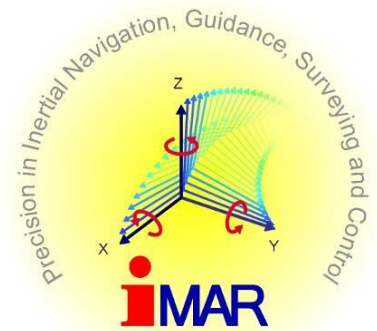
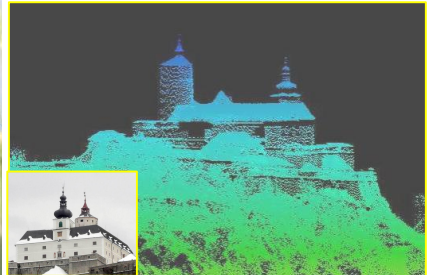


3D-ALS

3D Airborne Laser Scanning



European Leading Performance
in Inertial Navigation Technology and
High Precision Airborne Laser Scanning



Author: Dr. Edgar v. Hinüber, iMAR GmbH / Germany
v.Hinüeber@imar-navigation.de
www.imar-navigation.de

Test campaign: Vienna, June 2005; operated by BEWAG/Austria
Test equipment: iMAR ring laser gyro INS, iNAV-RQH-0018
Javad RTK L1/L2 or NovAtel OEM4 L1/L2
Riegl Airborne Laser Scanner
Rollei 32 MPixel Camera
Helicopter EC135 (supported by ÖAMTC)

Performance of the INS/RTK solution (1 sigma):

Roll/Pitch Performance: 0.0015 degree (forward/backward attitude separation 0.003 deg)
Heading Performance: 0.006 degree (forward/backward heading separation 0.01 deg)
Position Performance: 0.02 m East/North
0.02 m Altitude
Velocity Performance: 0.005 m/s

INS: iNAV-RQH-0018
ARW: 0.0018 deg/sqrt(hr)
Bias: 0.002 deg/hr, < 30 µg
Data rate: 2000 Hz (!)
Bandwidth: > 500 Hz
Interfaces: GPS, PPS, Trigger-Out (Pulse-per-Time),
Trigger Input / Marker Input



Plots of Performance:

Survey of "Burg Forchtenstein" (Austria, close to Eisenstadt)

