METRIC

MIL-PRF-89033
AMENDMENT 1
27 May 1998

PERFORMANCE SPECIFICATION

VECTOR SMART MAP (VMap) LEVEL 1

This amendment forms a part of MIL-PRF-89033, dated 1 June 1995, and is approved for use by all Departments and Agencies of the Department of Defense.

The attached insertable replacement pages listed below are replacements for the stipulated pages. When the new pages have been entered in the document, insert the amendment as the cover sheet to the specification.

Replacement page	Page replaced
25	25
26	26
29	Reprinted without change
30	30
39	39
40	Reprinted without change
41	Reprinted without change
42	42
57	Reprinted without change
58	58

PAGE 1

TITLE. Delete "VECTOR SMART MAP (VMap) Level 1" and substitute "VECTOR MAP (VMap) Level 1"

1.1 Delete "Vector Smart Map (VMap) Level 1" and substitute "Vector Map (VMap) Level 1"

AMSC N/A **AREA MCGT**

PAGE 35

6.4.1 Delete "Vector Smart Map" and substitute "Vector Map"

PAGE 66

F.3.1. Delete "These tables may appear in multiple libraries" and substitute "These tables may appear in multiple coverages"

PAGE 88

TABLE 83. Delete "Zone of Operation" from row 46 and substitute "Zone of Occupation"

PAGE 91

F.3.3. Delete "This coverage may contain information that affects the entire database" and substitute "This coverage may contain information that affects the entire library"

PAGE 100

TABLE 94. Delete "Data Quality Feature Class Schema Table;-;" and substitute "Elevation Feature Class Schema Table;-;"

PAGE 222

TABLE 183. Delete "p=T,12,N,Name of the Feature Table,-,-,-:" and substitute "TABLE=T,12,N,Name of Feature Table,-,-,-:"

Custodians:
Air Force - 09
Army - TI
Marine Corps - MC
Navy - NO

Preparing activity:
NIMA - MP

(Project MCGT-0287)

TABLE 15. Primitive table and associated files.

Primitive Table	File Name	Table Description
Edge table	ESI	Edge spatial index file
	EBR	Edge bounding rectangle table
	EDX	Edge variable-length index file
	EDG	Edge primitive table
Face table	FSI	Face spatial index file
	FBR	Face bounding rectangle table
	FAC	Face primitive table
	RNG	Ring table
Entity node table	NSI	Entity node spatial index file
	END	Entity node primitive table
Connected node table	CSI	Connected node spatial index file
	CNX	Connected node variable-length index file
	CND	Connected node primitive table
Text table	TSI	Text spatial index file
	TXX	Text variable-length index file
	TXT	Text primitive table

TABLE 16. Format and example of content for entity node primitive table (END).

{Header length}L; Entity Node Primitive Table;-; ID= I,1,P,Row Identifier,-,-,-,: *.PFT_ID[1]=I,1,N,Point Feature Table Identifier,-,-,-,: CONTAINING_FACE[2]=I,1,N,Foreign Key to Face Table,-,-,-,: COORDINATE=Z,1,N,Coordinates of Entity Node,-,-,-,:;			
1	1	2	7.893952 43.774712 0.000000
2	2	3	7.893897 43.773613 0.000000
3	3	4	7.843663 43.768391 0.000000
:	:	:	:
n	n	n	x.xxxxxx y.yyyyyy z.zzzzzz

NOTES:
1. The "*" preceding the ".PFT_ID" is replaced with the appropriate point feature class name. A feature class name must be entered for each point feature class present in the coverage.
2. The CONTAINING_FACE column is present only for coverages of Level 3 topology.

TABLE 17. Format and example of content for connected node primitive table (CND).

{Header length}L; Connected Node Primitive Table;-; ID=I,1,P,Row Identifier,-,-,-,: *.PFT_ID[1]=I,1,N,Node Feature Table Identifier,-,-,-,: FIRST_EDGE=K[2],1,N,Foreign Key to Edge Table,-,-,-,: COORDINATE=Z,1,N,Coordinates of Connected Node,-,-,-,:;			
1	1	2	7.893952 43.774712 0.000000
2	2	3	7.893897 43.773613 0.000000
3	3	4	7.843663 43.768391 0.000000
:	:	:	:
n	n	n	x.xxxxxx y.yyyyyy z.zzzzzz

NOTE:
1. The "*" preceding the ".PFT_ID" is replaced with the appropriate node feature class name. A feature class name must be entered for each node feature class present in the coverage.
2. Column type "K" is implemented for coverages that are tiled. For untiled coverages the column type is defined as "I."

TABLE 18. Format and example of content for edge (EDG) primitive table.

{Header length}L; Edge Primitive Table;-; ID=I,1,P,Row Identifier,-,-,-,: *.LFT_ID[1]=I,1,N,Line Feature Table ID,-,-,-,: START_NODE=I,1,N,Start/Left Node,-,-,-,: END_NODE=I,1,N,End/Right Node,-,-,-,: RIGHT_FACE[2]=K[3],1,N,Right Face,-,-,-,: LEFT_FACE[2]=K[3],1,N,Left Face,-,-,-,: RIGHT_EDGE=K[3],1,N,Right Edge from End Node,-,-,-,: LEFT_EDGE=K[3],1,N,Left Edge from Start Node,-,-,-,: COORDINATES=Z,*,N,Coordinates of Edge,-,-,-:;								
1	1	1	2	6 260 210	1 0 0	29 196 14	26 12 18	-10.00 45.00 9.90
2	2	3	5	5 0 0	8 260 214	30 198 12	76 52 48	-7.70 43.69 9.50 -7.80 43.70 10.69 -7.90 43.80 9.96
:	:	:	:	:	:	:	:	:
n	n	n	n	n n n	n n n	n n n	n n n	x.xxxxxx y.yyyyyy z.zzzzzz

NOTES:
1. The "*" preceding the ".LFT_ID" is replaced with the appropriate line feature class names. A feature class name must be entered for each line feature class present in the coverage.
2. The RIGHT_FACE and LEFT_FACE columns are required only for coverages with level 3 topology.
3. Column type "K" is implemented for coverages that are tiled. For untiled coverages the column type is defined as "I."

VMap TILING SCHEME BASED ON GEOREF

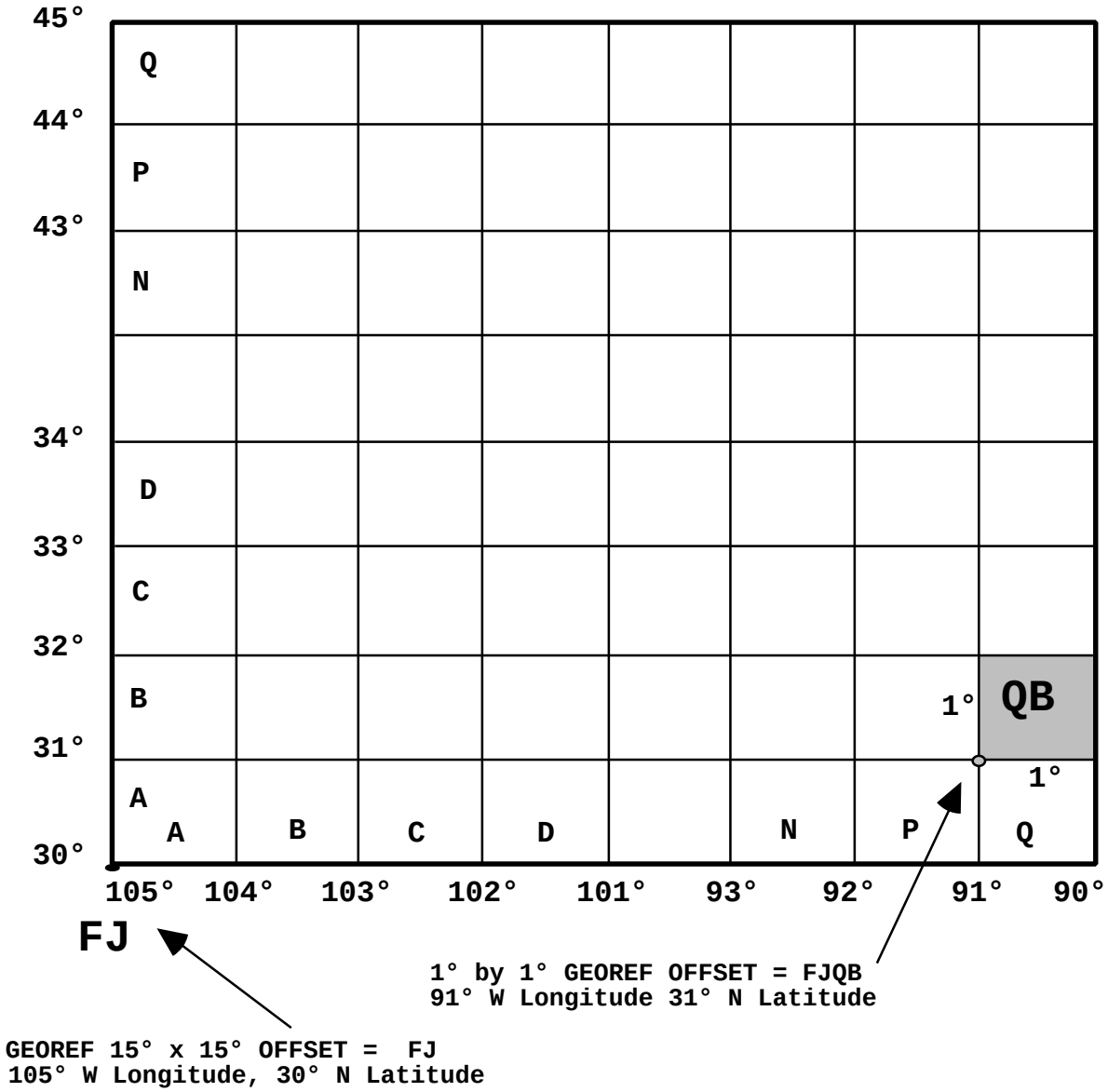
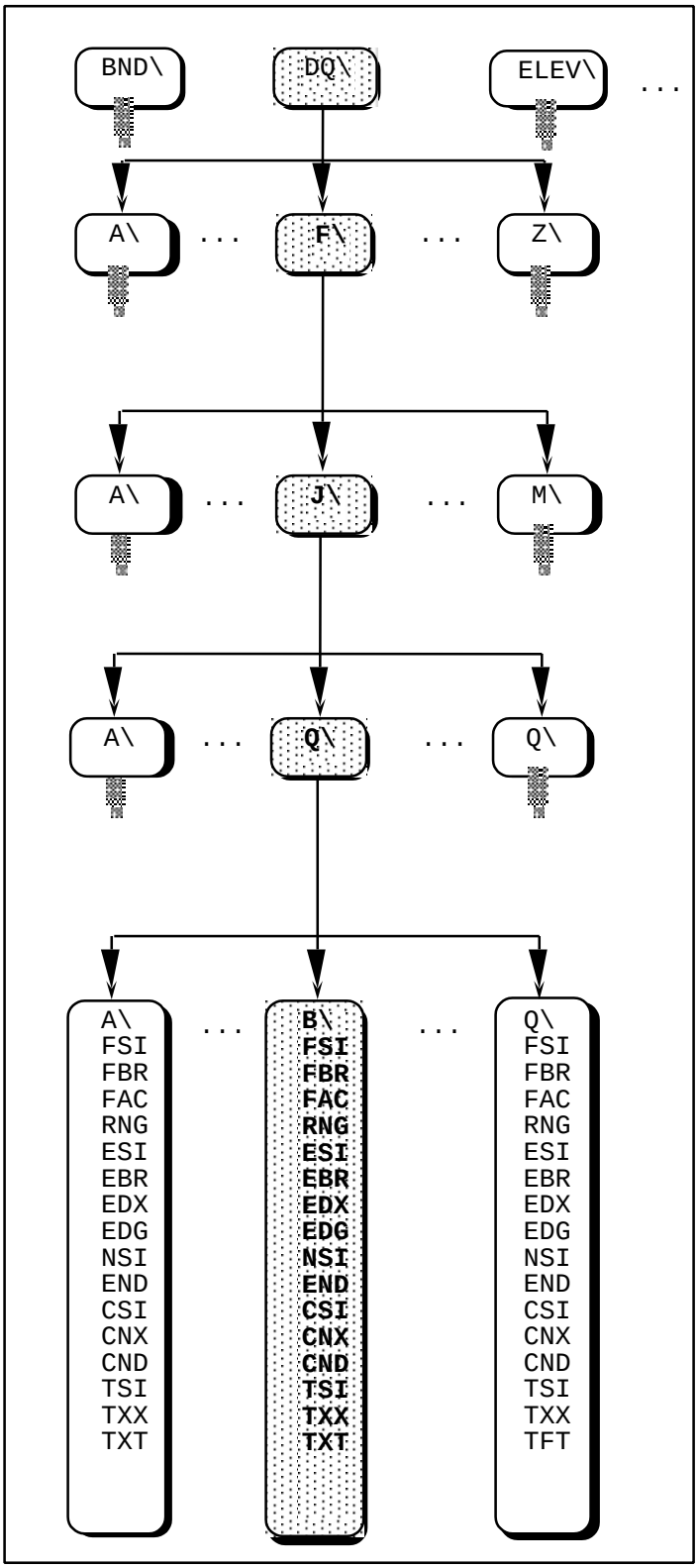


FIGURE 8. Coordinates for a 15° by 15° cell of GEOREF system (FJ).



Level 1 Coverage Directories

First partition of 24 tile subdirectories lettered A to Z (15° GEOREF longitude zones)

Second partition of 12 tile subdirectories lettered A to M (15° GEOREF latitude zones)

Third partition of tile subdirectories lettered A to Q (divides the 15° longitude zones into 15 1° GEOREF longitude zones)

Fourth partition of tile subdirectories lettered A to Q (divides the 15° latitude zones into 15 1° GEOREF latitude zones)

FIGURE 9. VMap Level 1 tile directory hierarchy.

APPENDIX B

B.3.1.2 Database header table. The DHT describes the database (TABLE 26).

TABLE 26. Format and content for Database Header Table (DHT).

{Header length}L; Database Header Table;-; ID=I,1,P,Row Identifier,-,-,-,: VPF_VERSION=T,10,N,VPF version number,-,-,-,: DATABASE_NAME=T,8,N,Directory name of this database,-,-,-,: DATABASE_DESC=T,100,N,Description of this database,-,-,-,: MEDIA_STANDARD=T,20,N,Media Standard,-,-,-,: ORIGINATOR=T,50,N,Producer of this database,-,-,-,: ADDRESSEE=T,100,N,Address of the producer,-,-,-,: MEDIA_VOLUMES=T,4,N,Number of Volumes in this database,-,-,-,: SEQ_NUMBERS=T,4,N,The Sequential Number(s) in this database,-,-,-,: NUM_DATA_SETS=T,4,N,Number of Libraries,-,-,-,: SECURITY_CLASS=T,1,N,Security Classification,-,-,-,: DOWNGRADING=T,3,N,Downgrading,-,-,-,: DOWNGRADE_date=D,1,N,Date,-,-,-,: RELEASABILITY=T,20,N,Releasability restrictions of data,-,-,-,: TRANSMITTAL_ID=T,1,N,Unique Transmittal Identifier,-,-,-,: EDITION_NUMBER=T,10,N,Edition Number of this database,-,-,-,: EDITION_DATE=D,1,N,Date of edition,-,-,-,:;
1\ 1.0\ sasaus (data specific)\ General-purpose, medium-resolution database to support GIS applications.\ ISO 9660\ NATIONAL IMAGERY AND MAPPING AGENCY\ ATTN: NIMA CUSTOMER SUPPORT/COD, MAIL STOP P-38, 12310 SUNRISE VALLEY DRIVE, RESTON, VA 20191-3449\ 177 (data specific)\ 147 (data specific)\ 1 (data specific)\ U (data specific)\ NO (data specific)\ 00000000000000.\ LIMITED DISTRIBUTION\ 1\ 1\ 199305000000000. (data specific)

APPENDIX C

REFERENCE LIBRARY

C.1 SCOPE.

This appendix contains the structure and content of each VPF table in a reference library directory. It is a mandatory part of this Specification. The information contained herein is intended for compliance.

C.2 APPLICABLE DOCUMENTS.

This section is not applicable to this appendix.

C.3 REFERENCE LIBRARY.

Each database will contain a reference library named RFERENCE. This library will contain smaller scale coverages that show the generalized extent of the database. Each coverage contains reference information designed to orient the user to the location and extent of the database and the libraries in it.

The structure and content of each VPF table in a reference library directory are provided in this section. Those records that vary are indicated by footnotes.

C.3.1 Reference library metadata tables. The RFERENCE library shall contain the following metadata tables at the library level.

RFERENCE	directory file
CAT	coverage attribute (description) table
DQT	data quality table
DQX	data quality index file
GRT	geographic reference table
LHT	library header table
LINEAGE.DOC	an optional documentation table

C.3.1.1 Coverage attribute (description) table. The following CAT shall be present in the RFERENCE library. TABLE 27 depicts the records that are present in the CAT.

TABLE 27. Format and content for RFERENCE Coverage Attribute (description) Table (CAT).

{Header length}L; Coverage Attribute (Description) Table;-; ID=I,1,P,Row Identifier,-,-,-,: COVERAGE_NAME=T,8,N,Coverage name,-,-,-,: DESCRIPTION=T,50,N,Coverage description,-,-,-,: LEVEL=S,1,N,Topology level,-,-,-,:;

1	LIBREF	Library Reference	2
2	DBREF	Database Reference	3
3	POLBND	Political Entities	3
4	PLACENAM	Place Names	0

APPENDIX C

C.3.1.2 Library header table. The following LHT shall be present in the RFERENCE library. The format and content of the library header table for each library is presented in TABLE 28.

TABLE 28. Format and content for RFERENCE Library Header Table (LHT).

{Header length}L; Library Header Table;-; ID=I,1,P,Row Identifier,-,-,-,: PRODUCT_TYPE=T,12,N,Product Type,-,-,-,: LIBRARY_NAME=T,12,N,Name,-,-,-,: DESCRIPTION=T,100,N,Description of the library,-,-,-,: DATA_STRUCT_CODE=T,1,N,Data Structure Code,-,-,-,: SCALE=I,1,N,Scale of the library,-,-,-,: SOURCE_SERIES=T,15,N,Series,-,-,-,: SOURCE_ID=T,30,N,Identifier of the source reference,-,-,-,: SOURCE_EDITION=T,20,N,Edition number of the source,-,-,-,: SOURCE_NAME=T,100,N,Name of library source,-,-,-,: SOURCE_DATE=D,1,N,Source Date,-,-,-,: SECURITY_CLASS=T,1,N,Security Classification,-,-,-,: DOWNGRADING=T,3,N,Downgrading,-,-,-,: DOWNGRADING_DATE=D,1,N,Date,-,-,-,: RELEASABILITY=T,20,N,Releasability,-,-,-,:;
1\ VMAP LEVEL 1\ RFERENCE\ Small-scale data to give users a geographic reference of VMap Level 1 database.\ 8\ Various\ Various\ Various\ Various\ Various\ 00000000000000.\ U\ NO\ 00000000000000.\ RESTRICTED

NOTE:
1. Each line represents the record value for each defined column.

APPENDIX C

C.3.1.3 Geographic reference table. The following GRT shall be present in the RFERENCE library (TABLE 29).

TABLE 29. Format and content for a RFERENCE Geographic Reference Table (GRT).

{Header length}L; Geographic Reference Table;-; ID=I,1,P,Row Identifier,-,-,-,: DATA_TYPE=T,3,N,Data Type,-,-,-,: UNITS=T,3,N,Units of Measure code for coordinates in library,-,-,-,: ELLIPSOID_NAME=T,15,N,Ellipsoid,-,-,-,: ELLIPSOID_DETAIL=T,50,N,Ellipsoid Details,-,-,-,: VERT_DATUM_NAME=T,15,N,Vertical Datum Reference,-,-,-,: VERT_DATUM_CODE=T,4,N,Vertical Datum Code,-,-,-,: SOUND_DATUM_NAME=T,15,N,Sounding Datum,-,-,-,: SOUND_DATUM_CODE=T,4,N,Sounding Datum Code,-,-,-,: GEO_DATUM_NAME=T,15,N,Datum Geodetic Name,-,-,-,: GEO_DATUM_CODE=T,4,N,Datum Geodetic Code,-,-,-,: PROJECTION_NAME=T,20,N,Projection Name,-,-,-,:;
1\ GEO\ M\ WGS 84\ A=6378137 B=6356752 METERS\ MEAN SEA LEVEL\ 015\ N/A\ N/A\ WGS 84\ WGE\ DEC DEG UNPROJECTED\

APPENDIX E

E.3.1.2 Library header table. The following LHT shall be present in every library. The format and sample content of the library header table for each library is presented in TABLE 51. The record content of this table will vary for each library.

TABLE 51. Format and content for example Library Header Table (LHT).

{Header length}L; Library Header Table;-; ID=I,1,P,Row Identifier,-,-,-,: PRODUCT_TYPE=T,12,N,Product Type,-,-,-,: LIBRARY_NAME=T,12,N,Name,-,-,-,: DESCRIPTION=T,100,N,Description of the library,-,-,-,: DATA_STRUCT_CODE=T,1,N,Data Structure Code,-,-,-,: SCALE=I,1,N,Scale of the library,-,-,-,: SOURCE_SERIES=T,15,N,Series,-,-,-,: SOURCE_ID=T,30,N,Identifier of the source reference,-,-,-,: SOURCE_EDITION=T,20,N,Edition number of the source,-,-,-,: SOURCE_NAME=T,100,N,Name of library source,-,-,-,: SOURCE_DATE=D,1,N,Source Date,-,-,-,: SECURITY_CLASS=T,1,N,Security Classification,-,-,-,: DOWNGRADING=T,3,N,Downgrading,-,-,-,: DOWNGRADING_DATE=D,1,N,Date,-,-,-,: RELEASABILITY=T,20,N,Releasability,-,-,-,:;
1\ VMap LEVEL 1\ LIB[1]\ Digital data collected from 1:250,000-scale map sheet or other sources of similar resolution.\ 8\ 250000\ 1501AIR\ SD 20-08\ 1\ Joint Operations Graphic\ 19900000000000.\ U\ NO\ 00000000000000.\ RESTRICTED

NOTE:
1. Replace with appropriate record content for each library. Each line represents the record value for each defined column.

E.3.1.3 Geographic reference table. The following GRT shall be present in every library. The record content of this table may vary for each library. The format and sample content of the geographic reference table for each library is presented in TABLE 52.

APPENDIX E

TABLE 52. Format and sample content for a Geographic Reference Table (GRT).

{Header length}L; Geographic Reference Table;-; ID=I,1,P,Row Identifier,-,-,-,: DATA_TYPE=T,3,N,Data Type,-,-,-,: UNITS=T,3,N,Units of Measure code for coordinates in library,-,-,-,: ELLIPSOID_NAME=T,15,N,Ellipsoid,-,-,-,: ELLIPSOID_DETAIL=T,50,N,Ellipsoid Details,-,-,-,: VERT_DATUM_NAME=T,15,N,Vertical Datum Reference,-,-,-,: VERT_DATUM_CODE=T,4,N,Vertical Datum Code,-,-,-,: SOUND_DATUM_NAME=T,15,N,Sounding Datum,-,-,-,: SOUND_DATUM_CODE=T,4,N,Sounding Datum Code,-,-,-,: GEO_DATUM_NAME=T,15,N,Datum Geodetic Name,-,-,-,: GEO_DATUM_CODE=T,4,N,Datum Geodetic Code,-,-,-,: PROJECTION_NAME=T,20,N,Projection Name,-,-,-,:;
1\ GEO\ M\ WGS 84\ A=6378137 B=6356752 METERS\ MEAN SEA LEVEL\ 015\ N/A\ N/A\ WGS 84\ WGE\ DEC DEG UNPROJECTED\

E.3.1.4 Data quality table. The following data quality table shall be present at the library-level for every library. The record content of this table may vary for each library. The format and sample content of the DQT for each library is presented in TABLE 53.