



# *Terms and Definitions*

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# Definition 1

Calibration	The process of quantitatively defining the system responses to known, controlled signal inputs	CEOS
Validation	The process of assessing, by independent means, the quality of the data products derived from the system outputs	CEOS
Traceability	Property of a <b>measurement result</b> relating the result to a stated metrological reference ( <i>free definition and not necessarily SI</i> ) through an unbroken chain of <b>calibrations of a measuring system</b> or comparisons, each contributing to the stated <b>measurement uncertainty</b>	ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)

# Definition 2

Error	Difference of <b>quantity value</b> obtained by <b>measurement</b> and <b>true value</b> of the <b>measurand</b>	ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)
Uncertainty	Parameter that characterizes the dispersion of the <b>quantity values</b> that are being attributed to a <b>measurand</b> , based on the information used	ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)
Type A evaluation of uncertainty	Method of evaluation of a component of <b>measurement uncertainty</b> by a statistical analysis of <b>quantity values</b> obtained by <b>measurements</b> under <b>repeatability conditions</b>	ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)

# Definition 3

Type B evaluation of uncertainty	Method of evaluation of a component of <b>measurement uncertainty</b> by means other than a statistical analysis of <b>quantity values</b> obtained by <b>measurement</b>	ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)
Accuracy (of measurement)	Closeness of agreement between a <b>quantity value</b> obtained by <b>measurement</b> and the <b>true value</b> of the <b>measurand</b>	ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)
Bias	Systematic <b>error of indication</b> of a <b>measuring system</b>	ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)
Reproducibility	<b>measurement precision</b> under a set of conditions including different locations, operators, and <b>measuring systems</b>	ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)

<p>Repeatability</p>	<p><b>Measurement precision</b> under set of conditions including the same <b>measurement procedure</b>, same operator, same <b>measuring system</b>, same operating conditions and same location, and replicated measurements over a short period of time</p>	<p>ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)</p>
<p>stability</p>	<p>Ability of a <b>measuring system</b> to maintain its metrological characteristics constant with time</p>	<p>ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)</p>
<p>precision</p>	<p>closeness of agreement between <b>quantity values</b> obtained by replicate <b>measurements</b> of a <b>quantity</b>, under specified conditions</p>	<p>ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)</p>

# Definition 5

<p>measurand</p>	<p><b>quantity</b> intended to be measured</p>	<p>ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)</p>
<p>Procedure (of measurement)</p>	<p>detailed description of a <b>measurement</b> according to one or more <b>measurement principles</b> and to a given <b>measurement method</b></p> <p>NOTE The measurement procedure is usually documented in sufficient detail to enable an operator to perform a measurement.</p>	<p>ISO guide 99 Vocabulary for International Metrology (updated draft of 2004)</p>
<p>Protocol</p>	<p>closeness of agreement between <b>quantity values</b> obtained by replicate <b>measurements</b> of a <b>quantity</b>, under specified conditions</p>	<p>Amalgamated from versions for software, engineering, measurement etc</p>

# Definition 6

Methodology	A generalised description of an approach or set of approaches to carry out a particular task. This provides an overview of concept but not the detail as in a protocol or procedure	Proposed working Definition
Quality Control	QC refers to the activities undertaken to check and optimise accuracy and precision of the data after its collection	Proposed working Definition
Quality Assurance	QA refers to the overall management of the processes involved in obtaining the data	Proposed working Definition
Vicarious Calibration	Vicarious calibration refers to techniques that make use of natural or artificial sites on the surface of the Earth for the post-launch calibration of sensors	CCRS

<p>Data fusion</p>	<p>Data fusion is a formal framework in which are expressed the means and tools for the alliance of data originating from different sources. It aims at obtaining information of greater quality; the exact definition of 'greater quality' will depend upon the application.</p>	<p>Wald L., A European proposal for terms of reference in data fusion. <i>International Archives of Photogrammetry and Remote Sensing</i>, Vol. XXXII, Part 7, 651-654, 1998</p> <p>Wald L., Some terms of reference in data fusion. <i>IEEE Transactions on Geosciences and Remote Sensing</i>, 37, 3, 1190-1193, 1999.</p>
<p>Harmonisation</p>	<p>Establish a consensus on general procedures and concepts</p>	<p>Proposed working Definition</p>

# Definition 8

Standardisation	Establish an agreement (not necessarily obligatory) on precise procedures and concepts	Proposed working Definition
<i>In situ</i> measurement	A direct measurement of the measurand in its original place Any sub-orbital measurement	Latin definition  Proposed working Definition
Availability	The quality of being at hand when needed	Proposed working Definition
Accessibility	The capability to access available data.  Access: The action or process of obtaining or retrieving stored information	Proposed working Definition
Meta Data	Description of key information describing a given data set	Proposed working Definition

# Definition 9

<p>EO data products (L0, L1, L2, L3, L4), across agencies and companies</p>	<p><b>L0:</b> Reconstructed unprocessed data at full space-time resolution with all available supplemental information to be used in subsequent processing (e.g. ephemeris, health and safety) appended.</p>	<p>Proposed working Definition</p>
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# Definition 10

EO data products (L0, L1, L2, L3, L4), across agencies and companies

**L1A:** Reconstructed unprocessed data at full resolution, time-referenced, and annotated with ancillary information, including radiometric and geometric calibration coefficients and geo-referencing parameters (e.g. ephemeris) computed and appended but not applied to the L0 data

**L1B:** Radiometrically corrected and calibrated data in physical units at full instrument resolution as acquired

**L2:** Derived geophysical parameters (e.g. sea surface temperature, leaf area index) at the same resolution and location as L1 source data

Proposed working Definition

# Definition 11

<p>EO data products (L0, L1, L2, L3, L4), across agencies and companies</p>	<p><b>L3:</b> Data or retrieved geophysical parameters which have been spatially and/or temporally re-sampled (i.e. derived from L1 or L2 products), usually with some completeness and consistency. Such re-sampling may include averaging and compositing</p> <p><b>L4:</b> model output or results from analysis of lower level data (i.e. parameters that are not directly measured by the instruments, but are derived from these measurements).</p>	<p>Proposed working Definition</p>
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