GHSOT Network Provided Classification Standardisations

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# Preface

# Definition Syntax

# CLASSIFICATION DEFINITIONS

## AREA\_CLASSIFICATION

Describes type of area a measurement station is situated in

#rural: All areas, that do not fulfil the criteria for an urban area are defined as "rural"

#3 subdivisions to indicate the distance to the nearest built-up urban area

#------near\_city: area within 10 km from the border of an urban or suburban area.

#------regional: 10-50 km from major sources/source areas.

#------remote: > 50 km from major sources/source areas.

#urban: All areas with some level of urban influence are defined as "urban"

#2 subdivisions to separate between urban centres and suburban areas:

#------centre: Continuously built-up urban area meaning complete (or at least highly predominant) building-up of the street front side by buildings with at least two floors or large detached buildings with at least two floors.

#With the exception of city parks, the built-up area is not mixed with non-urbanised areas.

#------suburban: Largely built-up urban area. ‘Largely built-up’ means contiguous settlement of detached buildings of any size with a building density less than for ‘continuously built-up’ area.

#The built-up area is mixed with non-urbanised areas (e.g. agricultural, lakes, woods).

#It must also be noted that ‘suburban’ as defined here has a different meaning than in every day English i.e. ‘an outlying part of a city or town’ suggesting that a suburban area is always associated to an urban area.

#A suburban area can be suburban on its own without any urban part.

## STATION\_CLASSIFICATION

Categorises the dominant type of air measured by a station

#background : Located such that its pollution levels are representative of the average exposure of the general population within the type of area under assessment. The pollution level should not be dominated by a single source type (e.g. traffic), unless that source type is typical within the area

#under assessment. The station should usually be representative of a wider area of at least several square kilometers.

#point\_source: Measurements influenced by a major stationary emissions source (i.e power plant),

#or influenced by traffic, off-road vehicles and engines, rail, marine, or aviation sources.

#Subdivisions of 'industrial' & 'traffic' given to allow for greater speciation given by AIRBASE & EIONET)

#--------industrial: Located in close proximity to single industrial sources or industrial areas, in a location that should represent the highest concentrations to which the population within the zone are exposed to.

#A wide range of industrial sources can be considered here, including: a) thermal power generation, b) district heating plants, c) refineries, d) waste incineration/treatment plants, dump sites, e) mining, including gravel, oil, natural gas, f) airports or g) ports.

#--------traffic: Located in close proximity to a road, in a location that should represent the highest concentrations to which the population are exposed to within the zone.

#Located such that the pollution level for the specific pollutant is determined predominantly by the emissions from road traffic (i.e. not ship, railway, airplane, off-road) on distinct major roads.

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#MAIN\_EMISSION\_SOURCE: Describes the main source of the emissions influencing air at a station.

#\*Note - this describes the main source of emissions, but does not necessarily mean these emissions dominate the type of air measured at a station (given by STATION\_CLASSIFICATION).

#agriculture: emissions associated with agriculture

#commercial\_and\_residential\_combustion: emissions associated with commercial and residential combustion

#extraction\_of\_fossil\_fuels: emissions associated with the extraction of fossil fuels

#industrial\_combustion: emissions associated with industrial combustion

#natural: emissions from natural sources (e.g terpenes from trees)

#other\_mobile\_sources\_and\_machinery: emissions from all other mobile sources than traffic, and from off-road vehicles and engines

#production\_processes: emissions from processes associated with production and assembly

#power\_production: emissions from processes associated with the generation of power

#road\_transport: emissions associated with emissions from traffic

#solvents: emissions associated with use of solvents

#waste\_treatment\_and\_disposal: emissions associated with waste treatment and disposal

#----------------------------------------------------

#LAND\_USE: Dominant land use in the area of the reporting station

#categories broadly follow IGBP land cover classification system, followed by MODIS/VIIRS land use maps

#source: http://www.eomf.ou.edu/static/IGBP.pdf

#barren: Lands with exposed soil, sand or rocks and never have more than 10% vegetated cover during any time of the year.

#--------beach: landform alongside a body of water which consists of loose particles. The particles composing a beach are typically made from rock, such as sand, gravel, shingle, pebbles, or cobblestones.

#--------desert: a barren area of landscape where little precipitation occurs and consequently living conditions are hostile for plant and animal life.

#The lack of vegetation exposes the unprotected surface of the ground to the processes of denudation.

#--------rock: characterised by areas of bedrock exposure, scarps, talus, slides, volcanic material, rock glaciers, and other accumulations of rock without vegetative cove

#--------soil: thin soil, without vegetation

#forest: Lands dominated by woody vegetation or trees, with a percent cover >60% and height exceeding 2 m.

#Includes all evergreen needleleaf, evergreen broadleaf, deciduous needleleaf, deciduous broadleaf types

#open: Lands with herbaceous, other understory systems or woody vegetation less than 2 m tall

#--------grassland: Lands with herbaceous types of cover. Tree and shrub cover is less than 10%.

#--------savanna: Lands with herbaceous and other understory systems, and with forest canopy cover between 10% and 60%. The forest cover height exceeds 2 m.

#--------shrubland: Lands with woody vegetation less than 2 m tall and with shrub canopy cover > 10%. The shrub foliage can be either evergreen or deciduous.

#snow: Lands under snow/ice cover throughout the year.

#urban: Land covered by buildings and other man-made structures.

#--------agricultural: Lands covered with temporary crops followed by harvest and a bare soil period (e.g., single and multiple cropping systems).

#Also includes lands used for farming and raising of livestock

#It is important to note that also agricultural is classed under urban, this class also includes naturally occuring crops.

#\*\*Sites with agricultural land\_use can have an AREA\_CLASSIFICATION of 'rural'.

#\*\*They are defined as 'urban' under LAND\_USE as they would not be there without human activity, but can be located extremely far from urban areas, with no major emission sources nearby (with the exception of pesticides)

#--------blighted: A blighted area is defined as: by reason of deterioration, faulty planning, inadequate or improper facilities, deleterious land use or the existence of unsafe structures,

#or any combination of these factors, are detrimental to the safety, health or welfare of the community.

#--------commercial: A commercial area is real estate intended for use by for-profit businesses, such as office complexes, shopping malls, service stations and restaurants.

#It may be purchased outright by a developer for future projects or leased through a real estate broker.

#--------industrial: Industrial land use is the use of a piece of land for industrial purposes, eg. manufacturing.

#--------military: Land used for solely military purposes

#--------park: A large public garden or area of land used for recreation.

#--------residential: A residential area is a land used in which housing predominates, as opposed to industrial and commercial areas. Housing may vary significantly between, and through, residential areas.

#These include single-family housing, multi-family residential, or mobile homes.

#--------transportation: All types of land use used for human transportation. This includes airports, roads, railway lines and shipping ports.

#\*\*possibly some overlap between between 'industrial' and 'transportation' classes, as some networks may class things such as airports as industrial (e.g AIRBASE), and others not

#water: Oceans, seas, lakes, reservoirs, and rivers. Can be either fresh or salt- water bodies.

#wetland: Lands with a permanent mixture of water and herbaceous or woody vegetation. The vegetation can be present either in salt, brackish, or fresh water.

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#TERRAIN: Dominant terrain in the area of the reporting station

#coastal: A coastal area is where land meets the sea or ocean.

#complex: A region having irregular topography (not including mountains or coastal).

#Complex terrain can include variations in land use, such as urban, irrigated, and unirrigated.

#flat: Open terrain, open country or open ground is terrain which is mostly flat and free of obstructions such as trees and buildings.

#Examples include farmland, grassland and specially cleared areas such as an airport.

#mountain: A mountain is a large landform that stretches above the surrounding land in a limited area, usually in the form of a peak.

#rolling: Terrain where the natural slopes consistently rise and fall across a horizontal plane

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#MEASUREMENT\_SCALE: A denotation of the geographic scope of the air quality measurements made by the monitor.

#The implication is that the same measurement made elsewhere within the measurement scale

#would produce an equivalent result to that produced at the monitoring site

#\*\*Neighbourhood and City scales have potential to overlap in applications that concern secondarily formed or homogeneously distributed air pollutants

#micro: representative for: several metres - ~100m

#middle: representative for: ~100m - 0.5km, several city blocks

#neighbourhood: representative for: 0.5km - 4km, some extended area of city that has relatively uniform land use

#city: representative for: 4km - 50km, city like dimensions.

#regional: representative for: 50km - 100s km, rural area of reasonably homogeneous geography, without large sources