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| Title | **Semantics of unitTypes for environment-related sensors** |
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| Source(s) | Tai-Gil Kwon tgkwon@keti.re.kr (Korea Electronics Technology Institute),  Changseok Yoon csyoon@keti.re.kr (Korea Electronics Technology Institute),  Tae-Beom Lim tblim@keti.re.kr (Korea Electronics Technology Institute),  Kwanghyun Ro [khrho@hansung.ac.kr (Hansung](mailto:khrho@hansung.ac.kr(Hansung) University) |
| Re: |  |
| Abstract | This contribution proposes semantics of unitTypes for environment-related sesnsor information in the physical world in a standardized data format. |
| Purpose | To start discussion on purpose of the standard |
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# Data formats for common types

## unitType

### Semantics

The semantics of the unitType:

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| Name | Definition |
| micrometer | A unit of length or distance equal to one-millionth of a meter. |
| mm | A unit of length or distance equal to one-thousandth of a meter. |
| cm | A unit of length or distance equal to one-hundredth of a meter. |
| meter | The basic unit of length in the International System of Units. |
| km | A unit of length or distance equal to one thousand meters. |
| inch | A unit of length or distance equal to 0.0254 meters. |
| yard | A unit of length or distance equal to 0.9144 meters. |
| mile | A unit of length or distance equal to 1609.344 meters. |
| mg | A unit of mass or weight equal to one-millionth of a kilogram. |
| gram | A unit of mass or weight equal to one-thousandth of a kilogram. |
| kg | The base unit of mass in the International System of Units. |
| ton | A unit of mass or weight equal to a thousand kilogram |
| meterpersec | The SI coherent derived unit of velocity in the International System of Units. |
| kmperhour | A unit of velocity equal to a thousand meters per hour. |
| hPa | A unit for pressure, which is equal to 100 pascals. |
| newton | The SI coherent derived unit of force in the International System of Units, which is equal to one kilogram-meter per second squared. |
| hz | The derived unit of frequency in the International System of Units, which is equal to one over a second. |
| khz | A unit of frequency equal to a thousand Hertz. |
| mhz | A unit of frequency equal to a million Hertz. |
| ghz | A unit of frequency equal to a billion Hertz. |
| volt | The SI coherent derived unit of electric potential difference or an electromotive force in the International System of Units, which is equal to one kilogram-square meter per second cubed-ampere. |
| watt | The SI coherent derived unit of power or radiant flux in the International System of Units, which is equal to one kilogram-square meter per second cubed. |
| ampere | The basic unit of electric current in the International System of Units. |
| lux | The SI coherent derived unit of illuminance in the International System of Units, which is equal to one candela per square meter. |
| celsius | The SI coherent derived unit of Celsius temperature in the International System of Units. |
| fahrenheit | A unit of temperature which is equal to a Celius temperature times nine fifths plus thirty-two. |
| radian | The SI coherent derived unit of plane angle in the International System of Units. |
| degree | A unit of plane angle which is equal to pi over hundred-eighty radian (pi is a mathematical constant whose value is the ratio of any circle’s circumference to its diameter in Euclidean space) |
| ppm | A unit of a way of quantifying small concentrations, equal to part(s) per million. |
| millimetersperhour | A unit of Speed or Velocity in the Metric System. |
| wattspermetersquare | The SI unit for radiative and other energy fluxes in geophysics |
| percentage | A number or ratio expressed as a fraction of 100 |
| kPa | The SI derived unit of pressure, which is equal to 1000 pascals |
| microSiemenspercentimeter | A unit in the category of Electric conductivity. |
| pH | A unit of measure which describes the degree of acidity or alkalinity of a solution |