

## TECHNICAL TERMINOLOGY FOR THE PHOTOGRAMMETRIC COMMUNITY

PAUL R. T. NEWBY (paulnewby@onetel.net)  
*West Wellow, Romsey, Hampshire*

### *Abstract*

*The editorial team of The Photogrammetric Record has long felt the need for standardised photogrammetric terminology, in order both to eliminate inconsistency within individual authors' work and to maintain consistency within the publication over time. To this end a guidance document was produced in 2000–2001 for internal use only. After a succession of revisions this is now published for the first time. It is hoped that, as well as helping authors to prepare papers for submission to the Record, the present list may become widely accepted or, failing that, may lead to correspondence, revision and ultimately a consensus which will be to the benefit of photogrammetrists and those who publish their work worldwide.*

KEYWORDS: editing, language, photogrammetry, technical terms,  
terminology, use of English

### BACKGROUND

EDITORS ARE CONTINUALLY FACED with minor but sometimes difficult decisions when handling authors' texts. Many technical terms have evolved without rigorous definition, and consensus on the exact form may be hard to achieve. Very frequently, authors are inconsistent within a single article, but it is not always easy to decide which of several versions of a given term to adopt as definitive. Even within the educated native English-speaking community, variations in the use of upper and lower case, of hyphenation or even of spelling are commonly tolerated, especially in acronyms or neologisms; it is not surprising that worldwide even greater variation occurs. However, it is a matter of both principle and pride that any scholarly journal of record maintains consistency within every article, every issue and every volume, and that any changes between volumes are made only after the most careful consideration.

### EARLY DEVELOPMENT OF THE TERMINOLOGY GUIDE

When the present author took office as Editor of *The Photogrammetric Record* in 1999 he was greatly encouraged to have the help and support both of his predecessor, K. B. Atkinson (now Editor Emeritus), and of an extremely experienced Assistant Editor, Veronica Brown. The latter agreed to remain in post for an extended transitional period. The author found that this team had long ago accepted as authoritative, for general use of English, the precepts of *The Oxford Dictionary for Writers and Editors* (ODWE) (Oxford English Dictionary Department,

1981), of which the publication of a Second Edition (Ritter, 2000) was then imminent. For guidance on scientific terminology and mathematical notation they had also made good use of *The Oxford Dictionary for Scientific Writers and Editors* (Isaacs et al., 1991).

With the aid of these two authoritative publications and making use of their long experience both of teaching photogrammetry and of editing authors' contributions, Atkinson and Brown had achieved a very clear consensus on the forms to be used in *The Photogrammetric Record*. The incoming Editor therefore asked Mrs Brown to compile, over a period up to her eventual retirement, a guide to photogrammetric terms, both on the basis of her earlier experience and the consensus with Atkinson, and of the ongoing editing process on live contributions. By the time of her retirement in 2002, the list already ran to about four pages and covered a significant portion of the terms which might present difficulty to any incoming team member; thanks to an ongoing dialogue within the team it was already in its fourth iteration. The author had also by then publicly laid down some markers in an Editorial (Newby, 2001), in relation to the use of British (UK) English as well as the limitations of ODWE. It was recognised that British (UK) and North American (US) conventions inevitably differ but, as an international journal published in the UK, *The Photogrammetric Record* will always naturally observe British English spellings and other conventions and asks its contributors to do the same.

At about this time the decision was made to invoke additional professional help with the production of *The Photogrammetric Record*, in order to reduce the volume of effort required of volunteers recruited from within the Remote Sensing and Photogrammetry Society. In the equal partnership eventually negotiated between the Society and Blackwell Publishing Ltd, copy editing would cease to be a volunteer's role, the work being done in future by a skilled professional member of the Blackwell team, who could not, however, be expected to be a photogrammetric specialist or to master the continually evolving terminology of geomatics, robotics, computer vision and other related subjects whose vocabulary would also inevitably feature in papers accepted for publication in *The Photogrammetric Record*. This greatly increased the need for the "Terminology Guide", as the document had become known, and it was supplied to all relevant members of the Blackwell team, who have been using it to good effect ever since.

Despite this delegation of the production roles to Blackwell, it soon became clear that even papers which had undergone the full process of peer review, normally followed by revision and further review before eventual acceptance via the International Editorial Board (IEB), would invariably require some clarification before they could reasonably be released to a non-technical copy editor. This Editor therefore developed his current *modus operandi* involving a read-through and preliminary edit of all accepted papers, with the option of additional technical clarification with the aid of the lead author where necessary.

#### CONTINUING EVOLUTION OF THE GUIDE

A valuable by-product of these changes in the management of *The Photogrammetric Record* has been the incentive to think carefully about the evolving terminology of geomatics, to develop the in-house "Terminology Guide" very considerably and, with the aid of the general precepts embodied in the Oxford dictionary, to attempt to give a lead to the photogrammetric community as a whole. In many cases of doubt, especially where there appears to be no Anglo-American consensus or where the consensus is at variance with Oxford precepts, selected members of the IEB have also been consulted at various times. Encouraging discussions also took place with the IEB as well as other members of the international photogrammetric and remote sensing community, in the course of the ISPRS Congress in Istanbul in 2004.

This short article and extended listing of terminology (see Appendix) accepted for use in *The Photogrammetric Record* is the result of this process. It is hoped that, through publication of the list, authors considering submitting contributions to the *Record* will be encouraged to adopt the accepted forms at the outset, thereby greatly reducing the labour of editing and hence the risk of errors in typesetting and the volume of subsequent corrections. It is also hoped that, following the clear public lead given here, the international photogrammetric community may be ready to accept the guidance offered, thus promoting a consensus accepted for general worldwide use.

There was never any intention that this listing should in general include definitions and thus become a dictionary or even a glossary; it should certainly not be considered as an attempt at a treatise on the fundamentals of photogrammetry. Numerous useful multilingual dictionaries have been produced over the years, some of them including definitions as well as photogrammetric terms in multiple languages, ever since the pioneering *Photogrammetric Dictionary* published in seven slim volumes (one for each of the languages then addressed) by the International Society for Photogrammetry (ISP) in 1961 and reviewed in *The Photogrammetric Record* by Veronica Brown herself (1962). Other notable examples have been produced in the USA (Rabchevsky, 1984) and France (Paul et al., 1997), as well as the successor to the original ISP publication, the *ISPRS Multilingual Dictionary of Photogrammetry and Remote Sensing* produced in Germany by the Institut für Angewandte Geodäsie (Lindig, 1993). A later German private-enterprise publication (Sallet, 2002) has also included a substantial photogrammetric section.

None of these dictionaries has come to be considered sufficiently authoritative in its English-language component to eliminate the need for *The Photogrammetric Record* to form an opinion of its own and to provide a guide to the correct use of technical words, phrases and abbreviations. Moreover, in the present list it has been felt necessary to explain the use, origin or even occasionally the pronunciation of certain terms, for the benefit of Blackwell's non-specialist staff, and also to cross-reference some related expressions or to highlight terms to be avoided if possible; it is but a short step from such explanation to definition. There seems little point in removing such explanations from the internal document in order to guard the purity of the present public version, but equally it has not been thought necessary to make special efforts to extend the range of explanations published now. It is hoped that those which are included here may also be valuable to the wider public, without raising expectations for any more complete dictionary or glossary in the future.

Land surveyors traditionally acknowledge the inevitability of errors of many kinds, and in order to eliminate them they are accustomed to devising and using self-checking systems for their observations and computations. The written word is not so open to such forms of quality management, although modern word processors do offer valuable help in this regard. Habitual users of guides such as the *Oxford Dictionary for Writers and Editors* soon become aware that not even the Oxford University Press is infallible and that it is easy to compile small collections of errors and discrepancies within its publications and between successive editions. It is readily acknowledged that the listing offered here contains idiosyncrasies and inconsistencies, perhaps most especially with regard to the minor matter of hyphenation of compound expressions. However, this defect is considered inevitable, given that technical terms which have become accepted have developed in different places over long periods, and it does not invalidate the objective of achieving internal consistency even though worldwide consensus may be more elusive. Thus, although hyphenation can reasonably be governed, in general, by principles such as "two-word compounds should be hyphenated when adjectival", there seems little point in rejecting common usages such as "close range photogrammetry" (three words, no hyphen). Some readers will doubtless enjoy and have no difficulty in finding other examples of

inconsistent or even unexpected treatment. And where there appears to be no existing common usage or any consensus, no apology is given for adopting personal preferences in the last resort.

### CONCLUSION AND APPEAL FOR FEEDBACK

It is very much hoped that this publication will promote consistency in authors' future submissions to *The Photogrammetric Record*. It will also be especially gratifying if it receives general acceptance across the whole photogrammetric community and thus leads to greater consistency in contributions to kindred publications, to the meetings of the International Society for Photogrammetry and Remote Sensing and so ultimately to the *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*. Meanwhile, readers are urged to respond with comments on the present list, as well as suggestions for amendments and additions, for consideration in any future revision.

### REFERENCES

- BROWN, V., 1962. Review of *Photogrammetric Dictionary*. *Photogrammetric Record*, 4(19): 87–88.
- ISAACS, A., DAINITH, J. and MARTIN, E. (Eds.), 1991. *The Oxford Dictionary for Scientific Writers and Editors*. Oxford University Press, Oxford. 389 pages.
- LINDIG, G. (Ed.), 1993. *Deutsches Fachwörterbuch Photogrammetrie und Fernerkundung [ISPRS Multilingual Dictionary]*. Institut für Angewandte Geodäsie, Frankfurt am Main. 260 pages.
- NEWBY, P., 2001. Editorial. *Photogrammetric Record*, 17(97): 3–5.
- OXFORD ENGLISH DICTIONARY DEPARTMENT, 1981. *The Oxford Dictionary for Writers and Editors*. Clarendon Press, Oxford. 448 pages.
- PAUL, S., DUCHER, G., JOBARD, I., LATARCHE, C.-H. and LENCO, M., 1997. *Terminologie de Télédétection et Photogrammétrie*. Conseil International de la Langue Française, Paris. 455 pages.
- RABCHEVSKY, G. A. (Ed.), 1984. *Multilingual Dictionary of Remote Sensing and Photogrammetry*. American Society of Photogrammetry, Falls Church, Virginia. 343 pages.
- RITTER, R. M. (Ed.), 2000. *The Oxford Dictionary for Writers and Editors*. Second edition. Oxford University Press, Oxford. 404 pages.
- SALLET, E., 2002. *Fachwörterbuch Fernerkundung und Geoinformation: Englisch-Deutsch [English-German Dictionary of Remote Sensing and Geospatial Information]*. Wichmann, Heidelberg. 350 pages.

### APPENDIX

#### Terminology and abbreviations for use in *The Photogrammetric Record* (version after revisions to 25th May 2007).

<i>Accepted, authoritative or preferred term, and a few terms to be avoided</i>	<i>Abbreviation/acronym/alternative/comment/context</i>
a posteriori value	Never hyphenated (contrary to ODWE)
a priori value	Ditto
absolute orientation	
Advanced Very High Resolution Radiometer	AVHRR, instrument providing multispectral image data from NOAA satellites
aerial triangulation	aerotriangulation (decried by purists but common in some influential organisations)
aerial, airborne	Cf. spaceborne, satellite-borne
affine transformation	
air/water interface	Cf. human–computer interface: perhaps the distinction is purely diagrammatic
airborne laser scanning	ALS; see also lidar

---

*Accepted, authoritative or preferred term, and a few terms to be avoided*    *Abbreviation/acronym/alternative/comment/context*

---

alias, aliasing	
along-track	
American Society for Photogrammetry and Remote Sensing	ASPRS
anaglyph stereoplotter	
analogue photogrammetry	
analogue plotter	
analytical photogrammetry	
analytical plotter	For the next in the above succession of technical developments, see DPW below
anti-aliasing	
aperture	f-number, <i>f/</i> (not italic)
approximate solution	
ArcInfo, ArcView, ArcGIS	Software from ESRI (see below)
area-based matching	
base	<i>B</i>
base station	
base-to-height ratio	<i>B:H</i> ratio ( <i>B/H</i> ratio may also be used)
bi-cubic, bilinear	No obvious reason for discrepancy
black and white	black-and-white when adjectival
block adjustment	
breakline	One word
British Antarctic Survey	BAS
British Geological Survey	BGS
British Standards Institution	BSI (not Institute)
bundle adjustment	
cadastral survey, cadastre	
camera calibration	
<i>camera constant</i>	Avoid if possible; principal distance (see below) preferred (contrary to German-language usage) because not in general constant; see also focal length
camera-to-object distance	
Cartesian coordinates	Upper case: Cartesian
CD-ROM	
change detection	
charge-coupled device	CCD, one hyphen
check point	Two words, cf. tie point
CIPA Heritage Documentation	Comité Internationale de Photogrammétrie Architecturale, the International Committee for Architectural Photogrammetry, established by ICOMOS in collaboration with ISPRS
clinometry	
close range photogrammetry	Three words, no hyphen
coangularity	
collinear, collinearity	Not co-linear
collocation	Mathematical technique used in physical geodesy, not generally in photogrammetry, but may occasionally occur in reviews etc.
colour infrared	CIR

---

<i>Accepted, authoritative or preferred term, and a few terms to be avoided</i>	<i>Abbreviation/acronym/alternative/comment/context</i>
commercial off-the-shelf (camera, system, etc.)	COTS, two hyphens, cf. OTS
complementary metal oxide semiconductor	CMOS
conformal transformation	
conjugate point	
continuous wave	CW
coordinate, coordinates	Noun and verb, no hyphen
coplanarity	
co-registration	
correlation algorithm	
correlation coefficient	
cross polarisation	
cross section	But cross-section if adjectival
cross strip	But cross-strip if adjectival
cross-ratio	
data	Although still a matter of debate and of tidally shifting consensus, treatment as collective noun taking singular verb (ODWE) is currently preferred in contexts arising in <i>The Photogrammetric Record</i> ; if authors or context appear to demand plural, consider using data-sets
data cloud	
data fusion	
database	
data-set	
datum	The underlying geometrical information providing the spatial reference frame in which coordinates are computed, plural datums; see OSGB36, WGS 84
decentring lens distortion	Symbolised as $p_1, p_2$ . Avoid US decentering except when quoting titles of original publications, but this spelling does provide the key to pronunciation. Now also sometimes decentric. Cf. radial lens distortion
Delaunay triangulation	Mathematically equivalent to Thiessen, Dirichlet, Voronoi and perhaps other eponymous tessellation processes. If possible avoid “mesh” and “meshing”, often derived from translation from German <i>Masche, maschen</i>
depth of field	Hyphens when adjectival
Deutsches Zentrum für Luft- und Raumfahrt	DLR (German Aerospace Center)
diapositive	Noun and adjective
differential global positioning system	DGPS
digital elevation model	DEM (not Dem or dem; pronounced <i>dee-ee-em</i> , never say “ <i>dem</i> ”). All of the following D*M are close equivalents although the context can vary slightly; other variants may also occur
digital ground model	DGM
digital line graph	DLG (US)
Digital National Framework	DNF (GB)
Digital Orthophoto Quadrangle	DOQ (often styled orthophotoquad by users but not apparently by its producer, USGS)

<i>Accepted, authoritative or preferred term, and a few terms to be avoided</i>	<i>Abbreviation/acronym/alternative/comment/context</i>
digital photogrammetric workstation	DPW. For the forerunners of this current equipment see analytical plotter etc., above
digital photogrammetry	
digital surface model	DSM
digital terrain model	DTM
DigitalGlobe	Owner of QuickBird satellite; upper and lower case, no spaces
direct linear transformation	DLT
dominant scatterer	Cf. scatterer, persistent scatterer (SAR imagery)
Doppler	Upper case Doppler
earth (the), earth observation and measurement	Not upper case in normal photogrammetric contexts—see ODWE concerning anthropomorphic, astronomical, mythical and poetical usage!
e-business, e-mail	
edgel	edge element, cf. pixel
electromagnetic distance measurement	EDM (strictly not electronic)
electronic theodolite	See total station
English Heritage	EH
Environmental Systems Research Institute	ESRI, US private-sector geographical software producer; see also ArcInfo
ephemeris	
epipolar plane	
epoch	
ERDAS IMAGINE, OrthoBASE, etc.	Software; example of recent trend for greedy use of upper case; in 2001 ERDAS was acquired by Leica Geosystems, itself now part of the Hexagon Group, Sweden
error theory	
error-free	
European Association of Remote Sensing Laboratories	EARSel (not EARSEL, Earsel or other variants)
European Space Agency	ESA
EuroSDR	See OEEPE
Extensible Markup Language	XML
exterior orientation	
façade	
feature extraction	
feature recognition	
finite element method, method of finite elements	
first-return pulse	One hyphen (laser scanning)
Florence	Example of English exonym preferred to Italian form: avoid <i>Firenze</i>
flying height	<i>H</i>
f-number	<i>f</i> / (not italic, see aperture)
focal length	<i>f</i> (constant except for zoom lenses; see also principal distance, camera constant, camera calibration)
forward motion compensation	FMC (equivalent to IMC)
forward overlap	Cf. lateral overlap, sidelap
fuzzy logic	
Galileo	European satellite navigation and positioning system in course of development at the time of writing, see GNSS

<i>Accepted, authoritative or preferred term, and a few terms to be avoided</i>	<i>Abbreviation/acronym/alternative/comment/context</i>
geocorrection	A misleading term, subject of some recent dispute and best avoided; has been used to describe a rubber-sheet transformation of aerial images which is explicitly correct only where the transformation constraints are applied
geodata	See also data
Geographic Markup Language	GML
geographical information system(s)	GIS, also used for geographical information science; avoid US geographic where possible!
geopositioning	
georeferencing	
German Aerospace Center	DLR (Deutsches Zentrum für Luft- und Raumfahrt)
Global Navigation Satellite System(s)	GNSS, generic term covering satellite navigation and positioning systems, especially when used in combination or newly developed to improve on service provided by the original GPS alone; also the direct translation from the Russian of the full name of GLONASS (below)
Global Positioning System	GPS, US satellite navigation and positioning system
GLONASS	ГЛОНАСС, Глобальная Навигационная Спутниковая Система (Global'naya Navigatsionnaya Sputnikovaya Sistema), Russian satellite navigation and positioning system analogous to GPS; all upper case transliterated abbreviation preferred to full English translation to avoid possible confusion with generic GNSS (above)
grey scale	Not gray (US); hyphen when adjectival
ground control point	GCP, three words
ground truth, ground-truth values	Hyphen when adjectival
groundel	ground element, cf. pixel
Hanover	Example of English exonym preferred to German form:
	avoid <i>Hannover</i>
Heuvel, van den	Example of Dutch author's preference for alphabetisation of his name, although contrary to ODWE; take each such case on its merits, with supposition of accepting individual's own wishes
high resolution visible	HRV
high-altitude photography	
high-resolution imagery	HRI (sometimes also VHRI = very ...)
hill shading	
human-computer interface	Example of use of en-rule, not hyphen, when linking independent entities. See also air/water interface, Thompson-Watts Plotter
IKONOS	Modern high-resolution satellite and imagery. Example of recent trend for greedy use of upper case, but registered name and therefore to be respected; not Ikonos
image coordinates	Normally <i>x, y</i> (2D only, lower case italic); cf. model coordinates, object coordinates
image matching	Hyphen when adjectival
image motion compensation	IMC (equivalent to FMC)
image processing	
image space	Cf. model space, object space



<i>Accepted, authoritative or preferred term, and a few terms to be avoided</i>	<i>Abbreviation/acronym/alternative/comment/context</i>
inch (= 25.4 mm)	Non-SI unit with legitimate use as general description of focal length of aerial cameras and the resulting imagery. SI version should be added to appropriate degree of precision, e.g. 12 inch (305 mm), 6 inch (152 mm). An exact calibrated value (e.g. 152.216 mm) may occasionally be given in the text if the context demands it. Hyphen is required when, for example, 12 inch is used adjectivally (see also normal-angle, wide-angle, super-wide-angle photography)
inertial navigation system	INS
infrared	
instantaneous field of view	Ifov
Institut Géographique National	IGN: national mapping organisations of France, Belgium, etc.
Institution of Civil Engineering Surveyors	ICES (not Institute)
Institution of Civil Engineers	ICE (not Institute)
integrated sensor orientation	ISO; avoid using abbreviation in same paper as International Standards Organisation!
interferometric synthetic aperture radar	InSAR (avoid IfSAR, although this usage is commonly found, even in the same document as InSAR, especially in North America)
interior orientation	Also inner orientation; cf. absolute, exterior, relative orientation
International Association of Geodesy	IAG
International Council on Monuments and Sites	ICOMOS
International Institute for Geo-Information Science and Earth Observation	ITC (established in 1950 under the name International Training Centre for Aerial Survey, also at various times International Institute for Aerospace Survey and Earth Sciences, International Training Centre for Aerial Survey and Earth Sciences)
International Society for Photogrammetry and Remote Sensing	ISPRS
International Standards Organisation	ISO; avoid using abbreviation in same paper as integrated sensor orientation!
Jet Propulsion Laboratory	JPL
Joint Photographic Experts Group	JPEG, a specific data compression process (but file extension is .jpg)
kinematic GPS	
land cover, land cover classes	No hyphens
Landsat	Early US satellite and imagery, not LANDSAT
large scale map, mapping, photography	No hyphens; rationale unclear, but perhaps this convention for the kind of mapping is to distinguish it from the case of a large-scale project
large-format camera	Hyphen because adjectival
laser altimetry	Forerunner of lidar, below
laser scanning, laser scanner	Interchangeable with lidar, especially for airborne applications
last-return pulse	One hyphen (laser scanning)
lateral overlap	Same as sidelap, cf. forward overlap

---

<i>Accepted, authoritative or preferred term, and a few terms to be avoided</i>	<i>Abbreviation/acronym/alternative/comment/context</i>
least squares adjustment, least squares solution	
Leica Photogrammetry Suite	LPS, software from Leica Geosystems
LH Systems	Prominent former supplier of photogrammetric systems (hardware and software); in 2001 acquired by Leica Geosystems, itself now part of the Hexagon Group, Sweden
lidar	light detection and ranging (not direction), all lower case by analogy with radar, Lidar in German because noun, lidar in Spanish. Interchangeable with laser scanning, laser scanner, more especially in airborne applications
line scanner	
linearisation	
lookup table	
lossy, lossless	Compression process properties, e.g. JPEG is lossy
medium scale map, mapping, photography	See large scale mapping
megabytes, megapixels	
<i>mesh, meshing</i>	Avoid as far as possible these English versions of German <i>Masche, maschen</i> ; see also Delaunay triangulation and TIN
mobile mapping	
model coordinates	Normally <i>x, y, z</i> (3D, lower case italic); cf. image coordinates, object coordinates
model space	Cf. image space, object space
modular optoelectronic multispectral scanner	MOMS, important instrument in German space programme (see also DLR); but in other contexts use opto-electronic
monocular, <i>monoscopic</i>	Binocular vision offers a stereoscopic effect; thus monoscopic is arguably unnecessary and to be avoided
mosaic, mosaicking, mosaicked	Noun or verb
multi-band	Some hyphenation consistency questions arise for words containing multi-. Multispectral (below, no hyphen) is well established in both UK and US English. <i>Multi-bande</i> replaces <i>multispectral</i> in French on the logical grounds that only one electromagnetic spectrum exists in nature
multidimensional	
multi-lens camera	
multi-path	Important phenomenon in GPS observation
multispectral imagery	MSI (see note to multi-band above, the preferred usage in French)
multispectral scanner	MSS (ditto); also XS in context of the French SPOT satellite (below)
multitemporal	
nadir point	
National Association of Aerial Photographic Libraries	NAPLIB (UK)
national mapping agency, organisation	NMA, NMO; accept either form but aim for consistency within a single article
National Oceanic & Atmospheric Administration	NOAA (USA)

---

<i>Accepted, authoritative or preferred term, and a few terms to be avoided</i>	<i>Abbreviation/acronym/alternative/comment/context</i>
NAVSTAR	Original series of GPS satellites (navigation system with timing and ranging, other variants are also prevalent); NB not an imaging satellite
near infrared	NIR; near-infrared (one hyphen) when adjectival
near-vertical photograph	
non-metric camera	
non-topographic photogrammetry	
normal-angle camera, lens, photography	Implies 12-inch focal length camera/lens and airborne imagery (see inch)
object coordinates	Normally <i>X, Y, Z</i> (3D, upper case italic); cf. image coordinates, model coordinates
object space	Cf. image space, model space
oblique photograph, photography, imagery	Cf. vertical aerial photograph
offline	
off-the-shelf (camera, system, etc.)	OTS, more usually commercial...
one-to-one (correspondence, mapping, transformation, etc.)	Avoid numerals 1-1 because of risk of inadvertent confusion with letters I, L, etc.
online	
opto-electronic	See also MOMS
Ordnance Survey	OS; may be specified as OSGB, OSNI or OS Ireland (OSI), for national mapping organisations of Great Britain, Northern Ireland or the Republic of Ireland, respectively. OS Dublin, often heard, has no official written status
Organisation Européenne d'Etudes Photogrammétriques Expérimentales	OEEPE (now renamed European Spatial Data Research, but will be known as EuroSDR)
ortho-image	
orthophotograph	orthophoto
orthophotoquad	See DOQ
orthorectification	
OS MasterMap	OSGB's master large scale mapping database
OSGB36	No space; coordinate reference frame (datum) used by OS for national mapping of Great Britain; cf. WGS 84
overdetermined	
overparameterisation	
pan-sharpened	
pass point	
pattern recognition	
peak signal-to-noise ratio	PSNR, two hyphens
persistent scatterer	dominant scatterer (see above) over long period; permanent scatterer has also been in common use but persistent is now preferred; cf. scatterer (SAR imagery)
personal computer	PC
perspective centre	Optical centre of a lens, sometimes also projection centre, especially in machine vision; cf. principal point
perspective view	
photo base	Some difficulty justifying the discrepancies in these conventions (here and below)!
photo control	
photo scale	

---

<i>Accepted, authoritative or preferred term, and a few terms to be avoided</i>	<i>Abbreviation/acronym/alternative/comment/context</i>
photo-coordinates	
photo-interpretation	
photo-realistic	
phototheodolite	
piecewise	
pixel	picture element; explanation is no longer required, but cf. edgel, groundel
planimetric coordinates	
plumb bob, plumb line	Hyphen when adjectival
polar coordinates	
polyline	String of topologically connected straight lines
post-processing operation	
pre-processing operation	
principal distance	Physical distance in a camera between the perspective centre of the lens and the imaging surface, conventionally but confusingly symbolised either as $f$ or $c$ ; known as camera constant in German-speaking countries, although not a constant because it depends on the focus setting (see also focal length $f$ )
principal point	In a photogrammetric image, the point of intersection of the optical axis of the camera with the imaging surface, in direct contrast to the term's general usage, in optics, as the equivalent of the photogrammetric term perspective centre
projective geometry	
pseudorange	Important quantity in raw GPS observations, no hyphen
pushbroom	Adjective describing one modern digital camera configuration and mode of operation, avoids arguments over hyphen (possibly acceptable) or two words (not acceptable as adjective)
QuickBird	Upper and lower case, no spaces; satellite owned by Digital-Globe, capturing "(very) high resolution imagery" (see HRI, VHRI)
radar altimeter	
radial lens distortion	
radiometric model, radiometric resolution	Symbolised as $k_1$ , $k_2$ , etc. Cf. decentring lens distortion
rangefinder	
raster model	
rational polynomial coefficient	RPC
real time, real world	Hyphen when adjectival
reflectorless	EDM without need to place reflectors
relative orientation	
Remote Sensing and Photogrammetry Society	RSPSoc; in the UK the result of the merger in 2001 of the Photogrammetric Society and the Remote Sensing Society
resample, resampling, resampled	
reseau	No longer <i>réseau</i> in English photogrammetric writing
retroreflective, retrotarget	No hyphen in either case
return beam vidicon	RBV
right angle	Hyphen when adjectival

---

<i>Accepted, authoritative or preferred term, and a few terms to be avoided</i>	<i>Abbreviation/acronym/alternative/comment/context</i>
robust estimation	
root mean square error	rmse (ODWE—lower case, no stops)
rotation matrix	
Royal Geographical Society (with the Institute of British Geographers)	RGS or RGS-IBG depending on context or epoch
Royal Institution of Chartered Surveyors	RICS (not Institute; pronounced <i>are-eye-see-ess</i> —never say “ <i>ricks</i> ”!)
Royal Photographic Society	RPS
rubber-sheet transformation	image warping function sometimes also used to resolve differences between historically disparate coordinate reference frames; see also geocorrection
Satellite pour Observation de la Terre	SPOT, SPOT 1, SPOT 5, etc.; French satellites and imagery, originally <i>Système Probatoire d’Observation de la Terre</i>
satellite-borne	Cf. spaceborne, airborne
scale factor	
scatterer	Ground feature contributing to a SAR image; see synthetic aperture radar, cf. dominant scatterer, persistent scatterer
self-calibration	
semi-metric camera	
set-up, set up	Noun and verb, respectively
Shuttle Radar Topography Mission	SRTM
sidelap	Same as lateral overlap, cf. forward overlap
signal-to-noise ratio	Two hyphens
small scale map, mapping, photography	See large scale
small-format camera	
Société Française de Photogrammétrie et de Télédétection	SFPT
space resection	
spaceborne	Cf. airborne, satellite-borne
spatial resolution	
spectral resolution	
stereo overlap, stereo photograph, stereo scene, stereo view (but stereoviewing)	Most other such compounds not listed here or below will be left as two or more words, but hyphenated when adjectival (e.g. stereo-photogrammetric applications); stereoscopic may replace stereo
stereo-comparator, stereodigitising, stereogram	
stereo-image	Hyphen here because of succession of vowels
stereomatching, stereomate, stereomodel	
stereo-orthophotograph, stereo-orthophotography	Consider whether these terms are appropriate or necessary when encountered
stereopair	
stereoplotter, stereoplotting	
stereoscope, stereoscopic	
strip	A series of overlapping aerial photographs taken without significant change of aircraft heading; not stripe (often used by German authors); cf. swath

---

<i>Accepted, authoritative or preferred term, and a few terms to be avoided</i>	<i>Abbreviation/acronym/alternative/comment/context</i>
Student's <i>t</i> -test	
sub-pixel accuracy	
super-wide-angle camera, lens, photography	Implies 3½-inch focal length camera/lens and airborne imagery (see inch)
swath, swath width	Not swathe. The width of the strip (or swath) imaged by a satellite-borne sensor; swath width is common, clearer and more acceptable
Swiss Federal Institute of Technology, Lausanne	Ecole Polytechnique Fédérale de Lausanne (EPFL)
Swiss Federal Institute of Technology, Zurich	Eidgenössische Technische Hochschule Zürich (ETH, ETHZ)
synthetic aperture radar	SAR, see also InSAR
synthetic imagery	
tacheometer, tacheometry	Field survey instrument and method, now usually "total station"
temporal resolution	
testfield	One word preferred, no hyphen
Thematic Mapper	TM; US satellite-borne sensor and imagery, avoid using abbreviation in same paper as Transverse Mercator!
Thompson–Watts Plotter	Two separate entities combined to create this once widely used stereoplotting instrument, so en-rule – not hyphen - 3D
three dimensions, three-dimensional	
through-water photography	
tie point, tie strip	Two words preferred, cf. check point
Topographic Identifier	TOID; 16-digit reference number assigned by OSGB for the unique identification of a feature in OS MasterMap
total station	Preferred term covering electronic tacheometer, electronic theodolite (with integrated electromagnetic distance measurement)
Transverse Mercator	TM, in various forms a very widely used map projection; avoid using abbreviation in same paper as Thematic Mapper!
triangulated (or triangular) irregular network	TIN (see also Delaunay, mesh)
two dimensions, two-dimensional	2D
two-media photogrammetry	
UK National Committee for Photogrammetry and Remote Sensing	UK NCPRS (now reconstituted as RSPSoc ISPRS Committee)
University College London	UCL (no comma after College)
US Department of Defense	
US Geological Survey	USGS, government agency also responsible for national topographic mapping of USA
van den Heuvel	Oxford preference for alphabetisation of Dutch names, but see under <i>Heuvel</i> , <i>van den</i> and take each case on its merits, with supposition of accepting individual's own wishes
vanishing point	
variance–covariance matrix	En-rule – preferred to hyphen - or solidus /; see also human–computer interface and air/water interface

---

<i>Accepted, authoritative or preferred term, and a few terms to be avoided</i>	<i>Abbreviation/acronym/alternative/comment/context</i>
vertical aerial photograph, vertical photography, imagery	Cf. oblique photograph
very high resolution imagery	VHRI, cf. HRI
very high resolution radiometer	VHRR; usually AVHRR (see above)
virtual reality	VR
visualisation	
want of correspondence, want-of-correspondence theorem	Two hyphens when adjectival
WGS 84	One thin space; World Geodetic System 1984, a modern GPS-based geodetic datum; cf. OSGB36
wide-angle camera, lens, photography	Implies 6-inch focal length camera/lens and aerial imagery (see inch)
wire-frame model	One hyphen
World Glacier Monitoring Service	WGMS
<i>x</i> axis, <i>x</i> coordinate, <i>x</i> parallax	No hyphens
<i>y</i> axis etc.	<i>Ditto</i>
Z/I Imaging	Combined photogrammetry divisions of Intergraph (USA) and Carl Zeiss (Germany); now used as the name covering Intergraph's software in this field

Prospective authors should also consult the latest version of “Hints to Authors”, published in every issue of *The Photogrammetric Record* and available on [http://www.rsp-soc.org/images/uploads/phor\\_21\\_116\\_hints.pdf](http://www.rsp-soc.org/images/uploads/phor_21_116_hints.pdf); this provides further guidance on practical aspects of submitting contributions to the *Record* as well as information on preferred mathematical symbolisation, the use of registered trade marks and similar terms, and the avoidance of abbreviations. It will be obvious to readers that in order to save a considerable amount of space the Editor has not observed the latter precept in the tabulation above! Further general information about *The Photogrammetric Record* can also be found on <http://www.rsp-soc.org/publications/the-photogrammetric-record/> [both the above pages accessed: 14th March 2007].

### *Résumé*

*L'équipe éditoriale du « Photogrammetric Record » a depuis longtemps ressenti le besoin d'une terminologie photogrammétrique normalisée, afin d'éliminer les incohérences dans les travaux personnels des auteurs et de garantir dans le temps la cohérence interne de la publication. Dans ce but on a établi pendant les années 2000–2001 un document fournissant des règles pour notre usage interne seulement. C'est ce document que l'on publie actuellement pour la première fois, après lui avoir apporté diverses révisions successives. On espère que cette présente liste de directives pourra être largement acceptée de manière à aider les auteurs dans la préparation des articles qu'ils soumettent au « Record » ou que, tout au moins, il puisse conduire à un échange de correspondance, de révision et déboucher finalement sur un consensus pour le plus grand bénéfice des photogrammètres et de ceux qui publient leurs travaux dans le monde entier.*

### *Zusammenfassung*

*Bereits seit langem hat die Schriftleitung des Photogrammetric Record sich mit einer standardisierten Terminologie in der Photogrammetrie beschäftigt, um Unstimmigkeiten in den Arbeiten einzelner Autoren zu eliminieren, aber auch um Konsistenz der Publikationen über Jahre hinweg zu erhalten. Zunächst wurde dazu in den Jahren 2000 bis 2001 eine Anleitung erstellt, die für den internen Gebrauch bestimmt war. Nach mehreren Überarbeitungen wird dieses Dokument nun erstmalig veröffentlicht. Es soll in erster Linie als Hilfe für Autoren bei der Erstellung ihrer Beiträge für diese Zeitschrift dienen, hoffentlich aber auch als allgemein akzeptierte Grundlage Anerkennung finden. Sollten jedoch hinsichtlich der Akzeptanz Probleme auftreten, hoffen wir, dass daraus Diskussion, Überarbeitung und Konsens resultieren, zum Wohle der Photogrammetrie und all denen, die weltweit Ergebnisse ihrer Arbeiten auf diesem Gebiet veröffentlichen.*

### *Resumen*

*El equipo editorial de The Photogrammetric Record ha echado en falta durante mucho tiempo una terminología fotogramétrica estandarizada, tanto para acabar con la falta de coherencia entre los autores de los artículos como para lograr una consistencia temporal en la publicación. Con este objetivo se elaboró un documento guía en los años 2000-1 para uso exclusivamente interno que, tras varias revisiones, se publica ahora por primera vez. Se trata de que, además de ayudar a los autores a preparar los artículos para enviar a The Photogrammetric Record, esta lista sea aceptada de forma general o que, alternativamente, sea revisada y consensuada para ayudar a los fotogrametristas y a aquellos que publican su trabajo en otros medios.*