

IMPLEMENTING AN ARCHIVAL GIS TEMPLATE UTILIZING ARCMAP GIS SOFTWARE AND THE PERSONAL GEODATABASE

Abstract

Despite research and literature about temporal GIS (Geographic Information Systems), there is little actual application. Traditionally, the quantity and value of temporal queries made on a GIS have not justified the excessive time and effort required to maintain temporal attributes. Thus, the temporality of many a GIS has been ignored. The recent maturation of GIS software, of GIS databases, and of computer operating systems has dramatically reduced the once onerous overhead of managing a temporal GIS.

The research objective for this thesis is to develop a generic temporal template for geo-objects using available commercial GIS software and apply it to facility management for Fort Campbell Army Base. The archiving methods use the extensibility of the ESRI ArcGIS suite of software and the personal geodatabase to create a 'supersede-not-delete' editing environment which establishes a geo-object archival record. A database schema has been developed that involves a series of attributes that are established and maintained through automated methods within the personal geodatabase feature class. These attributes manage archival information. The geo-object archiving template (tGIS Extension) was developed to support Fort Campbell Army Base use of GIS in managing facilities and infrastructure.