

Developments and progress at Matjiesfontein: Equipment and Communication

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Space Geodesy Programme
Hartebeesthoek Radio Astronomy Observatory



Geodesy Operations Office



HartRAO
Hartebeesthoek Radio
Astronomy Observatory



Geodesy Operations Office

Completed by 2013/04/16:

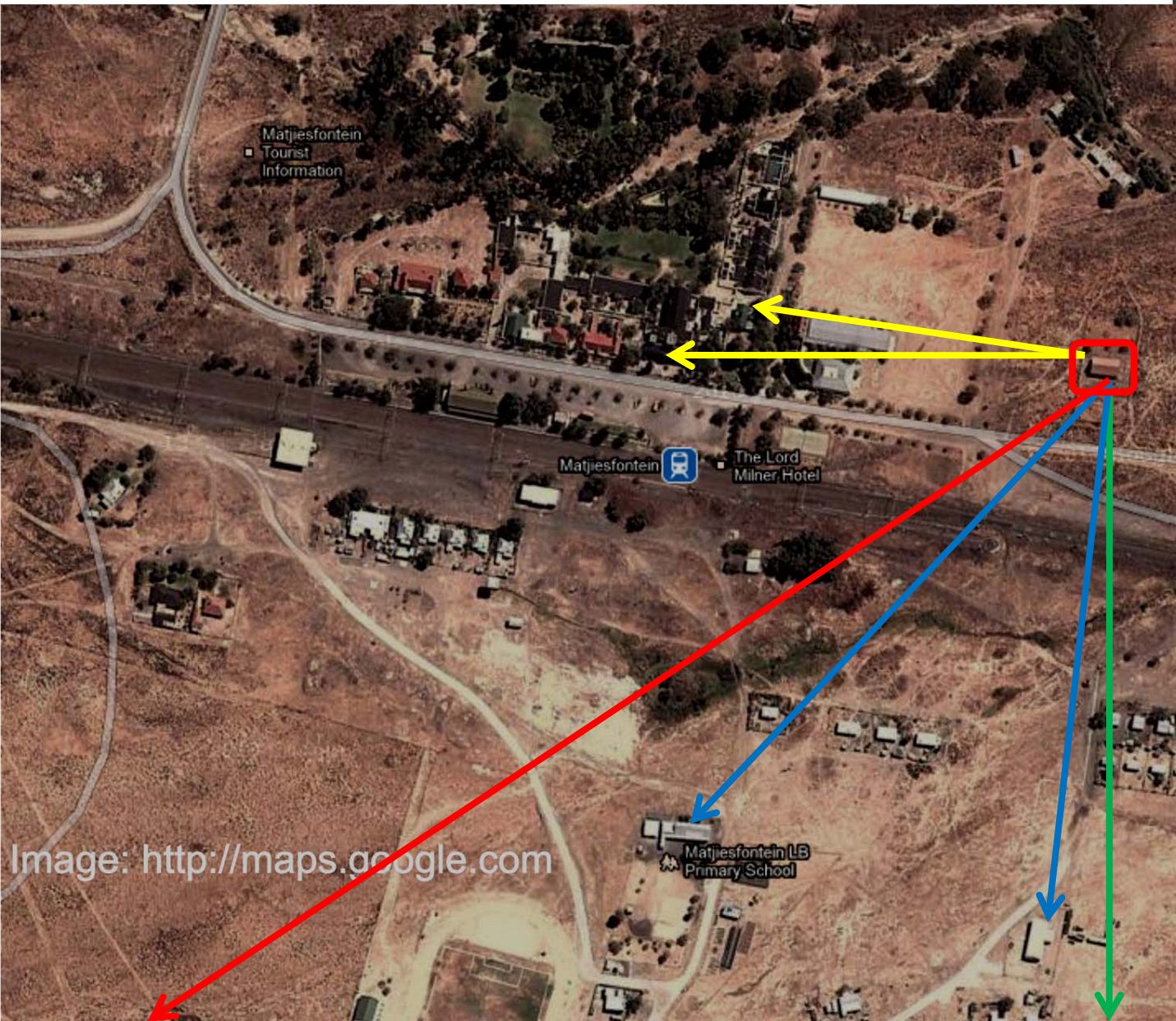
- Clean (junk, rocks, glass, dead birds etc...)
- New windows (South side)
- Close-up of one window (North side)
- Security Gates (3)
- Motion sensor solar lights (4)
- Passive alarm system

To be completed Q3 2013:

- Close-up another window on northern side
- Solar Power
- Water: repair pipes, taps, connection
- Communications system



Town and Village



Internet
WiFi Links (3)
Data server
Local Office

Site Link
(LAN + Internet)

Community Links

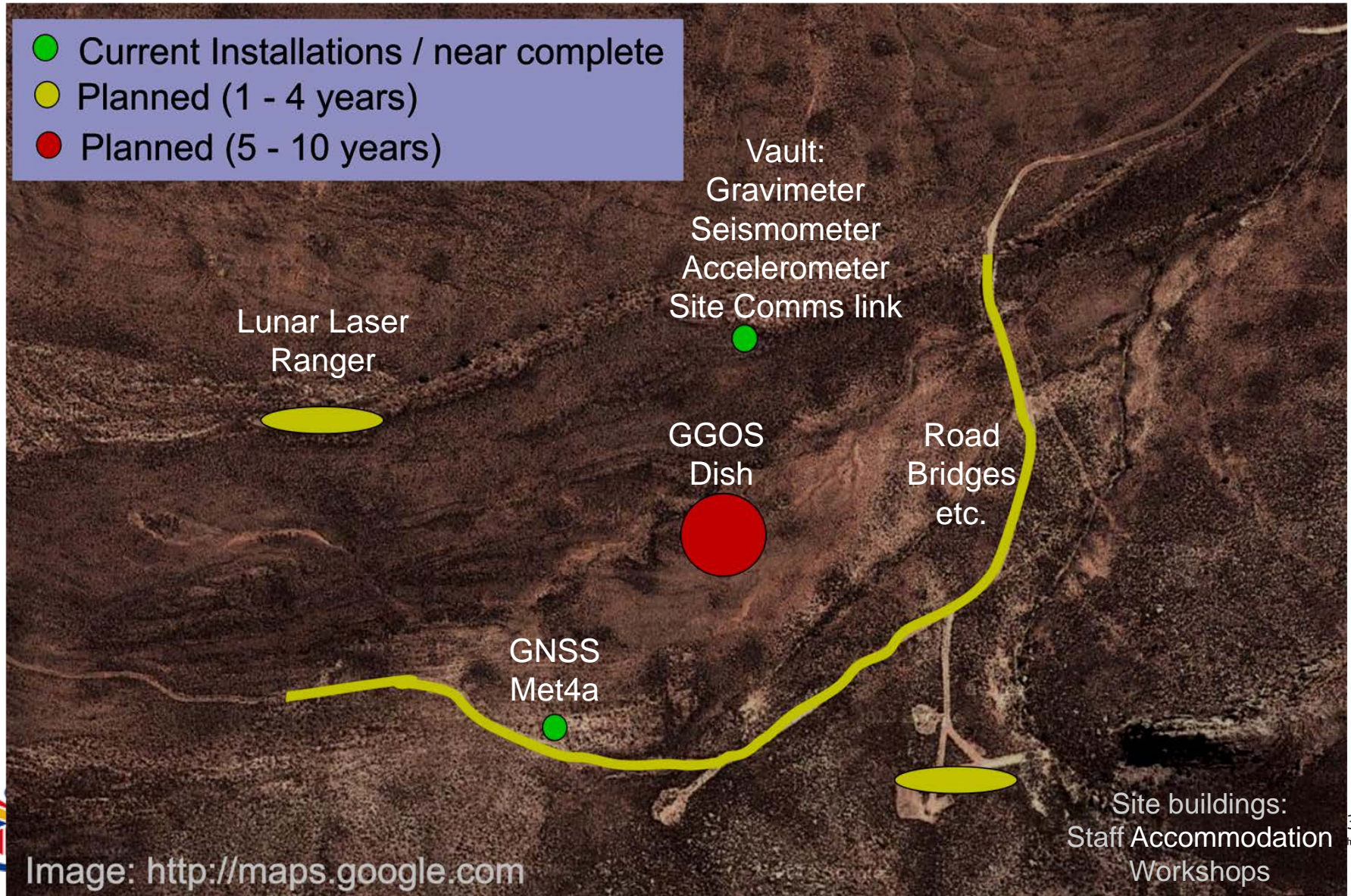
Court House
Hotel

Internet



- Current preferred option: Vodacom 3G (public IP via DHCP)
- Backup connection: MTN 3G (MTN 3G upgrade in progress)
- Future possibility: SANReN (Matjiesfontein listed as high-priority satellite site of HartRAO)

Site



Site: GNSS + Weather Station

Team: *Ludwig Combrinck, Roelf Botha, Marisa Nickola*



Site: Vault

Team:

- *Leon Croukamp, Peter van Wyk* (Stellenbosch University)
 - *Stoffel Fourie* (Tshwane University of Technology)
- Contractor: *Rian Willemse and his team* (Local)



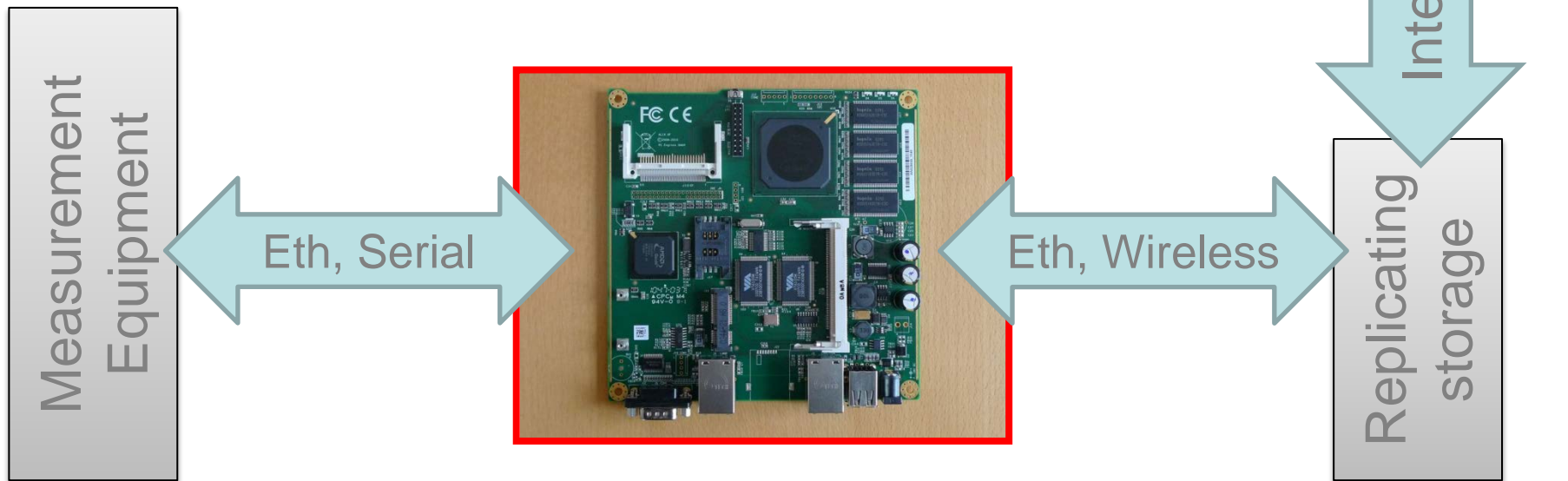
GeoStation Control System

To be installed at:

- Vault
- GNSS & Met4a stations

Student Project: Paul Barasa (Roelf Botha, Alun Peck)

Prototype as STANDARD control system for all stations



Equipment: Communications



Already procured:

- EDGE / 3G / LTE Modems
- EDGE / 3G / LTE Antennas
- Routers and Firewall
- WiFi Links (Site, Court house)
- WiFi Access Points (Site, Court house)
- WiFi Antennas (Site)
- Server
- Printer

Sill need:

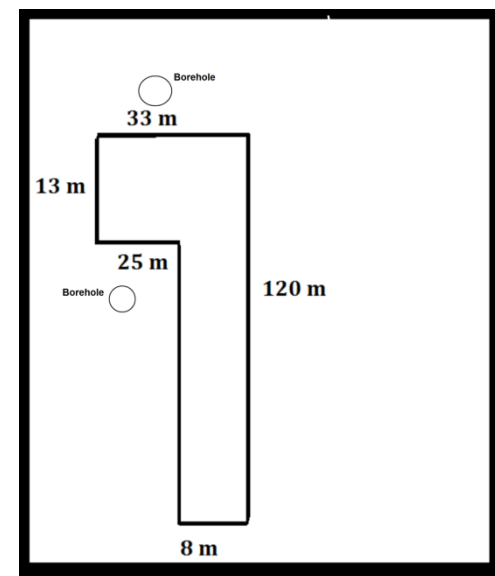
- WiFi Link (School, Community hall, Hotel)
- WiFi Access point (Hotel)
- Access control systems (network / internet)
- IP Cameras

Equipment: Power

- Solar system for Geodesy Operations Office (~ R 60 k) Q3 2013
- Solar system for Vault (~ R 25 k) Q3 2013
- On-site mains transformer (380V 3-phase and 220V single phase) 2014? / Laingsburg municipality?

Infrastructure

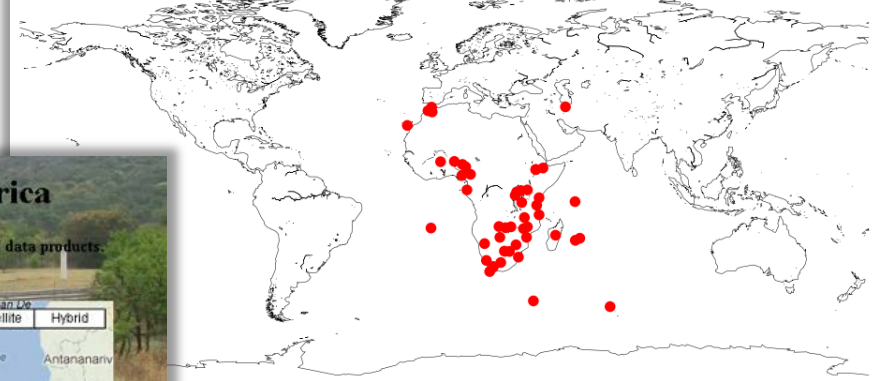
- Roads + Buildings (Sharon, Rachael)
- Other student involvement
- Municipality
- Local community



Data Products

Online Interactive DB (Cilence)

GNSS Station Location for AFREF Network



Thank you

