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| Guidelines for Procurement of Commercial Geospatial Mapping Products |
| Draft Guidelines |

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|  3/14/2012 |

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# Commercial Geospatial Mapping Product Guidelines

## Executive Summary (to be published as a sidebar)

These *Guidelines* were prepared by the ASPRS Commercial Geospatial Mapping Product (CGMP) Guidelines Committee, an ad hoc committee appointed by the ASPRS leadership. The core members of the Committee included representatives from the commercial sector and state and federal government. The core committee members were supported by representatives from state and federal procurement agencies Providers and Purchasers of CGMPs. These *Guidelines* were formally approved by the ASPRS Board of Directors at their meeting on [TBD].

The intent of these *Guidelines* is to expand upon current ASPRS service policy and guidelines updated in 2009, in order to provide Federal, State and Local Government Agencies, researchers, private entities and other organizations with an updated and current resource that they can use as a guide to help determine the best approach and methodology for procuring CGMP.

CGMP are typically defined as having a commercial off-the-shelf (COTS) specification. They are defined by a Provider (who is typically referred to as a Vendor in the appropriate FAR) and are not subject to modification by the client. Product Support Services can be included in this type of procurement and includes maintenance, training, or support of these CGMP. It is important to distinguish between a geospatial professional service versus product support services for CGMP. A matrix outlining these differences is provided in Table 1 of these *Guidelines*.

### Definition of Commercial Geospatial Mapping Products

* CGMP’s are typically considered “Commercial Off-The-Shelf” (COTS), built by the Provider at their cost, based on market demand as they have determined, licensed to the end-user with specific terms of use, procured based on a standard and published price model, and delivered on demand.
* CGMP’s often require specialized knowledge and skill to create. A unique characteristic of a CGMP is that the Provider makes a determination of the final specification(s). Its specification and performance will have been tested but may or may not have been developed to meet a specific industry standard or specification. A CGMP may utilize imagery and other related remote sensing and GIS technologies to produce geospatial mapping deliverables and information with a specified spatial and thematic accuracy.
* In the procurement of a CGMP, the specification is neither defined nor subject to change by the user/client/customer.
* The level of automation or standardization does not by itself distinguish a CGMP from a professional or technical service. The development of CGMP’s may include automated or standardized processes that may require the supervision of a qualified professional.
* Most CGMP’s are categorized by “off-the-shelf” data or specifications. CGMP may include imagery or other data where the specifications are clear and determinable with written references and set by the Provider or by the market. In many cases CGMP are licensed under fixed terms and conditions. A more detailed distinction between CGMP and Professional Services is provided in Table 1: Comparison of Services, Products and Product Support Services (page 8).

### Procurement Guidelines and Recommendations

The CGMP addressed by these *Product* *Guidelines* play an increasing and critical role in the success of integrating geospatial information into diverse applications areas such as advanced decision support, 3-D visualization, environmental planning, natural resource management, agriculture, emergency response, disaster recovery and topographic mapping.

These procurement methods may be recommended for the procurement of CGMP’s for non authoritative use. Independent judgment and oversight by an appropriately licensed, certified or otherwise qualified professional is recommended to support the overall project success.

Both price and quality may play a role in procurement of CGMP. It is imperative that a balance of both of these factors be considered, along with a client’s requirements in order to ensure the best possible outcome.

ASPRS has long endorsed and recommended the qualifications based selection (QBS) process for the procurement of professional services. CGMPs may be used as components of a professional services contract to deliver authoritative data procured by the QBS process. For information on this process, please refer to the ASPRS Professional Services Procurement Guidelines: <http://www.asprs.org/a/society/committees/standards/Procurement_Guidelines_w_accompanying_material.pdf>

ASPRS recognizes there will be instances where an organization will wish to follow a CGMP procurement method. In those cases, ASPRS recommends that specific minimum guidelines be recognized by the Purchaser:

* A detailed review of the users’ requirements should be compared to the published CGMP specifications available. If possible, a number of Providers CGMP should be reviewed. These CGMP should be set against the intended use plan.
* A qualified professional (either on the client's staff or hired as a consultant) may be involved in the evaluation process to ensure the CGMP best meets the end-user application requirements.
* As CGMP are often sold under a commercial license, these terms and conditions must be reviewed to insure the CGMP can be deployed as expected for the end-user application.

## I. Background and Intent

The **American Society for Photogrammetry and Remote Sensing** (ASPRS) is the leading scientific professional organization representing the photogrammetry and remote sensing profession. These *Guidelines* represent the best effort of the ASPRS at defining and clarifying the key issues that affect procurement of commercial geospatial mapping products and were formally approved by the ASPRS Board of Directors at their meeting on [TBD].

The intent of these *Guidelines* are to provide Federal, State and Local Government agencies, researchers, private entities and other organizations with a resource that they can use as a guide to help determine the best approach and methodology for procuring Commercial Geospatial Mapping Products (CGMP).

The specific goals of these *Guidelines* are to:

* Provide a clear and updated definition of what characterizes a deliverable as a CGMP, subject to commercial product procurement methodologies.
* Recognize and reference existing state and federal laws governing the procurement of CGMP’s.
* Distinguish between Professional Services versus CGMP.
* Review Procurement Methodology that may include elements of:
	+ License Data Terms and Conditions
	+ Cost/Value
	+ Provider-defined Product Specifications
	+ Services to support the implementation of a CGMP
* Provide a summary of the risks and benefits of CGMP procurement.

## II. Commercial Geospatial Mapping Products Addressed by These Guidelines

These *Guidelines* are specifically intended to apply to those CGMP that are associated with acquiring, interpreting, processing or analyzing remotely-sensed imagery and data. The primary focus of this document is on the photogrammetry, remote sensing and image-based CGMP that constitute an area of expertise of ASPRS and its membership. Processes for commercial product procurement are documented by the Department of Defense and the Federal Acquisition Regulations.

 “Commercial Off-the-Shelf (COTS),” as defined by the Department of Defense <http://www.dau.mil/pubscats/PubsCats/cotsreport.pdf> , is as follows:

**“A commercial off–the-shelf (COTS) item is one that is sold, leased, or licensed to the general public; offered by a Vendor trying to profit from it; supported and evolved by the Vendor who retains the intellectual property rights; available in multiple, identical copies used without modification of the internals.”**

Federal Acquisition Regulation (FAR) defines Commercial off the Shelf (COTS) as a non-developmental item (NDI) of supply that is both commercial and sold in substantial quantities in the commercial marketplace, and that can be procured or utilized under government contract in the same precise form as available to the general public. COTS items, in the example of software or data products, typically require configuration that is tailored for specific uses for the Purchaser by Product Support Services provided by the Provider.

A “commercial item” as defined in the Federal Acquisition Register (FAR), Part 2.101, has the following general characteristics:

* **It has been sold, leased, or licensed to the general public.**
* **It is generally available in the commercial marketplace.**
* **It may include installation, maintenance, repair, training and other services supporting the commercial item.**
* **It is sold based on published catalog or list prices available to the general public.**

FAR text from Section 2.101 is provided in Appendix 2 to these guidelines. This guideline is based on existing procurement regulations to provide a recommended process for commercial geospatial product procurement.

## III. Characteristics of Commercial Geospatial Mapping Products

ASPRS considers that CGMP’s must demonstrate a majority of the following attributes:

* Represented within a high level of standardization as defined by the Provider
* Having the ability to meet a published specification or to a stated industry standard
* Providing an end-user warranty
* Providing end-user licenses or other forms of shared ownership
* Available through a published catalog with an available price sheet
* Containing established terms and conditions.

## Table 1, compares the characteristics of Professional Services to CGMP and CGMP Support Services as defined in the Guidelines for Procurement of Professional Aerial Imagery, Photogrammetry, LiDAR and Related Remote Sensor-based Geospatial Mapping Services, ASPRS, August 2009. Table 1 was modified from the MAPPS Products vs. Services Matrix.

Table 1: Comparison of Services, Products and Product Support Services (Adapted from MAPPS Products vs. Service Matrix, www.mapps.org)

|  |  |  |  |
| --- | --- | --- | --- |
| OFFERING TYPE | PROFESSIONAL SERVICE | PRODUCT | PRODUCT SUPPORT SERVICE |
| Level of Standardization | VariesProfessional Service Provider exercises independent professional judgment and quality control | High StandardizationCGMP is offered at a published specification or quality standard | High StandardizationSpecific methodology from the Provider maybe prescribed by Service Level Agreement (SLA) CGMP Provider exercises only a minimal level of independent judgment |
| Specifications | Set by Client with critical input from Professional Service Provider | Set by Provider | Set by Provider |
| Ownership | In most cases, the Client owns all resulting work and deliverables | In most cases, the Provider owns the data and it is offered under license to the Client | In most cases, this product service is to support any subsequent related work by the Client and Client may or may not own the resulting work or data |
| Certification/Warranty | Typically certified by a professional, such as a land surveyor, photogrammetrist, engineer or GIS surveyor, who is in responsible charge of the project  | At this time, there is no third-party product seal or certification. Client is solely responsible for quality control and for verifying that deliverables meet specifications and expectations |
| Protection of Public Welfare | Professional liability may applyProvider is responsible for quality control and ensuring products and deliverables meet specifications and standards. Provider is expected to comply with ethical and professional standards to protect public interest.  | Product liability appliesProduct developer is responsible for ensuring deliverables meet stated specifications and requirements |
| Procurement Method | Qualifications-Based SelectionTypically agreed to between provider and client based on level of effort and negotiated rates. May be contracted as fixed price or as cost plus fixed fee  | Best Value | Either an evaluation of both cost and qualifications or through recommendations/referrals  |
| Pricing | Typically negotiated between provider and client based on level of effort and negotiated rates. May be contracted as fixed price or as cost plus fixed fee.  | Published pricing. Total price determined as a function of units times a standard price of the unit | Based on Published prices or estimates may be negotiated based on labor hours times hourly rate or as published pricing per unit, or per Service Level Agreement negotiation |

## IV. Specific Examples of Commercial Geospatial Mapping Products

This section provides examples of some types of CGMP that are currently available in the marketplace. CGMPs include, but are not limited to:

* **3-D Models –** Made from remotely sensed technology for applications such as community planning and development, disaster preparedness, facility management tactical planning, virtual visits, and more.
* **RGB and Infrared (IR) Images –** Used to recognize environmental trends in the area, such as vegetation mapping, commercial development planning and landscape management, watershed management, forestry management, and environmental impact assessment.
* Nadir – Images in which the image center is vertically beneath the camera center at the time of exposure.
* Ortho – Images geometrically corrected for topographic relief, lens distortion, and camera tilt, to ensure a uniform scale.
* **Oblique images –** Enables at-an-angle view of properties, etc.; from different directions.
* **Ground Control –** Coordinate positions of photoidentifiable or targeted Ground Control Points (GCPs) are used for the geo-referencing of imagery, LiDAR, GIS and other geospatial data sets, and also to provide QA/QC for these data sets. These commercially available GCPs are utilized in the production of geospatial products and services. The ground control product can be offered as certified or non-authoritative.
* **Vector Road and Street Data –** Standard off-the-shelf data sets with geospatially accurate road and street data with addressing. Typically these data products include Points of Interest (POI) such as hotels, fuel stations, schools, and airports.
* **Parcel Data –** Parcel Data includes attributes such as property description, zoning, and appraised or market value. These data sets are typically available by city, county or state.
* **Land Use Data –** Commercially or government furnished data sets of land use are provided for planning activities. Products are available for local and regional assessment.
* **Digital Elevation Model (DEM) –** a digital model or 3-D representation of a terrain’s surface.
	+ - **Digital terrain model (DTM) –** a bare-earth model in which cultural features such as buildings, roads, and vegetation canopy are digitally removed using processing software.
		- Point cloud data is typically generated by LIDAR, Radar or Sonar.
		- **Digital surface model (DSM) –** a first-reflective-surface model that contains cultural features such as buildings, roads, vegetation, and natural terrain features.
		- Point cloud data is typically generated by LIDAR, Radar or Sonar.
		- **Orthorectified radar image (ORI) –** a grayscale image of the earth’s surface that has been corrected to remove geometric distortions.
	+ **Elevation shaded image (ESI) –** a multi-spectral image composed of a DEM overlaid with high-resolution aerial images to provide a true visual representation of the terrain that cannot be duplicated with ordinary images. As the name suggests, a shaded relief product draws out terrain features and is more intuitive than either the [DSM](http://www.intermap.com/digital-surface-models) or [DTM](http://www.intermap.com/digital-terrain-models) on which it is based.

There are several methods for the delivery of CGMPs. These include but are not limited to a shrink wrapped package, download from a web service or online store, shipped via electronic media or via “the cloud.” The delivery method is typically defined by the Provider and driven by market demand.

**NOTE:** State laws and/or specific contract requirements often dictate that an appropriately licensed professional should be responsible in the development of the products described above. “Metadata” is an additional feature to many of the products noted.

### Product Support Services

Within a CGMP, a limited number of “Product Support Services” may be offered in support of their implementation. As defined in the Federal Acquisition Register (FAR), Part 2.101, these Product Support Services are offered to the public under similar terms and conditions or sold competitively in substantial quantities based on established catalog or market prices. Product Support Services include, but are not limited to:

* **Installation –** The act of installing the required CGMP into a customer test and/or production environment. Customer service and help desk are also covered.
* **Configuration -** Establishing and maintaining consistency of a customer’s system(s) or the CGMP performance for optimal operational efficiency through the lifecycle of a project.
* **Data Maintenance and Non-Computational Data Reformatting** – The process of changing the delivery of the COTS Commercial Geospatial Mapping Product format so that it may be optimally used in the customers’ system(s). This includes changing file formats of data delivery and orders of occurrence of data to match customer needs for automated use of CGMPs.
* **Training** - The acquisition of [knowledge](http://en.wikipedia.org/wiki/Knowledge), [skills](http://en.wikipedia.org/wiki/Skill), and [competencies](http://en.wikipedia.org/wiki/Competence_%28human_resources%29) as a result of teaching practical skills and knowledge that relate to the use of the Commercial Geospatial Mapping Product.

Additional CGMP may be offered as an online service, and are sometimes listed as separate products altogether (Table 1). These include, but are not limited to:

* **Managed / Hosted / Online Services**
	+ **Software –** Defined as Software as a Service (SaaS), this refers to application software deployed via the internet. There are no versions installed or accessed from a local machine. This may include a subscription model for access to the software functionality, commonly defined as a ‘pay as you go’ model; however, free software is increasingly common. This also includes geoprocessing tools.
	+ **Data –** Defined as Data as a Service (DaaS), this refers to the data product that can be provided on demandto the user irrespective of their location, often through the SaaS application program. DaaS is increasingly used in the delivery of new data products for updates.

## V. Implementation Steps for Commercial Geospatial Mapping Products Procurement

The following are considered best practices for the procurement of CGMP.

* **Pre-proposal research, including requirements definition**
	+ Organizations should carefully evaluate their project requirements; the appropriateness of a CGMP in a “fit for use” context, and should document the research results so that required CGMP can be clearly defined.
	+ The requirements definition should include, at a minimum:
		- Consideration of technical requirements,
		- Schedule and method of delivery,
		- Acceptable warranty and/or licensing restrictions,
		- Documentation expected to be provided by the CGMP Provider, including specifications, instruction manuals and metadata.
* **Market Analysis**
	+ Market analysis may be conducted to determine the availability of CGMP that may meet the defined project requirements. Such an analysis should seek to clarify the likely price ranges for these CGMP.
	+ Market analysis source information may include information based on:
		- Personal knowledge of the market and available CGMP,
		- Historical purchase information,
		- Company web sites or online catalogs,
		- Qualified Provider lists compiled through such a Market Analysis,
		- Commercial catalogs, trade journals, newspapers, and other professional publications.
* **Development of Source Solicitation Package**
	+ Depending on the regulations of the procuring organization and factors like the size of the procurement, a Solicitation Package may be required. The specific documents in the source solicitation package may include:
	+ Specifications Documents - These documents describe in detail the CGMP required.
	+ Products Support Services required to integrate the CGMP into the clients’ chosen application.
	+ Evaluation Methodology - A description of how any proposals for a CGMP will be evaluated, including final award criteria and weighting.
	+ Due dates, points of contact, required supporting documentation/information, and any special instructions.
* **Issuing the Source Solicitation Package**
	+ Issuing the source solicitation package involves providing the source solicitation directly to Providers or placing it in an advertised location or on a web site where source solicitation packages reside (for instance, <http://www.fedbizopps.gov> ).
* **Evaluating Proposals; Selection Decision, Award**
	+ The Purchaser should evaluate CGMP based on criteria defined and published prior to receipt of proposals. The organization may communicate with individual Providers, as appropriate, to address the responder’s understanding of the requirements, performance capabilities, price range limitations, and other terms and conditions.
		- **Selection Decision and Award-** the Provider should be selected based on the best value to the procuring organization, taking into account factors including, but not limited to: provider experience/ capability, price, quality of deliverables, delivery schedule and method, warranty or licensing, and payment terms.
		- **Documentation** The method of selection and rationale for awarding the contract should be documented and maintained by the procuring organization.

## VI. Acquisition of Commercial Geospatial Mapping Products

Part 12 of the FAR establishes Federal procedures for acquisition of commercial items. Policy background in Part 12 states that the government should acquire commercial items whenever possible when they are available to meet the needs of the agency. The procedures defined in Part 12 are generally used in conjunction with Part 13 (Simplified Acquisition), Part 14 (Sealed Bidding), or Part 15 (Contracting by Negotiation), whichever is applicable.

General steps to be followed in acquiring a commercial item, as defined in FAR Part 12, are as follows:

**“(a) Conduct market research to determine whether commercial items or non developmental items are available that could meet the agency’s requirements;**

**(b) Acquire commercial items or non developmental items when they are available to meet the needs of the agency; and**

**Require prime contractors and subcontractors at all tiers to incorporate, to the maximum extent practicable, commercial items or non developmental items as components of items supplied to the agency. “**

Of particular note, FAR Part 12 includes the following statement,

**“, the Government shall acquire only the technical data and the rights in that data customarily provided to the public with a commercial item or process. The contracting officer
shall presume that data delivered under a contract for commercial items was developed exclusively at private expense.”**

Specific language from FAR Part 12 is included in Appendix 3 of these guidelines.

Determining what to include in a comprehensive Request For Proposal (RFP) for CGMP may be a complicated task. As a result, RFPs are often vague, omit key information or have different specifications that are open to interpretation. When an RFP lacks sufficient detail, each Provider may interpret it differently. It is for this reason that a knowledgeable person be involved in the procurement from the Purchaser.

CGMP may be procured through a “Best Value” based solicitation. It is critical in Best Value based solicitations that the specifications of the product are well understood by the Purchaser and that all costs should be considered. Utilization of trusted sources, such as ASPRS, is recommended. If needed, a licensed, certified or otherwise qualified professional consultant should be considered to determine the CGMP to be procured is appropriate for the proposed application.

## GSA Procurement Vehicle

The GSA provides a purchasing vehicle for the procurement of CGMP from Providers registered under the program. These CGMP’s may include COTS Software, Data and Product Support Services. These CGMP can be procured under standard, agreed and structured Terms and Conditions provided under GSA. In addition, the GSA procurement vehicle provides a pre-approved rate structure between GSA and the Provider, to ensure a consistent CGMP price to the federal user, agency or authorized federal contractor.

Caution should be exercised in that the acquisition of professional geospatial services is prohibited by law from being offered or sold on GSA schedule contracts, which are for products and product support items only.

### Contractors Authorized to Use GSA

Federal employees, agencies, or authorized federal contractors have access to the GSA procurement vehicle for federal projects. Contracting officers should refer to FAR 51.101 regarding the authorization for contractors to use Federal Supply Schedule contracts in the performance of government cost‐reimbursement contracts.

# Appendix 1

## Supporting Documents

* *Executive Summary* (Side Bar)
* *Comparison of Professional Services, Products and Products Support Services* (Table 1)

## References

ASPRS, August 2009, Guidelines for Procurement of Professional Aerial Imagery, Photogrammetry, LiDAR and Related Remote Sensor-based Geospatial Mapping Services,

<http://www.asprs.org/a/society/committees/standards/Procurement_Guidelines_w_accompanying_material.pdf>

## Applicable QBS Laws and General Information

Brooks Act (40 U.S.C. 1101), FAR 36.6:

[*http://www.acquisition.gov/far/current/html/Subpart%2036\_6.html*](http://www.acquisition.gov/far/current/html/Subpart%2036_6.html)

American Institute of Architecture, 2003 Summary of “Mini-Brooks Act” State QBS Laws [*http://www.aia.org/static/state\_local\_resources/projectdelivery/QBS\_matrix.pdf*](http://www.aia.org/static/state_local_resources/projectdelivery/QBS_matrix.pdf)

American Public Works Association Position Statement [*http://www.apwa.net/Documents/Advocacy/Positions/Advocacy/Qualifications\_Based\_Selec\_Prof\_Svs\_Consult.pdf*](http://www.apwa.net/Documents/Advocacy/Positions/Advocacy/Qualifications_Based_Selec_Prof_Svs_Consult.pdf)

American Council of Engineering Companies description of QBS requirements for projects funded by federal grants

[*http://www.acec.org/advocacy/committees/qbs\_matrix\_8-16-04.cfm*](http://www.acec.org/advocacy/committees/qbs_matrix_8-16-04.cfm)

American Council of Engineering Companies general QBS resources page

[*http://www.acec.org/advocacy/committees/qbs.cfm*](http://www.acec.org/advocacy/committees/qbs.cfm)

U.S. Army Corps of Engineers Engineer FAR Supplement (EFARS definition of survey and mapping, refer to section 36.601-4) [*http://www.hq.usace.army.mil/cepr/efars/part36.pdf*](http://www.hq.usace.army.mil/cepr/efars/part36.pdf)

## Professional Products Procurement Resources

American Public Works Association “Red Book” on Qualifications-Based Selection Guidelines for Public Agencies

 *(Document can be purchased from:* [*http://www.apwa.net/bookstore/*](http://www.apwa.net/bookstore/)*)*

American Bar Association Model Procurement Code for State and Local Government

 *(Document can be purchased from:* [*http://www.abanet.org*](http://www.abanet.org)*)*

Michigan QBS Coalition, Workbook for QBS Procurement

[*http://www.qbs-mi.org/QBS\_reference\_PDF.cfm*](http://www.qbs-mi.org/QBS_reference_PDF.cfm)

Council on Federal Procurement of Architectural & Engineering Services (COFPAES)

www.cofpaes.org

## Accuracy and Professional Standards Information

National Standard for Spatial Data Accuracy (NSSDA)

[*http://www.fgdc.gov/standards/projects/FGDC-standards-projects/accuracy/part3/chapter3*](http://www.fgdc.gov/standards/projects/FGDC-standards-projects/accuracy/part3/chapter3)

ASPRS Code of Ethics

[*http://www.asprs.org/membership/certification/appendix\_a.html*](http://www.asprs.org/membership/certification/appendix_a.html)

ASPRS Certification Program

[*http://www.asprs.org/membership/certification/index.html*](http://www.asprs.org/membership/certification/index.html)

APSRS Standards Page

[*http://www.asprs.org/society/committees/standards/standards\_comm.html*](http://www.asprs.org/society/committees/standards/standards_comm.html)

MAPPS Code of Ethics

 http://www.mapps.org/about/code.cfm

## Professional Licensing & Certification Information

ASPRS Licensure Committee

[*http://www.asprs.org/society/divisions/ppd/licensing/licensure\_comm.htm*](http://www.asprs.org/society/divisions/ppd/licensing/licensure_comm.htm)

NCEES link to State Engineering/Surveying Boards

[*http://www.ncees.org/licensure/licensing\_boards*](http://www.ncees.org/licensure/licensing_boards)

NCEES Model Law

[*http://www.ncees.org/introduction/about\_ncees/ncees\_model\_law.pdf*](http://www.ncees.org/introduction/about_ncees/ncees_model_law.pdf)

NCEES Model Rules

[*http://www.ncees.org/introduction/about\_ncees/ncees\_model\_rules.pdf*](http://www.ncees.org/introduction/about_ncees/ncees_model_rules.pdf)

NCEES Multi-Organization Task Force Materials and Reports

[*http://www.asprs.org/news/ncees/*](http://www.asprs.org/news/ncees/)

GIS, Surveying and Mapping Certification Programs

http://www.cogo.pro/Certifications.html

# Appendix 2

## Excerpts from FAR 2.101

<https://acquisition.gov/far/html/Subpart%202_1.html#wp1145508>

“Commercial item” means—

(1) Any item, other than real property, that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and—

(i) Has been sold, leased, or licensed to the general public; or

(ii) Has been offered for sale, lease, or license to the general public;

(2) Any item that evolved from an item described in paragraph (1) of this definition through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation;

(3) Any item that would satisfy a criterion expressed in paragraphs (1) or (2) of this definition, but for—

(i) Modifications of a type customarily available in the commercial marketplace; or

(ii) Minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government requirements. Minor modifications mean modifications that do not significantly alter the nongovernmental function or essential physical characteristics of an item or component, or change the purpose of a process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor;

(4) Any combination of items meeting the requirements of paragraphs (1), (2), (3), or (5) of this definition that are of a type customarily combined and sold in combination to the general public;

(5) Installation services, maintenance services, repair services, training services, and other services if—

(i) Such services are procured for support of an item referred to in paragraph (1), (2), (3), or (4) of this definition, regardless of whether such services are provided by the same source or at the same time as the item; and

(ii) The source of such services provides similar services contemporaneously to the general public under terms and conditions similar to those offered to the Federal Government;

(6) Services of a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed or specific outcomes to be achieved and under standard commercial terms and conditions. For purposes of these services—

(i) “Catalog price” means a price included in a catalog, price list, schedule, or other form that is regularly maintained by the manufacturer or vendor, is either published or otherwise available for inspection by customers, and states prices at which sales are currently, or were last, made to a significant number of buyers constituting the general public; and

(ii) “Market prices” means current prices that are established in the course of ordinary trade between buyers and sellers free to bargain and that can be substantiated through competition or from sources independent of the offerers.

(7) Any item, combination of items, or service referred to in paragraphs (1) through (6) of this definition, notwithstanding the fact that the item, combination of items, or service is transferred between or among separate divisions, subsidiaries, or affiliates of a contractor; or

(8) A non developmental item, if the procuring agency determines the item was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local governments.

# Appendix 3

## Excerpts from FAR Part 12: Acquisition of Commercial Items

<https://acquisition.gov/far/html/FARTOCP12.html#wp1033864>

### 12.000 Scope of part.

This part prescribes policies and procedures unique to the acquisition of commercial items. It implements the Federal Government’s preference for the acquisition of commercial items contained in Title VIII of the Federal Acquisition Streamlining Act of 1994 (Public Law 103-355) by establishing acquisition policies more closely resembling those of the commercial marketplace and encouraging the acquisition of commercial items and components.

### 12.001 Definition.

“Subcontract,” as used in this part, includes, but is not limited to, a transfer of commercial items between divisions, subsidiaries, or affiliates of a contractor or subcontractor.

## Subpart 12.1—Acquisition of Commercial Items—General

### 12.101 Policy.

Agencies shall—

(a) Conduct market research to determine whether commercial items or non developmental items are available that could meet the agency’s requirements;

(b) Acquire commercial items or non developmental items when they are available to meet the needs of the agency; and

Require prime contractors and subcontractors at all tiers to incorporate, to the maximum extent practicable, commercial items or non developmental items as components of items supplied to the agency.

### 12.102 Applicability.

(a) This part shall be used for the acquisition of supplies or services that meet the definition of commercial items at [2.101](http://acquisition.gov/far/current/html/Subpart%202_1.html#wp1145508).

(b) Contracting officers shall use the policies in this part in conjunction with the policies and procedures for solicitation, evaluation and award prescribed in [Part 13](http://acquisition.gov/far/current/html/FARTOCP13.html#wp271421), Simplified Acquisition Procedures; [Part 14](http://acquisition.gov/far/current/html/FARTOCP14.html#wp301185), Sealed Bidding; or [Part 15](http://acquisition.gov/far/current/html/FARTOCP15.html#wp246607), Contracting by Negotiation, as appropriate for the particular acquisition.

(c) Contracts for the acquisition of commercial items are subject to the policies in other parts of this chapter. When a policy in another part of this chapter is inconsistent with a policy in this part, this [Part 12](http://acquisition.gov/far/current/html/FARTOCP12.html#wp1033864) shall take precedence for the acquisition of commercial items.

(d) The definition of commercial item in section [2.101](http://acquisition.gov/far/current/html/Subpart%202_1.html#wp1145508) uses the phrase “purposes other than governmental purposes.” These purposes are those that are not unique to a government.

(e) This part shall not apply to the acquisition of commercial items—

(1) At or below the micro-purchase threshold;

(2) Using the [Standard Form 44](http://acquisition.gov/far/current/html/FormsStandard13.html#wp1176676) (see [13.306](http://acquisition.gov/far/current/html/Subpart%2013_3.html#wp1092221));

(3) Using the imprest fund (see [13.305](http://acquisition.gov/far/current/html/Subpart%2013_3.html#wp1092187));

(4) Using the Government wide commercial purchase card; or

(5) Directly from another Federal agency.

(f)(1) Contracting officers may treat any acquisition of supplies or services that, as determined by the head of the agency, are to be used to facilitate defense against or recovery from nuclear, biological, chemical, or radiological attack, as an acquisition of commercial items.

(2) A contract in an amount greater than $16 million that is awarded on a sole source basis for an item or service treated as a commercial item under paragraph (f)(1) of this section but does not meet the definition of a commercial item as defined at FAR [2.101](http://acquisition.gov/far/current/html/Subpart%202_1.html#wp1145508) shall not be exempt from—

(i) Cost accounting standards (see [Subpart 30.2](http://acquisition.gov/far/current/html/Subpart%2030_2.html#wp1068143)); or

(ii) Cost or pricing data requirements (see [15.403](http://acquisition.gov/far/current/html/Subpart%2015_4.html#wp1208384)).

(g)(1) In accordance with section 1431 of the National Defense Authorization Act for Fiscal Year 2004 (Public Law 108-136) ([41 U.S.C. 437](http://uscode.house.gov/uscode-cgi/fastweb.exe?getdoc+uscview+t41t42+2+13++%2841%29%20%20AND%20%28%2841%29%20ADJ%20USC%29%3ACITE%20%20%20%20%20%20%20%20%20)), the contracting officer also may use [Part 12](http://acquisition.gov/far/current/html/FARTOCP12.html#wp1033864) for any acquisition for services that does not meet the definition of commercial item in FAR [2.101](http://acquisition.gov/far/current/html/Subpart%202_1.html#wp1145508), if the contract or task order—

(i) Is entered into on or before November 24, 2013;

(ii) Has a value of $27 million or less;

(iii) Meets the definition of performance-based acquisition at FAR [2.101](http://acquisition.gov/far/current/html/Subpart%202_1.html#wp1145508);

(iv) Uses a quality assurance surveillance plan;

(v) Includes performance incentives where appropriate;

(vi) Specifies a firm-fixed price for specific tasks to be performed or outcomes to be achieved; and

(vii) Is awarded to an entity that provides similar services to the general public under terms and conditions similar to those in the contract or task order.

(2) In exercising the authority specified in paragraph (g)(1) of this section, the contracting officer may tailor paragraph (a) of the clause at FAR [52.212-4](http://acquisition.gov/far/current/html/52_212_213.html#wp1179465) as may be necessary to ensure the contract’s remedies adequately protect the Government’s interests.

### 12.103 Commercially available off-the-shelf (COTS) items.

COTS items are defined in [2.101](http://acquisition.gov/far/current/html/Subpart%202_1.html#wp1145508). Unless indicated otherwise, all of the policies that apply to commercial items also apply to COTS. Section [12.505](http://acquisition.gov/far/current/html/Subpart%2012_5.html#wp1077123) lists the laws that are not applicable to COTS (in addition to [12.503](http://acquisition.gov/far/current/html/Subpart%2012_5.html#wp1077101) and [12.504](http://acquisition.gov/far/current/html/Subpart%2012_5.html#wp1075487)); the components test of the Buy American Act, and the two recovered materials certifications in [Subpart 23.4](http://acquisition.gov/far/current/html/Subpart%2023_4.html#wp1086857), do not apply to COTS.

Also:

### 12.211 Technical data.

Except as provided by agency-specific statutes, the Government shall acquire only the technical data and the rights in that data customarily provided to the public with a commercial item or process. The contracting officer shall presume that data delivered under a contract for commercial items was developed exclusively at private expense. When a contract for commercial items requires the delivery of technical data, the contracting officer shall include appropriate provisions and clauses delineating the rights in the technical data in addenda to the solicitation and contract (see [Part 27](http://acquisition.gov/far/current/html/FARTOCP27.html#wp224991) or agency FAR supplements).

# Glossary of Terms

This glossary represents a summary of definitions of selected key terms and phrases that are used throughout the *Guidelines* document. Many of these terms are defined in greater detail within the full text of the document. This glossary is intended to clarify potentially confusing terms in the context of procurement of professional photogrammetry and related remote sensing products. This glossary is not intended to be a comprehensive list of definitions of geospatial mapping terms and phrases.

* **Accuracy:** The degree of conformity of a measured or calculated value compared to the actual value. Accuracy relates to the quality of a result and is distinguished from precision, which relates to the quality of the operation by which the result is obtained.
* **Authoritative:** Certified or guaranteed to meet an established or defined standard.
* **Authoritative location:** An authoritative location is a location that can be relied on as the basis for making other determinations. Mapping data represented to meet a specific accuracy requirement is considered to represent authoritative locations. Establishing or determining the authoritative locations of features and boundaries is considered the practice of surveying. Refer to NCEES materials cited in the references section for further clarification and examples of how this term applies to surveying and mapping.
* **Best Value:** The most advantageous balance of price, quality, and performance achieved through competitive procurement methods in accordance with stated selection criteria. (source: http://architecture.mt.gov/content/designconstruction/docs/Best\_Value\_Definition.pdf).
* **Certification: Professional certification**, **trade certification**, or **professional designation**, often called simply *certification* or *qualification*, is a designation earned by a person to assure qualification to perform a job or task. Many certifications are used as post-nominal letters indicating an earned privilege from an oversight professional body acting to safeguard the public interest.
* **Compiled:** To make or compose from other materials or sources.
* **Deliverables (geospatial, mapping products):** Maps, data and information that are completed according to a define specification and process and delivered under the terms of an agreement, purchase order or contract.
* **Direct Georeferencing:** The direct measurement of exterior orientation parameters, i.e. position (x/y/z coordinates) and attitude (roll/pitch/heading) at the instant an aerial photograph is taken, to aid or replace aerial triangulation. The term is also applicable to the position and orientation of airborne LiDAR or IFSAR sensors.
* **Georeference:**  To associate imagery, feature data and information with a location in physical space; that is, determining and establishing the relationship of vector features, raster images and other geographical features to map projections or coordinate systems.
* **Geospatial mapping:** Mapping, information and data that identify the geographic location and characteristics of natural or constructed features or boundaries on the earth.
* **Geospatial accuracy:** Accuracy of geospatial mapping data and information. Map accuracies include both positional accuracies and thematic accuracies:
	+ **Positional accuracy:** Accuracy of the horizontal and/or vertical coordinates that define the location of features represented by geospatial maps, data or information.
	+ **Thematic accuracy:** Accuracy of the feature characteristics or attributes represented by the geospatial maps, data or information. **Licensure:** refers to the granting of a license, which gives a "permission to practice." Such licenses are usually issued in order to regulate some activity that is deemed to be dangerous or a threat to the person or the public or which involves a high level of specialized skill.
* **Photogrammetry:** The art, science, and technology of obtaining reliable information about physical objects and the environment, through processes of recording, measuring, and interpreting images and patterns of electromagnetic radiant energy and other phenomena.
* **Photogrammetry and related remote sensing**: This term is used throughout the document to clarify that the ASPRS definition of photogrammetry is not limited to conventional photographic imagery, but also includes imagery and measurements acquired using LiDAR, RADAR, multi-spectral imagery and other remote sensors.
* **Orthophotograph:**  A photograph prepared from a perspective photograph by removing those displacements of points caused by tilt, relief and central projection (perspective).  The removal of the relief due to terrain change is often in zones and not specific.  Sometimes called an orthophoto map, an orthophoto is georeferenced and is geometrically corrected such that the scale is uniform: the photo has the same lack of distortion as a map and can be used to measure distances, locations and the relationships between objects on the earth to within a specified accuracy.  Accuracy depends on process and project design parameters.
* **Ownership:** is the state or fact of exclusive rights and control over property, which may be an object, land/real estate or intellectual property.
* **Product Sales**: Sale of standardized products, usually according to an established pricing structure and often offered under license agreements for specific uses; specifications are established by the provider, though the purchaser may be able to choose from several options. Refer to Table 1 for a detailed definition of products.
* **Professional Services**: Projects that require specialized knowledge and skill, require independent judgment, and require a level of professional expertise and ethical conduct to ensure that the work meets the best interests of the client and public. Refer to Table 1 for a detailed definition of professional services.
* **Product Support Services**: Provider services such as installation, configuration, data maintenance, data reformatting and training to support a product. Also include delivery services such as Provider Hosted, Software as a Service (SaaS) or Data as a Service (DaaS). Service Level Agreements, fee for service or annual maintenance fees typically apply. Refer to Table 1 for a detailed description of Product Support Services.
* **Published Price List**: the Providers’ publicly published retail sales price for a product offered to the market. Retailers, wholesalers, or resellers may discount form this list at their discretion.
* **Qualifications Based Selection**: Qualifications Based Selection (QBS) is an objective and competitive process used by a procuring entity (owner) who evaluates and selects the most qualified firm to procure services based on a professionals' qualifications in relation to the work required, found in Federal law (40 USC 1101), the American Bar Association Model Procurement Code for State and Local Government, numerous state laws and referenced in the FAR, Part 36.
* **Remote Sensing:** Gathering and processing information about an object without direct physical contact.
* **Rectified imagery:** *Rectify* means to correct by calculation or adjustment. Rectified imagery is imagery that has been transformed and processed to be projected onto a common surface. Historically the geospatial term of rectification was defined as the process of correcting a photograph for displacement due to camera tilt only. Currently, the term is often used more generally to apply to a wider array of transformation processes used to project imagery onto a common coordinate system. "Ortho-rectified" imagery is corrected for camera tilt, distortion and terrain relief. "Rectified imagery" is a more general term and implies that a less robust transformation, which typically would not directly correct for terrain relief, was used.
* **Referential mapping**: Mapping that does not represent authoritative locations or survey data. This mapping is for reference purposes only and not for the purpose of determining reliable locations to be used as the basis for making measurements or other determinations. Locations of features are approximate and are not expected to comply with a specific positional accuracy requirement. Refer to NCEES materials cited in the references section for further clarification and examples for applying this term.
* **Specification:** (often abbreviated as **spec**) is an explicit set of requirements to be satisfied by a material, product, or service. Should a material, product or service fail to meet one or more of the applicable specifications, it may be referred to as being *out of specification*; Specs are a type of technical standard.
* **Standardization:** is the process of developing and implementing technical standards.
* **Subscription Service:** This business model is where a customer must pay a subscription price to have access to the product or support service for a defined period of time. The content or service provider typically delivers to a set specification with support services to the clients’ use.
* **Technical Products**: Standardized products for specific tasks that do not require independent professional judgment and where the client is responsible for ensuring that outcome best meet client and public interests. Refer to Table 1 in this document for a description of technical products.
* **Tested**: A procedure for critical evaluation; a means of determining the presence, quality, or truth of something.
* **Value Added Service:** services available at little or no cost, to promote and support their primary product. These support services can be delivered by the product provider, reseller, or third-party authorized agent for the product.
* **Warranty:** In business and legal transactions, a warranty is an assurance by one party to the other party that specific facts or conditions are true or will happen; the other party is permitted to rely on that assurance and seek some type of remedy if it is not true or followed.