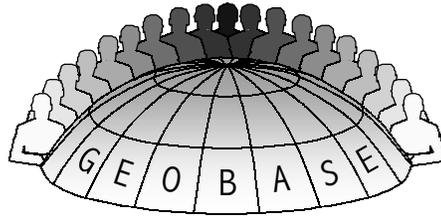


GeoBase Forum

Summer 00 (Jul-Sep)

IITA INSTITUTE FOR INFORMATION TECHNOLOGY APPLICATIONS
U.S. AIR FORCE ACADEMY



The GeoBase Forum is a quarterly newsletter intended to keep military, civil service and commercial partners informed on issues of mutual interest regarding the IITA GeoBase Initiative and the emerging GeoBase program. Previous Forum issues can be found at the GeoBase website: www.geobase.org.

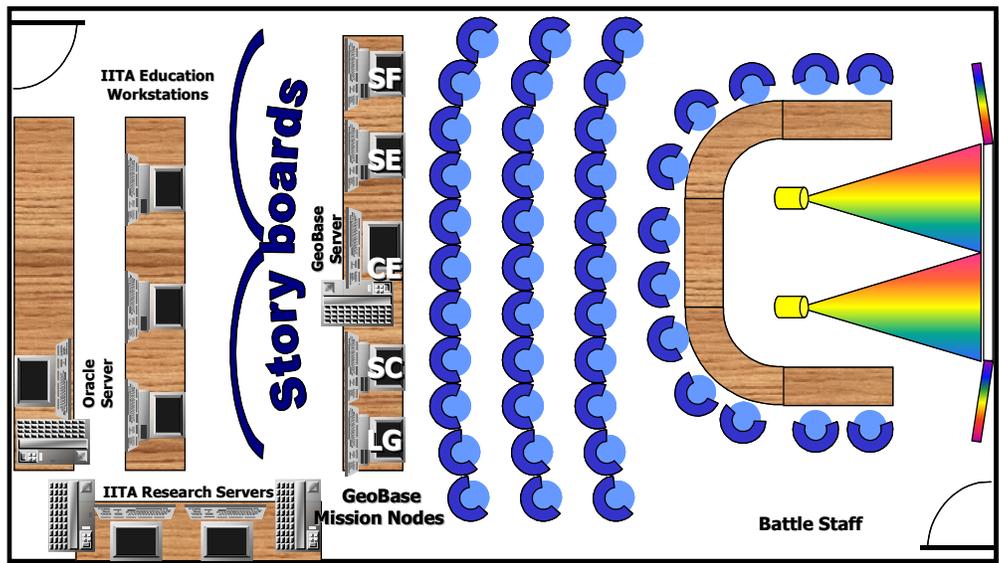
GeoBase/GeoReach Presentation to Fall CORONA

Maj John McDermon, USAFR
Chair, GeoBase IPT

The following report represents the observations of one officer in attendance at the presentation and does not represent the views of the Air Force or that of other participants.

Some time after 1000 on Thursday, 5 Oct 00 a procession of General Officers and Senior Executive Service Civilians stepped off the busses on the eastern edge of the terrazzo at the Air Force Academy and headed up the stairs of Fairchild Hall. Their destination? Room 4J15, the Institute for Information Technology Applications Laboratory, which on this day had been reconfigured to allow the GeoBase Simulator to host the Fall CORONA conference for a GeoBase/GeoReach presentation. The room was configured to hold 57 guests, 12 at the "U" shaped table and 45 in three rows of chairs. Judging by the number of empty chairs, I would estimate the final attendance at between 45 and 50.

With the room so full it was difficult to identify everyone who attended. From personal observation I know that the following people were there: Hon W. Peters (SECAF), Hon Ruby B. DeMesme (SAF/MI), Dr Delany (SAF/AQ), Gen Jumper (COMACC), Gen Gamble (COMPACAF), Gen Robertson (COMAMC), Lt Gen Woodward (USAF/SC), Lt Gen Zettler (USAF/IL), Dr Delany (SAF/AQ), Lt. Gen. William J. Begert (USAF/CVZ), Lt General Harry D. Raduege Jr. (Dir., DISA), Maj Gen James E. Sherrard III (Chief, AF Reserves). Obviously, there were many others that I did not see or recognize.



IITA Research

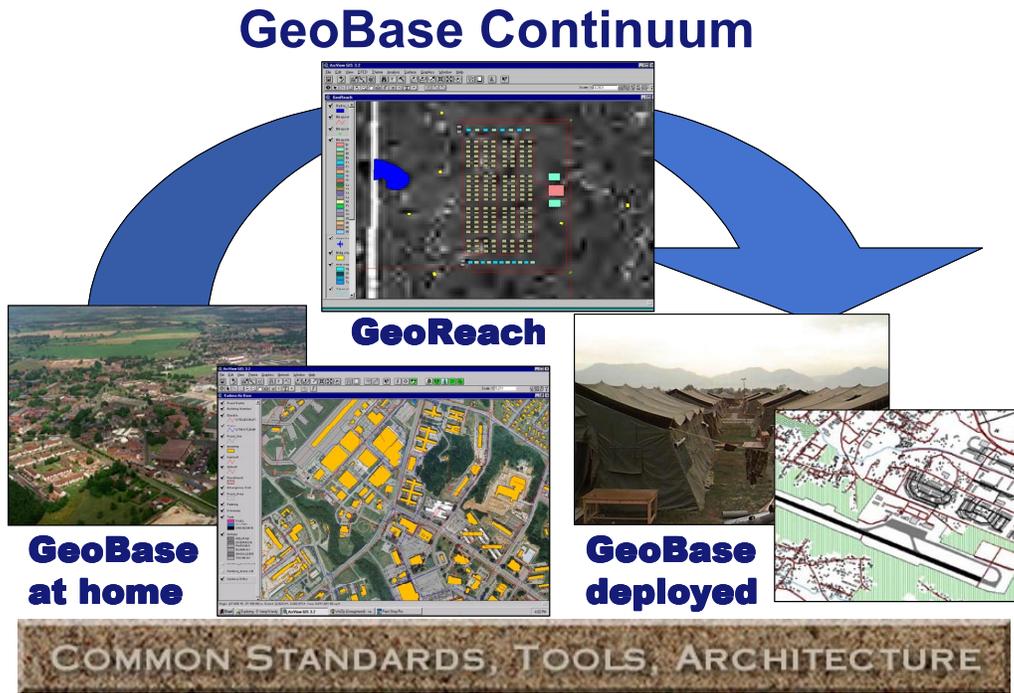
GeoBase Simulator

IITA Laboratory Layout

The presentation began when Lt Gen Zettler introduced the topic and then introduced Gen McCarthy, who in turn made some brief remarks and then introduced Col(S) Brian Cullis as the “father” of GeoBase. Col(S) Cullis went through introductory PowerPoint slides and then introduced Maj Ellen Fiebig, IITA Director of Reserve Research, who narrated the GeoBase demonstration showing response to a bomb threat and an aircraft accident and screen shots of the 10th CEG web server. Luke Heyerdahl, Brian Ward, Ed Rieglemann of CH2M Hill were at the controls. The data used during the GeoBase portion of the demonstration was from Okinawa. Both Kadena AFB and the Marine Corps supplied data that was integrated in the simulator environment. As part of the Simulator development the CH2M Hill team enhanced the cordon tool supplied by Kanda to meet the operational needs the IITA team developed in cooperation with 10th Wing input.

During the bomb threat exercise the team demonstrated the ability to quickly locate a facility on the installation and establish a cordon. The improved cordon tool includes the capability of automatically locating Traffic Control Points (TCPs), interactively locating the Entry Control Point (ECP) and interactively tracking the status of the facilities affected from “not notified” to “notified” to “evacuated.” In addition, a building manager contact list for the affected facilities was displayed. Data about the facility was then retrieved.. The facility in this case was the main telephone exchange that allowed the team to show screen shots of the C4ISR Infrastructure Planning System (CIPS) and discuss how such a tool can be used both in crisis response and day-to-day planning and activities. The floor plans with exit routes and the location and disposition of hazardous materials was also displayed. Once a hazard was identified the ALOHA model was used to plot the potential plume and a 95% confidence buffer. This was then used to adjust the cordon, locate additional TCPs and highlight additional facilities for evacuation. One of the more impressive portions of the demonstration was the ability to “share” a view of the data between networked systems. This allowed the status of TCPs and building evacuations to be updated on one system and the changes would be automatically reflected on the other systems on the network. This even included a wireless laptop. To demonstrate the network routing capability of the GeoBase architecture a munitions convoy was automatically rerouted when the primary and secondary munitions transport routes were unavailable. This also included the generations of written MapQuest™ like driving directions.

The Aircraft accident portion of the demonstration the exercise involved an F-16 crashing on the Futenma Marine Corps Air Station. During this exercise the network routing tools were used to locate the nearest emergency response facilities, plot the most efficient routes based on travel time and then display these response times. In addition, a cordon was plotted and the ability to share data between services was stressed since both installations are using compatible software and Spatial Data Standards.



GeoBase/GeoReach Transition Slide

The final portion of the GeoBase demonstration involved screen shots of the 10th CEG Interet Map Server application used to demonstrate the ability to locate facilities on the installation. In this case the 17th hole on the Silver course was highlighted due to a particularly troublesome water hazard. While these screens were displayed, the ability to control exactly what data is available over the web was highlighted by calling attention to the legend.

After the GeoBase demonstration, Col(S) Cullis then wrapped up with summary slides highlighting other existing GeoBase applications in use around the Air Force today and pointing out potential future integration efforts. A timeline was presented that featured the GeoBase Simulator as the catalyst for a series of GeoBase Seminars over the coming year. These will focus on improving the quality and capabilities of the tools demonstrated while preparing them for Air Force wide distribution. To transition to the GeoReach half of the demonstration the slide describing the GeoBase/GeoReach Continuum was shown (see above) and Gen Gamble, COMPACAF was introduced.

Gen Gamble did a short introduction of GeoReach personally briefing the slides presenting the GeoReach ConOps and then introduced Col Burns (PACAF/CE) who narrated the GeoReach demonstration. John Kisch from BTG Delta and Capt George Forbes were at the controls. In this half of the presentation Col Burns directed John and George through a series of demonstrations highlighting the advantages of georeferencing information. They showed how easy it is to query any of the airfields in the NIMA maintained AFIF files, as well as showing geographically aerial refueling routes and high and low level air routes. At each view they demonstrated the ability to graphically query the map and bring up tabular data associated with the queried feature.

In addition to the AFIF data, the GeoReach team highlighted the work they did for JEFX 2000, talking about the use of the tool in planning the JEFX force beddown while zooming in to Nellis AFB. This demonstrated the scale dependent use and integration of NIMA data sets, and how they can be used to plan the blue order of battle.

The GeoReach portion of the demonstration wrapped up with a three-dimensional interactive fly-through of a remote installation. Col Burns highlighted the ability to use the 3D fly-through to ascertain details about an installation before anyone ever sets foot on the ground.

The following discussion was lively and wide-ranging. Issues such as who should "own" this and where the data should be housed were raised. The only specific decision made before the

demonstration adjourned was to create a tasker at in following day's executive session.

Since the presentation the CSAF approved list of CORONA taskers has been released. The exact words are as follows:

Open Sesson Taskers

CF00T-49

Background: GEOBase/GEOReach Demonstration

Action: AF/IL form a Tiger Team to define actions needed to operationalize GEOBase across the AF. Include recommendation for developmental and sustainment funding along with an implementation OPR.

OPR: AF/IL

OCR: AF/XO, AF/SC, SAF/AQ (CIO), AF/XP, ACC

Suspense: CORONA SOUTH 01

Action on this suspense is already underway. A planning session is being held at USAF/ILE the week of 23-27 Oct 00. There will undoubtedly be more information to follow.

In summary, October 5, 2000 was probably the most significant day in the history of the GeoBase effort. Both briefings went flawlessly and the briefers should all be commended for a job well done.

USAF GeoBase IPT Update

Previous editions of the GeoBase Forum detailed the CIO Management decision to create the GeoBase IPT, the first IPT meeting and the first site visit to Hill AFB.

Since the initial IPT meeting in May some of the membership has changed. The current organizational representatives and assigned roles for the USAF GeoBase IPT include:

ILE	Maj John McDermon (USAFR)	Chair
38EIG	John Davis	Co-Chair
ILEXO	Lt Col Mike Conner	Member
ILEXO	Dan Schwarz	Member
SC	Jim Thorstad	Member
GRID	Lt Col Mike Sheridan	Member
GRID	Maj Jack Manley (USAFR)	Advisor
497IG	Bryne Lee	Member
XOF	MSgt Tracey Johnson	Member
AFCA	Jerry Barton	Member
AFCEE	Maj Ken Rogers	Member
AFCESA	Capt Tony Davit	Member
AC2ISRC	Capt Juan Kays	Member
ACC	Capt John Thomas	Member
ACC	TSgt Ken Jordan	Alt-Member
PACAF	Capt George Forbes	Member
AMC	Jennifer Rock	Member
	Lt Col Brian Cullis	Advisor

This IPT was charged with the five-month task of compiling a thorough and comprehensive study of the potential impacts of a formal GeoBase program

for the USAF mission. To this end, the IPT studied impacts internal to the installation domain by evaluating and documenting organizational investments and use of geospatial information at three representative sites with relatively mature geospatial IT portfolios. The three sites targeted for the review included Hill, Vandenberg, and Edwards AFBs.

Furthermore, members of the 38EIG from Tinker AFB will concurrently be evaluating the requisite base-wide communications configuration necessary to support a viable enterprise-wide GeoBase solution. The three sites to be visited present different operational and technical environments that will help in assembling a proposed, comprehensive GeoBase target architecture.

The second and third site visits were conducted at Vandenberg AFB from 17-21 Jul 00 and Edwards AFB from 31 Jul – 4 Aug 00. At each base the team gathered data from the Installation's GIS system along with general information about how organizations across the installation acquired and processed geospatial information.

Team members included:

Maj John McDermon	GeoBase IPT Chair
Maj Ken Rogers	GeoBase IPT Member
Mr Brent Haught	38 EIG/GF
Mr Gary Lushbough	38 EIG/GF
Mr Stephen Planer	38 EIG/GF
Mr Thanh Dang	38 EIG (VAFB STEM-B)
Mr Rajesh Parmer	38 EIG (EAFB STEM-B)

During two very busy weeks the team visited nearly 50 separate organizations and met with over 120 individuals. Hundreds of pages of notes were collected for subsequent analysis.

The success of these trips would not have been possible without the support of the people working with the systems at each installation. These dedicated professionals took time out of their busy schedules to support the IPT visit and should be commended. At Vandenberg a special thanks to Ms Jane Goldberg and the Vandenberg GIS team: Steve Quimby, Valerie Coombs, SSgt Jaime Logan-Krings and Randy Brownell. At Edwards AFB thanks goes to Maj Greg Emanuel, Mr. Emilio Rovira and the Edwards GIS team lead by Mr. Tom Rademacher: Jennifer Thomas, Mark Leschinsky, Sean McCain and Joe Thomas.

Simultaneous to the site visits Mr John Davis visited the Program Offices of several Air Force automation programs. In addition, John spent some time with the GCSS Integration Directorate (GRID) to assess the potential contribution GeoBase can make across the Air Force in support of both Command and Control and the 23 pillars of Agile Combat Support. In John's research he easily identified numerous instances where an integrated and consolidated

approach to georeferencing installation data would contribute directly to accomplishment of the mission.

The IPT members met at Scott AFB 22-23 Aug to present the findings from the visits and to outline the content of the final IPT report. Between the 2nd meeting and the last IPT meeting members drafted their portions of the report and took steps to fill in any data gaps that were identified. This involved several IPT members visiting Hurlburt Field, the site of JEFX 2000, to witness first-hand many of the C2 and AGS systems being exercised.

At the final IPT meeting, 19-20 Sep in Santa Fe, NM the members developed a proposal for the organizational location and composition of an Air Force Geo Integration Office. In addition a straw-man budget for the operation of the GIO was developed and the report outline was further refined.

Work on completing the report is on hold pending the outcome of the GeoBase planning sessions at USAF/ILE the week of 23-27 Oct 00. We expect the findings and recommendations of IPT report will be integrated into the ILE plan for GeoBase and briefed as a whole to the CIOMB sometime after October, 2000.

Vision of a GeoBase Air Force Introduction to the IPT Report

Imagine an Air Force where an installation commander and battle staff will be the first to receive the right information, at the right time, in the right format, to help in making the right decision when it is most needed. In this GeoBase Air Force deployed commanders have an increased situational awareness of the "Blue Order of Battle" previously reserved for the "Red order of Battle" and the Ops community. This is all possible through GeoBase.

GeoBase is a combination of processes, policy, architecture and tools providing installations with the organic capacity to access, maintain, and exploit *one* Geospatial Information Infrastructure (GII) supporting mission needs. The GeoBase capability provides the Commander a decision support tool that organizes data geospatially, using the common map as the interface into a near limitless collection of data.

By using the same processes, policy, architecture and tools at main operating bases in the accomplishment of the Title 10 responsibilities, exercising with these tools and then deploying with the same tools the Air Force will be ready to support the contingencies of the future. The GeoBase map interface can be applied across the spectrum of Air Force operations from preparing for impending natural disasters, to reducing the planning and

execution times for deployment, to responding to domestic or foreign crisis. The GeoBase Air Force is more efficient, can deploy with a reduced footprint and is thus quicker to respond, resulting in time, property and ultimately lives being saved.

The GeoBase Air Force, with a motto of “one base, one smart map” is consistent with the Commander’s NOTAM 005 “One Air Force One Network” and strives for consolidation, where feasible, while actively reducing duplication of effort.

This GeoBase IPT report prepared for the Air Force Chief Information Officer Management Board (CIOMB) details the results of a six-month study of the business case for a GeoBase Air Force. It describes the target architecture and outlines an organizational structure designed to minimize investment risk while maximizing the return to the Air Force on every dollar invested in geospatial information management and to make the GeoBase Air Force a reality.

Lt Gen Woodward, USAF/SC spends time with IITA

On the Monday before the big CORONA presentation the members of the IITA staff had a rare opportunity to spend time with Lt Gen Woodward, USAF/SC. He had heard about GeoBase, was looking forward to the presentation later in the week, but wanted an opportunity to meet with the IITA staff and discuss GeoBase and other IITA initiatives in a more personal setting.

Only the GeoBase portion of the CORONA brief was given. PACAF had not yet arrived. This was the first time Col(s) Cullis briefed the slides and saw the full demonstration of the GeoBase Simulator since he had been away to Air War College. The briefing went very well, but the real exciting part of this day was the time Lt Gen Woodward spent with the IITA staff.

After the briefing a wide-ranging discussion about innovation in Information Technology consumed over an hour of the General’s time. In this time, the IITA staff got a rare unedited glimpse at a General Officer’s unbridled enthusiasm for technology, the Air Force and what he feels needs to happen for the Air Force to be successful in this technology rich environment.

From this discussion I took away several key points:

Standards based not standardized – this is a phrase the General used as we discussed GeoBase and the future. It captures, very succinctly, what the GeoBase effort has been expressing since its inception

The web is the future – at some point in the not too distant future, everything will need to migrate to the web to be useful.

Current methods are too slow – the General used the new Air Force portal as an example of what a relatively few dedicated people can accomplish in a short period of time (7 weeks). He wants to see more initiatives happen this quickly.

Lt Gen Woodward is so enthused about the web, the AF Portal and the potential GeoBase connection that he insisted on the IITA staff joining him on the balcony at Arnold Hall later that afternoon when his staff walked him through the demos they planned for CORONA. As an indication of his enthusiasm for involving the IITA staff he took over at several points during the various demonstrations and was leading the presenter. In effect, the IITA staff was given a demonstration of the AF Portal by USAF/SC. A truly memorable experience.

GeoBase Happenings

Lt Col Cullis off to Air War College. Lt Col Cullis was selected from a very competitive poll of candidates to represent Air Force Academy in residence at Air War College. Lt Col Cullis began classes in Jul '00 and is expected to graduate in Jun '01.

Lt Col Cullis selected for promotion to O-6. The O-6 list that was made public on 7 Sep 00 contained a name very familiar to the GeoBase effort. Even though the pin-on date is many months away those close to Col(s) Cullis claim to already notice a change. Congratulations sir, well deserved!

New IITA Managing Director Arrives. In the height of preparing for CORONA Lt Col Gary Warren joined the IITA staff as the new Managing Director. Lt Col Warren is a career communicator with extensive acquisition background. He spent most of his career in the space arena, working for either AF Space Command or on the acquisition side supporting AF Space Command. Lt Col Warren's last assignment was at HQ AF Space Command where he led the command's highly successful Y2K program. He will be representing IITA in upcoming GeoBase planning efforts as well as coordinating the GeoBase Seminar Series. Lt Col Warren can be reached at DSN 333-3978, Comm (719)333-3978, email: Gary.Warren@usafa.af.mil

GeoBase Seminars

The GeoBase seminar series will be taking a different flavor this upcoming year. Each seminar will be part of the process aimed at developing and refining the GeoBase

capability. To that end, the seminars will be by invitation.

14-16 November 2000 – Seminar 1.

Simulator Operations. The goal of this first seminar will be to develop the consensus ConOps for the GeoBase simulator. Invitations were emailed the week of 16-20 Oct 00.

Future Dates

January, 2001 – Seminar 2

March, 2001 – Seminar 3

May, 2001 – Seminar 4

July, 2001 – Seminar 5

Recommended Reading

The History of Geographic Information Systems: Perspectives from the Pioneers, Timothy Foresman, editor, (1998) Prentice-Hall Publishers ISBN:0-13-862145-4. See Chapter 12, “**GIS Technology Takes Root in the Department of Defense**”, by William Goran, pp. 199-230.

Paradigms: The Business of Discovering the Future, Joel Barker, (1992) Harper Business Publishers ISBN: 0-88730-647-0 (paperback).

Understanding Commanders' Information Needs, James P. Kahan, D. Robert Worley, and Cathleen Stasz, (1989) RAND Report R-3761-A. <http://www.rand.org/publications/electronic/newstudies.html>

What Every CIO Needs to Know About Metadata, Federal CIO Council, February, 1999. <http://cio.gov/docs/metadata.htm>

The Unintended Consequences of Information Age Technologies, David Alberts, National Defense University Press, April 1996. <http://www.ndu.edu/inss/books/uc/uchome.html>

GeoBase Community Network

This list should provide you with points of contact that may be able to address specific questions regarding their respective GeoBase activities.

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USAF GeoBase Forum Inputs

The GeoBase relies on people like you sharing ideas and insights. Together let's defeat the "Not Invented Here" syndrome and benefit from our collective experiences. Please send your thoughts to the GeoBase Forum at IITA care of iita@usafa.af.mil.

Disclaimer

The opinions stated in the USAF GeoBase Forum do not reflect official USAF policy unless otherwise stated.