11.A.2.12. Zip Code Search

This example is created, assuming that a function can display a map of an area corresponding to an input zip code.

11.A.2.12.1 Zip Code Search Frame (B-Tree Type Search Frame)

This example provides a search frame with a uniform search speed, using B-Tree.

11.A.2.12.1.1. Search Frame Management Frame

name [Management Frame of Search Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	16		Management Frame Header of Search Frame		a
2	16	X		Detailed Search Information Record - #1		a

11.A.2.12.1.1.1. Management Frame Header of Search Frame

name [Management Frame Header of Search Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'DFSR'	a
2	4	4	N	Category and Matching Data Count – G (Number of Detailed Search Information Records)	=1	a
3	8	4	SWS	Size of Detailed Search Information Record	1)	a
4	12	4	D	Offset to Detailed Search Information Record	2)	a

1) This field describes the size of the detailed search information record. If there are two or more records, the records must have the same size (fixed length).

2) The displacement from the top of the search frame management frame to the first record of the sequence of detailed search information records is described, as it allows future expansion and manufacturer-specific data expansion.

11.A.2.12.1.2. Detailed Search Information Record

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRBT'	a
2	4	4	SWS	Expansion Field Size	1)	a
3	8	4	D	Offset to Expansion Field	1)	a
4	12	4	SWS	Category Definition Frame Size	2)	a
5	16	4	D	Category Definition Frame Address	3)	a
6	20	4	SWS	Category Data Frame Size	2)	a
7	24	4	D	Category Data Frame Address	3)	a
8	28	4	C	Default Keyboard Designation	'KBN5'	a
9	32	4	SWS	Category Parent Record Size	4)	a
10	36	4	SWS	Category Option Record	5)	a
11	40	4	SWS	First-level Category Table Size	6)	a
12	44	4	N	Number of Option Items of First-level Category	6)	a
13	48	4	D	Offset to First-level Category	6)	a

No.	offset	Data length	Data type	Item name	Remarks	Classification
14	52	4	C	Keyboard Designation for First-level Category	‘KBN5’	a
15	56	4	SWS	Matching Data Definition Frame Size	2)	a
16	60	4	D	Matching Data Definition Frame Address	3)	a
17	64	4	SWS	Matching Data Frame Size	2)	a
18	68	4	D	Matching Data Frame Address	3)	a
19	72	4	SWS	Size of the Record of Matching Data Frame	7)	a
20	76	4	N	Total Number of the Records of Matching Data Frame	8)	a
21	80	4	N	Default POI Information Serial Number	9)	a
22	84	4	SWS	Next-level Data Frame Size	10)	a
23	88	4	D	Next-level Data Frame Address	10)	a
24	92	B1		Character Information Data List for Representation Item	11)	a
25	O1	B2		A Sequence of Additional Frame Address(es) (#1 to #n)	3)	c
26	O2	B3		Expansion Field		c
27	O3	B4		Padding Field		c

Note: Positions of items 25 and 26 are optional in this detailed search information record because their areas can be determined by items 5, 7, 16, and 18. However, the detailed search information record size specified in the management frame header of the higher search frame must be satisfied by items 25 to 27.

1) Expansion Field Size and Offset

This field describes a displacement from the top of the detailed search information record to the top of the expansion field as the offset to the expansion field. Since this example does not have an expansion field, specify invalid values as the size and offset.

2) These fields describe the total size of the target data frame.

3) These fields describe the address of the target data frame in the representation format of 7) in Section 11.A.2.1.2.

4) This field describe the size of the category parent record.

Because the record length is variable, specify the maximum record size of the target data frame.

5) This field describes the size of a single option of the category.

Because the record length is variable, specify the maximum record size of the target data frame.

6) Size, Number of Option Items, and Offset of First-level Category

Because this example configures data in the step-by-step retrieval B-Tree category, specify the read size for all category tables, ranging from the first-level category table to the last-level category table. (That is, the maximum category table size, and not always the first-level category table size)

7) Size of the Record of Matching Data Frame

Because the record length is variable, specify the maximum record size of the target data frame.

8) Total Number of Records of Matching Data Frame

This field describes the total number of records of the matching data frame.

9) Default POI Information Serial Number

This field describes the corresponding POI information number.

10) Next-level Data Frame Size and Address

Since this example does not have a next-level search frame, specify an invalid value.

11) Character Information Data List for Representation Item

This field describes a search name, which is determined by the function specifications of the system.

ex) English; POST CODE'

11.A.2.12.1.3. Category Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classifi-cation
1	'DCTF'	'REAL'	-	-	(6)	Definition Field Declaration		a
2	'SELN'	'NORM'	'UL'	1	-	Number of Option Items		a
3	'DCSF'	'REAL'	-	-	(4)	Option Definition Field Declaration		a
4	'KYZP'	'NORM'	'CH'	1	-	Search Key (Zip Code)	1)	a
5	'NXKD'	'NORM'	'UH'	1	-	Next-level Data Frame Type	2)	a
6	'NXFN'	'NORM'	'UH'	1	-	Next-level Data Frame Serial Number	2)	a
7	'NXST'	'OFST'	'LG'	1	-	Offset to Next-level Data Frame	3)	a

1) Must be left-justified. In the category, 0xf (invalid digit) is not described.

For the search key, specify the maximum of the table (category, matching data frame) in the target next-level search frame.

Note that the number of data items 16 is just for reference because the number of digits differs depending on the search target area.

2) These field describe the type of the next-level data frame.

Next level, category: NXKD = 1 (category), NXFN = 0 (invalid value)

Next level, applicable record: NXKD = 2 (applicable record), NXFN = 0 (invalid value)

3) This field describes the displacement from the top of the target data frame to the top of the target record.

Note: Option category tables are stored in order by search key (zip code).

11.A.2.12.1.4. Category Data Frame

name [Zip Code Search Category Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Zip Code Search Category Table		a

11.A.2.12.1.4.1. Category Table

name [Zip Code Search Category Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Zip Code Search Parent Category Record		a
2	O1	B2		A Sequence of Zip Code Search Category Option(child) Records		a

name [Zip Code Search Parent Category Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	N	Number of Option(child) Items		a

name [Zip Code Search Category Option(child) Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	16	C	Zip Code Search Key		a
2	16	1/2	N	Next-level Data Frame Type		a
3	16.5	1/2	N	Next-level Data Frame Serial Number		a
4	17	4	D	Offset to Next-level Data Frame		a
5	21	1	BR	Padding Field		c

11.A.2.12.1.5. Matching Data Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classifi-cation
1	‘DCTF’	‘REAL’	-	-	(5)	Definition Field Declaration		a
2	‘BFRL’	‘FDRL’	‘UH’	1	-	Relation to the Top of the Previous record Forward Relation from the Top of This Record	1)	a
3	‘NFRL’	‘FDRL’	‘UH’	1	-	Relation to the Top of the Following Record Backward Relation from the Top of This Record	1)	a
4	‘ZIPN’	‘VRBL’	‘CH’	‘UB’	‘CMCH’	Zip Code	2)	a
5	‘POIO’	’OFST’	‘LG’	1	-	Offset to POI Information	3)	a
6	‘ARCD’	‘NORM’	‘UL’	1	-	Area Code		c

1) These fields describe a displacement from the top of the corresponding data record to the preceding or following record as the field relation.

   If the record is not preceded or followed by a record, specify 0.

2) This field describes a zip code in the character representation format.

3) This field describes the displacement from the top of the POI information data frame to the top of the POI information record.

Note: Applicable tables are stored in order by zip code or area code, with zip code having higher priority. (Temporary measure)

11.A.2.12.1.6. Matching Data Frame

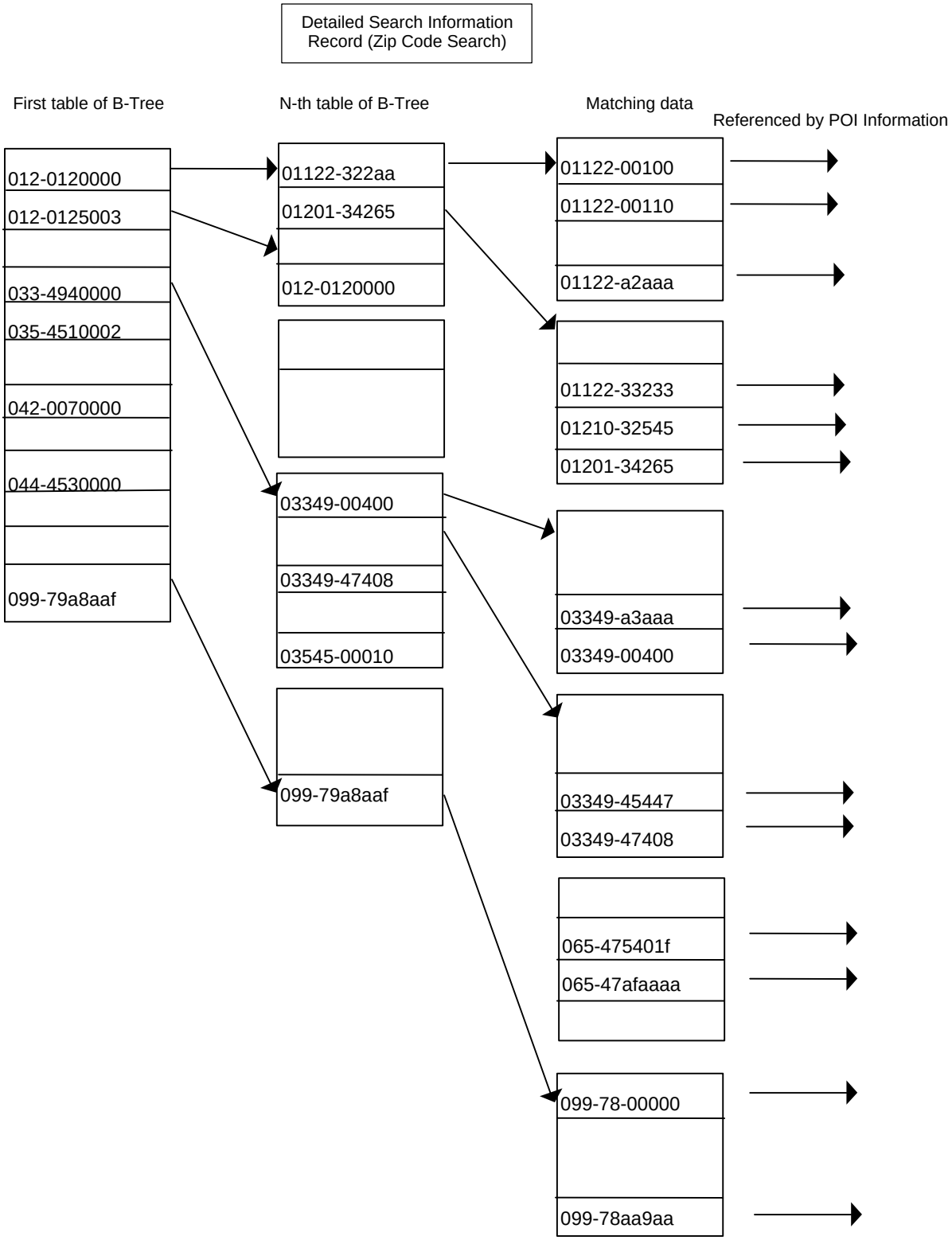
name [Zip Code Search Matching Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Zip Code Search Matching Data Records		a

name [Zip Code Search Matching Data Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	0.5	D	Relation to the Top of the Previous Record Forward Relation from the Top of This Record		a
2	0.5	0.5	D	Relation to the Top of the Following Record Backward Relation from the Top of This Record		a
3	1	B1	N:C	Zip Code		a
4	O1	4	D	Offset to POI Information		a
5	O2	4	N	Area Code		c
6	O3	1	BR	Padding Field		c

11.A.2.12.1.7. Zip Code Search Structure



Code Search Structure