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Ronald Reagan Building and International Trade Center
Washington, DC  USA
Paul Calhoun & Vince Smith
GIS Systems Analyst – City Of Virginia Beach
GeoMedia Product Line Executive – Intergraph
Land Information Management
Parcel and Address Management using GeoMedia & Oracle Workspace Manager
Program Agenda

• Virginia Beach RACS
• Virginia Beach Background
• Parcel and Address Management Processes
• GeoMedia Transaction Management using Oracle Workspace Manager
• System Metrics & Benefits
Revenue and Collection System

OVERVIEW
• Centrally managed, authoritative database
• Incorporates multiple city business units
• Supports GIS, Real Estate Assessors Office, Commissioner of Revenue, Treasurers Office

CHALLENGES / OPPORTUNITIES
• Need to integrate disparate data sets GIS Tax-Maps, Appraisals and Revenue Collection.
• Most records do not contain lat/long coordinates
• Maintain multiple data versions and history

SOLUTIONS
• Oracle Database Enterprise Edition
  • Spatial Option
  • Workspace Manager feature of Oracle Database
• Intergraph GeoMedia Professional, Parcel Manager, and Transaction Manager

RESULTS
• Organization now better understands activities in context of location
• Standardized all addresses and coordinates in a consistent format and datum
• Improved precision thereby making system more useful to the public and business
• Users can query as-built, proposed and historical versions of the data
Virginia Beach Background

- 440,000 Population
- 3 Million Tourists per year
- Land 248 sq. miles (642 km²)
- Water 59 sq. miles (153 km²)
- Beaches* 35 miles (*Atlantic Ocean and Chesapeake Bay) Ave.
- Elevation 12’ above sea level (4 meters)
TaxMap Database

- 150,000 Parcels
- 200,000 Point Addresses
- 1000-3000 Parcel Transactions per year
- 3 Member Team
- GeoMedia Parcel Manager
- GTM With Oracle Database 10g Release 2
- Oracle Spatial (SDO_GEOMETRY) format
- Custom API to Synchronize with Manatron GRM
Parcel Management
Address Update Process
Background

- Our primary goal was to have a single process that we could manage, create and retire, tax parcels.
- Our secondary goal was to develop a system that could manage address information in relationship to parcels, being able to track the address of a particular parcel.
- We contracted Manatron with Intergraph as a sub, who developed and implemented the TaxMap database.
- We went live in July 2007, and been using the software ever since to manage both parcels and addresses.
Results and Benefits

• The current system is very successful because it reduced the number of Synchronization issues from 1500 parcels to zero.

• It enables a single point of entry for GPIN and address information, which can be easily distributed through the enterprise.

• The GIS2GRM interface saves the City time and money, because it reduces the time it takes to create and populate new land records.

• Populates GPIN, Address, Source Document, Lot and Legal Description.

• Reduces Data Entry errors.
Current Model

- Central model
- Updated with API in realtime
- Contains Parcels and Addresses in the same model
- Coordinated with GRM touch the records one time
- Supports future growth since it is a relational model with unique ID and relates.
Intergraph to Manatron Workflow Overview
GIS/CAMA Integration
Creation and Update of Parcel, Address and Source Document Information
(Ref. City of Virginia Beach)

1. Preliminary Plan, Address, & OPIN

2. Approved
   Yes
   3. Officially Received (Clerk of Court)
      Document Copy
      Commissioner of Revenue
      Non-RE Address Creation
      Enter DocNum (Instrument Number), deed book & page or plat book & page
      CRM Records GUI

   No
   4. Document Copy
      GIS Dept.
      GeoMedia API
      Query for existence of DocNum
      Parcel creation/split/merge
      RE Situs Address Creation
      RE Situs Address Maintenance
      Web service Interface
      IHS Server Manatron CRM Records DR
      Record API
TaxMap Model
GRM Model
What is GeoMedia?

- A highly productive environment for capturing and editing geospatial data
- Allows users to analyze geospatial data from various sources in a single integrated view
- Effectively uses enterprise-oriented, industry standard database management systems, such as Oracle, or use open interfaces for data exchange, such as OGC’s WMS and WFS interfaces
- Allows customer to incorporate geospatial data to effectively run their daily operations and make critical business decisions
What is GeoMedia Parcel?

- Maintain parcel boundaries for easements, property or cadaster
- Optimized COGO entry of survey plans and plats
- Perform parcel splits or joins
- Produce cadaster maps for tax assessments
What is GeoMedia Transaction Manager?

- Allows multiple users to simultaneously access and edit the same feature data in an enterprise environment
- Gives users confidence that all edits to feature data are maintained without having to put processes in place restricting users to perform edits sequentially
- Manage the lifecycle of your data as features transition from one state to another ensuring the integrity of the data at all points in time
- Query and visualize your geospatial data at various points in time
Benefits of Workspace Manager + GeoMedia

- Optimistic and pessimistic locking – for enterprise environments with 100’s of users there’s no worries with what is being edited, by whom or when
- Row level locking – every geospatial entity or asset can be managed effectively
- Conflict view – visually inspect and resolve edits
- History of all data changes – perform complex, ad-hoc analysis across different versions of the data
Benefits of OWM + GeoMedia

- Workspace hierarchy – allows large organizations to perform quality control and assurance at multiple levels
- Valid time & effective dating – include past and future representations of the data as part of the analysis (temporal query) or visually display (temporal filter)

**GeoMedia users can manage geospatial assets, using the full power of GeoMedia technology with the added benefits of Workspace Manager in Oracle Database**
What is GeoMedia? – Data Access
Live access to extensive number of data warehouses and formats
What is GeoMedia? – Placement & Editing

Capture feature data using GeoMedia’s extensive set of placement commands

Point, line and area placement
- Point to point digitizing
- Placement by circle and arc
- Oriented to related features
- Maintain coincidence
- Break at intersections
- Vector & Raster snaps

Precise location and size using precision key-in or construction aids such as:
- Delta X, Delta Y
- Perpendicular To
- Distance and Direction

Perform Undo and Redo
What is GeoMedia? – Visualization

- High fidelity visualization of features and queries within the GeoMedia environment to exact style or symbology specifications.
- Styles can be named, stored and shared within the enterprise.
- Point, line and area styles & patterns
- Complex and custom gap-dash sequencing
- Endcap and mid-line join control
- Translucency
- Attribute-based symbology
What is GeoMedia? – Query and Analysis

Analyze data and perform complex what-if analysis using GeoMedia’s query and pipe technology

- Buffer zone
- Analytical Merge, Aggregation
- Spatial Difference, Spatial Intersection, Spatial Query
- Functional attributes and expressions
- Union, Join
- Expressions & Functional Attributes
- Geocoding
What is GeoMedia? – Layout, Print & Plot

GeoMedia’s Layout Window provides the environment for map composition and printing

- Define map content
- Generate and compose legend and margin information
- Use Batch Plotting for bulk plotting jobs and map books
- Build reference grids and cartographic grids
- Import and export layout templates for standardized printed products
Workspace Manager feature of Oracle Database

- Only DBMS with transaction management built-in using “revision sets”
- Enables project collaboration
Workspace Manager Architecture

GeoMedia Transaction Manager

PL/SQL API

Data Mgmt.  WS Mgmt.  Privilege Mgmt.  Lock Mgmt.  Conflict Mgmt.  Metadata Views

WORKSPACE MANAGER

ORACLE RDBMS
What is GeoMedia?

- GeoMedia is an open extensible geospatial environment for:
  - Natively accessing and displaying in a single view, various data sources and formats
  - Capturing and editing geospatial data using an extensive set of placement and editing commands
  - Visualizing features and queries to exact style or symbology specifications
  - Analyzing data and performing complex, ad-hoc, what-if analysis
  - Performing map composition and printing
  - Exporting data to the most common or standard formats
What is GeoMedia? – Export and Publishing

GeoMedia Publishing Services

dgn
dxf
tif
shp
kml

Google Earth