

INM Version 6.2a Software Update

11/03/2006

Version Information

INM Version 6.2a is a software update to Version 6.2. You must already have INM Version 6.2 to use this software update. The INM 6.2a software update may be downloaded from the FAA web site at:

http://www.faa.gov/about/office_org/headquarters_offices/aep/models/inm_model/

If you do not have a previous version of INM in the 6-series, you can order a CD-ROM containing INM 6.0 by downloading the INM Order Form from the FAA web site (above). After installing INM 6.0, you can download the INM 6.2a software update, which contains all previous updates.

The Version 6.0 User's Guide is the current manual for INM Version 6.2a software. The Version 6.0 Technical Manual is the current technical description of the methods used by INM 6.2 to calculate aircraft noise around airports. Release notes *Inm60a.pdf*, *Inm60b.pdf*, *Inm60c.pdf*, *Inm61.pdf*, *Inm62.pdf* and this document, *Inm62a.pdf*, record the changes to INM since the User's Guide and Technical Manual were published.

Installation Instructions

1. Use MS Windows to make a copy of your existing *INM6.2* directory. Select your *INM6.2* directory and, using the Windows File Manager under the "Edit" menu, select "copy" and then select "paste". This will create a new directory called "*Copy of INM6.2*".
2. Use the right button of your mouse to select the *Copy of INM6.2* directory created in step 1. Select "Rename" and rename the directory *INM6.2a*. Make sure that the attributes for the new *INM6.2a* directory as well as for all sub-directories and files are not set to "Read-only".
3. Download the *INM62a.EXE* file from the FAA Web site. Put it in the new *INM6.2a* directory.
4. Double click on the *INM62a.EXE* file name to automatically extract the updated files into the new *INM6.2a* directory. Select the "Unzip" button. This process will overwrite the old INM 6.2 files and replace them with those required for INM 6.2a. The distributed files are presented in Table 1:

Table 1. INM 6.2a Files

File	Date
<i>inm.exe</i>	10/25/2006
<i>compute.dll</i>	10/25/2006
<i>graph.dll</i>	10/25/2006
<i>compu50.dll</i>	10/25/2006
<i>winutil.dll</i>	10/25/2006
<i>GlobalMapperInterface.dll</i>	06/10/2004
<i>GmMpz.dll</i>	09/05/2003
<i>NCScnet.dll</i>	05/18/2003
<i>NCSEcw.dll</i>	05/18/2003
<i>NCSEcwC.dll</i>	05/18/2003
<i>NCSUtil.dll</i>	05/18/2003
<i>gmdll_regkey.txt</i>	02/09/2004
<i>inm60a.pdf</i>	05/19/2000
<i>inm60b.pdf</i>	01/16/2001
<i>inm60c.pdf</i>	09/07/2001
<i>inm61.pdf</i>	02/27/2003
<i>inm62.pdf</i>	05/19/2006
<i>inm62a.pdf</i>	11/03/2006
<i>helo\HeloExample*.*</i>	-----
<i>helo\Helicopter.pdf</i>	05/17/2006
<i>helo\hnmgrd.cfg</i>	08/27/2002
<i>helo\HnmGrd.exe</i>	05/18/2006
<i>sys_data*.dbf (12 files)</i>	10/23/2006
<i>sys_data\acdb60.bin</i>	10/23/2006
<i>sys_data\spectra.bin</i>	05/06/2005
<i>sys_dbf\pop_conr.dbf</i>	07/24/2003
<i>sys_dbf\scr_nois.dbf</i>	06/23/2005
<i>sys_dbf\scr_pts.dbf</i>	06/23/2005
<i>examples\test50*.*</i>	-----
<i>examples\test50_import*.*</i>	-----
<i>examples\test411*.*</i>	-----
<i>Process\census\census2000.cfg</i>	05/07/2002
<i>process\census\Census2000.exe</i>	05/18/2006
<i>process\census\Census2000.pdf</i>	07/24/2002
<i>process\census\fipscode.dat</i>	03/15/2005
<i>process\census\fipstate.dat</i>	03/15/2005
<i>process\census\shapefile.dbf</i>	11/09/2001
<i>process\census\shapefile.track.dbf</i>	04/30/2003
<i>process\census\Tiger2000.exe</i>	05/18/2006
<i>process\census\tiger2000.cfg</i>	04/29/2002
<i>process\dx\CadCvrt.exe</i>	05/18/2006
<i>process\dx\cadvrt.cfg</i>	08/18/2005
<i>usr_data\sys_aprt.dbf</i>	02/03/2003
<i>usr_data\sys_rwy.dbf</i>	02/03/2003

File	Date
<i>usr_data\bad_rwy.txt</i>	01/28/2003
<i>usr_data\loc_pts.dbf</i>	01/28/2003
<i>utility\Alaska3CD.exe</i>	05/18/2006
<i>utility\PopConr.exe</i>	05/18/2006
<i>utility\Utility.pdf</i>	10/23/2006
<i>utility\WriteCpBin.exe</i>	05/18/2006
<i>utility\SpectralcutoffCalculator.exe</i>	02/01/2006
<i>utility\spectral_cutoff_cases.txt</i>	02/15/2005
<i>utility\read3cd.exe</i>	04/22/2003
<i>utility\write3cd.exe</i>	10/20/2004

Items in bold are new or updated for INM 6.2a. Other files are new to INM updates since the release of INM 6.0.

SUMMARY of INM 6.2a Updates

The Federal Aviation Administration, in cooperation with other agencies, has been engaged in research activities designed to improve noise modeling for aviation projects that require environmental noise analysis and disclosure. The majority of this research is performed under the Society of Automotive Engineers Aircraft Noise Committee (SAE A-21). These activities are closely coordinated with similar groups within the European Civil Aviation Conference (ECAC) and the International Civil Aviation Organization (ICAO). INM 6.2a primarily consists of several updates to the aircraft noise/performance database, and the inclusion of two additional INM utilities; Read3CD.exe and Write3CD.exe.

Commercial Aircraft Noise/Performance Database

As mentioned in the INM 6.2 Release Notes, review of the core INM noise and performance database has shown that certain aircraft have grown in maximum allowable takeoff weight, operating range and thrust setting, since the database was developed in the late 1980's. This release of INM updates twelve aircraft types to better reflect the current "in-service" fleet. The INM **A30062**, **A310**, **A319**, **A320**, **A32023**, **A32123**, **A330**, **A33034**, and **A340** have been updated to reflect growth in maximum allowable takeoff weight and engine thrust since data for these aircraft were produced for previous versions of INM. Performance coefficients, flight profiles, and Noise-Power-Distance data have also been updated for these aircraft. The INM **MD81**, **MD82**, and **MD83** have also been updated. In addition to new Noise-Power-Distance, flap coefficient, and thrust coefficient data, the STANDARD procedural approach profiles have been replaced by fixed-point profiles that include a level segment at 3,000 ft AFE. Approach flap coefficients for these aircraft have been removed from the INM database. The STANDARD departure procedures for these aircraft have been modified from an "ICAO B"-like procedure to one that applies cutback power at 1,000 feet AFE. This may lead to a reduction in contour areas. The ICAO B procedure is still retained as core standard

data and users may directly choose an ICAO B procedure to be consistent with previous studies.

In addition, NPD data have been updated for the INM **737300**, **737400**, and **737500** aircraft. Weight and profile data for these aircraft were previously updated for INM 6.2. The updated NPD data include curves for additional thrust settings as well as the addition of LAMAX and PNLTM curves

Ambient Screening

The ability to perform Ambient Screening analyses was added to the INM for version 6.2, and details on how to perform these analyses are included in the INM 6.2 Release Notes. However it was not stated in the INM 6.2 Release Notes that in order to use Ambient Screening in the INM, the area to be screened must be defined by a geographic boundary file specified in the **Boundary File** dialog box of the **Setup // File Locations** window. The boundary file must utilize the same format as the Polyline TXT file described in Section 3.5.2 of the *INM 6.0 User's Guide*. As the boundary file is the only source of information considered by the INM when determining the area to be covered during an Ambient Screening analysis, it is not necessary to specify an analysis grid in the **Run // Grid Setup** window. Therefore the “Screen” Grid Type has been removed from the **Grid Type** drop-down box in the **Run // Grid Setup** window for INM 6.2a.

Read3CD and Write3CD Utilities

Utilities for reading and writing 3CD terrain files have been added to INM 6.2a. When utilized in conjunction with each other, **Read3CD** and **Write3CD** can be used to edit terrain files. **Read3CD** will convert an INM formatted 3CD binary terrain file into a text file called “terrain.txt”, which can then be viewed and edited by the user with a standard text editor. Then, **Write3CD** will convert “terrain.txt” back into an INM formatted 3CD binary terrain file, which can then be used in INM. See *Appendix A – Read3CD and Write3CD Utilities* for additional guidance on the use of the **Read3CD** and **Write3CD** utilities. Details on the use of these utilities are also included in the Utility.pdf file located in the Utility sub-directory of the INM system directory.

Database Modifications

1. Data for the Airbus A300-622R with PW4158 engines have been updated for INM 6.2a. The existing INM identifier is **A30062** and the noise identifier is **PW4158**. This aircraft reflects a growth in maximum allowable takeoff weight from 375,900 to 378,500 lbs and new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are three updated sets of procedural departure profiles: ICAO_A, ICAO_B, and STANDARD,

all of which have stage lengths 1 through 6, with stage length 6 representing the maximum takeoff weight. The updated STANDARD approach profile remains a fixed-point profile with a level segment at 3,000 ft AFE. The flap identifiers for the A30062 have been updated, therefore any user-defined procedural profiles defined using the old standard flap identifiers will need to be updated by the user. The INM will not automatically update the flap identifiers used within user-defined procedures. Noise-Power-Distance and thrust coefficient data have also been updated.

2. Data for the Airbus A310-304 with CF6-80C2A2 engines have been updated for INM 6.2a. The existing INM identifier is **A310** and the noise identifier is **A310**. This aircraft reflects a growth in maximum allowable takeoff weight from 330,700 to 346,100 lbs and new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are three updated sets of procedural departure profiles: ICAO_A, ICAO_B, and STANDARD, all of which have stage lengths 1 through 6 with stage length 6 representing the maximum takeoff weight. The updated STANDARD approach profile remains a fixed-point profile with a level segment at 3,000 ft AFE. The flap identifiers for the A310 have been updated, therefore any user-defined procedural profiles defined using the old standard flap identifiers will need to be updated by the user. The INM will not automatically update the flap identifiers used within user-defined procedures. Noise-Power-Distance and thrust coefficient data have also been updated.
3. Data for the Airbus A319-131 with V2522-A5 engines have been updated for INM 6.2a. The existing INM identifier is **A319** and the noise identifier is **V2522A**. This aircraft reflects a growth in maximum allowable takeoff weight from 141,100 to 166,400 lbs and new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are three updated sets of procedural departure profiles: ICAO_A, ICAO_B, and STANDARD all of which have stage lengths 1 through 5 with stage length 5 representing the maximum takeoff weight. The updated STANDARD approach profile remains a fixed-point profile with a level segment at 3,000 ft AFE. Noise-Power-Distance data have been updated, as well as thrust and flap coefficient data.
4. Data for the Airbus A320-211 with CFM56-5A1 engines have been updated for INM 6.2a. The existing INM identifier is **A320** and the noise identifier is **CFM565**. This aircraft reflects a growth in maximum allowable takeoff weight from 162,000 to 169,756 lbs and new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are three updated sets of procedural departure profiles: ICAO_A, ICAO_B, and STANDARD all of which have stage lengths 1 through 5 with stage length 5 representing the maximum takeoff weight. The updated STANDARD approach profile remains a fixed-point profile with a level segment at 3,000 ft AFE. Noise-Power-Distance data has been updated including the addition of more thrust levels. Thrust and flap coefficient data have also been updated.

5. Data for the Airbus A320-232 with V2527-A5 engines have been updated for INM 6.2a. The existing INM identifier is **A32023** and the noise identifier is **V2527A**. This aircraft reflects a growth in maximum allowable takeoff weight from 162,000 to 172,000 lbs and new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are three updated sets of procedural departure profiles: ICAO_A, ICAO_B, and STANDARD all of which have stage lengths 1 through 5 with stage length 5 representing the maximum takeoff weight. The updated STANDARD approach profile remains a fixed-point profile with a level segment at 3,000 ft AFE. Noise-Power-Distance, thrust coefficient, and flap coefficient data have also been updated.
6. Data for the Airbus A321-232 with IAE V2530-A5 engines have been updated for INM 6.2a. The existing INM identifier is **A32123** and the noise identifier is **V2530**. This aircraft reflects a growth in maximum allowable takeoff weight from 196,200 to 206,100 lbs and new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are three updated sets of procedural departure profiles: ICAO_A, ICAO_B, and STANDARD all of which have stage lengths 1 through 5 with stage length 5 representing the maximum takeoff weight. The updated STANDARD approach profile remains a fixed-point profile with a level segment at 3,000 ft AFE. Noise-Power-Distance, thrust coefficient, and flap coefficient data have also been updated.
7. Data for the Airbus A330-301 with CF6-80 E1A2 engines have been updated for INM 6.2a. The existing INM identifier is **A330** and the noise identifier is **CF680E**. This aircraft reflects a growth in maximum allowable takeoff weight from 467,400 to 478,400 lbs and new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are three updated sets of procedural departure profiles: ICAO_A, ICAO_B, and STANDARD all of which have stage lengths 1 through 7 with stage length 7 representing the maximum takeoff weight. The updated STANDARD approach profile remains a fixed-point profile with a level segment at 3,000 ft AFE. Noise-Power-Distance, thrust coefficient, and flap coefficient data have also been updated.
8. Data for the Airbus A330-343 with RR TRENT 772B engines have been updated for INM 6.2a. The existing INM identifier is **A33034** and the noise identifier is **TRENT7**. This aircraft reflects a growth in maximum allowable takeoff weight from 507,100 to 513,677 lbs and new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are three updated sets of procedural departure profiles: ICAO_A, ICAO_B, and STANDARD all of which have stage lengths 1 through 7 with stage length 7 representing the maximum takeoff weight. The updated STANDARD approach profile remains a fixed-point profile with a level segment at 3,000 ft AFE. Noise-Power-Distance, thrust coefficient, and flap coefficient data have also been updated.
9. Data for the Airbus A340-211 with CFM 56-5C2 engines have been updated for INM 6.2a. The existing INM identifier is **A340** and the noise identifier is **CF565C**. This

aircraft reflects a growth in maximum allowable takeoff weight from 566,500 to 573,200 lbs and new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are three updated sets of procedural departure profiles: ICAO_A, ICAO_B, and STANDARD all of which have stage lengths 1 through 7 with stage length 7 representing the maximum takeoff weight. The updated STANDARD approach profile remains a fixed-point profile with a level segment at 3,000 ft AFE. The flap identifiers for the A340 have been updated, therefore any user-defined procedural profiles defined using the old standard flap identifiers will need to be updated by the user. The INM will not automatically update the flap identifiers used within user-defined procedures. Previously available approach flap coefficients have been removed from the INM database. Noise-Power-Distance and thrust coefficient data have also been updated.

10. Data for the MD-81 with JT8D-217 engines have been updated for INM 6.2a. The existing INM identifier is **MD81** and the noise identifier is **2JT8D2**. The maximum allowable takeoff weight remains unchanged, however the departure profiles now use new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are now ICAO_A and ICAO_B departure procedural profiles in addition to the STANDARD procedural departure profiles, all of which have stage lengths 1 through 4 with stage length 4 representing the maximum takeoff weight. The STANDARD departure procedure has been modified from an “ICAO B”-like procedure to a procedure that has cutback power at 1,000 feet AFE. The updated STANDARD approach profile is now a fixed-point profile with a level segment at 3,000 ft AFE. The previously available STANDARD Touch-and-Go and Circuit procedural profiles have been removed from the INM database, as have the previously available approach flap coefficients. New flap identifiers have been added, therefore any user-defined procedural profiles defined using the old standard flap identifiers will need to be updated by the user. The INM will not automatically update the flap identifiers used within user-defined procedures. Noise-Power-Distance data has been updated. Though similar, there are now more curves for both approach and departure conditions, and the aircraft now has LAMAX and PNLTM curves. New high temperature jet thrust coefficients have been added for modeling aircraft performance above engine break point temperatures.
11. Data for the MD-82 with JT8D-217A engines have been updated for INM 6.2a. The existing INM identifier is **MD82** and the noise identifier is **2JT8D2**. The maximum allowable takeoff weight remains unchanged, however the departure profiles now use new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are now ICAO_A and ICAO_B departure procedural profiles in addition to the STANDARD procedural departure profiles, all of which have stage lengths 1 through 5 with stage length 5 representing the maximum takeoff weight. The STANDARD departure procedure has been modified from an “ICAO B”-like procedure to a procedure that has cutback power at 1,000 feet AFE. The updated STANDARD approach profile is now a fixed-point profile with a level segment at 3,000 ft AFE. The previously available STANDARD Touch-and-Go and Circuit procedural profiles have been removed from

the INM database, as have the previously available approach flap coefficients. New flap identifiers have been added, therefore any user-defined procedural profiles defined using the old standard flap identifiers will need to be updated by the user. The INM will not automatically update the flap identifiers used within user-defined procedures. Noise-Power-Distance data has been updated. Though similar, there are now more curves for both approach and departure conditions, and the aircraft now has LAMAX and PNLTM curves. New high temperature jet thrust coefficients have been added for modeling aircraft performance above engine break point temperatures.

12. Data for the MD-83 with JT8D-219 engines have been updated for INM 6.2a. The existing INM identifier is **MD83** and the noise identifier is **2JT8D2**. The maximum allowable takeoff weight remains unchanged, however the departure profiles now use new weight-to-stage length rules that are increased from earlier assumptions and described in detail in the INM 6.2 Release Notes. There are now ICAO_A and ICAO_B departure procedural profiles in addition to the STANDARD procedural departure profiles, all of which have stage lengths 1 through 5 with stage length 5 representing the maximum takeoff weight. The STANDARD departure procedure has been modified from an “ICAO B”-like procedure to a procedure that has cutback power at 1,000 feet AFE. The updated STANDARD approach profile is now a fixed-point profile with a level segment at 3,000 ft AFE. The previously available STANDARD Touch-and-Go and Circuit procedural profiles have been removed from the INM database, as have the previously available approach flap coefficients. New flap identifiers have been added, therefore any user-defined procedural profiles defined using the old standard flap identifiers will need to be updated by the user. The INM will not automatically update the flap identifiers used within user-defined procedures. Noise-Power-Distance data has been updated. Though similar, there are now more curves for both approach and departure conditions, and the aircraft now has LAMAX and PNLTM curves. New high temperature jet thrust coefficients have been added for modeling aircraft performance above engine break point temperatures.
13. NPD data for the **747300**, **747400**, and **747500** have been updated for INM 6.2a. The noise identifier for these three aircraft remains **CFM563**. The updated data increases the number of available thrust levels from 2 to 4 for approach NPD curves and from 4 to 6 for departure NPD curves. The new data set also includes previously unavailable LAMAX and PNLTM curves.
14. The substitution aircraft for the **EMB135** has been changed from the **CL600** to the **EMB145**.
15. Five new aircraft have been added to the standard substitution list for INM 6.2a. The new **EMB140** aircraft is substituted with the **EMB145**. The new **EMB170**, **EMB190**, **CRJ701**, and **CRJ900** aircraft are all substituted with the **GV**.
16. Duplicate STANDARD Touch-and-Go and Circuit profiles for the **747400** have been removed from the INM database. The aircraft weight for these profiles has been reset

from 571,000 lbs to 545,000 lbs to match the stage length 1 STANDARD departure profile weight.

17. A STANDARD Circuit procedural profile for the **737500** has been added to the INM database. The profile weight for the **737500** STANDARD Touch-and-Go profile has been changed from 98,000 lbs to 103,400 lbs to match the stage length 1 STANDARD departure profile weight.
18. STANDARD Touch-and-Go and Circuit profiles for the **1900D**, **717200**, **737700**, **CNA55B**, and **CNA750** have been added to the INM database.

Program Modifications

1. The INM now allows you to specify a “Fill In Missing Terrain” value when the “Do Line-of-Sight Blockage” box is not checked in the **Run // Run Options** window. In this situation, the value will only be used to replace any “NODATA” values that occur in GridFloat or DEM terrain data files used for noise calculations. The INM will still produce error messages if there is not sufficient terrain coverage for a given run. If the “Do Line-of-Sight Blockage” box is checked, the “Fill In Missing Terrain” value will be used both to fill in missing terrain AND to replace “NODATA” values.
2. The “Screen” Grid Type has been removed from the **Grid Type** drop-down box in the **Run // Grid Setup** window. As mentioned in the Ambient Screening section above, it is not necessary to specify an analysis grid when performing Ambient Screening analyses.

Reported Problems Fixed

1. Fixed a problem with the results presented in **Output // Detailed Grids...** Previously, there was an issue with the **Time Above** metrics (TALA, TALC and TAPNL) in the Detailed Grid report, if the same metric was selected in both the **Run // Run Options // Noise Metric** pulldown menu and in the corresponding **Run // Run Options // Grid // Do Detailed Grids // Calculate Metrics** checkbox. This would have resulted in a doubling of the **Time Above** results in the Detailed Grid report. This issue has been resolved in INM 6.2a. Standard Grid, Contour, Population Points and Location Points outputs were never affected by this issue.
2. Fixed a problem when using GridFloat or DEM terrain data. Previously “NODATA” values within GridFloat or DEM terrain data files would adversely affect the shapes of noise contours calculated using terrain data. In version 6.2a, the INM checks for the existence of “NODATA” values in each of the Gridfloat or DEM terrain data files that are used for noise calculations. When the INM finds a “NODATA” value, the “Fill In Missing Terrain“ value specified by the user in the **Run // Run Options**

window is used to replace the “NODATA” value. Users are prompted to specify a “Fill In Missing Terrain“ value if they have not already done so when “NODATA” values have been found.

3. Fixed a problem when using 3CD terrain data files when the “Fill In Missing Terrain” box was checked in the **Run // Run Options** window. In certain instances, the existing 3CD file(s) were overwritten with the “Fill In Missing Terrain” value. This situation occurred only if the 3CD files were set to Read/Write and only if there were two or more files in the directory.
4. Fixed a problem with the results presented in **Output // Detailed Grids**. Previously in INM 6.2, there was an issue involving the detailed grid report when the LAMAX is selected as “Noise Metric” in Run Options. When this condition exists, INM 6.2 incorrectly zeros out the “ONE “column in the detailed grid report, which is the contribution from one flight. This problem arose from a logic conflict between audibility and LAMAX during the detailed grid report generation and was unique to INM 6.2. This issue has been resolved in INM 6.2a.
5. Exception handling was added to the LOS blockage code to catch and handle a potential memory allocation error from occurring.
6. Fixed problems with manipulating the display of overlay contours in the **Output // Output Graphics** window. Previously, when attempting to change the width of overlay contour lines, the Contours Width window displayed the levels associated with the regular contours rather than those associated with the overlay contours. Also custom color assignments for overlay contours were previously not retained after closing the INM.

Appendix A – Read3CD and Write3CD Utilities

Read3cd.exe is a DOS program that will convert an INM formatted 3CD binary terrain file into a text file called “terrain.txt”. The field width for each data point in the output file is 6 characters. The file is formatted into 1201 rows that each contain 1201 elements of data. The data represent altitude in meters based on the INM terrain file standard. The top of the output file is the Northern extreme of the data and the right is the Eastern extreme. The syntax is as shown:

Read3cd.exe <3cdfilename>

The *3cdfilename* is the binary terrain file name normally used by INM.

Write3cd.exe is a DOS program that will convert a text file called “terrain.txt” into an INM formatted 3CD binary terrain file. The field width for each data point is 6 characters. The file is formatted into 1201 rows that each contain 1201 elements of data. The data represent altitude in meters based on the INM terrain file standard. The top of the input terrain file is the Northern extreme of the data and the right is the Eastern extreme. The syntax is as shown:

Write3cd.exe <terrainfilename>

The *terrainfilename* is the text terrain file name.