BAM!

Instant Reality inside ArcGIS®

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Instant Reality
Taking Vector Cartography/GIS to Raster Visualizations and Real Inputs

• New ESRI Tools get REAL in 9.0
• Traditional and New Sources for Imagery & Other Geo-Data
• What it Means – Why it Matters
• Examples
Instant Reality
Inside ArcGIS

• What’s New
  – Tools:  Arc9.0 – Improved Imagery Handling & ArcGlobe
  – Data: Cheap and Seamless High Res Imagery
    Efficient Linear Collects & Production
  – Access: Open Standards Based WMS/WFS Repositories & More
    Commercial ArcIMS Services, Arc Web Services

• What’s the Same
  – Foundation Level Data Sets (but more consistent)
  – Enterprise GIS (but new tools & topology part of geodatabase)
  – Industry Specific Suppliers (but more choices, better data)
Instant Imagery

Traditional Sources:
- USGS – Landsat and DOQQ’s, Terraserver
- Satellite data – NASA, International & High Res
  • space imaging – deeper archive
  • digital globe – lower prices
  • Orbital Sciences (NEW! Just up and calibrating now)
- Engineering/Survey Firms
  • Now Using Digital Sensors for elevation and efficient linear collections

What’s New:
- Seamless, “Off the Shelf “ Datasets
  • eDOQQ – 266,000 images into One Manageable Image
  • EarthSat – 8500 Landsat 7 scenes combined to one Seamless Global Image.
  • Depth of High-Res Sat Providers International Archive – More Imagery to choose from.

- New Elevation Datasets
  • usa: NED (30 and 10m post, best available)
  • international: srtm - North and South America and Eurasia Released
  • coming: Intermap’s NextMapUSA USA - 1m accurate

- New Access to Geo-Data
  MetaData Efforts (geodata.gov) and Open Web Map Services(WMS & WFS)
Examples and Applications
Oxy Petroleum

Section lines and Source point Map

blue points are shots acquired with vibe trucks

red points acquired using dynamite shots.

blue points typically follow paths in which a vehicle, (i.e. vibe truck), has access and the red typically in inaccessible areas.

Without Photo Base Map, Interpretablity is Tough.

Photo was also used to show how closely oxy was able to acquire data to sensitive areas without disturbance.

Instant Reality inside ArcGIS
Examples and Applications
Oxy Petroleum

Photo Base Map for Cultural Layer Reference
Layers Sourced from BLM, WhiteStar, and Oxy.
Includes 3D Survey Outlines, roads, wells, fields, and other misc. features
No Image = No Ground Truth

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Instant Reality
What It Means

– Transformation in GIS
  • Realistic Environments

– Cheap & Available Basemaps
  • Allows for Systematic Feature Collection, Correction and Tighter Layer Co-Registration

– Mapping & GIS that Anyone Can Understand.
  • Faster Decisions, Executive Buy-In, Increased System Utility & Reach
More Examples and Applications
CalTrans DHIPP – Total Inventory Program

Example of Large Linear Base-mapping Job using Digital Sensor and new production methods

• 26,000 Linear KM
• 5 year refresh cycle cut to 6 months!
• Cost 1/5\textsuperscript{th} of previous job!

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Examples and Applications
DHIPP Use/Impact

Immediate Uptake and Strong Sustained Use

- Multi-Departmental Impact
- Went from a few hundred photo requests/uses a month to over 6000 images served/mo.
- Over 40,000 images served in 6mo
- Saved 4 million dollars and Shortened 5 year refresh cycle to 6mo!
Examples and Applications
DHIPP

Ability to Automatically and Elegantly GeoReference and Access Full Motion Video, Stills and Other MultiMedia Data

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Examples and Applications
DHIPP

Online-Intranet Deployment

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Thanks!

PUG Fun Fact

The Story of Pompey
The most famous pug in history
- Owned by William the Silent, 1571

“Pompey awakened his master during a surprise Spanish attack by scratching, crying, and leaping on his face, saving the Dutch camp, and forever altering the history of Europe.”

Moral of the Story: Learn from the PUG - when scratching & crying for more GIS Resources doesn’t work, don’t be afraid to get in someone’s face to get your department what it needs to save the day.