

Suggestions for Publishing on Optical (CD-ROM or DVD) Media

CAPACITY

CD-ROM 650MB Otherwise known as 74-minute media. 700 MB (80 minutes) media are also available. However, such media will violate CD-R standards if more than 74 minutes (650 MB) are used. Therefore, it is best to use 74-minute (650 MB) media. The capacity of a CD-ROM is roughly equivalent to the capacity of 450 1.4 MB floppy discs.

DVD-ROM

DVD-5: single sided, single layer, 4.7 GB

DVD-9: single sided, dual layer, 8.5 GB

DVD-10: double sided, single layer, 9.4 GB

DVD-18: double sided, double layer, 17 GB

The capacities listed above are inflated; in the parlance of DVD, a kilobyte is 1,000 bytes rather than 1,024 bytes. Therefore, the actual capacity of DVD-5 media is 4.28 GB. Roughly speaking, the capacity of DVD-5 media is about 6.5 times greater than CD-ROM media. DVD-ROM drives now available read only DVD-5 media.

Two types of DVD-R media exist:

- DVD-R authoring (635 nm wavelength)
- DVD-R general (650 nm wavelength)

Each media type must be recorded on the proper drive type. CPG has both type of DVD-R drives. Both media types can be played on DVD-ROM drives, and both media types can be used for mastering a disc. DVD-R general media are substantially less expensive than DVD-R authoring media; the same generally holds true for DVR-R drives.

ARTWORK

Templates are available from CPG as EPS files. CPG maintains an expert design staff to provide the artwork for your CD-ROM and DVD-ROM publications. For visual identity standards, refer to [http://www.usgs.gov/visual-id/ \(USGS Internal\)](http://www.usgs.gov/visual-id/ (USGS Internal))

cover 1.eps The front cover that is placed in the jewelbox containing a CD or a DVD. Cover 1 can be one to four colors (CMYK). One color is standard; above that, an extra cost comes into play. The banner size should no be changed, but it may be moved to the bottom of the cover. Be careful not to move any of the bleed marks nor to position type beyond them. Avoid type smaller than 8 points if you wish to have it read. Use Times Postscript font or Univers condensed except for:

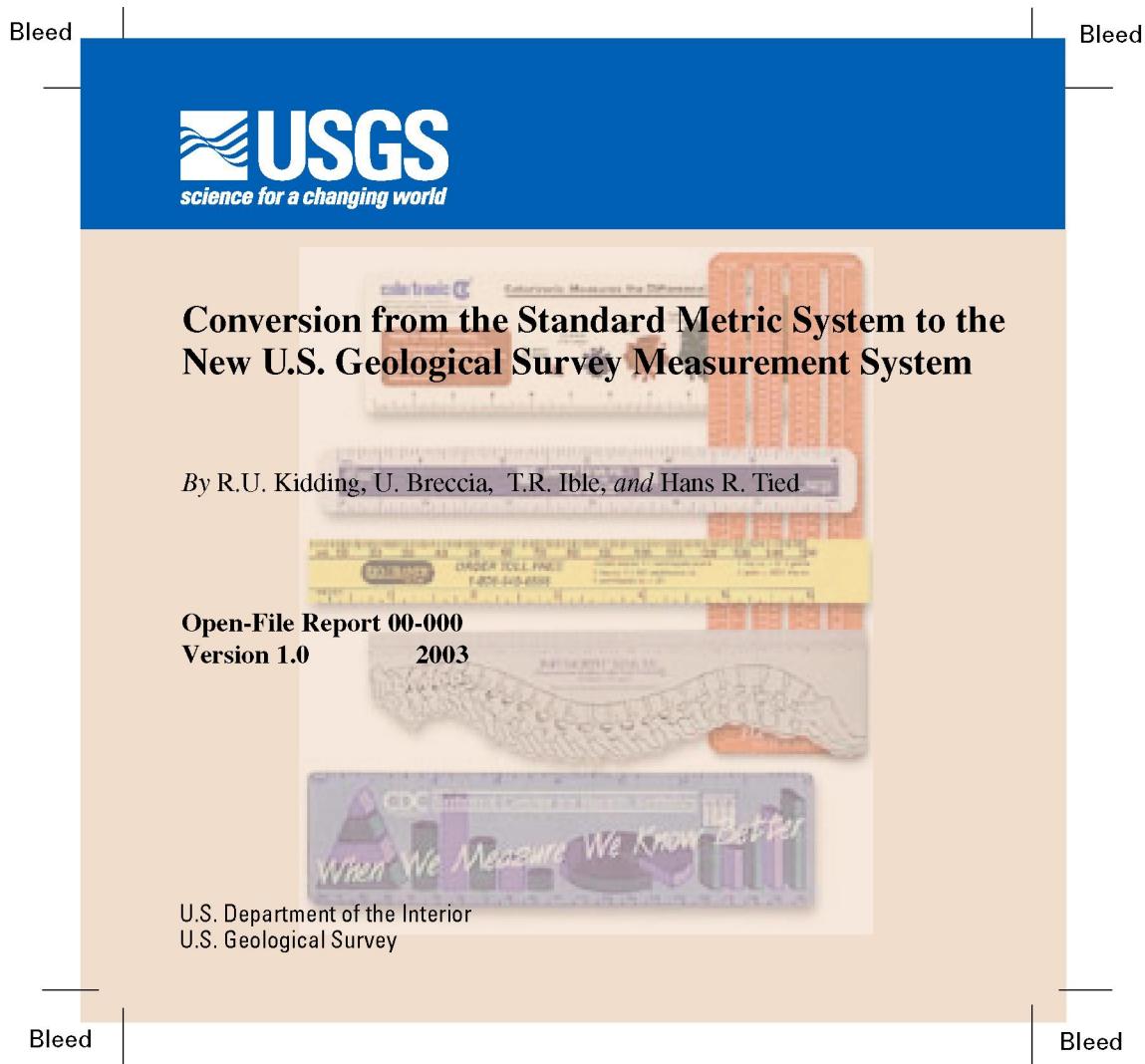
U.S. Department of the Interior
U.S. Geological Survey

which is always Univers 57 Condensed, 9 point and

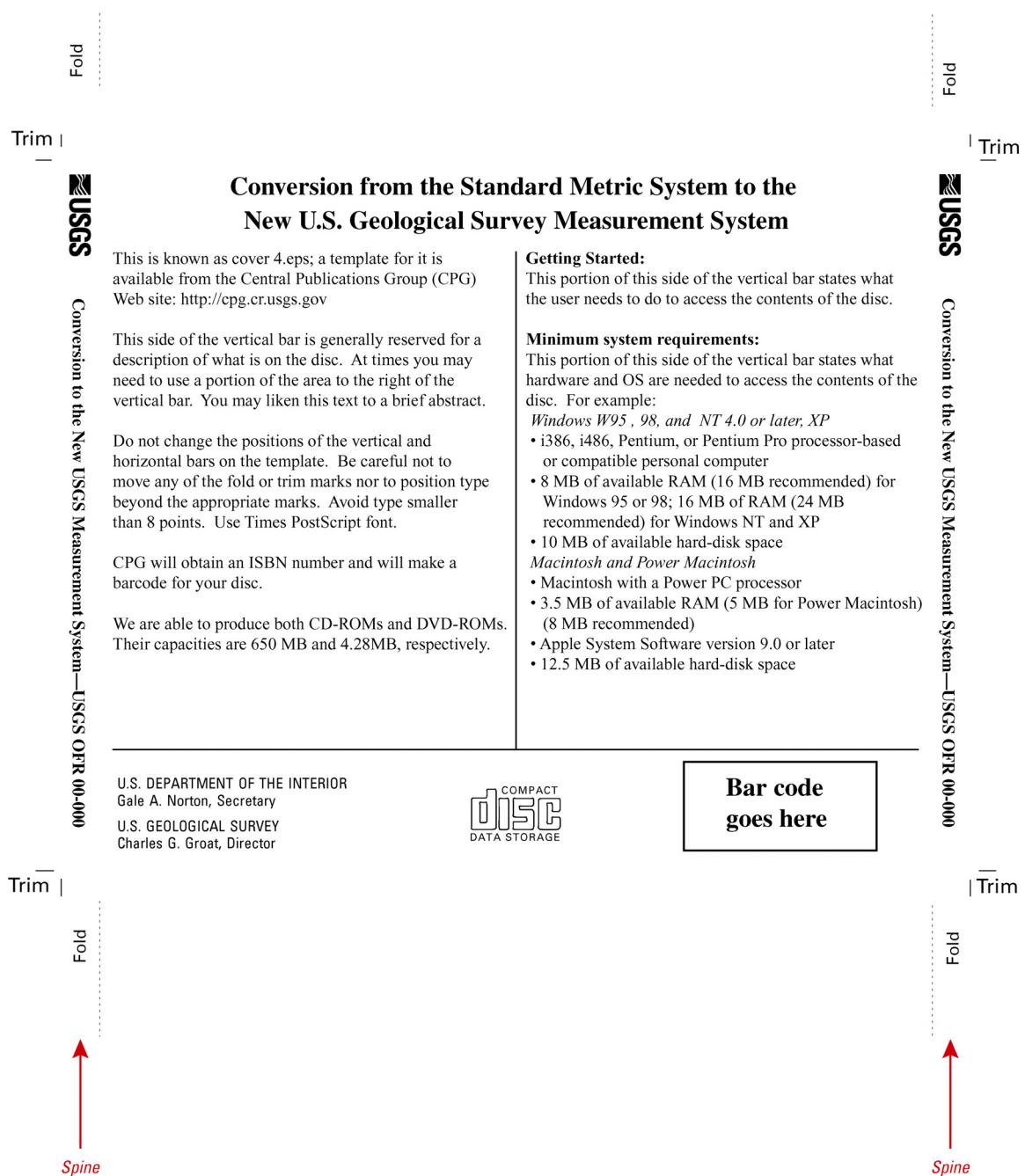
Bleed

which is Univers 55 Roman, but that is immaterial.

A typical example, of deliberately poor quality and design, follows:



cover 4.eps The back cover that is placed in the jewelbox containing a CD or a DVD. Cover 4 generally uses black ink only, although up to four colors may be used. Additional colors entail additional costs. A barcode is required, as CD-ROMs and DVD-ROMs are stocked items. CPG will obtain one from Reston. If CPG supplies a barcode to you, do not resize it. Be careful not to move any of the fold or trim marks nor to place type outside of the appropriate boundaries; be especially careful when placing type on the spines. Use Times Postscript font for the body of text. The title can be either Times Postscript or Univers condensed.



disc.eps The disc label, which can be one to four colors (CMYK). Again, additional colors entail additional costs. Be careful not to move or change the size of the disc or the size and position of the hole. Avoid type smaller than 8 points if you wish to have it read. Use Times PostScript or Univers condensed fonts except for:

U.S. Department of the Interior
U.S. Geological Survey

Which is always Univers 57 Condensed, 8 points.



FILE SYSTEMS FOR CD-ROMs

ISO 9660, level 1 Limited to 8.3 file names, upper case A to Z, 0 to 9, and the underscore character. Nested directory levels can be eight deep. Obsolete. *ISO 9660, levels 2, 3, and 4* allow file names up to 32 characters long.

Joliet An extension of the ISO 9660 standard to allow CDs to be written using long filenames and Unicode on Windows. Joliet allows filenames up to 64 characters, including spaces. Joliet is readable by PCs running Windows 95 or later operating systems. Unicode is intended to provide a unique number (or representation) for every character worldwide, including special symbols, regardless of the operating system and hardware platform, program, or language.

HFS HFS (Hierarchical File System) is the "native" file system used by the Macintosh to organize data. All Macintosh file attributes, such as custom icons, the Macintosh desktop, CREATOR and TYPE can be preserved. File names are limited to 31 characters and spaces.

RockRidge An extension of the ISO 9660 standard to allow CDs to be written using long filenames while maintaining UNIX file permissions and symbolic links. RockRidge allows filenames up to 127 characters, the underscore character, but no spaces. The RockRidge file system is readable on a variety of UNIX operating systems.

Hybrid Hybrid is not a CD File System but is a CD format that contains two or more file systems, commonly HFS and Joliet file systems. This type of hybrid provides support for Macintosh and Windows 95 and later computers and limited ISO 9660 support on UNIX. Joliet/RockRidge hybrids are useful for publications involving ArcInfo. The most compatible hybrid format contains HFS, Joliet, and RockRidge file systems. This type of hybrid is difficult to correctly author. Avoid such hybrids unless long UNIX file names are required. When possible, such as when using Adobe Acrobat, files are placed on the disc once and are shared among operating systems.

FILE SYSTEM FOR DVD-ROMs

The UDF (Universal Disk Format) file system is used for DVD-ROMs. The UDF file system allows up to 127 characters per filename. The UDF file system is cross-platform.

CREATING PRE-MASTER

Authors may submit a pre-master suitable for forwarding to the contractor for replication. We suggest that CPG make the pre-master, especially if the disc is intended to be a hybrid. Any file system errors on the disc are likely to be caused by USGS and not the contractor. Therefore, such errors, and costs associated with such errors, are the responsibility of USGS.

GPO CONTRACT

USGS uses a contract negotiated through the Government Printing Office for production of CD-ROMs. No equivalent contract exists at present for production of DVD-ROMs. Therefore, the cost of producing a CD-ROM is known. This is not true for the production of a DVD-ROM.

IF YOU INTEND TO CREATE THE PRE-MASTER

Supply a pre-mastered disc to CPG on 650 MB (74-minute) media. The CPG optical media expert can recommend reliable brands. Avoid using inexpensive media. Make certain that section 508-compatibility has been ensured.

IF YOU INTEND TO HAVE CPG CREATE THE PRE-MASTER

Supply all files needed to CPG. Authors may or may not have ensured section 508-compatibility at this point. If required, CPG will ensure such compatibility. Authors may supply the needed files via ftp, on CD-R media, or via JAZZ or ZIP disks.

IF YOU INTEND TO CREATE THE ARTWORK

Authors may supply the needed files via ftp, on CD-R media, or via JAZZ or ZIP disks. You will need to obtain a barcode from CPG.

IF YOU INTEND TO HAVE CPG CREATE THE ARTWORK

Supply preliminary artwork as either hardcopy (paper) drawings or EPS files, and revised text for cover 1, cover 4, and the disc. Alternatively, describe your cover design so that CPG's designer can create it for you. Authors may supply the EPS files via ftp, on CD-R media, or via JAZZ or ZIP disks. Authors may supply photographs either as slides, prints, scanned images, or digital camera images. All digital images should have at least 300 dpi resolution, and may be either TIFF or JPEG files.

WHAT HAPPENS NEXT

If needed, CPG will complete the artwork, ensure section 508-compliance, and create a pre-master. CPG will then package all materials and send them on to the contractor. If authors or CPG request proofs of the artwork from the contractor, such artwork will be sent to CPG for inspection by authors and CPG. Upon acceptance of any artwork proofs, CPG will notify the contractor to continue. If errors are found in any requested artwork proofs, such errors will be corrected. If such errors were introduced by USGS, USGS will be responsible for the costs of making corrections. If such errors were introduced by the contractor, the contractor will be responsible for the costs of making corrections. About three weeks after submitting the original package, the contractor will send an inspection disc to CPG. At that time, the contractor requests rapid verification of the disc, overnight if possible. CPG will contact authors to enable rapid verification. Upon verification, the remainder of the replicates will be shipped as indicated on the paperwork included with the original package.