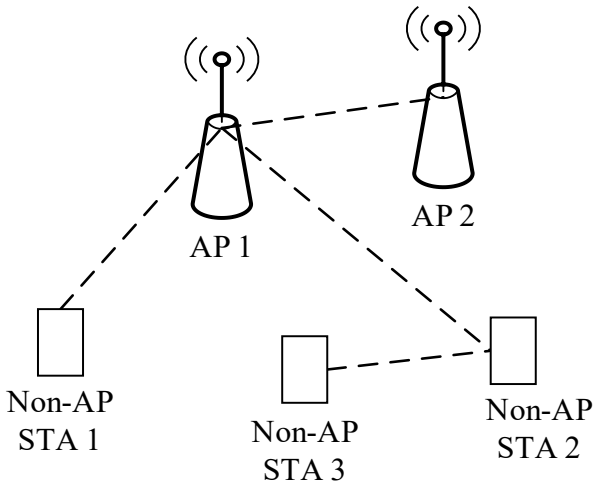
AP 1
AP 2
Non-AP
STA 1
Non-AP
STA 3
Non-AP
STA 2

FIG. 1

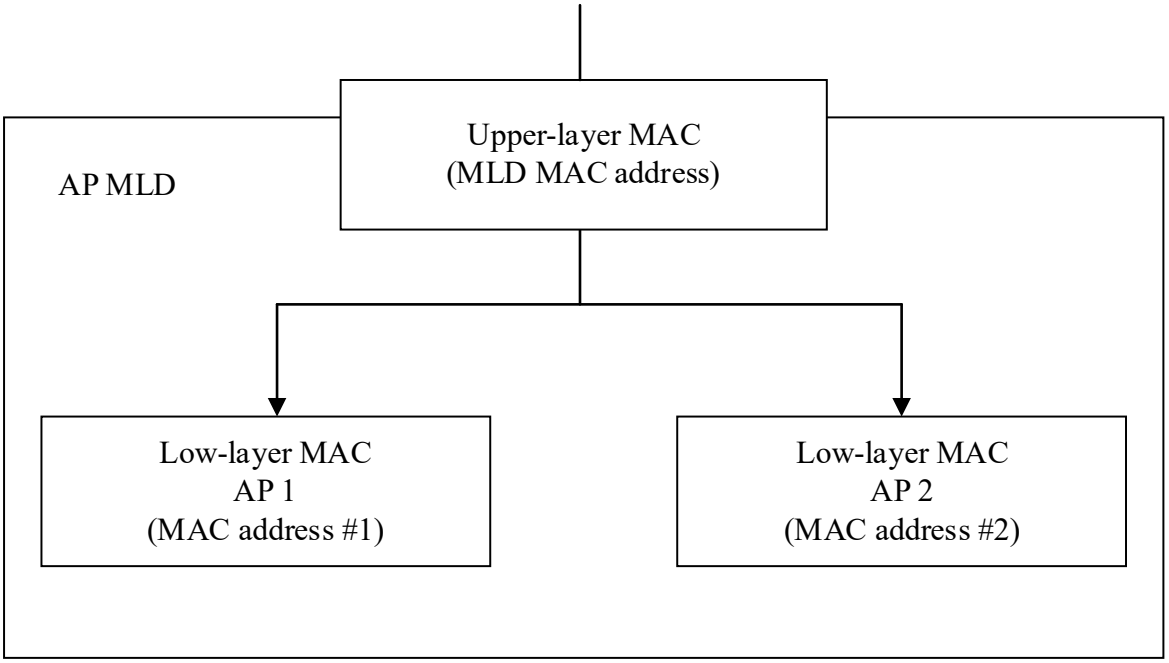
AP MLD
Upper-layer MAC
(MLD MAC address)
Low-layer MAC
AP 1
(MAC address #1)
Low-layer MAC
AP 2
(MAC address #2)

FIG. 2

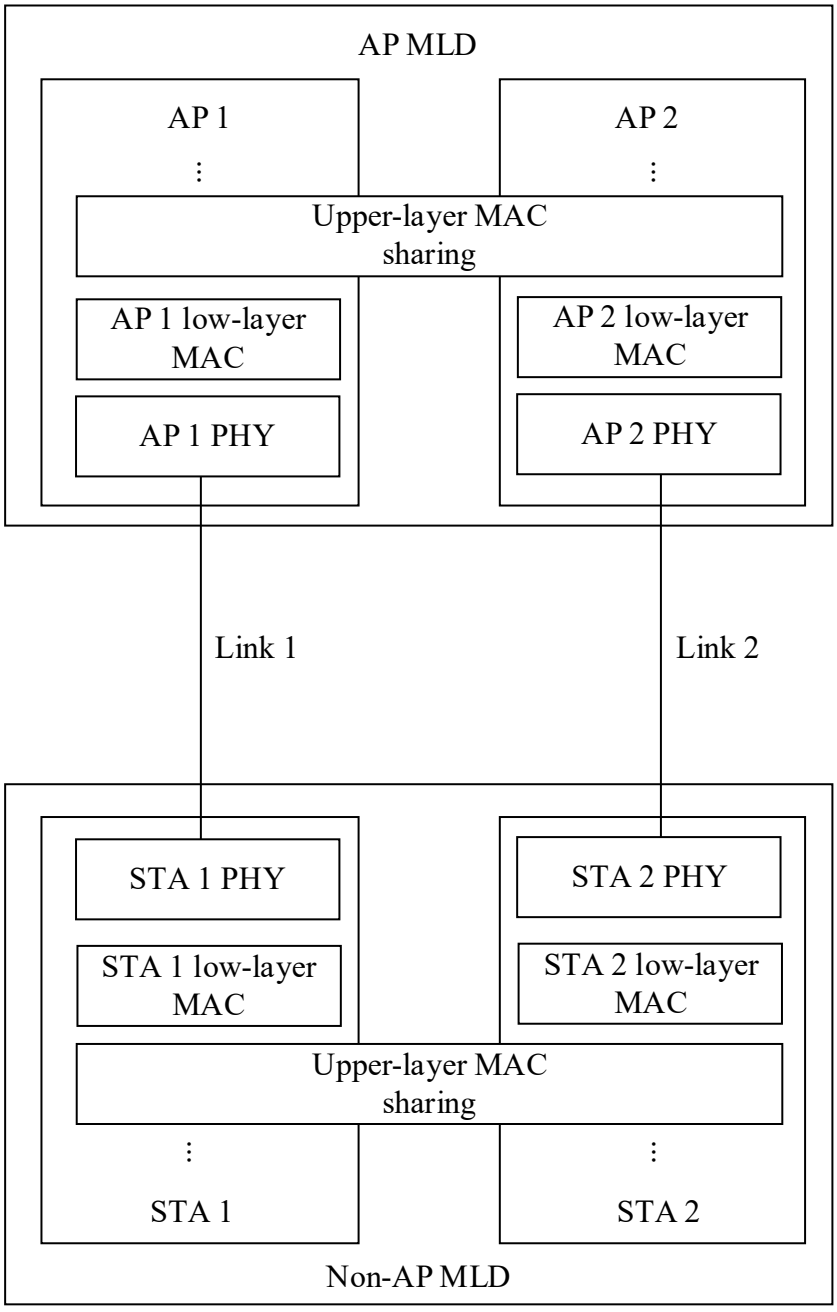
AP MLD
AP 1
AP 2
Upper-layer MAC sharing
AP 1 low-layer MAC
AP 2 low-layer MAC
AP 1 PHY
AP 2 PHY
Link 1
Link 2
STA 1 PHY
STA 2 PHY
STA 1 low-layer MAC
STA 2 low-layer MAC
Upper-layer MAC sharing
STA 1
STA 2
Non-AP MLD

FIG. 3

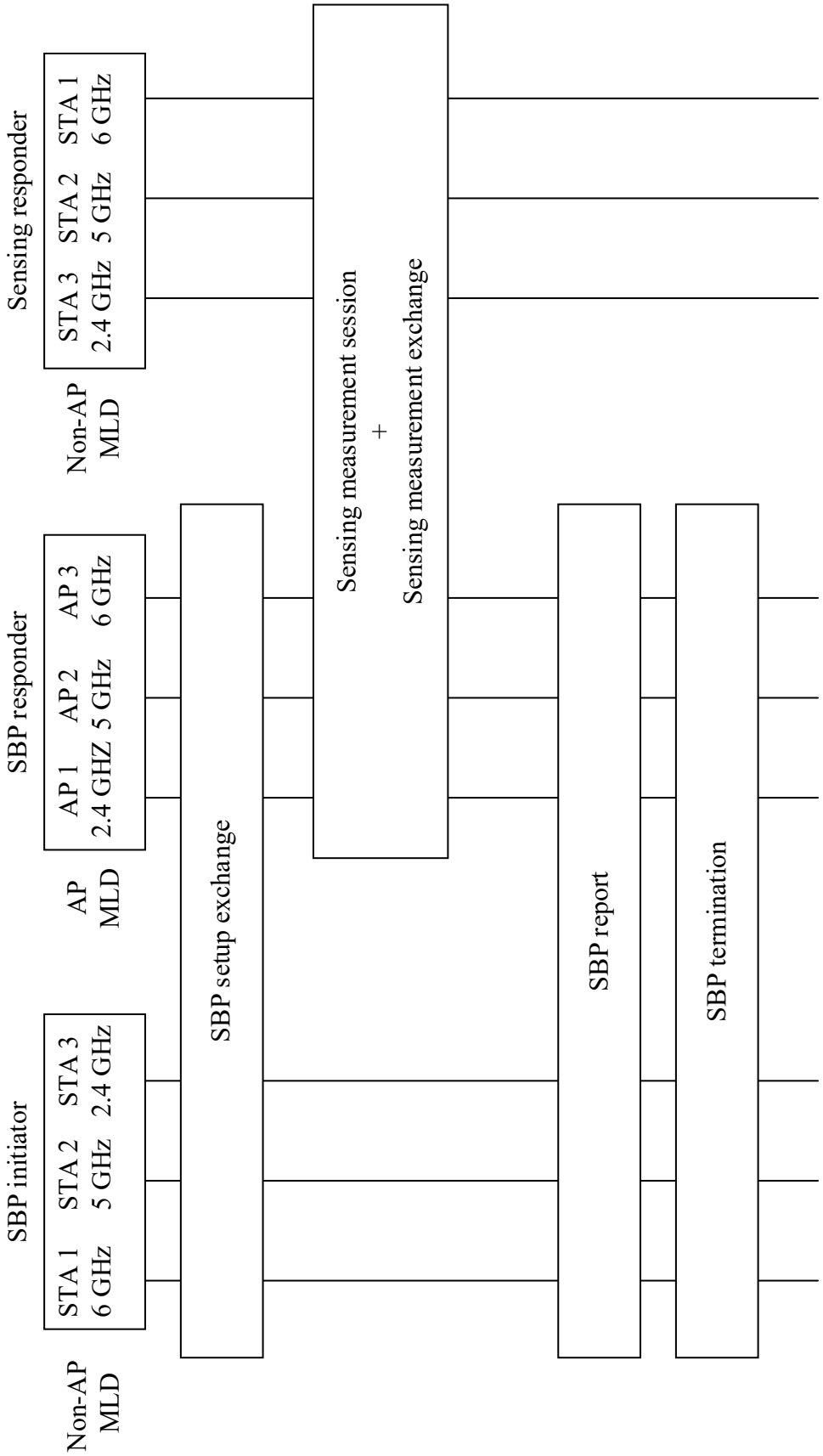
Non-AP MLD
STA 1 6 GHz
STA 2 5 GHz
STA 3 2.4 GHz
SBP initiator
AP MLD
AP 1 2.4 GHZ
AP 2 5 GHz
AP 3 6 GHz
SBP responder
Non-AP MLD
STA 3 2.4 GHz
STA 2 5 GHz
STA 1 6 GHz
Sensing responder
SBP setup exchange
Sensing measurement session
+
Sensing measurement exchange
SBP report
SBP termination

FIG. 4

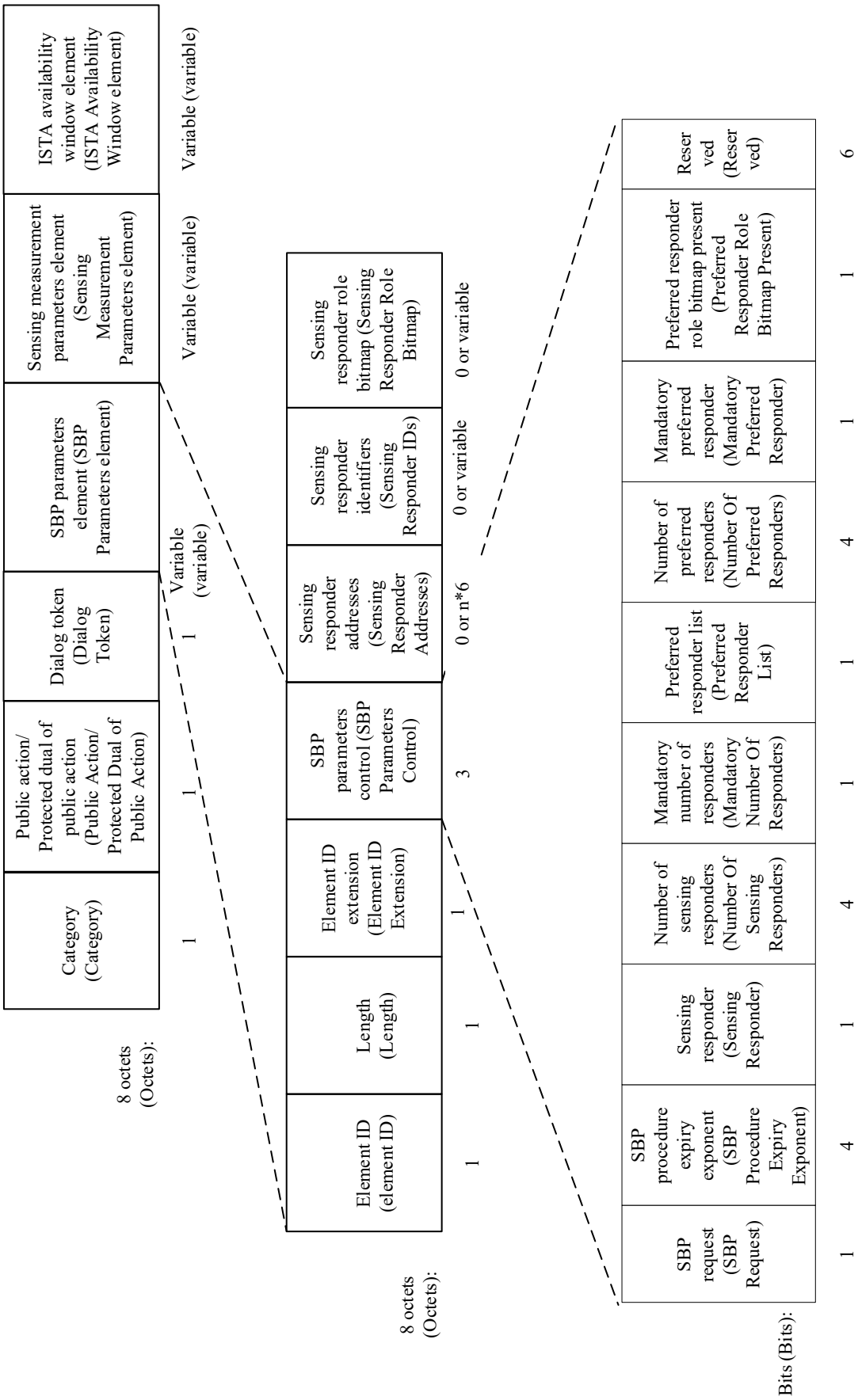
8 octets (Octets):
Category (Category)
Public action/ Protected dual of public action (Public Action/ Protected Dual of Public Action)
Dialog token (Dialog Token)
SBP parameters element (SBP Parameters element)
Sensing measurement parameters element (Sensing Measurement Parameters element)
ISTA availability window element (ISTA Availability Window element)
1
1
1
Variable (variable)
Variable (variable)
Variable (variable)
8 octets (Octets):
Element ID (element ID)
Length (Length)
Element ID extension (Element ID Extension)
SBP parameters control (SBP Parameters Control)
Sensing responder addresses (Sensing Responder Addresses)
Sensing responder identifiers (Sensing Responder IDs)
Sensing responder role bitmap (Sensing Responder Role Bitmap)
1
1
1
3
0 or n*6
0 or variable
0 or variable
Bits (Bits):
SBP request (SBP Request)
SBP procedure expiry exponent (SBP Procedure Expiry Exponent)
Sensing responder (Sensing Responder)
Number of sensing responders (Number Of Sensing Responders)
Mandatory number of responders (Mandatory Number Of Responders)
Preferred responder list (Preferred Responder List)
Number of preferred responders (Number Of Preferred Responders)
Mandatory preferred responder (Mandatory Preferred Responder)
Preferred responder role bitmap present (Preferred Responder Role Bitmap Present)
Reserved (Reserved)
1
4
1
4
1
1
4
1
1
6

FIG. 5

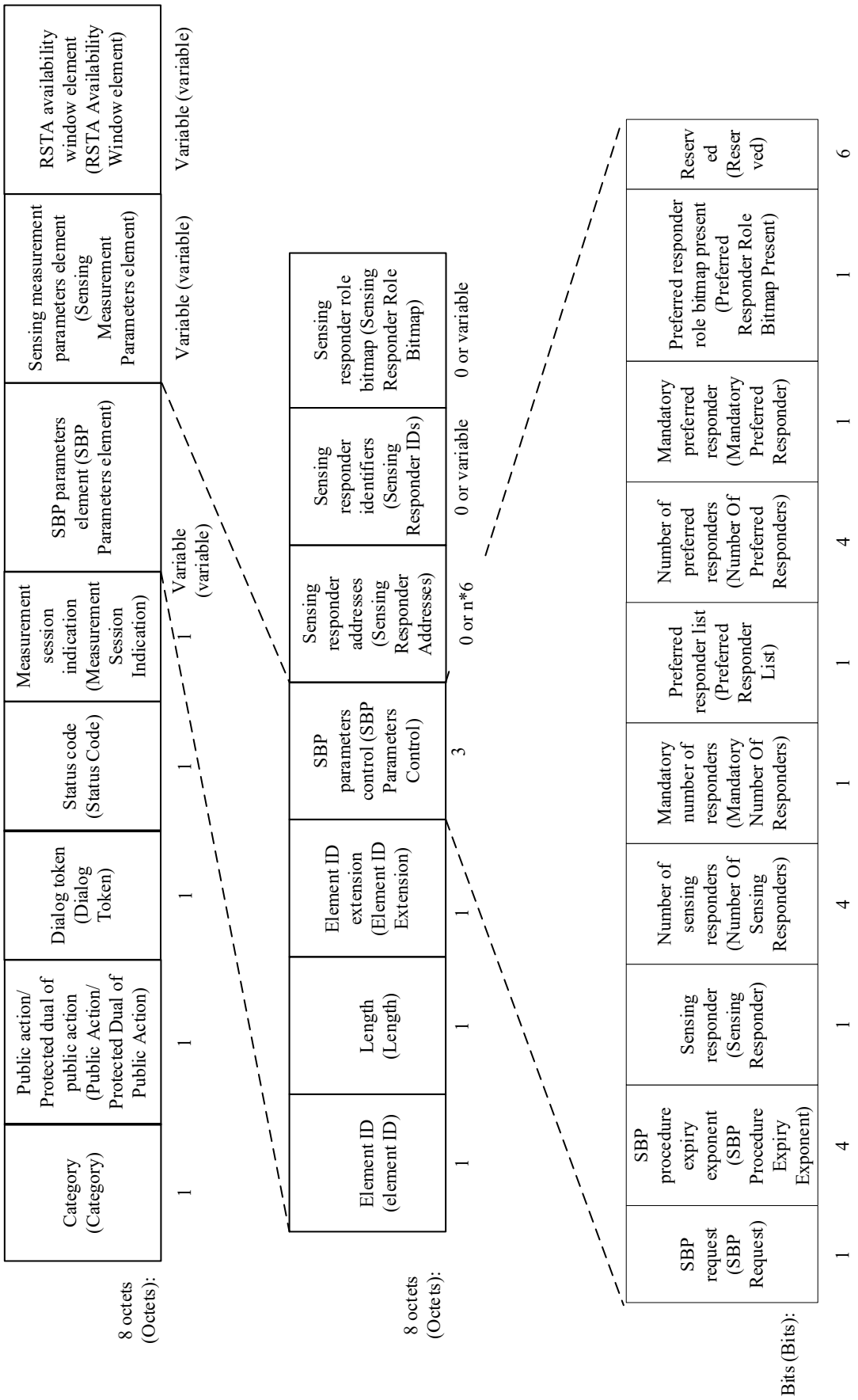
8 octets (Octets):
Category (Category)
Public action/ Protected dual of public action (Public Action/ Protected Dual of Public Action)
Dialog token (Dialog Token)
Status code (Status Code)
Measurement session indication (Measurement Session Indication)
SBP parameters element (SBP Parameters element)
Sensing measurement parameters element (Sensing Measurement Parameters element)
RSTA availability window element (RSTA Availability Window element)
1
1
1
1
Variable (variable)
Variable (variable)
Variable (variable)
8 octets (Octets):
Element ID (element ID)
Length (Length)
Element ID extension (Element ID Extension)
SBP parameters control (SBP Parameters Control)
Sensing responder addresses (Sensing Responder Addresses)
Sensing responder identifiers (Sensing Responder IDs)
Sensing responder role bitmap (Sensing Responder Role Bitmap)
1
1
1
3
0 or n*6
0 or variable
0 or variable
Bits (Bits):
SBP request (SBP Request)
SBP procedure expiry exponent (SBP Procedure Expiry Exponent)
Sensing responder (Sensing Responder)
Number of sensing responders (Number Of Sensing Responders)
Mandatory number of responders (Mandatory Number Of Responders)
Preferred responder list (Preferred Responder List)
Number of preferred responders (Number Of Preferred Responders)
Mandatory preferred responder (Mandatory Preferred Responder)
Preferred responder role bitmap present (Preferred Responder Role Bitmap Present)
Reserved (Reserved)
1
4
1
4
1
1
4
1
1
6

FIG. 6

Category (Category)	Public action/Protected dual of public action (Public action/Protected dual of public action)	Dialog token (Dialog token)	Sensing comeback information (Sensing comeback info)	Measurement session ID indication (Measurement session ID indication)	Sensing measurement parameters element (Sensing Measurement parameters element)
Octets: 1	1	1	1	1	0 or variable

FIG. 7

Category (Category)	Public action/Protected dual of public action (Public action/Protected dual of public action)	Dialog token (Dialog token)	Measurement session ID indication (Measurement session ID indication)	Status code (Status code)	Sensing measurement parameters element (Sensing Measurement parameters element)
Octets: 1	1	1	1	2	0 or variable

FIG. 8

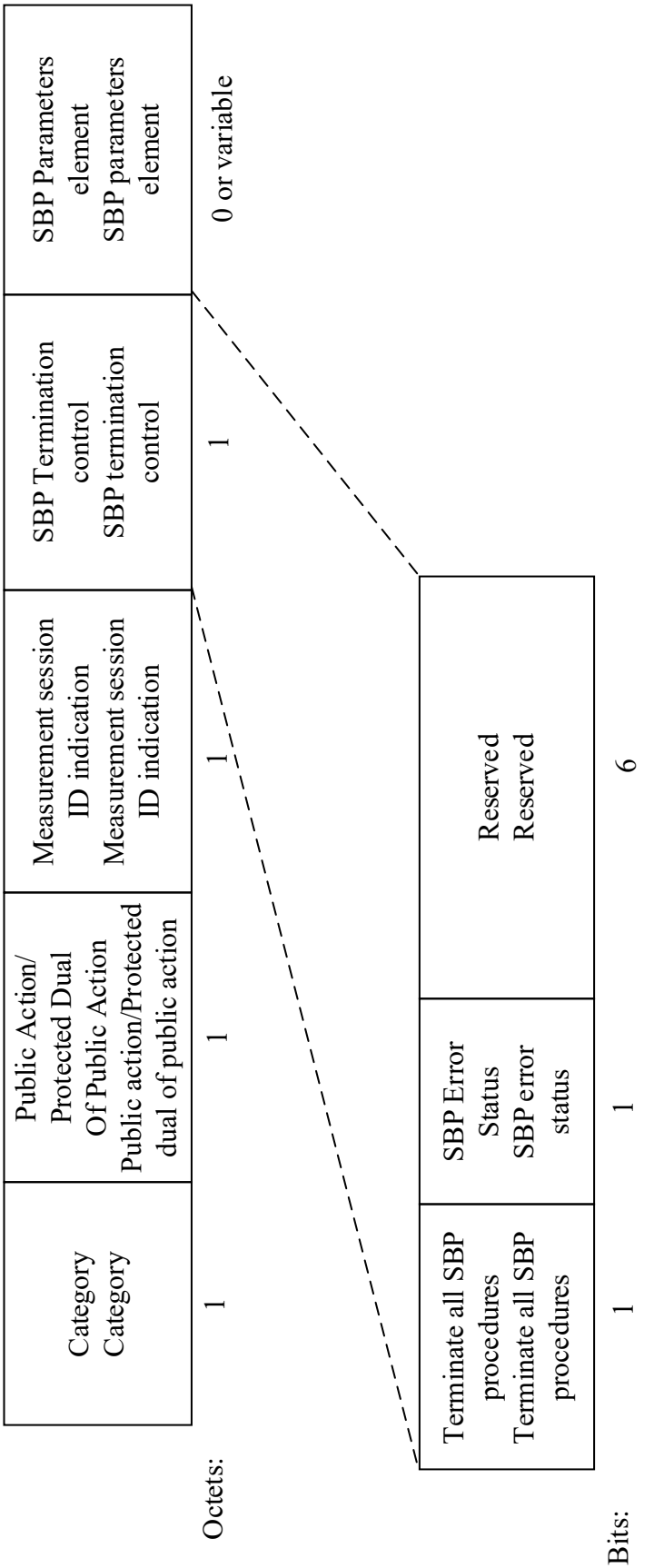
Category
Category
Public Action/
Protected Dual
Of Public Action
Public action/Protected
dual of public action
Measurement session
ID indication
Measurement session
ID indication
SBP Termination
control
SBP termination
control
SBP Parameters
element
SBP parameters
element
Octets:
1
1
1
1
0 or variable
Terminate all SBP
procedures
Terminate all SBP
procedures
SBP Error
Status
SBP error
status
Reserved
Reserved
Bits:
1
1
6

FIG. 9

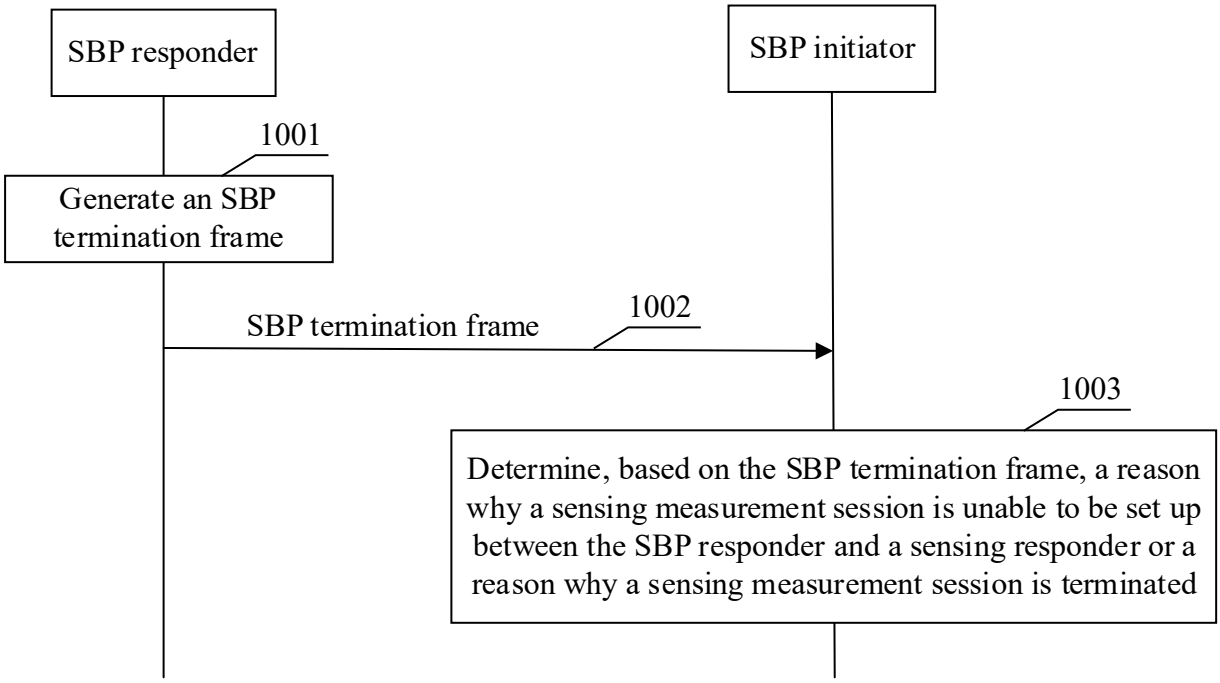
SBP responder
SBP initiator
1001
Generate an SBP termination frame
SBP termination frame
1002
1003
Determine, based on the SBP termination frame, a reason why a sensing measurement session is unable to be set up between the SBP responder and a sensing responder or a reason why a sensing measurement session is terminated

FIG. 10

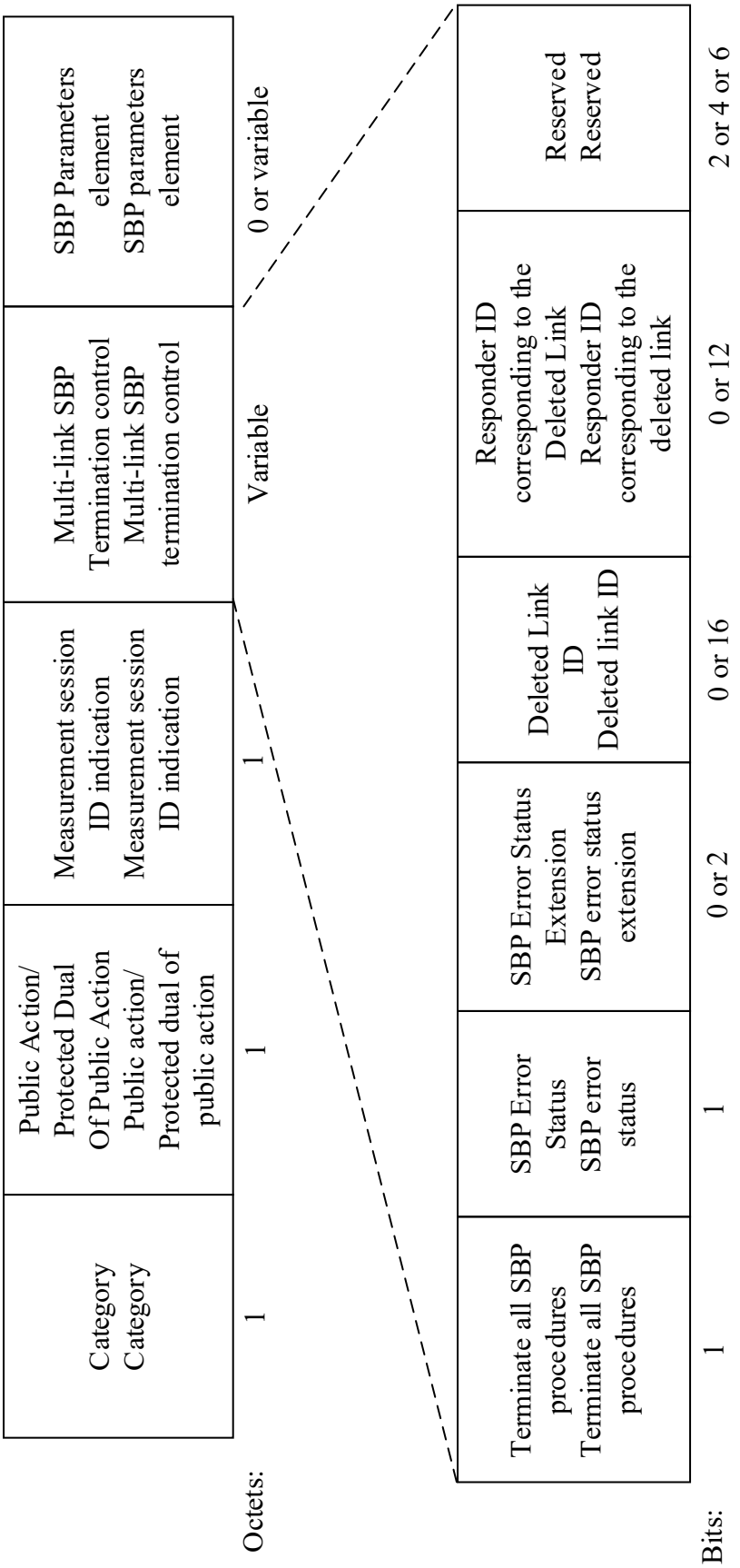
Category
Category
Public Action/
Protected Dual
Of Public Action
Public action/
Protected dual of
public action
Measurement session
ID indication
Measurement session
ID indication
Multi-link SBP
Termination control
Multi-link SBP
termination control
SBP Parameters
element
SBP parameters
element
Octets:
1
1
1
Variable
0 or variable
Terminate all SBP
procedures
Terminate all SBP
procedures
SBP Error
Status
SBP error
status
SBP Error Status
Extension
SBP error status
extension
Deleted Link
ID
Deleted link ID
Responder ID
corresponding to the
Deleted Link
Responder ID
corresponding to the
deleted link
Reserved
Reserved
Bits:
1
1
0 or 2
0 or 16
0 or 12
2 or 4 or 6

FIG. 11A

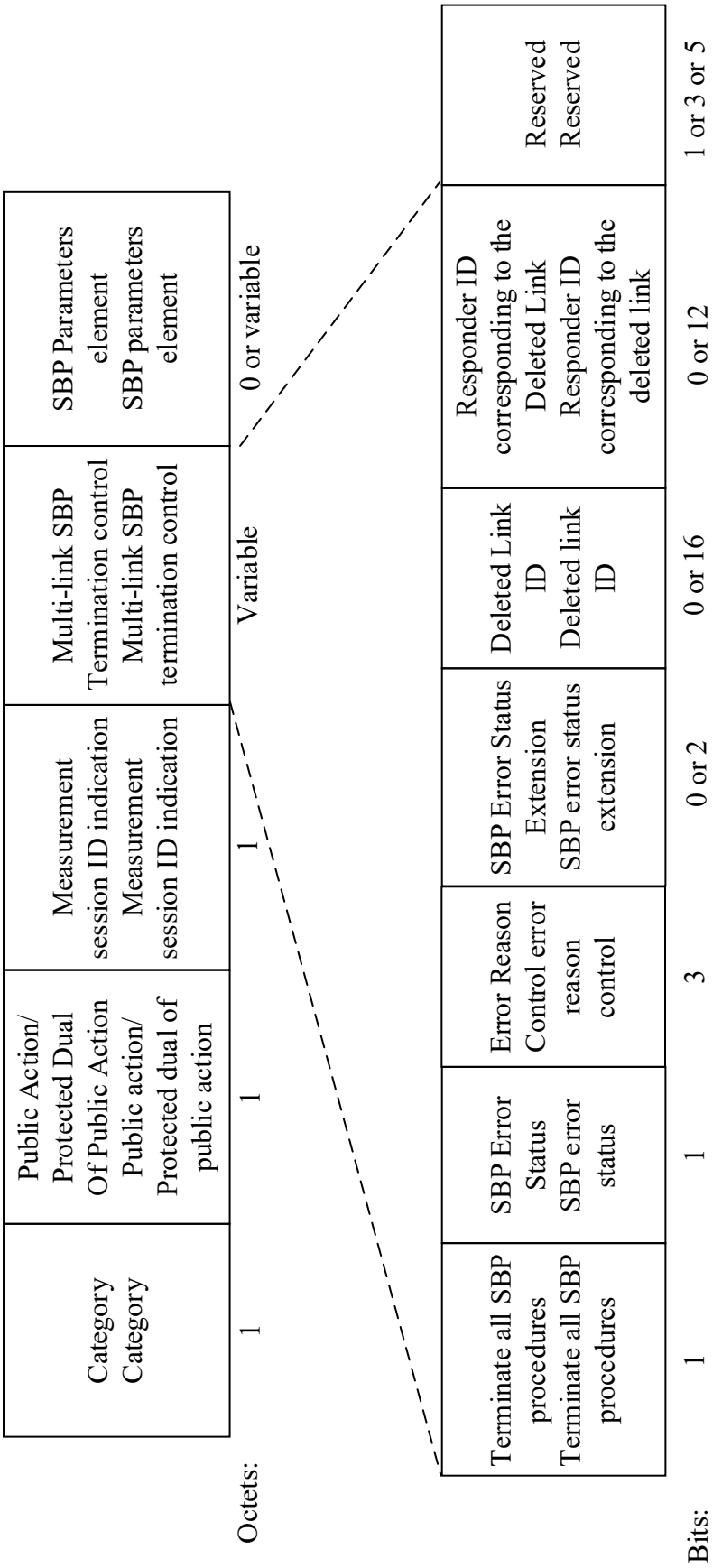
Category
Category
Public Action/
Protected Dual
Of Public Action
Public action/
Protected dual of
public action
Measurement
session ID indication
Measurement
session ID indication
Multi-link SBP
Termination control
Multi-link SBP
termination control
SBP Parameters
element
SBP parameters
element
Octets:
1
1
1
Variable
0 or variable
Terminate all SBP
procedures
Terminate all SBP
procedures
SBP Error
Status
SBP error
status
Error Reason
Control error
reason
control
SBP Error Status
Extension
SBP error status
extension
Deleted Link
ID
Deleted link
ID
Responder ID
corresponding to the
Deleted Link
Responder ID
corresponding to the
deleted link
Reserved
Reserved
Bits:
1
1
3
0 or 2
0 or 16
0 or 12
1 or 3 or 5

FIG. 11B

	Category Category	Public Action/ Protected Dual Of Public Action Public action/Protected dual of public action	Measurement session ID indication Measurement session ID indication	Multi-link SBP Termination control Multi-link SBP termination control	Multi-link SBP Parameters element Multi-link SBP parameters element
Octets:	1	1	1	Variable	0 or variable

FIG. 11C

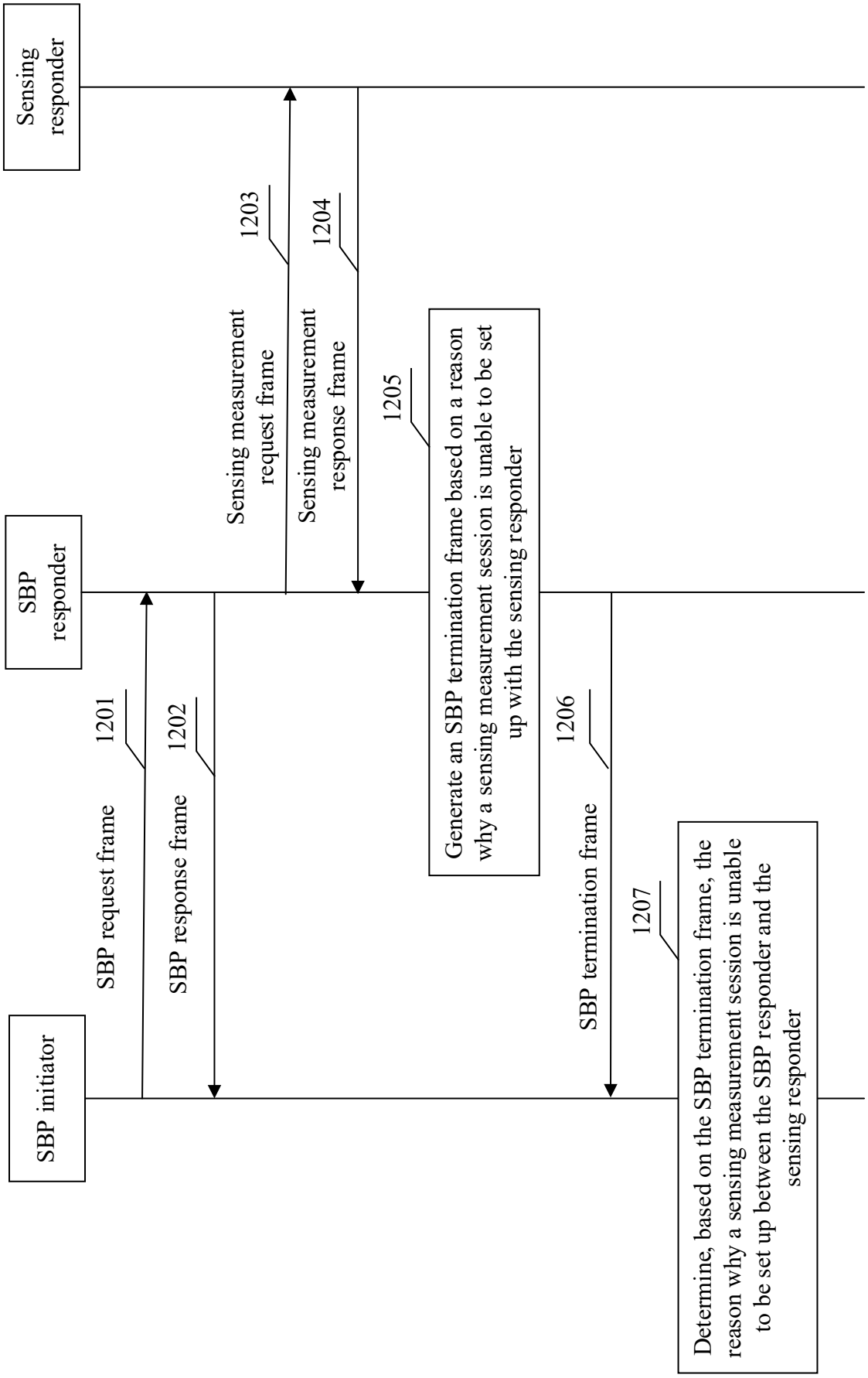
SBP initiator
SBP responder
Sensing responder
SBP request frame
1201
SBP response frame
1202
Sensing measurement request frame
1203
Sensing measurement response frame
1204
Generate an SBP termination frame based on a reason why a sensing measurement session is unable to be set up with the sensing responder
1205
SBP termination frame
1206
1207
Determine, based on the SBP termination frame, the reason why a sensing measurement session is unable to be set up between the SBP responder and the sensing responder

FIG. 12

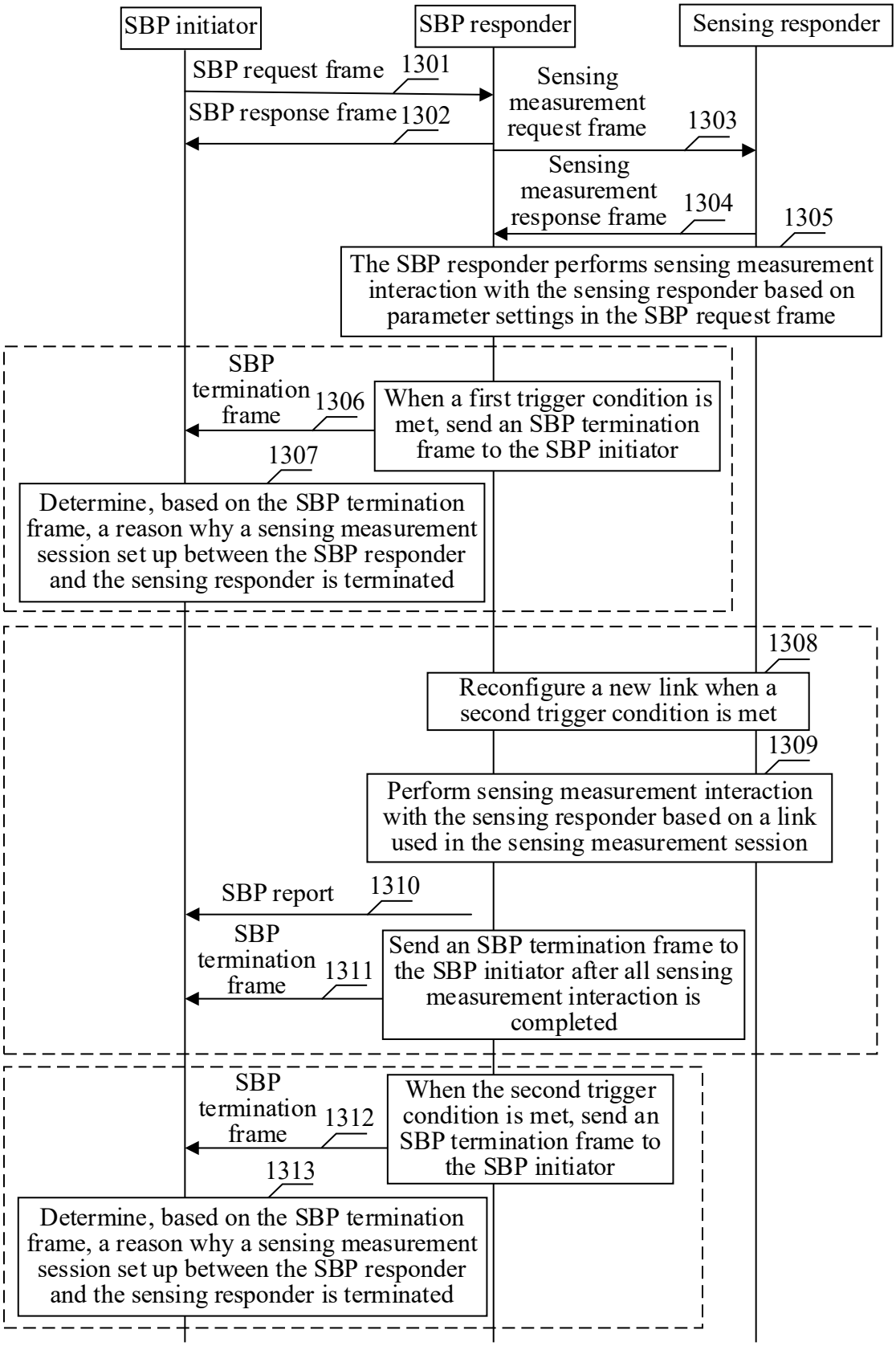
SBP initiator
SBP responder
Sensing responder
SBP request frame
1301
SBP response frame
1302
Sensing measurement request frame
1303
Sensing measurement response frame
1304
1305
The SBP responder performs sensing measurement interaction with the sensing responder based on parameter settings in the SBP request frame
SBP termination frame
1306
When a first trigger condition is met, send an SBP termination frame to the SBP initiator
1307
Determine, based on the SBP termination frame, a reason why a sensing measurement session set up between the SBP responder and the sensing responder is terminated
1308
Reconfigure a new link when a second trigger condition is met
1309
Perform sensing measurement interaction with the sensing responder based on a link used in the sensing measurement session
SBP report
1310
SBP termination frame
1311
Send an SBP termination frame to the SBP initiator after all sensing measurement interaction is completed
SBP termination frame
1312
When the second trigger condition is met, send an SBP termination frame to the SBP initiator
1313
Determine, based on the SBP termination frame, a reason why a sensing measurement session set up between the SBP responder and the sensing responder is terminated

FIG. 13

	Element ID Element ID	Length Length	Element ID Extension Element ID extension	Multi-link sensing measurement parameters Multi-link sensing measurement parameters	Multi-link sensing subelements Multi-link sensing subelements
Octets:	1	1	1	Variable	Variable

FIG. 14

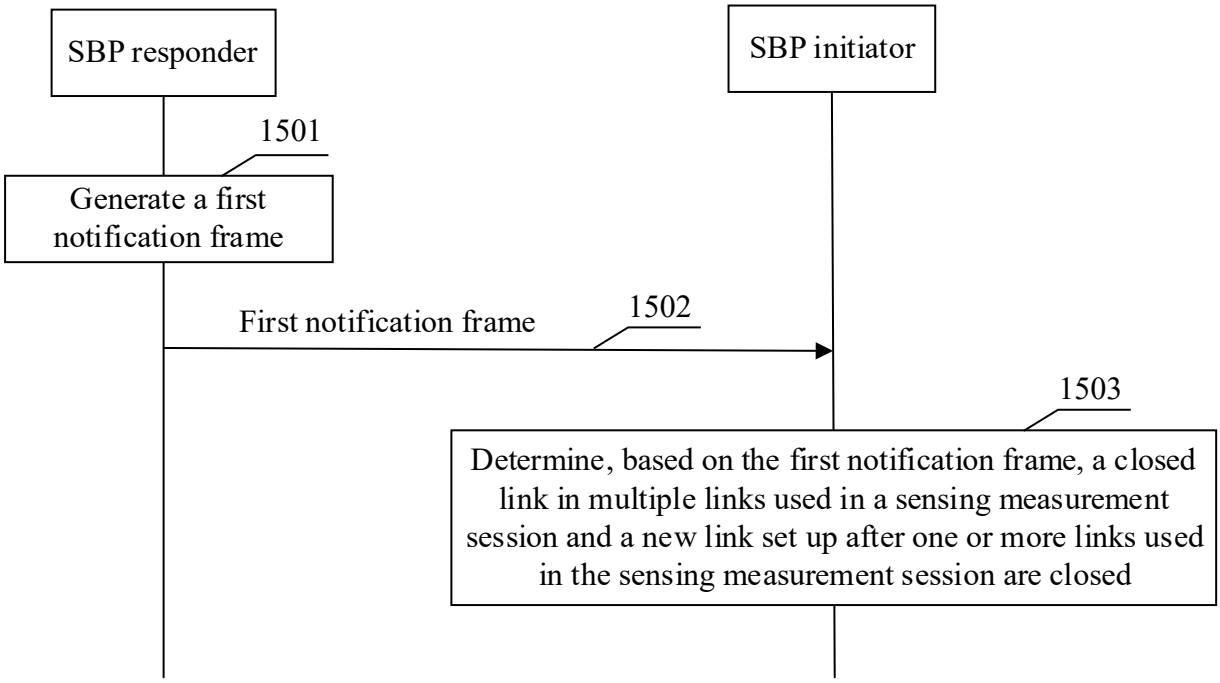
SBP responder
SBP initiator
1501
Generate a first notification frame
First notification frame
1502
1503
Determine, based on the first notification frame, a closed link in multiple links used in a sensing measurement session and a new link set up after one or more links used in the sensing measurement session are closed

FIG. 15

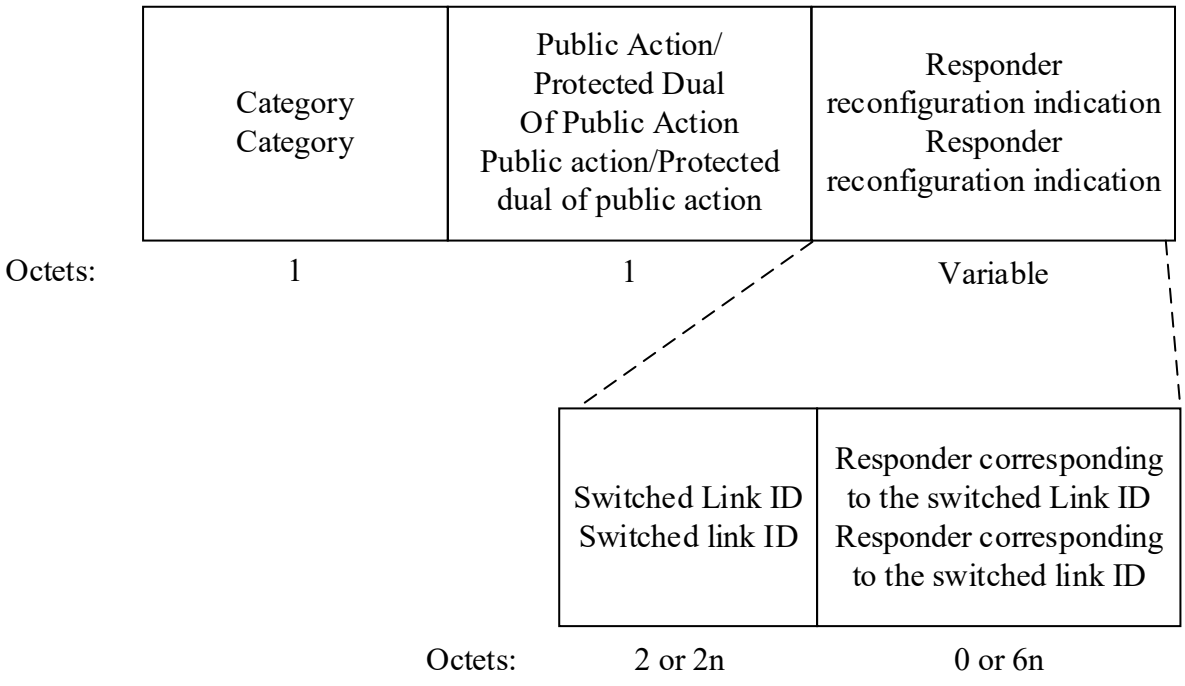
Category
Category
Public Action/
Protected Dual
Of Public Action
Public action/Protected dual of public action
Responder reconfiguration indication
Responder reconfiguration indication
Octets:
1
1
Variable
Switched Link ID
Switched link ID
Responder corresponding to the switched Link ID
Responder corresponding to the switched link ID
Octets:
2 or 2n
0 or 6n

FIG. 16

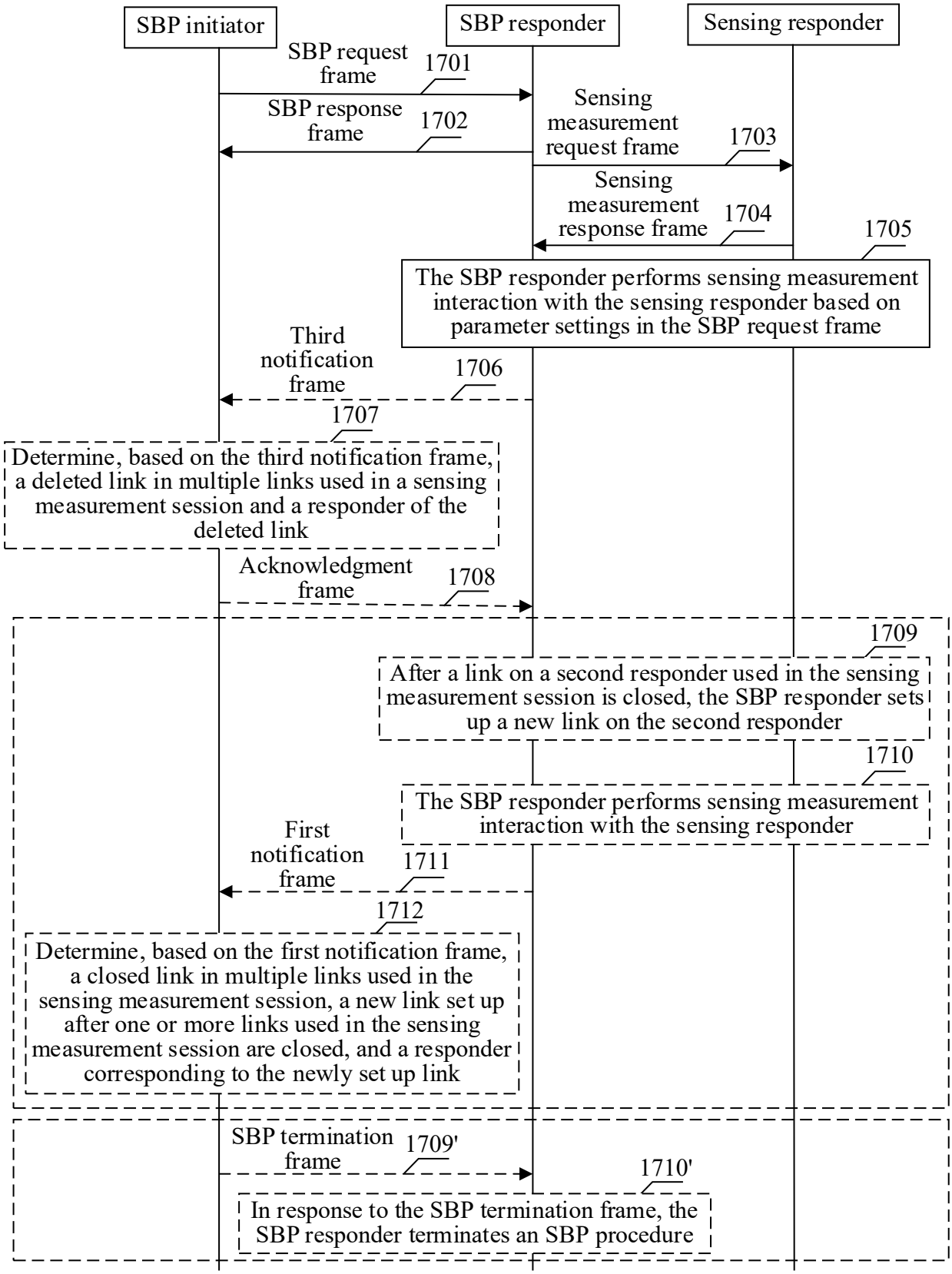
SBP initiator
SBP responder
Sensing responder
SBP request frame
1701
SBP response frame
1702
Sensing measurement request frame
1703
Sensing measurement response frame
1704
1705
The SBP responder performs sensing measurement interaction with the sensing responder based on parameter settings in the SBP request frame
Third notification frame
1706
1707
Determine, based on the third notification frame, a deleted link in multiple links used in a sensing measurement session and a responder of the deleted link
Acknowledgment frame
1708
1709
After a link on a second responder used in the sensing measurement session is closed, the SBP responder sets up a new link on the second responder
1710
The SBP responder performs sensing measurement interaction with the sensing responder
First notification frame
1711
1712
Determine, based on the first notification frame, a closed link in multiple links used in the sensing measurement session, a new link set up after one or more links used in the sensing measurement session are closed, and a responder corresponding to the newly set up link
SBP termination frame
1709'
1710'
In response to the SBP termination frame, the SBP responder terminates an SBP procedure

FIG. 17

Category Category	Public Action/ Protected Dual Of Public Action Public action/ Protected dual of public action	Dialog Token Dialog token	Sensing Comeback Info Sensing comeback information	Measurement Session ID Indication Measurement session ID indication	Multi-link Sensing Measurement Parameters element Multi-link sensing measurement parameters element
Octets: 1	1	1	2	1	0 or variable

FIG. 18A

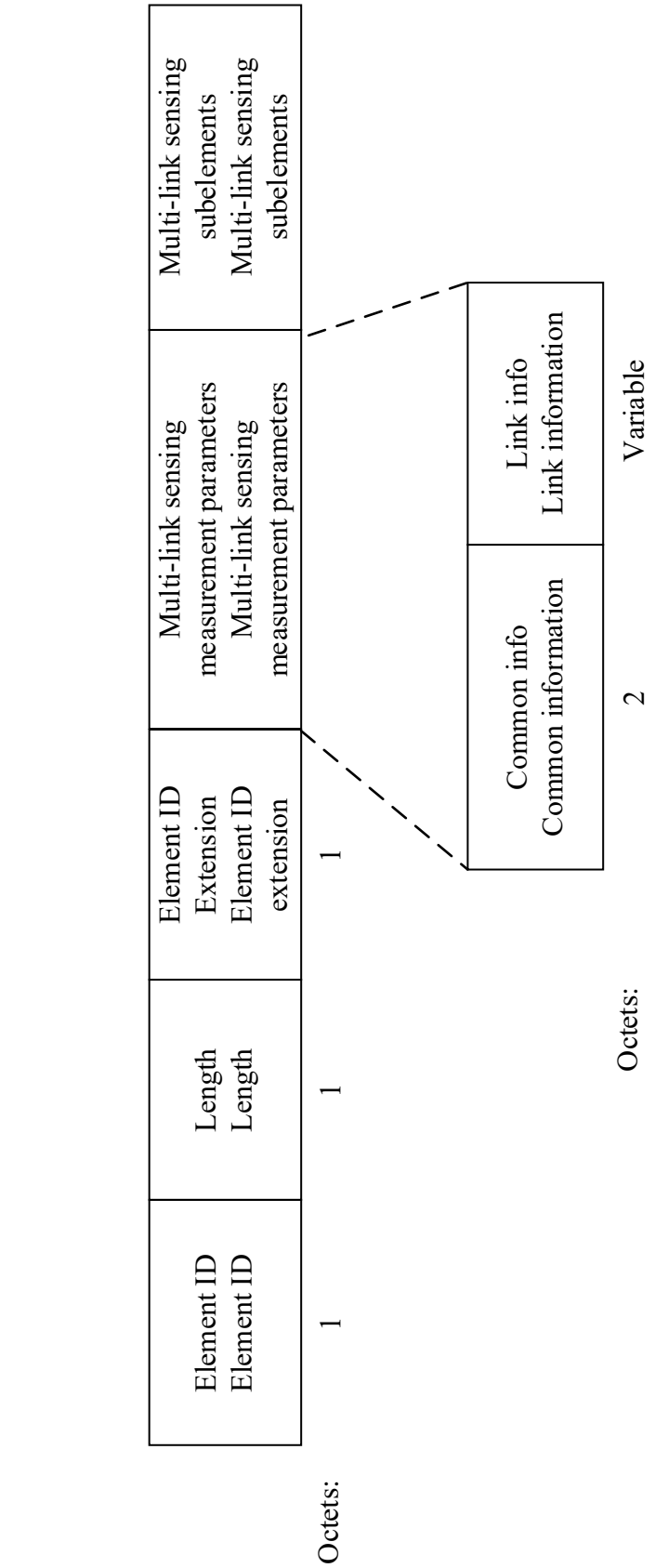
Element ID
Element ID
Length
Length
Element ID Extension
Element ID extension
Multi-link sensing measurement parameters
Multi-link sensing measurement parameters
Multi-link sensing subelements
Multi-link sensing subelements
Common info
Common information
Link info
Link information
Octets:
1
1
1
2
Variable
Octets:

FIG. 18B

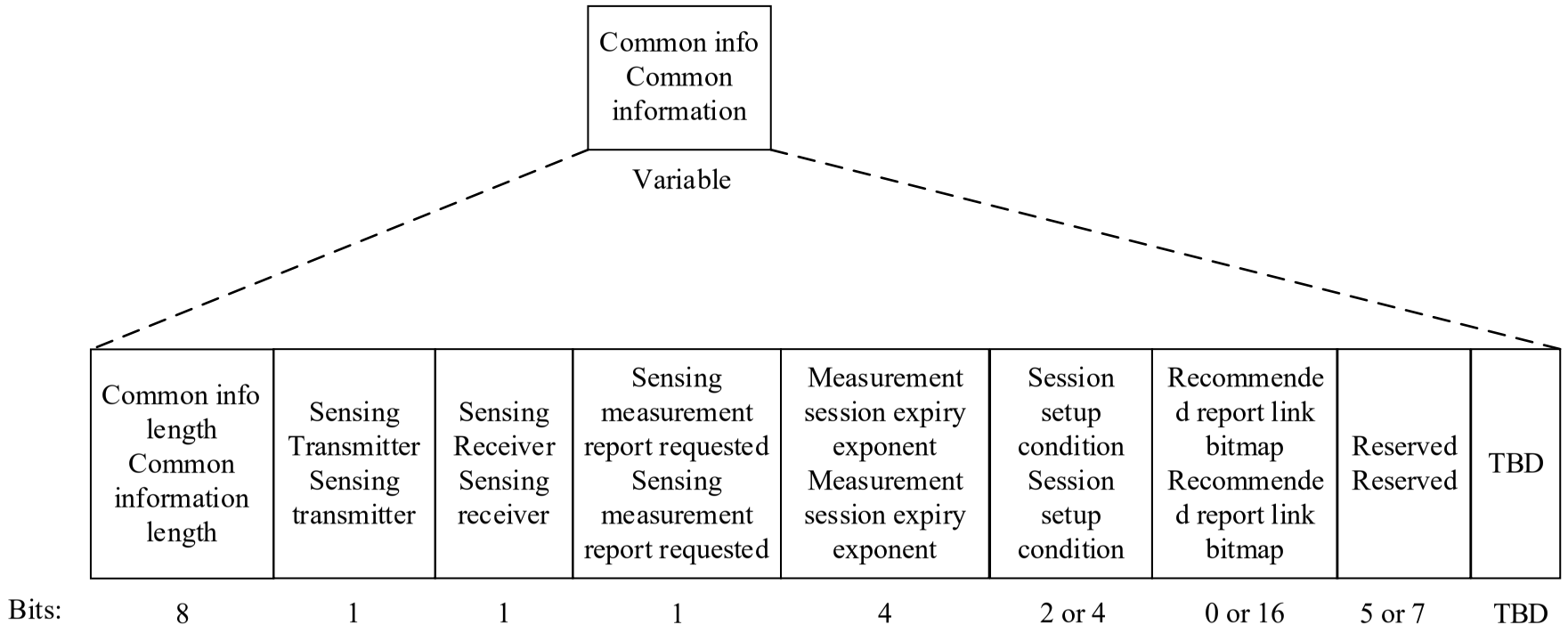
Common info
Common information
Variable
Common info length
Common information length
Sensing Transmitter
Sensing transmitter
Sensing Receiver
Sensing receiver
Sensing measurement report requested
Sensing measurement report requested
Measurement session expiry exponent
Measurement session expiry exponent
Session setup condition
Session setup condition
Recommended report link bitmap
Recommended report link bitmap
Reserved
Reserved
TBD
Bits:
8
1
1
1
4
2 or 4
0 or 16
5 or 7
TBD

FIG. 18C

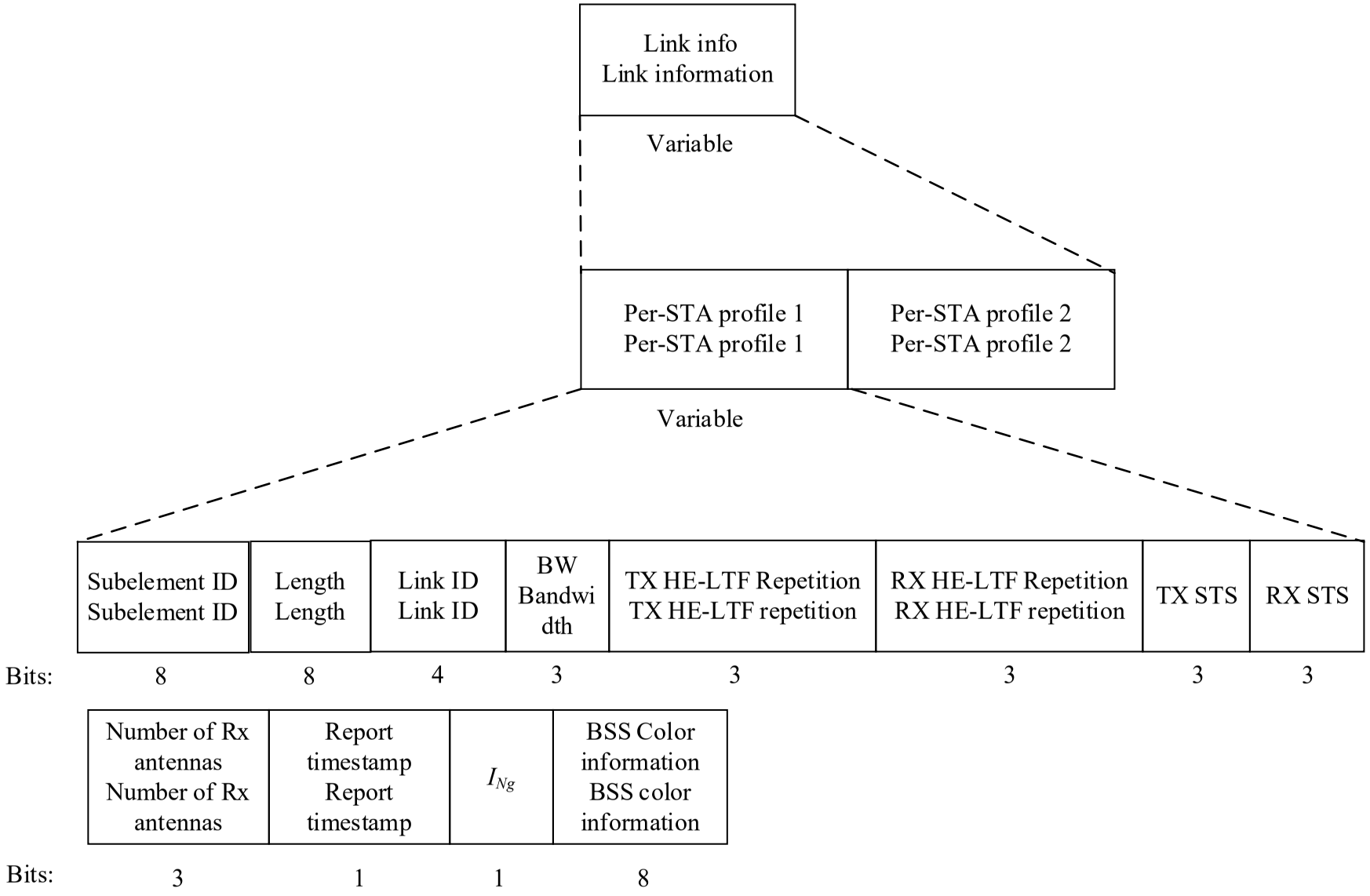
Link info
Link information
Variable
Per-STA profile 1
Per-STA profile 1
Per-STA profile 2
Per-STA profile 2
Variable
Subelement ID
Subelement ID
Length
Length
Link ID
Link ID
BW
Bandwi
dth
TX HE-LTF Repetition
TX HE-LTF repetition
RX HE-LTF Repetition
RX HE-LTF repetition
TX STS
RX STS
Bits:
8
8
4
3
3
3
3
3
Number of Rx antennas
Number of Rx antennas
Report timestamp
Report timestamp
I_{Ng}
BSS Color information
BSS color information
Bits:
3
1
1
8

FIG. 18D

Category Category	Public Action/ Protected Dual Of Public Action Public action/ Protected dual of public action	Dialog Token Dialog token	Status code Status code	Measurement Session ID Indication Measurement session ID indication	Multi-link Sensing Measurement Parameters element Multi-link sensing measurement parameters element	Accepted Link ID bitmap Accepted link ID bitmap
Octets: 1	1	1	2	1	0 or variable	0 or 2

FIG. 19

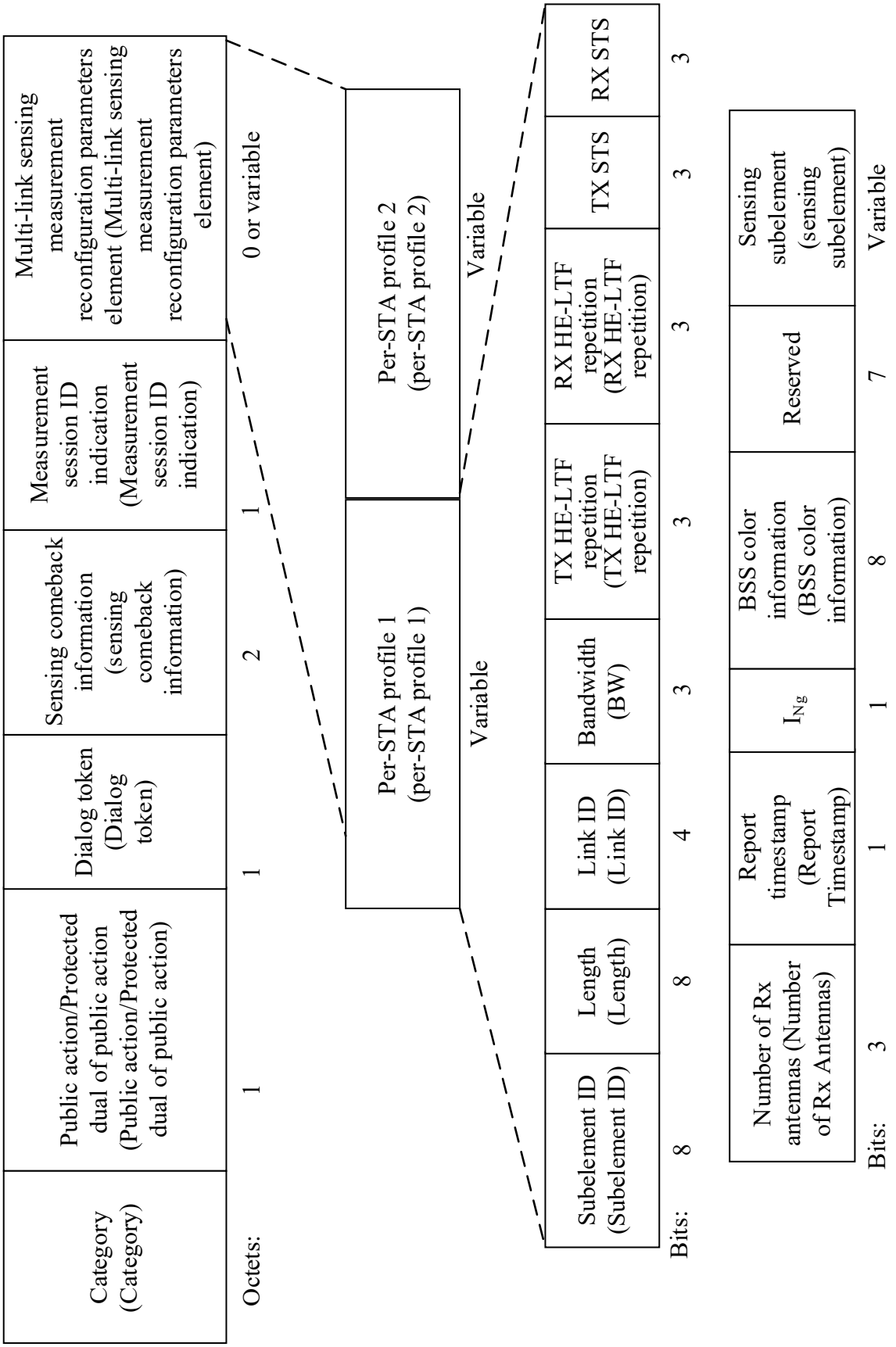
Category (Category)
Public action/Protected dual of public action (Public action/Protected dual of public action)
Dialog token (Dialog token)
Sensing comeback information (sensing comeback information)
Measurement session ID indication (Measurement session ID indication)
Multi-link sensing measurement reconfiguration parameters element (Multi-link sensing measurement reconfiguration parameters element)
Octets: 1 1 2 1 0 or variable
Per-STA profile 1 (per-STA profile 1)
Per-STA profile 2 (per-STA profile 2)
Variable
Variable
Subelement ID (Subelement ID)
Length (Length)
Link ID (Link ID)
Bandwidth (BW)
TX HE-LTF repetition (TX HE-LTF repetition)
RX HE-LTF repetition (RX HE-LTF repetition)
TX STS
RX STS
Bits: 8 8 4 3 3 3 3 3
Number of Rx antennas (Number of Rx Antennas)
Report timestamp (Report Timestamp)
I_{Ng}
BSS color information (BSS color information)
Reserved
Sensing subelement (sensing subelement)
Bits: 3 1 1 8 7 Variable

FIG. 20

Category (Category)	Public action/Protected dual of public action (Public action/ Protected dual of public action)	Dialog token (Dialog token)	Measurement session ID indication (Measurement session ID indication)	Status code (status code)	Reconfiguration link (Reconfiguration link)
Octets: 1	1	1	1	2	0 or variable

FIG. 21

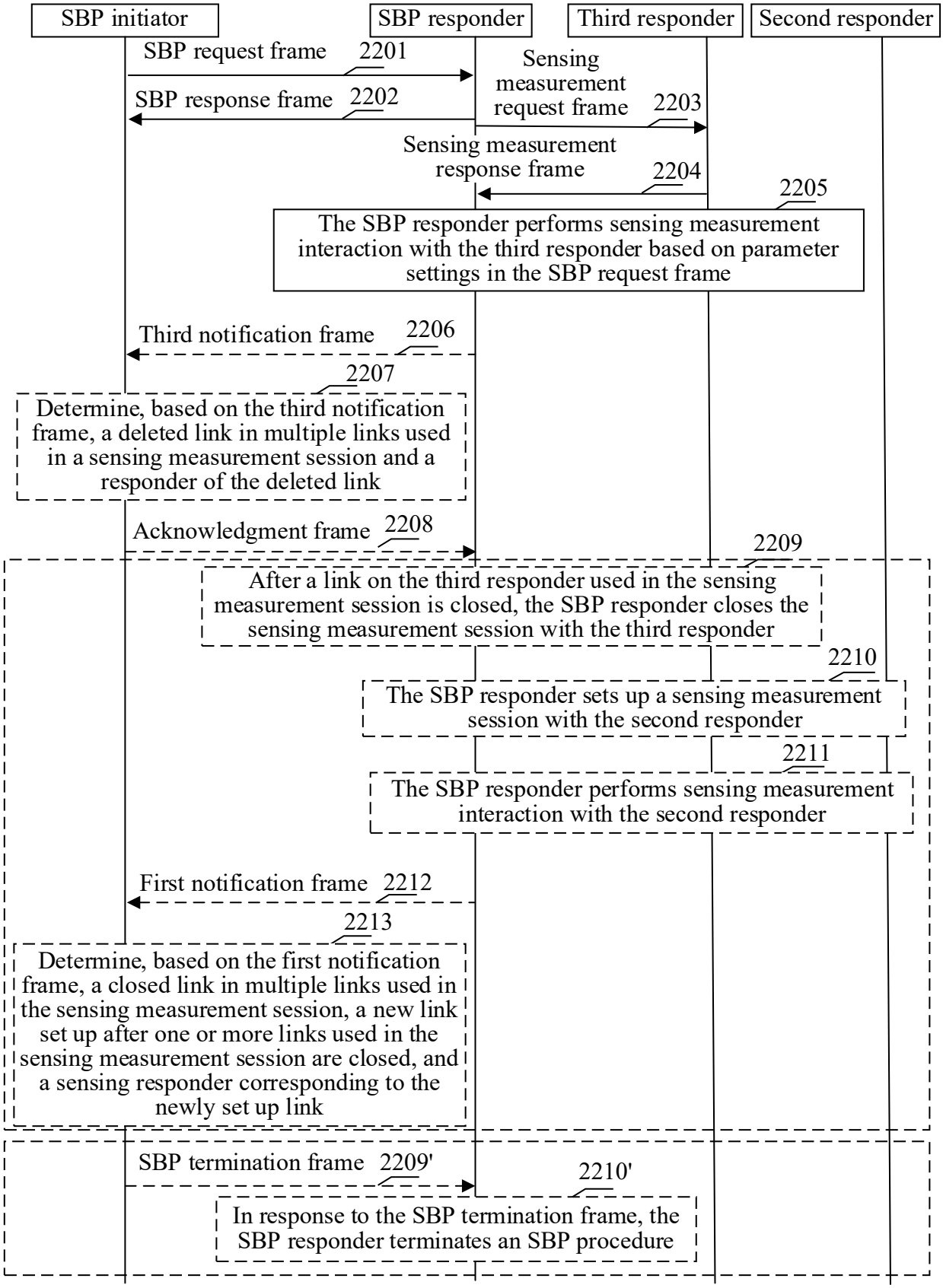
SBP initiator
SBP responder
Third responder
Second responder
SBP request frame
2201
SBP response frame
2202
Sensing measurement request frame
2203
Sensing measurement response frame
2204
2205
The SBP responder performs sensing measurement interaction with the third responder based on parameter settings in the SBP request frame
Third notification frame
2206
2207
Determine, based on the third notification frame, a deleted link in multiple links used in a sensing measurement session and a responder of the deleted link
Acknowledgment frame
2208
2209
After a link on the third responder used in the sensing measurement session is closed, the SBP responder closes the sensing measurement session with the third responder
2210
The SBP responder sets up a sensing measurement session with the second responder
2211
The SBP responder performs sensing measurement interaction with the second responder
First notification frame
2212
2213
Determine, based on the first notification frame, a closed link in multiple links used in the sensing measurement session, a new link set up after one or more links used in the sensing measurement session are closed, and a sensing responder corresponding to the newly set up link
SBP termination frame
2209'
2210'
In response to the SBP termination frame, the SBP responder terminates an SBP procedure

FIG. 22

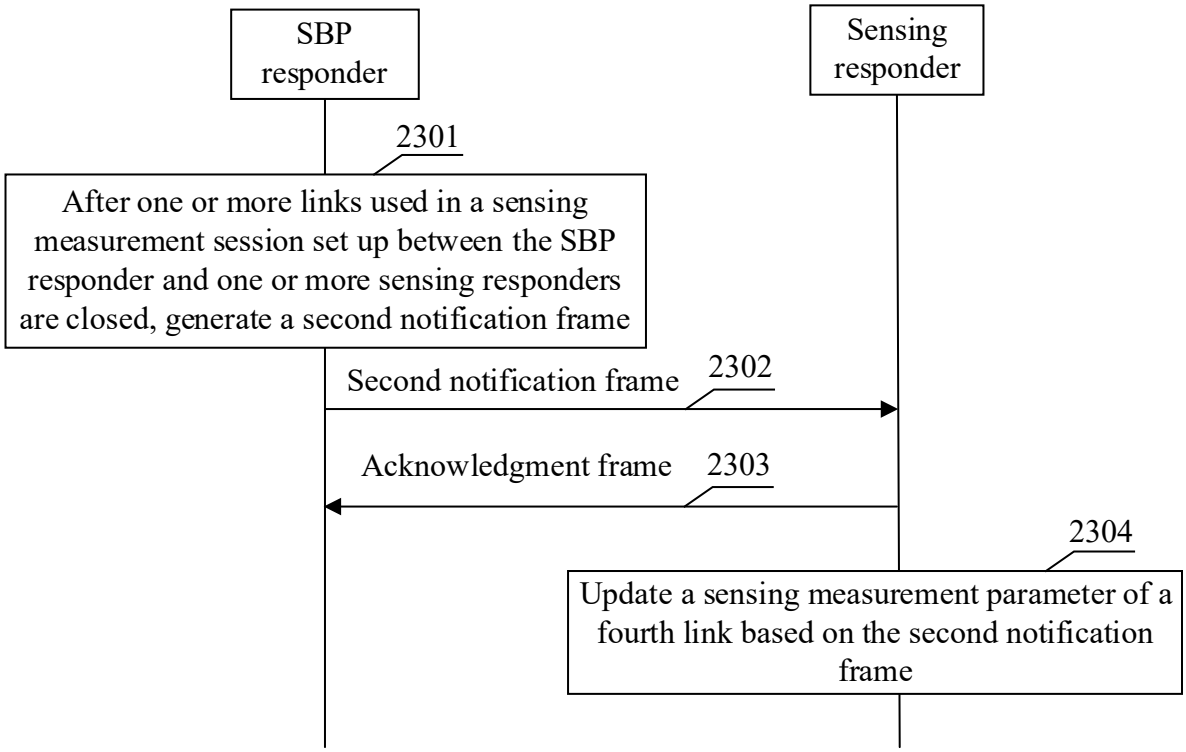
SBP responder
Sensing responder
2301
After one or more links used in a sensing measurement session set up between the SBP responder and one or more sensing responders are closed, generate a second notification frame
Second notification frame
2302
Acknowledgment frame
2303
2304
Update a sensing measurement parameter of a fourth link based on the second notification frame

FIG. 23

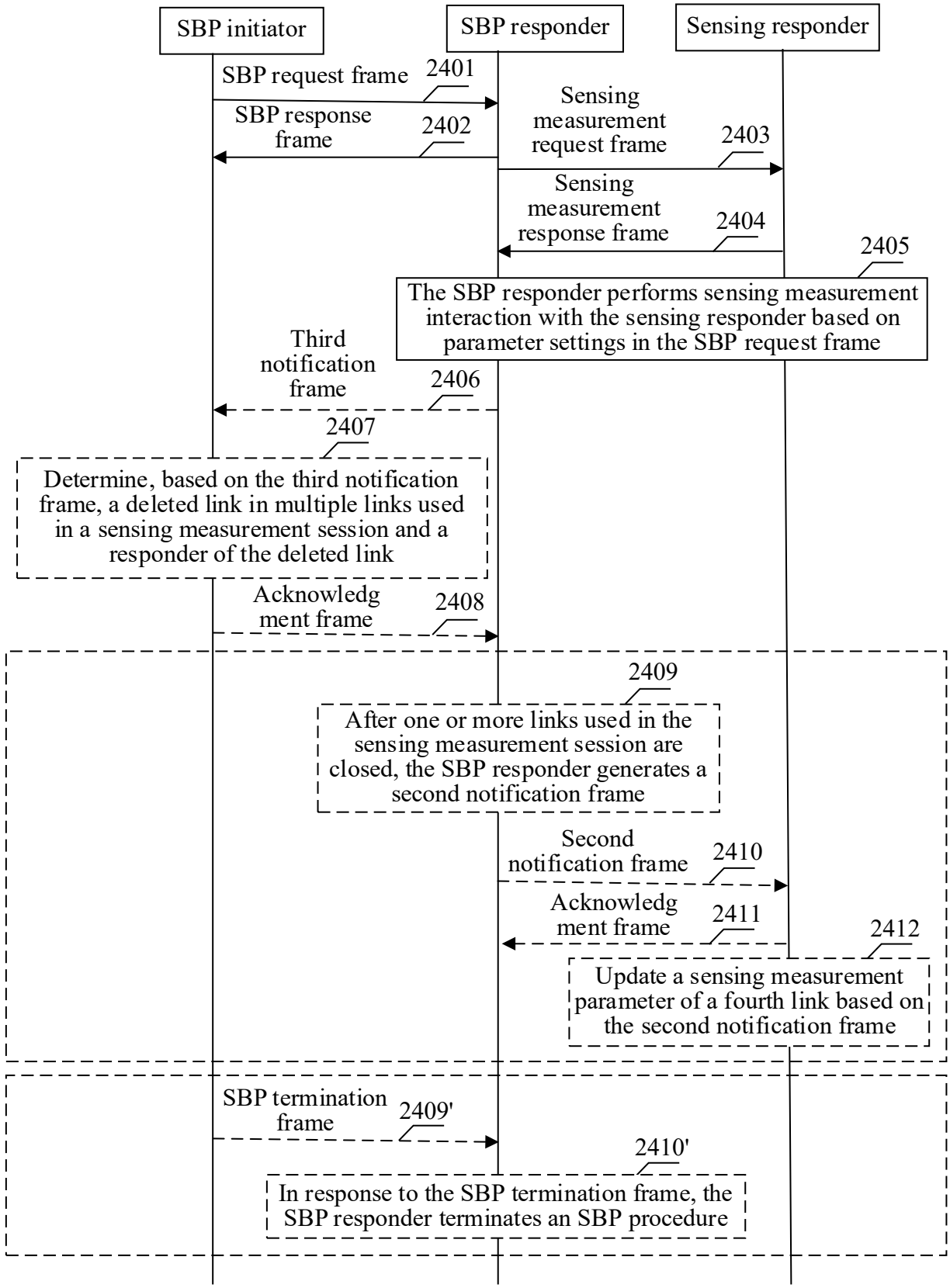
SBP initiator
SBP responder
Sensing responder
SBP request frame
2401
SBP response frame
2402
Sensing measurement request frame
2403
Sensing measurement response frame
2404
2405
The SBP responder performs sensing measurement interaction with the sensing responder based on parameter settings in the SBP request frame
Third notification frame
2406
2407
Determine, based on the third notification frame, a deleted link in multiple links used in a sensing measurement session and a responder of the deleted link
Acknowledgment frame
2408
2409
After one or more links used in the sensing measurement session are closed, the SBP responder generates a second notification frame
Second notification frame
2410
Acknowledgment frame
2411
2412
Update a sensing measurement parameter of a fourth link based on the second notification frame
SBP termination frame
2409'
2410'
In response to the SBP termination frame, the SBP responder terminates an SBP procedure

FIG. 24

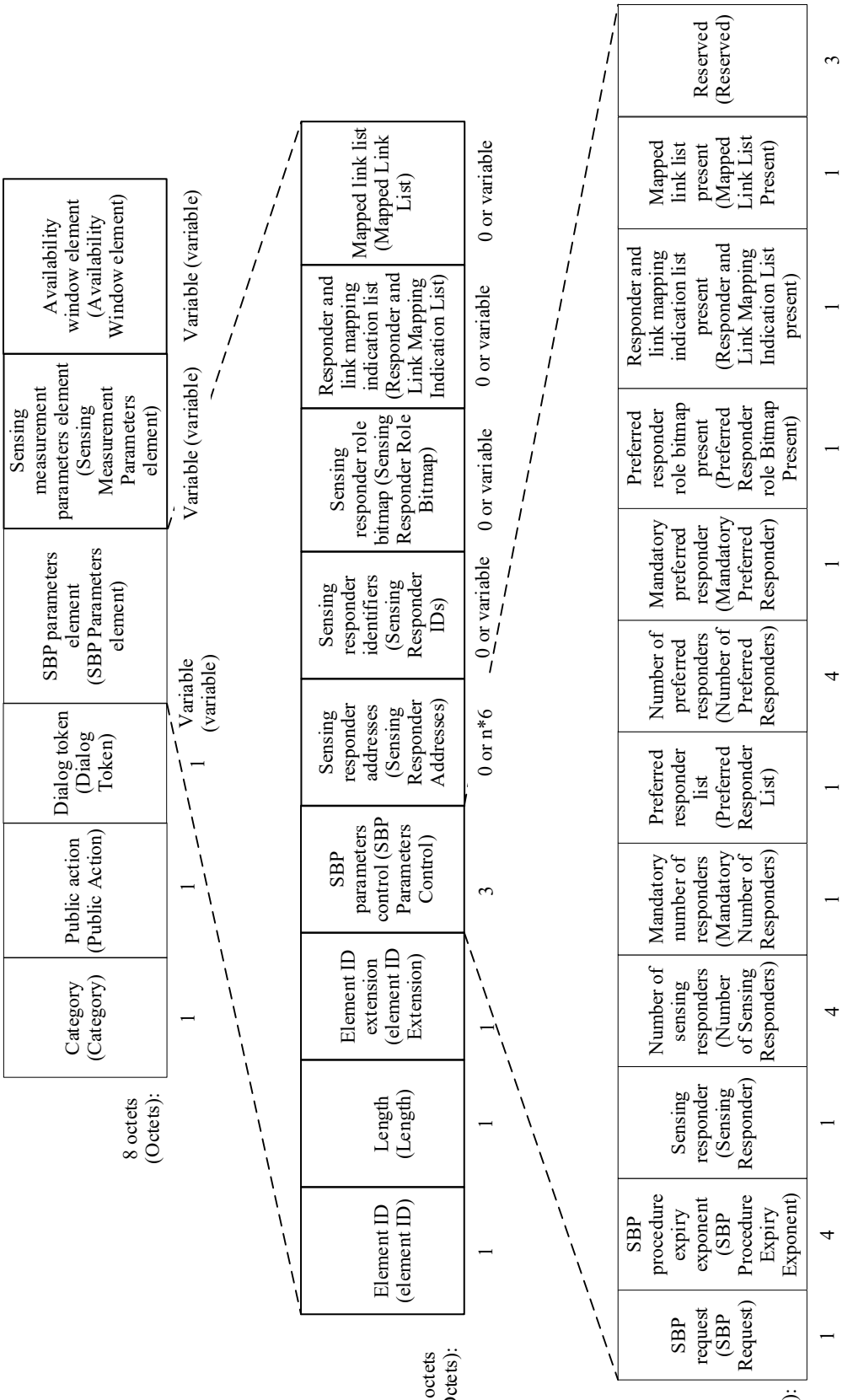
Category (Category)
Public action (Public Action)
Dialog token (Dialog Token)
SBP parameters element (SBP Parameters element)
Sensing measurement parameters element (Sensing Measurement Parameters element)
Availability window element (Availability Window element)
8 octets (Octets):
1
1
1
Variable (variable)
Variable (variable)
Variable (variable)
Element ID (element ID)
Length (Length)
Element ID extension (element ID Extension)
SBP parameters control (SBP Parameters Control)
Sensing responder addresses (Sensing Responder Addresses)
Sensing responder identifiers (Sensing Responder IDs)
Sensing responder role bitmap (Sensing Responder Role Bitmap)
Responder and link mapping indication list (Responder and Link Mapping Indication List)
Mapped link list (Mapped Link List)
8 octets (Octets):
1
1
1
3
0 or n*6
0 or variable
0 or variable
0 or variable
0 or variable
SBP request (SBP Request)
SBP procedure expiry exponent (SBP Procedure Expiry Exponent)
Sensing responder (Sensing Responder)
Number of sensing responders (Number of Sensing Responders)
Mandatory number of responders (Mandatory Number of Responders)
Preferred responder list (Preferred Responder List)
Number of preferred responders (Number of Preferred Responders)
Mandatory preferred responder (Mandatory Preferred Responder)
Preferred responder role bitmap present (Preferred Responder role Bitmap Present)
Responder and link mapping indication list present (Responder and Link Mapping Indication List present)
Mapped link list present (Mapped Link List Present)
Reserved (Reserved)
Bits (Bits):
1
4
1
4
1
1
4
1
1
1
1
3

FIG. 25A

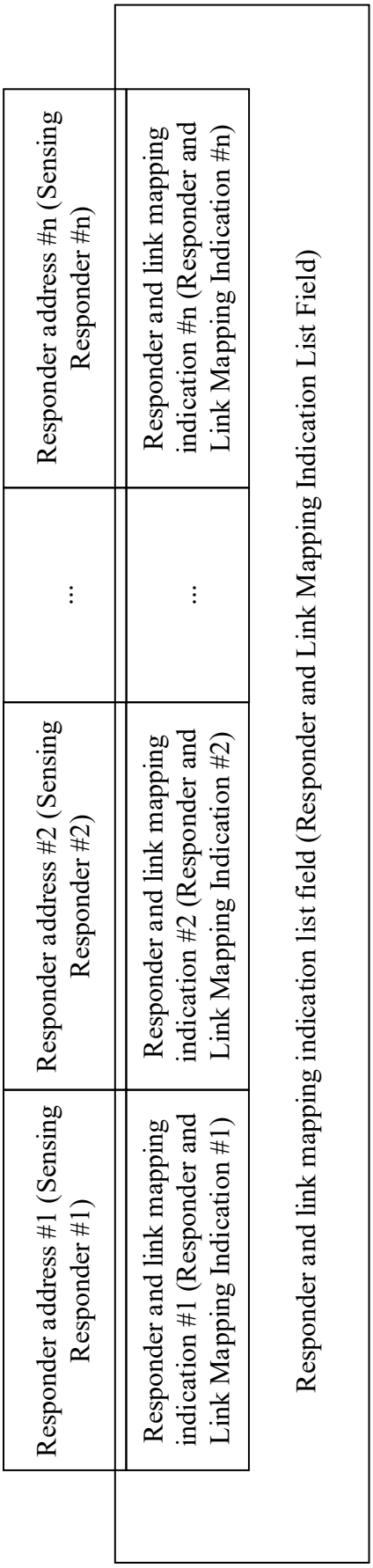
Responder address #1 (Sensing Responder #1)
Responder address #2 (Sensing Responder #2)
...
Responder address #n (Sensing Responder #n)
Responder and link mapping indication #1 (Responder and Link Mapping Indication #1)
Responder and link mapping indication #2 (Responder and Link Mapping Indication #2)
...
Responder and link mapping indication #n (Responder and Link Mapping Indication #n)
Responder and link mapping indication list field (Responder and Link Mapping Indication List Field)

FIG. 25B

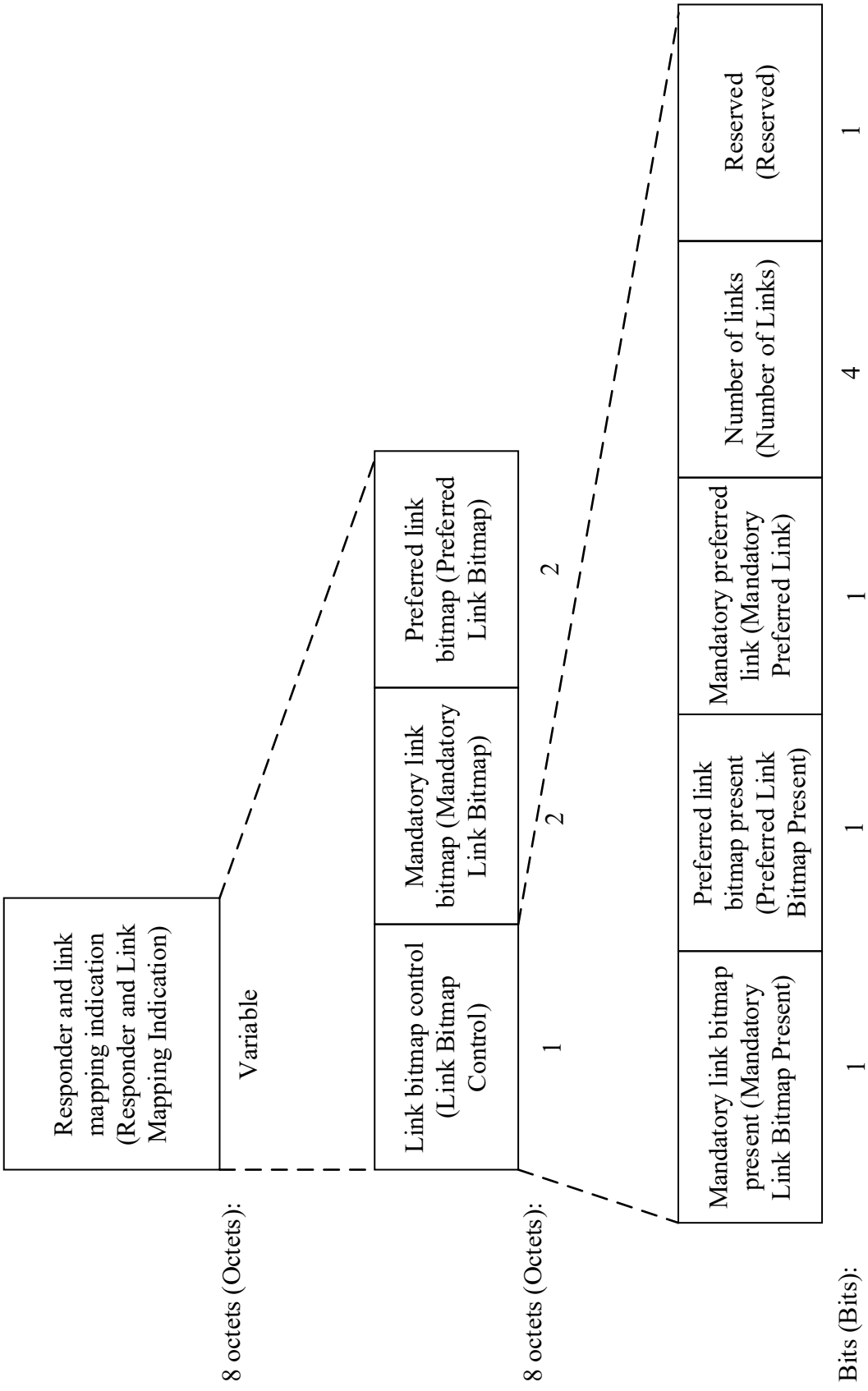
Responder and link mapping indication (Responder and Link Mapping Indication)
Variable
8 octets (Octets):
Link bitmap control (Link Bitmap Control)
Mandatory link bitmap (Mandatory Link Bitmap)
Preferred link bitmap (Preferred Link Bitmap)
8 octets (Octets):
1
2
2
Mandatory link bitmap present (Mandatory Link Bitmap Present)
Preferred link bitmap present (Preferred Link Bitmap Present)
Mandatory preferred link (Mandatory Preferred Link)
Number of links (Number of Links)
Reserved (Reserved)
Bits (Bits):
1
1
1
4
1

FIG. 25C

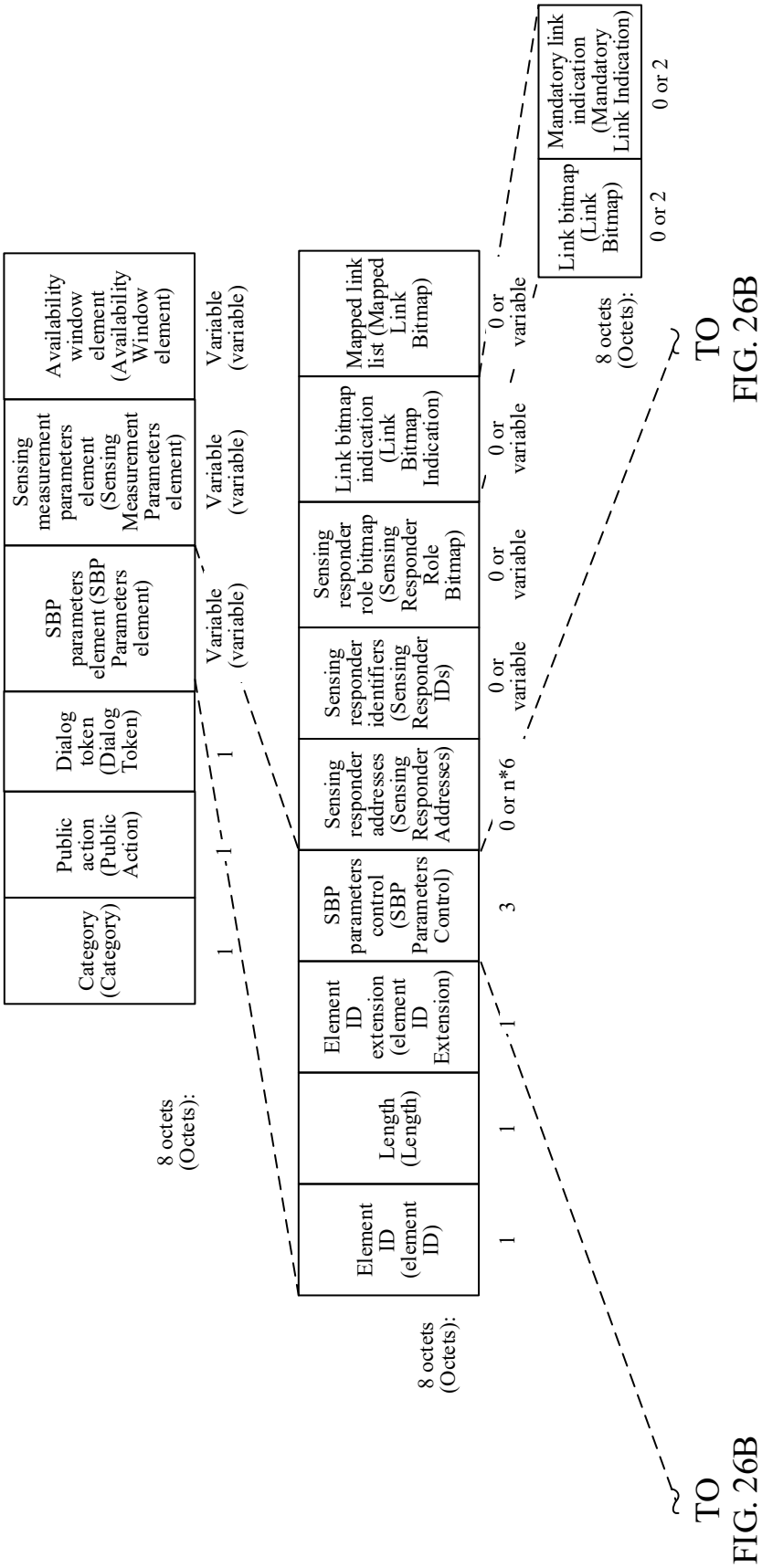
Category (Category)
Public action (Public Action)
Dialog token (Dialog Token)
SBP parameters element (SBP Parameters element)
Sensing measurement parameters element (Sensing Measurement Parameters element)
Availability window element (Availability Window element)
8 octets (Octets):
1
1
1
Variable (variable)
Variable (variable)
Variable (variable)
Element ID (element ID)
Length (Length)
Element ID extension (element ID Extension)
SBP parameters control (SBP Parameters Control)
Sensing responder addresses (Sensing Responder Addresses)
Sensing responder identifiers (Sensing Responder IDs)
Sensing responder role bitmap (Sensing Responder Role Bitmap)
Link bitmap indication (Link Bitmap Indication)
Mapped link list (Mapped Link Bitmap)
8 octets (Octets):
1
1
1
3
0 or n*6
0 or variable
0 or variable
0 or variable
0 or variable
Link bitmap (Link Bitmap)
Mandatory link indication (Mandatory Link Indication)
8 octets (Octets):
0 or 2
0 or 2
TO FIG. 26B
TO FIG. 26B

FIG. 26A

CONT. FROM FIG. 26A

CONT. FROM FIG. 26A

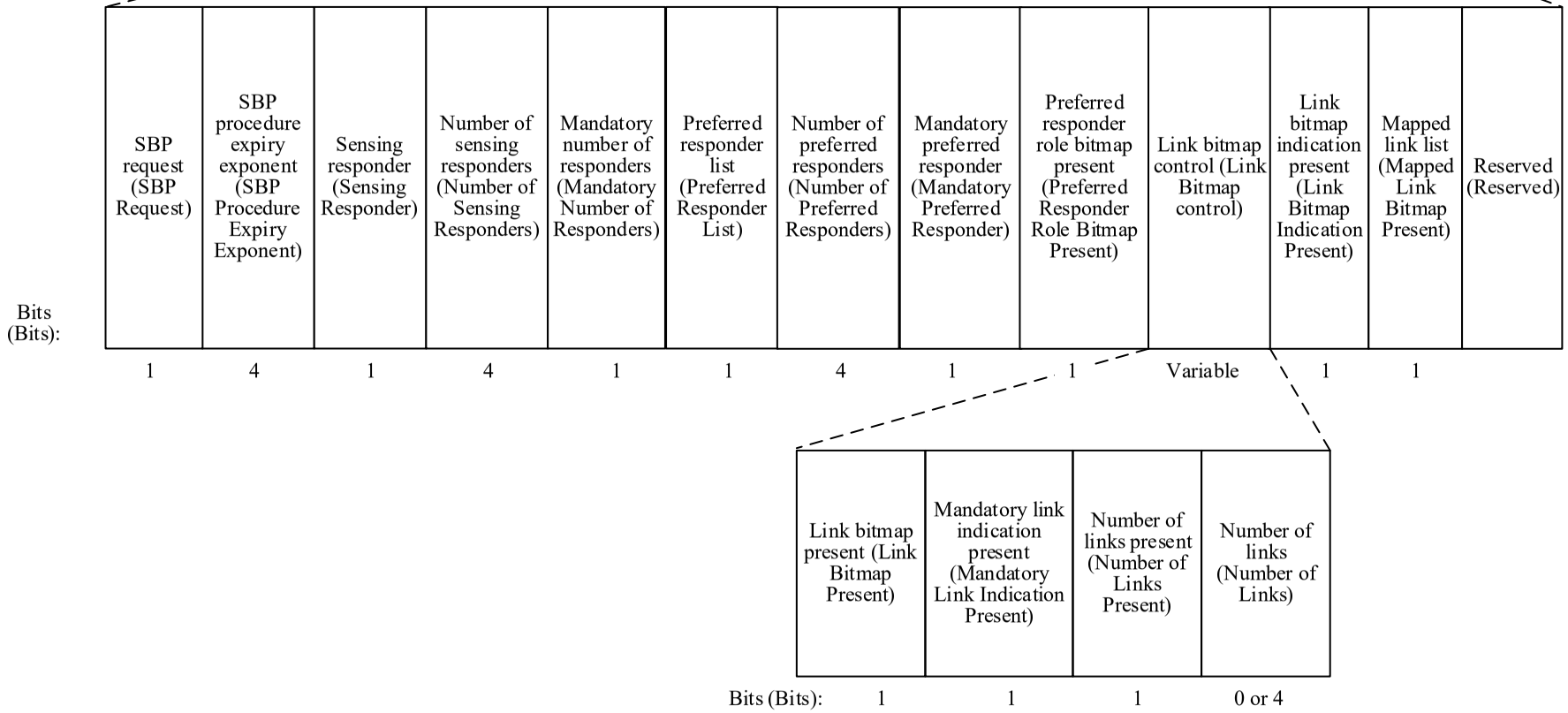

FIG. 26B

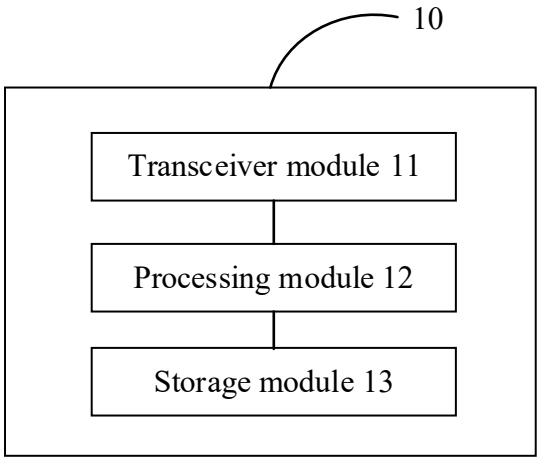
10
Transceiver module 11
Processing module 12
Storage module 13

FIG. 27

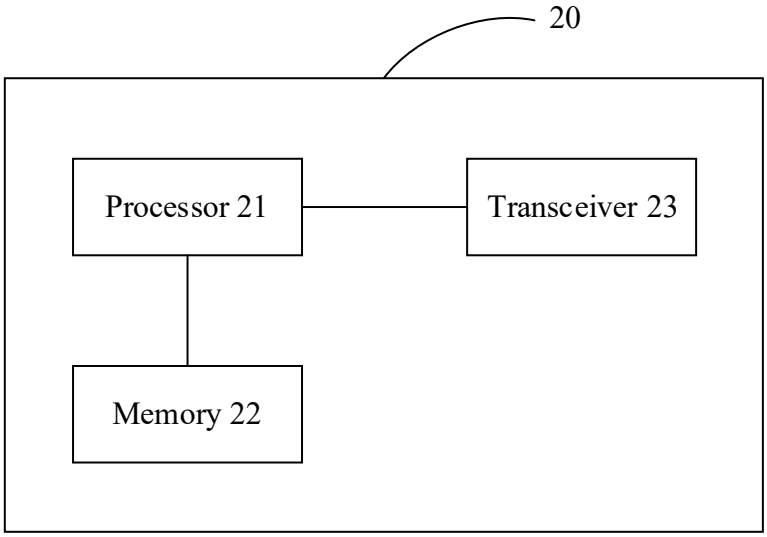
20
Processor 21
Transceiver 23
Memory 22

FIG. 28

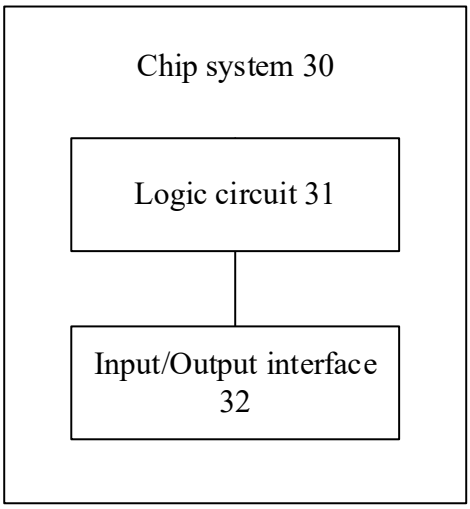

FIG. 29