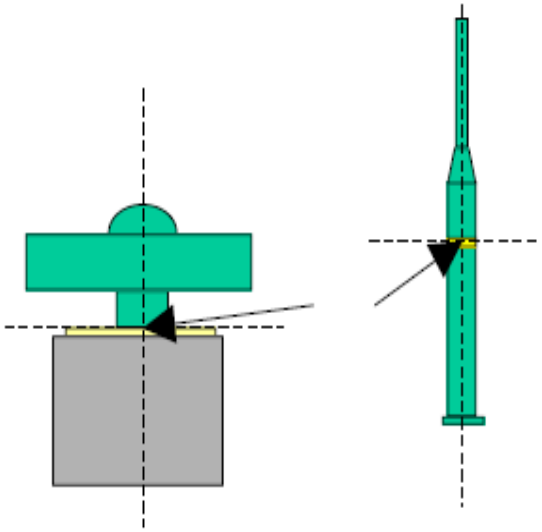
Ground Monitoring of Co-location Vectors (1)

- Co-location site
  - two or more space-geodetic techniques at one site
  - distance between techniques up to several km
  - essential for TRF combinations
- Current state
  - typical accuracies for tie vector: ±1…3 mm
  - insufficient number and distribution of co-location sites
  - infrequent resurveys
- Goal
  - accuracy $\leq$ 1 mm
  - frequent re-surveys or continuous monitoring

Ground Monitoring of Co-location Vectors (2)

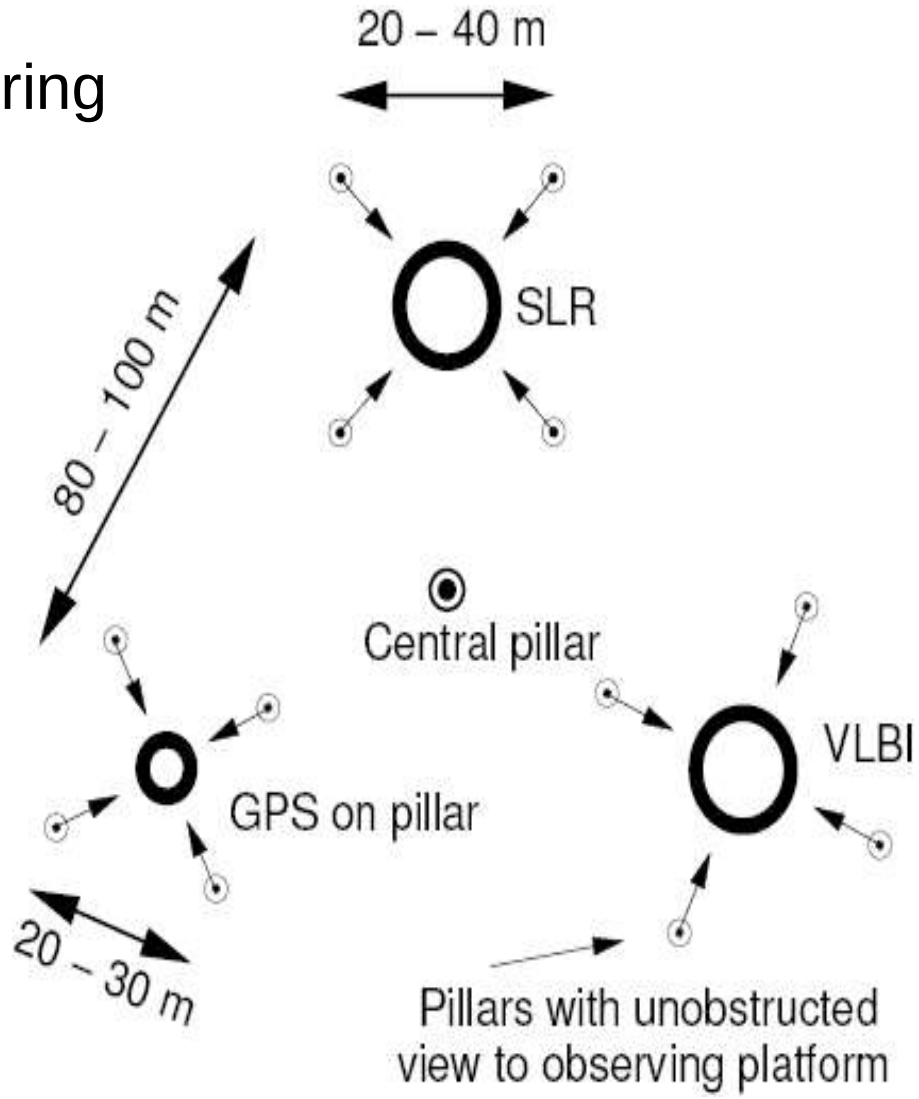
- GPS and DORIS Reference Points



- VLBI and SLR Reference Points
  - RP through indirect approach
  - targets mounted on system structure
  - rotational sequence about axes of space geodetic instrument
  - model to determine axes location

Ground Monitoring of Co-location Vectors (3)

Local monitoring network



Ground Monitoring of Co-location Vectors (4)

- Conceptual design of automatic ground survey (automization of classical survey)
- VLBI and SLR indirect automatic survey procedures
  - Special, dedicated measurement sequence synchronized between space technique and local survey
  - Tag along local survey to regular space technique observing