



Applying Mobile Mapping System (MMS) in GIS Applications

Michael Lau, Assistant GIS Solution Manager



MMS Overview

- A technology to facilitate acquisition of 360° and high resolution Imagery based spatial data from a moving vehicle.
- Every pixel is geo-referenced with three-dimensional coordinates (X, Y, Z).

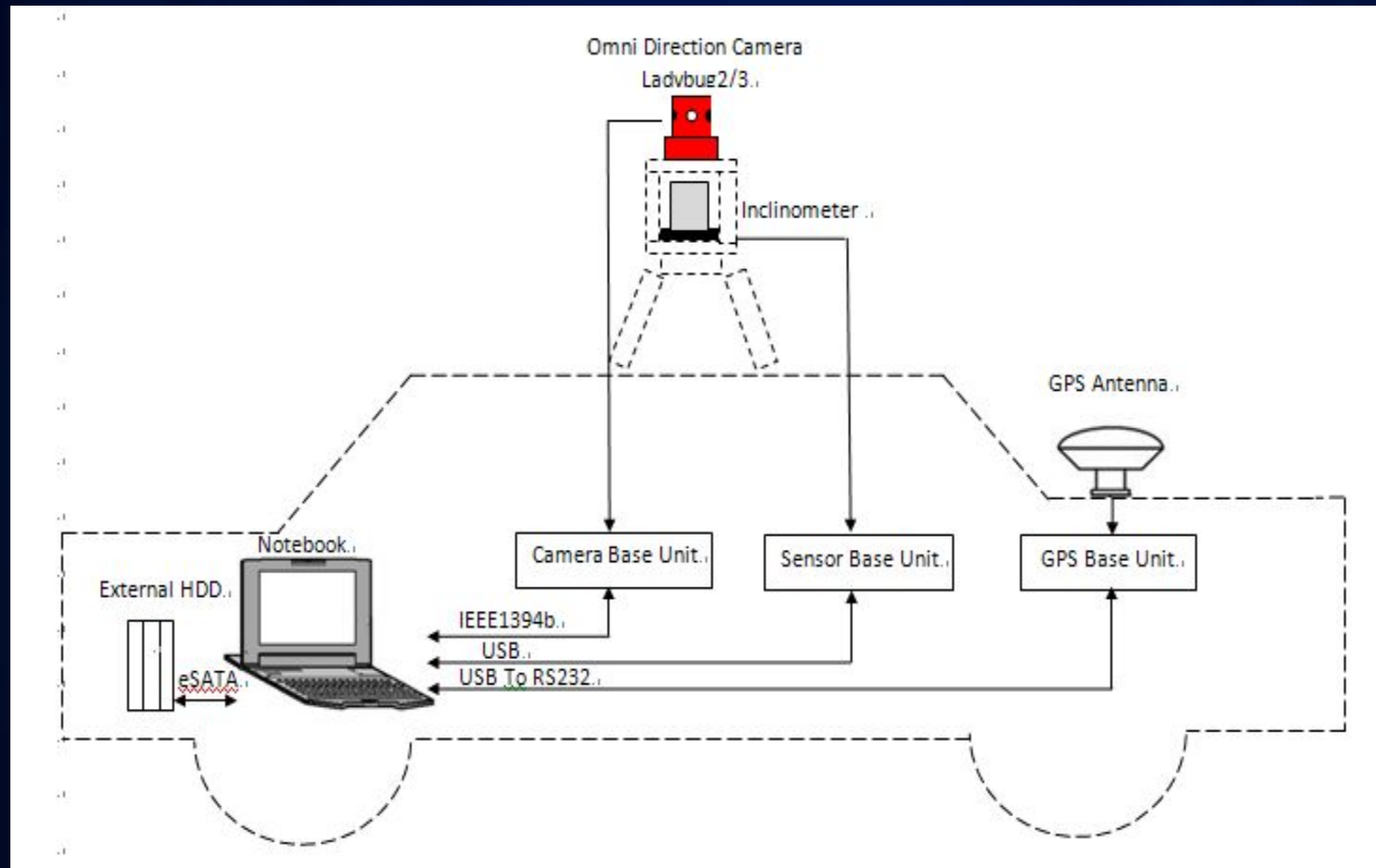


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Mobile Mapping Unit



Components for the Field Shooting

Different Vehicle Options



Helicopter



Boat



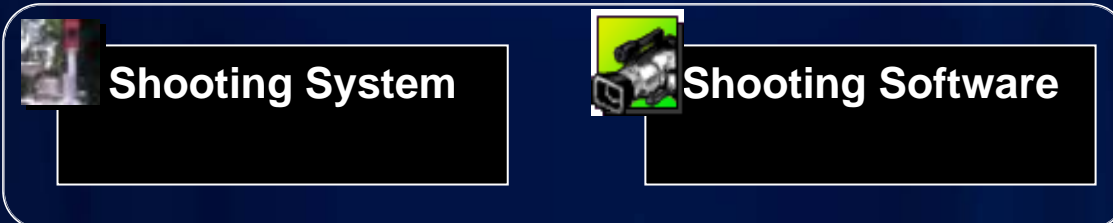
Scooter



Human

System Flow

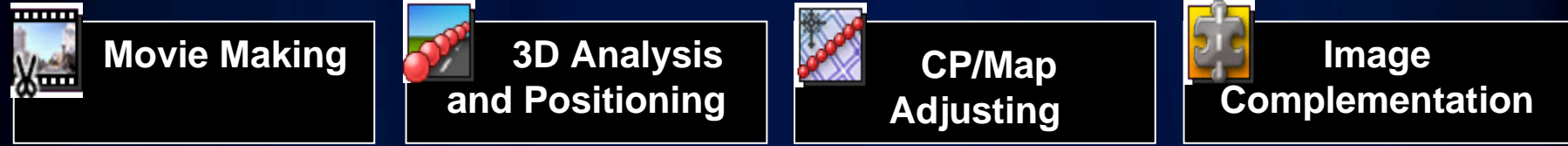
- Field Shooting



- Data Processing



MMS Tools

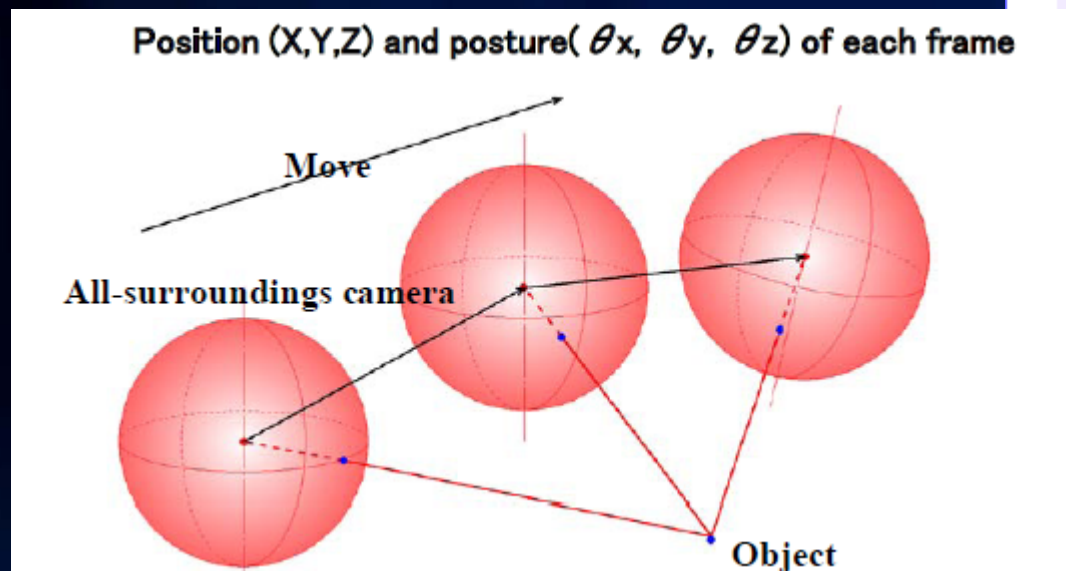
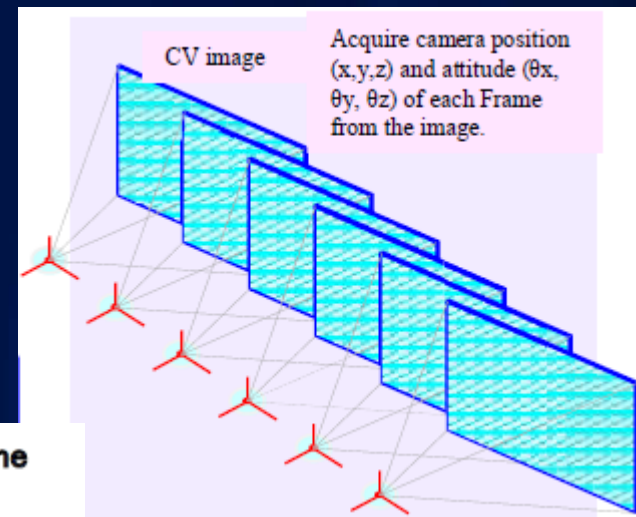


- Application

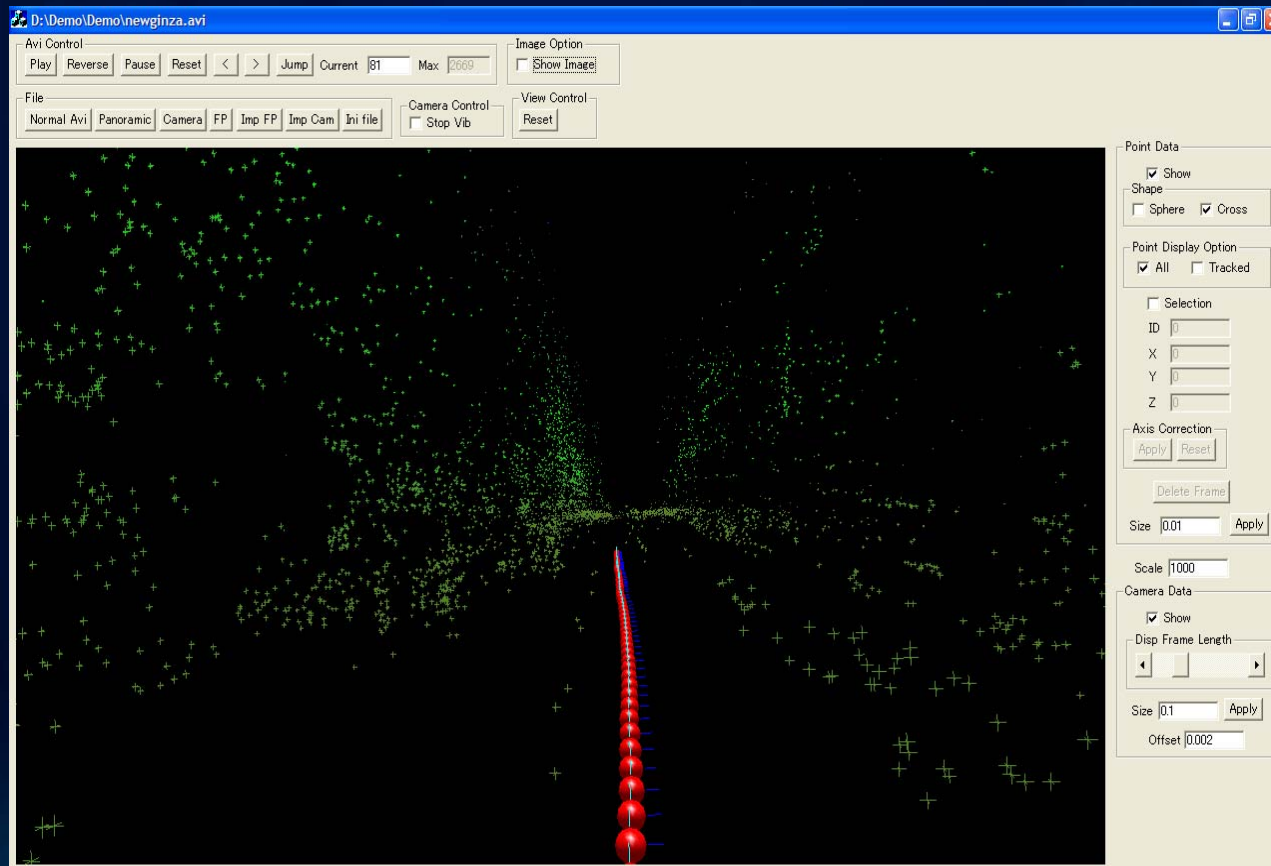


Camera Vector Technology

- Technology of acquisition of the camera position from the automatic, highly accurate all-surrounding video image.
- Apply mathematical analysis, based on the captured Ground Control Points, to derive the camera positions and the three-dimensional posture of each image (CV value).

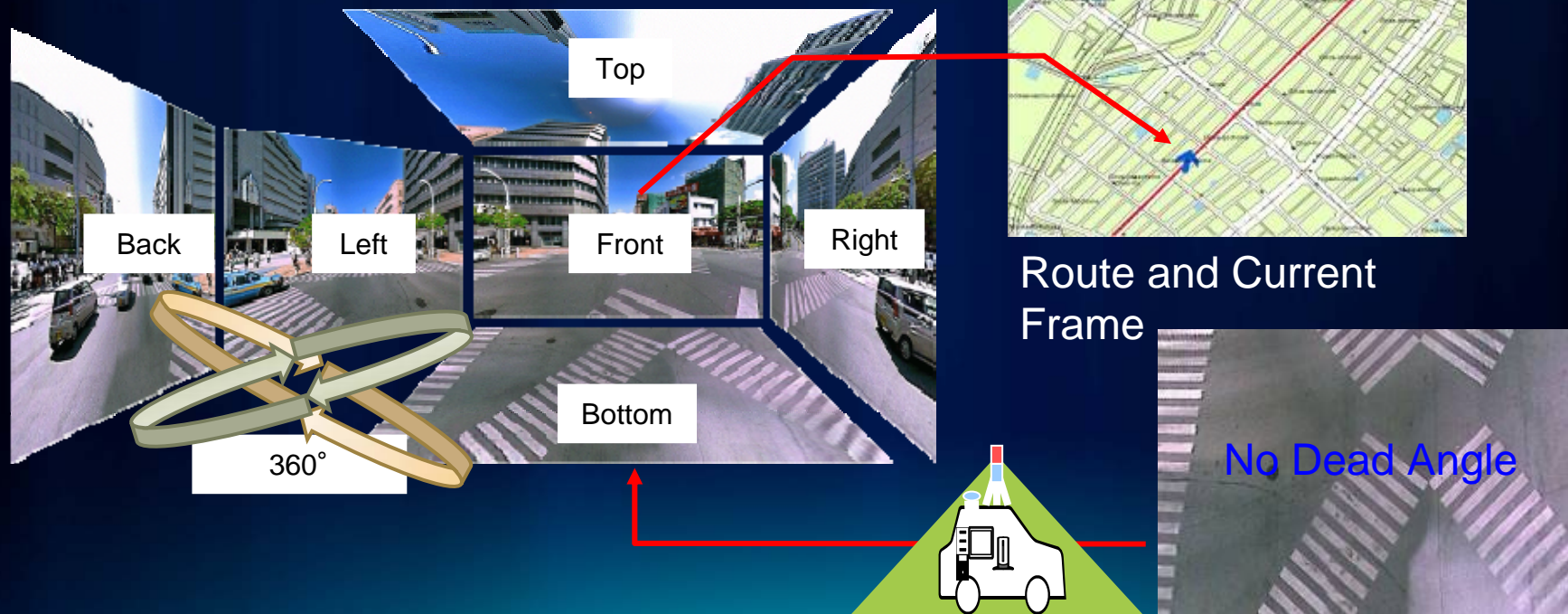


Camera Vector Technology



360 degree Geo-referenced Video

- 1) All Surrounding Complete Spherical Image
- 2) No Dead Angle
- 3) High density movie (Speed: 40km/h, FPS: 15-20 frames per second)
- 4) High resolution (2800x1400 (4mega) pixel)





MMS Applications

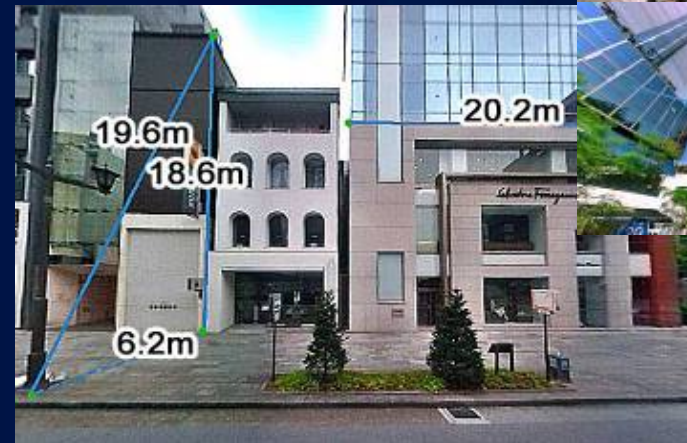


3D Measurements

- 1) One Click Calculation of 3D Coordinate
- 2) Drawing the 3D Geometry (point, poly-line, polygon)
- 3) 3D Measurement and Area calculation
- 4) Intuitive 3D Grid Interface



3D Coordinate calculation



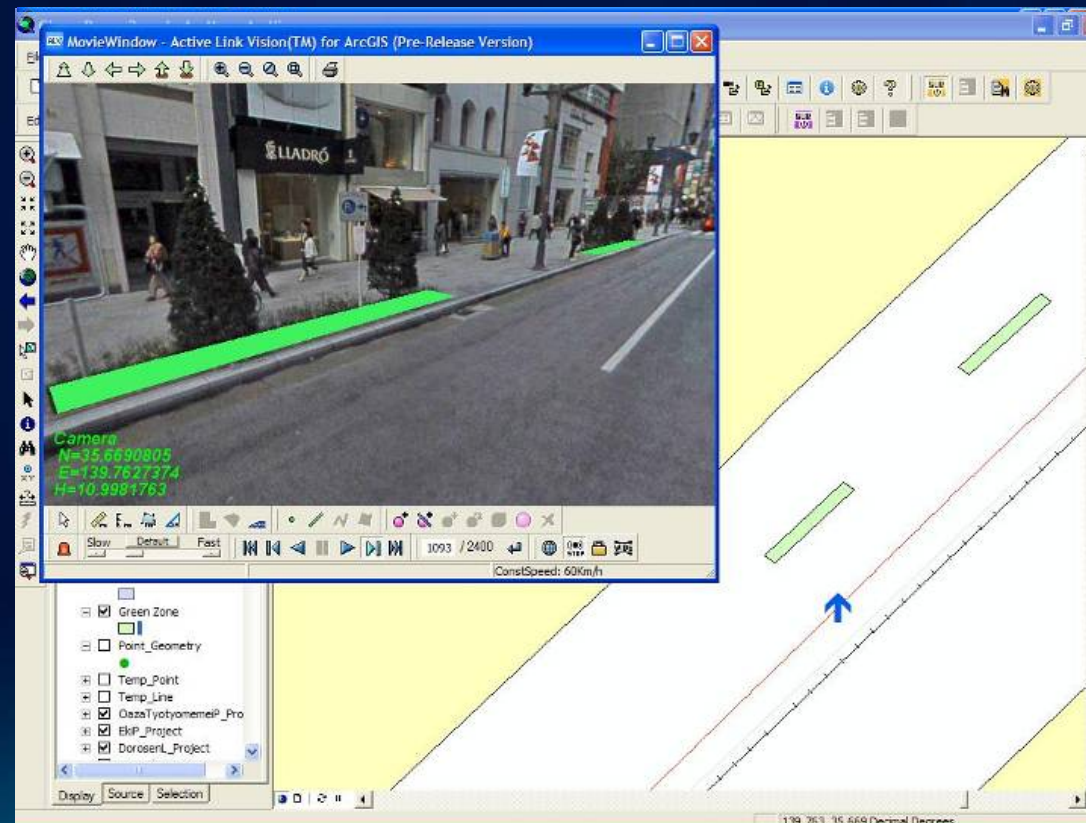
Measurement



Grid Interface

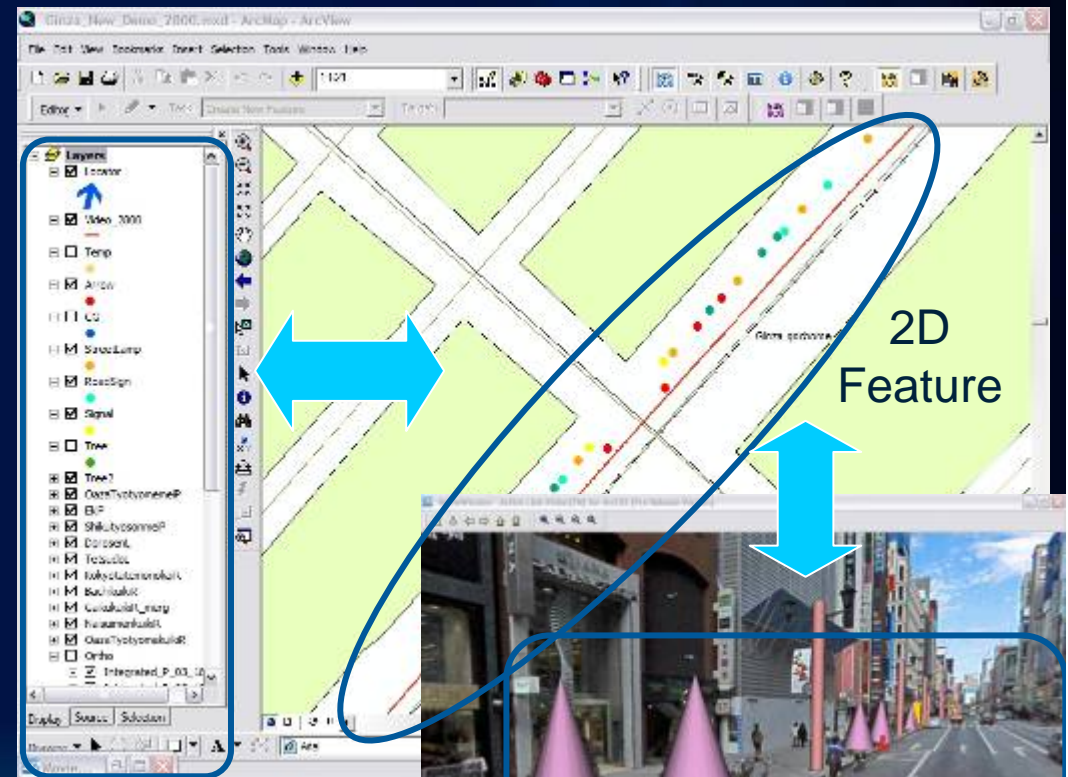
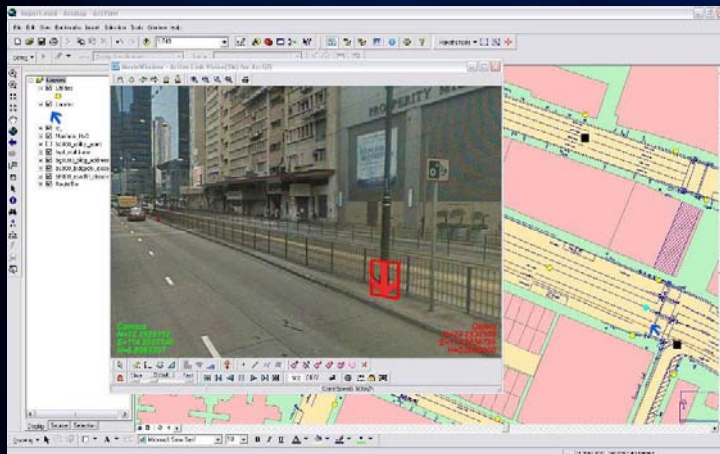
Spatial Database Creation

- 1) Treating 3D Geo-referenced Video Imagery as a base
- 2) Digitize inside the Video and Reflect on the Map
- 3) Support for Point , Line and Polygon Geometry



Integration with GIS

- 1) Import Vector data inside the Video and Visualize the data in 3D World
- 2) Interact between 2D map and 3D Video

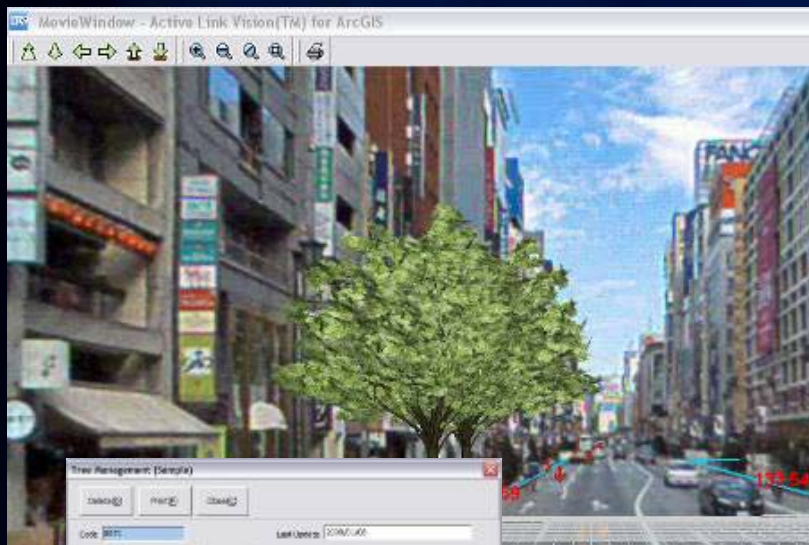


Layer

3D Feature

Asset Management

- 1) Trees Management
- 2) Road Defects Management
- 3) More...



Tree Management (Details)

Code: 0011 Last User: COM/UCG

Inspector: [Tree Data] [Main] [Details]

Location: [Select for Presentation] Site: [Details]

Site No: 010 [Open] In service: [OFF]

Type: [Exploit] Owner:

Species: [VPA 100] Size: [200000]

Height: [10 - 15] Light: [Sun] [OFF]

Plant Species: [VPA 100] Division: [VPA 100]

Trade: [N/A] Recommendation:

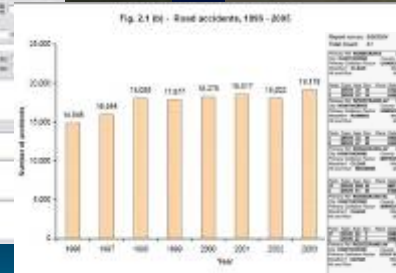
Age Class: [Young] Plant Location: [COM/UCG]

Name:

Name	Description	Dep



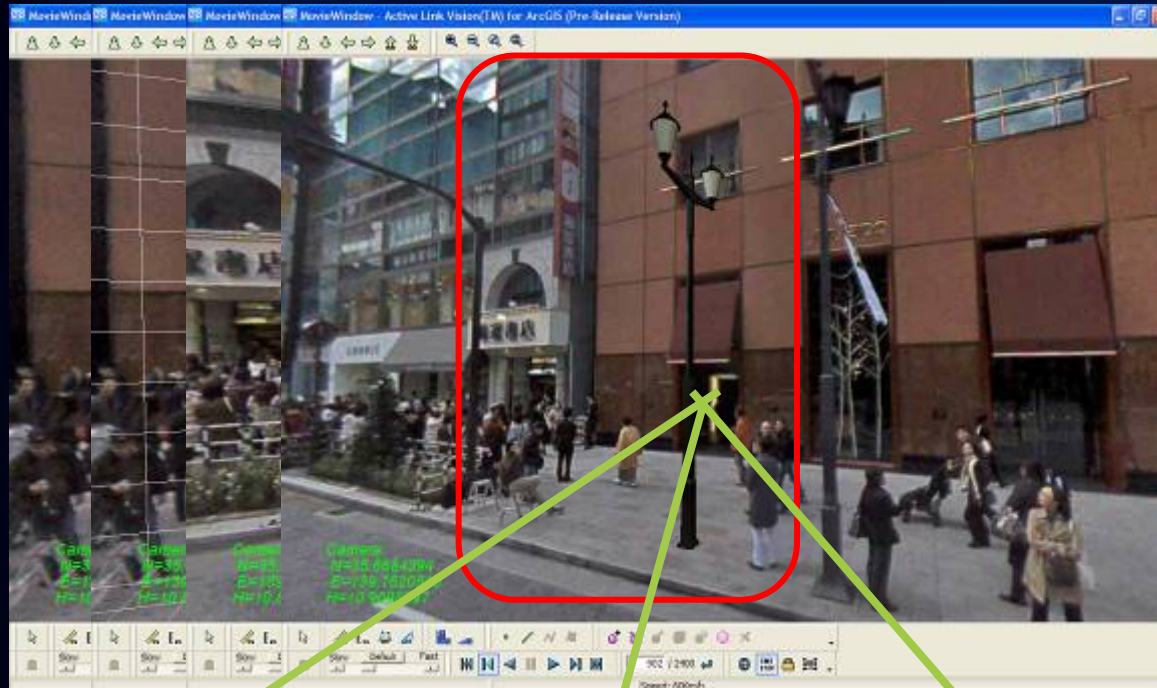
Code	Name	Value	Unit
0011	0011	100	m
0012	0012	100	m
0013	0013	100	m
0014	0014	100	m
0015	0015	100	m
0016	0016	100	m
0017	0017	100	m
0018	0018	100	m
0019	0019	100	m
0020	0020	100	m



Report on Road Accidents

Year	Number of Accidents
1995	16,368
1996	16,384
1997	16,028
1998	15,871
1999	16,276
2000	16,017
2001	16,022
2002	16,176

Simulation and Planning



Pan



Rotate



Scale



MMS Demonstrations



