

Rapid 3D Mapping

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Agenda

- Background
- Performance
- 3D Rappid Mapping - Saab
- Applications

Based on World Leading Competence

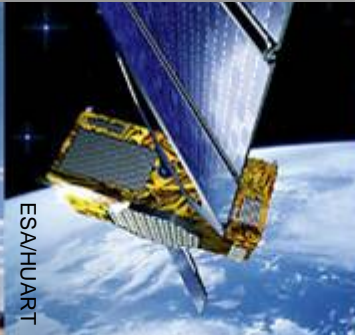


Navigation

Image Processing

Information Technology

System Integration



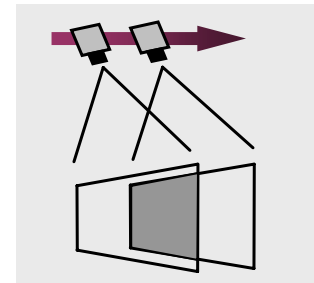
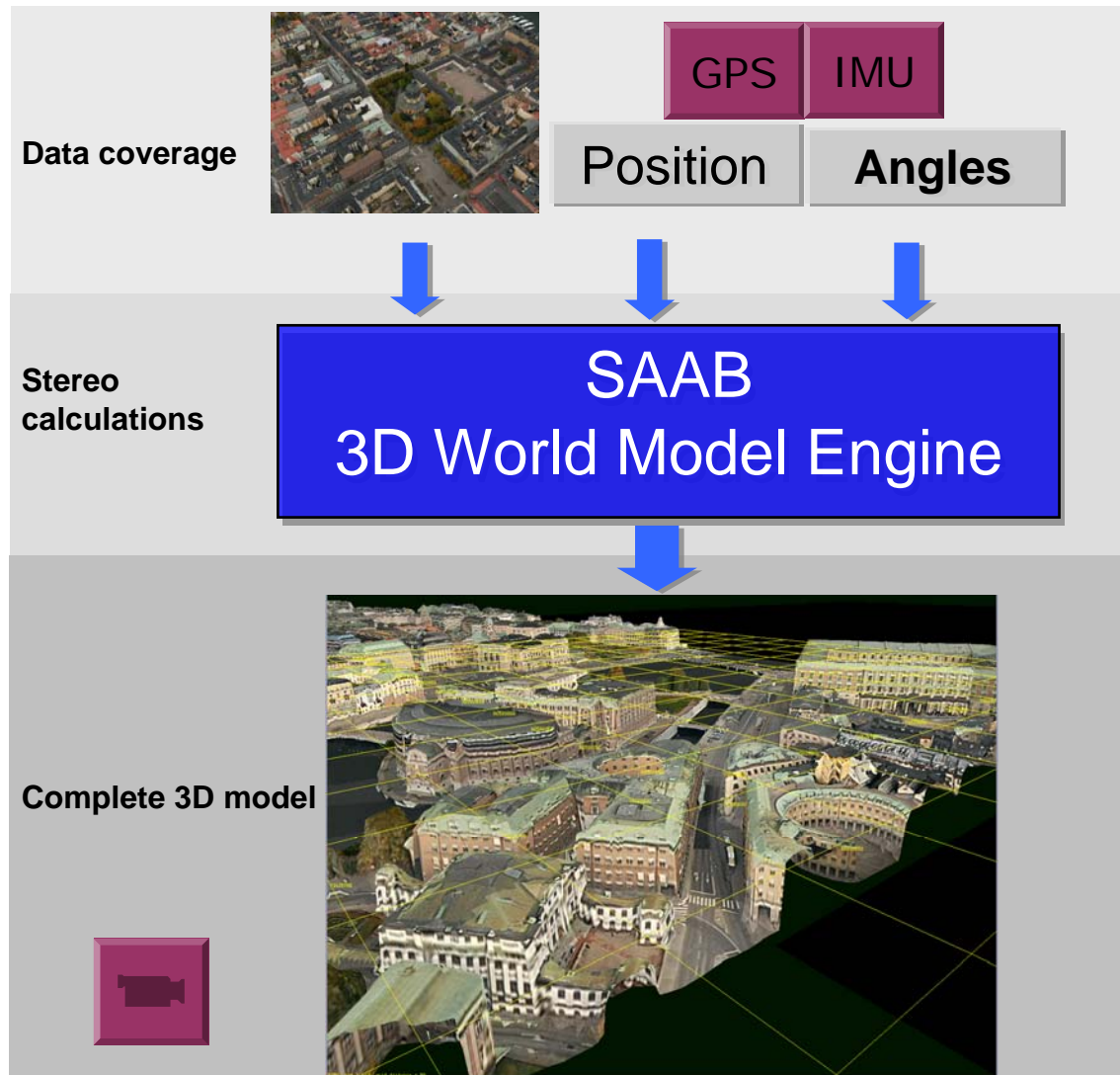
ESAHUART



Synergies - Navdemo



Functional flow - 3D Mapping



Output from Rapid 3D Mapping

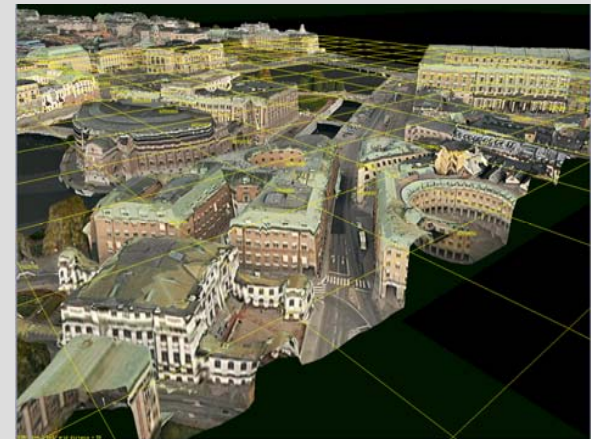
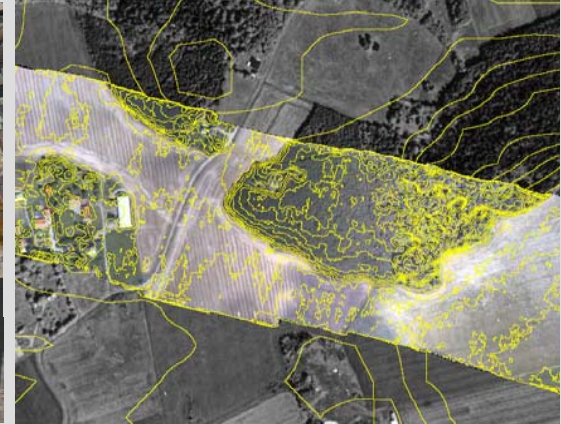
3D model



Measurable orthoimage



Height contours



Georeferenced and measurable

3D model with lat/long grid

Performance examples

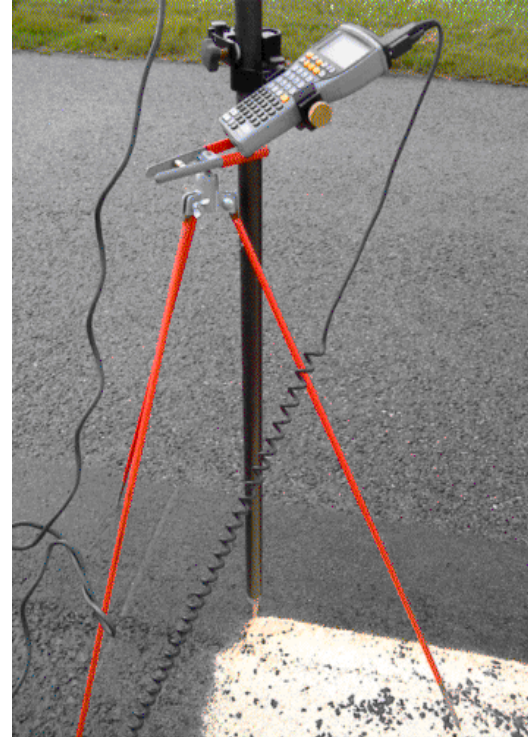
Air Carrier	Speed	Height	Resolution*	Width	Area/h
Airplane MU2:	200 km/h	500 m	10 cm	500m	100 km ²
	360 km/h	2000m	0,5 m	2000m	720 km ²
Helicopter:	20 km/h	50 m	1 cm	50 m	1 km ²
	100 km/h	200 m	4 cm	200	20 km ²

Other Carriers: UAVs, Ground Vehicles

Turn around time, depending on resolution maximum 5 times the flight time, i.e.

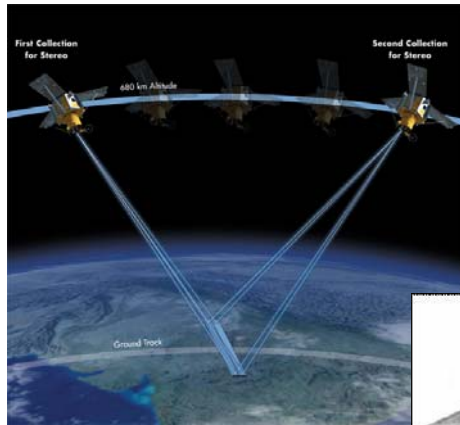
the data model is ready to use 5 hours after a 1 hour mission

Accuracy



1-sigma difference of 0.3m using 36 points

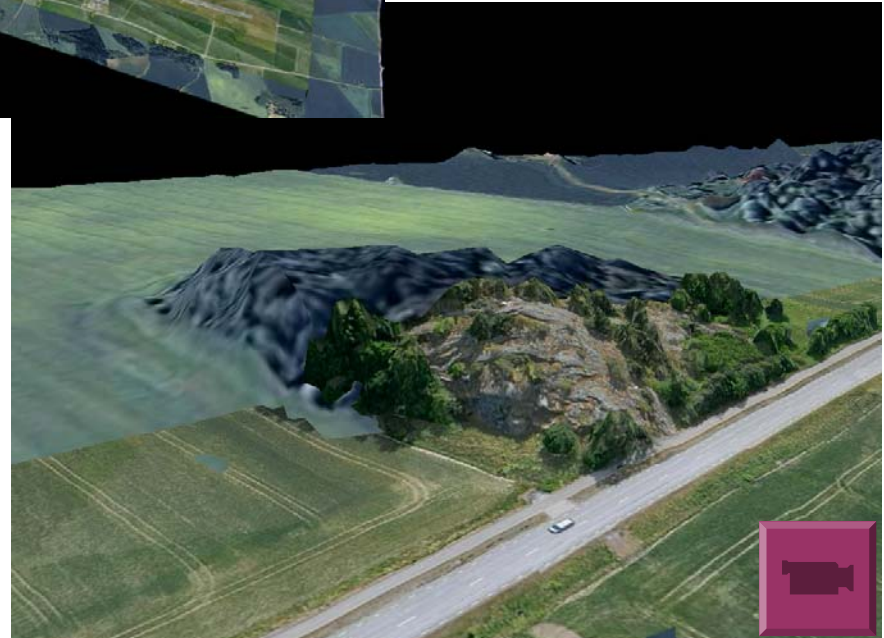
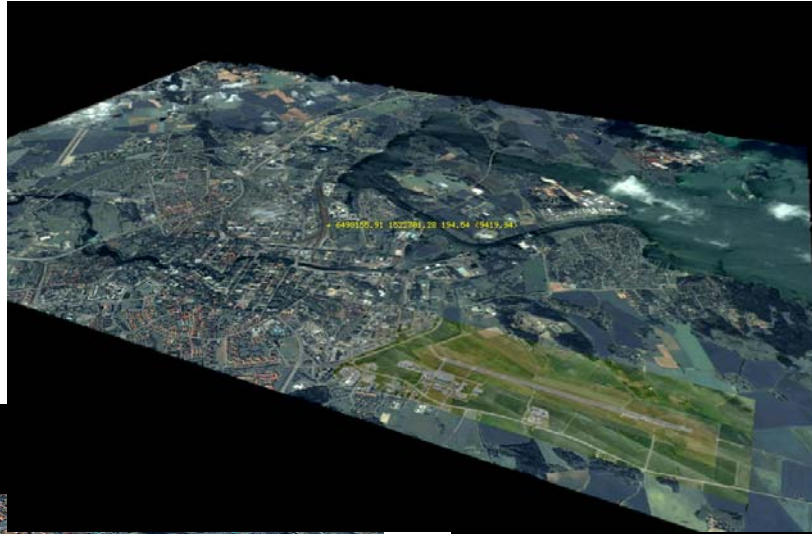
Applications



3D from Satellite images (Ikonos-2) (Colours added from lower resolution cameras)



Combination of Satellite and airborne data (1 m) vs (1 dm)



Aerial 3D Mapping

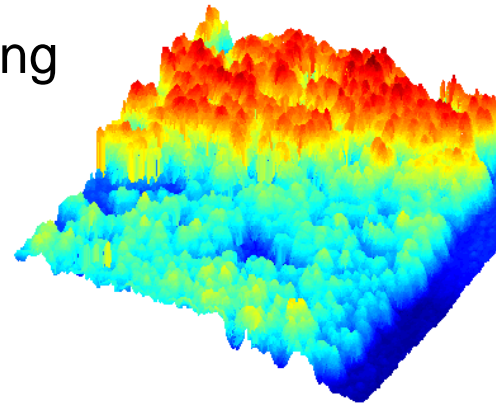
➤ Urban Mapping

- Cutting edge image processing promotes rapid urban modelling and mapping



➤ Power Line Corridor Mapping

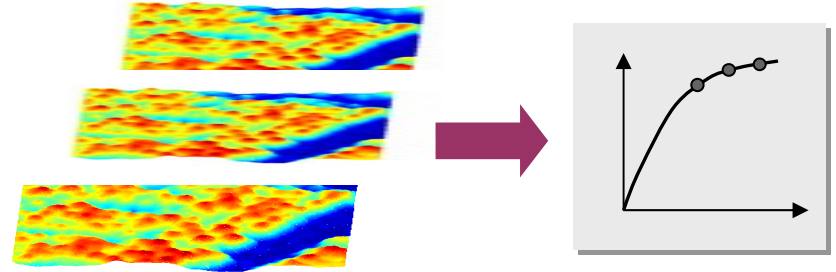
- High resolution height map promotes detailed analysis



Aerial 3D Mapping

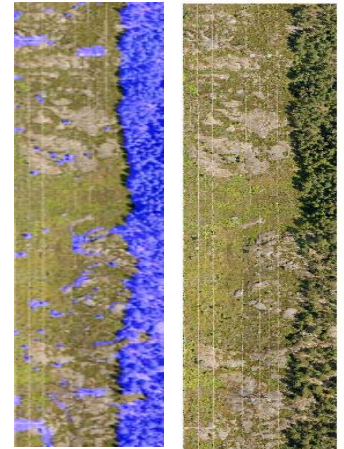
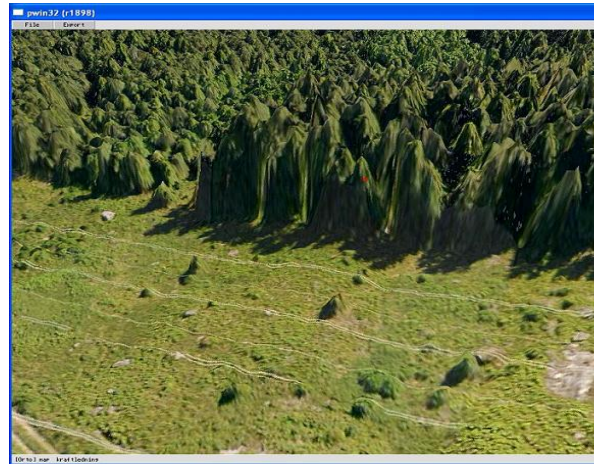
➤ Forest Mapping

- Rappid coverage
- Added value effect by differential measurements



➤ Environmental Mapping

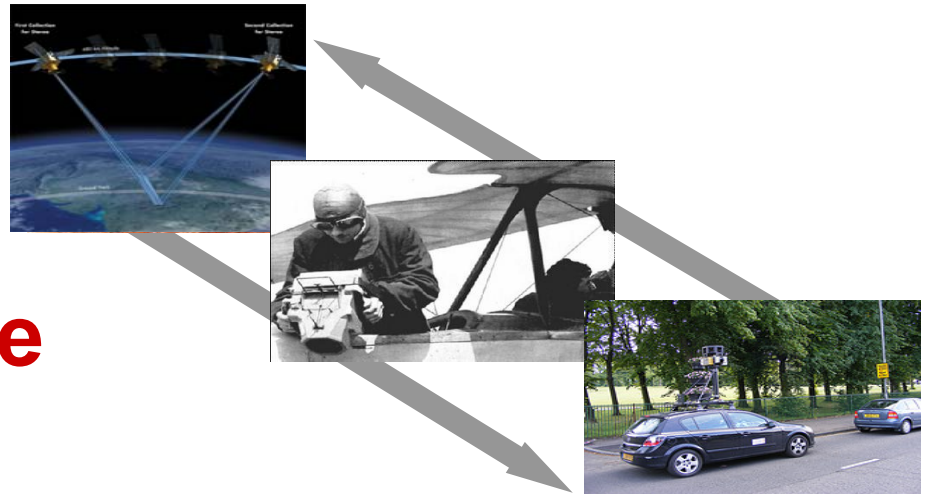
- Qualitative judgements by photorealistic
- Quantitative judgements by automatic algorithms



Ground Based 3D Mapping

- ▶ Initial steps have been taken
 - Streetview
 - Car Mapping

More to come



Emergency/Military Application Examples

- Fast terrain reconnaissance
- Measurable orthophotos with height data
- Reconnaissance for approaches
- Reconnaissance for breakthroughs and break in points
- 3D mapping for training facilities for planning, rehearsal and evaluation
- Planning pre exercise in the actual terrain for all type of personnel
- Planning for engagement systems
- Assessments
- Cost effective image based maps



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