From Science to Operations:
Practical problems in implementing instruments in an operational network

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The Ideal:

-A very long time series with known error characteristics of some variable.
The CCN record at Cape Grim (Courtesy of John Gras, CSIRO)

Figure 2. Monthly median concentrations of CCN active at 0.5% for Baseline conditions 1981-2004. Includes data from manual and automated CCN counters.
Problems [no solutions!]:

- The babysitting issue
- The four-year wall
- The manager’s dilemma
- The politician’s horizon
Babysitting your instrument:
- Keeping a small family:
  The one-scientist – one instrument principle

- Getting to know your ‘baby’:
  Understanding how the instrument works

- ‘Moving out of the house’:
  Exposure to operations; ‘operations guys talk funny’; ‘scientists are weirdo’s’. The SLA.

- Your ‘child’ is always your ‘child’:
  The link between scientist and instrument cannot be erased
The four-year wall:

- Getting to know an instrument takes lots of time

- You cannot ‘score’ on a developing instrument, so avoid to become a prisoner of the project. Obscurity does not pay the bills.

- Funding comes in four – year cycles, EU – projects, also in government departments!

- Is it really fun to work on a problem for 10 years?
Example at Cabauw
[almost operationa]
Cloud classification
Was supported under EU FP5; continues on a shoestring budget
The manager’s dilemma:

- There is science and science

Three types of work:

  a) theoretical
  b) with data and theory
  c) with instruments

- Scoring with Citation Indices: Type C has the fewest publications and the lowest Citation Indices [by a considerable margin].

So it is ‘low impact’ work; you can’t score it easily; blessed be the manager who understands this dilemma.
The politician’s horizon:

-Who wants to invest in a 30 year project? I need to be reelected in 3 years

-Everybody wants ‘my’ money [read the taxpayers money]. I cannot sell this to my electorate.

-The climate problem is solved [thanks to Gore]: We need to move to Adaptation and Mitigation Issues, not more of the same, i.e. Monitoring
An example of rarity and beaty:

- Stable staff: One scientist worked on a single record for 25 years
- Stable funding: Provision for 30 years
- Stable instruments: Few variations

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