

7 Deliverables and Data Exchange

The need to exchange digital data (drawing files and database information) between DoD elements (and the A-E community) necessitates answering many questions about electronic media, file format, etc. The overview presented herein should not be considered a standard or all inclusive. It is presented only as a checklist of pertinent items. A more thorough analysis of data exchange is available in the Tri-Service CADD/GIS Technology Center's publication, "Tri-Service Standards, Part 1.1 - A-E CADD Deliverables Standards" (TSTC 1998b). This report is available by contacting Mr. Bobby Carpenter at the Tri-Service CADD/GIS Technology Center (1-800-522-6937, extension 4572).

Delivery Media

The preferred type of media for data exchange depends both on the hardware/software platforms utilized in creating a drawing/data file and the size of the file. Generally, digital data sets larger than 9 megabytes (Mb) should be furnished via magnetic tape, optical disk, or compact disc-read only memory (CD-ROM), and not on multiple diskettes.

Note: *For archiving data, CD-ROM is the preferred format due to its extended shelf life. Magnetic tape media should be transferred to new tapes or CDs within one year of creation.*

The most common and generally acceptable digital media consist of:

- a. 3-1/2-in. high-density floppy disks.

- b. High-density disk (e.g., Bernouli Disk, Zip Disk, JAZ Disk).
- c. 8-mm magnetic tape cartridge.
- d. 4-mm magnetic tape cartridge (e.g., Colorado Jumbo Tapes).
- e. 5-1/4-in. read/write (R/W) optical disk.
- f. CD-ROM.

When digital media are exchanged, an external label should contain, at a minimum, the following information:

- a. Format and version (e.g., Windows NT 4.0) of the operating system on which the media was created.
- b. Utility (command) used for writing the files to disk.
- c. Sequence number (for multiple diskettes, etc.)
- d. A short description of contents.

In addition, a transmittal sheet should accompany the media containing, at a minimum, the following information:

- a. Information included on the external label of each tape, diskette, etc.; total number of disks/tapes being delivered; and a list of the file names and file descriptions on each disk/tape.

- b. Instructions for restoring/transferring the files from the media.
- c. Certification that all delivery media is free of known computer viruses, including the name(s) of the virus scanning software used and the date the virus scan was performed.

Format

All digital files should be delivered in a format that is directly readable and compatible with the installation's CADD software and platforms without conversion. Before a file is placed on the delivery digital media, the following procedures should be performed:

- a. Remove all extraneous graphics outside the border area, and set the active parameters to a standard setting or those in the seed/prototype file.
- b. Make sure all reference (external reference) files are attached without device or directory specifications.
- c. Compress and reduce all files using the appropriate utilities. A digital media copy of the decompression utility should be provided with the deliverable media, if appropriate.
- d. Include all files, both graphic and nongraphic, required for the project (e.g., color tables, pen tables, font libraries, cell/block libraries, user command files, plot files, etc.).
- e. Make sure that all support files such as those listed in *d* are in the same directory and that references to those files do not include device or directory specifications.
- f. Include any standard sheets (i.e., abbreviation sheets, standard symbol sheets, etc.) necessary for a complete project.

- g. Document any nonstandard fonts, tables, symbols, etc., developed by the A/E or not provided with the Government-furnished material.

Documentation

Complete documentation (e.g., data input procedures), pen settings, lock settings, reference files, cells, level assignments, and history (e.g., when developed/ modified) information for each file should be included on level/layer ******-ANNO-NPLT (****** represents the design discipline). Documentation of the plot for each drawing is needed to duplicate the plot at a later date and should be provided with the deliverables.

Hard copy

A/E's should provide one full-size (or half-size at the preference of the installation) hard copy (usually Mylar, paper, or vellum) of each finished drawing with the final submittal. A hard copy of the documentation for each file should also be provided with each submittal on the size and type of media as preferred by the installation and negotiated in the A/E contract.

Ownership

The Government's rights to ownership of the digital data and other deliverables developed by the A/E under the contract must be clearly defined in the technical contract provisions. The Government has a legal right to demand unrestricted ownership to all data, designs, and materials for which the Government has paid 100 percent of the development cost. If the Contractor has to develop data, designs, or materials above and beyond what the Government specifies and pays for 100 percent, then the Contractor owns the rights to that percentage.

A statement similar to the following should be included in each A/E contract:

The Government, for itself and such others as it deems appropriate, will have unlimited rights under this contract to all information and materials developed under this contract and furnished to the Government and documentation thereof, reports and listings, and all other items pertaining to the work and services pursuant to this agreement including any copyright. Unlimited rights under this contract are rights to use, duplicate, or disclose data, and information, in whole or in part in any manner and for any purpose whatsoever without compensation to or approval from the Contractor. The Government will at all reasonable times have the right to inspect the work and will have access to and the right to make copies of the above-mentioned items. All digital files and data, and other products generated under this contract, shall become the property of the Government. By

reference, the following DFAR clauses are included in this contract as a part of the requirements herein:

- a. DFAR 252.227-7013, "Rights in Technical Data and Computer Software."*
- b. DFAR 252.227-7018, "Restrictive Markings on Technical Data."*
- c. DFAR 252.227-7019, "Identification of Restricted Rights Computer Software."*
- d. DFAR 252.227-7028, "Requirement for Technical Data Representation."*
- e. DFAR 252.227-7037, "Validation of Restrictive Markings on Technical Data."*