

> Presented to: Los Angeles Region Imagery Acquisition Consortium

## LAR-IAC Status Meeting Project Status Overview




February 22, 2007

LOS ANGELES REGION



imagery acquisition consortium

> Progress Meeting Infotech  
Creating Business Impact  
The Geospatial Experts

**Purpose of Meeting:**

- Project Overview
- Expectations VS Compliance to Specification
  - Digital Orthophotos Examples Area #1
  - Digital Orthophotos Examples Area #2
  - Contours Specifications
  - Contours Examples Area #1
  - Contours Examples Area #2
- Questions and Answers Session

>

## Project Overview

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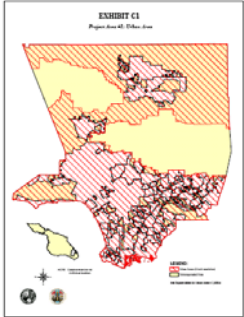
imagery acquisition consortium

> Project Summary Infotech  
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**Summary of Project:**

**Area #1 (Urban Area)**

- Project area covers approx 2,900 sq. miles
- Color & CIR Digital Aerial Imagery Acquisition
- 4" Color & CIR Digital Ortho Imagery
- LiDAR Acquisition
- Digital Terrain Model/Digital Surface Model
- 2' Contours



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**Summary of Project:**  
**Area #2 (National Forest)**

- Project area covers approx 1,050 sq. miles
- Color (& CIR) Digital Aerial Imagery Acquisition
- Color (& CIR) Digital Ortho Imagery
- Digital Terrain Model/Digital Elevation Model
- 4' Contours (5' contour accuracy)

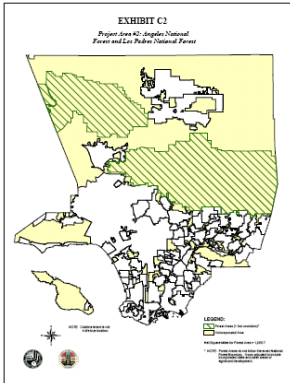


EXHIBIT C2  
Project Area #2: Angeles National Forest and Los Padres National Forest

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**Summary of Project:**  
**Area #3 (Catalina Island)**

- Project area covers approx 75 sq. miles
- Color (& CIR) Digital Aerial Imagery Acquisition
- Color (& CIR) Digital Ortho Imagery
- LIDAR Acquisition
- Digital Terrain Model/Digital Surface Model
- 2' Contours

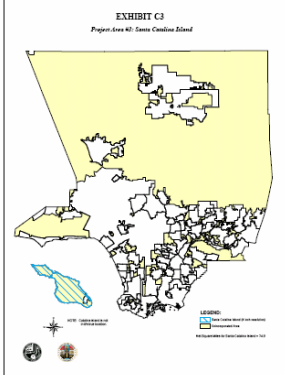


EXHIBIT C3  
Project Area #3: Santa Catalina Island

**Project Delivery Formats** Infotech  
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Delivery Product	Format	Format	Format
Orthophoto	GeoTIFF	JPEG 2000	
Digital Surface Model	ASCII – points	ArcGIS shape file – points	Microstation (dgn) – points, lines
Digital Terrain Model	ArcGIS shape file – points, 3D lines	AutoCAD (dwg) – points, lines	Microstation (dgn) – points, lines
Digital Elevation Model	ArcGIS raster	AutoCAD (dwg)	
Contours	ArcGIS shape file	AutoCAD (dwg)	


1. Digital Surface Model- contains the masspoints (from LIDAR or photogrammetric Compilation)
2. Digital Terrain Model represents the bare earth terrain including the breaklines and mass points
3. Digital Elevation Model represents the bare earth in grid format

**Expectations vs. Compliance To Specifications**

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## Digital Orthophotos Specifications




### > Specifications:

- **GeoTIFF format**
- **Projection** NAD83 SPCS California Zone V
- **Vertical Datum** NAVD88
- **Tonal Quality:**
  - <2 percent of values at 0 or 255.
- **Image Appearance:**
  - the differences in pixel values on either side of mosaic seam-line should generally not exceed 70 (30 preferred). Greater differences may be allowed if the correction will cause significant degradation of the image content on either side
- **Radiometry:**
  - Radiometry should be consistent through out the imagery.
  - Sample orthophotos were send to the consultant to approve the radiometric quality before the comment of the production phase

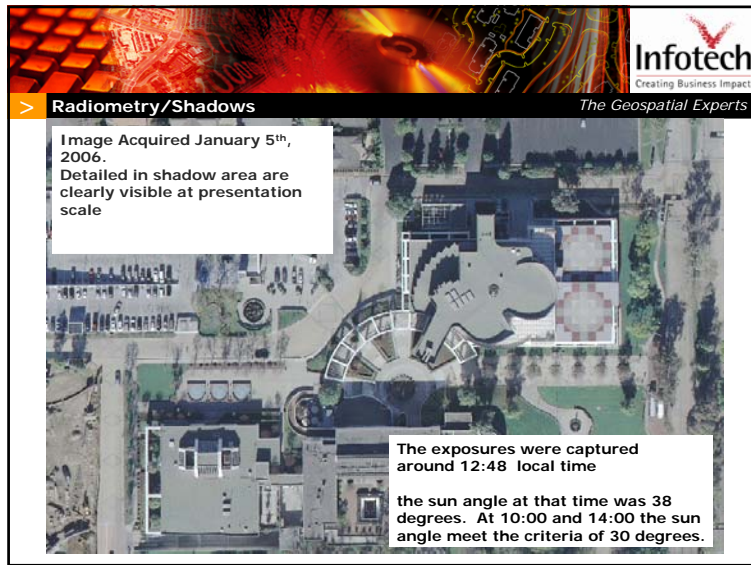
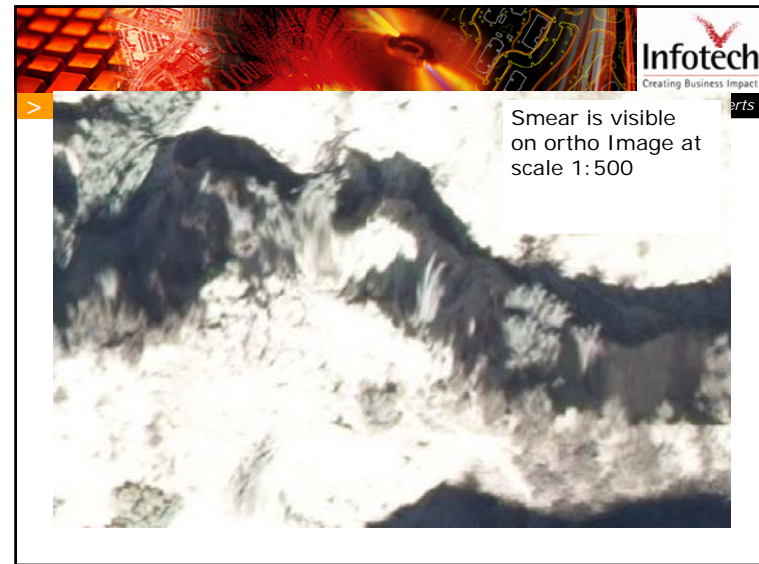
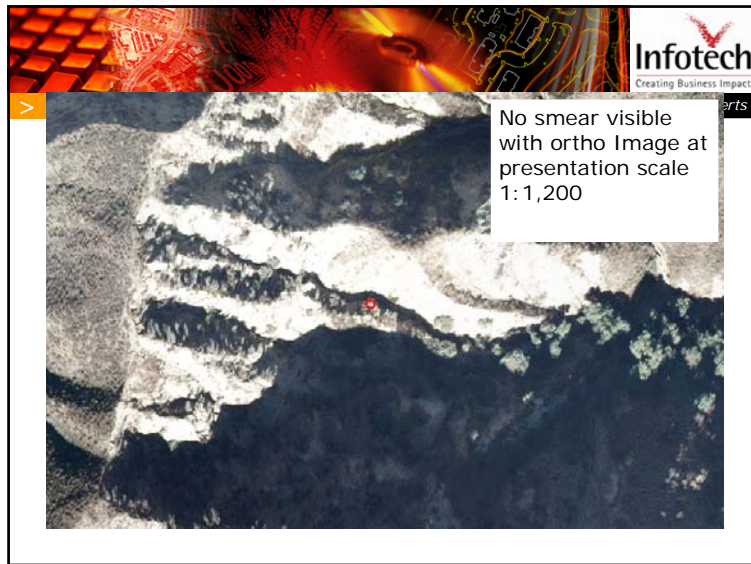


### > Specification: Continued

- **Smears**
  - Where visible at presentation scale. Corrected by adjusting DTM.
- **Wavy features**
  - distinct ground features should not deviate from apparent path by more than 3 feet measured perpendicular to the features within 100 foot distance measured along the feature length.
- **Mosaic lines**
  - No Mosaic lines run through buildings. No Mosaic lines run through above ground transportation structures carrying automobiles or trains unless unavoidable.
- **Building Leans**
  - The maximum displacement of a 10 story building at the edge on a model is be 16 feet



## Digital Orthophoto Examples Area #1





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> **Completeness Check**

Full shore tiles were generated

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> **Radiometric Balancing**

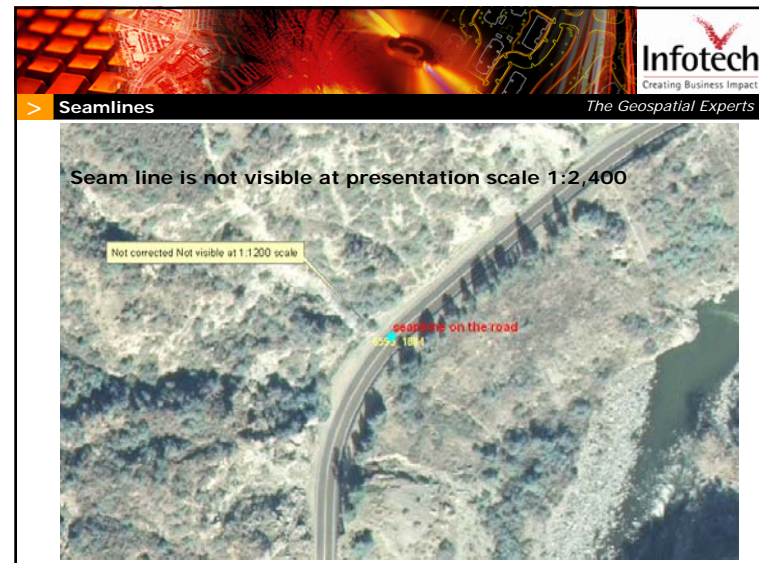
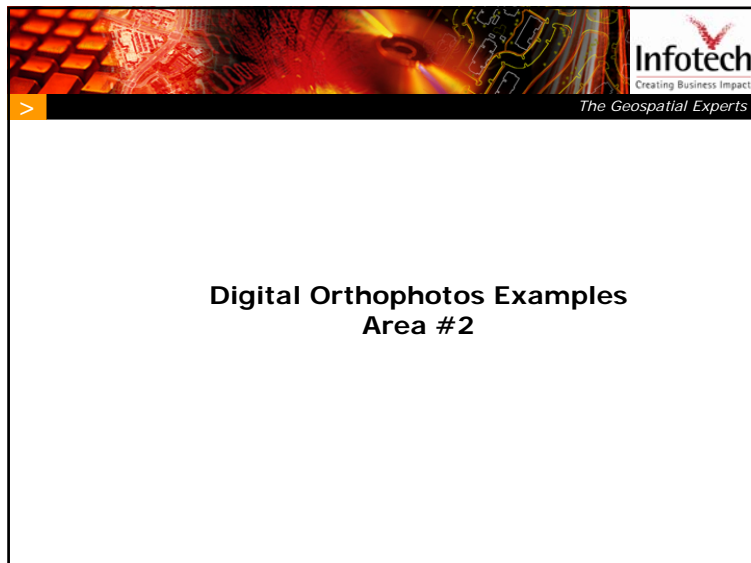
Tiles are consistent in radiometric quality across Tile edges.

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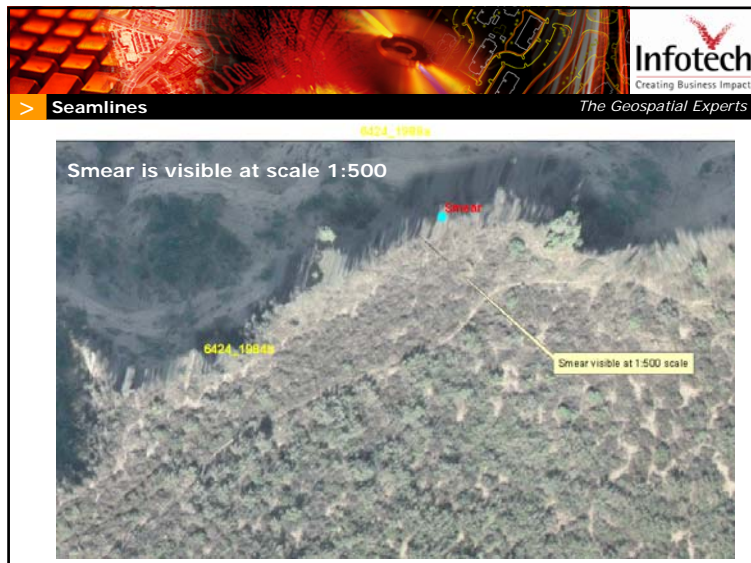
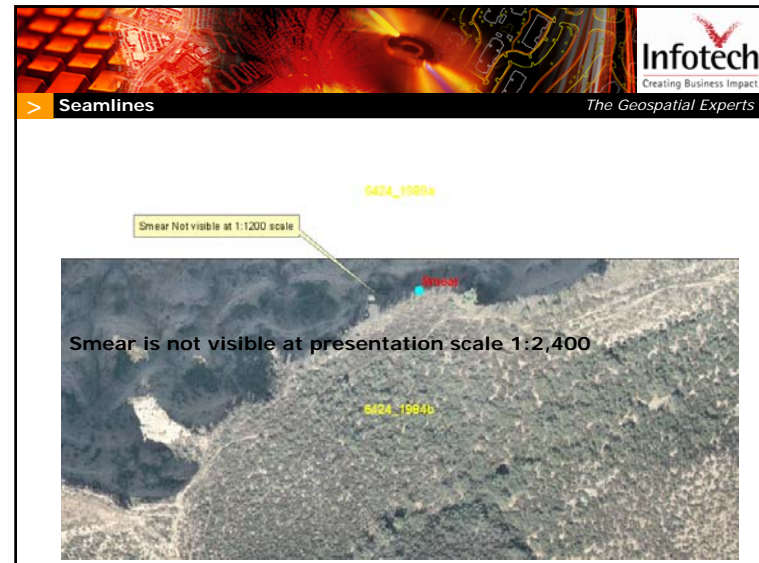
> **Color Orthophoto vs. Color IR**

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> **Mosaic lines**







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> **Possible Image Artifacts**

Red – Green Streak is visible at scale 1:250

Visible at scale 1:250

Red green streak  
6450 2021

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> **Contours Specifications**

- Contours shall portray the shape of the terrain within specified accuracy standards
- Every fifth contour shall be shown as an index contour. All index contours are to be clearly distinguishable and labeled with their elevations given in full feet.
- Any contour line on the shore with elevation less than 10 has different attribute than other contours lines.

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> **Contours Specifications**

**Contours 2-foot Interval Project Area 1 & #3 Process**

- Contours are generated from LIDAR bare earth DEM points in combination with break lines which are collected by photogrammetric methods.
- DEM data are generated at 20 ft grid mesh
- Breaklines are merged with the DEM to enhance the quality
- Contour lines are generated. The result is more smoothed contours that are aesthetically pleasing.
- For contours passing the Roads, these contours are further smoothed and invalid saddles are removed from roads.

**Contours 4- foot Interval Project Area #2**

- Contours were generated from DTM collect by photogrammetric process
- DTM were generated by collecting points and breaklines

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> **Sample 2ft contours from Area #1**



