

11.A.2.8. POI Search (Hybrid Search)

11.A.2.8.1. POI Search Frame (by all-city & all-genre)

This frame stores the all-city data in the zone targeted by a time zone search frame that is set on the higher level.

11.A.2.8.1.1. 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		A Sequence of Detailed Search Information Record(s) - #1 to #3		a

11.A.2.8.1.1.1. Management Frame Header of Search Frame

name [Management Frame Header of Genre 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)	=3	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.2.8.1.2. POI Search by All-city & All-genre

11.A.2.8.1.2.1. Detailed Search Information Record (POI Search by All-city & All-genre)

name [Detailed Search Information Record (POI Search by all-city & all-genre)]

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
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 First-level Category	6)	a
13	48	4	D	Offset to First-level Category	6)	a
14	52	4	C	Keyboard Designation for 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 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, 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 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

This field describes 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 describes 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, if degenerate method 2 is applied, specify the management frame of a degenerate POI search frame as the next-level search frame. Otherwise, a null value is set in this field.

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: "POINT OF INTEREST"

11.A.2.8.1.2.2. 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 Next-level Category		a
9	'NTSZ'	'NORM'	'UW'	1	-	Next-level Category Size	4)	c

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

This field describes the result of counting the relevant data records.

- 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 describes the result of counting the relevant data objects.

- 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).

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.2.8.1.2.3. Category Data Frame

name [POI Search Category Data Frame]

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

11.A.2.8.1.2.3.1. Category Table

name [POI Search Category Table]

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

name [POI Search Category Parent Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	D	Offset to 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(child)		a
5	13	1	BR	Padding Field		c

name [POI Search 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 Next-level Category		a
3	5	2	SWS	Next-level Category Size		c
4	7	1	BR	Padding Field		c

11.A.2.8.1.2.4. Matching Data Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(24)	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	'ARCD'	'NORM'	'UL'	1	-	Area Code		c
5	'FGFZ'	'NORM'	'UB'	1	-	Fuzzy Search Flag	2)	a
6	'STFG'	'NORM'	'UB'	3	-	Stored Data Flag		a
7	'CTGY'	'NORM'	'UW'	1	-	Category Code	3)	c

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
8	'RLXY'	'NORM'	'P6'	1	-	Latitude and Longitude	4)	a-c
9	'NXKD'	'NORM'	'UH'	1	-	Next-level Data Frame Class	5)	a-c
10	'NXFN'	'NORM'	'UH'	1	-	Next-level Data Frame Serial Number	5)	a-c
11	'NXST'	'OFST'	'LG'	1	-	Next-level Data Frame Offset	6)	a-c
12	'NXCT'	'NORM'	'UL'	1	-	A Sequence of Next-level Data Frame Records	7)	c
13	'LGNO'	'NORM'	'UB'	1	-	Language Number	8)	c
14	'KYCH'	'VRBL'	'CH'	'UB'	'CMCH'	Character Search Key	9)	a-c
15	'NAME'	'VRBL'	'CH'	'UB'	'CMCH'	Name	9)	c
16	'RPLV'	'NORM'	'UB'	1	-	Number of Degenerated hierarchies	10)	a
17	'RPAT'	'NORM'	'BF'	8	-	Degenerated Representative Attribute	11)	a
18	'RPCN'	'NORM'	'UL'	1	-	Matching Data Count in the Next Degenerated Hierarchy	12)	c
19	'RPLN'	'NORM'	'UL'	1	-	Number of Matching Lists in the Next Degenerated Hierarchy	13)	c
20	'RPST'	'FDRL'	'LG'	1	-	Displacement to the End of Representative Object	14)	a-c
21	'RPSO'	'FDRL'	'LG'	1	-	Displacement to the Top of Representative Object	15)	a-c
22	'RPNK'	'NORM'	'UH'	1	-	Degenerated next-level Data Frame Class	16)	c
23	'RPNF'	'NORM'	'UH'	1	-	Degenerated Next-level Data Frame Serial Number	16)	c
24	'RPNS'	'OFST'	'LG'	1	-	Offset to Degenerated Next-level Data Frame	17)	c
25	'RPNC'	'NORM'	'UL'	1	-	Number of Degenerated Next-level Data Frame Records	18)	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 search keys such as "character search keys" for the same facilities as the preceding record).

- 3) Category code of the present object is set.

- 4) 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).

- 5) The contents of these fields are set as follows:

Next-level - POI: NXKD=3 (POI)

NKFN = n: (POI serial number)

Next-level - POI search frame (degenerate object): NXKD=9, 10 (Next-level search frame)

NXFN=n: (Detailed search information record serial number)

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

NXKD=3: Displacement from the beginning of the POI information data frame to the beginning of the sequence of the records relevant to the present POI information.

NXKD=9, 10: Displacement from the beginning of the present file to the beginning of the next-level POI search frame (degenerate object) category table or the first relevant data record in the frame is set because the next-level degenerate search frame file name is omitted.

- 7) According to the set content of the field of next-level data frame class, this field describes:

NXKD=3: 1 (Number of records relevant to the POI information)

NXKD=9, 10: Number of relevant records in the next-level degenerate search frame (number of category option items or matching records)

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

- 10) If the present matching data is a degenerate object of facilities, this field describes the number of hierarchies of degeneration.

Even for a representative record, the same value as set for the option (in the hierarchies of degeneration) is set. Setting examples will be described later.

- 11) 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)

12) Number of Matching Data in the next degenerate hierarchy

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

13) Number of Matching Lists in the Next Degenerated Hierarchy

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

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

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

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

16) Set this item for the records making up a representative record of degenerate method 2. Set the next-level degenerate search frame as follows:

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

or

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

17) This field describes the following depending on the setting of the next-level data frame type of degenerate method 2:

RPNK = 9: Displacement from the beginning of the matching data frame indicated by the degenerate next-level search frame to the beginning of the present matching record.

RPNK = 10: Displacement from the beginning of the matching data frame indicated by the degenerate next-level search frame to the beginning of the present matching record.

18) The number of target records (number of option records and number of matching records) in the frame subject to next-level search of degenerate method 2 is set.

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

Search key	Name of object of facilities	
NORTH NORWAY:	NORTH - NORWAY	-> 0
NORWAY NORTH:	NORTH - NORWAY	-> 3

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.

11.A.2.8.1.2.5. POI Search Matching Data Frame

name [POI Search Matching Data Frame]

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

name [POI 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	N	Area Code		c
4	4	1	B:N	Fuzzy Search Flag		a
5	5	3	B:...:B	Stored Data Flag		a
6	8	2	N	Category Code		c
7	O1	6	N:N	Latitude and Longitude		c
8	O2	1/2	N	Next-level Data Frame Class		c
9	O3	1/2	N	Next-level Data Frame Serial Number		c
10	O4	4	D	Offset to Next-level Data Frame		c
11	O5	4	N	Number of Next-level Data Frame Records		c
12	O6	1	N	Language Number		c
13	O7	B1	N:C	Character Search Key		c
14	O8	B2	N:C	Name		c
15	O9	1	N	Number of Degenerated Hierarchies		c
16	O10	1	B:...:B	Degenerated Representative Attribute		c
17	O11	4	N	Matching Degenerated Data Count		c
18	O12	4	N	Number of Matching Degenerated Lists		c
19	O13	4	D	Displacement to the End of Representative Object		c
20	O14	4	D	Displacement to the Top of Representative Object		c
21	O15	1/2	N	Degenerate Next-level Data Frame Class		c
22	O16	1/2	N	Degenerate Next-level Data Frame Serial Number		c
23	O17	4	D	Offset to Degenerate Next-level Data Frame		c
24	O18	4	N	Number of Degenerated Next-level Data Frame Records		c
25	O19	1	N	Padding Field		c

<Rules for Storing Degenerated Data >

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

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

Method in which alphabetical order search is performed from search frames of the higher-level alphabetical order step-by-step retrieval type, but not covering strings in option.

Usage	RPAT	RPLV	RPCT RPLN	RPST	RPSO	NXKD	NXFN NXST	NXCT
General record	-	-	-	-	-	(=3)		
								-
Method 1 First representative record				-		-	-	-
Method 1 Last representative record					-	-	-	-
Method 1 Option	-		-	-	-	(=3)		
Method 2 Representative		-	-	-	-	(=9)		

: Storage is optional.

(?): Indicates that the field must contain a specified setting.

For first and last representative degenerate records, degenerate records, and normal records, to implement the degeneration function, a basis of setting the data contents of the following fields is established.

No.	RPLV	RPAT	RPCT	RPLN	RPST	RPSO	CTGY	NAME	Remaining
1	0	-	-	-	-	-	2000	HALL OMNISPORTS & BASSIN D'APPRENT	
2	0	-	-	-	-	-	4180	AKADEMIE VOOR MASSAGE & BEWEGING	
3	1	First	4	-	Relation to (8)	-	1080	BIG MAMOU	
4	1		-	-	-	-	-	BIG MAMOU\ ISTIEK	
5	1		-	-	-	-	-	BIG MAMOU\ KEMPEN	
6	1		-	-	-	-	-	BIG MAMOU\ UTRECHT	
7	1	-	-	-	-	-	-	BIG MAMOU\ ZACHT	
8	1	Last	4	-	-	Relation to (3)	*	*	*
9	0		-	-	-	-	-	BADMINTON TENNIS	
10	0		-	-	-	-	-	BASILIEK	

-Representation-

-: The field contains no setting.

*: The field contains no setting (some content may be set, but is not used).

: The field contains a specified setting.

Number and string: A specified value is set, a sample value being entered in the above table.

Note: RPLV of a representative record: The number of degenerate hierarchies that exist currently is set.

Note: For a representative record, 'RPCT': The number of successive records of a same object is set.

Note: For a representative record, 'RPST' and 'RPSO': The representative object record displacements are set.

'RPST': The displacement to the top of representative record is set. 'RPSO': The displacement to the end of representative record is set.

Note: If the degenerate attribute definition is that same category code and coordinates are valid, the storage of this definition into the selective records is omitted because the same contents are self-evident.

Note: In this example, because of only a single hierarchy hierarchy, RPLN need not be set.

RPLN must be set if hierarchy of two or more hierarchies is made.

11.A.2.8.1.3. All Genre & City Selection

11.A.2.8.1.3.1. Detailed Search Information Record (All Genre & City Selection)

name [Detailed Search Information Record (all-genre & city selection)]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRHA'	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	'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 First-level Category	6)	a
13	48	4	D	Offset to First-level Category	6)	a
14	52	4	C	Keyboard Designation for 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 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

No.	offset	Data length	Data type	Item name	Remarks	Classification
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)	2)	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, 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 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). 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 describes 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 Number

Because POI information is not directly called in this example, a null value (0) is assigned.

10) Next-level Data Frame Size and Address

As the next-level search frame, the management frame of the city-specific: all-genre POI search frame is set.

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: "CITY"

11.A.2.8.1.3.2. 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		a
5	'SELN'	'NORM'	'UB'	1	-	Number of Option Items		a
6	'DCSF'	'REAL'	-	-	(3)	Option Definition Field Declaration	2)	a
7	'KYCH'	'NORM'	'UB'	1	-	Character Search Key		a
8	'NEXT'	'OFST'	'LG'	1	-	Offset to the Next Category	3)	a
9	'NTSZ'	'NORM'	'UW'	1	-	Size of the Next Category		c

- 1) If no matching data exists (the matching data count = 0), a null value is assigned.
- 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 sequence of category option records 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.2.8.1.3.3. Category Data Frame

name [POI Search (all-genre/city selection) Category Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		POI Search (all genre/city selection) Category Table		a

11.A.2.8.1.3.3.1. Category Table

name [POI Search (city selection /all-genre) Category Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		POI Search (all genre/city selection) Category Parent Record		a
2	O1	B2		A Sequence of POI Search (all genre/city selection) Category Option(child) Records		a

name [POI Search (all-genre/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	N	Number of Matching Lists		a
4	12	1	N	Number of Option Items		a
5	13	1	BR	Padding Field		c

name [POI Search (all-genre/ city selection) Category Option(child) Record]

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

11.A.2.8.1.3.4. 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	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	'MXSG'	'ACTN'	'SG'	1	-	Hybrid Search Signature	2)	a
5	'MXKY'	'ACTN'	'UL'	1	-	Hybrid Search Key	2)	a
6	'FGFZ'	'NORM'	'UB'	1	-	Fuzzy Search Flag	3)	c
7	'KYCH'	'VRBL'	'CH'	'UB'	'CMCH'	Character Search Key	5)	a
8	'STFG'	'NORM'	'UB'	1	-	Stored Data Flag		a
9	'NXKD'	'NORM'	'UH'	2(1)	-	Next-level Data Frame Class	6)	a
10	'NXFN'	'NORM'	'UH'	2(1)	-	Next-level Data Frame Serial Number	6)	a
11	'NXST'	'OFST'	'LG'	2(1)	-	Next-level Data Frame Offset	7)	a
12	'LGNO'	'NORM'	'UB'	1		Language Number	4)	c
13	'NAME'	'VRBL'	'CH'	'UB'	'CMCH'	Name (Representation Name)	5)	c
14	'RLXY'	'VRBL'	'BT'	'UH'	'CMP6'	Latitude and Longitude	8)	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 hybrid search key is set as follows:

'MXSG': 'ARCD' (Area code)

'MXKY': Area code

- 3) 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 search keys such as "character search keys" for the same facilities as the preceding record).

- 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) This field describes the city name to be displayed on the screen. #

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.'

- 6) As the next-level data frames, category tables of the selected city relevant to the city-specific: all-genre POI search are set. (NXKD=4: Next-level search frame category, NXFN=1: Detailed search information record serial number)
- 7) The displacement from the beginning of the next-level city-specific search category data frame to the beginning of the relevant city category table and the table size are set.
- 8) This field is used to display a representative point of the relevant city.

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

Note: The sequence of matching tables shall be in order of character search keys and names.

Note: In this example, the next-level data frames are city-specific POI search frames.

Note: Because the next-level search frames are defined by the number of detailed search information records = 2 in this example, two categories of the relevant city are stored in order that the city-specific POI search category precedes the city-specific genre search category (in sequence of the detailed search information records).

Note: For an element for which the next-level search frame is not defined in this data frame, the system executes the desired search with the search frames corresponding to all cities, picks up appropriate cities, and creates a list of relevant city candidates.

11.A.2.8.1.3.5. Matching Data Frame

name [POI Search (all-genre/city selection) Matching Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of POI Search (all-genre/ city selection) Matching Data Records		a

name [POI Search (all-genre/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	6	4	N	Hybrid Search Key		a
5	10	1	B:....B	Fuzzy Search Flag		c
6	11	B1	N:C	Character Search Key		a

No.	offset	Data length	Data type	Item name	Remarks	Classification
7	O1	1	B:...:B	Stored Data Flag		a
8	O2	B2	N(:N)	Next-level Data Frame Class		a
9	O3	B3	N(:N)	Next-level Data Frame Serial Number		a
10	O4	B4	D(:D)	Offset to Next-level Data Frame		a
11	O5	1	N	Language Number		c
12	O6	B5	N:C	Name (Representation Name)		c
13	O7	B6	N:N:N:N	Latitude and Longitude		c

11.A.2.8.1.4. POI Search by All-city & Genre Selection

11.A.2.8.1.4.1. Detailed Search Information Record (by All-city & Genre Selection)

name [Detailed Search Information Record (by All-city & Genre selection)]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRHG'	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	'KBGN'	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 First-level Category	6)	a
13	48	4	D	Offset to First-level Category	6)	a
14	52	4	C	Keyboard Designation for First-level Category	'KBGN'	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 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

No.	offset	Data length	Data type	Item name	Remarks	Classification
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, invalid values is assigned for 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 describes the size of the category parent record.

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

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

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

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

The Invalid values are assigned for the number of option items' and offset to first-level category'. Maximum value is assigned for the first-level category size'.

7) Size of the Record of Matching Data Frame

This field describes maximum size of the record in the target data frame since it is represented by variable length.

8) Total Number of the Records of Matching Data Frame

This field describes the total number of the records of matching 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, this field describes the address to the management frame of the genre-specific & all-city POI frame as the next-level search frame address.

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: "CATEGORY"

11.A.2.8.1.4.2. Category Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(20)	Definition Field Declaration		a
2	'JPTB'	'VRBL'	'UB'	'UW'	'G2CT'	Jump Table (category code major classification)		a
3	'SFTO'	'OFST'	'LG'	1	-	Offset to the Top of Option Record		a
4	'SFBO'	'OFST'	'LG'	1	-	Offset to the End of Option Record		a
5	'SELN'	'NORM'	'UL'	1	-	Number of Option Items		a
6	'DCSF'	'REAL'	-	-	(15)	Option Definition Field Declaration		a
7	'BFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Previous Record Forward Relation from the Top of This Record		a
8	'NFRL'	'FDRL'	'UB'	1	-	Relation to the Top of the Following Record Backward Relation from the Top of This Record		a
9	'KBTP'	'NORM'	'UB'	1	-	Top Menu Priority	1)	a
10	'MXSG'	'ACTN'	'SG'	1	-	Hybrid Search Signature	2)	a
11	'MXKY'	'ACTN'	'UW'	1	-	Hybrid Search Key	3)	a
12	'MXK2'	'ACTN'	'UW'	1	-	Hybrid Search Key 2	3)	c
13	'MXAB'	'ACTN'	'BF'	8	-	Hybrid Search Attribute	3)	a
14	'LGNO'	'NORM'	'UB'	1	-	Language Number	4)	c
15	'NAME'	'VRBL'	'MC'	'UB'	-	Name (Representation Name)	5)	a
16	'STFG'	'NORM'	'UB'	1	-	Stored Data Flag		a
17	'NXKD'	'NORM'	'UH'	2(1)	-	Next-level Data Frame Class	6)	a-c
18	'NXFN'	'NORM'	'UH'	2(1)	-	Next-level Data Frame Serial Number	6)	a-c
19	'NXST'	'OFST'	'LG'	2(1)	-	Offset to Next-level Data Frame	6)	a-c
20	'NXSZ'	'NORM'	'LG'	2(1)	-	Next-level Data Frame Size	7)	c
21	'TPNM'	'VRBL'	'MC'	'UB'	-	Top Menu Name	8)	a-c

- 1) The top menu priority is the priority of the data display with a predefined keyboard key.

All records in this data frame are uniquely assigned serial numbers starting with 1 and duplicate numbers cannot be used. (A null value = 0: null)

- 2) The following hybrid search keys can be set:

'MXSG': 'CTGY' (Category code)

'MXKY': Minimum value of category code

'MXK2': Maximum value of category code

Because of two-value specification in this example, specify the minimum and maximum values of category codes.

One-value specification is possible without specifying the MKX2 setting.

- 3) Hybrid Search Attribute

- [0]: Search zone flag
- 0: The next-level POI search in the selected genre is executed for only the objects specified by the higher-level zone search frame. (Default specification)
 - 1: The next-level POI search in the selected genre is generated to be executed for all search zones.
- [1]: Q-POI frame flag (Unused)
- 0: A frame containing the Q-POI data relevant to the selected genre does not exist. (Default specification)
 - 1: A frame containing the Q-POI data relevant to the selected genre exists.
- [2]: Single category code attribute
- 0: As the result of setting a search range with MXKY and MXK2, the category code setting is not unique (single). (Default specification)
 - 1: As the result of setting a search range with MXKY and MXK2, the category code setting is unique (single).
- [3-7]: Reserved (fixed to 0)

- 4) Character information is set as a language category.
- 5) The name field contains a name in multilingual representation 'MC.'
- 6) The next-level data frame setting is such that two category tables of the selected genre, one relevant to the genre-specific: all-city POI search, the other to the genre-specific: city selection POI search, are set as the next-level search frame category. (Either omissible)
- 7) If this field contains no setting, the application reads the next category of the maximum size calculated by the maximum size of option records.
- 8) This field describes a top menu name. If the top menu name to be displayed is the same as the content of the "name" field, it need not be set.

Note: For an element for which the next-level search frame is not defined on the last category level, the system executes the desired search with the search frames corresponding to all genres, picks up appropriate genres, and creates a list of relevant genre candidates.

Note: Because the next-level search frames are defined so as to be genre-specific search frames (the number of detailed search information records = 2) in this example, two categories of the relevant city are set in order that the genre-specific POI search category precedes the genre-specific city search category (in sequence of the detailed search information record serial numbers).

Note: In this example, the category definition can comprise two or more stages.

11.A.2.8.1.4.3. Category Data Frame

name [POI Search (by All-city & Genre Selection) Category Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		POI Search (by all-city & genre selection) Category Table		a

11.A.2.8.1.4.3.1. Category Table

name [POI Search (by All-city & Genre Selection) Category Table]

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

Note: The sequence of option (child) category records shall be in order of category code (provisional).

name [POI Search (by all-city & genre selection) Category Parent Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	Jump Table Size		a
2	2	2	N;C;CC	Jump Key (#1)		c
3	4	4	D	Offset to Jump Option Record (#1)		c
4	6	2	N;C;CC	Jump Key (#2)		c
5	8	4	D	Offset to Jump Option Record (#2)		c
				:		
6	O1	2	N;C;CC	Jump Key (#n)		c
7	O2	4	D	Offset to Jump Option Record (#n)		c
8	O3	4	D	Offset to the Top of Option Record		a
9	O4	4	D	Offset to the End of Option Record		a
10	O5	4	N	Number of Option(child) Records		a

name [POI Search (by all-city & genre selection) Category Option(child) 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	N	Top Menu Priority		a
4	3	4	C	Hybrid Search Signature		a
5	7	2	N	Hybrid Search Key		a
6	9	2	N	Hybrid Search Key 2		c
7	11	1	B:...:B	Hybrid Search Attribute		a
8	12	B1	N:D:...:D: C:...:C	Name (Representation Name)		a
9	O1	1	B:...:B	Stored Data Flag		a
10	O2	1/2	N(:N)	Next-level Data Frame Class		c
11	O3	1/2	N(:N)	Next-level Data Frame Serial Number		c
12	O4	4	D(:D)	Offset to Next-level Data Frame		c
13	O5	4	SWS(:SWS)	Next-level Data Frame Size		c
14	O6	B2	N:D:...:D: C:...:C	Top Menu Name		c
15	O7	1	BR	Padding Field		c

11.A.2.8.2. POI Search Frame (by City-specific & All-genre)

11.A.2.8.2.1. Search Frame Management Frame (POI Search by City-specific & All-genre)

This management frame is a frame for declaring a comprehensive search for all city-specific POI searches, targeting all city-specific POI search frames. This frame is specified for reference as the next-level search frame in its higher-level detailed search information record for all-genre: city selection search.

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		A Sequence of Detailed Search Information Record(s) - #1 to #2		a

11.A.2.8.2.1.1. Management Frame Header of Search Frame (POI Search by City-specific & All-genre)

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)	=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.2.8.2.2. POI Search by City-specific & All-genre

11.A.2.8.2.2.1. Detailed Search Information Record (POI Search by City-specific & All-genre)

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
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 the Option Items of First-level Category	6)	a
13	48	4	D	Offset to First-level Category	6)	a
14	52	4	C	Keyboard Designation for 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 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, invalid values are assigned for 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 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

The invalid values are assigned for the number of option items and offset of the first-level category. The maximum value is assigned for the first-level category size.

7) Size of the Record of Matching Data Frame

Because of variable-length representation, specify the maximum record size in the target data frame.

8) Total Number of the Records of Matching Data Frame

This field describes the total number of records in the Matching Data frame.

9) Default POI Serial Number

The serial number of the POI 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 specifications of the system.

ex) English: "POINT OF INTEREST"

11.A.2.8.2.2.2. Category Definition Frame

The frame structure shall be the same as the category definition frame provided for all-genre: all-city POI search.

11.A.2.8.2.2.3. Category Data Frame

The frame structure shall be the same as the category data frame provided for all-genre: all-city POI search. The data is stored into the frame for each city.

11.A.2.8.2.2.4. Matching Data Definition Frame

The frame structure shall be the same as the matching data definition frame provided for all-genre: all-city POI search.

11.A.2.8.2.2.5. Matching Data Frame

The frame structure shall be the same as the matching data frame provided for all-genre: all-city POI search. The data is stored into the frame for each city.

11.A.2.8.2.3. City-specific & Genre Selection

11.A.2.8.2.3.1. Detailed Search Information Record (by Genre Selection)

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRHG'	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	'KBGN'	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 the Option Items of First-level Category	6)	a
13	48	4	D	Offset to First-level Category	6)	a
14	52	4	C	Keyboard Designation for First-level Category	'KBGN'	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 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, invalid values are assigned for 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 describes the size of the category parent record.

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

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

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

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

The Invalid values are assigned for the number of option items and offset of the first-level category. The maximum value is assigned for the size of the first-level category.

7) Size of the Record of Matching Data Frame

Because matching data frame records do not exist in this example, a null value is assigned to this field.

8) Total Number of the Records of Matching Data Frame

Because matching data frame records do not exist in this example, a null value is assigned to this field.

9) Default POI Serial Number

Because POI is not directly called in this example, a null value (0) is assigned.

10) Next-level Data Frame Size and Address

The next-level search frame is a search frame management frame (city-specific: genre-specific) as will be provided in Section 11.A.2.8.4.1.

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: "CATEGORY"

11.A.2.8.2.3.2. Category Definition Frame

Same as the category definition frame as provided in Section 11.A.2.8.1.4.2.

However, the "number of data items" of 'NXKD,' 'NXFN,' 'NXST,' and 'NXSZ' is defined to be 1.

Note: As the next-level data frame, a category table of the selected city and genre relevant to the city-specific: genre-specific POI search is set.

Note: The sequence of category tables shall be in order of name. If, however, multilingual representation is used in category option records, the application must execute alphabetical sorting (as the alphabetical-order jump table is declared).

Note: Furthermore, because the above multilingual representation is possible, the number of any level of category option records is limited to a maximum of 200 records (provisional).

11.A.2.8.3. POI Search Frame (by Genre-specific & All-city)

This data frame is not directly referenced and specified by the data management frame. This data frame is specified for reference by its higher-level POI search frame for all cities with genre selection as provided in Section 11.A.2.8.1.4.

In consideration of data size specification, however, this frame may not be referenced and no data may be stored into this frame, according to the selected genre in the higher-level frame as provided in Section 11.A.2.8.1.4.

11.A.2.8.3.1. Search Frame Management Frame (by Genre-specific & All-city)

This management frame is a frame for declaring a comprehensive search of all genre-specific POI searches, targeting all genre-specific POI search frames and is specified for reference as the next-level search frame in its higher-level detailed search information record (for all cities with genre selection) as provided in Section 11.A.2.8.1.4.1.

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		A Sequence of Detailed Search Information Record(s) - #1 to #2		a

11.A.2.8.3.1.1. 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)	=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.2.8.3.2. POI Search by All-city & Genre-specific

11.A.2.8.3.2.1. Detailed Search Information Record (POI Search by All-city & Genre-specific)

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
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 the Option Items of First-level Category	6)	a
13	48	4	D	Offset to First-level Category	6)	a
14	52	4	C	Keyboard Designation for 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 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, 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 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

The invalid values are assigned for the number of option items and offset of the first-level category. The maximum value is assigned to the field 'first-level category size'.

- 7) Size of the Record of Matching Data Frame

Because of variable-length representation, this field describes 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 Number

The serial number of the POI 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 specifications of the system.

ex) English: "POINT OF INTEREST"

11.A.2.8.3.2.2. Category Definition Frame

The frame structure shall be the same as the category definition frame provided for all-genre all-city POI search.

11.A.2.8.3.2.3. Category Data Frame

The frame structure shall be the same as the category data frame provided for all-genre all-city POI search. The relevant data is stored into the frame for each genre.

11.A.2.8.3.2.4. Matching Data Definition Frame

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

11.A.2.8.3.2.5. Matching Data Frame

The frame structure shall be the same as the matching data frame provided for all-genre all-city POI search. The relevant data is stored into the frame for each genre.

11.A.2.8.3.3. Genre-specific & City Selection

11.A.2.8.3.3.1. Detailed Search Information Record (Genre-specific & City Selection)

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRHA'	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	'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 the Option Items of First-level Category	6)	a
13	48	4	D	Offset to First-level Category	6)	a
14	52	4	C	Keyboard Designation for 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 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, invalid values are assigned for 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 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

The invalid values are assigned for the number of option item and offset of the first-level category. The maximum value is assigned for the first-level category size.

7) Size of the Record of Matching Data Frame

Because of variable-length representation, this field describes 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 Serial Number

Because POI is not directly called in this example, a null value (0) is assigned.

10) Next-level Data Frame Size and Address

The next-level search frame is the management frame of a city-specific: genre-specific POI search frame.

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: "CITY"

11.A.2.8.3.3.2. Category Definition Frame

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

11.A.2.8.3.3.3. Category Data Frame

The frame structure shall be the same as the all-genre city-selection category data frame. The frame is created for each of the relevant genres.

11.A.2.8.3.3.4. Matching Data Definition Frame

Same as the matching data definition frame provided for all-genre city-selection POI search.

However, the "number of data items" of 'NXKD,' 'NXFN,' 'NXST,' and 'NXSZ' is defined to be 1.

Note: The next-level data frame setting is such that a category table of the selected city relevant to the city-specific: all-genre POI search is set as the next-level search frame category.

Note: The sequence of matching tables shall be in order of character search keys.

11.A.2.8.3.3.5. Matching Data Frame

The frame structure shall be the same as the matching data frame provided for all-genre city-selection POI search. The frame is created for each of the relevant genres.

However, the "number of data items" of 'NXKD,' 'NXFN,' 'NXST,' and 'NXSZ' is defined to be 1.

11.A.2.8.4. POI Search Frame (city-specific & genre-specific)

This data frame is not directly referenced and specified by the data management frame. This data frame is specified by its higher-level frame for city-specific genre-selection search or for genre-specific city-selection search.

11.A.2.8.4.1. Management Frame of Search Frame (city-specific & genre-specific)

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.2.8.4.1.1. Search Frame - Management Frame Header

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.2.8.4.2. POI Search by City-specific & Genre-specific

11.A.2.8.4.2.1. Detailed Search Information Record (POI Search by City-specific & Genre-specific)

name [Detailed Search Information Record (city-specific: genre-specific POI Search)]

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
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 the 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	'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 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(#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, invalid values are assigned for 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 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

The invalid values are assigned for the number of option items and offset of the first-level category. The maximum value is assigned for the first-level category size.

7) Size of the Record of Matching Data Frame

Because of variable-length representation, this field describes 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 Serial Number

The serial number of the POI 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 specifications of the system.

ex) English: "POINT OF INTEREST"

11.A.2.8.4.2.2. Category Definition Frame

The frame structure shall be the same as the category definition frame provided for all-genre all-city POI search.

11.A.2.8.4.2.3. Category Data Frame

The frame structure shall be the same as the category data frame provided for all-genre all-city POI search. The data is stored into the frame for each city of the selected genre.

11.A.2.8.4.2.4. Matching Data Definition Frame

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

11.A.2.8.4.2.5. Matching Data Frame

The frame structure shall be the same as the matching data frame provided for all-genre all-city POI search. The data is stored into the frame for each city of the selected genre.

11.A.2.8.5. POI Search Frame (degenerate object)

This frame is for executing the POI search by object name of facilities after a representative degenerate object is searched and selected by the higher-level POI search.

11.A.2.8.5.1. Hierarchical Search (Practical Example 1)

11.A.2.8.5.1.1. 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.2.8.5.1.2. 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	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	'NORM'	a
9	32	4	SWS	Category Parent Record Size	4)	a
10	36	4	SWS	Category Option Record Size	5)	a

No.	offset	Data length	Data type	Item name	Remarks	Classification
11	40	4	SWS	First-level Category 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
14	52	4	C	Keyboard Designation for 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	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 Records of Matching Data Frame	8)	a
21	80	4	N	Default POI 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, invalid values are assigned for 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 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

The invalid values are assigned for the number of option items and offset of the first-level category. The maximum value is assigned for the first-level category size.

7) Size of the Record of Matching Data Frame

Because of variable-length representation, this field describes 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 Number

The serial number of the POI 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 specifications of the system.

ex) English: "POINT OF INTEREST"

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 applies (for all-city/city-specific), the data frame can be set up to make a list display.

11.A.2.8.5.1.3. Category Definition Frame (Creation of the Frame is optional.)

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(7)	Definition Field Declaration		a
2	'SELN'	'NORM'	'UL'	1	-	Number of Option Items		a
3	'DCSF'	'REAL'	-	-	(5)	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	-	Next-level Data Frame Offset	2)	a
7	'LGNO'	'NORM'	UB	1	-	Language Number	3)	c
8	'NAME'	'VRBL'	'CH'	'UB'	-	Name	4)	a

1) As the next-level search frame class, either the next category or matching data frame can be set.

In either case, the next-level search frame serial number is set to 0: a null value.

2) The displacement from the beginning of the next-level search frame to the beginning of the relevant category table or record (category or matching data) is set.

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 set to identify a city (city name) relevant to the matching data.

Note: Multiple levels of category tables can be set up.

11.A.2.8.5.1.4. Category Data Frame

name [POI Search (hierarchical degeneration) Category Data Frame]

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

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

name [POI Search (hierarchical degeneration) Category Parent Record]

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

name [POI Search (hierarchical degeneration) Category Option(child) Record]

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		a
4	5	1	N	Language Number		c
5	O1	B1	N:C	Name		a

11.A.2.8.5.1.5. Matching Data Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(8)	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-c
5	'ARCD'	'NORM'	'UL'	1	-	Area Code	3)	a
6	'CTGY'	'NORM'	'UW'	1	-	Category Code	4)	c
7	'LGNO'	'NORM'	'UB'	1	-	Language Number	5)	c
8	'NAME'	'VRBL'	'CH'	'UB'	-	Name (Representation Name)	6)	a
9	'POIO'	'OFST'	'LG'	1	-	Offset to POI	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 describes the coordinates defined in 3 bytes x 2 = 6 bytes (tail extension bytes of PID format are omitted).

- 3) The area code of the relevant object is set.
- 4) The category code is set. For the object to which no category code is assigned, a null value (0) is assigned.
- 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) Name is used for screen display.

- 7) The displacement from the beginning of the present POI data frame to the POI record is set.

Note: The sequence of matching tables shall be in order of area code, category code, and character search key (provisional).

11.A.2.8.5.1.6. Matching Data Frame

name [POI Search (hierarchical degeneration) Matching Data Frame]

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

name [POI 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		c
4	8	4	N	Area Code		a
5	12	2	N	Category Code		c
6	14	1	N	Language Number		c
7	15	B1	N:C	Name (Representation Name)		a
8	O1	4	D	Offset to POI		a
9	O2	1	BR	Padding Field		c

11.A.2.8.5.2. Alphabetical Order Search (Practical Example 2)

11.A.2.8.5.2.1. 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.2.8.5.2.1.1. 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.2.8.5.2.2. Detailed Search Information Record

name [Detailed Search Information (alphabetical order degeneration)]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'SRNR'	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	'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 the Option Items of First-level Category	6)	a
13	48	4	D	Offset to First-level Category	6)	a
14	52	4	C	Keyboard Designation for 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

No.	offset	Data length	Data type	Item name	Remarks	Classification
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 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, invalid values are assigned for 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 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

The invalid values are assigned for the number of option items and offset of the first-level category. The maximum value is assigned for the first-level category size.

7) Size of the Record of Matching Data Frame

Because of variable-length representation, this field describes 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 Serial Number

The serial number of the POI 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 specifications of the system.

ex) English: "POINT OF INTEREST"

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 applies (for all-city/city-specific), the data frame can be set up to make a list display.

11.A.2.8.5.2.3. 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	-	Next Category Size	4)	c

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

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

11.A.2.8.5.2.4. Category Data Frame

name [POI Search (alphabetical order degeneration) Category Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		POI Search (alphabetical order degeneration) Category Table		a

11.A.2.8.5.2.4.1. Category Table

name [POI Search (alphabetical order degeneration) Category Table]

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

name [POI Search (alphabetical order degeneration) Category Parent Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	D	Offset to 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	Padding Field		c

name [POI Search (alphabetical order degeneration) Category Option(child) 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-level Category		a
3	5	2	SWS	Next-level Category Size		a
4	7	1	BR	Padding Field		c

11.A.2.8.5.2.5. Matching Data Definition Frame

No.	Usage	Description type	Description type declaration	Number of data items	Additional information	Comment	Remarks	Classification
1	'DCTF'	'REAL'	-	-	(9)	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	'CTGY'	'NORM'	'UW'	1	-	Category Code	3)	c
7	'KYCH'	'VRBL'	'CH'	'UB'	'CMCH'	Character Search Key	4)	a
8	'LGNO'	'NORM'	'UB'	1	-	Language Number	5)	c
9	'NAME'	'VRBL'	'CH'	'UB'	'CMCH'	Name (Representation Name)	4)	c
10	'POIO'	'OFST'	'LG'	1	-	Offset to POI	6)	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) This field is used for sorting in order of distance.

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

- 3) The category code is set. For the object to which no category code is assigned, a null value (0) is assigned.

- 4) 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.'
- 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) The displacement from the beginning of the present POI data frame to the POI record is set.

11.A.2.8.5.2.6. Matching Data Frame

name [POI Search (alphabetical order degeneration) Matching Data Frame]

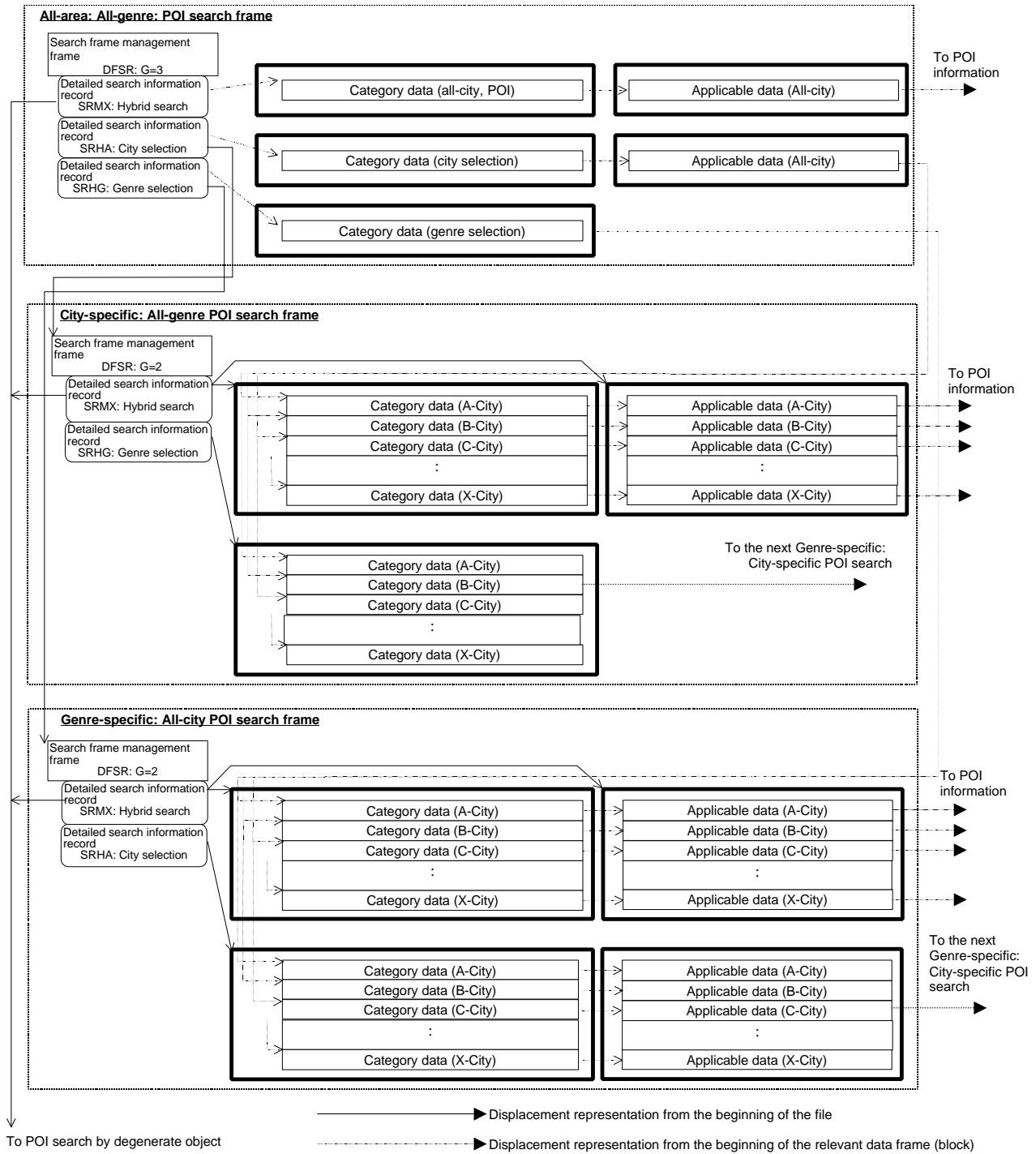
No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		POI Search (alphabetical order degeneration) Matching Record		a

Note: The sequence of matching tables shall be in order of character search key and name (provisional).

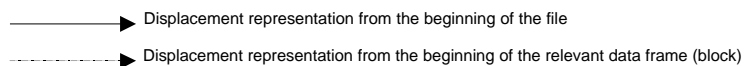
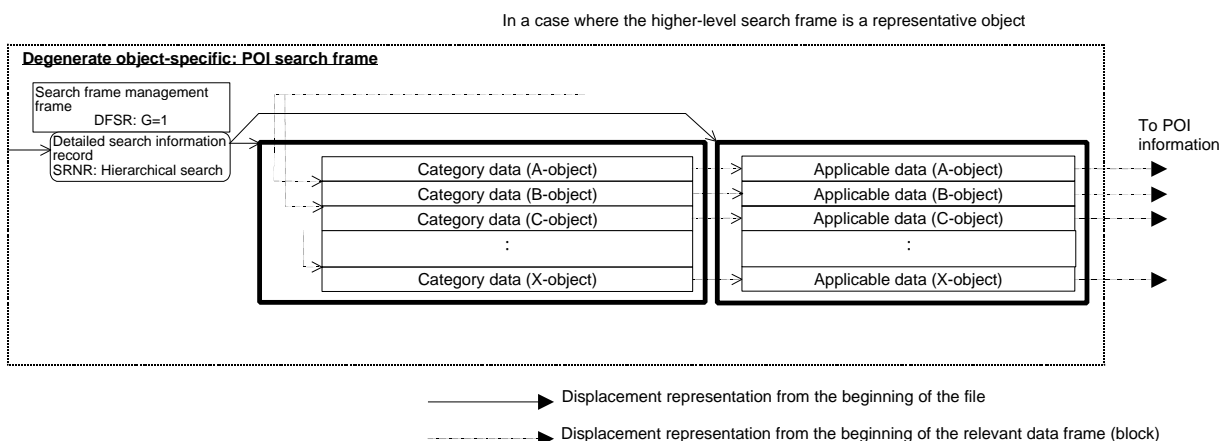
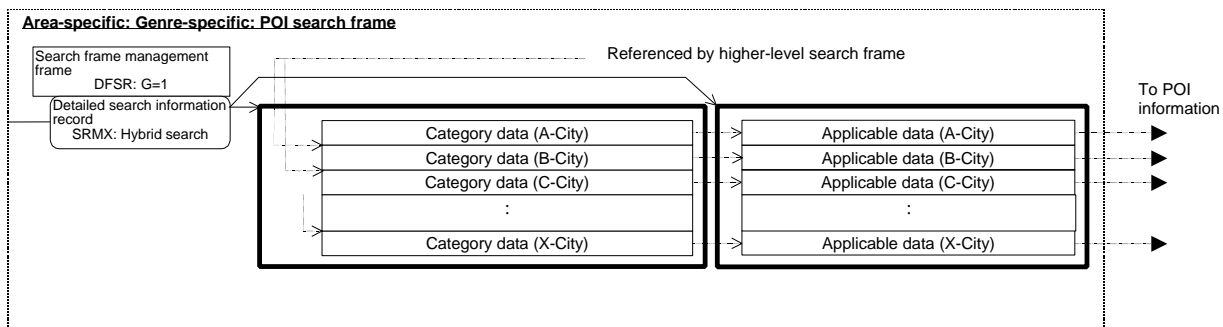
name [POI Search (alphabetical order degeneration) Matching Record]

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	2	N	Category Code		c
6	O1	B1	N:C	Character Search Key		a
7	O2	1	N	Language Number		c
8	O3	B2	N:C	Name (Representation Name)		c
9	O4	4	D	Offset to POI		a
10	O5	1	BR	Padding Field		c

11.A.2.8.6. POI Search Overall Structure



Search Frame Structure of POI Search



POI Search Frame Structure