



Country Update Singapore

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OSCAR/Surface course for RA-V
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Outline

- I. Introduction to the country and the NMHS
- II. Physical context of the country
- III. National requirements for observations
- IV. Inventory of current national observing capabilities
- V. Other remarks



1. Introduction to Singapore



- Located deep in the tropics (about 1°N of the equator)
- 710.3 sq km (49 km E-W; 26 km N-S)
- Population of 5.6 million

- Urbanised environment
- Main meteorological/environmental hazards:
 - Heavy rain/flash floods;
 - Lightning* ; strong winds (from thunderstorms)
 - Transboundary Haze

*Average of 168 thunderstorm days per year



1. Mission and Basic Info of NMHS

Meteorological Service Singapore (MSS) is the national meteorological authority for **weather** and **climate**

i Weather Forecasting Services

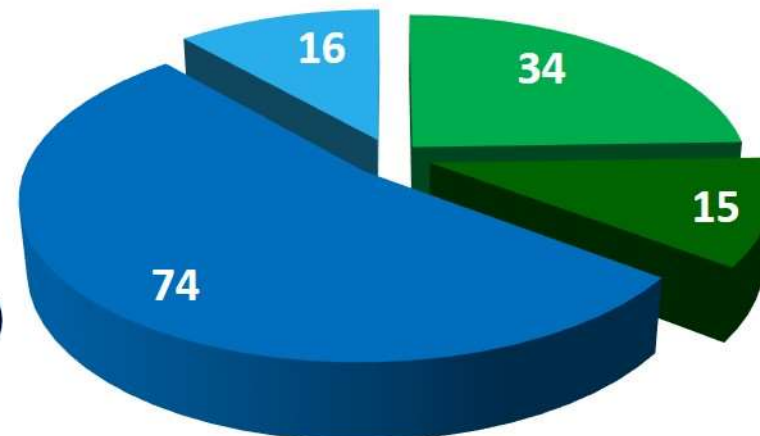
ii Multi-hazard Warning Services

iii Climate Information and Prediction Services



MSS Staff Composition

- Meteorological Officers
- Research Scientists
- Technicians (including observers)
- IT/Admin



2. Physical Context



- 710.3 sq km
- Mostly urban landscape
- Most of Singapore is no higher than 15m AMSL
- Highest point is Bukit Timah Hill (165m)
- 2 main rivers – Singapore River and Kallang River

3. National requirements for observations

Priority Application areas



Most relevant observed variables:

- Temperature, humidity, precipitation, wind, lightning
- Air quality
- Radiation, heat stress

Inventory of current national observing capabilities (maps and lists – 2 or 3 slides in total)

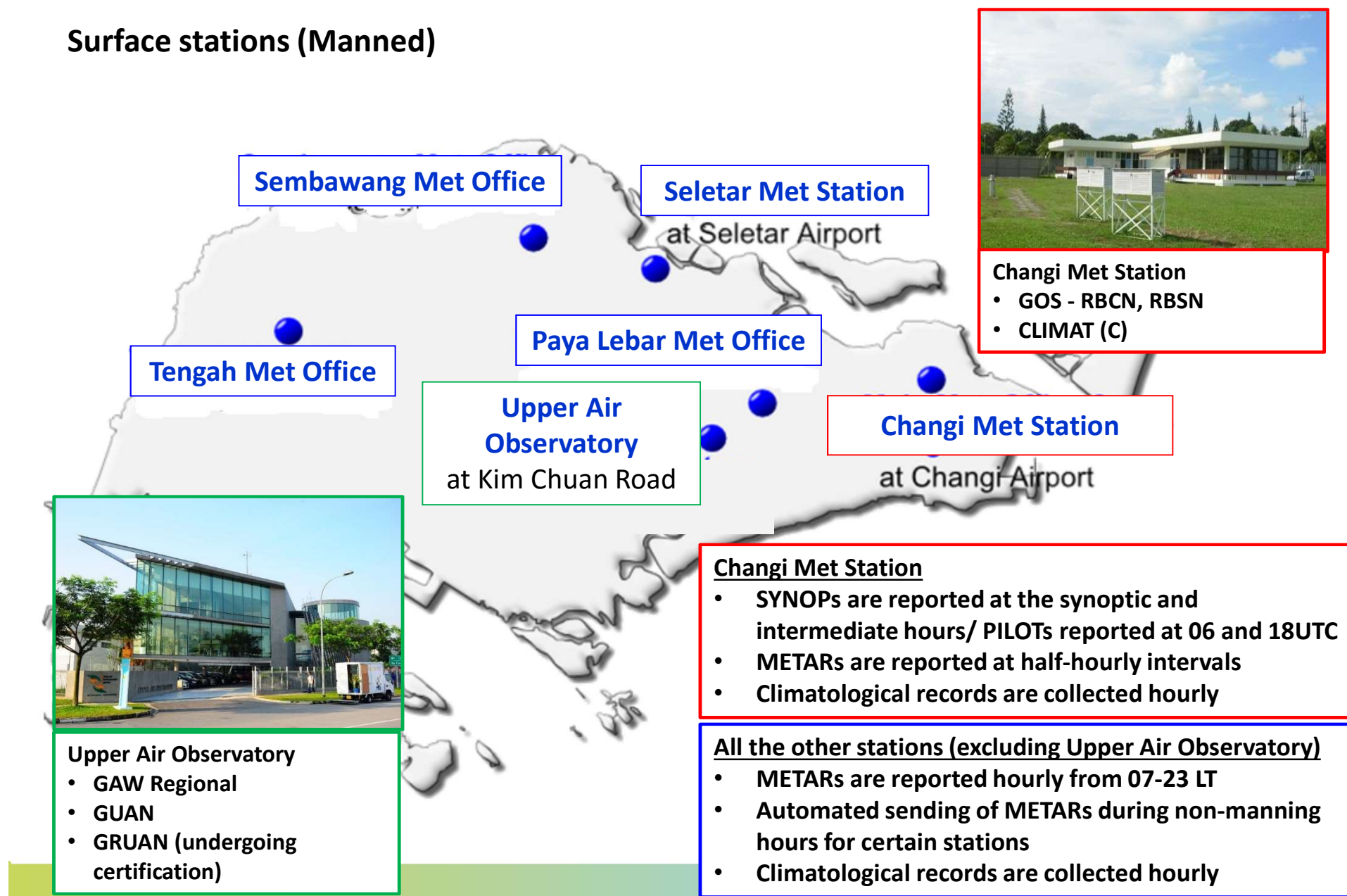
I. Networks description with metadata

- Map and list of meteorological/climatological operational stations (identifying the technology used):
 - Surface observing stations
 - Precipitation stations
 - Upper-air/radiosonde stations
 - Weather Radars
 - Lightning detection networks
- Map and list of other surface operational stations:
 - Hydrological stations
 - Sea stations
 - Atmospheric composition and other stations



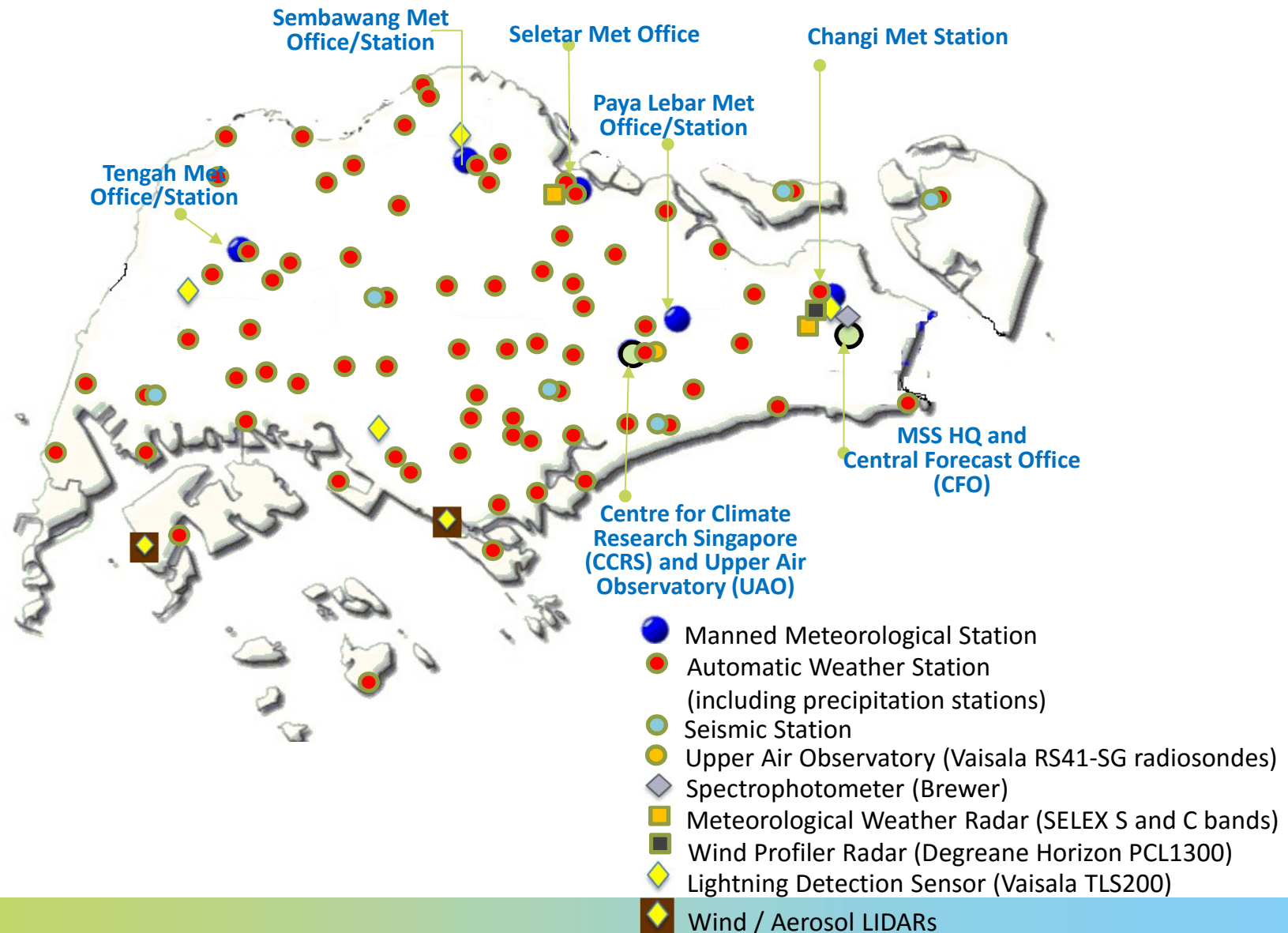
4. Inventory of current national observing capabilities

Surface stations (Manned)



4. Inventory of current national observing capabilities

Observation Network



5. Update on WIGOS IMPLEMENTATION

OSCAR/Surface

- Main climate station updated (Phase 1 requirements met)
- Upper air station pending confirmation of separation procedures and updating

Observation Committee

- Oversee and guide planning, implementation, management and maintenance of MSS obs network to intl requirements.
- Analyse and review met obs requirements to meet ops and research needs.
- Ensure the adequacy, reliability and resilience of the observation network through advising on requirements relating to inspection & calibration, obs best practices, the need for new/replacement sys etc
- Identify emerging obs technologies, and develop recommendations
- Coordinate with other agencies/providers engaged in met obs systems and data management activities.





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