

# Recent Activities of WMO GAW World Calibration Centre for SF<sub>6</sub>

Haeyoung Lee<sup>1\*</sup>, Hee-Jeong Yoo<sup>1</sup>, Hong-woo Choi<sup>1</sup>, Chulkyu Lee<sup>1</sup>, Bok-Haeng Heo<sup>1</sup>, Jeong-Sik Lim<sup>2</sup>, and Jeong-Soon Lee<sup>2</sup>

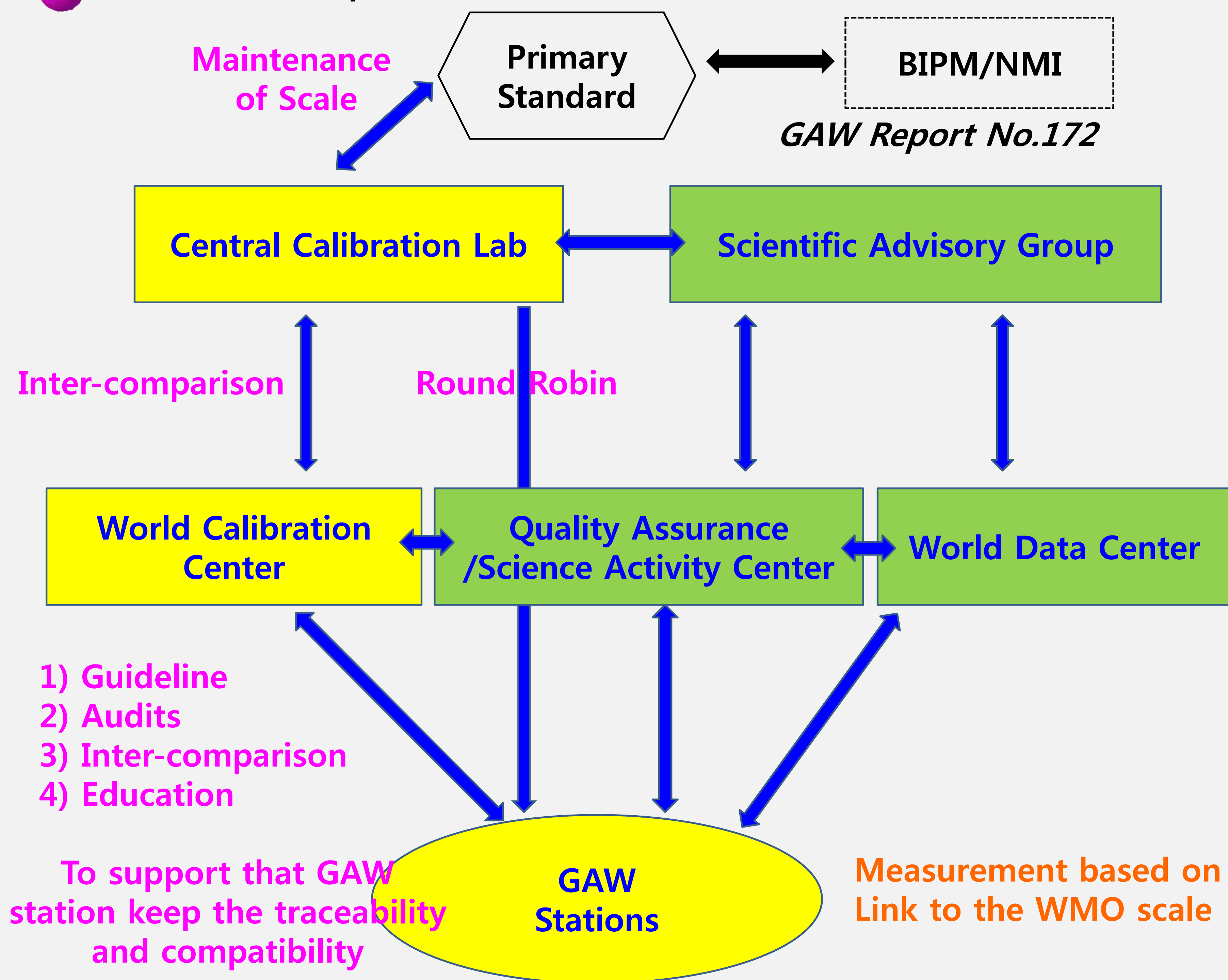


\* [leehy80@korea.kr](mailto:leehy80@korea.kr)

1. Korea Meteorological Administration  
2. Korea Research Institute of Standards and Science



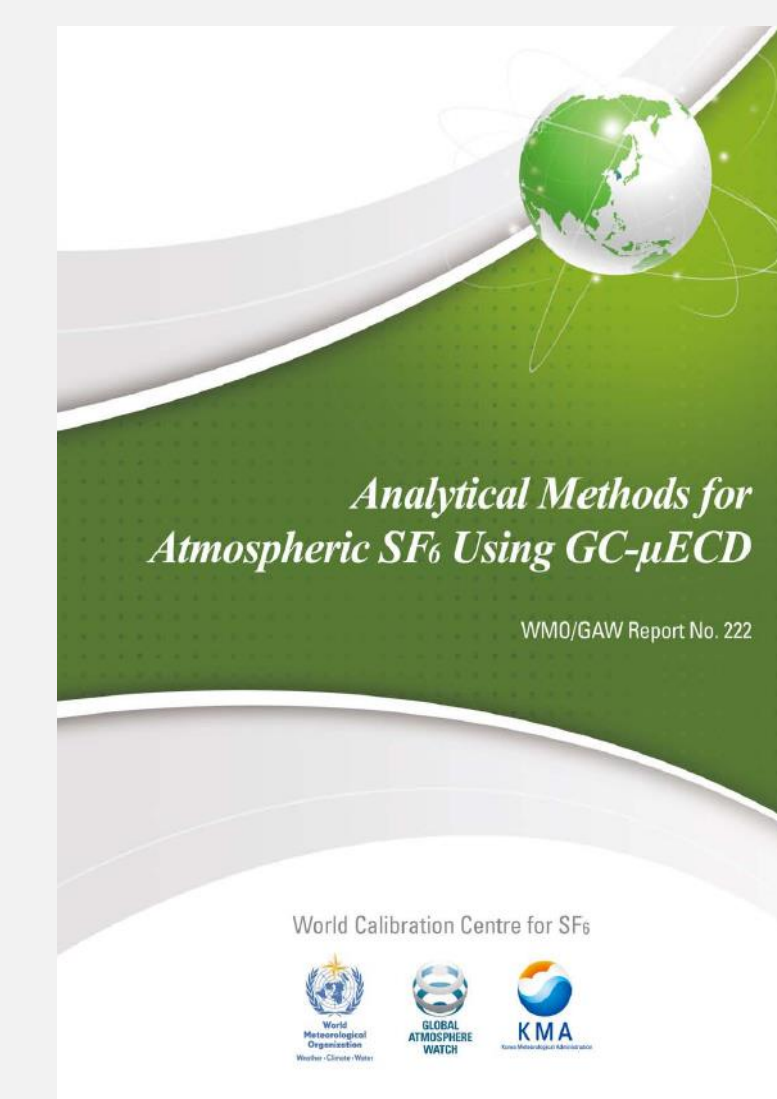
Yes, it's me! SF<sub>6</sub>! 22,800 times stronger than CO<sub>2</sub> and live 3,200 years  
Sulfur hexafluoride is an extremely stable atmospheric trace gas produced entirely anthropogenically and increases dramatically in the atmosphere.



## Technical report for SF<sub>6</sub> WMO GAW No. 222

Done!

- This technical report explained analytical methods for atmospheric SF<sub>6</sub> using GC-μECD.
- In this report, we suggested three major methods to analyze atmospheric SF<sub>6</sub> with detailed installation methods and examples ; a) conventional GC- μECD b) GC- μECD with pre-concentrator and c) Fore-cutting/back flush method
- It also describes the diagnostic procedure of lab's or station's analysis systems to secure analysis condition. Several materials and different types of parts such as flasks, tubes, regulators and columns were compared for SF<sub>6</sub> analysis.
- This report is available on WMO/GAW webpage as one of WMO/GAW reports(No.222) [www.wmo.int/pages/prog/arep/gaw/gaw-report.html](http://www.wmo.int/pages/prog/arep/gaw/gaw-report.html)
- Next report will be published about calibration methods for the SF<sub>6</sub> measurements.



## Workshop and Training/Education course

On going !

- Asia-Pacific GAW Workshop(APGG) has been held by KMA since 2009 to support the GAW stations in Asia regions under the GAW umbrella.
- In the APGG-2014, 13 countries and 30 people attended the workshop to share their knowledge including introduction of their stations on greenhouse gases.
- As one of the results of the workshop, Asia-Pacific Newsletters on greenhouse gases has been published since 2010.
- All members who are interested in it can be authors of it.
- Newsletters are available on the GAW webpages: [www.wmo.int/pages/prog/arep/gaw/other\\_pub.html](http://www.wmo.int/pages/prog/arep/gaw/other_pub.html)



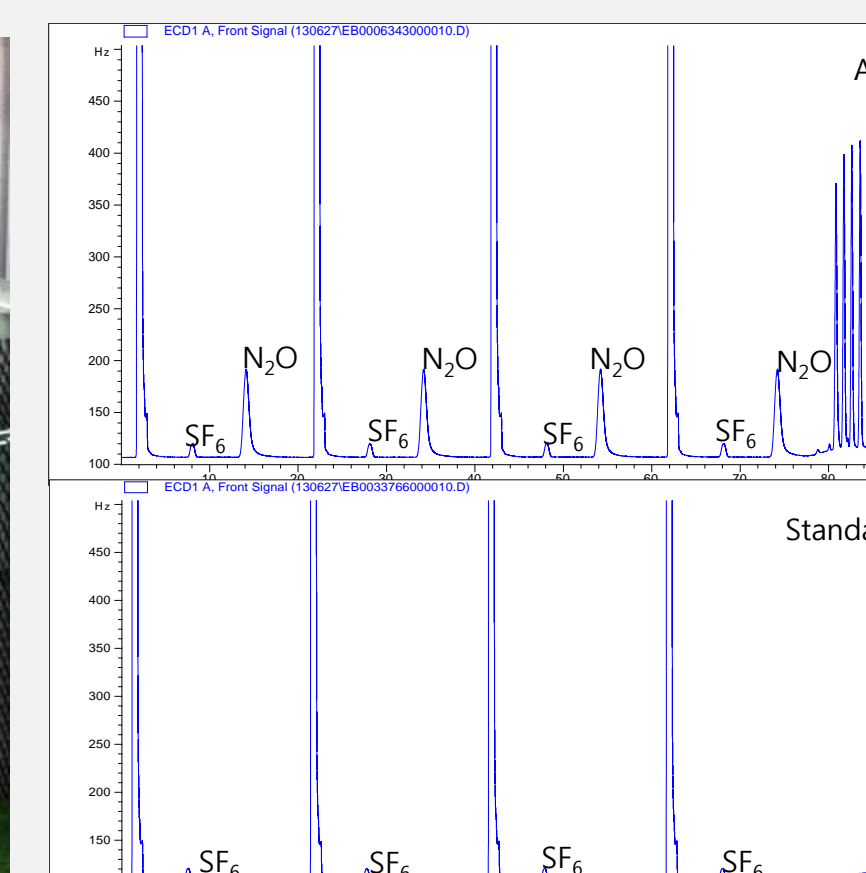
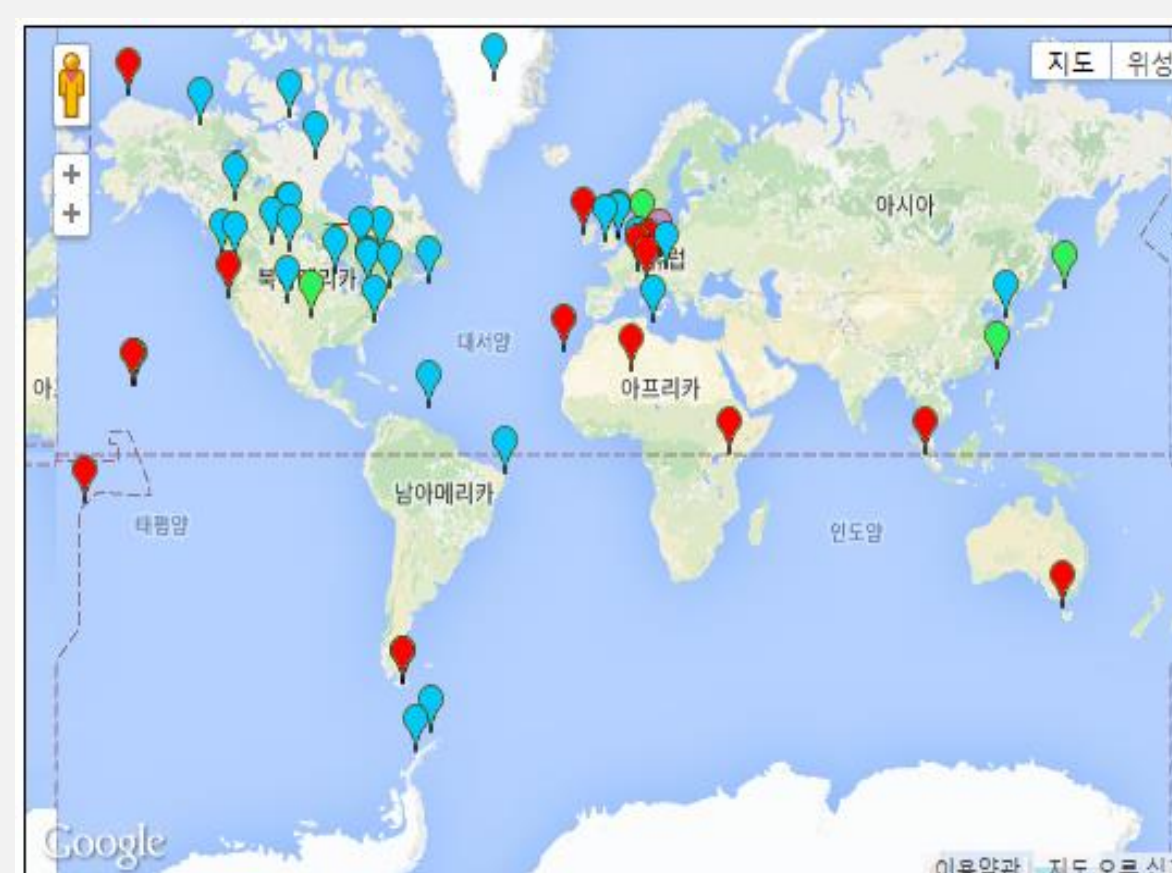
- Since 2014, WCC-SF<sub>6</sub> training and education course has been held in tandem with APGG.
- In 2014, 3 countries attended this course and linked to the next steps such as installations of SF<sub>6</sub> monitoring system.
- We deliver practical skills which are applicable back to their stations.



## Future Actions

### Technical support, Audits and inter-comparison Experiment

- Because the numbers on SF<sub>6</sub> production is very rough estimates, observing the global increase of SF<sub>6</sub> in the atmosphere provides a reliable accumulation record from which release rates can be calculated.
  - Under the GAW Programme only 55 stations are monitoring SF<sub>6</sub> that the gap between stations still remain.
  - Measurement quality has to be kept high by getting a traceability and a compatibility
- 1) In September, 2015, we are going to support to build up SF<sub>6</sub> measurement system in IITM, India
  - 2) In February, 2016, we are going to have an audit of Cape Point station in South Africa.
    - For last two years we have developed audit procedures, check-lists and travelling standards. Also we had an audit for one Korea station.
  - 3) In 2015, we are going to organize the 1<sup>st</sup> inter-comparison experiment for SF<sub>6</sub>
    - So far, we had an inter-comparison experiment with CCL and have developed a procedure for it.
    - Before end of the year we are going to announce the detailed information in the 1<sup>st</sup> experiment on WMO GAW webpage.



Contact WCC-SF<sub>6</sub> if you need any helps / have interests / want to cooperate with us  
Haeyoung Lee: [leehy80@korea.kr](mailto:leehy80@korea.kr) ☺