



AGIC 2009

Geospatial Education and Training

S • Y • M • P • O • S • I • U • M

November 4-6, 2009

Doubletree Hotel at Reid Park | Tucson, Arizona

Welcome to the AGIC 2009 Geospatial Education and Training Symposium

On behalf of the Arizona Geographic Information Council (AGIC) we would like to welcome you to the AGIC 2009 Geospatial Education and Training Symposium and to the City of Tucson. This symposium is held annually to bring geospatial professionals together to learn, network, and share knowledge and experiences. Each year this symposium relies on a dedicated team of volunteers from around the State and it has been my pleasure to work with such an enthusiastic and committed group of individuals for this symposium, especially the conference committee co-chairs Steve Whitney and Jami Garrison. These economic times have been challenging both personally and professionally. We graciously thank you for your attendance in these difficult times and we hope at this symposium you will find new ways to approach these issues.

There have been significant accomplishments for AGIC this year. First, on July 10, 2009 Governor Jan Brewer signed Senate Bill 1318 into law and took effect on September 30, 2009. This is very significant piece of legislation for the Arizona GIS community which will help to strengthen GIS in the State and allow for more effective operations. This bill moved AGIC from an executive board to a legislative board, establishes a clearinghouse of information and a central repository for Geospatial Data and Statewide GIS services, focuses on developing an Enterprise GIS, and facilitate data sharing. Second, in February 2009, the Federal Geospatial Data Committee (FGDC), National Spatial Data Infrastructure (NSDI) and Cooperative Agreement Partnership (CAP) awarded Arizona a Grant to support a GIS Strategic and Business Plan. There have been four workshops around the State to gather information to create these plans and there is an additional workshop at the symposium to go over the workshop findings and get additional input. Please try attending this workshop if you missed out on the previous four, because it is a great experience for you and for AGIC to get feedback. Finally, the ongoing efforts of the board and the committee members that bring you the AGIC newsletter, the Arizona Imagery Server, Arizona Height Modernization Program, Arizona Geodata Portal, Arizona Geospatial Clearinghouse and all the resources that can be found on the AGIC webpage (<http://agic.az.gov/>).

Again, we would like to thank you for attending the 2009 symposium and for your continued interest in GIS. We express our appreciation to the great line-up of speakers who always bring relevant and timely content to enrich your experience. Special thanks to our keynote speaker William Boynton, Professor of Planetary Sciences, University of Arizona. Thank you to our vendors, exhibitors and all the sponsors who help make this symposium a success. Please take time to visit and thank our sponsors for their support. It is a team effort between sponsors and AGIC to bring this symposium together and I hope you will enjoy the fruits of their labor and can take back some new ideas, insights, and inspiration to your organization.

As you network with fellow geospatial professionals, colleagues and vendors, you are encouraged to explore and share how you've experienced success with your GIS investment in your organization. We wish you a successful and educational experience.

Enjoy the symposium and Tucson!

Sincerely,



Kevin R. Blake, AGIC President 2009



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| Kevin Blake | Northern Arizona Geographic Information Forum |
| Steve Whitney | Tucson Area GIS Cooperative |
| Manny Rosas | Pima Association of Governments |
| Brian Brady | Yuma Regional Geographic Information System |

AGIC 2009 Agenda at a Glance

WEDNESDAY

| | Foyer/Ballroom | Cottonwood | Salon G | Ironwood | Salon F | Salon H |
|-----------------|--|--------------------------------|--|---------------------------------------|--|--|
| 8:00a – 4:00p | REGISTRATION | | | | | |
| 10:00a – 12:00p | President's Welcome and Keynote Address | | | | | |
| 12:00pm – 1:30p | LUNCH | | | | | |
| 1:30p – 3:00p | EXHIBITS OPEN | | Capturx for ArcGIS, Autodesk, & Excel (hands-on) | ArcGIS 9.3 Tips and Tricks | Optimizing ArcGIS Server ArcGIS Svr FLEX API & Cached Svcs | GIS for Comm Development Engaging Youth in GIS Projects |
| 3:00p – 3:30p | Break | | | | | |
| 3:30p – 5:00p | EXHIBITS OPEN | Intro to ArcGIS Svr (hands-on) | Remote Sensing Nuts & Bolts (hands-on) | Spatial Data Quality Panel Discussion | Application of ESRI Silverlight API Hacking ESRI Geodatabases | |
| 6:00p – 8:00p | Offsite Activity | | | | | |

THURSDAY

| | Foyer/Ballroom | Cottonwood | Salon G | Ironwood | Salon F | Salon H |
|-----------------|---|----------------------------------|--|--|--|--|
| 7:30a – 4:00p | REGISTRATION | | | | | |
| 7:30a – 9:00a | BREAKFAST | | | | | |
| 8:30a – 10:00a | EXHIBITS OPEN | | Autodesk 2010: FUNdamentals of FDO (hands-on) | ArcGIS Svr pt 1: Effective Web Maps | GPS Cameras for Landscape Mgmt Arizona Imagery Server | Fleet Tracking Pima Cty LRS/DynSeg |
| 10:00a – 10:30a | Break | | | | | |
| 10:30a – 12:00p | EXHIBITS OPEN | Building Geodatabases (hands-on) | GIS Analysis & Tools with AutoCAD Map (hands-on) | | AGIC Executive Board Meeting | ADOT Photolog Van Survey Says... |
| 12:00p – 1:30p | LUNCH | | | | | |
| 1:30p – 3:00p | EXHIBITS OPEN | ArcGIS Explorer (hands-on) | GPS Workshop: Intro to ArcPad 8 | ArcGIS Svr pt 2: JavaScript and FLEX API | AGIC Strategic Business Plan pt 1 | Ground Truth: Custom Coordinate Systems in ArcGIS |
| 3:00p – 3:30p | Break | | (classroom and outdoor data collection, hands-on workshop) | | | Sabino Canyon Hike Meet in Salon H at 3:15p sharp |
| 3:30p – 5:00p | EXHIBITS OPEN | QA/QC for GIS data (hands-on) | | Geoscience Information Network AZ3D: Common Operating Picture | AGIC Strategic Business Plan pt 2 | |
| 5:00p – 7:30p | EXHIBITOR SOCIAL & DINNER BUFFET | | | | | |

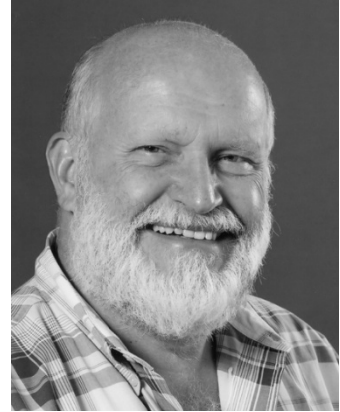
FRIDAY

| | Foyer/Ballroom | Cottonwood | Salon G | Ironwood | Salon F | Salon H |
|-----------------|--|------------------------------------|---|--|---|---|
| 7:30a – 9:00a | BREAKFAST | | | | | |
| 8:00a – 10:30a | Registration | | | | | |
| 8:30a – 10:00a | | Cartography with ArcGIS (hands-on) | | Serving Imagery and Raster Data w/ArcGIS | Deploying ArcGIS Server | FLEX vs. Silverlight Improving Elect Utility Info Mgmt |
| 10:00a – 10:30a | Break | | | | | |
| 10:30a – 12:00p | | | AutoDesk Interoperability Tools with ESRI | Advanced Geodatabase Concepts: Managing Distributed Data | Quality Assured GIS Data GISCI Program | Terrestrial 3D Mobile Mapping |
| 12:00p – 1:30p | Wrap-up and Closing Remarks Box Lunch | | | | | |

AGIC 2009 Keynote Speaker

William V. Boynton

**Co-Investigator, TEGA Lead, Geochemistry,
University of Arizona**



Dr. Boynton's past work in the area of meteorites and the origin of the Solar System has emphasized using elemental abundances in meteorites to understand the early history of the Solar System. The results provided a strong observational basis for both high temperatures and brief energetic events in the solar nebula that fundamentally constrain the way we think about the formation of the Solar System.

Dr. Boynton's current work is focused on Mars, using data from the 2001 Mars Odyssey Gamma-Ray Spectrometer (built at the University of Arizona) to map the distribution of elements on the Martian surface. Very high concentrations (~75% by mass) of ice have been found just beneath the surface in the Polar Regions, which requires the ice to be emplaced in the form of snow or frost. He also worked on developing a Thermal and Evolved-Gas Analyzer for the 2007 Phoenix mission. This instrument will determine the quantity and isotopic ratio of gases evolved from heated icy soils and will detect organic molecules if present.

AGIC 2009 Agenda

WEDNESDAY, NOVEMBER 4

8:00 am – 4:00 pm

REGISTRATION

Foyer – Coffee, Ice Tea and Juice available in the Foyer

10:00 am – 12:00 pm

OPENING SESSION

Ballroom

Welcome and Introduction

Steve Whitney, AGIC Conference Co-Chair

AGIC Presidential Address

Kevin Blake, Yavapai County

KEYNOTE ADDRESS:

Sub-surface Ice on Mars and the Phoenix Mission

William V. Boynton

Professor of Planetary Sciences, University of Arizona

In 2002 the Mars Odyssey spacecraft began the science phase of its mission. An important objective of the mission was to look for water in any of its forms. In July of that year, using the University of Arizona instrument on Mars Odyssey, called the Gamma-Ray Spectrometer, we published results showing there were massive fields of water ice just a few centimeters beneath the surface. As the data improved with time, we found that the soil was more than 50% ice by mass, which translates to about 75% by volume.

Originally there was some thinking there might be ice beneath the surface in the polar regions but that it would be formed by diffusion of water vapor into the pores in the soil and the freezing out at a depth low enough to be below the summer heat pulse. The indication of 75% ice by volume, however, made this hypothesis unlikely. Instead, we are now thinking we had to have snow or frost forming on the surface with occasional wind storms adding dust to the surface snow.

This discovery came at the time the University of Arizona was writing a proposal for the first Mars Scout Mission. One of the important objectives of the proposed mission was to land on these putative ice fields in the North Polar Region and to study the ice. We were successful in that proposal effort leading to the Phoenix Lander, which successfully touched down on the surface of Mars in May of 2008.

The basis for the determining the amount of ice in the soil by remote sensing and some of the results of the Phoenix Mission will be discussed.

12:00 pm -1:30 pm

PLATED LUNCH

Ballroom

Award Presentations

1:30 pm -3:00 pm

CAPTURX FOR ARCGIS, AUTODESK AND EXCEL: PAPER AND PEN GIS FOR FIELDWORKERS (hands-on)

Salon G

Bill Timmins, GIS Services

Brad Tatham, GIS Services

Mobile data collection solutions provide access to and creation of geospatial features and data by public works, planning, appraisers, emergency responders, operational managers, associated support personnel and the general public - many who have no background in GIS or databases. Frequently, GIS projects record very limited datasets and not necessarily the information needed by the fieldworkers. There are lots of solutions chasing this problem but new digital pen and paper solutions should be an important component to be considered. Projects with time constraints often need a simple and direct method for getting the points, lines and polygons in the Geographical Information System. Audience members will create features using pre-printed maps and digital pens. The resulting data will be brought into ArcGIS to view the editable features. While exploring the use of Capturx for ArcGIS Desktop, we will be able review its capabilities with minimal training.

ARCGIS DESKTOP 9.3 TIPS AND TRICKS

Ironwood Room (upstairs)

Heather Paskevic, ESRI

ArcGIS Desktop is geographic information system (GIS) software for visualizing, managing, creating, and analyzing geographic data. New functionality in ArcGIS 9.3 helps you to improve your organizational workflow, manage your data more effectively, and allows you to disseminate the results of your analysis to others throughout the organization and share information in the field. This beginner to intermediate level workshop focuses on general desktop tricks, data management with ArcGIS, editing, and cartography.

OPTIMIZING ARCGIS SERVER AT THE CITY OF NEW BRAUNFELS, TEXAS

Salon F

Darin Herle, Latitude Geographics Group, Ltd.

The City of New Braunfels, TX has embraced web-based mapping in a big way. As early adopters and implementers of ArcGIS Server, the city deployed several powerful and easy to use applications serving data to both internal and public users. When questions from staff and management came in around usage patterns, popular layers and justification for implementation, the city used an internal tool, Geocortex Optimizer, to learn more about how people were leveraging their popular ArcGIS Server based tools. In this

1:30 pm -3:00 pm (cont)

interactive demo, learn more about some of the underlying performance, usage data, reporting, alerting tools and data the City of New Braunfels was able to leverage from their entire ArcGIS Server stack to answer many of their stakeholder questions.

ARCGIS SERVER: THIS IS YOUR BRAIN ... THIS IS YOUR BRAIN ON THE FLEX API WITH CACHED MAP SERVICES *Salon F*

Andy Wright, Salt River Project (SRP)

SRP's first foray into the ArcGIS Server realm was a rather slow, arduous journey on the back of the Web ADF. Our applications were nice and they were functional, but they lacked pizzazz, flash, and most importantly blazing performance. We knew map caching could get us to the promise land of lightning fast response time in our web applications, but didn't feel we could take advantage of it because of the large volume of dynamic data we deal with. With a little bit of ingenuity, a lot of hard work, a few powerful servers, and the Flex API we can finally show our faces around the office again. This presentation will cover our journey from dynamically serving up data in Web ADF applications to the dream world of map caching and the Flex API. Come see how we did it, and how you can do it too.

UTILIZING GIS FOR COMMUNITY DEVELOPMENT (INTEGRATING GIS WITH PERMITS & ADDRESSING) *Salon H*

Larry Prentice, Town of Prescott Valley
Rebecca Myers, Town of Prescott Valley
Missy Kern, IK Consulting
Connie Ingram, IK Consulting

The Town of Prescott Valley will present some of the GIS mapping capabilities we've established and provide attendees with an in depth view of how our Community Development Department is utilizing GIS capabilities to further their reporting mechanisms and increase customer service. Furthermore, this presentation will showcase specifically how GIS data is perpetuated into the Permits program through a series of structured queries.

CASE STUDY: ENGAGING YOUTH IN MEANINGFUL GIS PROJECTS *Salon H*

Meckenzie Helmandollar, University of Arizona

This presentation demonstrates the power of using locally relevant (and often user-collected) data to empower youth to be successful GIS users by maximizing comprehension and participation. This will be accomplished by highlighting a dynamic GIS project completed by culturally diverse youth from the rural White Mountains region of northeastern Arizona. A group of youth from the Fort Apache Indian Reservation spent numerous days collecting data from sites and events they determined were significant to their cultural history. Another group of youth from the Young Marines program used GIS as a tool to solve community problems. These youth engaged in projects of their own design that culminated in a database, map display, and presentation to local community and tribal councils. Youth from both groups will be part of the presentation to share testimonials of success.

3:00 pm -3:30 pm

BREAK

Beverages and light snacks provided in the Foyer

Visit the Map Gallery and Vendor Exhibits in the Ballroom and Foyer

3:30 pm -5:00 pm

INTRODUCTION TO ARCGIS SERVER: "TAKING YOUR GIS TO THE NEXT LEVEL" (hands-on)

Cottonwood Room (upstairs)

Tosca Hoffman, ESRI

ArcGIS Server provides a complete server-based GIS system that supports the use of centrally managed spatial data for mapping and analysis. You learn how to publish maps, globes, and geoprocessing models that are optimized for performance and how to create out-of-the-box Web applications using ArcGIS Server Manager. The course covers using GIS services in both Web applications and ArcGIS Explorer. Installation and some configuration techniques for ArcGIS Server are also covered, but administration is not the focus of this course. This course is designed for those new to ArcGIS Server who want to learn about its architecture, capabilities, and client applications

REMOTE SENSING: NUTS, BOLTS AND APPLIED APPLICATIONS (hands-on)

Salon G

Ian Hanou, AMEC
Brian Sovik, AMEC

This workshop will provide an introduction to aerial and satellite image remote sensing. Exploration will include the introduction to various platforms with their specific specs. An overview of some of the basic tenants of remote sensing will be covered with hands on exercises including electromagnetic bands, pixels, and various spectral, spatial and temporal resolutions. Next, image acquisition will be covered. Specifically, we will show you how to answer the questions, "where do I go to get the imagery needed for my application, is there availability and is there a cost?"

Finally, a brief overview of various real world remote sensing applications will be covered. This is where the rubber meets the road and remote sensing takes an integral role in solving real world challenges. It is our hope through this workshop and with the resources provided to attendees that you will consider and embrace this emerging technology to help with issues in your communities.

PANEL DISCUSSION: SPATIAL DATA QUALITY

Ironwood Room (upstairs)

Bo Guo, GISTIC Research, Inc. (moderator)

Ensuring the quality of GIS data has always been a major challenge for GIS-T professionals who face an ever expanding volume of data, a diminishing pool of resources, and the inevitable increase in user expectations. There have been many creative and successful approaches in tackling the challenges in the GIS communities. The motivation of the panel discussion is to share the experiences,

3:30 pm -5:00 pm (cont)

practices and issues in our common effort to improve the truth in spatial data.

Panelists will discuss practices and challenges at their organization then take questions from the audience.

PRACTICAL APPLICATION OF ESRI SILVERLIGHT API

Salon F

Phil Ponce, Engineering Mapping Solutions (EMS)

EMS develops GIS Mapping websites using the ESRI Silverlight API technology.

This approach leverages the exciting new Microsoft Silverlight 3 Technology to build a fast, easy-to-use, intuitive GIS interface. We've also solved the as-built document viewing issues using the Silverlight DeepZoom technology.

This session is intended for casual web users interested in seeing the latest technology, as well as web developers interested in our approach to developing the site.

This session will demonstrate the tools and approaches used to develop the EMSWebMap and EMSDocView applications. We will show each component, discuss challenges, and show source code. We will discuss the future direction of the on-going development efforts and lastly open to questions.

HACKING ESRI GEODATABASES: ARCSDE'S BIGGEST SECRETS FINALLY REVEALED

Salon F

Rudy Stricklan, AMEC

Ever wonder what goes on underneath the hood of an ArcSDE geodatabase? Have you ever wanted to access an ArcSDE geodatabase with non-ESRI software? Are you secretly a closet software hacker?

If so, then this is the session for you. Undocumented details of ESRI's ArcSDE geodatabase structure are unmasked in this one-hour expose. Find out how to query and display SDE geospatial data without an ArcGIS license. Edit SDE-versioned data in ways that will amaze and horrify your staid colleagues.

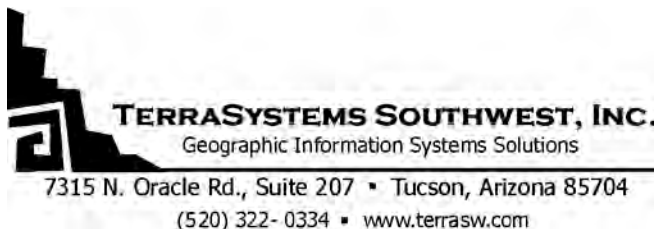
WARNING: ESRI operatives and organized protestors have threatened to infiltrate this session. Loud or profane interruptions will not be tolerated.

6:00 pm -8:00 pm

Networking Social

Location information to be announced and posted in the Foyer

Sponsored by TerraSystems Southwest, Inc.



THURSDAY, NOVEMBER 5

7:30 am – 4:00 pm

REGISTRATION

Foyer

7:30 am – 9:00 am

FULL BREAKFAST BUFFET

Foyer

Sponsored by Entellus



8:30 am – 10:00 am

AUTODESK 2010: FUNDAMENTALS OF FDO (hands-on)

Salon G

Richard Chappell, CADSoft

FDO, or Feature Data Objects is an open source method of connecting to various geospatial data source types. AutoCAD Map 3D is Autodesk's tool for working with FDO and geospatial data. FDO is a key player for many interoperability workflows.

We'll look at options for working with FDO in AutoCAD Map - including loading data, stylizing data, creating new data sets and moving AutoCAD drawing information into FDO data sources.

WORKING WITH ARCGIS SERVER (PART 1): CREATING EFFECTIVE WEB MAPS

Ironwood Room (upstairs)

Dave Vaillancourt, ESRI

If you want to create Web applications that meet today's high expectations for Web mapping, spread the value of GIS technology throughout your entire organization, and discover ways to simplify your GIS technology decisions, then come to this complimentary workshop. You will find out how to apply best practices to easily and quickly deploy modern Web maps and make the most of your investment in GIS data and infrastructure. You will also be shown how to use free resources such as sample viewers, industry templates, and widgets. From GIS professionals to new users to decision makers—whatever your experience—you'll come away knowing the most efficient way to serve optimal Web applications.

APPLYING GPS CAMERAS FOR GIS MANAGEMENT OF LANDSCAPE CHANGE IN THE CIENEGA CREEK

Salon F

Brad Tatham, GIS Services

As Geographical Information Systems begins to record information with greater detail, the use of photography has become more important. From liability issues, to having a geobased historic record of our changing environment, the GPS camera will provide a vital GIS record. The use of GPS enabled cameras will become ubiquitous as consumer cameras will gradually acquire these capabilities. The best use practices of GPS cameras will be reviewed through the PhotoGPS survey of Cienega Creek, Pima County. The advantages and disadvantages of various GIS formats will also be discussed.

8:30 am -10:00 am (cont)

ARIZONA IMAGERY SERVER – BUILDING A HIGH PERFORMANCE, SCALABLE IMAGERY SERVER ON A VIRTUALIZATION PLATFORM

Salon F

Ayan Mitra, ASU

This presentation will discuss the architecture of the imagery server as well as comparisons to previous architecture and the general 'story' of how the service has evolved from an ArcIMS service residing on a physical host to an ArcGIS service hosted virtually. Issues, tips, tricks for creating large caches, as well as lessons learned will be reviewed. Web mashup applications and potential use of the service for REST, SOAP, WMS, WCS etc. will also be discussed.

FLEET TRACKING AT LOS ANGELES COUNTY, CA

Salon H

Darin Herle, Latitude Geographics Group Ltd.

With 100,000 employees, Los Angeles County is one of the largest staffed counties in the US. With over 30 departments, many of whom use GIS on a daily basis, there arose a need to track (mobile) people, vehicles and things. The County chose to leverage ArcGIS Server and Geocortex Fleet Tracker to do this for a pilot project to demonstrate the efficacy of such a system. Combining a Silverlight front-end, REST-based Fleet Tracker Server back end (tied to ArcSDE and ArcGIS Server) and mobile GPS devices, the County can use this toolset to determine the effectiveness of mobile asset tracking as a management tool. Join this presentation for a live demo, lessons learned and pragmatic feedback about AVL.

PIMA COUNTY LRS/DYNSEG

Salon H

Steve Whitney, Pima County DOT
Cody Cohn, Pima County DOT
Ray Brice, Pima County DOT

The goal of the Pima County DOT Geographic Information Services Division is to develop, establish, and maintain a comprehensive and integrated GIS system by providing products and services to Pima County departments, other government agencies, consultants, and the public. A key component of reaching this goal is to maintain accurate, relevant, and accessible data. The street network is a critical data layer for DOT - supporting multiple departments and agencies - enabling key business processes such as pavement management, emergency response, etc, etc. Because the street network supports a wide array of GIS consumers, the data must be capable of supporting varying workflows and applications, without compromising data integrity or maintenance efficiency. LRS / DynSeg allows multiple, even conflicting, attributes to reference a single route while preserving linear network geometry. For this reason, Pima County AZ is implementing LRS / DynSeg to preserve non-typical core street attribution while reducing segmentation.

This presentation will provide an overview of core linear referencing and dynamic segmentation concepts, present the business case for adoption by the county, as well as lessons learned and the road ahead (no pun intended). Topics will include an in-depth discussion of the LRS data architecture, data collection/creation procedures, tools and methodologies used to implement Pima Counties LRS / DynSeg.

10:00 am – 10:30 am

BREAK

Coffee, Ice Tea and Juice provided in the Foyer

Visit the Map Gallery and Vendor Exhibits in the Ballroom and Foyer

10:30 am – 12:00 pm

BUILDING GEODATABASES: "WHICH GEODATABASE SHOULD I USE?" (hands-on)

Cottonwood Room (upstairs)

Tosca Hoffmann, ESRI

This course provides an overview of the structure and capabilities of the geodatabase. You learn how to create a geodatabase, migrate existing GIS data to a geodatabase, and edit and maintain data stored in a geodatabase. This course is designed for experienced ArcGIS users who want to store data in a geodatabase and take advantage of advanced geodatabase functionality. Data managers will find this course of particular benefit.

GIS ANALYSIS AND TOOLS WITH AUTOCAD MAP (hands-on)

Salon G

Richard Chappell, CADSoft

AutoCAD Map is Autodesk's primary geospatial editing and management tools. It combines AutoCAD's powerful editing and data creation tools with full-powered GIS tools, including overlay, buffers, and other spatial analysis tools. In this workshop we'll explore these tools and see Autodesk's desktop GIS in action.

AGIC EXECUTIVE BOARD MEETING

Salon F

AGIC Board Members will meet to discuss current AGIC agenda topics. This is a public meeting. Conference attendees are welcome to sit in as a member of the public. Those wishing to speak must sign up at the door and an opportunity to speak will be provided during the "Call to the Public."

ADOT PHOTOLOG VAN

Salon H

Jim Snow, Arizona Dept. of Transportation

This presentation will highlight the recent implementation of our new roadway Photolog imagery system. This system will be provisioning approximately 10TB of data annually. The information consists of video imagery, Light Detection and Ranging (LiDAR) and GPS data. In an attempt to maximize the utility of this data, the central data repository has been made accessible throughout all divisions of ADOT.

Specific topics to be addressed are as follows:

- o Description of van operations, on-board electronic equipment, and software.
- o Demonstration of actual information collected (e.g., Imagery, LiDAR and GPS data).
- o Effort to post-process and integrate data into existing GIS and IT infrastructure.
- o Downstream utilizations of this data.

10:30 am – 12:00 pm (cont)

SURVEY SAYS . . .

Salon H

Walter Domann, Cochise County

The involvement of our end-users is crucial to our success as a GIS and no end-user is more critical, to more fundamental aspects of our system, than the members of the Cochise County survey staff. This presentation will attempt to move past the idle dialog about roles and demonstrate how the day to day workflow and responsibilities of the GIS and the survey crew are interrelated and interdependent. The presentation will be done with the participation of a critique panel comprised of experienced and knowledgeable surveyors who will listen to a brief overview of our system and our interaction and involvement with the survey crew and respond with scrutiny and constructive criticism.

12:00 pm – 1:30 pm

PLATED LUNCH

Ballroom

1:30 pm – 3:00 pm

ARCGIS EXPLORER: MORE THAN A MAP VIEWER (hands-on)

Cottonwood Room (upstairs)

Jami Garrison, Maricopa Assoc. of Governments

ArcGIS Explorer is a free, downloadable GIS viewer that gives you an easy way to share your GIS data with a broad audience. In this workshop you will learn how to make the most of this free GIS viewer by creating a custom map, adding additional content such as photos, reports and videos, performing spatial analysis and creating custom presentations. You'll also learn how to make the most of ArcGIS Explorer by using the ESRI Resource center and you'll get an introduction on how to create your own custom resource center. If you want to learn how to share your GIS data and projects with non-GIS users or if you simply need a way to view GIS data quickly and easily, this is the workshop for you!

AN INTRODUCTION TO ARCPAD 8 (hands-on)

Note : this session continues to 5:00pm

Salon G

Michele Mattix, GeoMattix

ArcPad makes field data collection a breeze - especially when you have the added functionality of GPS. In this workshop we will use ArcPad on a GPS unit to go through the basic workflow for collecting GIS data in the field. Beginning in the classroom, we will design a geodatabase with functionality devised to facilitate field work, prepare the data for ArcPad, transfer the data to the Juno, collect data in the field, and then integrate the data with the geodatabase back in the office/classroom.

WORKING WITH ARCGIS SERVER (PART 2): INTRO TO THE JAVASCRIPT AND FLEX API

Ironwood Room (upstairs)

Dave Vaillancourt, ESRI

With ArcGIS Server 9.3, ESRI introduced the ArcGIS API for JavaScript and the ArcGIS API for Flex™. You can build ArcGIS Server Web applications using these APIs powered by backend REST services that are hosted on any ArcGIS Server. Attendees will learn about these APIs and explore the online SDKs. Additionally, attendees will learn how to get started building applications with these APIs by walking through the online samples in the SDK and covering best practices. Familiarity with web programming is helpful but not required.

AGIC STRATEGIC BUSINESS PLAN (PART 1)

Salon F

Gene Trobia, State Cartographer's Office

Richard Grady, Applied Geographics

Malcolm Adkins, Michael Baker Jr., Inc

The preliminary findings from the Regional Workshops and On-Line Survey will be presented. These were conducted in support of the AGIC Strategic and Business Planning Process that is underway. If you have not participated in a workshop previously, or if you have more to say, come to the later session (3:30-5:00) and provide additional input and/or feedback on findings to-date.

GROUND TRUTH: DESIGN OF CUSTOM COORDINATE SYSTEMS IN THE ARCGIS ENVIRONMENT

Salon H

Michael Dennis, Geodetic Analysis, LLC.

Richard Nava, Geodetic Analysis, LLC.

GPS technology and direct use of electronic survey data in GIS are together driving a growing awareness of issues related to georeferencing and map projection distortion. Survey data are often intended to represent conditions "at ground," such that distances based on map (grid) coordinates equal "true" distances on the ground. But such survey coordinate systems are often not consistent with those used for GIS, and in many cases they are not well defined. In addition, some geographic areas managed using GIS are not well represented by any existing published coordinate system, such as the Navajo Nation (which spans five State Plane zones).

This presentation shows how to design custom coordinate systems within the ArcGIS environment. It includes optimal design of Low Distortion Projections (LDPs) to allow seamless incorporation of survey data in a GIS, as well as design of coordinate systems to provide improved coverage in areas where existing systems are lacking. A demonstration will be given of methods and tools for designing such coordinate systems in ArcGIS. The goal is to show that custom coordinate systems can be created that facilitate data sharing, improve geographic coverage, and allow survey and GIS data to coexist without either being degraded or without resorting to approximate "rubber-sheeting" acts of desperation.

3:00 pm – 3:30 pm

BREAK

Beverages and light snacks provided in the Foyer

***Visit the Map Gallery and Vendor Exhibits in
the Ballroom and Foyer***

3:15 pm – 5:30 pm

SABINO CANYON HIKE

Meet in Salon H at 3:15pm SHARP!

3:30 pm – 5:00 pm

QA/QC FOR GIS DATA "HOW FIT IS YOUR DATA?" (hands-on)

Cottonwood Room (upstairs)

Tosca Hoffmann, ESRI

Data is the foundation of every successful GIS. To ensure a reliable foundation for their GIS, organizations should have a well-designed quality assurance (QA) plan and quality control (QC) procedures integrated with the production and maintenance of GIS data. This course covers errors and quality in GIS data and provides practical guidelines for creating a complete QA plan. This course is designed for project managers, spatial data managers, and GIS technicians who will be involved in the design and implementation of QA/QC programs for vector and attributed data production and maintenance.

AN INTRODUCTION TO ARCPAD 8 (hands-on)

*Note : Continuation of session that began at 1:30pm
Salon G*

Michele Mattix, GeoMattix

This is a continuation of the workshop. Attendees should be in this workshop beginning at 1:30pm.

GEOSCIENCE INFORMATION NETWORK

Ironwood Room (upstairs)

Lee Allison, Arizona Geological Survey

The Arizona Geological Survey is leading a coalition of the U.S. state geological surveys (Association of American State Geologists - AASG), the U.S. Geological Survey (USGS), and partners in building the Geoscience Information Network, a national, distributed, interoperable data network. GIN is developing Web-based services to link existing and developing components using open source standards and protocols, and work with data providers to implement these services. The U.S. Department of Energy has adopted GIN as the basis for the National Geothermal Data System.

The key components of this network are 1) catalog system(s) for data discovery; 2) service definitions for interfaces for searching catalogs and accessing resources; 3) shared interchange formats to encode information for transmission (e.g. various XML markup languages); 4) data providers that publish information using standardized (Web) services defined by the network; and 5) client applications adapted to use information resources provided by the network. GIN will integrate and use catalog resources that currently exist or are in development. Existing interchange formats are being used, such as GeoSciML, ChemML, and Open Geospatial Consortium sensor, observation and measurement MLs. Client application development is fostered by collaboration with industry and academic partners. GIN focuses on the remaining aspects of the system - service definitions and assistance to data providers to implement the services and bring content online - and on system integration of the modules. Collaborators include the OneGeology-Europe consortium of 21 nations that is building a comparable network under the EU INSPIRE initiative, ESRI, Microsoft Research, Schlumberger,

MetaCarta, and petroWEB. The National Science Foundation is funding initial development.

AZ3D: A COMMON OPERATING PICTURE FOR ARIZONA Ironwood Room (upstairs)

Brian Sherman, AZ Government Information Technology Agency

To enhance public safety and government operations in the event of an emergency or disaster, states and regions need the ability to access the best available geospatial information. With a secure and simple to use application interface, a common operating picture can be a very powerful tool for government decision-makers, planners and emergency responders. AZ3D is a visualization application and an information and application sharing platform where authorized government users may access or contribute geospatial data, services and applications to support border and homeland security. A proof of concept was implemented in the spring of 2009 and an operational system is planned for the fall of 2010.

AGIC STRATEGIC BUSINESS PLAN PROJECT (PART 2) Salon F

Gene Trobia, State Cartographer's Office
Richard Grady, Applied Geographics
Malcolm Adkins, Michael Baker Jr., Inc

This session is intended for anyone who would like to provide additional input and/or feedback on findings to-date, regarding the AGIC Strategic and Business Planning Process. The preliminary findings will be presented at the earlier session (1:30-3:00), so most of the time during this later afternoon session will be devoted to capturing additional input.

***Be sure to visit the AGIC sponsors at
their booths in the
Ballroom and Foyer.
Have your card stamped/signed by
each vendor to be eligible for the
vendor-sponsored door prizes.***

***Door prize drawings will take place
during the Exhibitor Social
Thursday evening in the Ballroom.***

5:00 pm – 7:30 pm

EXHIBITOR SOCIAL AND DINNER BUFFET
Ballroom

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We apologize to any exhibitors who may have been omitted due to printing deadlines.

FRIDAY, NOVEMBER 6

7:30 am – 9:00 am

FULL BREAKFAST BUFFET
Foyer

Sponsored by Stewart Geo Technologies



8:00 am – 10:30 am

REGISTRATION
Foyer

8:30 am – 10:00 am

CARTOGRAPHY WITH ARCGIS DESKTOP: "THE ART AND SCIENCE OF MAKING MAPS" (hands-on)
Cottonwood Room (upstairs)

Tosca Hoffman, ESRI

This course teaches basic principles of cartographic design and how to apply them using ArcGIS cartographic and geoprocessing tools to create outstanding maps. You examine factors that control and influence cartographic design and create maps that communicate information effectively. This course is designed for experienced ArcGIS users who want to produce high-quality map products.

SERVING IMAGERY AND RASTER DATA WITH ARCGIS
Ironwood Room (upstairs)

Dave Vaillancourt, ESRI

This workshop will discuss the new image service capabilities of ArcGIS Server as well as the ArcGIS Image Server extension. An image service provides access to raster data through a Web service. The ArcGIS Image Server extension allows you to manage and process huge volumes of raster data, and provide enterprise-wide access to an infinite number of image datasets within GIS, CAD, imaging, and Web applications. This intermediate to advanced level workshop will review the two solutions for serving imagery referenced above, provide guidance on how to choose the solution most appropriate for your organization, and demonstrate building and consuming these services.

DEPLOYING ARCGIS SERVER AT PINAL COUNTY, AZ
Salon F

Darin Herle, Latitude Geographics

Interested in leveraging the power and feature set inherent to ArcGIS Server, but eager to not reinvent the wheel, Pinal County implemented enterprise wide web-GIS using ArcGIS Server and Geocortex Essentials. Designed to augment development using ESRI's .NET Web ADF and Developer APIs (REST, JavaScript, Flex, and Silverlight), Geocortex Essentials provides flexible core elements as well as tools, processes, and features that will give your organization an enormous jumpstart when building, customizing and managing applications. Join one of our staff as they tour you through the Geocortex Essentials demonstration site, profiling

8:30 am – 10:00 am (cont)

features and capabilities included with this powerful product engineered from the ground-up for ArcGIS Server. This presentation is ideal for anyone thinking about or engaged in ArcGIS Server projects or ArcIMS-to-ArcGIS Server migrations.

FLEX VS. SILVERLIGHT AND WHY ESRI'S ADF IS DEAD (OR DYING)

Salon H

Bob Finkle, IT Nexus
Brian Besier, IT Nexus

Since releasing ArcGIS Server in 2004 ESRI has thrown a variety of APIs (application programming interfaces) at its users. Starting first with the .NET ADF, the offering now includes a JavaScript API, a Flex API (Adobe Flex Builder) and very recently, a Silverlight API (Microsoft Silverlight).

This presentation provides a comparison of each of these APIs using examples and a straight-forward discussion of what's easy, what's possible and what's missing or difficult to achieve with each API. We discuss what's available with ESRI free templates, why we don't use them, what it takes to learn and use each API and our experience developing GIS-web applications in each environment.

IMPROVING ELECTRIC UTILITY LAND INFORMATION MANAGEMENT USING ARCGIS SERVER AND FLEX

Salon H

Rich Lopez, SRP
Bob Finkle, IT Nexus
Brian Besier, IT NEXUS

SRP (the Salt River Project) is an electric and water utility serving nearly 930,000 retail customers in the greater Phoenix area. The Land Division of SRP (LAND) recently completed a large conversion project that scanned all of its land record documents. A web-GIS Land Records Information Management System (LRIMS) was created, using ESRI's FLEX API, to easily access the documents. The LRIMS-Flex application provides users an easy-to-use method for accessing SRP's massive archive of land rights documents supported by a sophisticated security model that differentiates and controls document access privileges across a wide number of user groups within the organization.

This presentation provides background on the Land Divisions document conversion project, a technical briefing on the creation of the LRIMS-Flex web-GIS application and its security model and a demonstration of the capabilities and efficiencies achieved using LRIMS-Flex application.

10:00 am – 10:30 am

BREAK

Coffee, Ice Tea, and Juice provided in the Foyer

10:30 am – 12:00 pm

LOSING MY RELIGION: AUTODESK INTEROPERABILITY TOOLS WITH ESRI (hands-on)

Salon G

Richard Chappell, CADSoft

ESRI and Autodesk both produce incredibly powerful applications that provide their clients the tools to accomplish mission critical tasks. While these applications have some overlap, they each have unique functions and require many organizations to work with both applications, requiring interaction between the data from both systems.

In this workshop, we'll explore the tools in AutoCAD Map for interoperability. We'll work with data sets from both systems to see how ArcSDE, Shapes and other data sets can be available for use within the AutoCAD world, and the tools AutoCAD Map provides for editing and creating live in ESRI data sets.

ADVANCED GEODATABASE CONCEPTS: MANAGING DISTRIBUTED DATA

Ironwood (upstairs)

Heather Paskevic, ESRI

Managing and distributing current GIS data is a challenge many GIS professionals face. Geodatabase replication is a data distribution method provided through ArcGIS Server which allows spatial data to be distributed across two or more geodatabases by replicating all or part of your geodatabase. As updates are made, the geodatabases can then be synchronized to maintain data currency. Geodatabase replication is built on top of the versioning environment and supports the full geodatabase data model including topologies, networks, terrains, relationships, etc. This workshop will outline the primary concepts behind replication, common scenarios, and best practices for implementing a replication workflow.

QUALITY ASSURED GIS DATA: ISSUES AND TECHNIQUES

Salon F

Bo Guo, GISTIC Research, Inc.

When compared with the availability of GIS data and data collection/conversion tools, the error checking and quality assurance tools are few and far between. Ensuring the quality of GIS data has always been a major challenge for GIS-T professionals who face an ever expanding volume of data, a diminishing pool of resources, and the inevitable increase in user expectations.

The presenter will explain the meaning of accuracy, correctness, completeness and consistency in the spatial database domain. QC challenges in different data context (spatial, topological and attributal) will be examined along methods and/or algorithms to identify the errors. Finally, case studies will be given to demonstrate that how a combination of mostly vendor mutual approaches was used to achieve high level of data quality.

GISCI PROGRAM

Salon F

Gnaneshwar Marupakula, Salt River Pima Maricopa Indian Community
Brian Sovik, AMEC

This session will detail the GISCI Certification Program for GIS Professionals. Started on January 1, 2004, this is a recognition program for established GIS professionals. It is a non-examination, portfolio-based system. Strategies for filling out the application as well as detailed information about the history of the effort and the Institute will be provided. Information about certification in relation to licensure and state endorsements of the program will be offered as well.

TERRESTRIAL 3D MOBILE MAPPING

Salon H

Dave Henderson, TOPCON Positioning Systems
Join us for this exciting and informative presentation which describes a new revolutionary way to collect accurate GIS data quickly and safely from a vehicle. Using a plug and play combination of sensors including LIDAR, GNSS tracking and positioning, digital imaging and Inertial Measurement Unit (IMU) technology, this flexible IP-S2 system from Topcon acquires accurate 3D "point cloud" data combined with a colorful digital image of the site.

The position data is accurately time stamped, geo-referenced and can be used to assign GIS attribute information, or make calculations from the comfort of your office. Measure distances between features or the lengths and widths of features on the screen. With the IP-S2, field re-visits are eliminated and field personnel are safe as all data is mapped from inside the vehicle. Data can be exported to a GIS database and taken back into the

field on handheld devices for periodical field update and maintenance. The IP-S2 maintains accurate positioning in obstructed areas such as under bridges and through tunnels. Applications include asset management and engineering. Come and see what this system can do for you!

12:00 pm – 1:30 pm

BOX LUNCH

Ballroom

Closing Words from the AGIC President-Elect
Jana Hutchins, ASU

***Thank You for Your Attendance and
Participation at the 2009 AGIC
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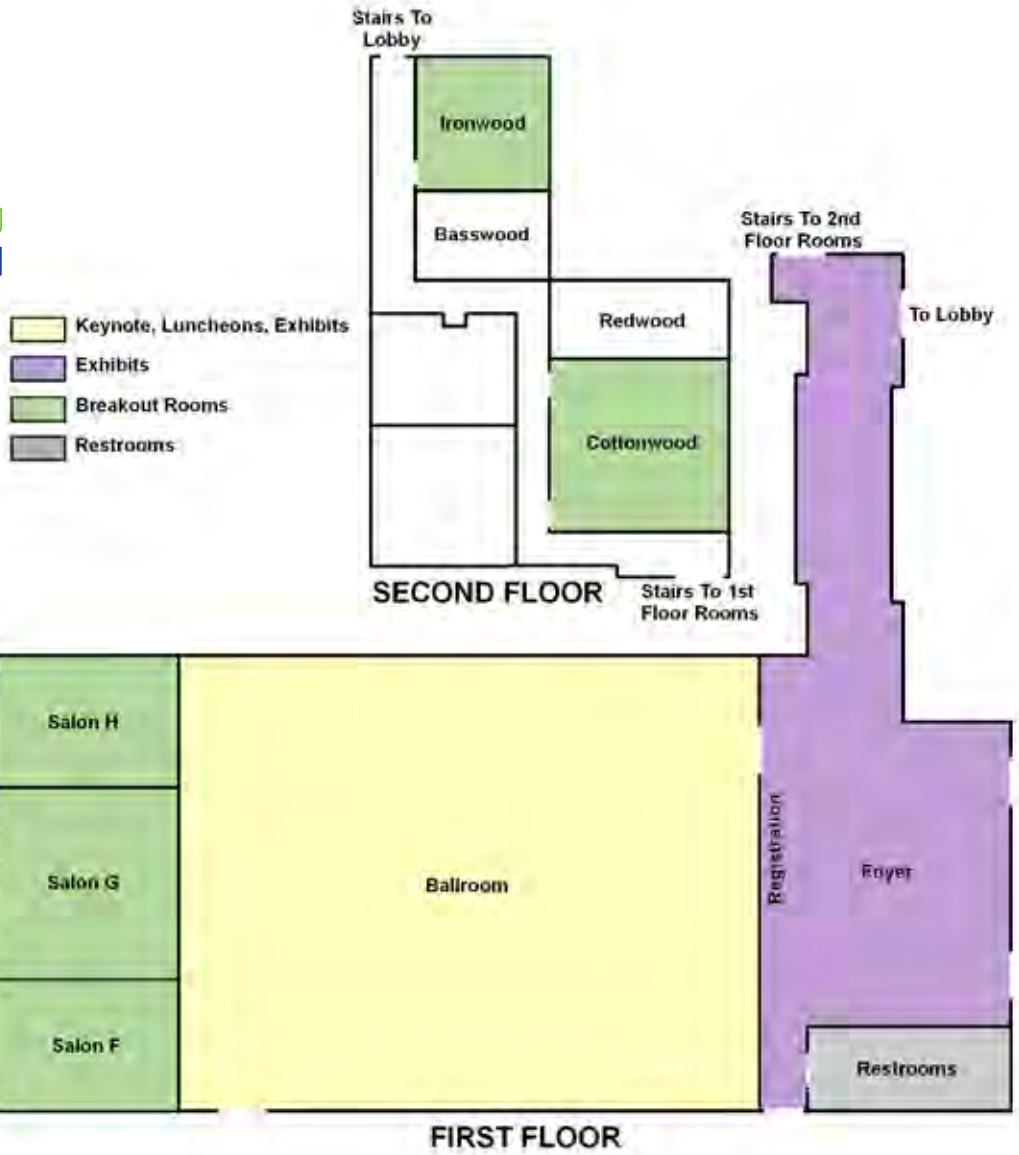


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