Developing surveying methods and evaluations to observe, manipulate and correct values of points through glass and at cryogenic conditions led to measurements at CERN for Super-FRS-multiplets and at GSI for SIS100-QDM testing these procedures. Measurements at CERN were done by personnel from CERN and GSI itself. But, like in nearly every experiment, unexpected and unwanted events occurred, which led to additional considerations and refinements.

**Considerations before testing:**
- use of solid 1.5"-reflectors capable of measuring under cryogenic conditions
- dependence of the laser tracker wavelength and the coating of the glass
- geometric definition of the laser tracker station and the glass surface

**Unexpected circumstances:**
- @CERN for FAIR Super-FRS multiplets
  - pollution (oil) on the reflector glass, which made it impossible to observe
  - failure of the determination of points with a specific laser tracker, but others could still measure
- @GSI for FAIR SIS100-QDMs
  - failure of the determination not during the first, but during the second thermal cycle! -> hint of irreversible influence on the reflector
  - failure of the determination of points with a specific laser tracker, but others could still measure
- after measurements @CERN and @GSI extensive check of reflectors
  - some had divergent diameter
  - some were impossible to measure
  - some were possible to measure with a Leica LT, but not with a FARO LT
  - after cleaning of reflector surface some were even not measureable

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**Refinements:**
- use of specific laser trackers (Leica)
- use of specific solid reflectors (BRR) capable of measuring under cryogenic conditions

**Concentricity and depth error tests at the reflectors after several thermal cycles**
- RLT = Rundlauftest (concentricity test)
- TFT = Tiefenfehlertest (depth error test)