

# CHAIRMAN OF THE JOINT CHIEFS OF STAFF INSTRUCTION

Directive Current as of 9 May 2011

J-2  
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CJCSI 3505.01A  
11 March 2009

## TARGET COORDINATE MENSURATION CERTIFICATION AND PROGRAM ACCREDITATION

### References:

- a. Title 10, United States Code
- b. DODD 5100.1, 1 August 2002 Certified Current as of 21 November 2003, "Functions of the Department of Defense and Its Major Components"
- c. DODD 5105.60, 11 October 1996, "National Imagery and Mapping Agency (NIMA) (U)"
- d. NSG Concept of Operations (CONOPS) for Target Coordinate Mensuration Accreditation, 1 March 2008
- e. DIAI 3000.002, 15 July 2008, "U.S./Allied Target Analysis Program (U)"

1. Purpose. This instruction establishes policy for target coordinate mensuration certification and program accreditation for individuals, Services, combatant commands, and DOD combat support agencies (CSAs) that mensurate coordinates to support employment of coordinate-seeking weapons.

2. Cancellation. CJCSI 3505.01, 31 August 2006, is canceled.

3. Applicability. This instruction applies to the Services, combatant commands, and CSAs engaged in the mensuration of precise target coordinates, derived from imagery, for use in joint or coalition strike operations for deliberate/planned and tactical operations.

### 4. Policy

a. Target coordinate mensuration<sup>1</sup> occurs at the strategic (national agency), operational (theater HQs and components), and tactical levels of war. Due to its importance as a critical function in the kill chain supporting precision fires, **personnel who conduct target coordinate mensuration must be certified to do so**. The targeting process requires due diligence in all facets, to include

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<sup>1</sup> See glossary for definition.

target coordinate mensuration. Due diligence, in terms of coordinate mensuration, means ensuring individuals performing this task are properly trained and certified to established standards and can sufficiently demonstrate their proficiency on a continuing basis. Any target coordinate mensuration program that produces mensurated targeting coordinates for coordinate-seeking weapons must meet the standards set forth in this instruction.

b. As the functional manager of geospatial intelligence (GEOINT) in accordance with reference c, the NGA establishes target coordinate mensuration and certification standards as well as criteria for accrediting Service/combatant command/CSA target coordinate mensuration programs within the Department of Defense for the production of mensurated target coordinates. Individuals who mensurate coordinates used to support employment of coordinate-seeking kinetic weapons **require certification by NGA, or certification by an NGA-accredited Service, combatant command, or CSA program.** This is in order to maintain the integrity and reliability of (1) coordinate data in targeting databases; (2) products generated using mensurated coordinates, and (3) coordinate data used to support employment of GPS coordinate seeking weapons.<sup>2</sup>

c. Target Coordinate Mensuration Training and Certification. Training and certification will be based on validated NGA imagery-based mensuration tools and processes.<sup>3</sup> A tool will be considered validated if the outputs of the mensurated positions in latitude, longitude, height, and error propagation estimates are within stated performance parameters. Target coordinate mensuration training and certification requirements vary by tool and mensuration process. However, the certification process for all tools will include instruction on validation statements and risks/implications of tool use for purposes not validated by NGA. At a minimum, mensuration instruction shall address the following core topics (see reference d for details on specific training and certification requirements):

(1) Basic imagery familiarization and management (to include acquisition and updating)

(2) Digital Point Positioning Database (DPPDB) management (to include acquisition, storage, and updating).

(3) Basic geodesy

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<sup>2</sup> Examples include Joint Direct Attack Munition, Small Diameter Bomb, 155mm Excalibur artillery munition, Guided Multiple Launch Rocket System, and the Army Tactical Missile System.

<sup>3</sup> Reference NGA Web site <http://www.geoint.nga.smil.mil/programs/validation/index.php> for current mensuration tools and processes validated by NGA. Methods and capabilities for deriving coordinates that do not involve NGA-validated tools and mensuration processes are outside the scope of this instruction.

- (4) Mensuration tool capabilities, operations, and limitations
- (5) Precise point positioning process techniques and limitations

d. Program accreditation. In order to achieve NGA accreditation, all requirements contained in reference d must be met. For the purposes of this instruction, a target coordinate mensuration program is defined as the combination of the following components and their ability to operate as a whole to certify operators and accurately produce mensurated target coordinates: an NGA-validated mensuration tool, a mensuration process, training materials, proficiency development and maintenance procedures, work center/work environment procedures and concept of operations, and certified operators. The mensuration process for Modernized Integrated Database (MIDB) producers ends when the derived coordinate is entered into MIDB and related target materials are produced in accordance with reference e. For all others, the mensuration process ends with coordinate generation. Service and command HQ and CSAs requesting accreditation for their respective target coordinate mensuration programs must submit a formal Letter of Request to NGA. After receiving the accreditation request letter, NGA will provide the requesting organization the accreditation application package online<sup>4</sup> or through other appropriate means. Organizations requesting accreditation will return the completed package to NGA within 60 days of submitting the Letter of Request. For planning purposes, organizations should submit accreditation packages no later than 120 days prior to target accreditation date (see reference d for detailed guidance on accreditation criteria).

e. MIDB production. Combatant commands, Services, and CSAs will establish procedures to ensure that only appropriately certified personnel produce mensurated coordinates for MIDB (using authorized producer codes) and that the integrity of target coordinate data or other mensurated points transacted in MIDB is maintained. Certified personnel producing to MIDB shall be registered in the joint registry of certified operators maintained by the Joint Staff J-2 Deputy Directorate for Targets (JS/J2T) (see paragraph 6d, below). Combatant commands, Services, and CSAs producing mensurated coordinates for MIDB will manage their MIDB producer codes for Joint Desired Points of Impact (JDPIs) and mensurated reference point entry into target detail tables. Mensurated coordinates produced prior to 31 August 2006 should be reviewed by combatant commands via normal review timelines and may be used at command discretion.

f. Appropriate combatant commands will ensure that, to the maximum extent possible, coalition partners use NGA-validated tools and certified personnel in accordance with standards set forth in this instruction when

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<sup>4</sup> NGA Web site <http://www.geoint.nga.ic.gov/programs/ngapoints/precise/accreditation/index.html> or <http://www.geoint.nga.smil.mil/programs/ngapoints/precise/accreditation/index.html>.

providing mensurated target coordinates for U.S. weapons or databases during combined operations. The supporting combatant command or supporting joint task force will ascertain whether coalition partners are using non-validated tools or non-certified personnel when providing mensurated target coordinates to U.S. operations. Coalition partners shall submit requests for NGA accreditation through JCS/J2T with endorsement by the appropriate geographic combatant command. The appropriate combatant command shall encourage coalition partners to use existing U.S. programs and training opportunities to enhance interoperability. JCS/J2T will coordinate with coalition partners to report information regarding their certified personnel.

5. Definitions. See the glossary at the end of this instruction.

6. Responsibilities

a. NGA. NGA will establish minimum training, certification, and proficiency standards for target coordinate mensuration and publish them in the accreditation CONOP (reference d). NGA will review and accredit uniformed Service, CSA, and command target coordinate mensuration programs that certify personnel for target coordinate mensuration. NGA will re-accredit these programs every 4 years or sooner if warranted by mensuration program changes or other circumstances. NGA will review all documentation of accredited Service, CSA, and combatant command programs every 2 years to ensure no significant changes have been made to training, certification, and proficiency processes. Upon request, NGA will review and accredit allies' training and certification processes. NGA, in coordination with JCS/J2T, will periodically review data produced by accredited Services, CSAs, and commands contained in MIDB target detail tables and will provide additional reviews as changes to processes dictate. Upon request from a Service, NGA will provide validation of Service-provided, imagery-based target coordinate mensuration tools. Until Services and combatant commands are accredited, NGA will provide JCS/J2T updates on initial individual certifications and re-certifications for the joint registry.

b. Services. Services will provide an NGA accredited program for training, certification, and maintaining credentials and tracking proficiency for personnel performing target coordinate mensuration using Service mensuration tools. Services will provide trained and certified operators for the performance of target coordinate mensuration (refs a and b apply). Training and certification requirements for NGA accreditation are found in reference d. Services will identify to JCS/J2T and NGA one or more coordinate mensuration program functional managers, who will serve as primary points of contact for target coordinate mensuration. Service functional managers will provide certification results for certified individuals producing to MIDB to JCS/J2T for maintenance in the joint registry. For all other certified operators, Services shall maintain a record of certification and provide NGA, the combatant

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commands, and the other Services access upon request. Services are responsible for seeking and obtaining NGA validation of mensuration tools used by their personnel in support of this process.

c. Combatant commands and CSAs. Combatant command HQ and CSAs must ensure initial training, proficiency, and certification requirements are met for assigned individuals. Combatant commands will determine the number of certified personnel required based on operational requirements. Those requirements should be identified to their Service components to ensure sufficient personnel are trained to mensurate coordinates within both their HQ and subordinate organizations.<sup>5</sup> Combatant command HQ may establish local policy for grandfathering non-certified operators until such time as Service programs are accredited. Combatant commands and CSAs may choose to establish an independent target coordinate mensuration certification program accredited by NGA. If accredited to certify operators, commands and CSAs will designate one or more functional managers to serve as primary points of contact for target coordinate mensuration. Command and CSA functional managers will provide certification results for certified individuals producing to MIDB to JCS/J2T for maintenance in the joint registry.

d. JCS/J2T. JCS/J2T will facilitate the accreditation of coordinate mensuration programs submitted by the Services, commands, and coalition partners in coordination with NGA. JCS/J2T will maintain a joint registry of certified operators producing to MIDB. Registry will be available via secure access via the Secret Internet Protocol Routing Network (SIPRNET), Joint Worldwide Intelligence Communication System (JWICS), and the J2T STONEGHOST site for commonwealth participants, per agreements with foreign partners. JCS/J2T will receive individual certification updates from NGA until the Services and combatant commands are accredited.

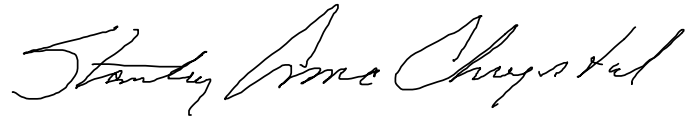
7. Summary of Changes. Enclosures containing training, certification, and work center criteria have been removed and will now be contained in reference d. In addition, Joint Terminal Attack Controllers, Forward Observers, and fire support personnel conducting target coordinate mensuration for weapons employment are no longer exempt from this instruction.

8. Releasability. This instruction is approved for public release; distribution is unlimited. DOD components (to include the combatant commands), other federal agencies, and the public may obtain copies of this instruction through the CJCS Directives home page--[http://www.dtic.mil/cjcs\\_directives](http://www.dtic.mil/cjcs_directives). Joint Staff activities may access or obtain copies of this instruction from the Joint Staff Decision Support Environment.

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<sup>5</sup> The combatant command and/or CSA will be required to provide retraining and recertification in instances where certified personnel were trained on Service mensuration systems that differ from those in use by the combatant command.

9. Effective Date. This instruction is effective upon receipt.

A handwritten signature in black ink, reading "Stanley A. McChrystal". The signature is written in a cursive, flowing style.

STANLEY A. MCCHRYSTAL  
Lieutenant General, USA  
Director, Joint Staff

Enclosure:

GL -- Glossary of Acronyms & Terms and Definitions

## GLOSSARY

### PART I--ACRONYMS

CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CSA	Combat Support Agency
DIAI	Defense Intelligence Agency Instruction
DOD	Department of Defense
DODD	Department of Defense Directive
DPPDB	Digital Point Positioning Database
FO	Forward Observer
GEOINT	Geospatial Intelligence
J-2	Joint Staff Directorate for Intelligence
J2T	J-2, Deputy Directorate for Target Support
JCS	Joint Chiefs of Staff
JDPI	Joint Desired Point of Impact
MIDB	Modernized Integrated Database
NGA	National Geospatial-Intelligence Agency

## PART II—TERMS AND DEFINITIONS

Accreditation – The formal declaration to operate at an acceptable level of risk, based on the implementation of an approved set of technical, instructional, managerial, and procedural safeguards.

Certification – A comprehensive evaluation of both an individual and a process that establishes compliance with a set of standards.

Deliberate targeting – Targeting that prosecutes planned targets. These are targets that are known to exist in the operational environment. For this instruction, this typically includes any target planning in support of precision guided munitions other than troops in contact and/or fleeting targets

Desired Point of Impact. A precise point, associated with a target, and assigned as the impact point for a single unitary weapon to create a desired effect. May be defined descriptively, by grid preferences, or geolocation. Also called DPI. (JP 3-60)

Dynamic targeting – Targeting that prosecutes targets identified too late, or not selected for action in time to be included in deliberate targeting. (JP 3-60). For this instruction, this typically involves operators engaged in troops in contact and/or prosecution of fleeting targets.

Error propagation – The process of evaluating the accuracy of computed values as a function of accuracy in the input values. In the case of target coordinates, error propagation is the assignment of accuracy estimates for ground point, based on the accuracy of the input variables. These accuracy values are carried forward or propagated into subsequent processes.

Joint Desired Mean Point of Impact (JDPI) – A unique, alpha-numeric coded aimpoint identified by a three dimensional (latitude, longitude, elevation) mensurated point. It represents a weapon or capabilities desired point of impact or penetration and is used as the standard for identifying aimpoints. Also called a JDPI. (JP 3-60)

Mensuration program – The combination of the following distinct separate critical components and their ability to operate as a whole to accurately produce mensurated target coordinates: an NGA-validated mensuration tool; a mensuration process; training materials, proficiency development and maintenance procedures; work center/work environment procedures



and concept of operations; and certified operators. The program is considered to be accredited to operate with an NGA validated tool, and a review of program ability to certify and maintain proficient operators.

**Planned target** – Target that is known to exist in the operational environment, upon which actions are planned using deliberate targeting, creating effects which support commander’s objectives. There are two types of planned targets: scheduled and on-call. See also deliberate targeting (JP 3-60)

**Target Coordinate Mensuration** – The process of measurement of a feature or location on the earth to determine an absolute latitude, longitude, and height. For targeting applications, the errors inherent in both the source for measurement as well as the measurement processes must be understood and reported. Mensuration tools can employ a variety of techniques to derive coordinates. These may include, but are not limited to, direct read from DPPDB stereo-pairs in stereo or dual mono mode, multi-image geopositioning, or indirect imagery correlation to DPPDB.

**Validation** – The process of determining the degree to which a model is an accurate representation of the real world from the perspective of the intended uses of the model. It is also the process of determining that a model implementation accurately represents the developer’s conceptual description and specifications.

**Work Center** – Physical space where target material production and coordinate mensuration is performed; as typified by deliberate planning. Operators must be certified and employ an accredited mensuration process that includes imagery acquisition and management, use of an NGA validated target coordinate mensuration tool, and product generation.

**Work Environment** – No one location defines a typical work environment. Particularly in the conduct of tactical operations, the work environment may represent a variety of locations, from tactical operations centers, to mobile vehicles, to aircraft cockpits, to individual fighting positions. But regardless of where target coordinate mensuration is performed, operators must be certified and employ an accredited mensuration process that includes imagery acquisition and management and the use of an NGA validated target coordinate mensuration tool for coordinate generation.

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