

Oman National Geoid Model (ONGM)



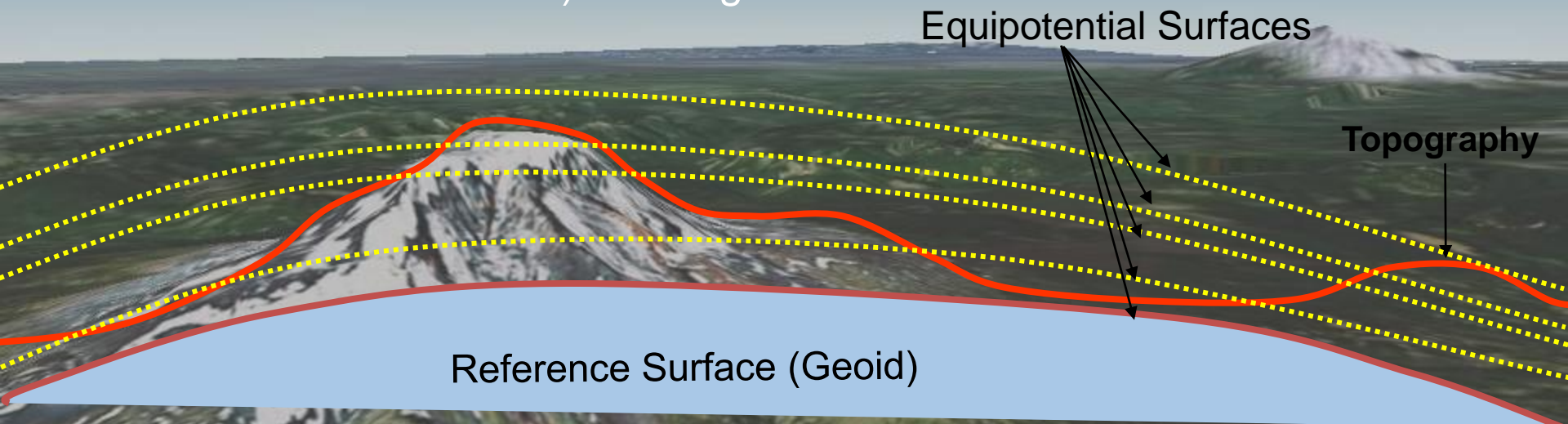
Establishment of
Oman National Geoid
Model (ONGM) for the
Sultanate of Oman

Project Title : Establishment of Oman National Geoid Model (ONGM) for the Sultanate of Oman

Client : National Survey Authority , Ministry of Defence

Project Duration : 2 years

Work components : 1) Levelling
2) Ground Gravity Survey
3) Airborne Gravity Survey
4) Geoid Computation
5) Training

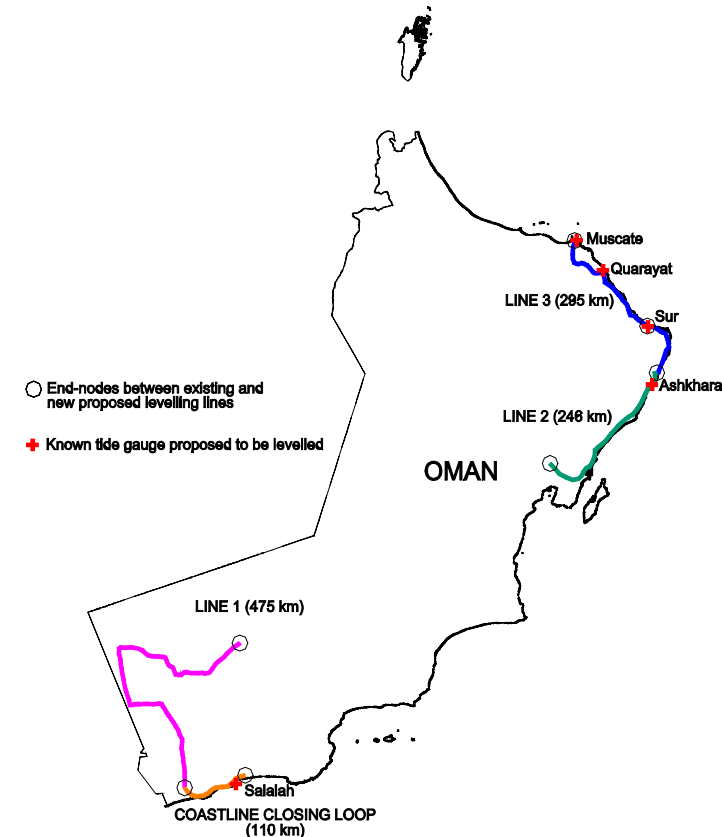


The project has been divided into four parts: Levelling, ground gravity surveys, airborne gravity surveys and geoid computation.

1. Analysis of the existing levelling network and to carry out additional levelling surveys to complete loops and hanging lines;
2. To compile and assess existing gravity data and carry out detailed land gravity surveys;
3. To carry out airborne gravity surveys;
4. Geoid computation: and
5. To develop a national gravity database for precise geoid computation.

Activities Completed So Far...

- Construction of benchmark monument along the proposed levelling lines at about 5 km spacing;
- To carry out survey for three (3) levelling lines of a total distance of nearly 1200 km
- To carry out levelling surveys to link the height network to publicly available tide gauges.
- Total 300 benchmarks installation





Field Operations



Ground Gravity Survey

- Acquired GPS-positioned ground gravity measurements at 2 km spacing over the cities and populated areas
- 6000+ gravity data points;
- 6 No.s Scintrex CG-5 gravimeters were used
- Finished the ground gravity in 3 months time



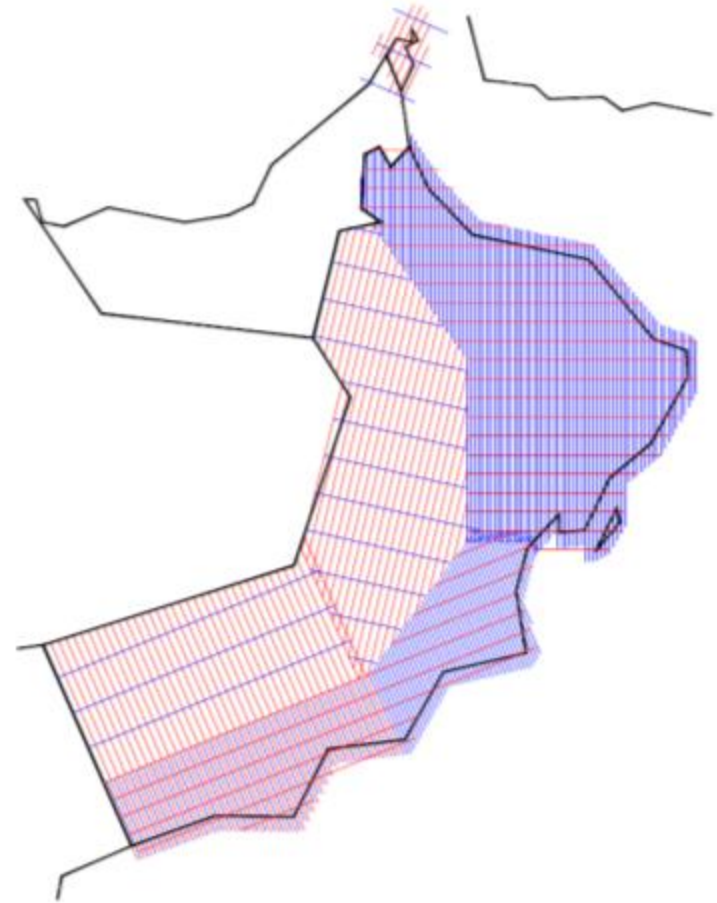
The above figure shows the area covered by the ground gravity survey

Field Operations



Airborne Gravity Survey

- 5 and 10 km line spacing
- Control line spacing of 25 and 50 km
- 76000 line-km of survey
- Lines extended 20 km offshore and 15 km in neighbouring countries
- 300 m. flight height
- Sensor : GT 1A Airborne Gravimeter



Flight paths for the Block with a 5 and 10 km line spacing and respectively 25 and 50 km control line spacing.

Airborne Gravity Survey (Cont..)

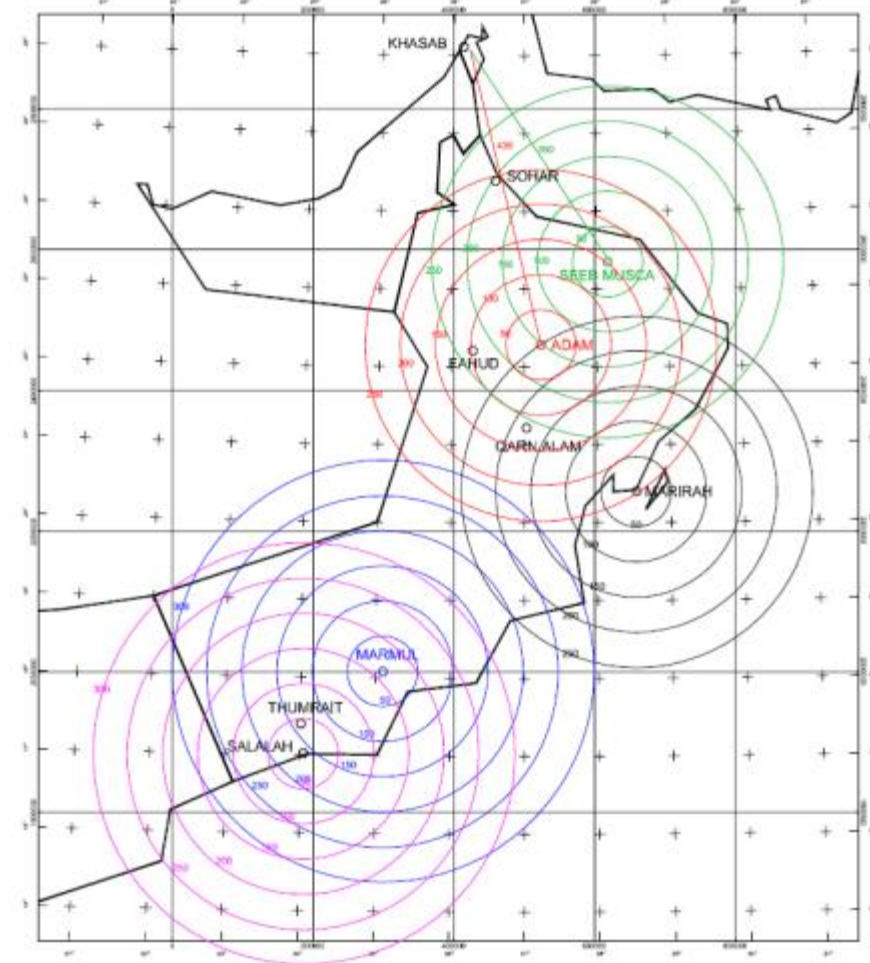
Cessna Caravan 208B aircraft

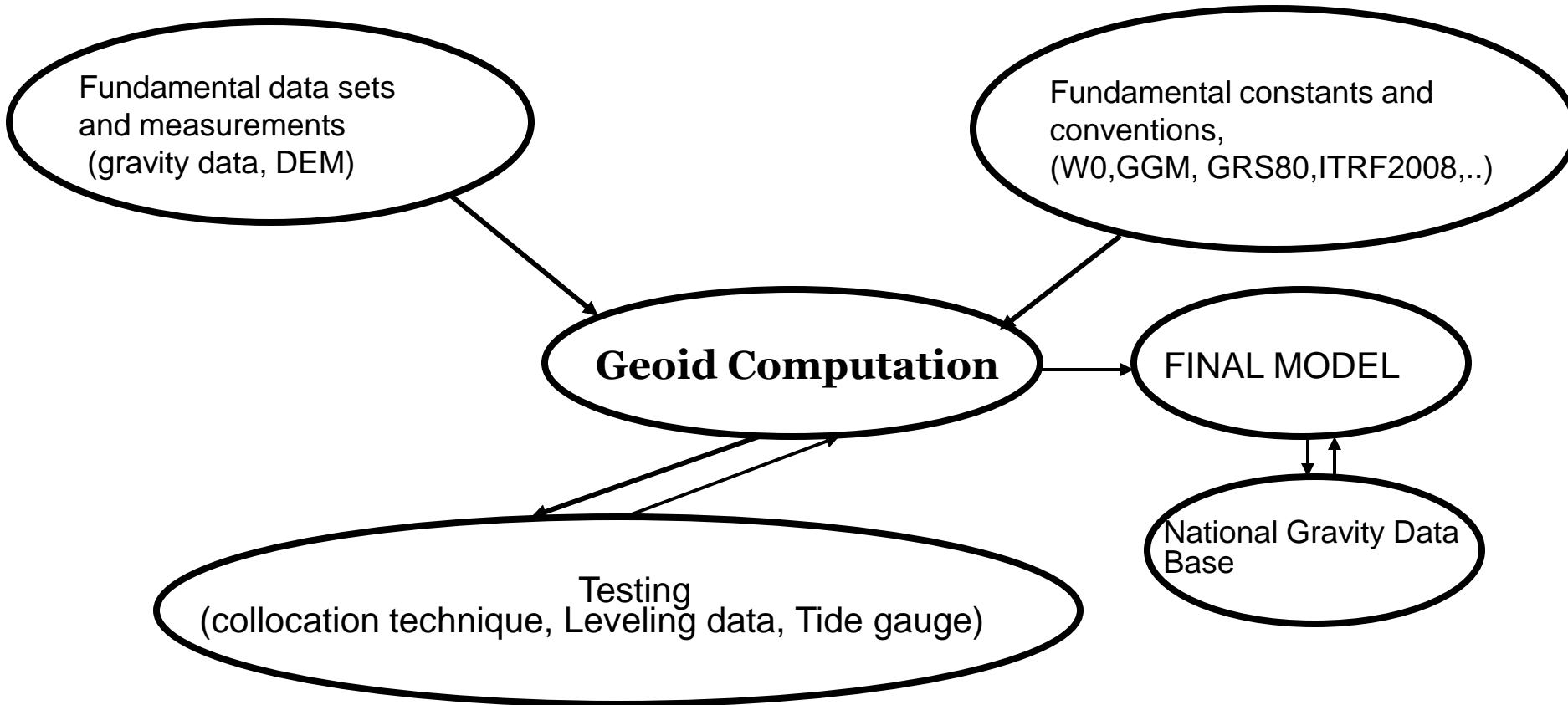


GT-1A airborne gravity sensor

Airborne Gravity Survey (Cont..)

- **Base airports:**
- Musannah,
- Salalah,
- Masirah





On job training completed on...

- Precise Levelling
- Land gravity survey.

The final computed geoid model is expected for delivery by the end of April 2016.

Thank you!