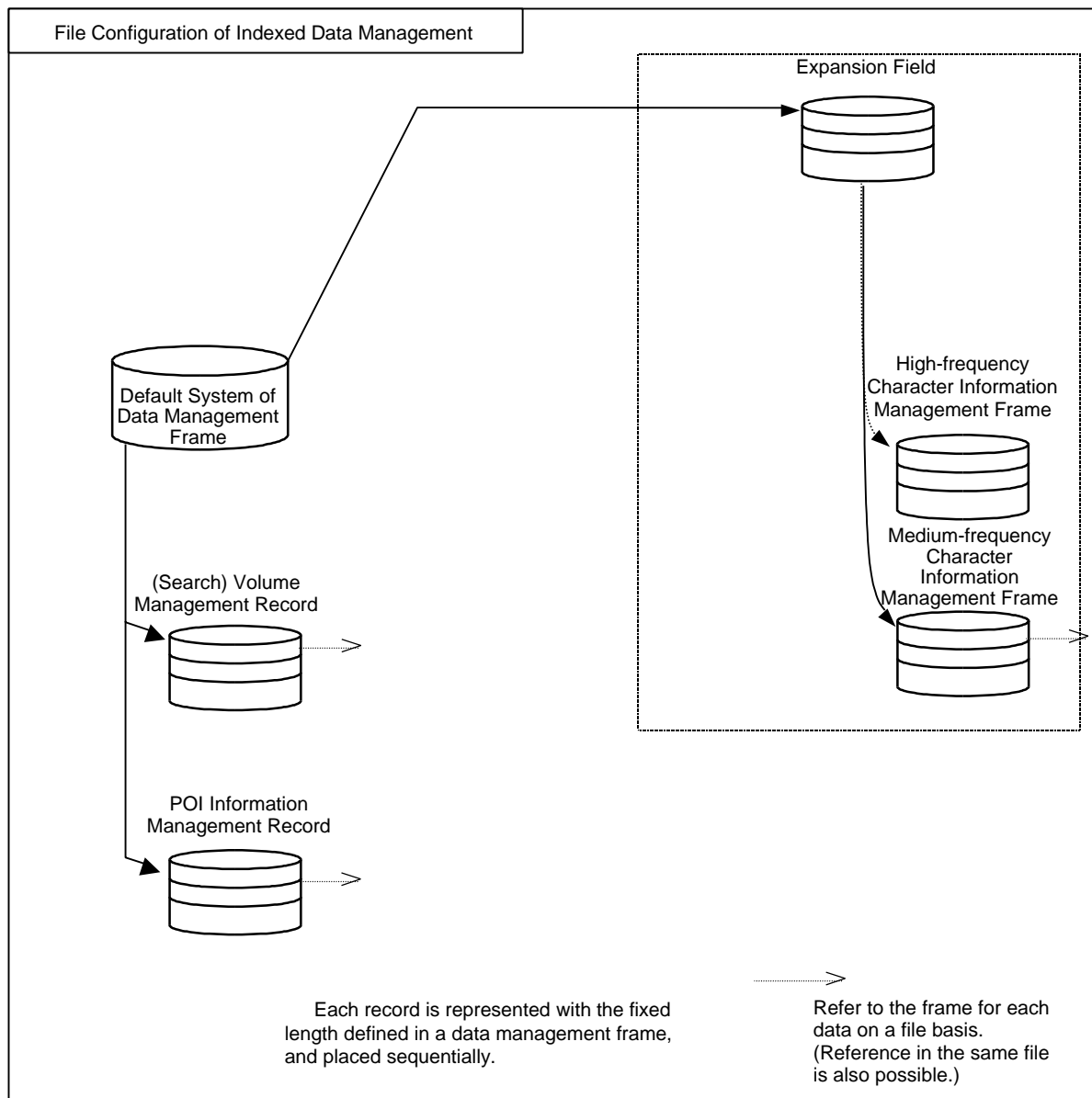


11.A.2.1 Indexed Data Management Frame



Configuration Diagram of Indexed Data Management File

11.A.2.1.1 Data Management Block

name [Data Management Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	L0		Data Management Frame Header	1)	a
2	L0	Lx		User Field (defined by Metadata)		c
3	O1	$L1 \times (M + \alpha)$		Volume Management Record(s) (#1 to #M + α)	2)	a
4	O2	$L2 \times N$		POI Information Management Record(s) (#1 to #N)	3)	a
5	O3			Expansion Field		c

- 1) The description for the data management frame must be fixed.
- 2) The volume management record and POI information management record have fixed record length. The size (L1) is described in the "Data management frame header."

α is the number of volumes managed by the detailed volume management.

- 3) The size of a POI information management record is described in the "Data management frame header."

Offset O1 = L0 + Lx

O2 = L0 + Lx + L1 * (M + α)

O3 = L0 + Lx + L1 * (M + α) + L2 * N

11.A.2.1.1 Data Management Header

name [Data Management Header]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'DCTR'	a
2	4	8	C	Data Format Version	1)	a
3	12	8	BCD	Data Creation Date	2)	a
4	20	32	C	Copyright	3)	a
5	52	4	SWS	User Field Size(defined by Metadata)	4)	a
6	56	4	D	Offset to User Field (defined by Metadata)	4)	a
7	60	4	SWS	Expansion Field Size	5)	a
8	64	4	D	Offset to Expansion Filed	5)	a
9	68	4	N	Number of Volume Management Records	= M	a
10	72	4	SWS	Volume Management Record Size (one record)	= L1	a
11	76	4	D	Offset to the Top of Volume Management Record	(= O1)	a
12	80	4	N	Number of POI Information Management Records	= N	a
13	84	4	SWS	POI Information Management Record Size (one record)	= L2	a
14	88	4	D	Offset to the Top of Volume Management Record		a
15	92	B1		Character Information Data List for Title Display	6)	a

- 1) The version of a data format is represented as an initial value '1.00????' using ASCII characters. The integer section represents a version number and the second decimal place indicates a revision number. The third and the following digits are represented freely by the data creator. For example: 1.00a, 1.00b, 1.000001, 1.00IPC, etc.

- 2) The date of data creation is represented as YYYYMMDDhhmmssss by using the BCD code.

Examples:

November 7, 1998, 15 hr. 14 min. 30.02 sec.: 0x1998110715143002

September 15, 2001, 0 hr. 0 min. 0.00 sec.: 0x2001091500000000

The time is represented by the 24-hour method.

- 3) Copyright

This is represented by ASCII characters.

Example: "KIWI CORPORATION" (Does not include double quotation marks ("").)

- 4) User Field

These fields describe the information required for managing a search or POI information storing by converting it to metadata. The user field is used to supply search data or POIs (regardless of cartographic data) from the outside. If the latitude/longitude resolution is different from the cartographic data or the corresponding language, always describe the details. The offset to the user field stores the displacement to the beginning of the user field (explained in Subsection 11.A.2.1.4) from the beginning of the data management frame. If a setting is not provided, the field will store an invalid value.

- 5) Expansion Field Size and Offset

These fields describe the extended data for the expansion management frame. If the expansion field is set, the offset will store the displacement from the beginning of the data management frame to the beginning of the expansion field. If a setting is not provided, the field will store an invalid value.

- 6) Character Information Data List for Title Display

A POI information name is used to display names for each POI information to verify detailed data. The number of languages defined in the metadata is described in the order defined in the metadata. The method of description conforms to the volume management record used for step-by-step type retrieval as described in "13) Representation items - character information data list" of Subsection 11.2.2.

Examples: US POI SEARCH, EU POI SEARCH, ... The creator needs to set the POI name.

11.A.2.1.2 Volume Management Record

11.A.2.1.2.1 Volume Management Record (used for step-by-step type retrieval)

name [Volume Management Record (used for step-by-step type retrieval)]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	1)	a
2	4	4	C	Search Function Declaration	1)	a
3	8	4	C	Address Description Declaration	2)	a
4	12	4	SWS	Expansion Field Size	3)	a
5	16	4	D	Offset to Expansion Field	3)	a
6	20	4	C	Default Keyboard Designation	4)	a
7	24	8	PID	Coverage Area; Minimum Latitude/Longitude	5)	a
8	32	8	PID	Coverage Area; Maximum Latitude/Longitude	5)	a
9	40	4	SWS	Size of Search Frame Management Frame		a
10	44	4	D	Search Frame Management Frame Address	7)	a

11	48	B1		Character Information Data List for Representation Items	6)	a
12	O1	B2		Address to Management Frame of Additional Search Frame	7)	c
13	O2	B3		Expansion Field		c
14	O3	B4		Padding Field		c

Note: Positions of items 12 and 13 are optional in a volume management record because their areas can be determined by items 5 and 10. However, items 12 to 14 must satisfy the volume management record size specified in the higher-level data management frame.

1) Data Declaration and Search Function Declaration

The following definition is used in this document.

Data declaration	Search function declaration	Associated volume
'DSRC'	'FSLZ'	Zone Selection
'DSRC'	'FSAD'	Street Address Search
'DSRC'	-	Genre Search
'DSRC'	'FITS'	Intersection Search
'DSBT'	'FSIS'	Intersection Search (B-Tree type)
'DSRC'	'FFRW'	Freeway Search
'DSRC'	'FP0I'	POI Search
'DSRC'	'FARG'	Q-POI Genre Search
'DSRC'	'FAGE'	Q-POI Genre Search (Emergency)
'DFSM'	'FMES'	Mesh Search
'DFSM'	'FWM1'	Wide-boundary Mesh Search 1
'DFSM'	'FWM2'	Wide-boundary Mesh Search 2
'DFSM'	'FWM3'	Wide-boundary Mesh Search 3
'DFSM'	'FMNC'	Surrounding City Mesh Search
'DSZP'	'FZIP'	Zip Code Search
'DSBT'	'FTEL'	Telephone Number Search

2) Address Description Declaration

This example uses or sets 'FNME' (filename and offset specification).

3) Expansion Field Size and Offset

The offset to the expansion field stores the displacement from the beginning of the data management frame to the beginning of the expansion field. If no expansion field is provided, specify invalid values as the size and offset.

4) Default Keyboard Designation

'NORM': Sets the ordinary representation.

5) Coverage Area

The latitude and longitude cover the south-west end point as a minimum and the north-east end point as a maximum. They are represented by the PID format.

6) Setting the Entire Indexed Data Name

Example: 'POI_SEARCH'

7) Addresses Representation

The addresses are represented by the following formats for FNME. 'Additional*** address' is necessary.

name [Address]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1				:		c
2		4	D	*** Address		a
3				:		c
4		B1		Additional *** Address		c
5				:		c

For the details of data declaration and the details of Nos. 2 and 4 accompanying to this declaration, set the following according to items 1) and 6) about the address description declaration.

a) Describe a filename and offset

(No. 2) Describe the displacement from the beginning of the data frame to the beginning of "Additional*** address" in No. 4.

(No. 4) For further details, refer to the following "name [Additional*** address]."

name [Additional*** Address]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	D	Offset to ***	7-1)	a
2	4	2	SWS	Data Name - Size	7-2)	a
3	6	B1	C	Data Name	7-3)	c

Describe a filename and offset

7-1) Offset to ***

Describe the displacement from the beginning of the target file to the target data frame.

7-2) Size of a Data Name

Describe the size of a target filename which stores the target data frame.

7-3) Data Name

Describe the filename which stores the target data frame. However, if the filename size is an odd number, this field is padded with NULL.

11.A.2.1.2.2 Volume Management Record (used for direct input type retrieval)

name [Volume Management Record (used for direct input type retrieval)]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'DVCR'	a

2	4	4	C	Management Purpose Declaration	1)	a
3	8	4	C	Address Description Declaration	'OFST'	a
4	12	4	SWS	Expansion Field Size	0	a
5	16	4	D	Offset to the Expansion Field	NULL	a
6	20	16		(Reserved)		b
7	36	4	N	Number of Volume Management Records	2)	a
8	40	4	SWS	Size of Volume Management Record (of one record)	3)	a
9	44	4	D	Address to the Top of the Volume Management Records	4)	a
10	48	B1		Character Information Data List for Representation Item	5)	a
11	O1	B2		Address to the Top of the Target Frame referred by Additional Volume Management Record	4)	c
12	O2	B3		Expansion Field		c
13	O3	B4		Padding Field		c

Note: Positions of items 11 and 12 are optional in a volume management record because their areas can be determined by items 5 and 9. However, items 11 to 13 must satisfy the volume management record size specified in the higher-level data management frame.

1) Management Purpose Declaration

The use of a managed volume is declared with a signature. To manage the emergency search volume created for each genre, describe 'DSEM'.

2) Number of Volume Management Records

This information is only described for direct input type retrieval. The number of volume management records managed on the next level is specified. This enables more volumes to be managed on the next table.

3) Volume Management Record Size

The size of a single record of the volume management records managed by this frame is described.

4) In this example, since the address description declaration is OFST, the displacement to the beginning of the volume management record on the next level is set in item 9, and the content of item 11 is not set.

5) Describe the entire name of search volumes to be managed

Example: 'CATEGORY SEARCH'

11.A.2.1.3 POI Information Management Record

name [POI Information Management Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	'PINR' etc. 1)	a
2	4	4	C	POI Information Type Declaration	7)	a
3	8	4	C	Address Description Declaration	2)	a
4	12	4	SWS	Expansion Field Size	3)	a
5	16	4	D	Offset to the Expansion Field	3)	a
6	20	4	BR	(Reserved)		b
7	24	8	PID	Coverage Area; Minimum Latitude/Longitude	4)	a
8	32	8	PID	Coverage Area; Maximum Latitude/Longitude	4)	a
9	40	4	SWS	Size of Management Frame of POI Information Frame		a
10	44	4	D	Address to Management Frame of POI Information Frame	5)	a
11	48	B1		Character Information Data List for POI Information Name	6)	a
12	O1	B2		Address to Management Frame of Additional POI Information Frame	5)	c
13	O2	B3		Expansion Field		c
14	O3	B4		Padding Field		c

Note: Positions of items 12 and 13 are optional in a volume management record because their areas can be determined by items 5 and 10. However, items 12 to 14 must satisfy the POI information management record size specified in the higher-level data management frame.

1) Data Declaration

This is set at 'PINR' = 'Point of Interest (NoRmal)' in this example.

2) Address Description Declaration

The descriptive method of an address is specified with the signature. In this example, the declaration is set at "FNME": Specifying filenames and offset."

3) Expansion Field Size and Offset

In this example, "invalid value: NULL=0" is set because the definition is not given.

4) Coverage Area

The latitude and longitude cover the south-west end point as a minimum and the north-east end point as a maximum. They are represented by the PID format. The standard latitude/longitude for the mesh numbers are set especially for a surrounding search volume.

5) Address Representation

The method of representation conforms to the 'FNME' type as described in Subsection 11.A.2.1.2 7) "Address representation."

6) Character Information Data List for POI Information Name

The POI information name is used to display (or verify the details of data) for each POI information. (In most cases, the representation items in the volume management are used for displaying a name.) The corresponding number of languages defined in metadata is described. The sequence of descriptions is in order of metadata definition. The method of description conforms to the volume management record used for step-by-step type retrieval as described in Subsection 11.2.2 13) "Representation items - character information data list."

Examples: POI INFORMATION, FREEWAY INFORMATION , etc. The creator can set an optional name.

7) POI Information Type Declaration

Describe as follows:

- a) POI information (normal) 'PKNR' = 'Point of interest Kind NoRmal'
- b) PIO information (address) 'PKSA' = 'Point of interest Kind Street Address'
- c) POI information (intersection) 'PKIT' = 'Point of interest Kind Inter Section'
- d) POI information (freeway) 'PKFW' = 'Point of interest Kind Free Way'
- e) POI information (zip code) 'PKPC' = 'Point of interest Kind Post Code'

11.A.2.1.4 Expansion Field

11.A.2.1.4.1 Management Frame of Expansion Field

name [Management Frame of Expansion Field]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration (= 'DFDA')	1)	a
2	4	8	C	(Reserved (NULL=0.))		a
3	12	4	N	Number of Individual Expansion Definitions	2)	a
4	16			A Sequence of Individual Expansion Field Management Records		

1) Data Declaration

Describe 'DFDA'='Define For Dependable Area' for the user field declaration.

2) Describes the number of definitions for an individual user field as the 'N' type.

Describes the number of existing definitions.

11.A.2.1.4.1.1 Individual Expansion Field Management Record

name [Individual Expansion Field Management Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	1)	a
2	4	12	MID	Manufacturer Identification Information	4)	a
3	16	4	SWS	Size of Individual Expansion Field Management	2)	a
4	20	4	C	Address to Individual Expansion Field (Address Description Declaration)	3)	a
5	24	1	N	Address to Individual Expansion Field (Number of Data Name Characters)	3)	a

6	25	B1	C	Address to Individual Expansion Field (Data Name)	3)	a
7	O1	4	D	Address to Individual Expansion Field (Offset)	3)	a
8	O2	1;2;3	BR	Padding Field		c

Note: Allocate a four-byte boundary for item 7.

- 1) Describe the data declaration for an individual expansion field. In the current step, the following is defined:

Character information frame = 'DFCF' (Define for Character Frame)

- 2) Management Frame Size of Individual Expansion Field

This field describes the management frame size of the target individual expansion field (**).

- 3) Represent the address of an individual expansion field as the format "'FNME' = filename and offset." In this example, the displacement from the beginning of the retrieval data management file (corresponding file) to the beginning of the target individual expansion field is set.
- 4) This field describes the manufacturer identification information.

11.A.2.1.4.2 Character Information - Management Frame

name [Character Information Management Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration (= 'DFCF')	1)	a
2	4	8	C	(Reserved (NULL=0.))		a
3	12	4	N	Number of Character Information Management Records		a
4	16			A Sequence of Character Information Management Records	2)	a

- 1) Data Declaration

Describe the data declaration='DFCF' for this frame.

- 2) Describe the number of definitions for the element-specific character information management record as the 'N' type.

11.A.2.1.4.2.1 Character Information Management Record

name [Character Information Management Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	1)	a
2	4	4	SWS	Size of Element-specific Character Information Management Frame	2)	a
3	8	4	C	Address to the Element-specific Character Information Management Frame (Address Description Declaration)	3)	a
4	12	1	N	Address to the Element-specific Character Information Management Frame (Number of Data Name Characters)	3)	a
5	13	B1	C	Address to the Element-specific Character Information Management Frame (Data Name)	3)	a

6	O1	4	D	Address to the Element-specific Character Information Management Frame (Offset)	3)	a
7	O2	1;2;3	BR	Padding Field		c
8	O2	48	BR	(Reserved)		a

Note: Allocate a four-byte boundary for item 7.

- 1) Describe the data declaration of a character information management record.

Describe the element-specific character information declaration as a declaration. The following table shows the definition examples for each language.

Data declaration	Target element-specific character information management frame
'DFC1'	Metadefinition No. 1 (Language No. 1: English (US))
'DFC2'	Metadefinition No. 2 (Language No. 2: French)
'DFC3'	Matadefinition No.3 (Language No. 3: German)
'DFC4'	Matadefinition No. 4 (Language No. 4: Spanish)
'DFC5'	Matadefinition No. 5 (Language No. 5: English (UK))
'DFC6'	Matadefinition No. 6 (Language No. 6: Italian)
'DFC7'	Matadefinition No. 7 (Language No. 7: Dutch)

A character at the end of the data declaration is defined as the sequence number for the element-specific character information frame. Sequence numbers are represented with 1-9 and A-Z.

- 2) Size of the Target Element-specific Character Information Management Frame

This field describes the size of the target element-specific character information management frame.

- 3) Represent the address of an individual expansion field as the format "'FNME = filename and offset.'" In this example, the displacement from the beginning of the retrieval data management file (corresponding file) to the beginning of the element-specific character information management frame (created for each language) is set.

11.A.2.1.4.3 Element-specific Character Information Management Frame

name [Element-specific Character Information Management Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration (= 'DFC1' to 'DFC7')	1)	a
2	4	8	C	(Reserved (NULL=0))		a
3	12	4	N	Number of Element-specific Character Information Management Records		a
4	16			A Sequence of Character Information Management Records	2)	a

- 1) Data Declaration

Describes a language number at the end of data declaration = 'DFC1' to 'DFC7' in this frame.

- 2) Describe the number of definitions for an element-specific character information management record as the 'N' type.

11.A.2.1.4.3.1 Character Information Management Record

name [Character Information Management Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	C	Data Declaration	1)	a
2	4	4	SWS	Size of Element-specific Character Information Management Frame	2)	a
3	8	4	C	Address to the Element-specific Character Information Frame Management Frame (Address Description Declaration)	3)	a
4	12	1	N	Address to the Element-specific Character Information Frame Management Frame (Number of Data Name Characters)	3)	a
5	13	B1	C	Address to the Element-specific Character Information Frame Management Frame (Data name)	3)	a
6	O1	4	D	Address to the Element-specific Character Information Frame Management Frame (Offset)	3)	a
7	O2	1;2;3	BR	Padding Field		c
8	O2	48	BR	Reserved		a

Note: Allocate a four-byte boundary for item 7.

- 1) Describe the data declaration of a character information management record.

Describe the element-specific character information declaration as a declaration. The following table shows the definition examples for each language.

Data declaration	Target frame
'DFH1'	High-frequency Character Information Frame 1
:	:
'DFHF'	High-frequency Character Information Frame 16
'DFM0'	Medium-frequency Character Information Frame 0
:	:
'DFM3'	Medium-frequency Character Information Frame 3

- 2) Size of the Element-specific Character Information Frame Management Frame

Describes the size of the target element-specific character information frame management frame.

- 3) The address to the element-specific character information frame management frame is represented by the "FNME'=filename and offset" format. In this example, a filename set for each language and frame (medium-frequency character information frame) is used.