

GCOS Austria 2021

TAWES Status & CIMO Classification



ZAMG
Zentralanstalt für
Meteorologie und
Geodynamik

Status

ZAMG is partly governmental (ministry of science), partly a private company
ZAMG should be merged with geological survey and become a new type of company (similar to universities, new defined tasks, budget for 3 years) within the next year (text from Nov 2019 😊)

Station network

290 automatic stations

1 radiosonde station (manual, maybe automated in the few years)

Staff:

15 employees for development and technical maintenance (Vienna and four regional branches)

20 employees for data quality control

Budget:

1.2 Million €

1/3 investment, 1/3 maintenance, 1/3 remuneration for voluntary observes, data transfer,....

19.10.2021
Folie 2



Evolution:

10/19/2021
Folie 3

New Data logger:

SOM (System on Memory): ARM CPU, Debian

Tailored carrier board with all necessary connections at the right place
CPU, RAM, Storage, data transfer x 10 to x 100 compared to the old
logger (2005)

Additional IP connectivity between logger and sensors

PowerLan (existing infrastructure)

fiber optic cables (new sites)





New sensors:
focus on less maintenance and more reliability

10/19/2021
Folie 4

Data transfer: Additional usage of governmental digital radio. Slow transmission, but reliable in terms of a crisis

Data quality control: Online quality checks, automatic flagging of suspect values, can be overridden by human afterwards

Data transmission: sub hourly BUFR, usage of automatic snow measurements in SYNOP, transmission of radiosonde descents

CIMO Site Classification



CIMO Guide (*Commission for Instruments and Methods of Observation*):

10/19/2021
Folie 5

WMO Guideline for meteorological observations. Types of sensors, site characteristics, quality assurance and maintenance, metadata

Chapter “General”, ANNEX 1.B. SITING CLASSIFICATIONS FOR SURFACE OBSERVING STATIONS ON LAND

Classes 1 – 5

Example Air Temperature and Humidity:

Class 1 – 2: no additional estimated uncertainty added by siting

Class 3 (additional estimated uncertainty added by siting up to 1 °C)

Class 4 (additional estimated uncertainty added by siting up to 2 °C)

Class 5 (additional estimated uncertainty added by siting up to 5 °C)

<https://community.wmo.int/activity-areas/imop/cimo-guide>

CIMO Site Classification Air Temperature and Humidity



Class 1

Flat, horizontal land, surrounded by an open space, slope less than $\frac{1}{3}$ (19°);

(b) Ground covered with natural and low vegetation (< 10 cm) representative of the region;

(c) Measurement point situated:

(i) At more than 100 m from heat sources or reflective surfaces (buildings, concrete surfaces, car parks, etc.);

(ii) At more than 100 m from an expanse of water (unless significant of the region);

(iii) Away from all projected shade when the sun is higher than 5°

A source of heat (or expanse of water) is considered to have an impact if it occupies more than 10% of the surface within a circular radius of 100 m surrounding the screen, makes up 5% of an annulus of 10–30 m, or covers 1% of a 10 m radius area.

10/19/2021
Folie 6

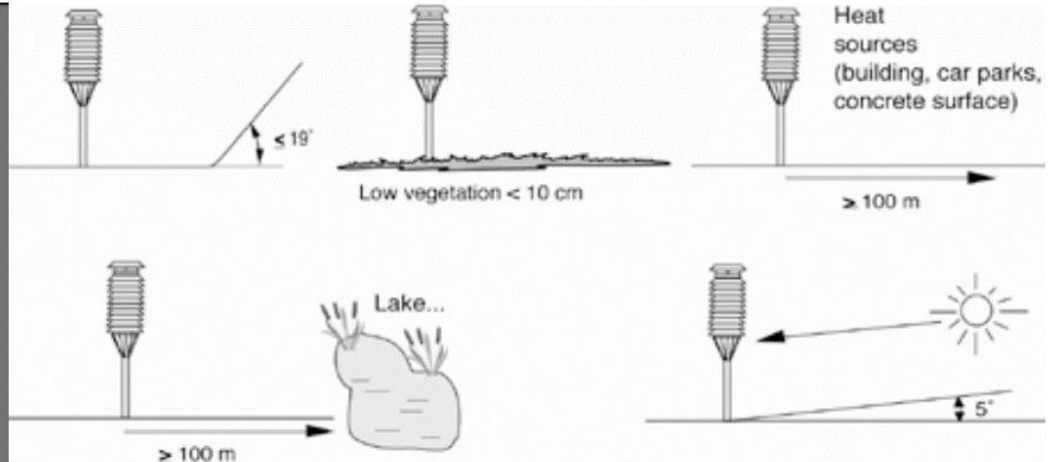
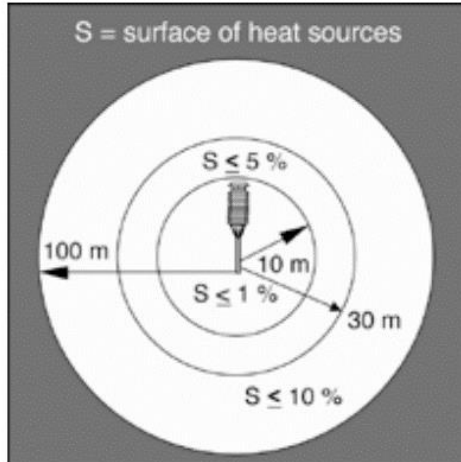
<https://community.wmo.int/activity-areas/imop/cimo-guide>

CIMO Site Classification Air Temperature and Humidity

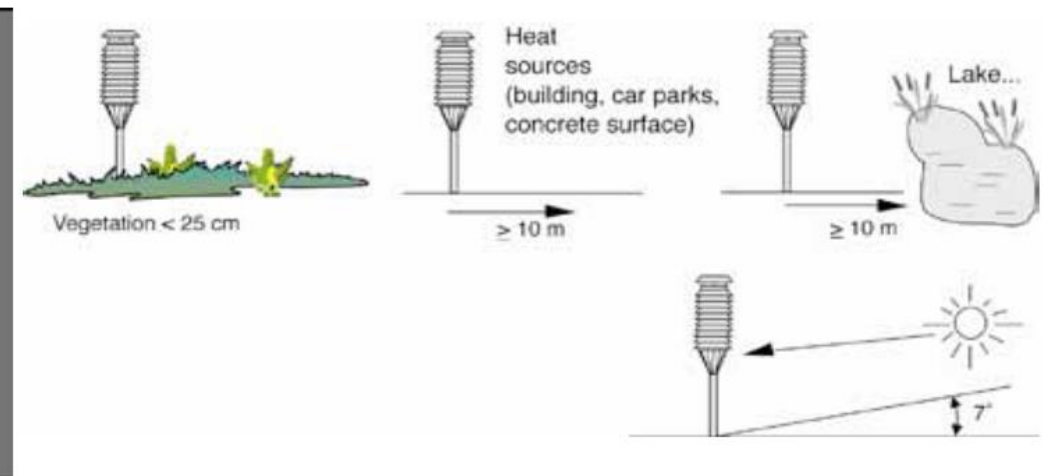
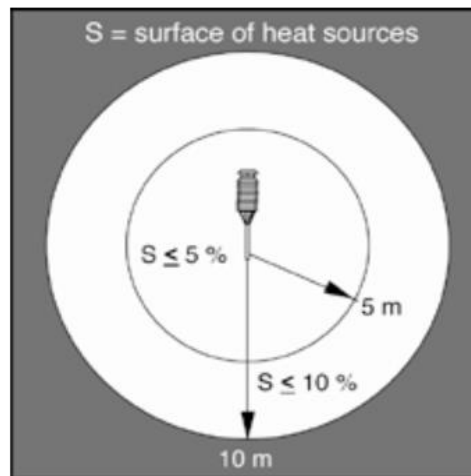


0/19/2021
Folie 7

Class 1



Class 3



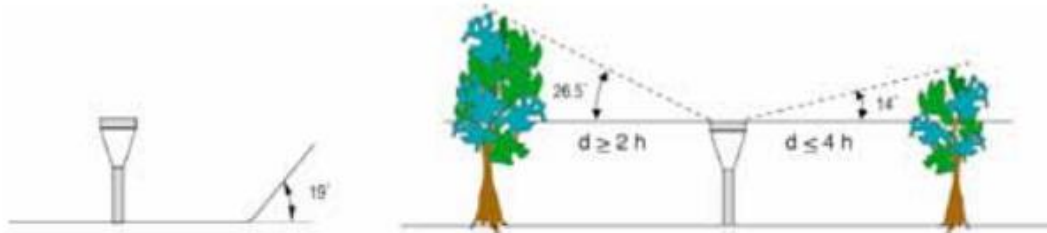
<https://community.wmo.int/activity-areas/imop/cimo-guide>

CIMO Site Classification Precipitation

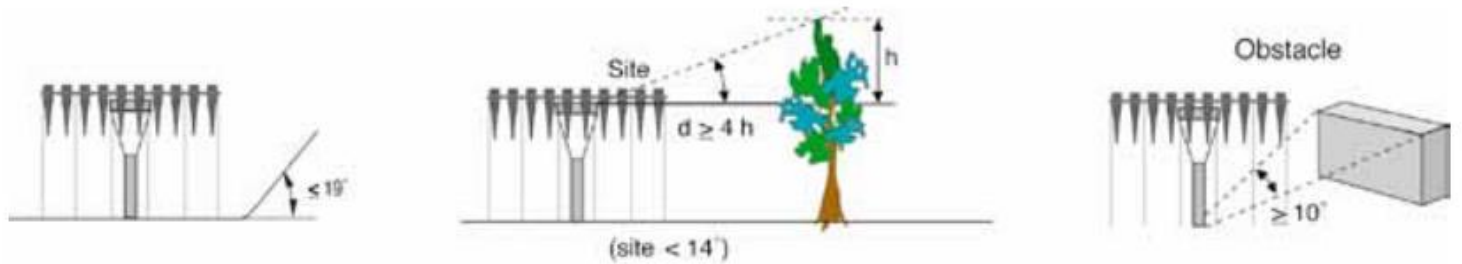


10/19/2021
Folie 8

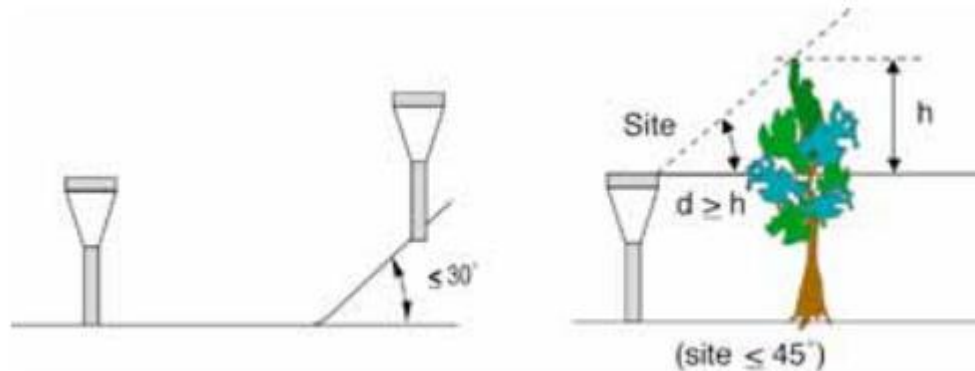
Class 1



or



Class 3
Uncertainty up
To 15%



<https://community.wmo.int/activity-areas/imop/cimo-guide>

CIMO Site Classification



2001: Cimo 2



2020: Cimo 5



2021: Cimo 1 - 2

10/19/2021
Folie 9