



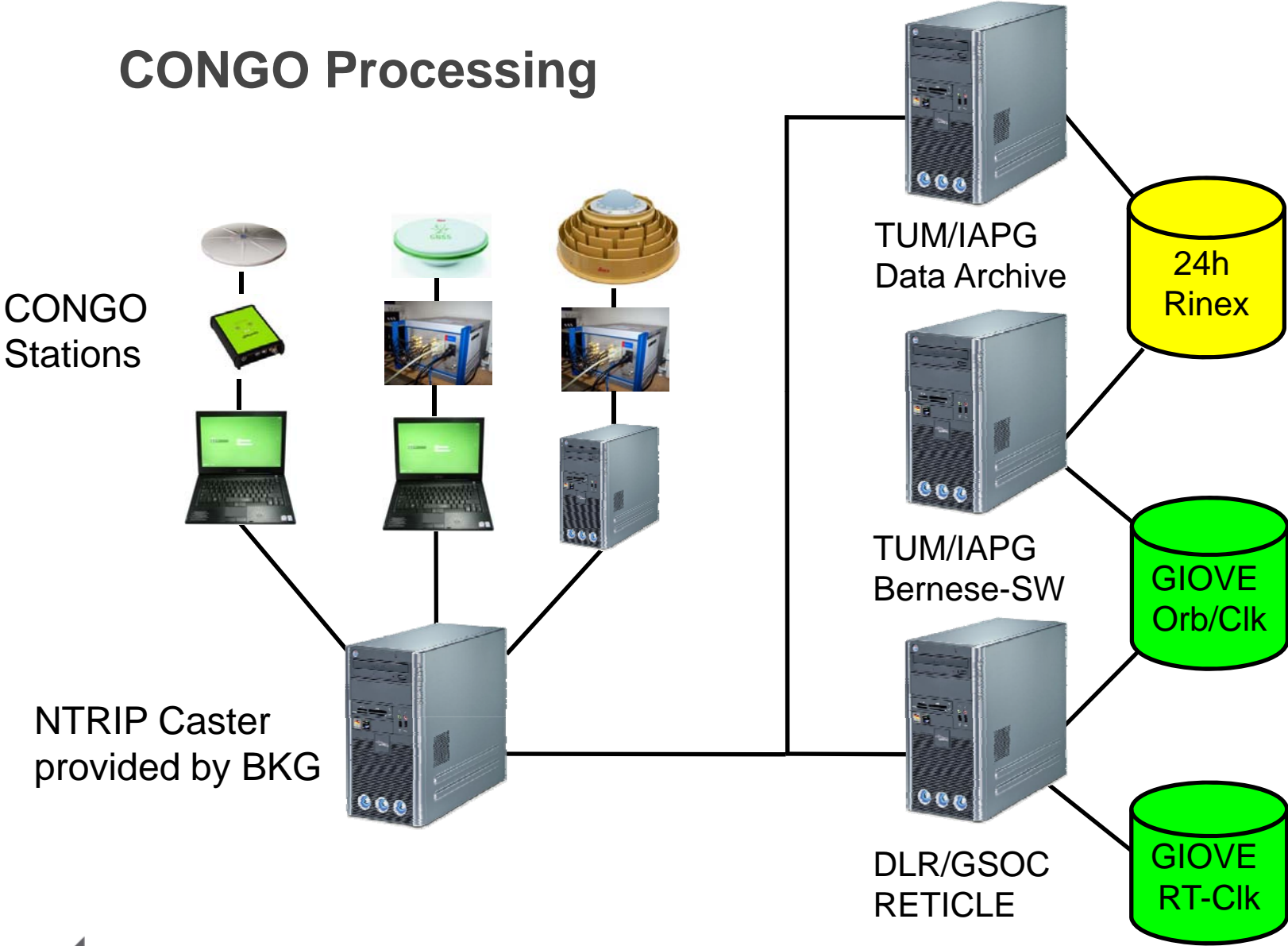
# Real-time GIOVE Orbit- and Clock-Product Generation with RETICLE

**André Hauschild, Oliver Montenbruck (DLR/GSOC)**

**Peter Steigenberger, Urs Hugentobler (TUM/IAPG)**

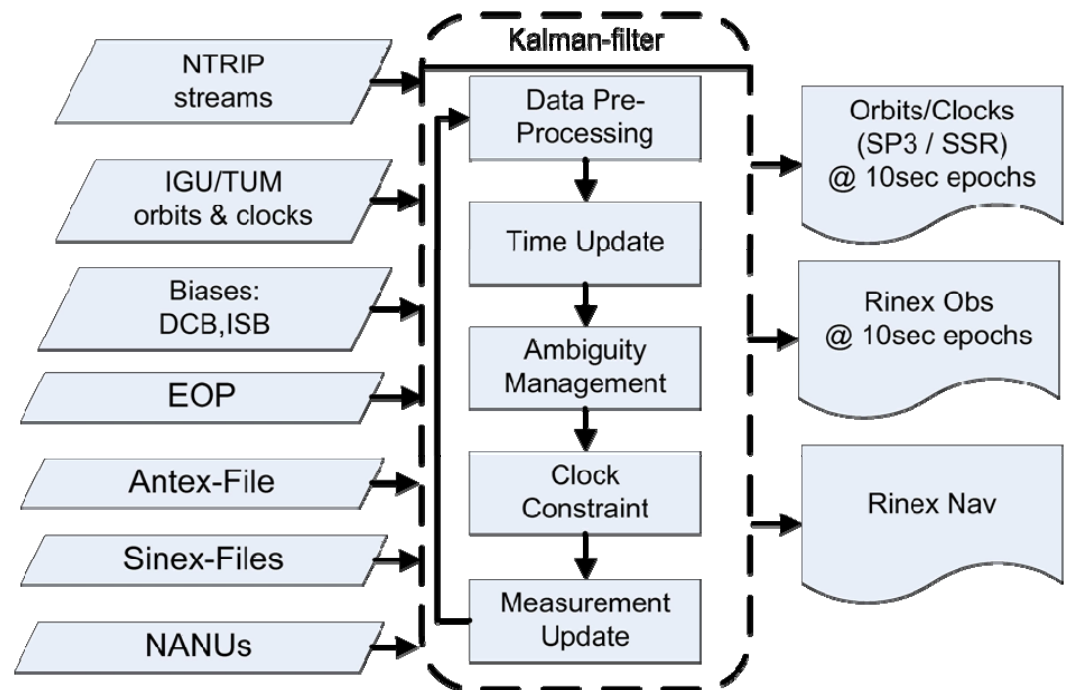


# CONGO Processing



# Real-Time Clock Estimation (RETICLE) System

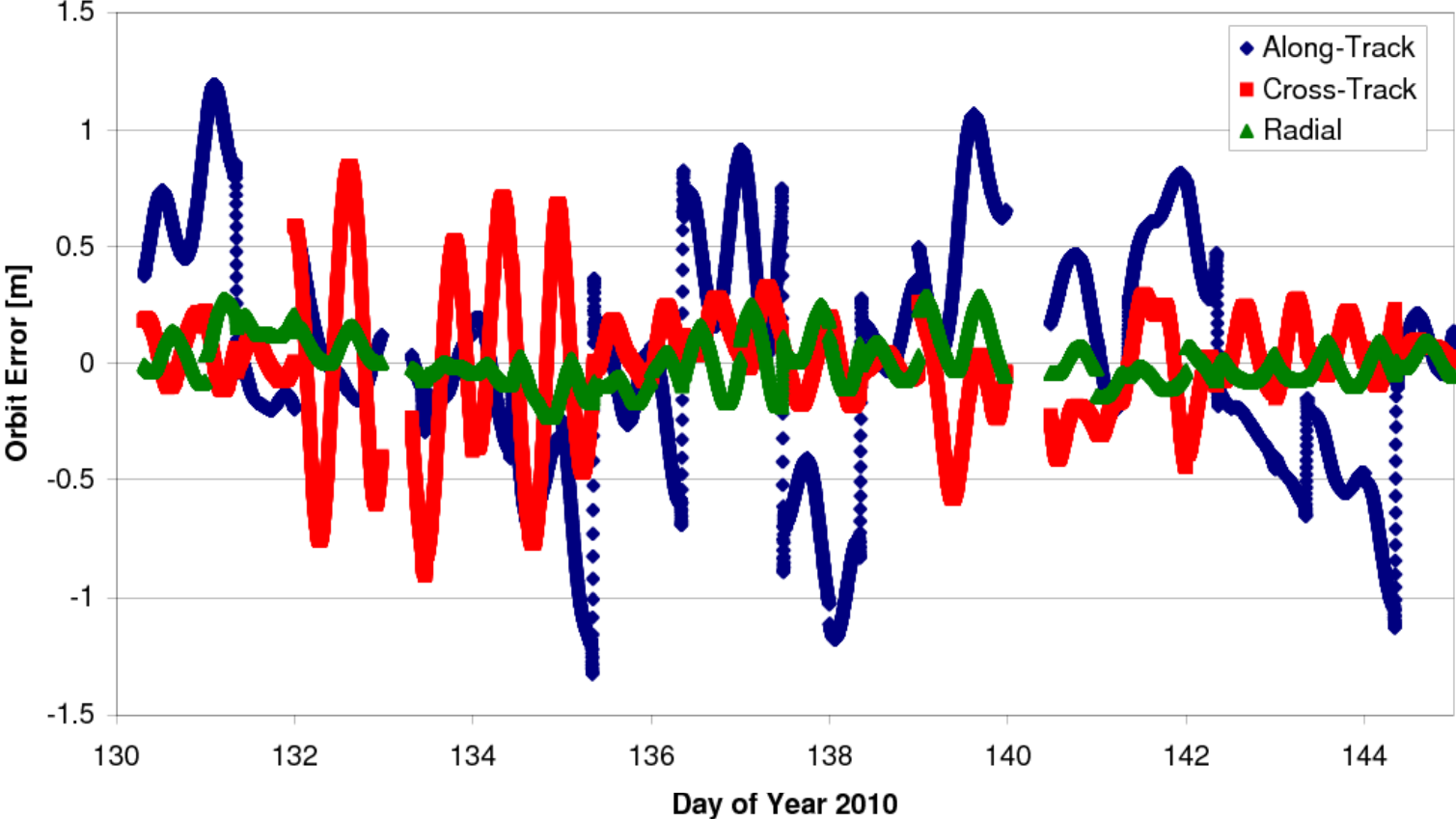
- Combined GPS+GIOVE clock estimation based on Kalman-filter
- Data from global NTRIP-network in real-time
- Ionosphere-free dual-frequency PR and CP
- Estimation parameters:
  - Sat. clock offset & drift
  - Station clock offset
  - Trop. zenith delay
  - carrier-phase biases





# Results for GIOVE Orbits and Clocks

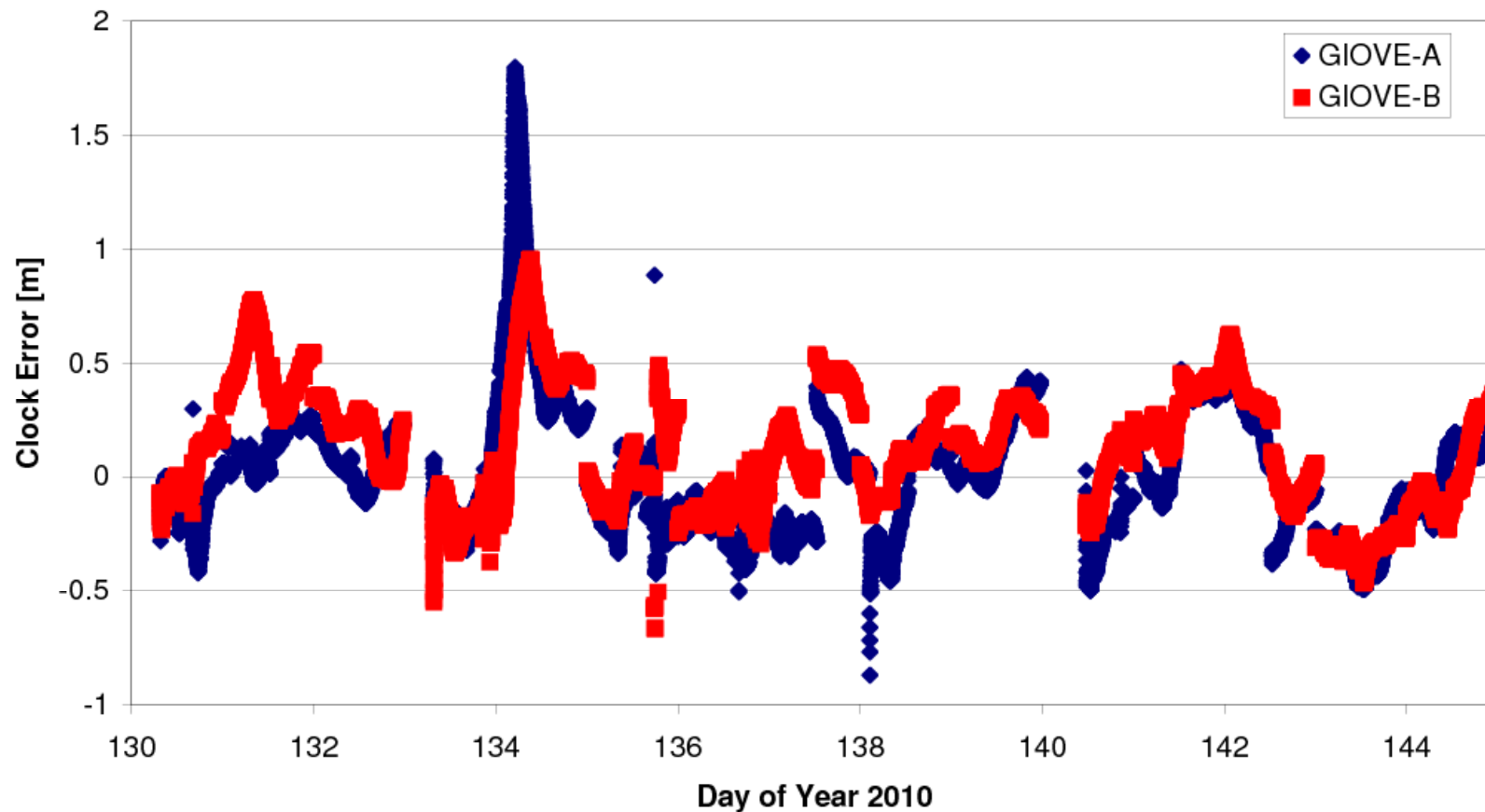
## Errors of orbit predictions for GIOVE-B





## Results for GIOVE Orbits and Clocks (cont.)

Errors of real-time clock estimates for GIOVE-A/B





## Access to RETICLE GPS and GIOVE Products

- Freely available in SP3 format via FTP:
  - Server: **ftp.gsoc.dlr.de**
  - User: **reticle**
  - Password: **getReticle**
- Updated every 5 minutes, retained for 7 days

See poster 53 for more details



**Deutsches Zentrum  
für Luft- und Raumfahrt e.V.**  
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# Real-Time Tracking Networks (CONGO)

