and continual advancement of a global geospatial information infrastructure, industry, and profession to provide decision support across the entire range of applications of geospatial information. ASPRS and its members—coming from the governmental, academic, and private sectors alike—must also be committed collectively to overall improvement of the quality of life through the responsible use of geospatial information technologies (including, but not limited to: photogrammetry, remote sensing, geographic information systems, and kindred technologies). We must redouble our efforts aimed at the continued development of new theory and innovative techniques and methods to ensure the application of geospatial information for the broadest scientific, commercial, and societal benefits possible. This bigger picture, in the context of the new realities facing the Society, is what the "New Vision" is all about.*

### An Open Invitation for Reaction and Participation

The ideas and statements I've attempted to convey are intended as "food for thought." Your reaction is most welcome. A combination of new blood and renewed engagement by long-time members of the Society is critical to transforming any such vision into a reality. In my view, we simply dare not conduct Society business as usual. Instead, we must conduct "business for the future" in everything we do.

We must inspire the youth of this world and demonstrate to them that our industry, our profession, and this Society will help ensure the best future possible for generations to come. Given the rich history, resolve, and accomplishments of this organization and its members to date, I am truly humbled by the opportunity to play at least a small role in charting the course for ASPRS into the next century. However, *wishing* for a bright future is different from actually *creating* one. Your help is essential if we are to continue to position the Society as the premier geospatial information society for the future. Please give of your time and talents if you believe in this cause. I extend an open invitation both to the young and the not so young throughout the Society to become more fully engaged in what we are trying to accomplish at this critical point in the Society's life. Your contributions can range from committee service, to calling to welcome new members, to writing journal articles, to sponsoring internship opportunities in your organization, to name but a few of the options. Expressions of willingness to become active (or more active) in Society affairs can be made to any of the Officers, Board Members, Committee Chairs, our Executive Director, or any member of the Headquarters Staff. We are a "member-friendly" organization that welcomes your input and participation. You are key to maximizing the rate and magnitude of our future success as an organization, industry, and profession.

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