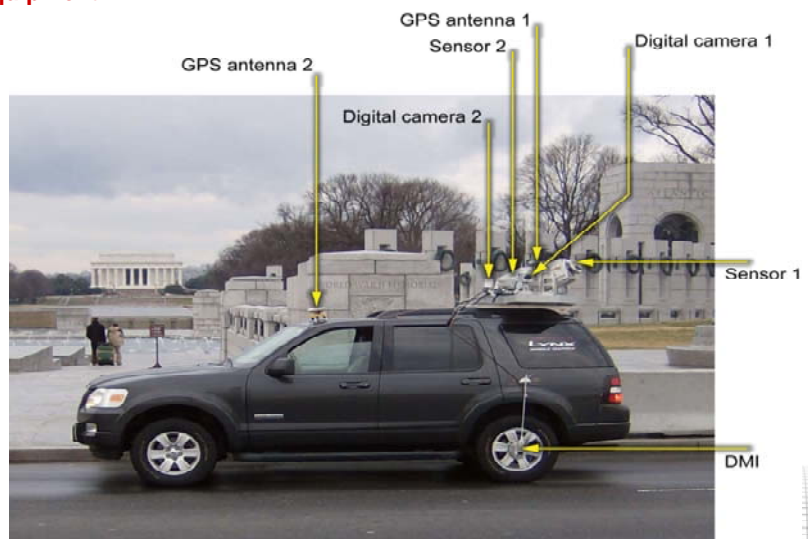
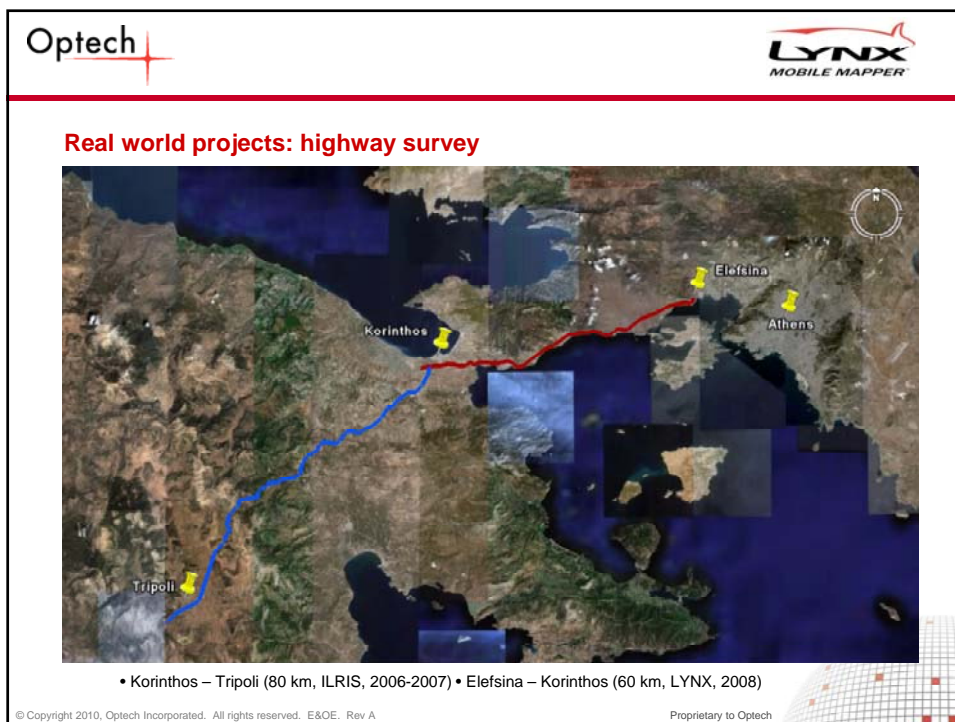
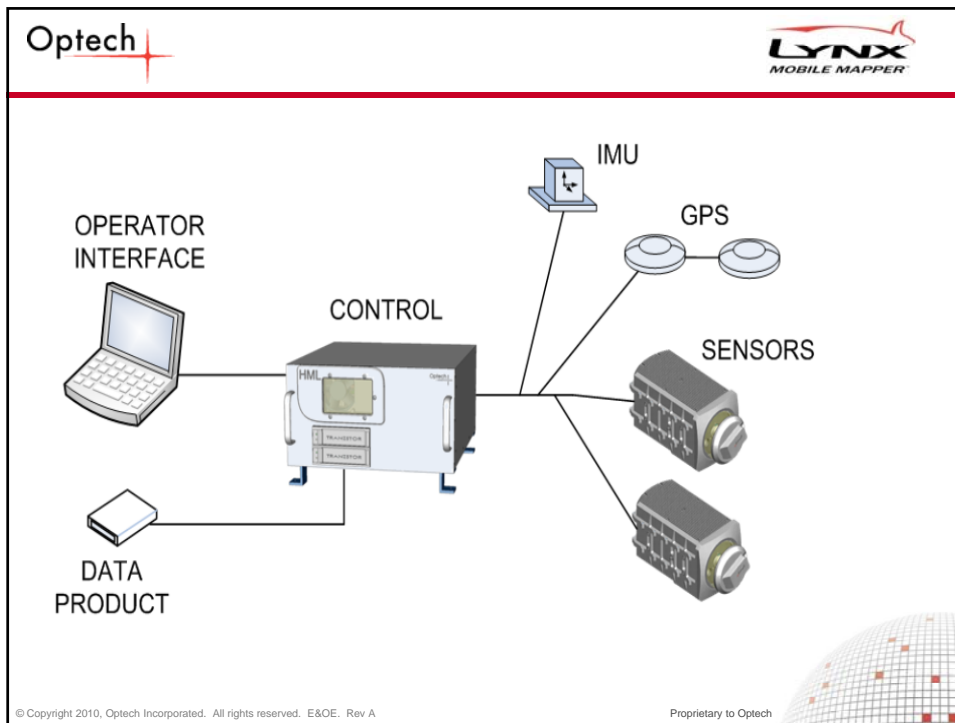




Lynx equipment





Real world projects: highway survey

- Existing highways: dual carriageway, 2-3 lanes & shoulder



© Copyright 2010, Optech Incorporated. All rights reserved. E&OE. Rev A

Proprietary to Optech

Real world projects: highway survey

- Detail "as built" survey of all highway features (pavement, structures, slopes, signage, poles, etc.)
- Efficient archiving of "as built" situation for future reference
- Positional accuracy: 2-3 cm
- Elevation accuracy: 1-2 cm
- 3D model (TIN) for highway reconstruction design
- Background survey maps (scale 1:500)
- No significant traffic closure or delay
- Efficient safety plan
- Permits from local traffic authorities



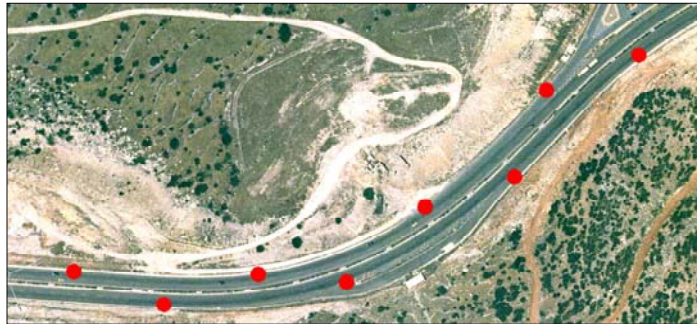
© Copyright 2010, Optech Incorporated. All rights reserved. E&OE. Rev A

Proprietary to Optech

Real world projects: highway survey

Static laser scanning

- Optech ILRIS mounted on vehicle moving or positioned in shoulder lane
- Scanning from both sides of highway
- Distance between scanning positions 50-80m
- 1100 total scanning stations, 120 working days for 80 km of highway



© Copyright 2010, Optech Incorporated. All rights reserved. E&OE. Rev A

Proprietary to Optech

Real world projects: highway survey

Mobile laser scanning (SINECO)

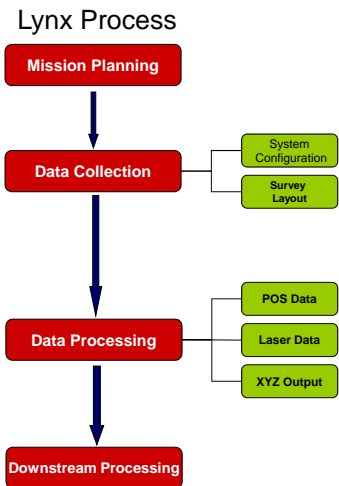
- Optech Lynx Mobile Mapper mounted on vehicle travelling 50 km/h on shoulder and left lane
- 2 passes for each carriageway for better data quality
- 240 km total scanning distance, 1 working day for 60 km of highway



© Copyright 2010, Optech Incorporated. All rights reserved. E&OE. Rev A

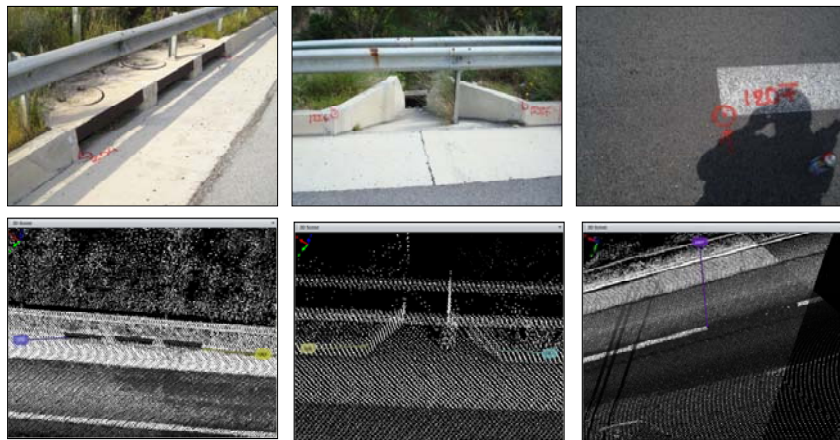
Proprietary to Optech

Real world projects: highway survey



Real world projects: highway survey

- Base GPS station support (7 base stations on known points)
- Measurement of positional Ground Control Points (natural targets identifiable in point cloud)



Real world projects: highway survey

- SBET creation and GPS base station correction

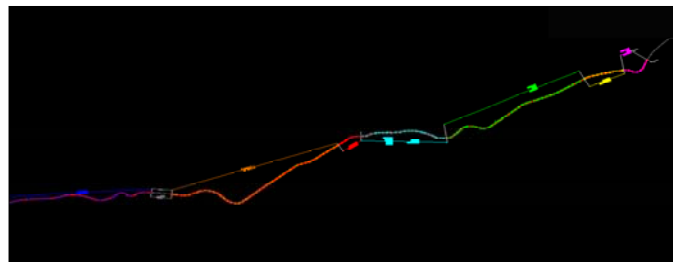


© Copyright 2010, Optech Incorporated. All rights reserved. E&OE. Rev A

Proprietary to Optech

Real world projects: highway survey

- SBET creation and GPS base station correction



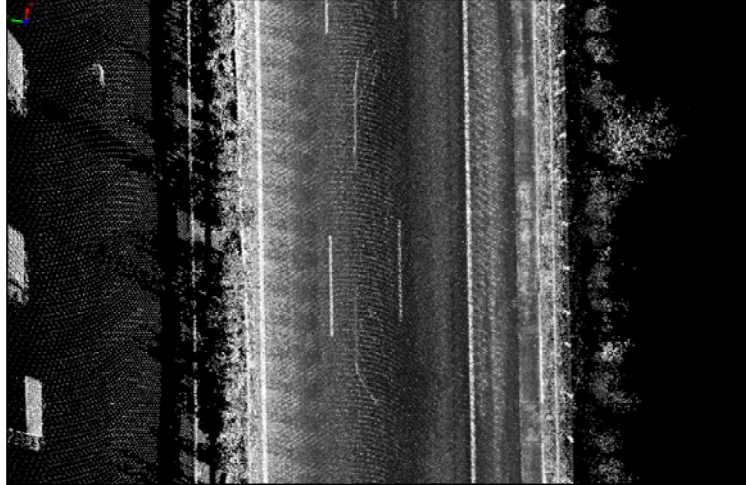
Base Station	X	Y	Z
T2	716397,438	4211970,201	82,493
T5	706381,286	4207057,081	20,377
T7	698999,794	4205883,704	74,133
T9	693001,432	4204125,31	27,595
T10	689981,482	4202372,422	26,116
T13	680101,384	4199350,249	11,519
T16	670916,888	4199036,617	60,122

© Copyright 2010, Optech Incorporated. All rights reserved. E&OE. Rev A

Proprietary to Optech

Real world projects: highway survey

- Output

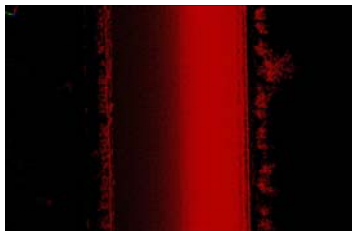


© Copyright 2010, Optech Incorporated. All rights reserved. E&OE. Rev A

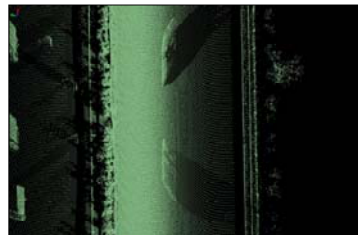
Proprietary to Optech

Real world projects: highway survey

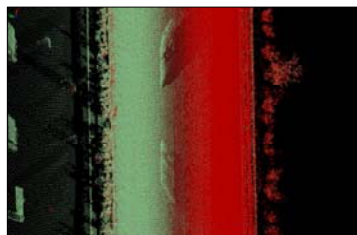
- Output



Shoulder Lane



Left Lane



Left and Shoulder Lane

© Copyright 2010, Optech Incorporated. All rights reserved. E&OE. Rev A

Proprietary to Optech

Real world projects: highway survey

- Output



Point Cloud



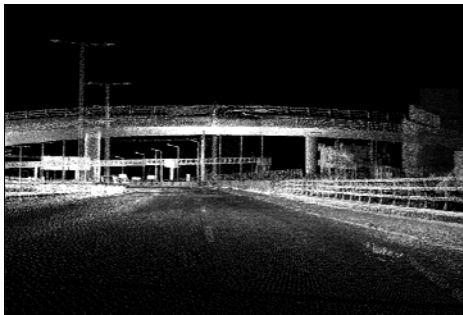
Photo

© Copyright 2010, Optech Incorporated. All rights reserved. E&OE. Rev A

Proprietary to Optech

Real world projects: highway survey

- Output



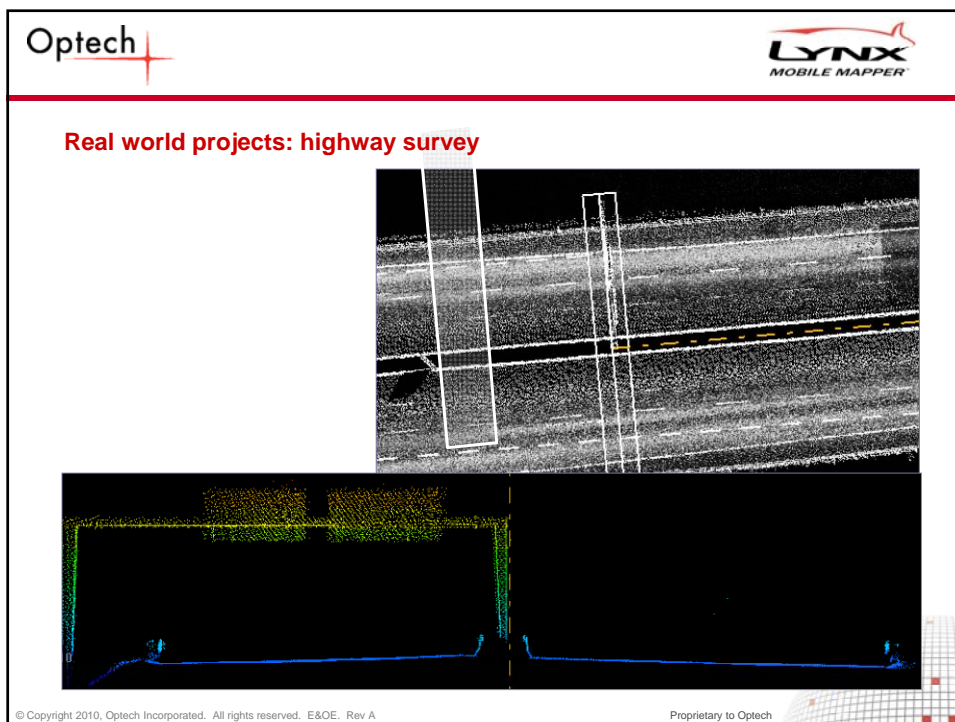
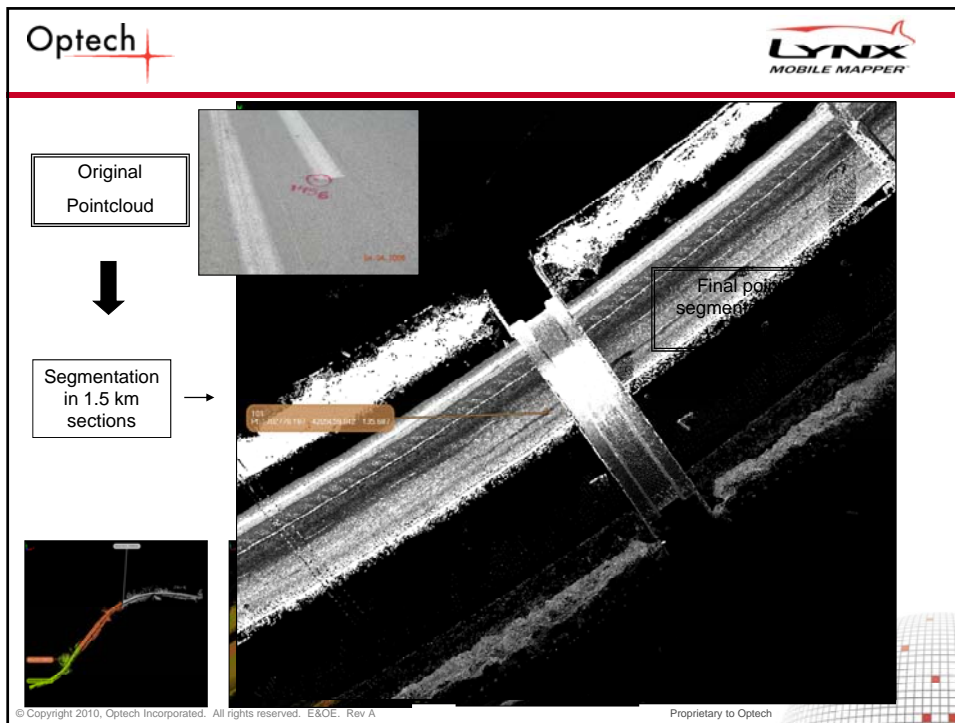
Point Cloud



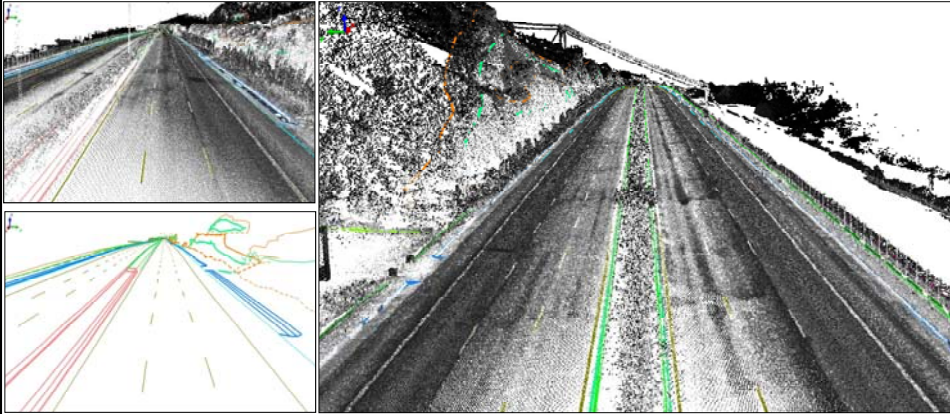
Photo

© Copyright 2010, Optech Incorporated. All rights reserved. E&OE. Rev A

Proprietary to Optech

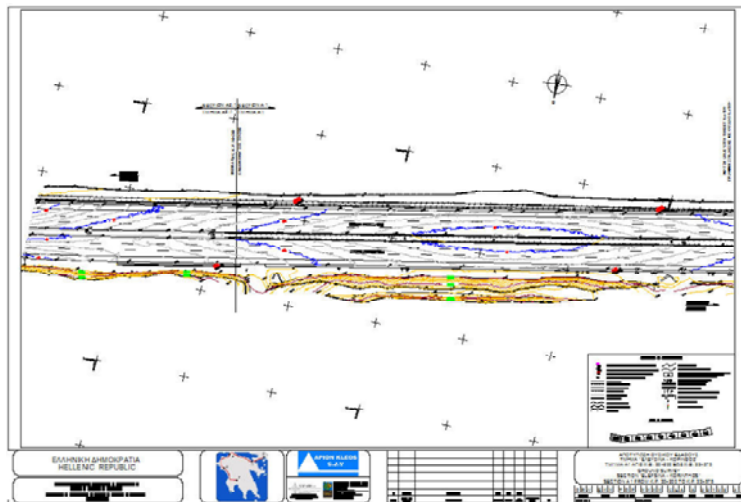


Real world projects: highway survey



Point Cloud / 3D Features (Lynx Mobile Mapper survey)

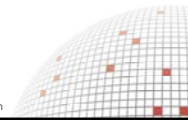
Real world projects: highway survey



Background Survey Map (scale 1:500)

Summary

- GPS is a critical factor in mobile terrestrial mapping
- Proper set-up and monitoring of GPS improves data quality
- Careful route planning is important—import background images, check all equipment, check weather
- Use best driving practices to minimize GPS signal outage
- Always be aware of GPS signal status—monitor POS LV
- Safe, fast and efficient data collection compared to static methods



Thank You
Daina Morgan
Lynx Product Manager
www.optech.ca

