

Data acquisition requirement and operation plan (strategy) :
Data acquisition requirement from application

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There would be two sides in data acquisition requirements from the stand point of scientific applications, which need compromise. One is to gather data globally and continuously for as long a period as possible. The other is to get detailed spatial information on cloud/aerosol distributions. We discussed on what would be the best strategy for data collection under the conditions of the lidar hardware and data recording/downlink systems.

Data acquisition requirements from application

Ultimate requirements

- Global coverage
- Long-term change monitoring (seasonal, annual)
- Short-term change detection (daily, monthly)
- Diurnal change detection
- High spatial resolution measurements (higher than 100 m)

Limitations

- On-board recording capacity
- Down-link capability
- Data handling on the ground

Data acquisition requirements from application (cont'd)

Minimum requirements

- Coverage dependent on orbit
- One-year dataset
- Monthly (seasonal) average climatology
- Vertical resolution higher than 100 m for clouds and 1 km for aerosols
- Horizontal resolution higher than 1.5 km for clouds and 150 km for aerosols
- Occasional measurements with much higher spatial resolutions