

Guidelines for Procurement of Commercial Geospatial Mapping Products

Adopted Guidelines

October 29, 2012

Table of Contents

Commercial Geospatial Mapping Product Guidelines	4
Executive Summary (to be published as a sidebar).....	
Definition of Commercial Geospatial Mapping Products	4
Procurement Guidelines and Recommendations.....	4
I. Background and Intent	6
II. Commercial Geospatial Mapping Products Addressed by These Guidelines	6
III. Characteristics of Commercial Geospatial Mapping Products	7
Table 1: Comparison of Professional Services, Products and Product Support (Adapted from MAPPS Products vs. Service Matrix, www.mapps.org).....	8
IV. Specific Examples of Commercial Geospatial Mapping Products	9
Product Support	10
V. Implementation Steps for Commercial Geospatial Mapping Products Procurement	11
VI. Acquisition of Commercial Geospatial Mapping Products	12
GSA Procurement Vehicle	13
Contractors Authorized to Use GSA	13
Appendix 1	14
Supporting Documents	14
References	14
Applicable QBS Laws and General Information	14
Professional Products Procurement Resources	14
Accuracy and Professional Standards Information	15
Professional Licensing & Certification Information	15
GIS, Surveying and Mapping Certification Programs.....	16
Appendix 2.....	16
Excerpts from FAR 2.101.....	16
Appendix 3.....	18
Excerpts from FAR Part 12: Acquisition of Commercial Items	18
12.000 Scope of part.	18

12.001 Definition.....	18
Subpart 12.1—Acquisition of Commercial Items—General	18
12.101 Policy.....	18
12.102 Applicability.....	18
12.103 Commercially available off-the-shelf (COTS) items.....	20
12.211 Technical data.....	20
Glossary of Terms.....	21

Commercial Geospatial Mapping Product Guidelines

Executive Summary (to be published as a sidebar)

The following *Guidelines* were prepared by the ASPRS Commercial Geospatial Mapping Products (CGMP) *Guidelines* Committee, an ad hoc committee appointed by the ASPRS Board of Directors. The core members of the Committee included representatives from the commercial / private sector, as well as state and federal government. During the development of these *Guidelines*, the Committee interviewed procurement representatives from State and Federal agencies and private providers of CGMP. These *Guidelines* were formally approved by the ASPRS Board of Directors at their meeting on 10-29-2012.

The intent of these *Guidelines* is to provide Federal, State and Local Government Agencies, researchers, private entities and other organizations with the characteristics of CGMP that distinguishes them from deliverables made through professional geospatial services contracts and the criteria to consider when evaluating the procurement of CGMP. A matrix outlining these differences is provided in Table 1 of these *Guidelines*.

For the purpose of these *Guidelines*, CGMP refers to geospatial map data that are readily available from commercial Providers and tagged “commercially available off-the-shelf” or COTS (the procurement of geospatial hardware and/or software is not part of these *Guidelines*). CGMP are created by a Provider at their own expense (referred to as a “Vendor” in the Federal Acquisition Regulations) and are not subject to modification by the Provider for the procuring agency / customer. Product support such as installation, non-computational data reformatting, and training can be included in the procurement of CGMP. Maintenance may also be considered part of the purchase provided it is limited to fulfilling the product warranty as defined within the user license. Maintenance that involves altering and/or updating the CGMP for a specific application or end user / customer is not considered to be COTS CGMP but rather a professional service which may be subject to Federal and/or State procurement policies and procedures.

Definition of Commercial Geospatial Mapping Products

CGMP are commercially available through the Provider or the Provider’s reseller(s) and like other non-geospatial products are referred to as COTS. In response to a market need determined by the Provider, CGMP are produced by the Provider at their expense and made available to the consumer market via a non-exclusive license with specific terms including rights and restrictions. The customer can determine the cost of CGMP from the Provider’s published price list / model, and should expect delivery at point of sale. The specification(s) by which CGMP were produced may not be clearly defined and are not subject to change by the Producer at the customer’s request. Ultimately, the key to this definition is that CGMP exist prior to purchase or procurement. If the customer becomes involved with defining any portion of the geospatial product specifications, requirements, uses, or design, the end result is no longer COTS CGMP but rather a deliverable as part of a professional service.

Procurement Guidelines and Recommendations

The CGMP addressed by these *Guidelines* can play a 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 preliminary topographic analysis.

These procurement *Guidelines* are specifically recommended for the procurement of CGMP for non authoritative use. Independent judgment and oversight by an appropriately licensed or certified professional is strongly recommended to support the overall project success.

Price, suitability, and timely availability are factors to consider in procurement of CGMP. It is imperative that a balance of these factors be considered, along with the end user/customer requirements in order to ensure the best possible outcome.

ASPRS has long endorsed and strongly recommends following the qualifications-based selection (QBS) process for the procurement of Professional Geospatial Mapping Services (PGMS). Notwithstanding this position, CGMP may be used as components of a professional services contract to deliver authoritative data procured by the QBS process. However, the evaluation and ultimate decision to incorporate CGMP as a component (not a deliverable) of a professional service must reside with the professional judgment of the Provider.

ASPRS recognizes there will be instances in which an organization may wish to consider procurement of CGMP to fulfill their mapping requirements and/or GIS applications. In those cases, ASPRS recommends the following specific minimum *Guidelines* be considered by the purchasing organization or agency:

- A detailed review of the users' requirements should be compared to the published CGMP specifications when available. If possible, multiple CGMP Providers should be evaluated against the intended use plan.
- A qualified licensed and/or certified geospatial professional (either on the customer's staff or hired as a consultant) should be involved in the evaluation process to ensure the CGMP best meets the end-user application(s) and requirement(s).
- CGMP are sold under a non-exclusive commercial license, and as such, these terms and conditions must be reviewed to ensure the CGMP can be deployed as expected for the end-user application(s).

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 ASPRS at defining and clarifying the key issues that affect procurement of Commercial Geospatial Mapping Products (CGMP) and were formally approved by the ASPRS Board of Directors at their meeting on 10-29-2012.

The intent of these *Guidelines* is to provide Federal, State and Local Government Agencies, researchers, private entities and other organizations with the characteristics of CGMP that distinguishes them from deliverables made through professional geospatial services contracts and the criteria to consider when evaluating the procurement of CGMP. A matrix outlining these differences is provided in Table 1 of these *Guidelines*.

The specific goals of these *Guidelines* are to:

- Provide a clear definition of "commercial off-the-shelf" (COTS) CGMP.
- Recognize, acknowledge, and reference the existence of state and federal laws that may govern the procurement of CGMP as they relate to COTS.
- Distinguish CGMP from deliverables provided as part of a Professional Geospatial Mapping Services (PGMS) contract.
- Define CGMP procurement practices that may include elements of:
 - Data license terms and conditions
 - CGMP price, suitability, and availability
 - Provider-defined product specifications
 - Available Provider product support of the CGMP

II. Commercial Geospatial Mapping Products Addressed by These Guidelines

These *Guidelines* are specifically intended to apply to the COTS CGMP that have been produced from remotely-sensed imagery and/or other sources and types of geospatial 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 the procurement of COTS are documented by the Department of Defense and the Federal Acquisition Regulations (FAR).

"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."

FAR section 2.101 defines Commercially available off-the-shelf (COTS) item as “(1) Any item of supply (including construction material) that is – (i) A commercial item as defined in paragraph (1) of the definition in this section); [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 has been sold, leased, or licensed to the general public or has been offered for sale, lease, or license to the general public]; (ii) Sold in substantial quantities in the commercial marketplace; and (iii) Offered to the Government, under a contract or subcontract at any tier, without modification, in the same form in which it is sold in the commercial marketplace; and (2) Does not include bulk cargo.”

A “commercial item” as defined in the Federal Acquisition Regulation (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.

For additional FAR text from Section 2.101 see Appendix 2 to these *Guidelines*.

III. Characteristics of Commercial Geospatial Mapping Products

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

- Represent a level of standardization as defined by the Provider
- Have the ability to meet a published specification or to a stated industry standard
- Provide an end-user warranty
- Provide the end-user with a non-exclusive license or other form of shared ownership
- Pricing has been established through a published catalog
- License includes clearly defined terms and conditions including authorized and unauthorized uses

Table 1, compares the characteristics of Professional Services to CGMP and CGMP Support 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 Professional Services, Products and Product Support (Adapted from MAPPS Products vs. Service Matrix, www.mapps.org)

OFFERING CHARACTERISTICS	PROFESSIONAL SERVICE	PRODUCT	PRODUCT SUPPORT
Level of Standardization	<p>Dynamic</p> <p>In consultation with the Client, Provider exercises professional judgment in developing the appropriate level of standards needed to meet the Clients' project specific requirements and expectations.</p>	<p>Static</p> <p>Product standards are solely determined and defined by the Provider and are not subject to change by the Customer.</p>	<p>Static</p> <p>Product support standards are solely determined by the Provider and documented in a license agreement.</p>
Specifications	<p>Established by Client with critical input from a professional service Provider. Specifications are clearly defined in contract documents.</p>	<p>Established solely by Provider and are not subject to change by the Customer. Specifications may not be clearly defined .</p>	<p>Established solely by Provider.</p>
Ownership	<p>Client owns the contracted project deliverables while Provider may retain ownership of resulting work documents such as notes, computations, and records related to the development of the contracted project deliverables.</p>	<p>Provider retains ownership of the data that is offered under a non-exclusive license to individuals, private organizations, and government agency Customers.</p>	<p>Product support may be offered by the Provider to fulfill Product warranties and are defined in licensing agreements. Non-computational data reformatting requested by a Customer, may or may not be owned by Customer.</p>
Certification/Warranty	<p>Must meet clearly defined contractual accuracy requirements and sealed by a licensed or certified professional.</p>	<p>Provider is not required certify that the Product will meet the Customer's needs. Customer is solely responsible for quality control and for verifying that the product will meet the Customer's specifications and expectations. Product warranties are documented in the Providers license.</p>	
Protection of Public Welfare	<p>Professional liability applies. Licensed professionals have met the qualifications criteria as defined by professional licensing boards whose primary mission is to protect the public's health, safety, and welfare by only licensing qualified individuals.</p>	<p>Product liability applies. Provider is responsible for ensuring product(s) meet Provider's documented specifications. Customer is responsible for identifying and evaluating the risk to the publics' health, safety and welfare that may result directly or indirectly from the use of commercially available products.</p>	
Procurement Method	<p>Qualification-Based Selection Competitive procurement process established by the US Congress as part of the Brooks Act. Procuring entity evaluates submitted qualifications and selects most highly qualified firm. Scope of work, schedule, budget, and fee are negotiated.</p>	<p>Best Value Price and other key factors can be considered in the evaluation and selection process.</p>	<p>Best Value Price and other key factors can be considered in the evaluation and selection process.</p>

Price	Negotiated between Provider and Client based on the level of effort required to prepare the deliverables to be provided using pre-approved rates. May be contracted as fixed price or as cost plus fixed fee.	Published unit pricing. Total price is determined by multiplying the number of units to be purchased by the catalog price per unit.	Based on published catalog or market prices.
-------	---	---	--

IV. Specific Examples of Commercial Geospatial Mapping Products

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

- **3-D Models** – A three dimensional representation of a real object 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** – Imagery collected using remote sensing technology in the visible light spectrum (red-green-blue) or infrared, 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** – An aerial photograph taken with the optical axis of the camera deliberately pointed away from the vertical. Vertical photographs are usually taken with the optical axis of the camera kept within 5° of the vertical. Oblique photographs could therefore be defined as photographs taken with the optical axis more than 5° from the vertical. Enables at-an-angle view of properties, etc.; from different directions.
- **Ground Control** – Georeferenced identifiable locations within imagery, Lidar, GIS and other geospatial data sets that can be utilized for the production and/or QA/QC of CGMP. Control is established by control surveys on the ground, as distinguished from control established by photogrammetry using aerial photographs.
- **Vector Road and Street Data** – Standard off-the-shelf data sets with geospatial accurate road and street data with addressing. Typically these data products include Points of Interest (POI) such as hotels, fuel stations, schools, and airports. A vector represents a physical quantity or feature having both length and direction.
- **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. A parcel is a single piece of land described in a single description in a deed or as one of a number

of lots on a plat, separately owned either publicly or privately and capable of being conveyed separately.

- **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 are 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 are 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 or DTM on which it is based.
- **Hosted / Online Data** – Defined as Data as a Service (DaaS), this refers to the data product that can be provided under a subscription model and may be provided under a Software as a Service (SaaS) application.

There are several methods for the delivery of CGMP. 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 will be defined by the Provider and driven by market demand. “Metadata” is an additional feature of many of the products noted.

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.

Product Support

In order to fulfill warranties as defined within the user license, CGMP Providers may offer customer product support. Product support can also be offered to the public under similar terms and conditions or sold competitively in substantial quantities based on established catalog or market prices. For the purpose of these *Guidelines* product support is 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.

- **Non-Computational Data Reformatting** – The process of changing the delivery format so that it may be optimally used in the customers’ system(s). May also include changing file formats of data delivery and orders of occurrence of data to match customer needs for automated use of CGMP.
- **Maintenance** – That which may be required to fulfill the product warranty as defined within the user license.
- **Training** - The transfer of knowledge, skills, and competencies that relate to the use of the CGMP.

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 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,
 - Geographic area to be covered by the CGMP.
 - Availability of support / maintenance
- **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 required to integrate the CGMP into the customers' chosen application.
 - Evaluation Methodology - A description of how any proposals for 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 customer 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

(c) 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 widely varying interpretations by the potential Providers. It is for this reason that ASPRS highly recommends that a licensed or certified professional be involved in the development of the RFP, proposal review, and procurement decision(s).

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 documented by the Provider, understood by the customer, and that all intended uses and acquisition costs are carefully evaluated. Involving a licensed or certified professional early in the procurement process will ensure that the CGMP to be acquired are appropriate for the proposed application.

U.S. General Services Administration (GSA) Procurement Vehicle

The GSA provides a purchasing vehicle for the procurement of CGMP from Providers registered under the program. These CGMP may include COTS software, data, and product support as defined in these. 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 must be exercised in the acquisition of contracted professional geospatial services as such professional services are prohibited by law from being offered or sold through GSA schedule contracts. The GSA may be used for products such COTS CGMP 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. ASPRS recommends that Contracting officers 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 Product Support* (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](http://www.asprs.org/a/society/committees/standards/Procurement_Guidelines_w_accompnying_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>

American Public Works Association Position Statement

[http://www.apwa.net/Documents/Advocacy/Positions/Advocacy/Qualifications Based Selection Prof Svs Consult.pdf](http://www.apwa.net/Documents/Advocacy/Positions/Advocacy/Qualifications_Based_Selection_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

American Council of Engineering Companies general QBS resources page

<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.usace.army.mil/Portals/2/docs/EFARS.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/>)

American Bar Association Model Procurement Code for State and Local Government

(Document can be purchased from: <http://www.abanet.org>)

Michigan QBS Coalition, Workbook for QBS Procurement

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>

ASPRS Code of Ethics

<http://www.asprs.org/About-Us/Code-of-Ethics-of-the-American-Society-for-Photogrammetry-and-Remote-Sensing.html>

ASPRS Certification Program

<http://www.asprs.org/membership/certification/index.html>

ASPRS Standards Page

<http://www.asprs.org/Standard-Activities.html>

MAPPS Code of Ethics

http://www.mapps.org/?page=about_codeofethics

Professional Licensing & Certification Information

ASPRS Licensure Committee

<http://www.asprs.org/PPD-Division/PPD-Licensure-Committee.html>

NCEES link to State Engineering/Surveying Boards

http://www.ncees.org/Licensing_Boards.php

NCEES Model Law

http://www.ncees.org/Records/Model_Law_designation.php

NCEES Multi-Organization Task Force Materials and Reports

<http://www.asprs.org/NCEES-materials/NCEES-Task-Force-Materials.html>

GIS, Surveying and Mapping Certification Programs

<http://www.coqo.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.

(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, Simplified Acquisition Procedures; Part 14, Sealed Bidding; or Part 15, 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 shall take precedence for the acquisition of commercial items.

(d) The definition of commercial item in section [2.101](#) 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](#) (see [13.306](#));
- (3) Using the imprest fund (see [13.305](#));
- (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](#) shall not be exempt from—

- (i) Cost accounting standards (see [Subpart 30.2](#)); or
- (ii) Cost or pricing data requirements (see [15.403](#)).

(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](#)), the contracting officer also may use [Part 12](#) for any acquisition for services that does not meet the definition of commercial item in FAR [2.101](#), 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](#);
- (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](#) 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](#). Unless indicated otherwise, all of the policies that apply to commercial items also apply to COTS. Section [12.505](#) lists the laws that are not applicable to COTS (in addition to [12.503](#) and [12.504](#)); the components test of the Buy American Act, and the two recovered materials certifications in [Subpart 23.4](#), 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](#) 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. Accuracy can be further defined as:
 - **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.
- **Authoritative:** Contracted Professional Geospatial Mapping Services (PGMS) resulting in the preparation of specific geospatial data deliverables that will be made public by the contracting agency for use by any individual, private organization, or government agency as an authoritative source. Geospatial data deliverables must meet clearly defined accuracy standards and sealed by a licensed or certified professional.
- **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 a legislative body acting to safeguard the public interest.
- **Client:** Individuals or organizations engaged in a qualitative relationship with a professional service(s) provider whose professional skills and judgment are applied to their specific practice area in order to provide both tangible and intangible deliverables and/or services.
- **Compiled:** To make or compose from other materials or sources.
- **Customer:** Individuals or organizations who are the recipient(s) of commercially available products.

- **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.
- **Georeference:** To associate data and information with a location in physical space; one example 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.
- **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.
- **Model** - (1) A copy in three dimensions of an object, usually on a smaller scale but occasionally on a larger scale. Models are used extensively in engineering; tests are made on the model instead of on the original. The results of such tests are then made to apply to the original by dimensional analogy. Models are also used in other sciences such as physical oceanography and crustal physics. They are little used in surveying or geodesy except as representations of terrain and usually in regions of small area. (2) In particular, in photogrammetry, the visual or optical image (called a stereoscopic model) produced by combining the images from two photographs of the same object from different angles or by creating a hologram. (3) A simplified, theoretical, not necessarily mathematical representation of a real thing or event and acting like the original in situations of interest. (4) A mathematical function or representation.
- **Ortho or orthorectified image:** 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.
- **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.

- **Product Sales:** Refer to Table 1 for a detailed definition of products. 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.
- **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:** Provider support such as installation, configuration, data maintenance, data reformatting and training to support a product. Also includes 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.
- **Published Price List:** the Providers' publicly published retail sales price for a product offered to the market. Retailers, wholesalers, or resellers may discount from 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.
- **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:** 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.
- **Test:** A procedure for critical evaluation; a means of determining the presence, quality, or truth of something.

- **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.