FIG 1

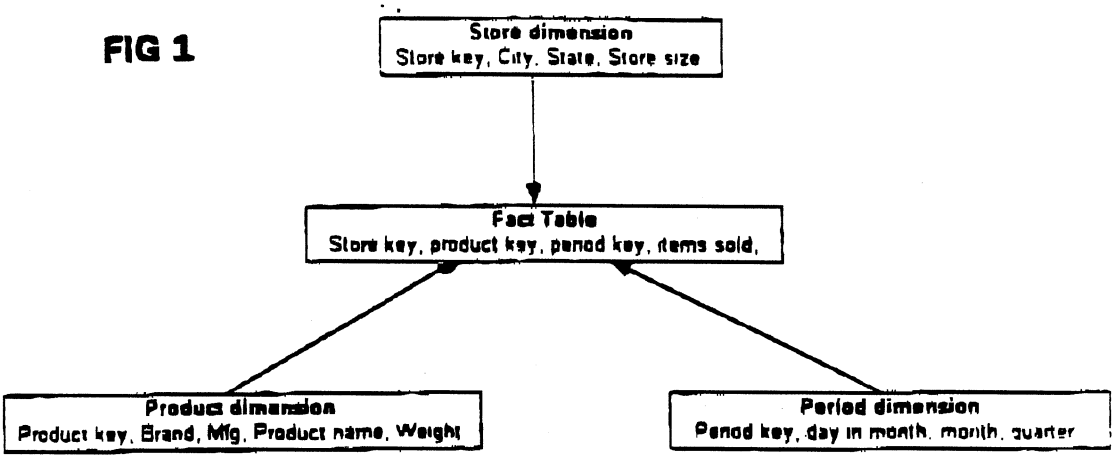

Store dimension
Store key, City, State, Store size
Fact Table
Store key, product key, period key, items sold,
Product dimension
Product key, Brand, Mfg, Product name, Weight
Period dimension
Period key, day in month, month, quarter

FIG 3

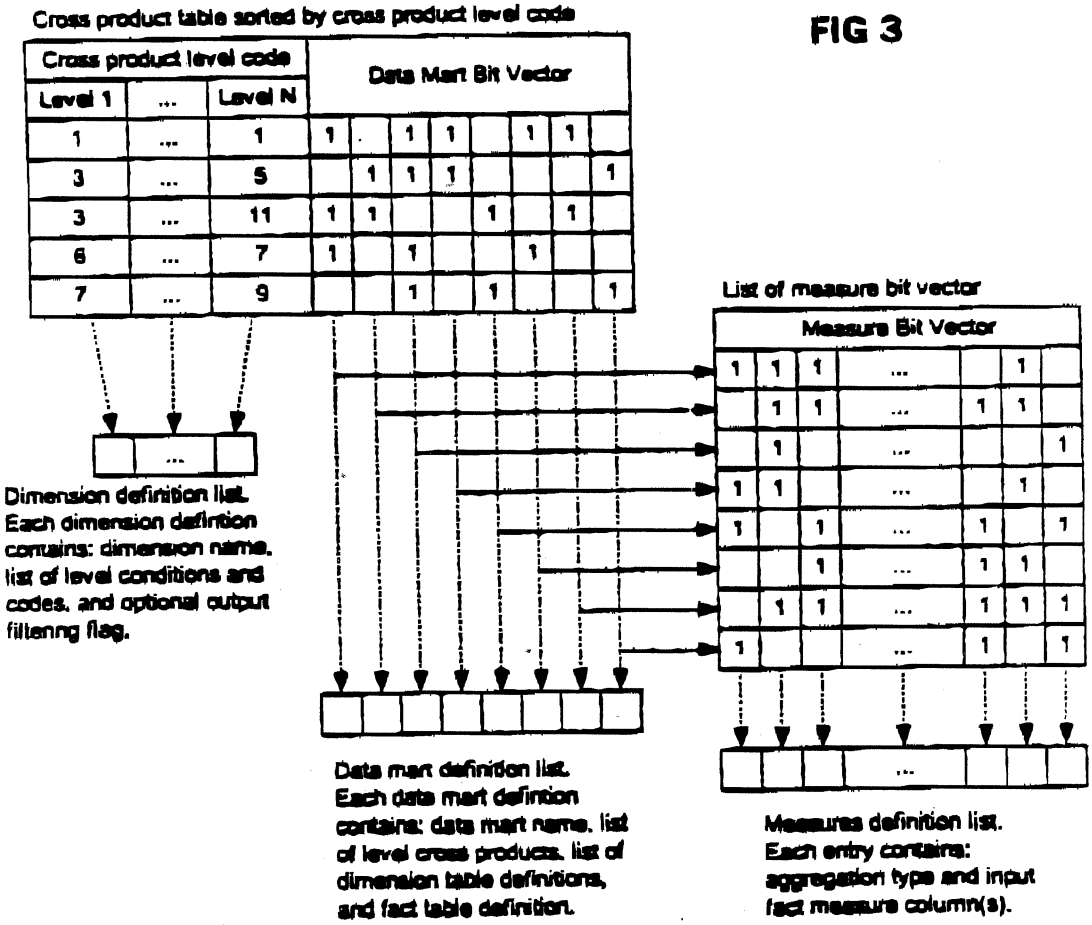

Cross product table sorted by cross product level code
Cross product level code
Level 1
...
Level N
Data Mart Bit Vector
Dimension definition list. Each dimension definition contains: dimension name, list of level conditions and codes, and optional output filtering flag.
List of measure bit vector
Measure Bit Vector
Data mart definition list. Each data mart definition contains: data mart name, list of level cross products, list of dimension table definitions, and fact table definition.
Measures definition list. Each entry contains: aggregation type and input fact measure column(s).

FIG 2

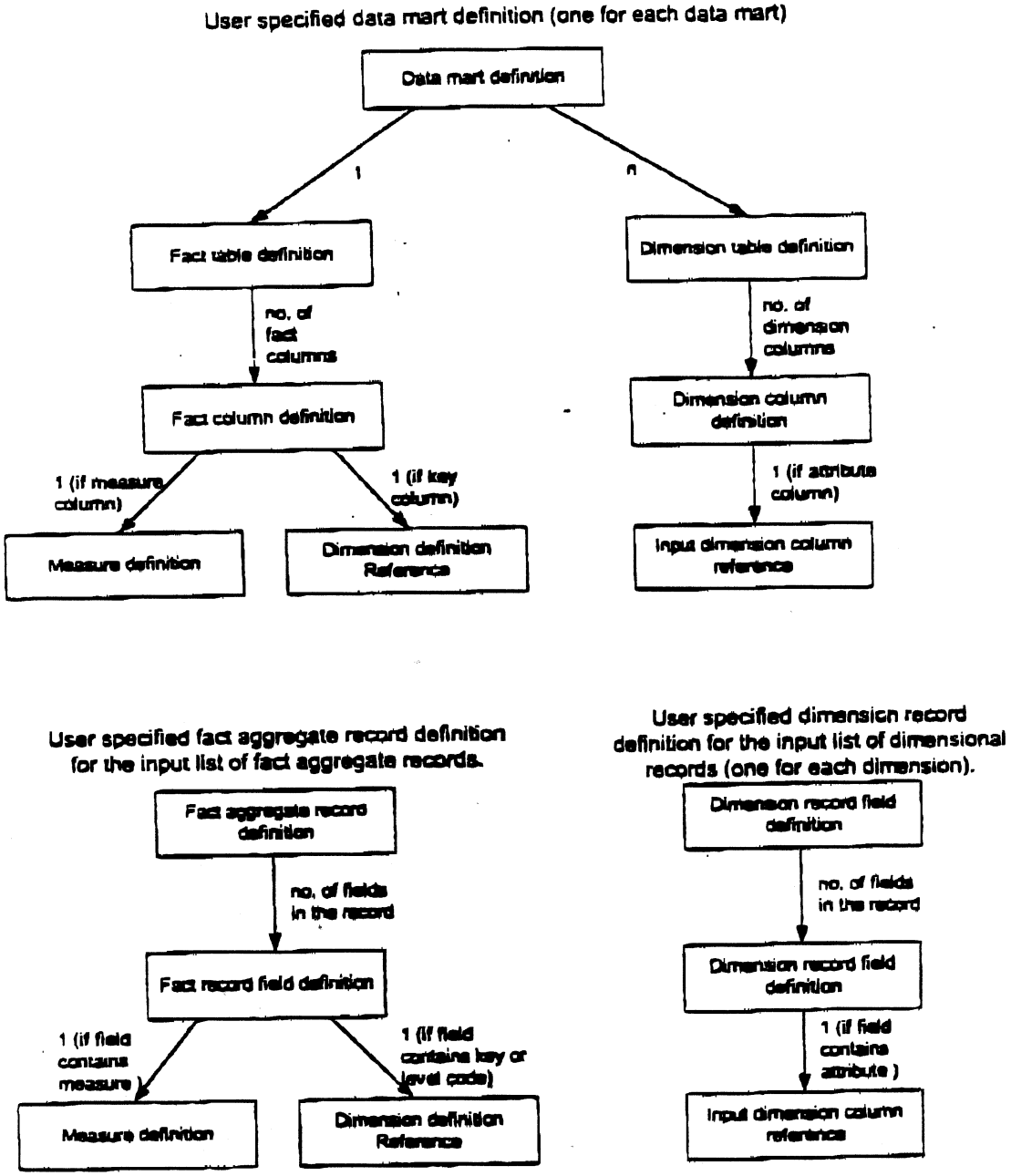
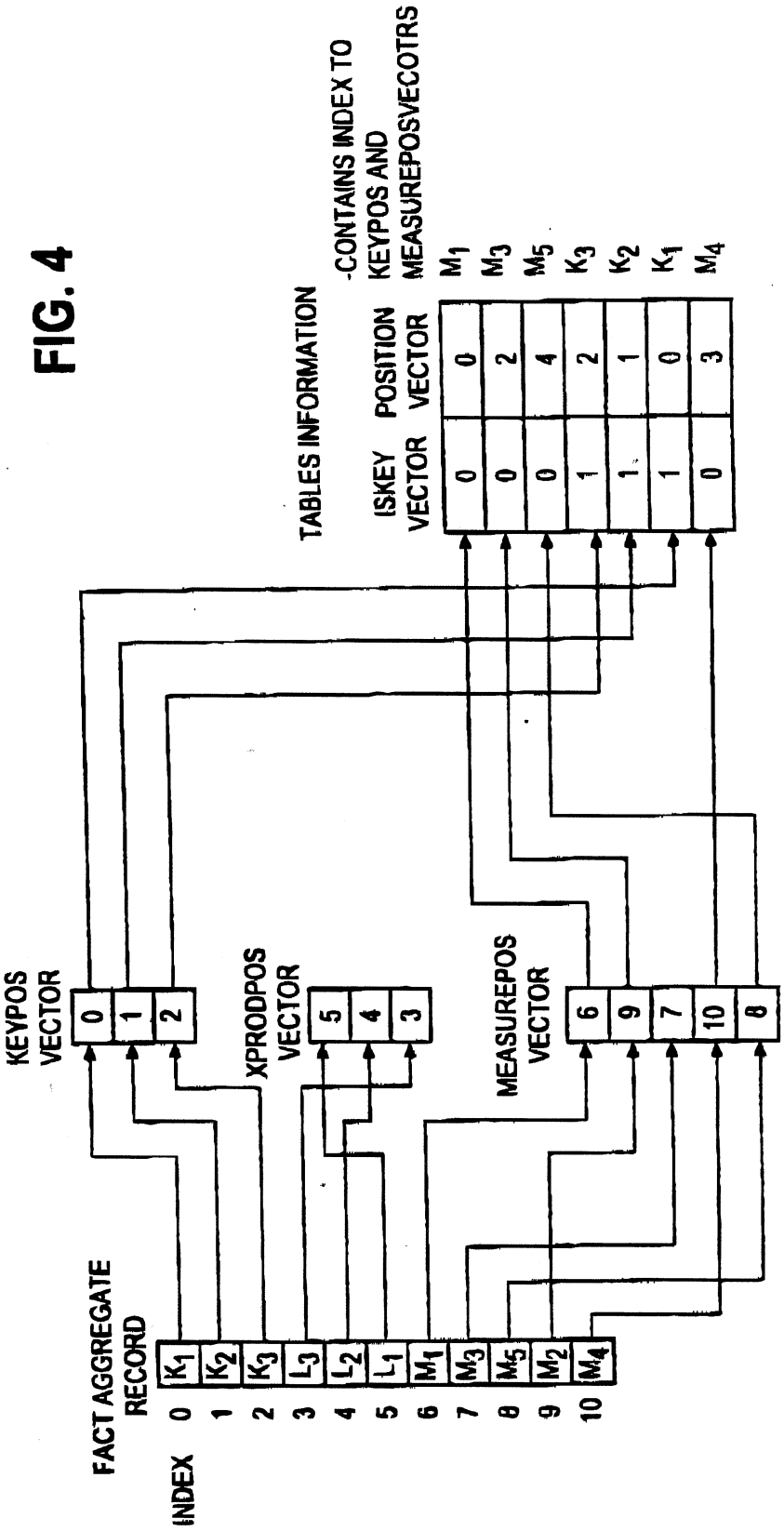

User specified data mart definition (one for each data mart)
Data mart definition
1
n
Fact table definition
Dimension table definition
no. of fact columns
no. of dimension columns
Fact column definition
Dimension column definition
1 (if measure column)
1 (if key column)
1 (if attribute column)
Measure definition
Dimension definition Reference
Input dimension column reference
User specified fact aggregate record definition for the input list of fact aggregate records.
Fact aggregate record definition
no. of fields in the record
Fact record field definition
1 (if field contains measure)
1 (if field contains key or level code)
Measure definition
Dimension definition Reference
User specified dimension record definition for the input list of dimensional records (one for each dimension).
Dimension record field definition
no. of fields in the record
Dimension record field definition
1 (if field contains attribute )
Input dimension column reference

FIG. 4


TABLES INFORMATION
-CONTAINS INDEX TO KEYPOS AND MEASUREPOSVECOTRS
ISKEY VECTOR
POSITION VECTOR
M1 M3 M5 K3 K2 K1 M4
0 0 0 1 1 1 0
0 2 4 2 1 0 3
KEYPOS VECTOR
0 1 2
XPRODPOS VECTOR
5 4 3
MEASUREPOS VECTOR
6 9 7 10 8
FACT AGGREGATE RECORD
K1 K2 K3 L3 L2 L1 M1 M3 M5 M2 M4
INDEX
0 1 2 3 4 5 6 7 8 9 10

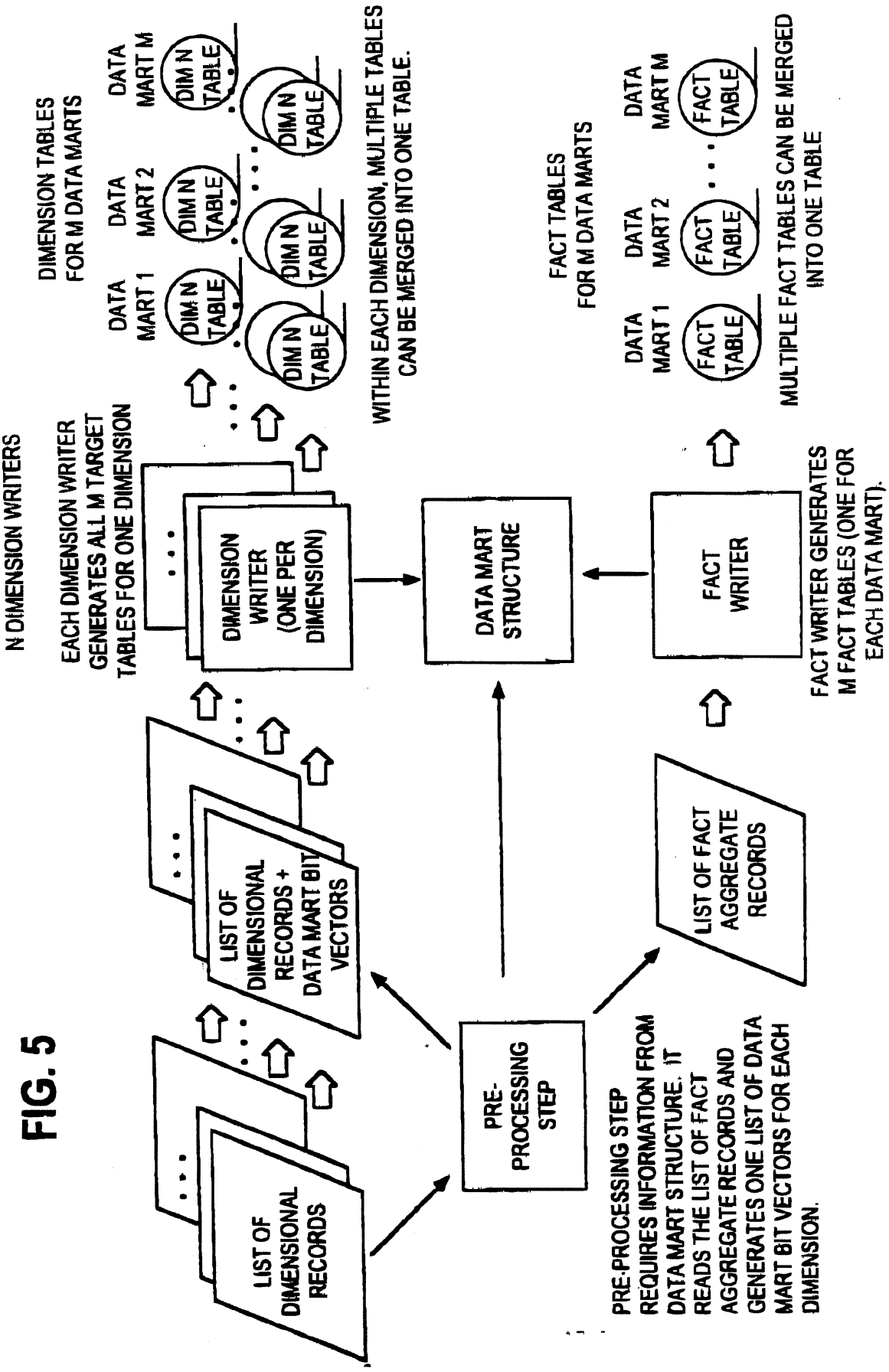

N DIMENSION WRITERS
EACH DIMENSION WRITER GENERATES ALL M TARGET TABLES FOR ONE DIMENSION
DIMENSION TABLES FOR M DATA MARTS
DATA MART 1
DATA MART 2
DATA MART M
DIM N TABLE
WITHIN EACH DIMENSION, MULTIPLE TABLES CAN BE MERGED INTO ONE TABLE.
DIMENSION WRITER (ONE PER DIMENSION)
DATA MART STRUCTURE
FACT WRITER
FACT TABLES FOR M DATA MARTS
FACT TABLE
MULTIPLE FACT TABLES CAN BE MERGED INTO ONE TABLE
FACT WRITER GENERATES M FACT TABLES (ONE FOR EACH DATA MART).
LIST OF DIMENSIONAL RECORDS + DATA MART BIT VECTORS
LIST OF DIMENSIONAL RECORDS
PRE-PROCESSING STEP
LIST OF FACT AGGREGATE RECORDS
PRE-PROCESSING STEP REQUIRES INFORMATION FROM DATA MART STRUCTURE. IT READS THE LIST OF FACT AGGREGATE RECORDS AND GENERATES ONE LIST OF DATA MART BIT VECTORS FOR EACH DIMENSION.

FIG. 5