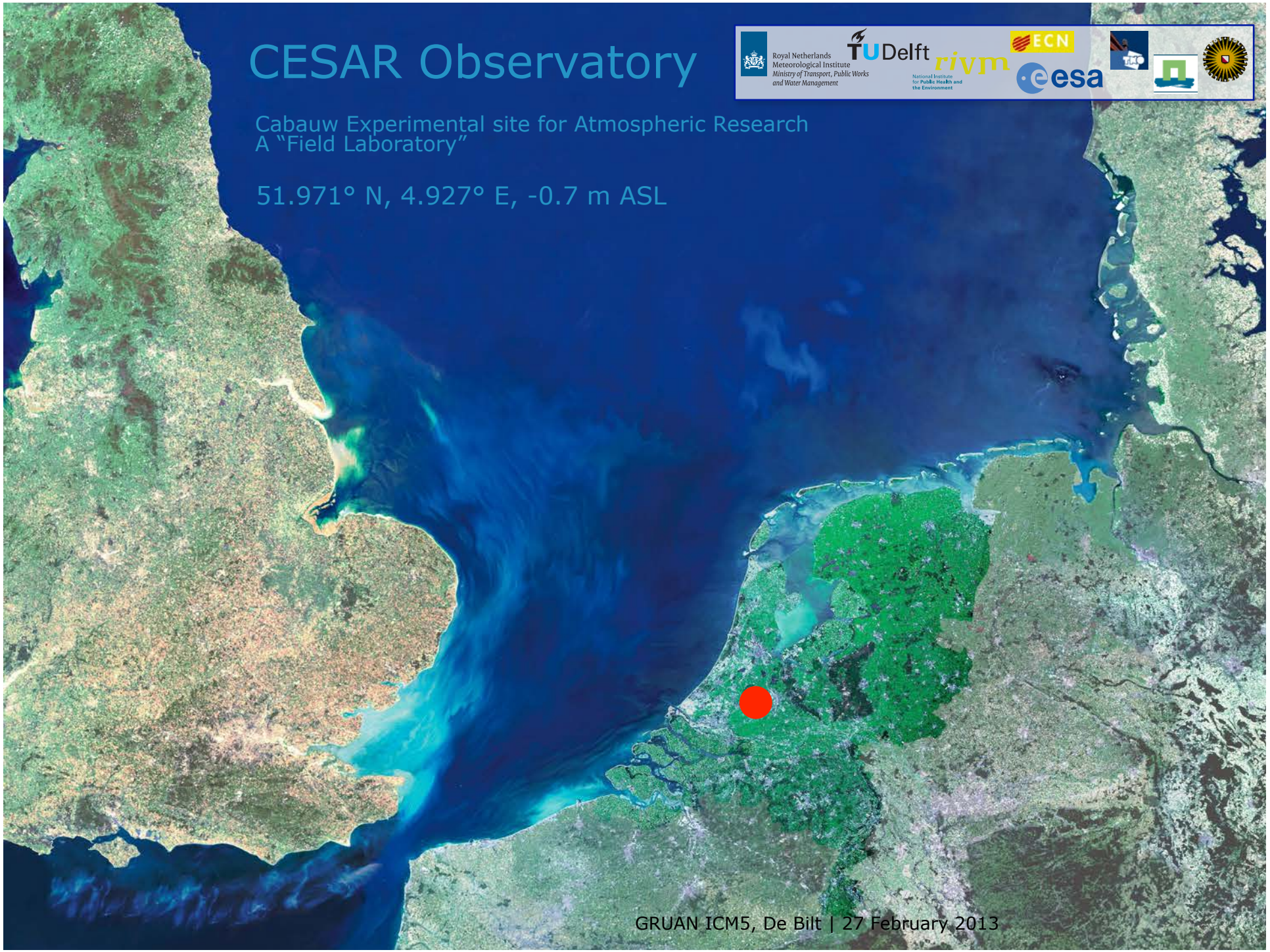
Royal Netherlands
Meteorological Institute
Ministry of Infrastructure and the Environment

Site Report Cabauw (NL)

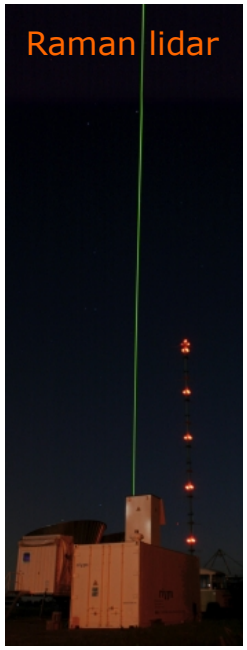
Arnoud Apituley

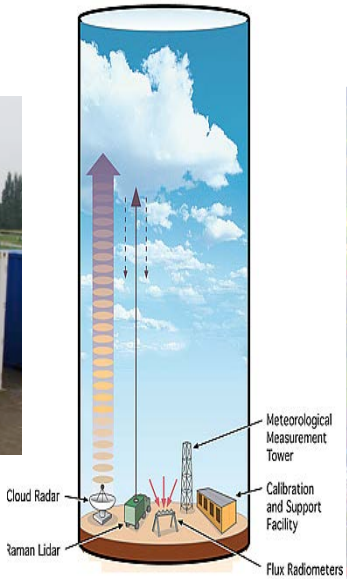
GRUAN ICM5, De Bilt | 27 February 2013

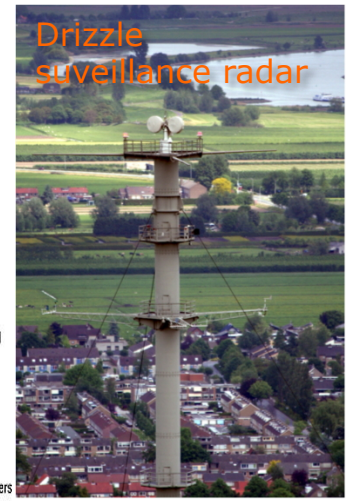

CESAR Observatory
Cabauw Experimental site for Atmospheric Research
A "Field Laboratory"
51.971° N, 4.927° E, -0.7 m ASL
Royal Netherlands Meteorological Institute
Ministry of Transport, Public Works and Water Management
TU Delft
rivm
National Institute for Public Health and the Environment
ECN
esa
GRUAN ICM5, De Bilt | 27 February 2013

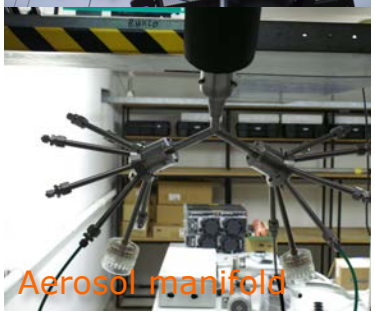
CESAR Observatory

Cabauw Experimental site for Atmospheric Research
A "Field Laboratory"









Status 2012/2013

Persons involved

- Arnoud Apituley – TT6 site representative
  – TT5 Involvement lidar (WV, Aerosol)
  – WG-GRUAN (Remote Sensing)
- (Reinout Boers) – TT3 - Scheduling
- Siebren de Haan – TT2 - GNSS
- Henk Klein Baltink – MWRnet TT5
  Sonde
- Ankie Piters – Ozone sonde, satellite validation
- Marc Allaart – Ozone sonde, Brewer

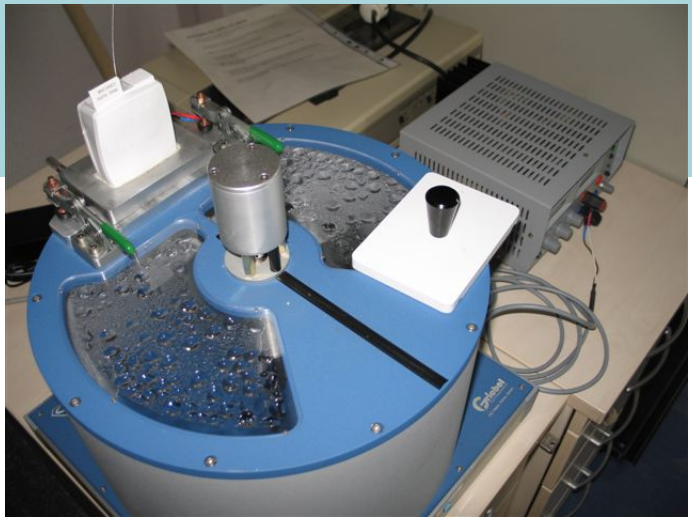
2012 Status update

- Radio sonde update
- Raman lidar update
- GNSS – see presentation Thursday

Radio Sonde update

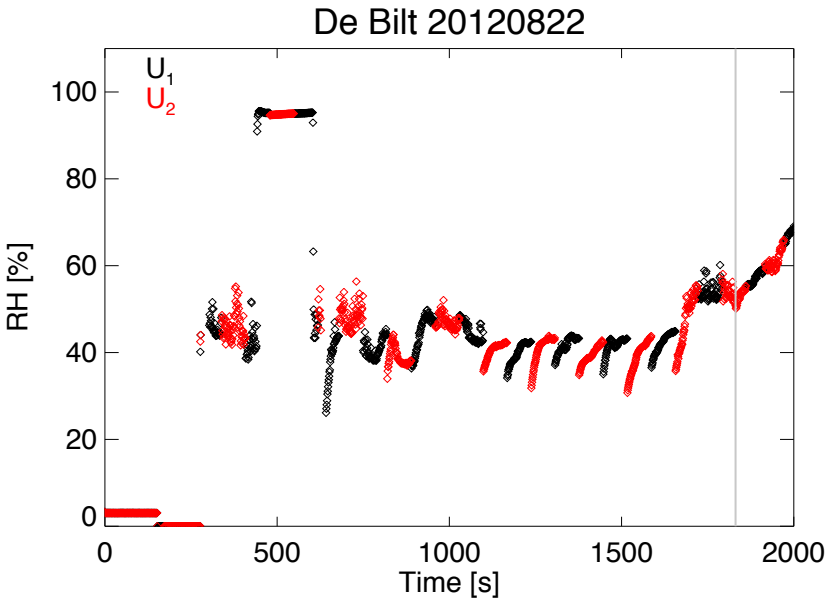
- Frequency of radio soundings reduced to one per day (00 UTC)
  - Budgetary reasons
- Ozone soundings continue at 1x per week

Radio Sonde update



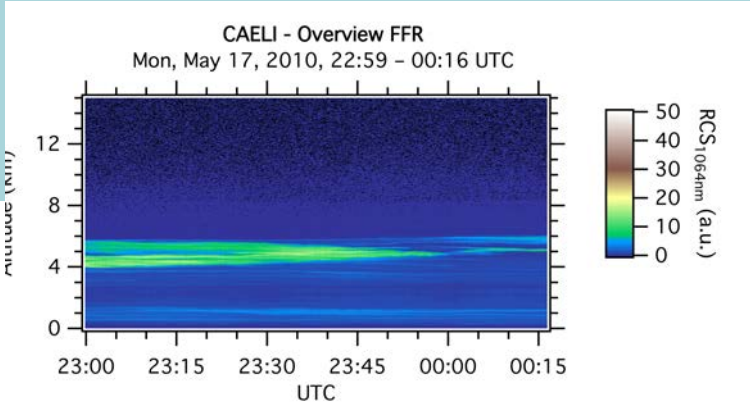
- 100% humidity test chamber installed in June 2012
  - Presenttly applied to ozone sounding only
  - Sometimes test gives <100%
  - Interpretation of results ongoing

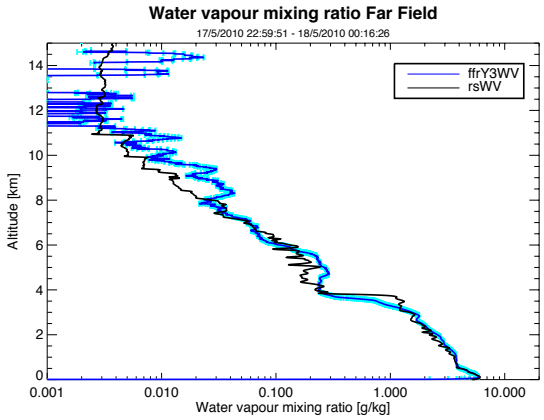
- RSLaunch Client currently not used
  - Data is uploaded through automated script
  - Incorrect metadata for ozone sounding

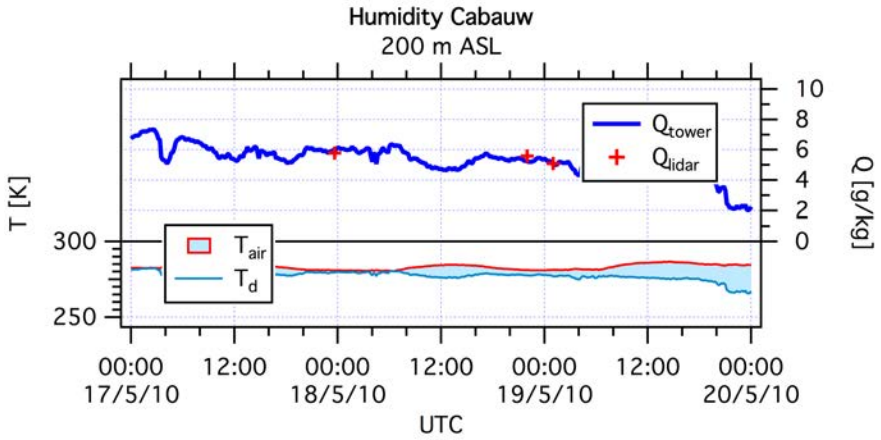


Raman Lidar WV calibration

- Experiment with tall tower humidity measurements
- Procedure
  - Standard lidar to sonde calibration
  - Compare to tower humidity measurements
  - Good collocation and synchronisation
  - Low altitude regime for lidar
- Promising results for a few cases
- Needs to be fleshed out



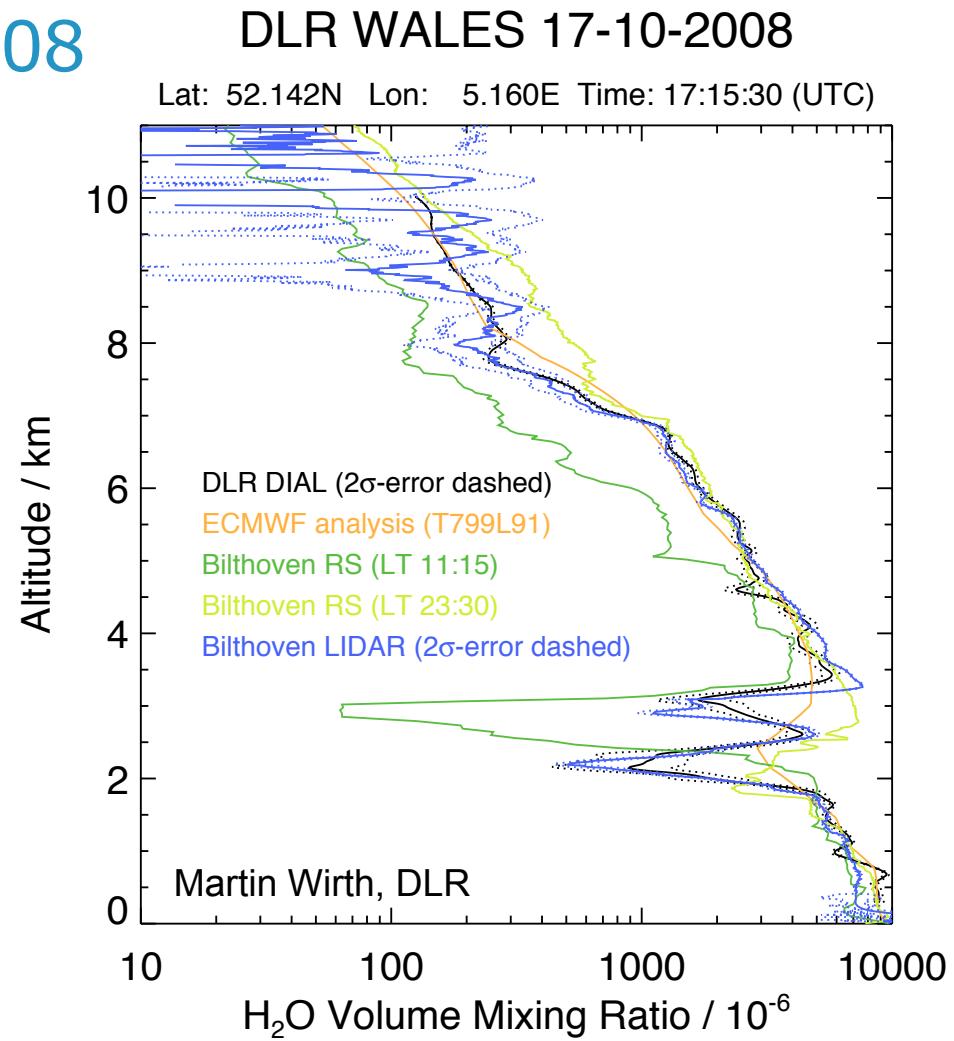




See paper Apituley, ISTP9, l'Aquila, 2012

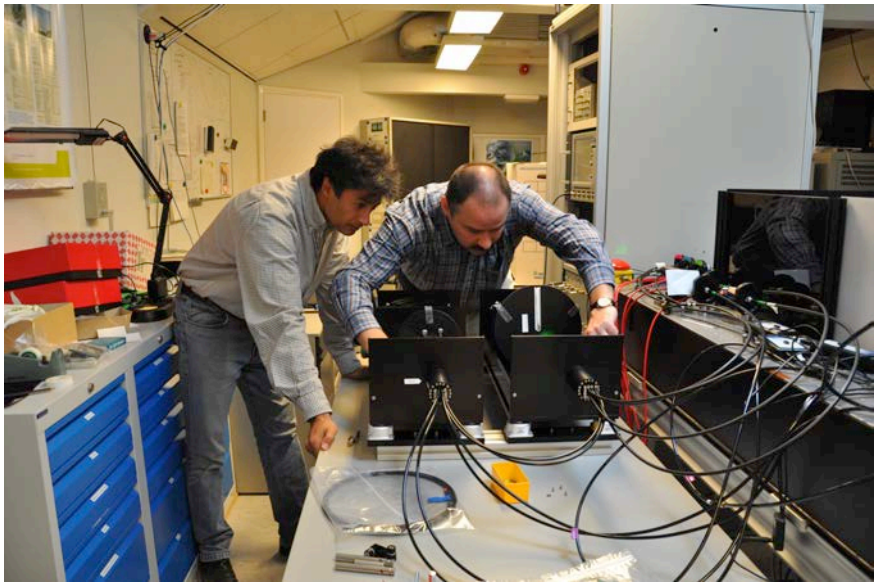
LUAMI – Flight 17 Oct. 2008

DIAL/Raman lidar intercomparison
Caeli integration time: 15 min.

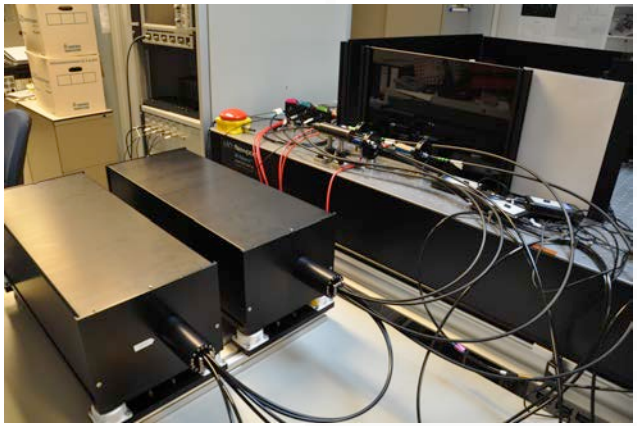


Pure Rotational Raman Lidar Temperature Preparation

- Raman Lidar
  - Pure Rotational Raman lidar upgrade
    - Prototype in lab
    - Waiting for testing
    - Integration into Cabauw system Caeli



Optical Layout



Developments

Next steps

- Continue observational programme
- Apply for Site Certification