**US Army Corps
of Engineers**
Engineer Research and
Development Center

AMC Spatial Data Quality Control Project

GPS and Data Management Tutorial

Amit K. Patel, Jeffery Miller, James Cookas, Kelly Dilks, Tom Vorac
US Army Engineer Research and Development Center

Introduction

The Army Materiel Command (AMC) is the Army's principal materiel developer. AMC accomplishes its mission through nine major subordinate commands that direct the activities of numerous depots, arsenals, ammunition plants, laboratories, test activities, and procurement operations. AMC installations account for more than 5 million acres of U.S. military land.

Geographic Information Systems (GIS) are used by many AMC installations for installation management. As with any management tool, GIS requires good data and information on which to base management decisions.

The AMC Spatial Data Quality Control Project began in June 1998 to support the stewardship of military land by enhancing the quality of data used for decision making. During the course of the project, knowledge gaps were identified related to Global Positioning System (GPS) use and GIS data management. A short course was developed to address the relevant issues. The difficulty was scheduling the training course for those who would benefit most from the information. As training and travel budgets are tight, a new way for information dissemination was determined to support the greatest number of AMC installations at the lowest cost possible. A CD-ROM computer-based training tool was developed. It uses text to portray the information. This tool is flexible in that users can complete the course at their own pace and on their own schedule, while having the information to refer back to when necessary. Travel and training costs are not necessary, so the training cost is minimal for installation personnel — just an investment in time.

Tutorial Features

User friendliness played a big part in designing the GPS and Data Management Tutorial. The goal is to provide the student with control over his or her learning process while at the same time letting the student evaluate their own performance.

The tutorial keeps track of each student's progress and scores. At startup, the student is prompted for a user name and password. If the student has not yet registered with the program, the system will give the option of assigning themselves

a username and password. When a student creates a username and password, a profile is created that will keep track of completed lessons, page last read, quiz scores, and book marked pages.

An options panel is located on the left of every page of the tutorial. This allows the student to access all of the features of the tutorial at any given moment. Each feature is associated with an icon that displays in text the name of the feature when the mouse is placed directly over the icon, a common feature in interface design.

The features displayed on this panel are Menu, Objectives, Bookmark, Find, Help, Glossary, and Quit.

Menu is a useful tool because it shows the lessons and pages in a hierarchical manner. This gives the student a good idea of how he/she should proceed with each lesson and gives a good estimate of how much material is in a particular lesson.

As a student goes through a lesson, he/she should keep in mind the lesson objectives. The objective window lists in order the objectives of each lesson. Like all the other features on the pane, it is accessible at any time, even when the student is in the middle of a lesson.

The glossary enables students to look up any unfamiliar terms in the lessons. The glossary contains letters from A through Z at the top of the glossary window. The student clicks on a letter to get a display of the words beginning with that letter along with their definitions.

Searching for phrases or words in the tutorial is easy with the find feature. All the student has to do is type in the word or phrase they are looking for and a list of pages containing those words is generated.

Help is a guide that students can reference when they do not understand a particular feature of the tutorial. It contains information on how to use the features mentioned above and some others.

Quit is used to save the page the student is currently reading and bookmark the settings. The program exits after performing these saves.

Another convenient tool in the tutorial is the right click pop-up menu. By right clicking anywhere on the tutorial window, a pop-up menu appears listing all of the features talked about earlier plus direct links to the next page, previous page, and the first page of every lesson. This is a simple, quick feature that gives the student complete control over the tutorial with only a few mouse clicks.

The status page is perhaps the most user-friendly feature of this tutorial. This page is displayed immediately after the student logs in.

One item on the status page is a list of all the lessons the student has fully completed. A lesson is considered fully completed only if the student has read every page of that lesson. It is possible that a quiz must be passed to consider a lesson completed, but this feature is not in the current prototype. Along with the list of lessons completed is a list of lessons that still need to be completed. To get to these lessons the student can simply click on the title of each lesson in the list and the program will go to the first page of that lesson.

The lesson name and page the student last exited from are also displayed on this screen. A button is provided at the bottom of this page so students can quickly resume what they had been working on previously. There is a bar that shows the percentage of the current lesson the student has completed. The bar fills with red as the student comes closer to the end of the lesson.

CERL Distribution

Chief of Engineers
ATTN: CEHEC-IM-LH (2)
ATTN: HECSA Mailroom (2)
ATTN: CECC-R
ATTN: CERD-L
ATTN: CERD-M

Defense Tech Info Center 22304
  ATTN: DTIC-O (2)

9
9/99