

11.A.2.4. Street Address Search

11.A.2.4.1. All-city Street Name Search

11.A.2.4.1.1. Management Frame of Search 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 (#1-2)		a

11.A.2.4.1.1.1. 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 G (Number of Detailed Search Information Records)	=2	a
3	8	4	SWS	Size of Detailed Search Information Record	1)	a
4	12	4	D	Offset to the Top of 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.
- 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 description.

11.A.2.4.1.2. Detailed Search Information Record (Street Name Search from All Cities)

name [Detailed Search Information Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRMX'	a
2	4	4	SWS	Expansion Field Size	1)	a
3	8	4	D	Offset to the 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	'KBA2'	a
9	32	4	SWS	Category Parent Record Size	4)	a
10	36	4	SWS	Category Option Record Size	5)	a
11	40	4	SWS	First-level Category Size	6)	a
12	44	4	N	Number of Option Items of the First-level Category	6)	a
13	48	4	D	Offset to First-level Category	6)	a
14	52	4	C	Keyboard Designation for the First-level Category	'KBA2'	a
15	56	4	SWS	Matching Data Definition Frame Size	2)	a

No.	offset	Data length	Data type	Item name	Remarks	Classification
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 Records 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	Address of Next-level Data Frame	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

The 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.

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 describes the size of the category parent Record.

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

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

These fields describe the size, number of option records, and displacement from the top of the category data frame, of the category to be read first (which contains all the option records). For the second- and subsequent-level category, the size, number of option records, and offset should be specified in the parent record of the actual data.

7) Size of the Records of Matching Data Frame

Because of variable-length representation, this field contains the maximum record size in the data frame.

8) Total Number of the Records of Matching Data Frame

This field describes a total Number of Records in the data frame.

9) Default POI Information Serial Number

The serial number of the POI information is set in this field.

10) Next-level Data Frame Size and Address

In this example, the next-level search frame is an address range search frame as provided in Section 11.A.2.4.3.

11) Character Data List for Representation Item

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

ex) English: "STREET ADDRESS"

11.A.2.4.1.3. Category Data Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(8)	Definition Field Declaration		a
2	'FNST'	'OFST'	'LG'	1	-	Offset to the Matching Data		a
3	'FNCT'	'NORM'	'UL'	1	-	Number of Matching Data	1)	a
4	'FNLT'	'NORM'	'UL'	1	-	Number of Matching Lists	2)	c
5	'SELN'	'NORM'	'UB'	1	-	Number of Option Items		a
6	'DCSF'	'REAL'	-	-	(3)	Option Definition Field Declaration		a
7	'KYCH'	'NORM'	'UB'	1	-	Character Search Key		a
8	'NEXT'	'OFST'	'LG'	1	-	Offset to the Next-level Category		a
9	'NTSZ'	'NORM'	'UW'	1	-	Next-level Category Size	3)	c

1) If no matching data exists (the matching data count = 0), a null value is assigned.

This field contains the result of counting successive data from the beginning of the record for the matching data to its end.

2) The number of matching lists field contains the number of list lines to be displayed in degenerate mode, according to the search character (corresponding to each level of category).

This field contains the result of the count reflecting the effect of the 'FGFZ' fuzzy search flag of all objects of the matching data.

3) If this field contains no settings, the system reads the next category of the maximum size calculated by the maximum value that is set for the present detailed search information record category size (parent records + option records).

Note: The category table sequence shall be in order of character search keys.

Note: Limit judgment is made for the number of matching data, not for the number of matching lists (the number of list lines to be displayed in degenerate mode).

11.A.2.4.1.4. Category Data Frame

name [Category Data Frame for Street Name Search (by All-city)]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Street Name Category Table		a

11.A.2.4.1.4.1. Category Table

name [Street Name Search Category Table (by all-city)]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Street Name Search(by all- city) Category Parent Record		a
2	O1	B2		A Sequence of Street Name Search(by all-city) Category Option(child) Records		a

name [Street Name Search(by all-city) Category Parent Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	D	Offset to the Matching Data		a
2	4	4	N	Number of Matching Data		a
3	8	4	N	Number of Matching Lists		c
4	12	1	N	Number of the Option(child) Items		a
5	13	1	BR	Padding Field		c

name [Street Name Search(by all cities) Category Record for]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	1	N	Character Search Key		a
2	1	4	D	Offset to the Next Category		a
3	5	2	SWS	Next Category Size		c
4	7	1	BR	Padding Field		c

11.A.2.4.1.5. Matching Data Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(22)	Definition Field Declaration		a
2	'BFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Previous Record Forward Relation from the Top of this Record	1)	a
3	'NFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Following Record Backward Relation from the Top of this Record	1)	a
4	'FGFZ'	'NORM'	'UB'	1	-	Fuzzy Search Flag	2)	a
5	'STFG'	'NORM'	'UB'	3	-	Stored Data Flag		a
6	'STID'	'NORM'	'UL'	1	-	Street ID	3)	a-c
7	'NXKD'	'NORM'	'UH'	1	-	Next-level Data Frame Class	4)	a-c
8	'NXFN'	'NORM'	'UH'	1	-	Next-level Data Frame Serial Number	4)	a-c
9	'NXST'	'OFST'	'LG'	1	-	Next-level Data Frame Offset	5)	a-c

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
10	'NXCT'	'NORM'	'UL'	1	-	Number of Next-level Data Frame Records	6)	c
11	'KYCH'	'VRBL'	'CH'	'UB'	'CMCH'	Character Search Key	7)	a-c
12	'LGNO'	'NORM'	'UB'	1		Language Number	8)	c
13	'NAME'	'VRBL'	'CH'	'UB'	'CMCH'	Name	7)	a-c
14	'RPLV'	'NORM'	'UB'	1	-	Number of Degenerated Levels	9)	c
15	'RPAT'	'NORM'	'BF'	8	-	Degenerate Representative Attribute	10)	c
16	'RPCN'	'NORM'	'UL'	1	-	Number of Generated Next-level Matching Data	11)	c
17	'RPLN'	'NORM'	'UL'	1	-	Number of Matching Lists in the Next Degenerate Level	12)	c
18	'RPST'	'FDRL'	'LG'	1	-	Displacement to the End of Representative Object	13)	c
19	'RPSO'	'FDRL'	'LG'	1	-	Displacement to the Top of Representative Object	14)	c
20	'RPNK'	'NORM'	'UH'	1	-	Next-level Degenerate Data Frame Class	15)	c
21	'RPNF'	'NORM'	'UH'	1	-	Next-level Degenerate Data Frame Serial Number	15)	c
22	'RPNS'	'OFST'	'LG'	1	-	Next-level Degenerate Data Frame Offset	16)	c
23	'RPNC'	'NORM'	'UL'	1	-	Number of Next-level Degenerate Data Frame Records	17)	c

- 1) The relation fields contain the displacements to the preceding and following records from the beginning of the present data record.

If the preceding or following record does not exist, the appropriate field contains 0.

- 2) The fuzzy search flag shall be set on the basis below:

Most significant bit: Entity flag

This flag is set to '1: ON' if reading of the record (by the character search key) is the same as reading of the object (by the character search key), that is, if the record is an entity record. Otherwise, the bit is set to '0: OFF.'

Remaining lower bits: Number of duplicate name characters.

The bits contain the number of duplicate name characters (the number of the first same characters of a search key for the same facilities as the preceding record).

- 3) A street ID is set.

A street ID shall be set on the basis that the ID is specific to the street. (The name of the city may be added to the street name, so that IDs can be assigned on the basis of city-specific streets.)

- 4) A data frame applicable to the address range search is set (NXKD=5: Next-level matching data, NXFN=1: Detailed search information record serial number).

For degenerate representative records (degenerate method 2), the next-level search frame is set (NXKD=0: Next-level search frame, NXFN=0: Null value). The basis of setting storage will be described later.

- 5) According to the set content of the field of next-level data frame class, the content of this field is set as follows:

NXKD=5: Displacement from the beginning of the data frame that is specified as the next-level search frame to the beginning of the present matching data record.

NXKD=0: Displacement from the beginning of the present file to the beginning of the management frame of the next-level search frame (degenerate object) is set because the name of the next-level search frame file (NXFN) is omitted.

- 6) According to the set content of the field of next-level data frame class, the content of this field is set as follows:

NXKD=5: Number of records of the matching data in the next-level data frame

- 7) A street name is set

'NAME' is a name text available for screen display.

- 8) Language number corresponding to META-definition is set.

Language number corresponding to the name of the present record is set. If the language number is the same as the default language number that is implicitly declared on the higher level, it can be omitted.

- 9) If the present matching data is for a degenerate object of facilities, this field contains the number of levels of degeneration.

Even for a representative record, the same value as set for option records is set. For setting examples, see Section 11.A.2.8, "PIO search."

- 10) The degenerate attribute field contains the following elements:

[0]: Degenerate method 1 representative record flag

0: The record is not a representative object of degenerate method 1. (Default: Unspecified)

1: The record is a representative object of degenerate method 1.

[1]: Degenerate method 1 last record flag

0: The record is not the last representative object of degenerate method 1. (Default: Unspecified)

1: The record is the last representative object of degenerate method 1.

[2]: Degenerate method 2 representative record flag

0: The record is not a representative object of degenerate method 2. (Default: Unspecified)

1: The record is a representative object of degenerate method 2.

[3]: Same coordinates degeneration flag

0: Degenerate objects are not on the same coordinates. (Default: Unspecified)

1: All degenerate objects are on the same coordinates.

[4]: Same category code flag

0: Degenerate objects are not assigned a same category code. (Default: Unspecified)

1: All degenerate objects are assigned a same category code.

[5]: Next-level list display sequence flag

0: The list is displayed in DISC storage sequence. (Default: Unspecified)

1: The list is displayed in distance sequence.

[6-7]: Reserved (fixed to 0)

11) Number of Matching Data in the Next Degenerated Level

A total number of matching data records that constitute the next layer of degenerate method 1 is set.

12) Number of Matching Lists in the Next Degenerate Level

This field contains the number of matching data records (except the last representative) on a same degenerate level that constitute the next layer of degenerate method 1.

If this number is the same as the number of matching data in the next degenerate layer, this setting can be omitted.

13) For only an object whose degenerate attribute is a representative record of degenerate method 1, the displacement to the beginning of the last representative record in a same degenerate layer from the beginning of the present record is set.

14) For only an object whose degenerate attribute is the last representative record of degenerate method 1, the displacement to the beginning of the representative record in a same degenerate layer from the beginning of the present record is set.

15) A constituent record of the representative record of degenerate method 2 is set and the next-level degenerate search frame is set to:

RPNK=9: Next-level category data and RPNF=1: Detailed search information record serial number or

RPNK=10: Next-level matching data and RPNF=1: Detailed search information record serial number.

16) According to the set content of the field of next-level data frame class of degenerate method 2, the content of this field is set as follows:

RPNK=9: Displacement from the beginning of the data frame that is specified as the next-level degenerate search frame to the beginning of the present matching data record.

RPNK=10: Displacement from the beginning of the data frame that is specified as the next-level degenerate search frame to the beginning of the present matching data record.

17) Number of target records (number of option records, number of matching records) in the next-level frame of degenerate method 2 to be searched is set.

Note: Number of duplicate name characters is defined as follows. "Example of NORTH NORWAY RD"

Search key Street name

NORTH NORWAY: NORTH NORWAY RD -> 0 (For a true object, 0 is set)

NORWAY NORTH: NORTH NORWAY RD -> 3 (For an object generated by fussy division, the number of the first same characters as the original is set.)

Note: Data for the number of duplicate name characters is generated on the basis that the data field contains the maximum number of the first same name characters between the preceding and next blocks (separated by space) of the object name.

Note: The present data frame sequence is basically in order of names (street names), but may be sorted in order of names plus numbers.

Note: If this frame is used to identify a city as well as a street, advanced search can be performed by taking advantage of degenerate representation that will be described below.

11.A.2.4.1.6. Matching Data Frame

name [Matching Data Frame for Street Name Search (by all-city)]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Matching Data Records for Street Name Search (by all-city)		a

name [Street Name Search Matching Data Record (by all-city)]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	1	D	Relation to the Top of the Previous Record Forward Relation from the Top of this Record		a
2	1	1	D	Relation to the Top of the Following Record Backward Relation from the Top of this Record		a
3	2	1	N:B	Fuzzy Search Flag		a
4	3	3	B:...:B	Stored Data Flag		a
5	6	4	N	Street ID		c
6	10	1/2	N	Next-level Data Frame Class		c
7	10.5	1/2	N	Next-level Data Frame Serial Number		c
8	11	4	D	Offset to Next-level Data Frame		c
9	15	4	N	Number of Next-level Data Frame Records		c
10	19	B1	N:C	Character Search Key		c
11	01	1	N	Language Number		c
12	02	B2	N:C	Name		c
13	03	1	N	Number of Degenerated Levels		c
14	04	1	B:...:B	Attributes of Degenerate Representative Record		c
15	05	4	N	Number of Matching Data		c
16	06	4	N	Number of Matching Degenerated List		c
17	07	4	D	Displacement to the End of Representative Object		c
18	08	4	D	Displacement to the Top of Representative Object		c
19	09	1/2	N	Degenerated Next-level Data Frame Class		c
20	010	1/2	N	Degenerated Next-level Data Frame Serial Number		c
21	011	4	D	Offset to Degenerated Next-level Data Frame		c
22	012	4	N	Number of Degenerated Next-level Data Frame Records		c
23	013	1	BR	Padding Field		c

<Basis of Storing Degenerated Data>

In degeneration of this frame, the basis of storing data into a representative record (having option records in a lower layer) and a child record (not having further option records in a lower layer) is defined below.

Method 1

Method making it possible that alphabetical order search is performed from search frames of the upper-level alphabetical order step-by-step method, covering strings in option records.

Method 2

Method in which alphabetical order search is performed from search frames of the upper-level alphabetical order step-by-step method, but not covering strings in option records.

Usage	RPAT	RPLV	RPCN RPLN	RPST	RPSO	RPNK	RPNF RPNS RPNC	NXKD	NXFN NXST	NXCT
General record	-	-	-	-	-	-	-	(=5)		
										-
Method 1 First representative record				-		-	-	-	-	-
Method 1 Last representative record					-	-	-	-	-	-
Method 1 Option	-		-	-	-	-	-	(=5)		
Method 2 Representative		-	-	-	-	(=9,10)		(=0)		-

Note: : Storage is optional.

Note: '-': Indicates the field contains no setting or a null value.

Note: '(??)': Indicates the field whose setting is defined.

11.A.2.4.2. City Selection

11.A.2.4.2.1. Detailed Search Information Record (City Selection)

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRHA'	a
2	4	4	SWS	Size of Expansion Field	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	'KBA2'	a
9	32	4	SWS	Category Parent Record Size	4)	a
10	36	4	SWS	Category Option Record Size	5)	a
11	40	4	SWS	Size of First-level Category Table	6)	a
12	44	4	N	Number of Option Items of the First-level Category	6)	a
13	48	4	D	Offset to the First-level Category	6)	a
14	52	4	C	Keyboard Designation for the First-level Category	'KBA2'	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	Size of Next-level Data Frame	10)	a
23	88	4	D	Address of Next-level Data Frame	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

The 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.

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 describes the size of the category parent record.

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

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

These fields describe the size, number of option items, and displacement from the top of the category data frame, of the category table to be read first (which contains all the option records). For the second- and subsequent-level category tables, the record size, number of option records, and offset should be specified in the parent record of the actual data.

7) Size of the Record of Matching Data Frame

Because of variable-length representation, this field contains the maximum record size in the data frame.

8) Total Number of the Records of Matching Data Frame

This field contains a total number of records in the data frame.

9) Default POI Information Serial Number

Because POI information is not directly called in this example, a null value = 0 is set in this field.

10) Next-level Data Frame Size and Address

In this example, the next-level search frame is the search frame management frame for a city-specific street name search frame as provided in Section 11.A.2.4.2.1.

11) Character Data List for Representation Item

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

ex) English: "CITY"

11.A.2.4.2.2. Category Data Definition Frame (City Selection)

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(8)	Definition Field Declaration		a
2	'FNST'	'OFST'	'LG'	1	-	Offset to the Matching Data	1)	a
3	'FNCT'	'NORM'	'UL'	1	-	Matching Data Count		a
4	'FNLT'	'NORM'	'UL'	1	-	Number of Matching Lists		a
5	'SELN'	'NORM'	'UB'	1	-	Number of Option Items		a
6	'DCSF'	'REAL'	-	-	(3)	Option Record Definition Field Declaration	2)	a
7	'KYCH'	'NORM'	'UB'	1	-	Character Search Key		a
8	'NEXT'	'OFST'	'LG'	1	-	Offset to Next Category	3)	a
9	'NTSZ'	'NORM'	'UW'	1	-	Next Category Size		c

1) If no matching data exists (the matching data count = 0), 0 is set.

2) The character search key is one alphabet letter (in compliance with ISO-8859).

3) If this field contains no setting, the application reads the next category of the maximum size calculated by the maximum value for option records.

Note: The category table sequence shall be in order of character search keys.

Note: Unless the matching data size is set, the matching data count is calculated by integrating the matching data frame record size that is set in the detailed search information records and the data of the maximum size of the matching data frames (because of possible variable-length representation) is read for search.

11.A.2.4.2.3. Category Data Frame

name [Category Data Frame for City Selection]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		City Selection Category Table		a

11.A.2.4.2.3.1. Category Table

name [City Selection Category Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		City Selection Category Parent Record		a
2	4	B2		A Sequence of City Selection Category Option(child) Records		a

name [City Selection Category Parent Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	D	Offset to the Matching Data		a
2	4	4	N	Matching Data Count		a
3	8	4	D	Number of Matching Lists		a
4	12	4	N	Number of Option(child) Items		a
5	13	1	BR	Padding Field		c

name [City Selection Category Option(child) Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	1	I	Character Search Key		a
2	1	4	D	Offset to the Next Category		a
3	5	2	SWS	Next Category Size		c
4	7	1	BR	Padding Field		c

11.A.2.4.2.4. Matching Data Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(13)	Definition Field Declaration		a
2	'BFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Previous Record Forward Relation from the Top of this Record		a
3	'NFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Following Record Backward Relation from the Top of this Record		a
4	'MXSG'	'ACTN'	'SG'	1	-	Hybrid search signature	1)	a
5	'MXKY'	'ACTN'	'UL'	1	-	Hybrid Search Key	1)	a
6	'FGFZ'	'NORM'	'UB'	1	-	Fuzzy Search Flag	2)	c
7	'KYCH'	'VRBL'	'CH'	'UB'	'CMCH'	Character Search Key	3)	a
8	'STFG'	'NORM'	'UB'	1	-	Stored Data Flag		a
9	'NXKD'	'NORM'	'HB'	1	-	Next-level Data Frame Class	4)	a

10	'NXFN'	'NORM'	'HB'	1	-	Next-level Data Frame Serial Number	4)	a
11	'NXST'	'OFST'	'LG'	1	-	Offset to Next-level Data Frame		a
12	'LGNO'	'NORM'	'UB'	1		Language Number	5)	c
13	'NAME'	'VRBL'	'CH'	'UB'	'CMCH'	Name (Representation Name)	3)	c
14	'RLXY'	'VRBL'	'BT'	'UH'	'CMP6'	Latitude and Longitude	6)	a-c

- 1) The hybrid search key is set as follows:

'MXSG': 'ARCD' (Area code)

'MXKY': The field contains the area code.

- 2) For the basis of setting the fuzzy search flag, see Section 11.A.2.4.1.2.2.

If fuzzy name setting is disabled for all records, this field has no setting. Thus, the field classification is 'c.'

- 3) If the representation name is the same as the character search key (fuzzy search is not executed), no setting is required (the field is filled with null characters).
- 4) To specify the next-level data frame, the present city category table in the city-specific street name search frame is set as the next-level search frame category (NXLD=4, NXFN=1: Detailed search information serial number).
- 5) Language number corresponding to META-definition is set.

Language number corresponding to the name of the present record is set. If the language number is the same as the default language number that is implicitly declared on the higher level, it can be omitted.

- 6) This field contains the representative coordinates of the appropriate area.

11.A.2.4.2.5. Matching Data Frame

name [City Selection Matching Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of City Selection Matching Data Records		a

Note: The sequence of applicable records shall be in order of character search keys.

name [City Selection Matching Data Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	1	D	Relation to the Top of the Previous Record Forward Relation from the Top of this Record		a
2	1	1	D	Relation to the Top of the Following Record Backward Relation from the Top of this Record		a
3	2	4	C	Hybrid search signature		a
4	O1	4	N	Hybrid Search Key		a
5	O2	1	B:N	Fuzzy Search Flag		c
6	O3	B1	N:C	Character Search Key		a
7	O4	1	B:...:B	Stored Data Flag		a
8	O5	1/2	N	Next-level Data Frame Class		c

9	O6	1/2	N	Next-level Data Frame Serial Number		c
10	O7	4	D	Offset to Next-level Data Frame		c
11	O8	1	N	Language Number		c
12	O9	B2	N:C	Name (Representation Name)		c
13	O10	B3	N:N:N:N	Latitude and Longitude		c

11.A.2.4.3. City-specific Street Name Search Frame

This data frame is not directly referenced and specified by the data management frame. This data frame is specified by its higher-level street name search frame as provided in Section 11.A.2.4.1.

11.A.2.4.3.1. Search Frame Management Frame

This management frame is a frame for declaring a comprehensive search of all city-specific street names, targeting all city-specific POI search frames, and specified for reference as the next-level search frame in its higher-level detailed search information record (City Selection) as provided in Section 11.A.2.4.1.2.

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.2.4.3.1.1. 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 the Top of 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 description.

11.A.2.4.3.2. Detailed Search Information Record

name [Detailed Search Information Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRMX'	a
2	4	4	SWS	Expansion Field Size	1)	a
3	8	4	D	Offset to Expansion Field	1)	a

No.	offset	Data length	Data type	Item name	Remarks	Classification
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	'KBA2'	a
9	32	4	SWS	Category Parent Record Size	4)	a
10	36	4	SWS	Category Option Record Size	5)	a
11	40	4	SWS	First-level Category Size	6)	a
12	44	4	N	Number of Option Items of the First-level Category	6)	a
13	48	4	D	Offset to the First-level Category	6)	a
14	52	4	C	Keyboard Designation for the First-level Category	'KBA2'	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 the 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

The 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.

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 describes the size of the category parent record.

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

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

These fields describe the size, number of option items, and displacement from the top of the category data frame, of the category table to be read first (which contains all the option items). For the second- and subsequent-level

category tables, the record size, number of option items, and offset should be specified in the parent record of the actual data.

7) Size of the Record of Matching Data Frame

Because of variable-length representation, this field contains the maximum record size in the data frame.

8) Total Number of the Records of Matching Data Frame

This field contains a total number of records in the data frame.

9) Default POI Information Serial Number

This field describes the serial number of the POI information.

10) Next-level Data Frame Size and Address

In this example, the next-level search frame is an address range search frame as provided in Section 11.A.2.4.3.

11) Character Data List for Representation Item

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

ex) English: "STREET ADDRESS/CITY"

11.A.2.4.3.3. Category Definition Frame

The frame structure shall be the same as for the all-city category definition frame.

11.A.2.4.3.4. Category Data Frame

The frame structure shall be the same as for the all-city category data frame. This frame stores the data for each city.

11.A.2.4.3.5. Matching Data Definition Frame

The frame structure shall be the same as for the all-city matching data definition frame.

11.A.2.4.3.6. Matching Data Frame

The frame structure shall be the same as for the all-city matching data frame. This frame stores the data for each city.

11.A.2.4.4. Address range Search Frame

This data frame is not directly referenced and specified by the data management frame. This data frame is specified by its higher-level street name search frame.

11.A.2.4.4.1. Search frame Management Frame

This management frame is a frame for declaring a comprehensive search of all ranges and specified for reference as the next-level search frame in its higher-level detailed search information record as provided in Sections 11.A.2.4.1.2 and 11.A.2.4.2.2.

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.2.4.4.1.1. 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 the Top of 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 description.

11.A.2.4.4.2. Detailed Search Information Record

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRT1	a
2	4	4	SWS	Size of Expansion Field	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	'KBST	a
9	32	4	SWS	Category Parent Record Size	4)	a
10	36	4	SWS	Category Option Record Size	5)	a
11	40	4	SWS	First-level Category Size	6)	a
12	44	4	N	Number of Option Items of the First-level Category	6)	a
13	48	4	D	Offset to the First-level Category	6)	a
14	52	4	C	Keyboard Designation for the First-level Category	'KBST	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

The 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, a null value is set for both the size and offset to the expansion field.

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 describes the size of the category parent record.

In this example, a null value is set in this field because of no category setting.

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

In this example, a null value is set in this field because of no category setting.

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

In this example, a null value is set in these fields because of no category setting.

7) Size of the Record of Matching Data Frame

Because of variable-length representation, this field contains the maximum record size in the data frame.

8) Total Number of the Records of Matching Data Frame

This field contains a total number of records in the data frame.

9) Default POI Information Serial Number

In this example, the serial number of the POI information stored in the appropriate street address POI Information frame is set in this field.

10) Next-level Data Frame Size and Address

Because the next-level search frame does not exist in this example, a null value is set in these fields.

11) Character Data List for Representation Item

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

ex) English: "ADDRESS RANGE"

11.A.2.4.4.3. Category Definition Frame

In this example, there is no setting.

11.A.2.4.4.4. Matching Data Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(10)	Definition Field Declaration		a
2	'BFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Previous Record Forward Relation from the Top of this Record	1)	a
3	'NFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Following Record Backward Relation from the Top of this Record	1)	a
4	'POIO'	'OFST'	'LG'	1	-	Offset to POI Information	2)	a
5	'POIC'	'NORM'	'UW'	1	-	Number of POI Information Records	3)	a
6	'FGSA'	'NORM'	'UB'	1	-	Street Address Flag	4)	a
7	'STAD'	'VRBL'	'BT'	'UH'	'CMST'	Street Address	5)	a
8	'ARCD'	'VRBL'	'UL'	'UB'	-	Area Code	6)	a
9	'STFG'	'NORM'	'UB'	1	-	Stored Data Flag		a
10	'ZIPN'	'VRBL'	'CH'	'UB'	'CMCH'	Zip Code	7)	c
11	'PRFX'	'VRBL'	'CH'	'UB'	'CMCH'	Prefix name	8)	a-c

- 1) The relation fields contain the displacements to the preceding and following records from the beginning of the present data record.

If the preceding or following record does not exist, the appropriate field contains 0.

- 2) Offset to POI Information

The displacement from the beginning of the target POI information data frame to the beginning of the POI information record in the present address range is set.

- 3) Number of POI Information Records

This field describes the number of target POI information data records.

- 4) The contents of the bits of the street address flag are described below. If a valid side flag is not defined for the address range search, both right and left flags are set to indicate odd-even coexistence.

Moreover, if a center link (used as the map display point. If any address is not specified) exists in a lower-level link ID search frame, the center link flag is set. The bits are as follows:

bit 7: Center link flag

0: Invalid (no application of center link)

1: Valid (center link)

bit 6: Address representation flag

0: (Prefix name) address + street name

1: Street name + (prefix name) address

bit 5: Irregular address data flag

0: Regular address data (Default; Regular addresses; Coordinates are calculated with a proportional expression.)

1: Irregular address data (Irregular addresses; Pin-point coordinates are used.)

bit 4: <Unused>
bit 3: Valid side flag (left)
bit 2: 0: Invalid 1: Odd 2: Even 3: Odd-even coexistence
bit 1: Valid side flag (right)
bit 0: 0: Invalid 1: Odd 2: Even 3: Odd-even coexistence

Note: The street address flag is defined together with a street address.

5) Street address setting is as follows:

★ For regular address data

size (4 bits): Compressed code data size ('UH' because of size in variable-length representation)
stdln (4 bits): Number of forward reference records
(0: Null indicating non-compressed data)
l_cmpdat Compressed code data {
st_adrs (size/2): Offset to start address of reference record
ed_adrs (size/2): Offset to end address of reference record
}

Note: When regular address data is compressed, only regular address data can be assumed a reference record.

★ For irregular address data

size (4 bits): Compressed code data size ('UH' because of size in variable-length representation)
stdln (4 bits): Number of forward reference records
(0: Null indicating non-compressed data)
l_cmpdat Compressed code data {
adrs (size): Offset to address standard of reference record
}

Note: When irregular address data is compressed, only irregular address data can be assumed a reference record.

6) Describe area code.

If a common range for Postal and Admin exists and shared use applies (in a same group of records), the separately assigned area codes are set in order of Postal and Admin.

7) Describe appropriate zip code.

Zip code is set only when there are multiple objects with same area code and prefix name.

8) If, as a prefix name, a block name is assigned to a street address name, this field contains the block name.

Example) "10," "A," "S," "%03," "sN"

Note: A record of this data frame (one record unit) is generated on the basis that links assigned same city (city name) and prefix name are picked from the sequence of POI information link IDs and arranged in a single record in sequence of the POI information link IDs.

<Representation of prefix name and street address>

Name that precedes (follows) a house number is set in a specific format.

Format:

Prefix: \p (character string): Precedes a house number (omissible if stored in the first position).
Suffix: \s (character string): Follows a house number.

With leading 0s: \%03:

Represented in 3 digits, with leading 0s if necessary.

Example:

Actual address representation	'PRFX' prefix name	'STAD' street address
100,101,,,200	NULL, 'No setting'	100-200
S10,S11,,, S50	S	10-50
10-1,10-2,,,10-99	10-	1-99
12-99,12-98,,,12-1	12-	99-1
001,002,003,,, 010	\%03	1-10
N0001,N0002,,,N0301	N\%04	1-301
100N,102N,,,500N	\sN	100-500
14-20E,14-21E,,, 14-30E	14-\sE	20-30
500N,499N,,, 100N	\sN	500-100

Note: \\ is handled as one \' character.

11.A.2.4.4.5. Matching Data Frame

name [Address Range Search Matching Data Frame]

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

Note: The data in this data frame is sorted in order of area code, zip code, prefix name (starting with an object without prefix address), and lowest address number.

name [Address Range Search Matching Data Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	1	D	Relation to the Top of the Previous Record Forward Relation from the Top of this Record		a
2	1	1	D	Relation to the Top of the Following Record Backward Relation from the Top of this Record		a
3	2	4	D	Offset to POI Information		a
4	6	2	N : N:N	Number of POI Information Records		a
5	8	1	B:...:B	Street Address Flag		a
6	9	B1	N:N:N:N	Street Address		a
7	O1	B2	N:N:N	Area Code		a
8	O2	B3	B:...:B	Stored Data Flag		a
9	O3	B4	N:C	Zip Code		c
10	O4	B5	N:C	Prefix name		c

11.A.2.4.5. Degenerate Street Search Frame (Degenerate Object)

This frame is a search frame for a street-by-street basis search to be executed after a degenerate object is selected by a degenerate street name search. Generally, it is assumed that a city name search is executed.

11.A.2.4.5.1. Hierarchical Search (Implementation Example 1)

11.A.2.4.5.1.1. Management Frame of Search 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.2.4.5.1.1. Management Frame Header of Search Frame

name [Management Frame Header of Street Name Search Frame (hierarchical degeneration)]

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)	=2	a
3	8	4	SWS	Size of Detailed Search Information Record	1)	a
4	12	4	D	Offset to the Top of 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 description.

11.A.2.4.5.1.2. Detailed Search Information Record (hierarchical degeneration)

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRNR'	a
2	4	4	SWS	Size of Expansion Field	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	Address of Category Data Frame	3)	a
8	28	4	C	Default Keyboard Designation	'NORM'	a
9	32	4	SWS	Category Parent Record Size	4)	a
10	36	4	SWS	Category Option Record Size	5)	a
11	40	4	SWS	First-level Category Size	6)	a
12	44	4	N	Number of Option of the First-level Category	6)	a
13	48	4	D	Offset to the First-level Category	6)	a
14	52	4	C	Keyboard Designation for the First-level Category	'NORM'	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	Address of Matching Data Frame	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	Size of Next-level Data Frame	10)	a
23	88	4	D	Address of Next-level Data Frame	10)	a
24	92	B1		Character Information Data List for Representation Item	11)	a

No.	offset	Data length	Data type	Item name	Remarks	Classification
25	O1	B2		A Sequence of Additional Frame Address(es) (#1 to #n)	1)	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

The 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, a null value is set for both the size and offset to the expansion field.

2) These fields describe the total size of the target Data Frame.

3) These field describe the address of the target data frame in the representation format of 9) in Section 11.2.2.

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

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

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

These fields describe the size, number of option items, and displacement from the top of the category data frame, of the category table to be read first (which contains all the option items). For the second- and subsequent-level category tables, the record size, number of option items, and offset should be specified in the parent record of the actual data.

7) Size of the Record of Matching Data Frame

Because of variable-length representation, this field contains the maximum record size in the data frame.

8) Total Number of the Records of Matching Data Frame

This field contains a total number of Records in the data frame.

9) Default POI Information Serial Number

This field describes the serial number of the POI information.

10) Next-level Data Frame Size and Address

Because the next-level search frame does not exist in this example, a null value is set in these fields.

11) Character Data List for Representation Item

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

ex) English: "STREET ADDRESS"

Note: For this search frame, an object can be identified with only a category data frame as done for a genre search (no matching data frame is set). However, if the shared use of an matching data frame (all-city or city-specific) applies, the data frame can be set for a list display.

11.A.2.4.5.1.3. Category Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(8)	Definition Field Declaration		a
2	'SELN'	'NORM'	'UL'	1	-	Number of Option Items		a
3	'DCSF'	'REAL'	-	-	(6)	Option Definition Field Declaration		a
4	'NXKD'	'NORM'	'UH'	1	-	Next-level Data Frame Class	1)	a
5	'NXFN'	'NORM'	'UH'	1	-	Next-level Data Frame Serial Number	1)	a
6	'NXST'	'OFST'	'LG'	1	-	Offset to Next-level Data Frame	2)	a
7	'NXCT'	'NORM'	'UL'	1	-	Number of Next-level Data Frame Records	3)	
8	'LGNO'	'NORM'	'UB'	1	-	Language Number	4)	c
9	'NAME'	'VRBL'	'CH'	'UB'	-	Name	5)	a

- 1) In the next-level search frame class field, the next category or matching data may be set.

For either setting, the next-level search frame serial number is set at 0: Null value.

- 2) The displacement from the beginning of the next-level search frame to the beginning of the target category table or matching record (according to the next-level search frame which is category or matching data) is set.
- 3) If the next-level search frame is a category data frame, the number of option items in the next-level category table is set. If the next-level search frame is an matching data frame, the number of matching data records is set.
- 4) Language Number corresponding to META-definition is set.

Language number corresponding to the name of the present record is set. If the language number is the same as the default language number that is implicitly declared on the higher level, it can be omitted.

- 5) Name is set to identify a city (name) for the matching data.

Note: The sequence of option records in a category table shall be in order of name (provisional).

Note: Multiple category table levels can be set up.

11.A.2.4.5.1.4. Category Data Frame

name [Street Name Search(hierarchical degeneration) Category Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Street Name Search(hierarchical degeneration) Category Tables		a

11.A.2.4.5.1.4.1. Category Table

name [Street Name Search(hierarchical degeneration) Category Table]

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

name [Street Name Search(hierarchical degeneration) Category Table]

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

name [Street Name Search (hierarchical degeneration) Category Option Records]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	1/2	N	Next-level Data Frame Class		a
2	0.5	1/2	N	Next-level Data Frame Serial Number		a
3	1	4	D	Offset to Next-level Data Frame		c
4	5	4	N	Number of Next-level Data Frame Records		c
5	9	1	N	Language Number		
6	10	B1	N:C	Name		a
7	11	1	BR	Padding Field		c

11.A.2.4.5.1.5. Matching Data Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(11)	Definition Field Declaration		a
2	'BFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Previous Record Forward Relation from the Top of this Record	1)	a
3	'NFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Following Record Backward Relation from the Top of this Record	1)	a
4	'RLXY'	'NORM'	'P6'	1	-	Latitude and Longitude	2)	a
5	'ARCD'	'NORM'	'UL'	1	-	Area Code		a
6	'LGNO'	'NORM'	'UB'	1		Language Number	3)	c
7	'NAME'	'VRBL'	'CH'	'UB'	'CMCH'	Name (Representation Name)	4)	c
8	'STID'	'NORM'	'UL'	1	-	Street ID	5)	a
9	'NXKD'	'NORM'	'UH'	1	-	Next-level Data Frame Class	6)	a
10	'NXFN'	'NORM'	'UH'	1	-	Next-level Data Frame Serial Number	6)	a
11	'NXST'	'OFST'	'LG'	1	-	Offset to Next-level Data Frame		a

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
12	'NXCT'	'NORM'	'UL'	1	-	Number of Next-level Data Frame Records	7)	a

- 1) The relation fields contain the displacements to the preceding and following records from the beginning of the present data record.

If the preceding or following record does not exist, the appropriate field contains 0.

- 2) This field is used for sorting in order of distance.

The field contains the coordinates defined in 3 bytes x 2 = 6 bytes (tail extension bytes of PID format are omitted).

- 3) Language number corresponding to META-definition is set.

Language number corresponding to the name of the present record is set. If the language number is the same as the default language number that is implicitly declared on the higher level, it can be omitted.

- 4) Name is used for screen display. This field contains a city name.

- 5) A street ID is set.

A street ID shall be set on the basis that the ID is specific to the street. (The name of the city may be added to the street name, so that IDs can be assigned on the basis of city-specific streets)

- 6) A data frame applicable to the address range search is set (NXKD=5: Next-level matching data, NXFN=1: Next-level detailed search information record serial number).

- 7) The displacement from the beginning of the data frame that is specified as the next-level search frame to the beginning of the present matching data record is set.

- 8) The number of matching data records contained in the next-level address range table is set.

Note: The sequence of matching tables shall be in order of area code and name (provisional).

11.A.2.4.5.1.6. Matching Data Frame

name [Street Name Search(hierarchical degeneration) Matching Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Street Name Search(hierarchical degeneration) Matching Data Table		a

11.A.2.4.5.1.6.1. Matching Data table

name [Street Name Search(hierarchical degeneration) Matching Data Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Street Name Search (hierarchical degeneration) Matching Data Records		a

name [Street Name Search(hierarchical degeneration) Matching Data Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	1	D	Relation to the Top of the Previous Record Forward Relation from the Top of this Record		a

2	1	1	D	Relation to the Top of the Following Record Backward Relation from the Top of this Record		a
3	2	6	N:N	Latitude and Longitude		a
4	3	4	N	Area Code		a
5	4	1	N	Language Number		c
6	5	B1	N:C	Name (Representation Name)		a
7	O1	4	N	Street ID		a
8	O2	1/2	N	Next-level Data Frame Class		a
9	O3	1/2	N	Next-level Data Frame Serial Number		a
10	O4	4	D	Offset to Next-level Data Frame		a
11	O5	4	N	Number of Next-level Data Frame Records		a

11.A.2.4.5.2. Alphabetical Order Search (Implementation Example 2)

11.A.2.4.5.2.1. 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.2.4.5.2.1.1. Management Frame Header of Search Frame

name [Management Frame Header of Street Name Search(alphabetical order degeneration) Matching 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)	=2	a
3	8	4	SWS	Size of Detailed Search Information Record	1)	a
4	12	4	D	Offset to the 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 description.

11.A.2.4.5.2.2. Detailed Search Information Record (alphabetical order degeneration)

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRAL'	a
2	4	4	SWS	Size of Expansion Field	1)	a
3	8	4	D	Offset to Expansion Field	1)	a
4	12	4	SWS	Size of Category Definition Frame	2)	a
5	16	4	D	Address of Category Definition Frame	3)	a
6	20	4	SWS	Size of Category Data Frame	2)	a
7	24	4	D	Address of Category Data Frame	3)	a

8	28	4	C	Default Keyboard Designation	'KBA2'	a
9	32	4	SWS	Category Parent Record Size	4)	a
10	36	4	SWS	Category Option Record Size	5)	a
11	40	4	SWS	Size of First-level Category Table	6)	a
12	44	4	N	Number of Option Items of the First-level Category	6)	a
13	48	4	D	Offset to First-level Category	6)	a
14	52	4	C	Keyboard Designation for the First-level Category	'KBA2'	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	Address of Matching Data Frame	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)	1)	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

The 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, a null value is assigned to both the size and offset to the expansion field.

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 9) in Section 11.2.2.

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

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

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

These fields describe the size, number of option items, and displacement from the top of the category data frame, of the category table to be read first (which contains all the option items). For the second- and subsequent-level category tables, the size, number of option items, and offset should be specified in the parent record of the actual data.

7) Size of the Record of Matching Data Frame

Because of variable-length representation, this field contains the maximum record size in the data frame.

8) Total Number of the Records of Matching Data Frame

This field contains a total number of Records in the data frame.

9) Default POI Information Serial Number

This field describes the serial number of the POI information.

10) Next-level Data Frame Size and Address

In this example, the next-level search frame is an address range search frame.

11) Character Data List for Representation Item

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

ex) English: "STREET ADDRESS"

Note: This search frame is assumed to be a search frame for allocating degenerate object data to matching data records to be displayed in a list. However, matching data can be selected in advance by setting up a category search frame.

If a category data frame is not generated, the category-related settings shall be a null value.

11.A.2.4.5.2.3. Category Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(8)	Definition Field Declaration		a
2	'FNST'	'OFST'	'LG'	1	-	Offset to the Matching Data	1)	a
3	'FNCT'	'NORM'	'UL'	1	-	Matching Data Count		a
4	'FNLT'	'NORM'	'UL'	1	-	Number of Matching Lists	2)	a
5	'SELN'	'NORM'	'UB'	1	-	Number of Option Items		a
6	'DCSF'	'REAL'	-	-	(3)	Option Definition Field Declaration		a
7	'KYCH'	'NORM'	'UB'	1	-	Character Search Key	3)	a
8	'NEXT'	'OFST'	'LG'	1	-	Offset to the Next Category		a
9	'NTSZ'	'NORM'	'UW'	1	-	Size of the Next Category	4)	c

1) If no matching data exists (the matching data count = 0), a null value is set.

In this frame, the field contains the result of counting the object records of matching data.

2) The number of matching lists field contains the number of list lines to be displayed in degenerate mode, according to the search character (corresponding to each level of category).

In this frame, the field contains the result of counting the objects of matching data.

3) The character search key is one alphabet letter (in compliance with ISO-8859).

4) If this field contains no setting, the application reads the next category of the maximum size calculated by the maximum value that is set for the present detailed search information record category size (parent records + option records).

11.A.2.4.5.2.4. Category Data Frame

name [Street Name Search (alphabetical order search) Category Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
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1	0	B1		A Sequence of Street Name Search(alphabetical order search) Category Tables		a
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11.A.2.4.5.2.4.1. Category Table

name [Street Name Search (alphabetical order search) Category Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Street Name Search (alphabetical order search) Category Parent Record		a
2	O1	B2		A Sequence of Street Name Search(alphabetical order search) Category Option Records		a

Note: The sequence of category option records shall be in order of character search keys.

name [Street Name Search (alphabetical order search) Parent Category Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	D	Offset to the Matching Data		a
2	4	4	N	Matching Data Count		a
3	8	4	N	Number of Matching Lists		a
4	12	1	N	Number of Option Items		a
5	13	1	BR	Pudding Field		c

name [Street Name Search (alphabetical order search) Category Option Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	1	N	Character Search Key		a
2	1	4	D	Offset to Next Category		a
3	5	2	SWS	Next Category Size		c
4	7	1	BR	Padding Field		c

11.A.2.4.5.2.5. Matching Data Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(13)	Definition Field Declaration		a
2	'BFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Previous Record Forward Relation from the Top of this Record	1)	a
3	'NFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Following Record Backward Relation from the Top of this Record	1)	a
4	'FGFZ'	'NORM'	'BT'	1	-	Fuzzy Search Flag	9)	c
5	'RLXY'	'NORM'	'P6'	1	-	Latitude and Longitude	2)	a

6	'ARCD'	'NORM'	'UL'	1	-	Area Code		a
7	'KYCH'	'VRBL'	'CH'	'UB'	'CMCH'	Character Search Key	3)	a
8	'LGNO'	'NORM'	'UB'	1	-	Language Number	4)	c
9	'NAME'	'VRBL'	'CH'	'UB'	'CMCH'	Name (Representation Name)	3)	c
10	'STID'	'NORM'	'UL'	1	-	Street ID	5)	a
11	'NXKD'	'NORM'	'UH'	1	-	Next-level Data Frame Class	6)	a
12	'NXFN'	'NORM'	'UH'	1	-	Next-level Data Frame Serial Number	6)	a
13	'NXST'	'OFST'	'LG'	1	-	Offset to Next-level Data Frame	7)	a
14	'NXCT'	'NORM'	'UL'	1	-	Number of Next-level Data Frame Records	8)	a

- 1) The relation fields contain the displacements to the preceding and following records from the beginning of the present data record.

If the preceding or following record does not exist, the appropriate field contains 0.

- 2) This field is used for sorting in order of distance.

The field contains the coordinates defined in 3 bytes x 2 = 6 bytes (tail extension bytes of PID format are omitted).

- 3) Name is used for screen display. If only a name identical to the character search key is specified in all fields, the name setting can be omitted. Thus, the field classification is 'c.'

- 4) Language Number corresponding to META-definition is set.

Language number corresponding to the name of the present record is set. If the language number is the same as the default language number that is implicitly declared on the higher level, it can be omitted.

- 5) A street ID is set.

A street ID shall be set on the basis that the ID is specific to the street. (The name of the city may be added to the street name, so that IDs can be assigned on the basis of city-specific streets.)

- 6) A data frame applicable to the address range search is set (NXKD=5: Next-level matching data, NXFN=1: Detailed search information record serial number).

- 7) The displacement from the beginning of the data frame that is specified as the next-level search frame to the beginning of the present matching data record is set.

- 8) The number of matching data records contained in the next-level address range table is set.

- 9) For the basis of setting the fuzzy search flag, see Section 11.A.2.4.1.2.2.

If fuzzy name setting is disabled for all records, this field has no setting. Thus, the field classification is 'c.'

11.A.2.4.5.2.5.1. Matching Data Frame

name [Street Name Search(alphabetical order search) Matching Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Street Name Search(alphabetical order search) Matching Data Records		a

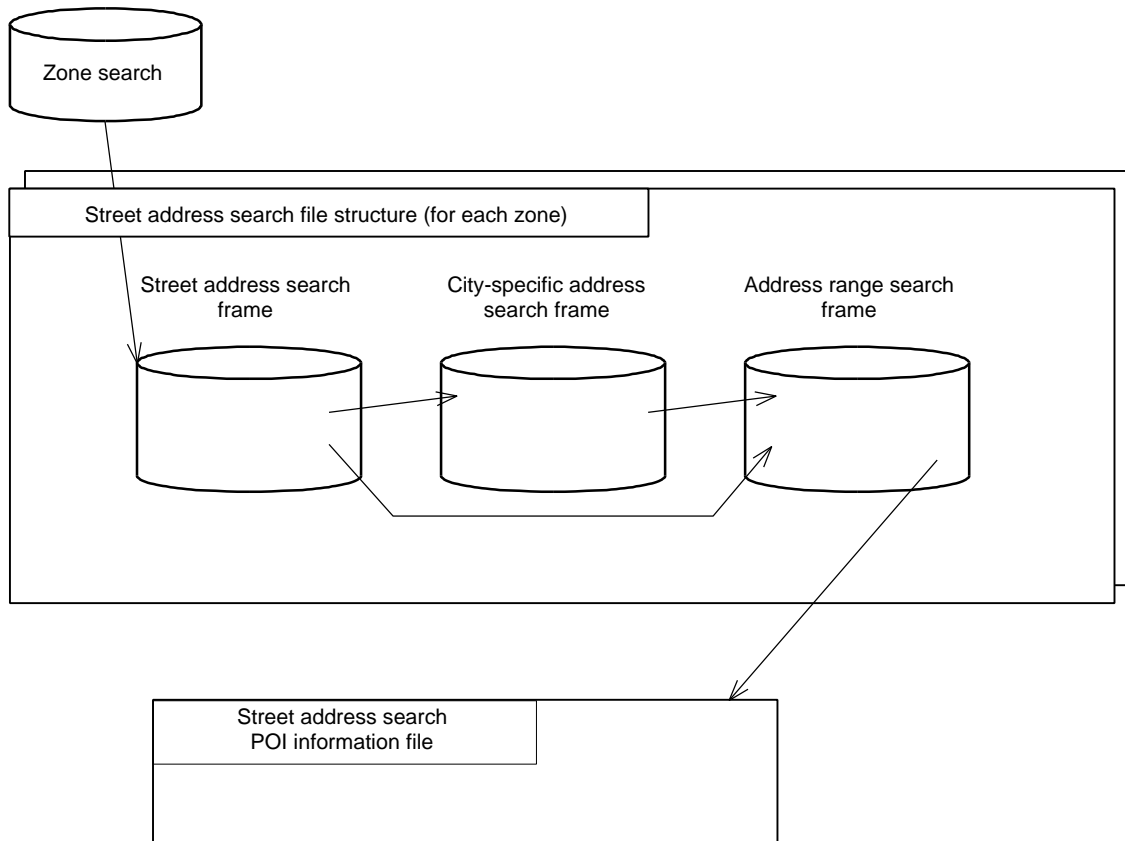
Note: The sequence of matching tables shall be in order of area code and name (provisional).

name [Street Name Search(alphabetical order search) Matching Data Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	1	D	Relation to the Top of the Previous Record Forward Relation from the Top of this Record		a
2	1	1	D	Relation to the Top of the Following Record Backward Relation from the Top of this Record		a
3	2	1	B:N	Fuzzy Search Flag		c
3	3	6	N:N	Latitude and Longitude		c
4	9	4	N	Area Code		a
5	13	B1	N:C	Character Search Key		a
6	O1	1	N	Language Number		c
7	O2	B2	N:C	Name		c
8	O3	4	N	Street ID		a
9	O4	1/2	N	Next-level Data Frame Class		a
10	O5	1/2	N	Next-level Data Frame Serial Number		a
11	O6	4	D	Offset to Next-level Data Frame		a
12	O7	1	BR	Padding Field		a

11.A.2.4.6. Conceptual Diagram of Street Address Search

11.A.2.4.6.1. File Configuration of Street Address Search



File Configuration of Zone Search

11.A.2.4.6.2. Street Address Search Frame Structure

