163163

G00002

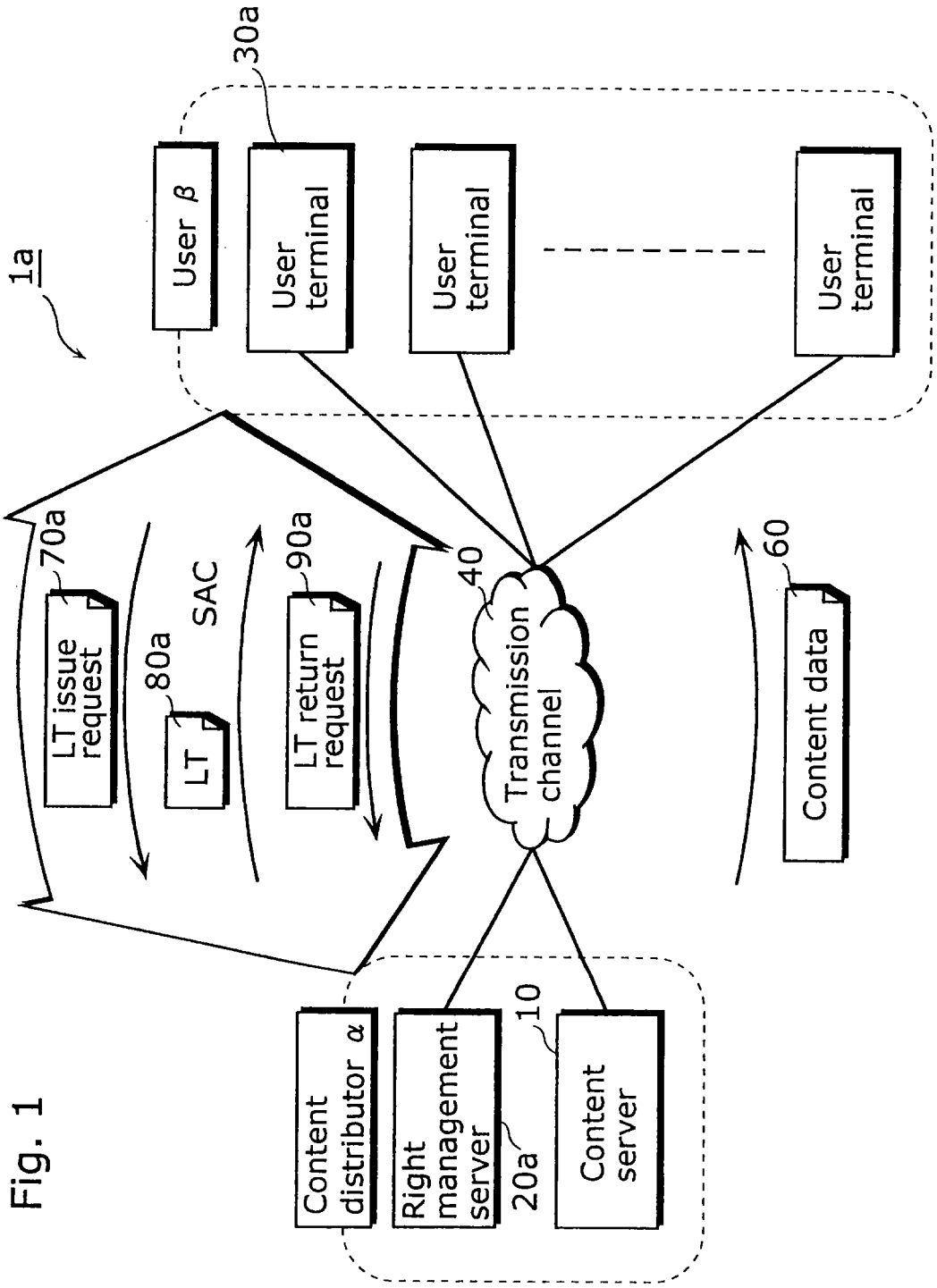


Fig. 1

Fig. 2

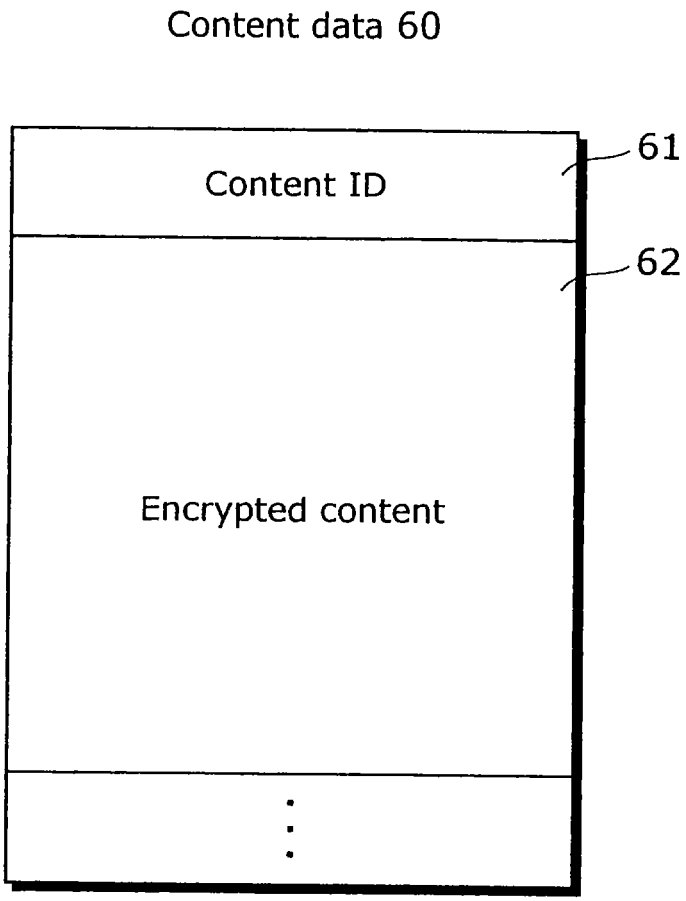


Fig. 3

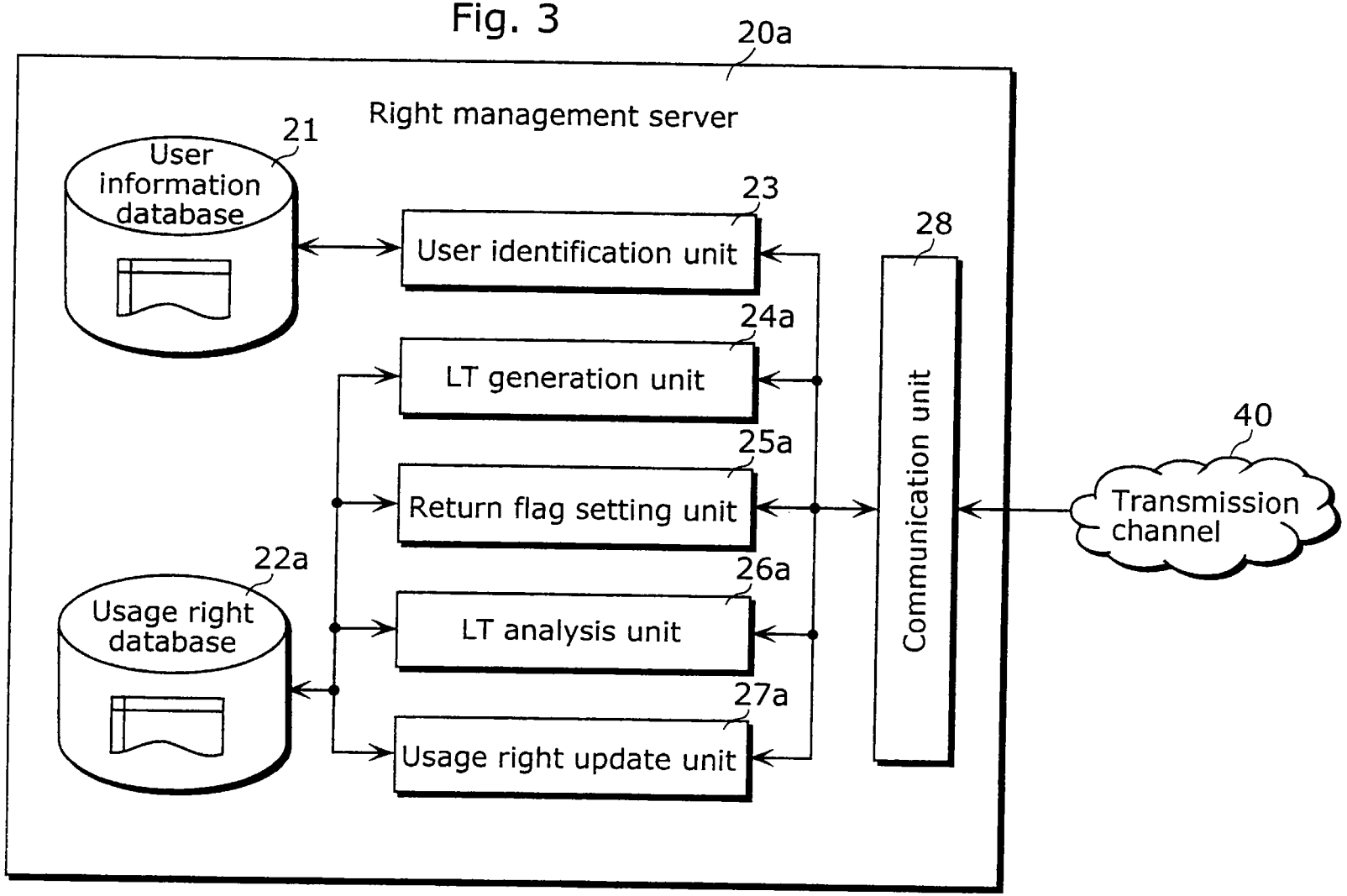

20a
Right management server
21
User information database
23
User identification unit
28
24a
LT generation unit
25a
Return flag setting unit
Communication unit
40
Transmission channel
22a
Usage right database
26a
LT analysis unit
27a
Usage right update unit

Fig. 4

User information database 21

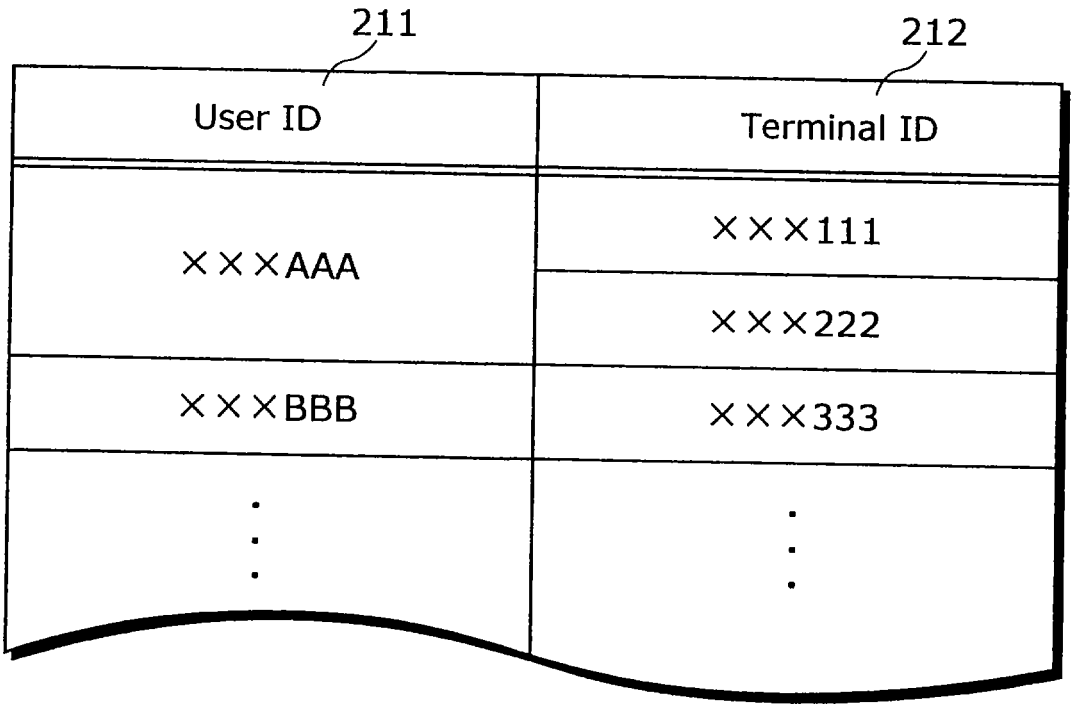


Fig. 5

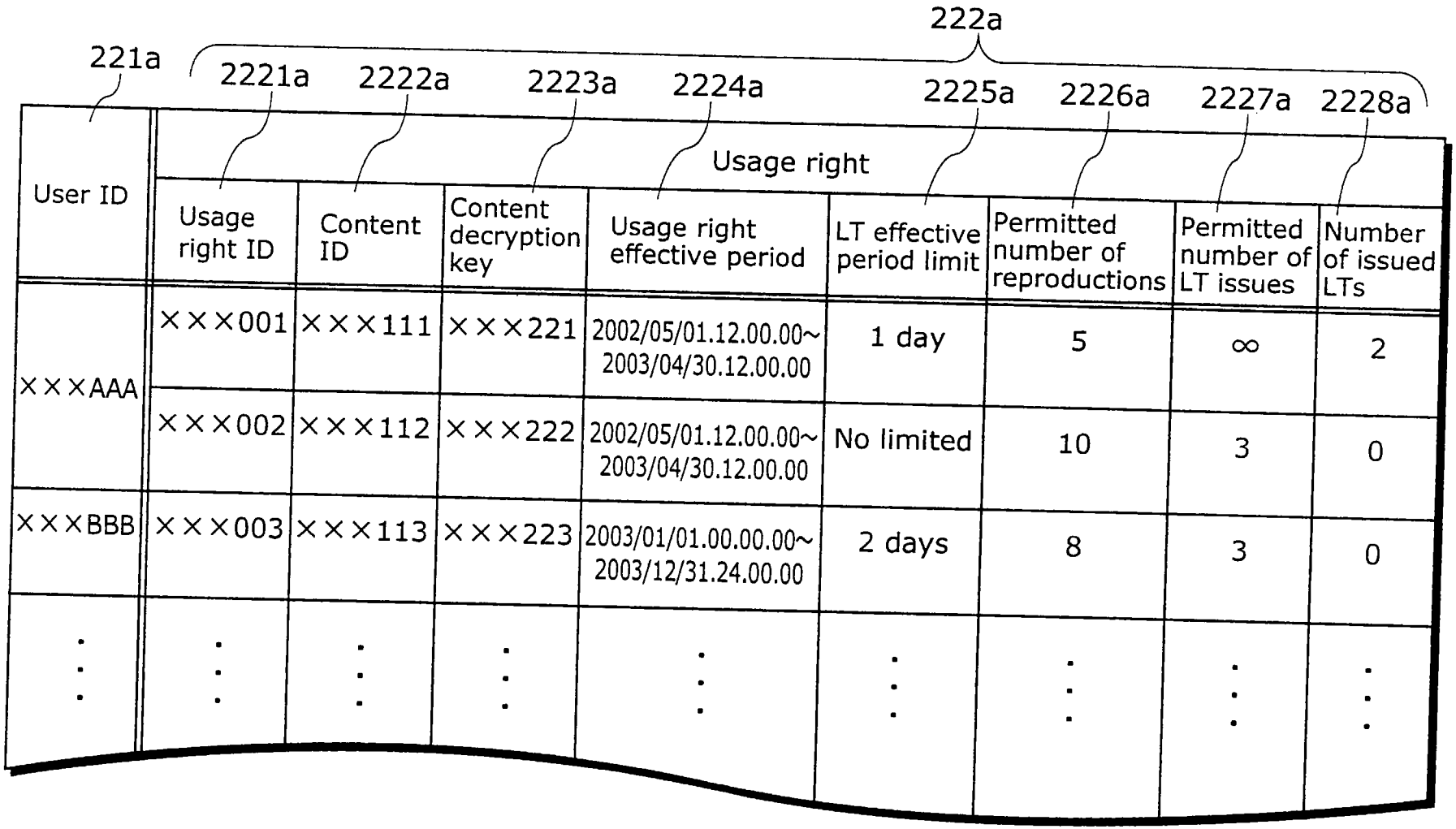

Usage right database 22a
222a
221a
2221a
2222a
2223a
2224a
2225a
2226a
2227a
2228a
Usage right
User ID
Usage right ID
Content ID
Content decryption key
Usage right effective period
LT effective period limit
Permitted number of reproductions
Permitted number of LT issues
Number of issued LTs
×××AAA
×××001
×××111
×××221
2002/05/01.12.00.00~ 2003/04/30.12.00.00
1 day
5
∞
2
×××002
×××112
×××222
2002/05/01.12.00.00~ 2003/04/30.12.00.00
No limited
10
3
0
×××BBB
×××003
×××113
×××223
2003/01/01.00.00.00~ 2003/12/31.24.00.00
2 days
8
3
0

Fig. 6

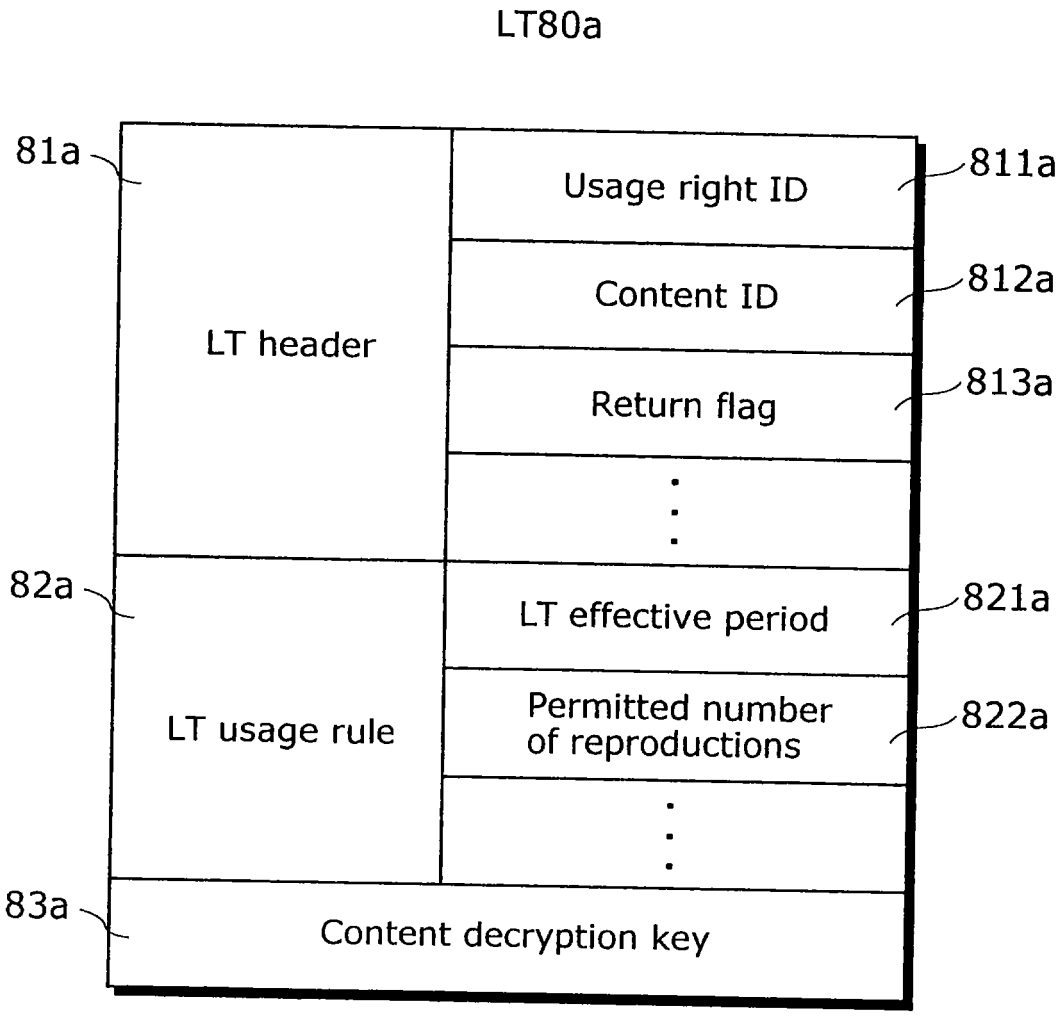

LT80a
81a
LT header
Usage right ID
811a
Content ID
812a
Return flag
813a
82a
LT usage rule
LT effective period
821a
Permitted number of reproductions
822a
83a
Content decryption key

Fig. 7

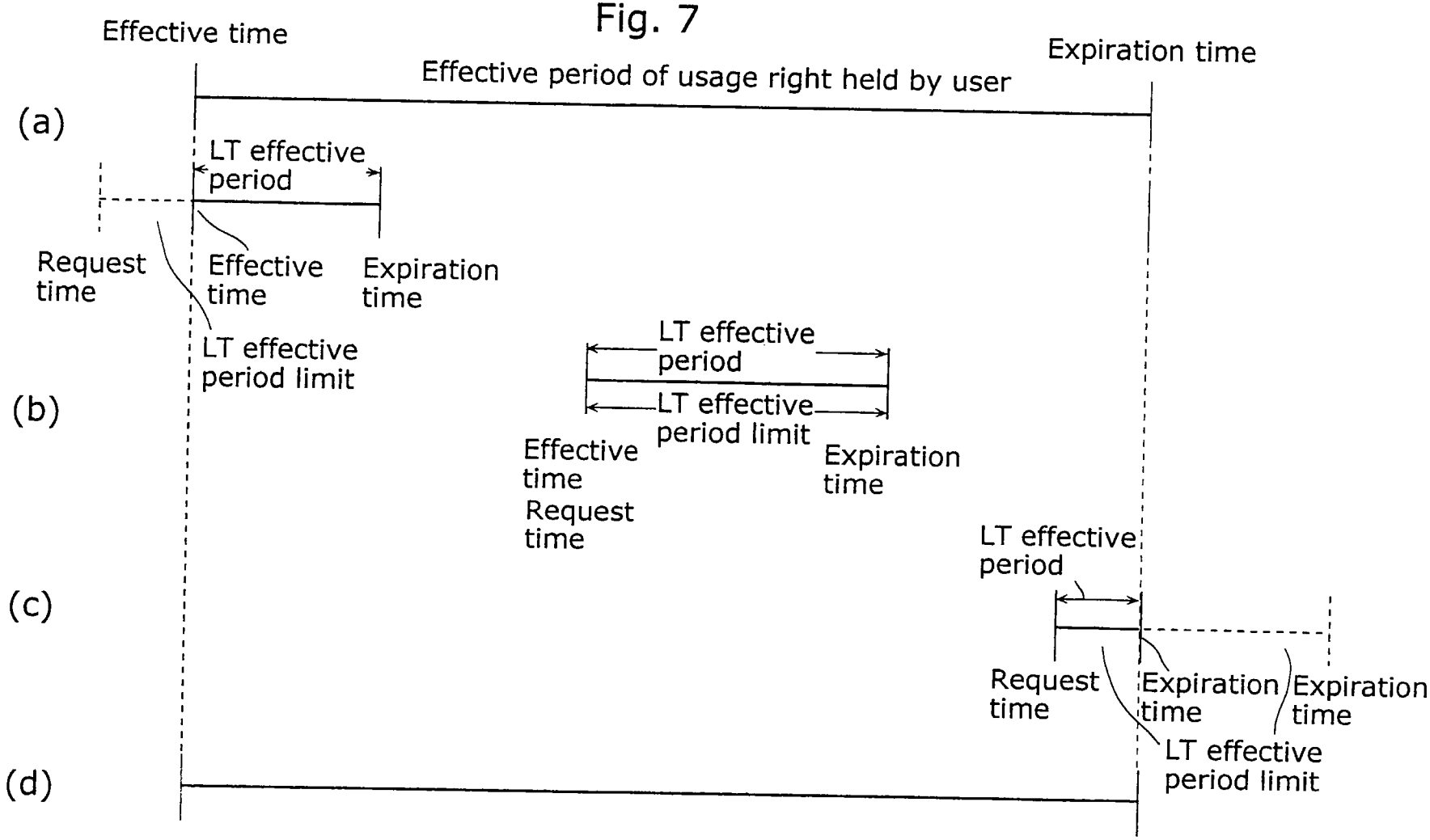

Effective time
Expiration time
Effective period of usage right held by user
(a)
LT effective period
Request time
Effective time
Expiration time
LT effective period limit
(b)
LT effective period
LT effective period limit
Effective time
Request time
Expiration time
(c)
LT effective period
Request time
Expiration time
Expiration time
LT effective period limit
(d)

Fig. 8

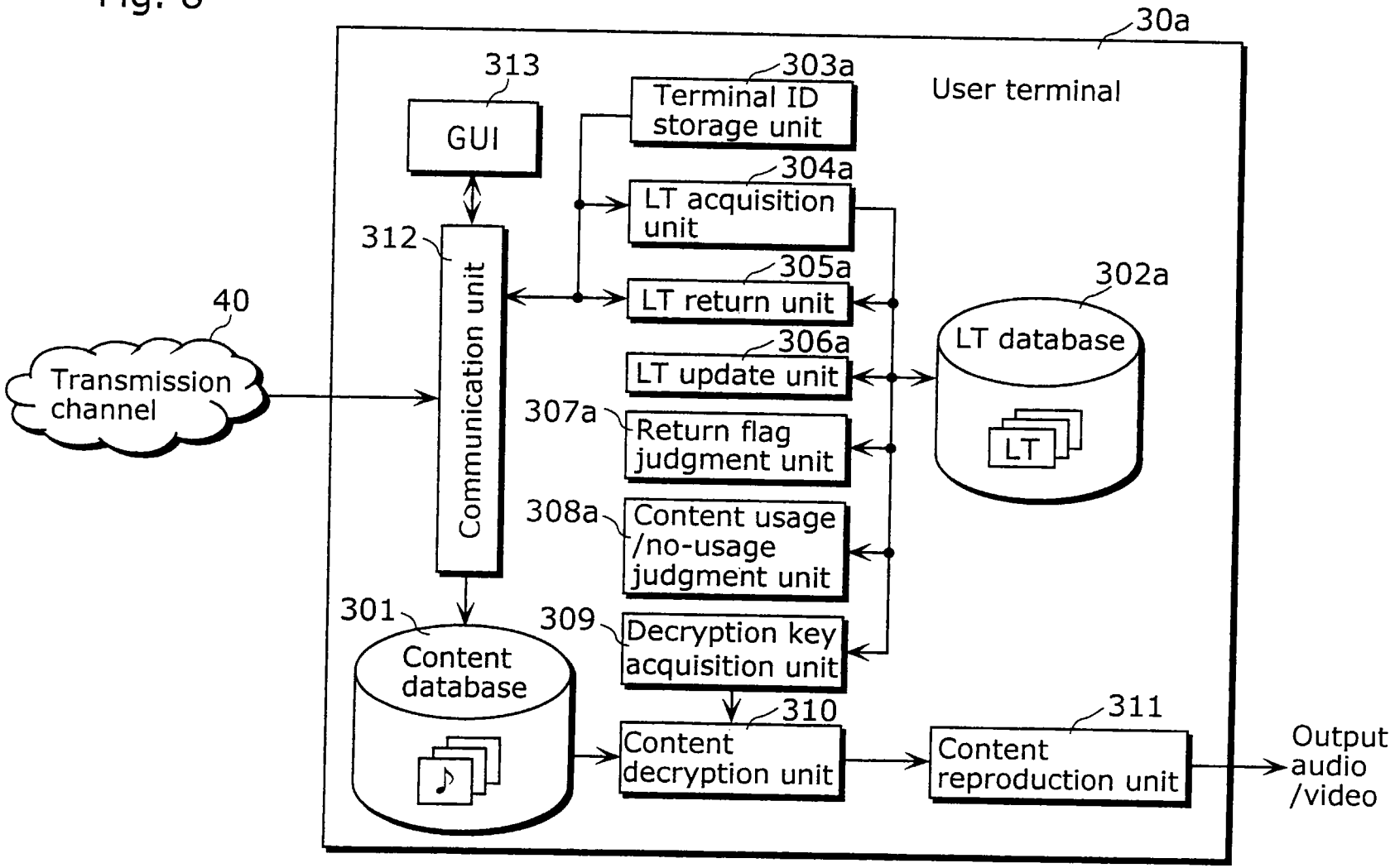

30a
User terminal
313
GUI
303a
Terminal ID storage unit
304a
LT acquisition unit
312
Communication unit
305a
LT return unit
302a
LT database
LT
40
Transmission channel
306a
LT update unit
307a
Return flag judgment unit
308a
Content usage /no-usage judgment unit
301
Content database
309
Decryption key acquisition unit
310
Content decryption unit
311
Content reproduction unit
Output audio /video

Fig. 9

LT issue request 70a

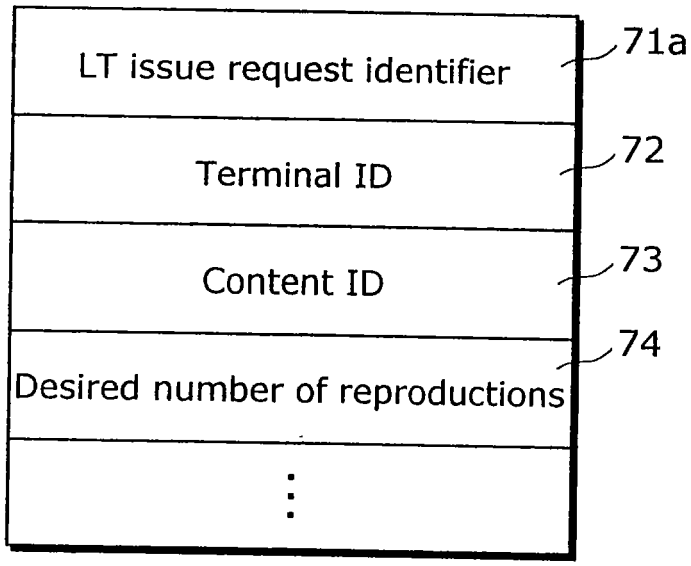


Fig. 10

LT return request 90a

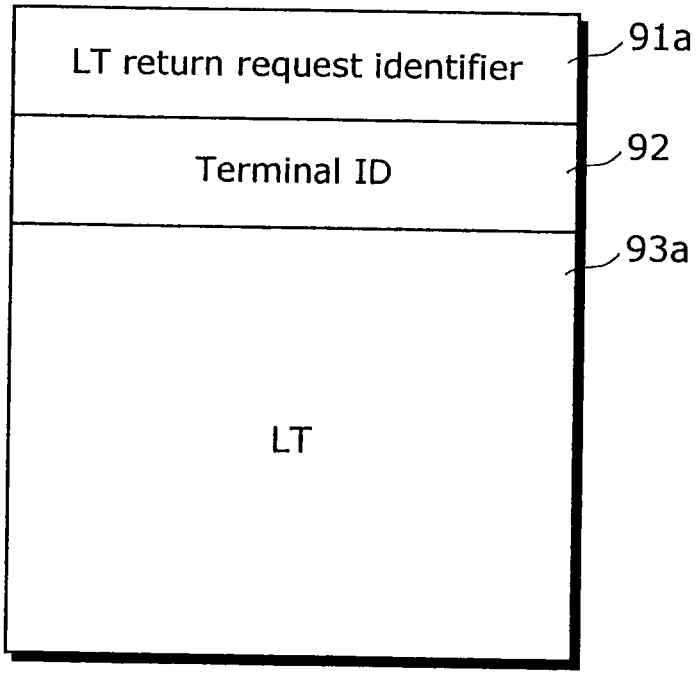


Fig. 11

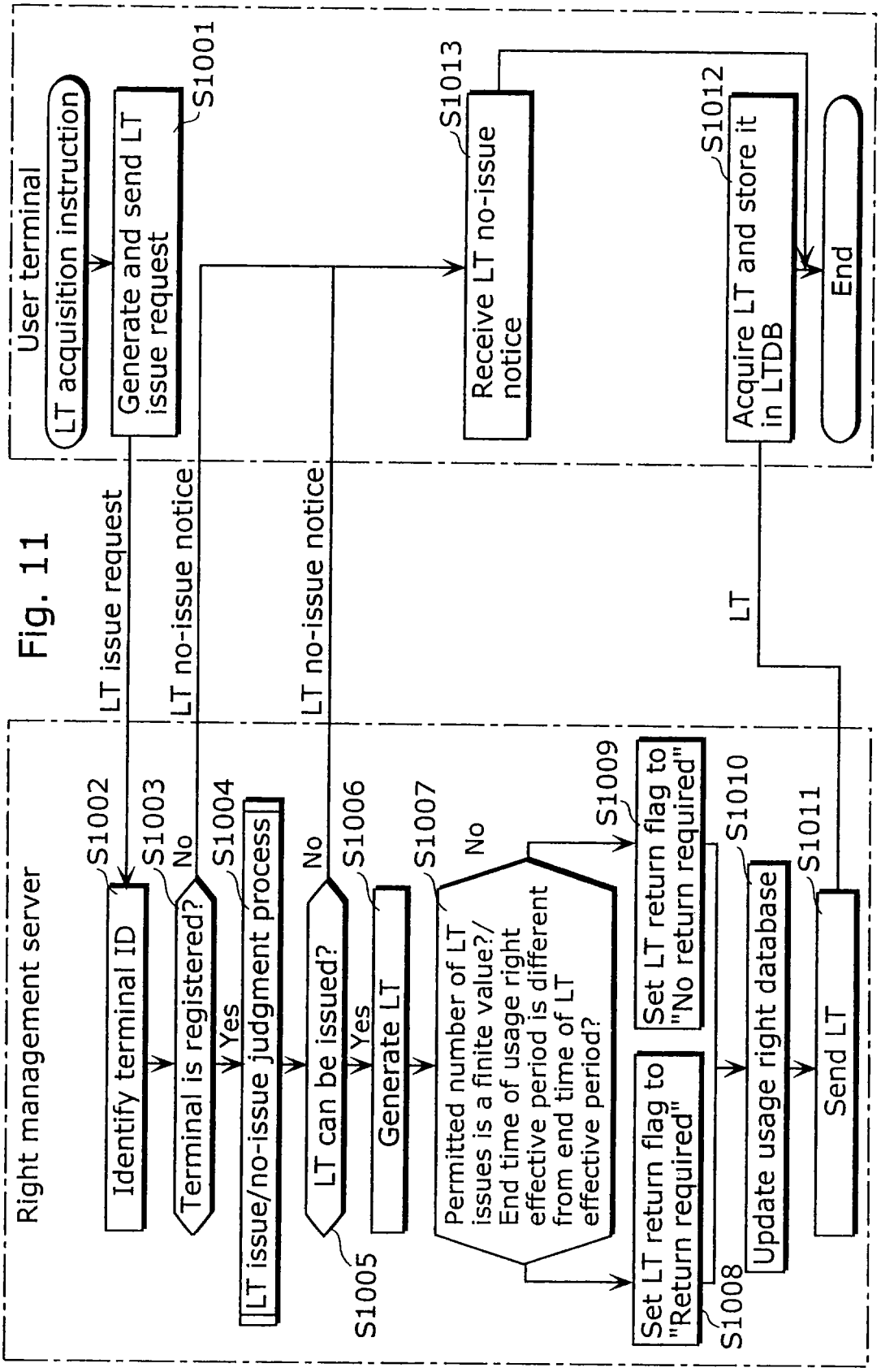

User terminal
LT acquisition instruction
Generate and send LT issue request
S1001
Receive LT no-issue notice
S1013
Acquire LT and store it in LTDB
S1012
End
LT issue request
LT no-issue notice
LT no-issue notice
LT
Right management server
S1002
Identify terminal ID
S1003
Terminal is registered?
No
Yes
S1004
LT issue/no-issue judgment process
LT can be issued?
No
Yes
S1006
Generate LT
S1007
Permitted number of LT issues is a finite value?/ End time of usage right effective period is different from end time of LT effective period?
No
S1009
Set LT return flag to "No return required"
S1010
Set LT return flag to "Return required"
S1008
Update usage right database
S1011
Send LT
S1005

Fig. 12

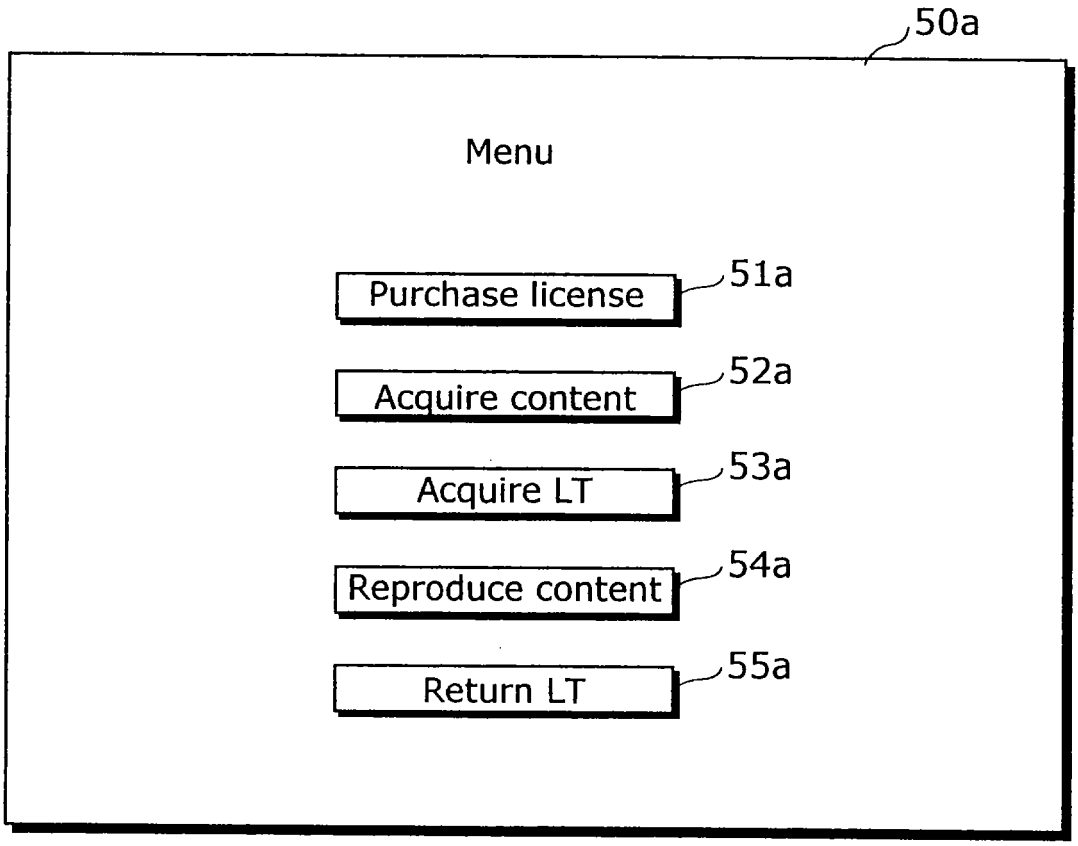

50a
Menu
Purchase license
51a
Acquire content
52a
Acquire LT
53a
Reproduce content
54a
Return LT
55a

Fig. 13

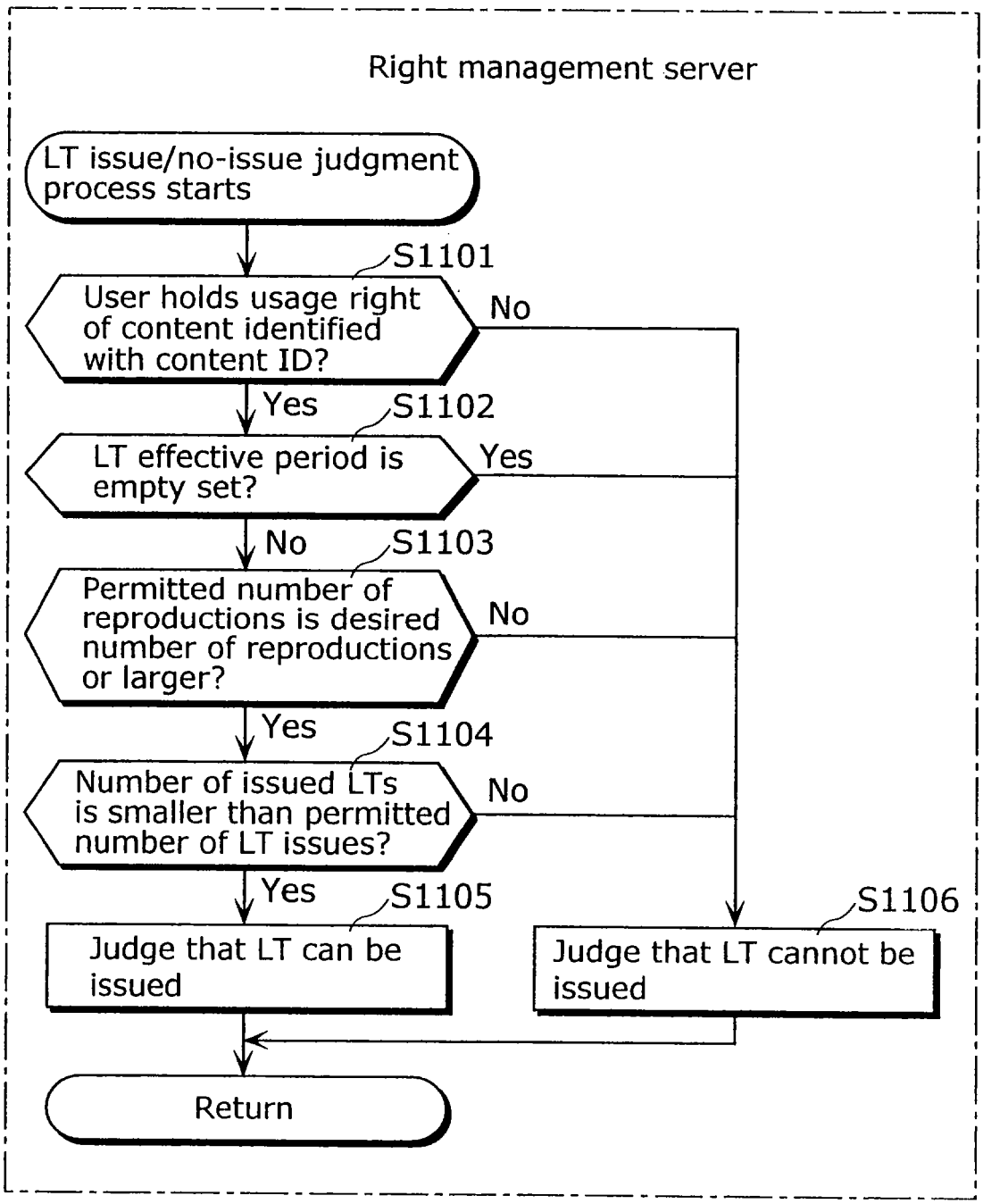

Right management server
LT issue/no-issue judgment process starts
S1101
User holds usage right of content identified with content ID?
No
Yes
S1102
LT effective period is empty set?
Yes
No
S1103
Permitted number of reproductions is desired number of reproductions or larger?
No
Yes
S1104
Number of issued LTs is smaller than permitted number of LT issues?
No
Yes
S1105
Judge that LT can be issued
S1106
Judge that LT cannot be issued
Return

Fig. 14

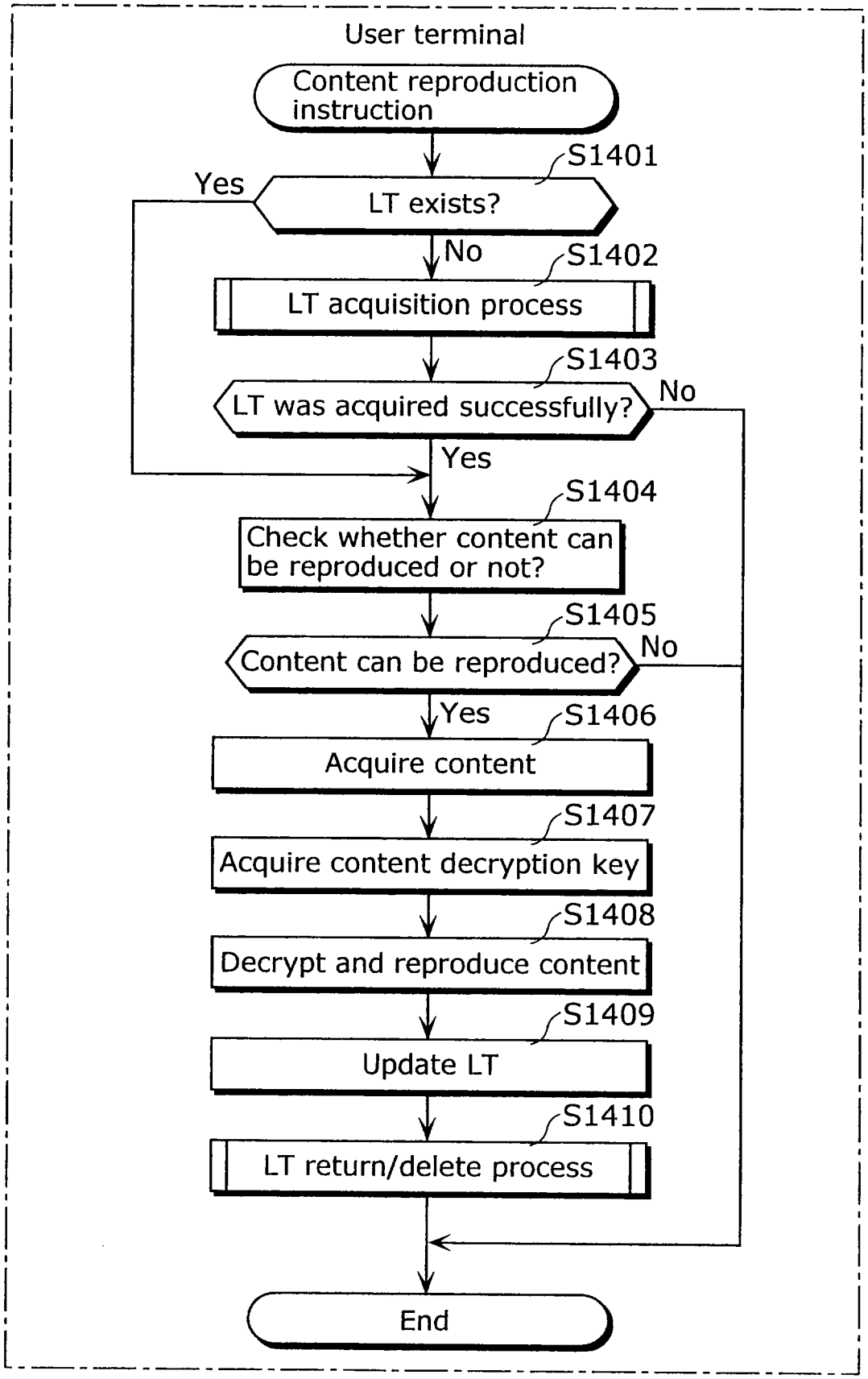

User terminal
Content reproduction instruction
S1401
LT exists?
Yes
No
S1402
LT acquisition process
S1403
LT was acquired successfully?
No
Yes
S1404
Check whether content can be reproduced or not?
S1405
Content can be reproduced?
No
Yes
S1406
Acquire content
S1407
Acquire content decryption key
S1408
Decrypt and reproduce content
S1409
Update LT
S1410
LT return/delete process
End

Fig. 15

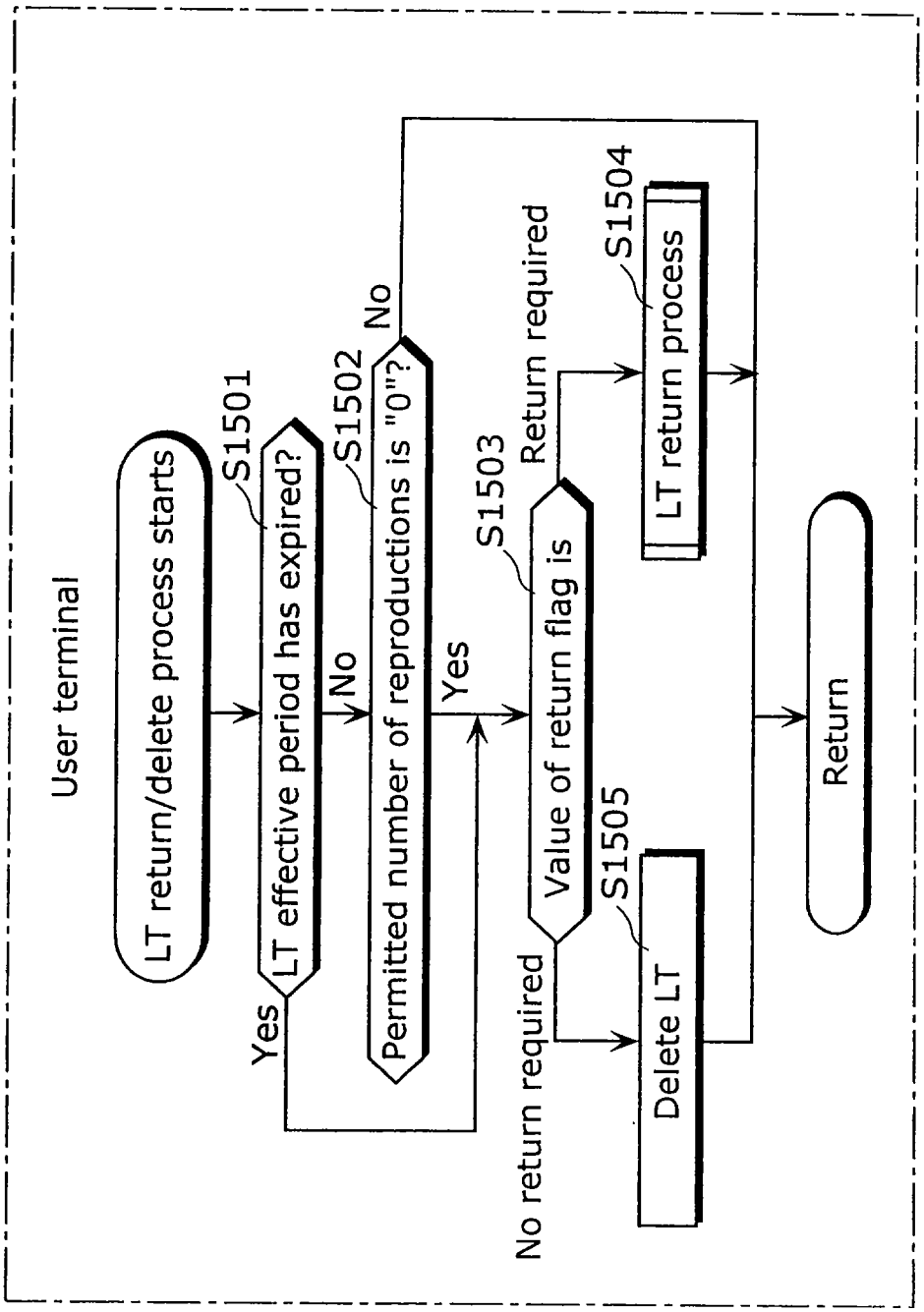

User terminal
LT return/delete process starts
S1501
LT effective period has expired?
Yes
No
S1502
Permitted number of reproductions is "0"?
No
Yes
S1503
Value of return flag is
Return required
No return required
S1504
LT return process
S1505
Delete LT
Return

Fig. 16

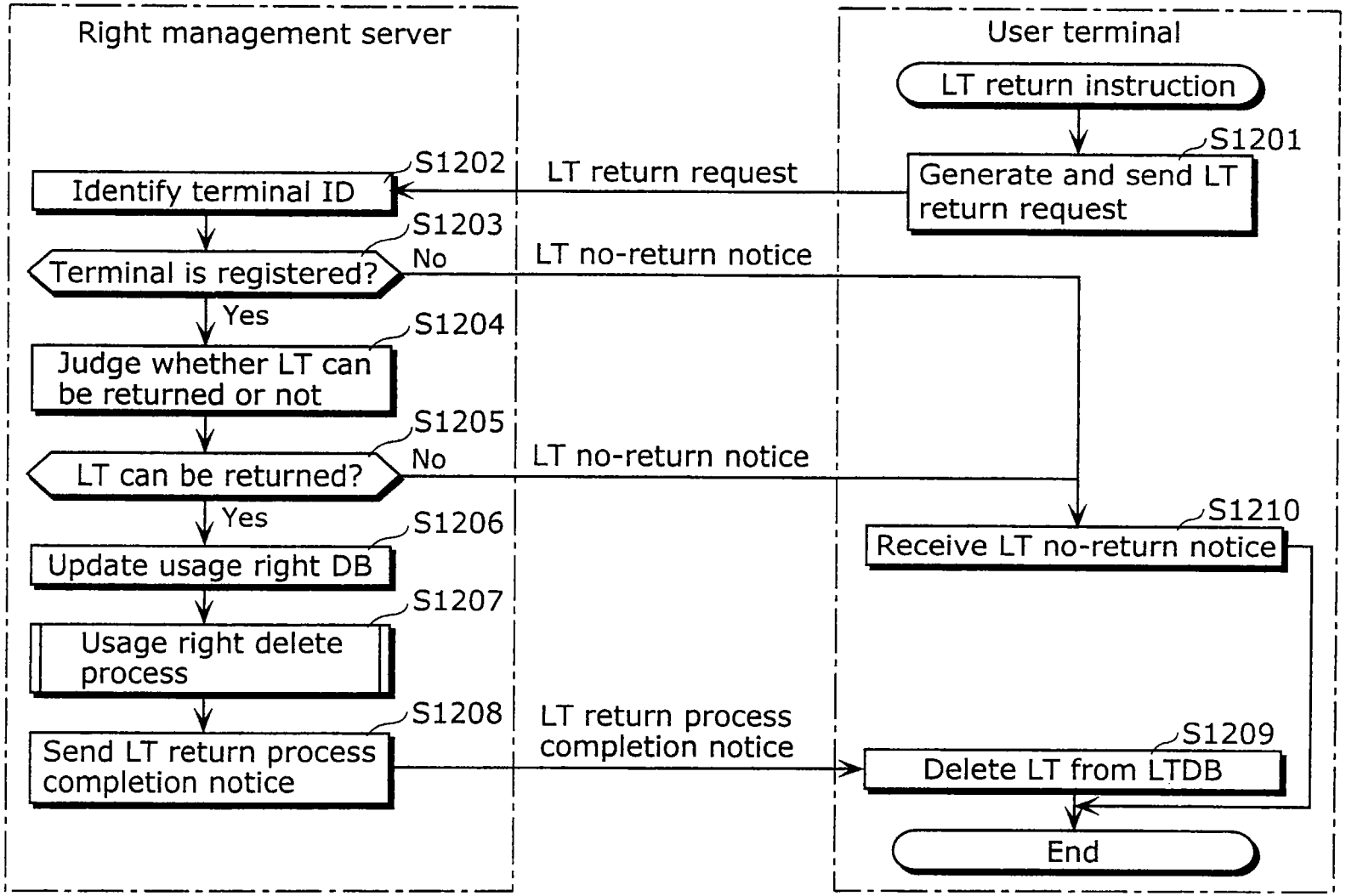

Right management server
User terminal
LT return instruction
S1201
Generate and send LT return request
LT return request
S1202
Identify terminal ID
S1203
Terminal is registered?
No
LT no-return notice
Yes
S1204
Judge whether LT can be returned or not
S1205
LT can be returned?
No
LT no-return notice
Yes
S1206
Update usage right DB
S1207
Usage right delete process
S1208
Send LT return process completion notice
LT return process completion notice
S1210
Receive LT no-return notice
S1209
Delete LT from LTDB
End

Fig. 17

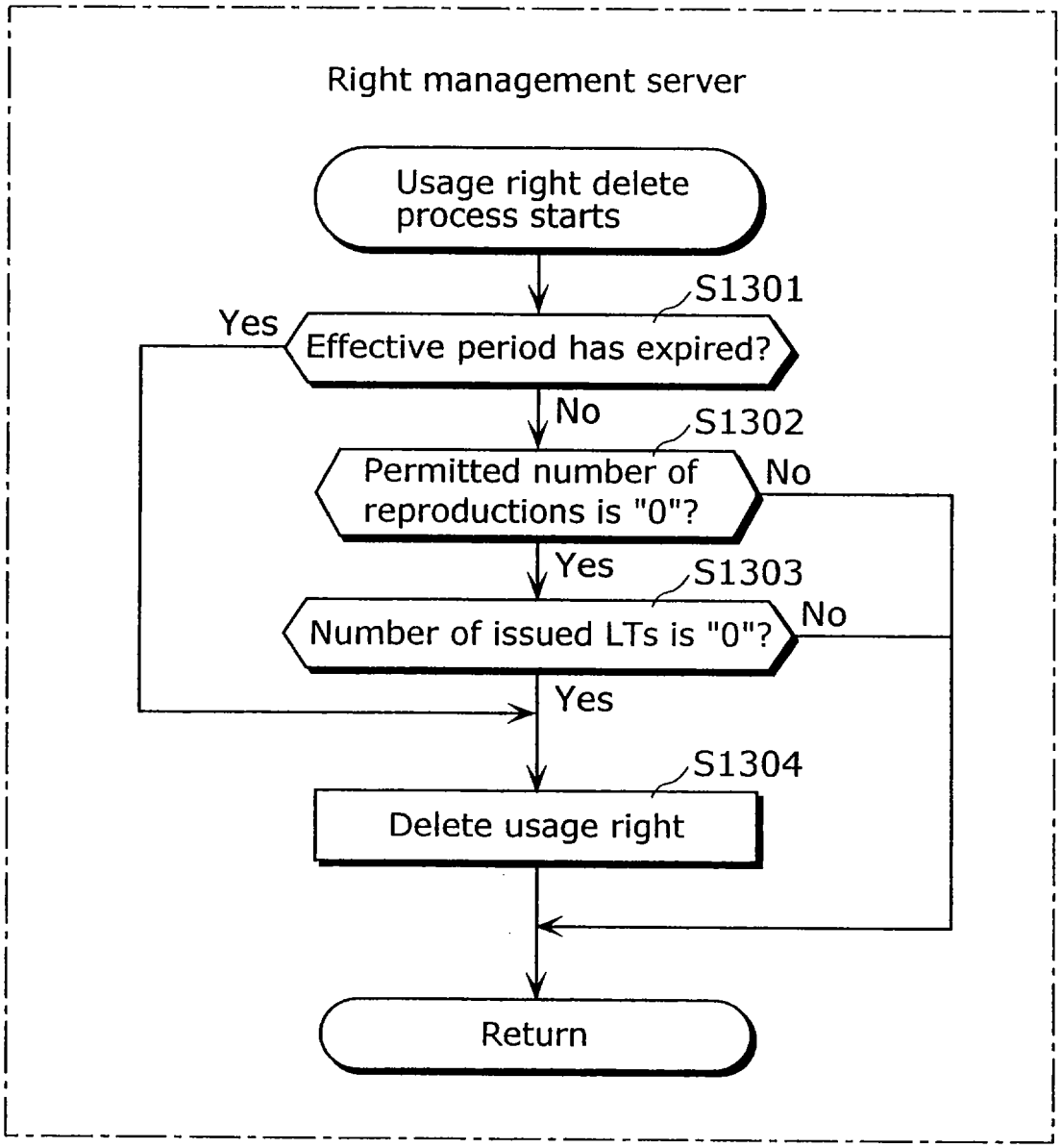

Right management server
Usage right delete process starts
S1301
Yes
Effective period has expired?
No
S1302
Permitted number of reproductions is "0"?
No
Yes
S1303
Number of issued LTs is "0"?
No
Yes
S1304
Delete usage right
Return

Fig. 18

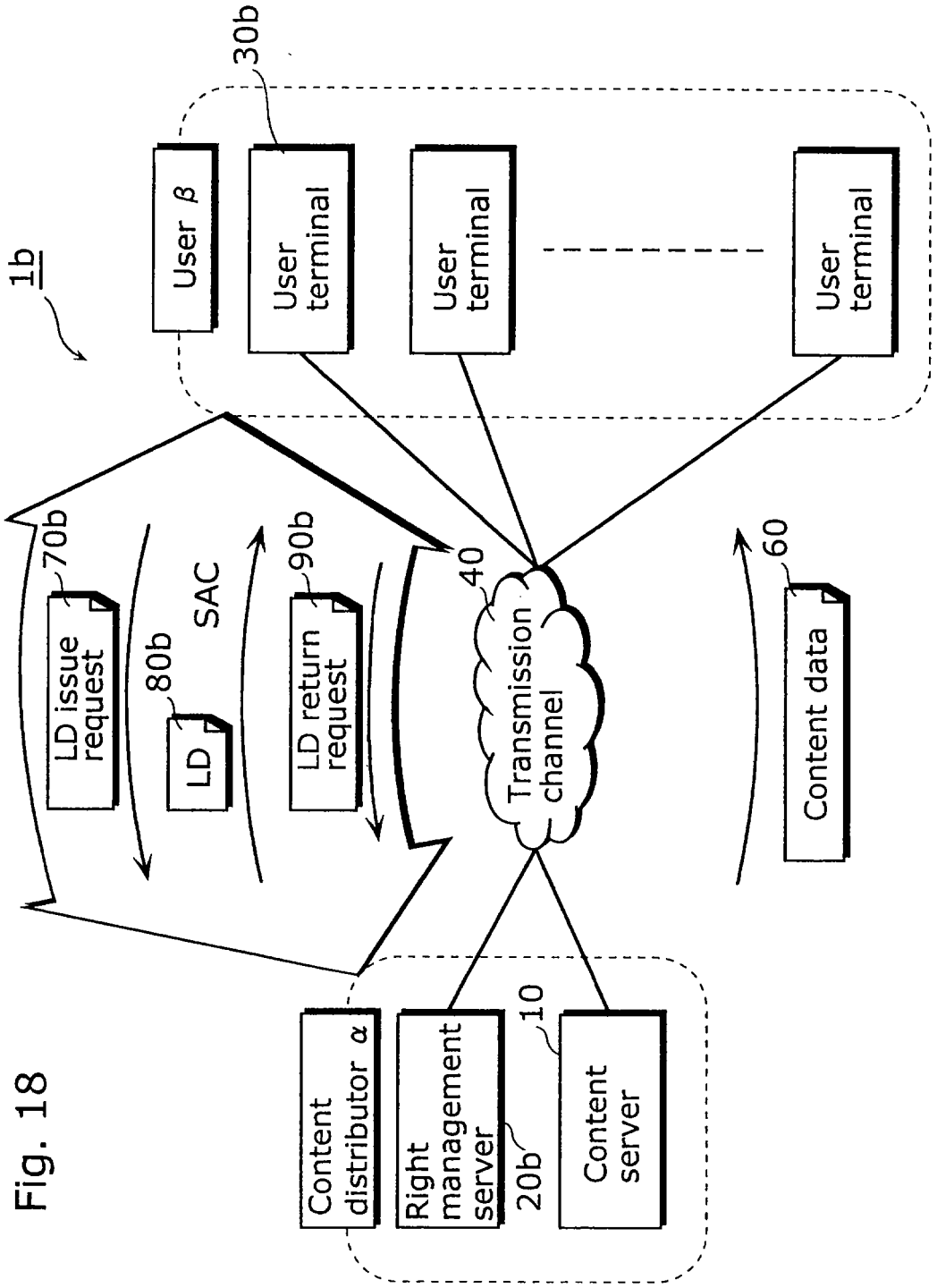

1b
30b
User β
User terminal
User terminal
User terminal
70b
LD issue request
80b
LD
SAC
90b
LD return request
40
Transmission channel
60
Content data
Content distributor α
Right management server
20b
10
Content server

Fig. 19

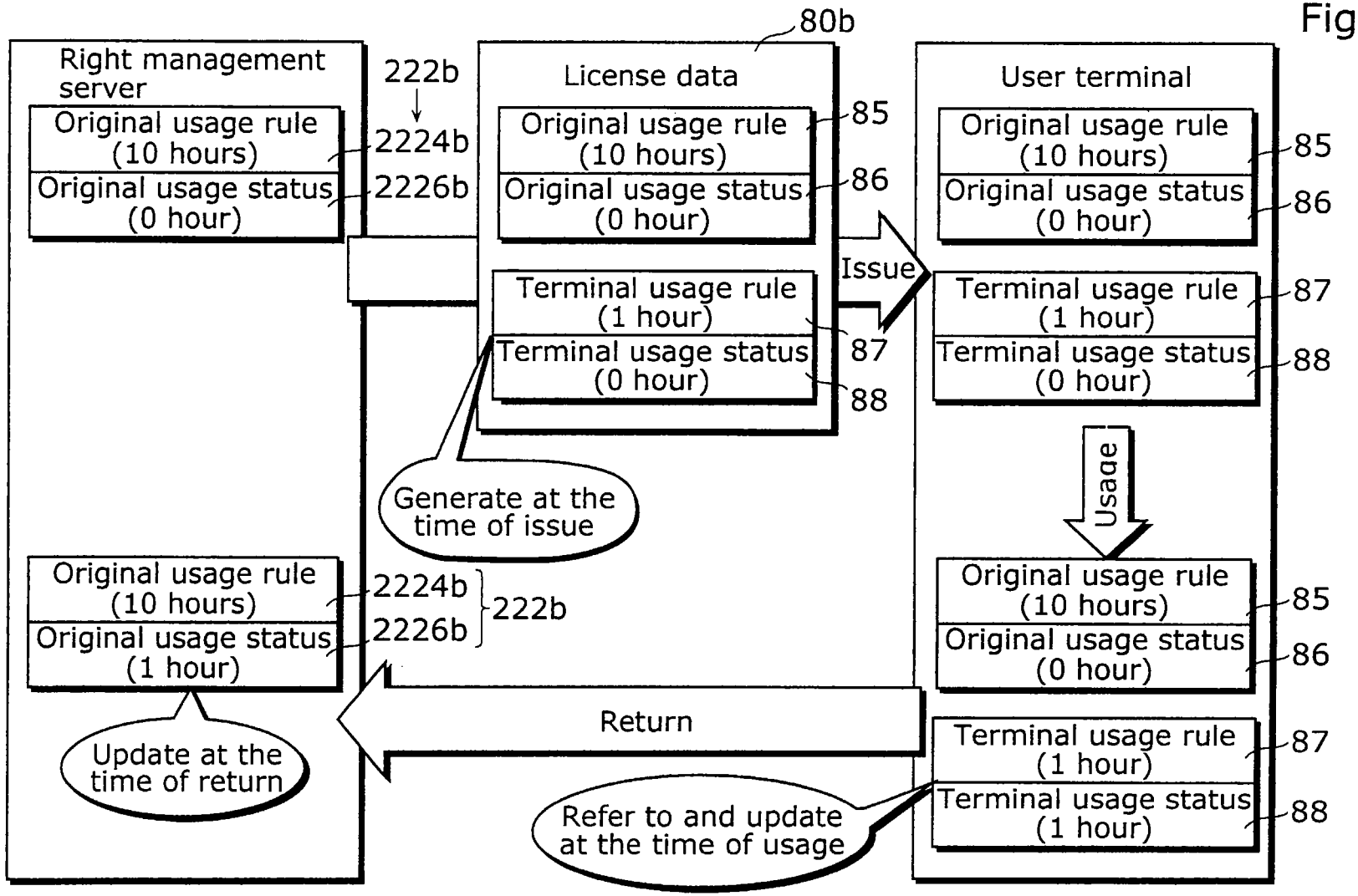

Right management server
222b
Original usage rule (10 hours)
2224b
Original usage status (0 hour)
2226b
80b
License data
Original usage rule (10 hours)
85
Original usage status (0 hour)
86
Terminal usage rule (1 hour)
87
Terminal usage status (0 hour)
88
Issue
User terminal
Original usage rule (10 hours)
85
Original usage status (0 hour)
86
Terminal usage rule (1 hour)
87
Terminal usage status (0 hour)
88
Usage
Generate at the time of issue
Original usage rule (10 hours)
2224b
Original usage status (1 hour)
2226b
222b
Return
Update at the time of return
Original usage rule (10 hours)
85
Original usage status (0 hour)
86
Terminal usage rule (1 hour)
87
Terminal usage status (1 hour)
88
Refer to and update at the time of usage

Fig. 20

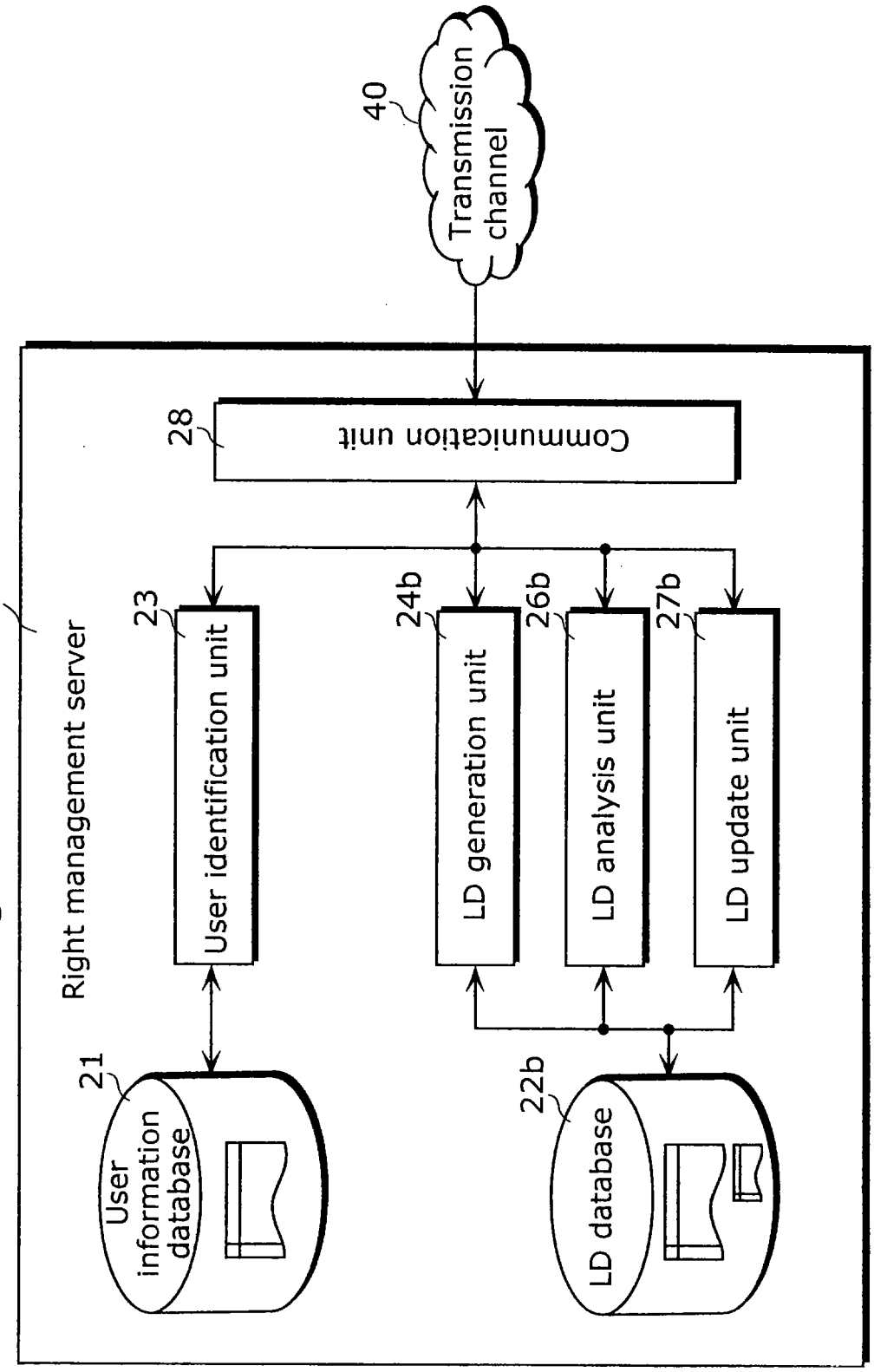

40
Transmission channel
20b
Right management server
28
Communication unit
23
User identification unit
24b
LD generation unit
26b
LD analysis unit
27b
LD update unit
21
User information database
22b
LD database

Fig. 21

License data database 22b

222b

221b	2221b	2222b	2223b	2224b	22242	2226b
User ID	License data					
	License ID	Content ID	Content decryption key	22241 Original usage rule: License effective period	22241 Original usage rule: Permitted reproduction time	Original usage status
×××DDD	×××004	×××114	×××224	2002/05/01.12.00.00~ 2003/04/30.12.00.00	10	0
	×××005	×××115	×××225	2002/05/01.12.00.00~ 2003/04/30.12.00.00	∞	0
×××EEE	×××006	×××116	×××226	2003/01/01.00.00.00~ 2003/12/31.24.00.00	20	3
⋮	⋮	⋮	⋮	⋮	⋮	⋮

Fig. 22

Rule table 22c

License ID (221c)	Rule data (2221c)		(2222c)
	22211 Terminal usage rule		22212
	License effective period	Permitted reproduction time	On-usage-end return flag
×××004	1 day	30 minutes	Return required
×××005	No limited	3 hours	—
×××006	1 week	1 hour	No return required
⋮	⋮	⋮	⋮

"—": Set the flag based on terminal capability included in LD issue request

Fig. 23

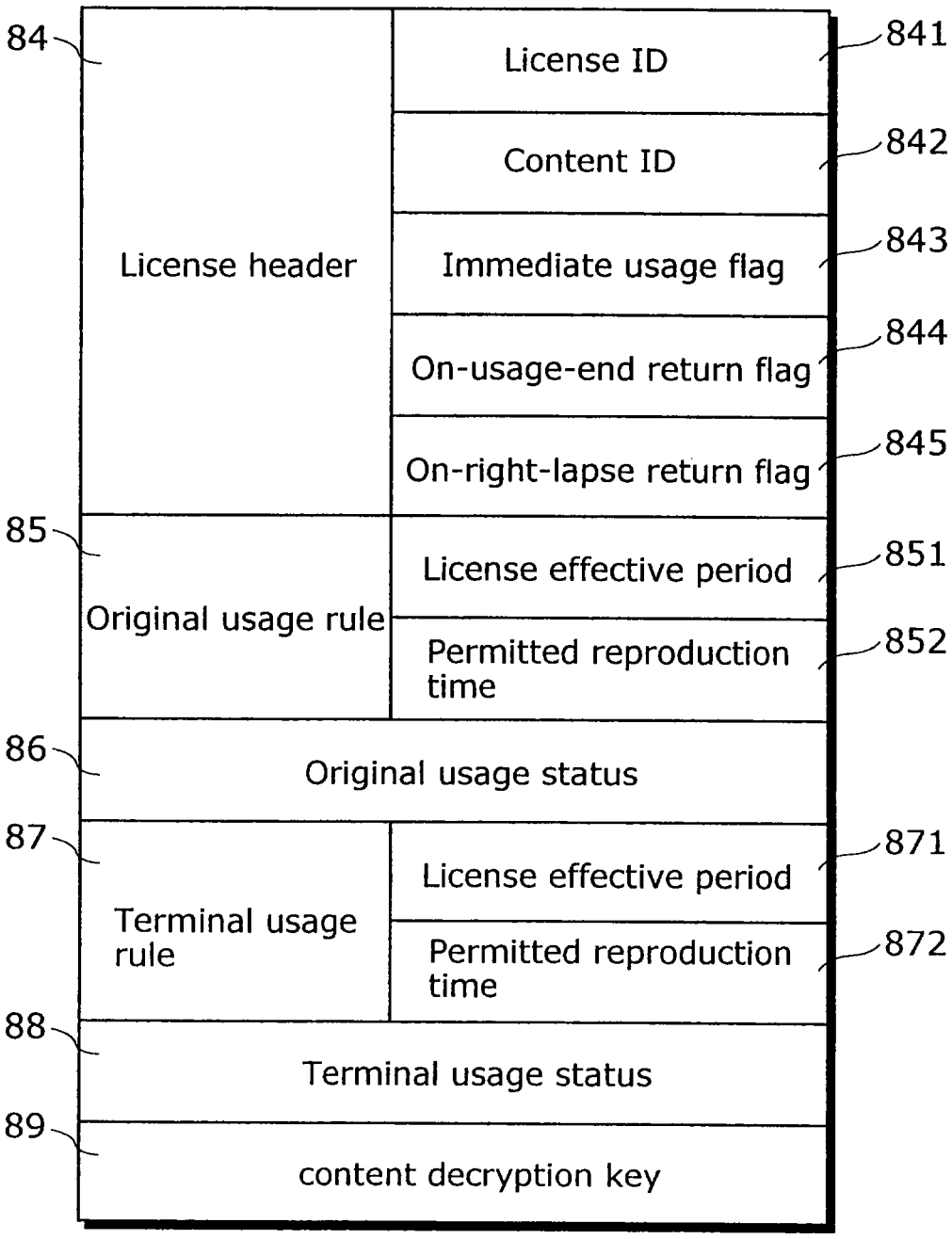

LD80b
84
License header
License ID
841
Content ID
842
Immediate usage flag
843
On-usage-end return flag
844
On-right-lapse return flag
845
85
Original usage rule
License effective period
851
Permitted reproduction time
852
86
Original usage status
87
Terminal usage rule
License effective period
871
Permitted reproduction time
872
88
Terminal usage status
89
content decryption key

Fig. 24

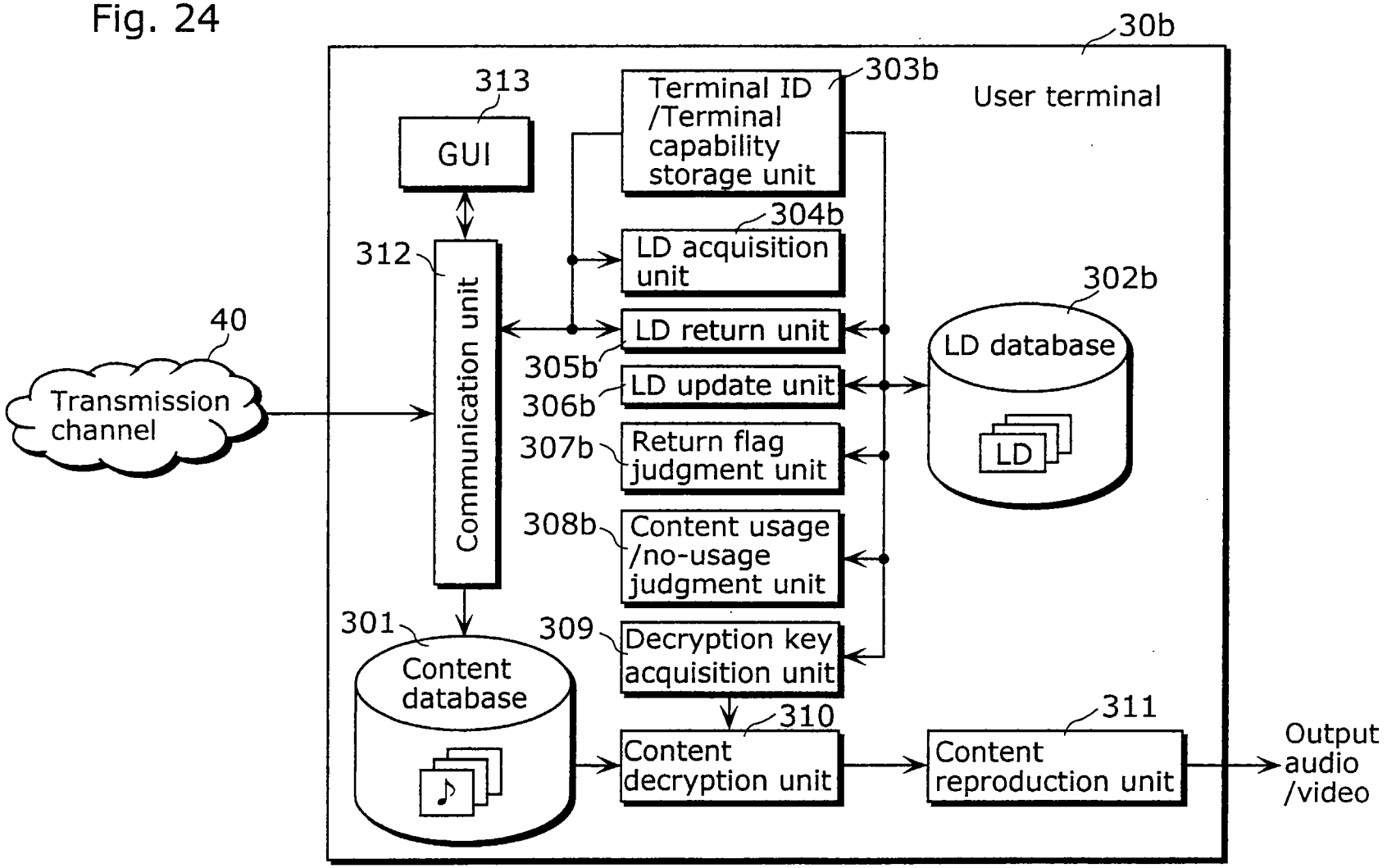

30b
User terminal
313
GUI
303b
Terminal ID /Terminal capability storage unit
304b
LD acquisition unit
312
Communication unit
40
Transmission channel
LD return unit
305b
LD update unit
306b
307b
Return flag judgment unit
302b
LD database
LD
308b
Content usage /no-usage judgment unit
301
Content database
309
Decryption key acquisition unit
310
Content decryption unit
311
Content reproduction unit
Output audio /video

Fig. 25

License data issue request 70b

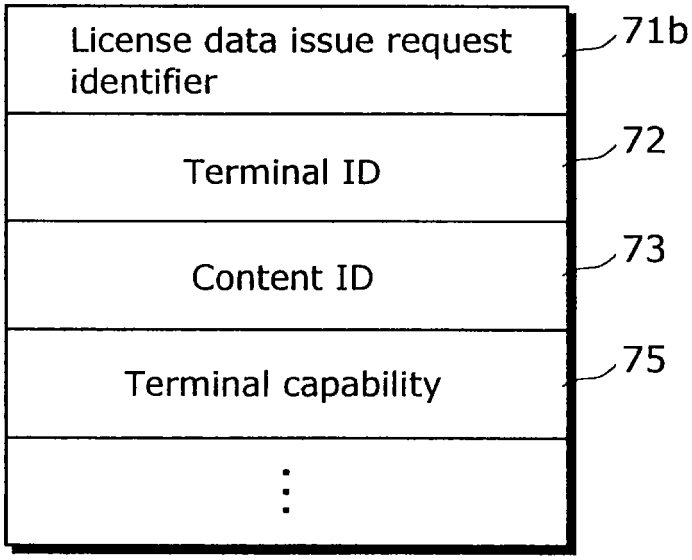


Fig. 26

License data return request 90b

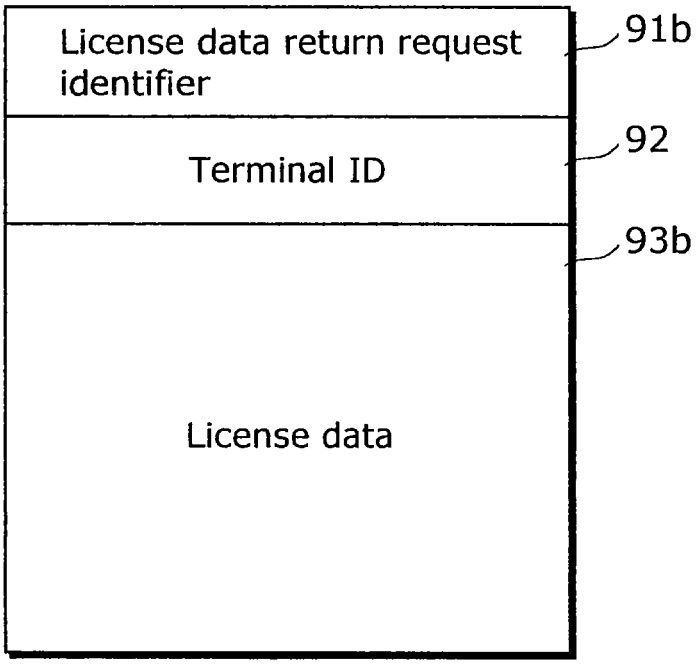


Fig. 27

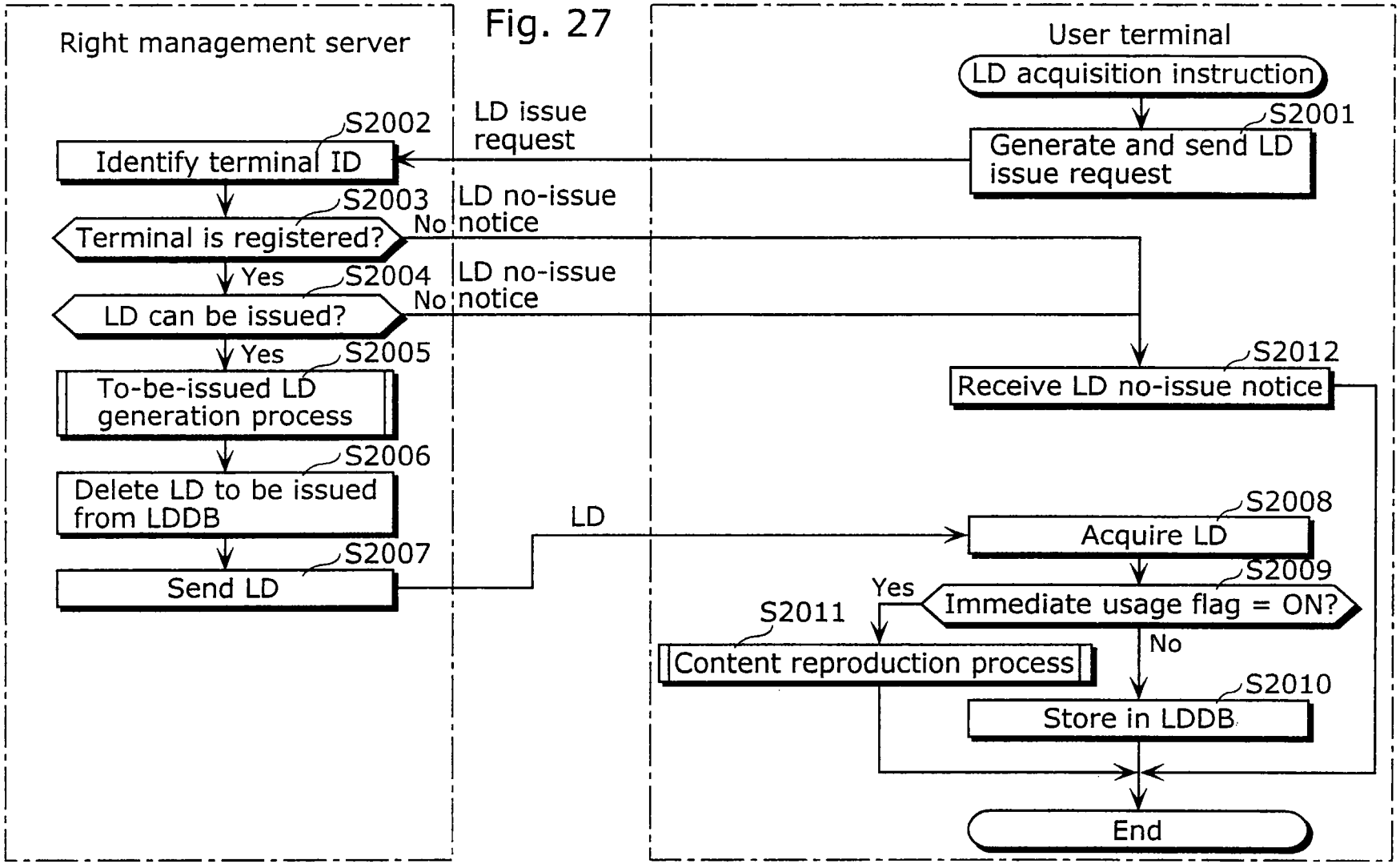

Right management server
User terminal
LD acquisition instruction
S2001
Generate and send LD issue request
LD issue request
S2002
Identify terminal ID
S2003
Terminal is registered?
No
LD no-issue notice
Yes
S2004
LD can be issued?
No
LD no-issue notice
Yes
S2005
To-be-issued LD generation process
S2006
Delete LD to be issued from LDDB
S2007
Send LD
LD
S2012
Receive LD no-issue notice
S2008
Acquire LD
S2009
Immediate usage flag = ON?
Yes
S2011
Content reproduction process
No
S2010
Store in LDDB
End

Fig. 28

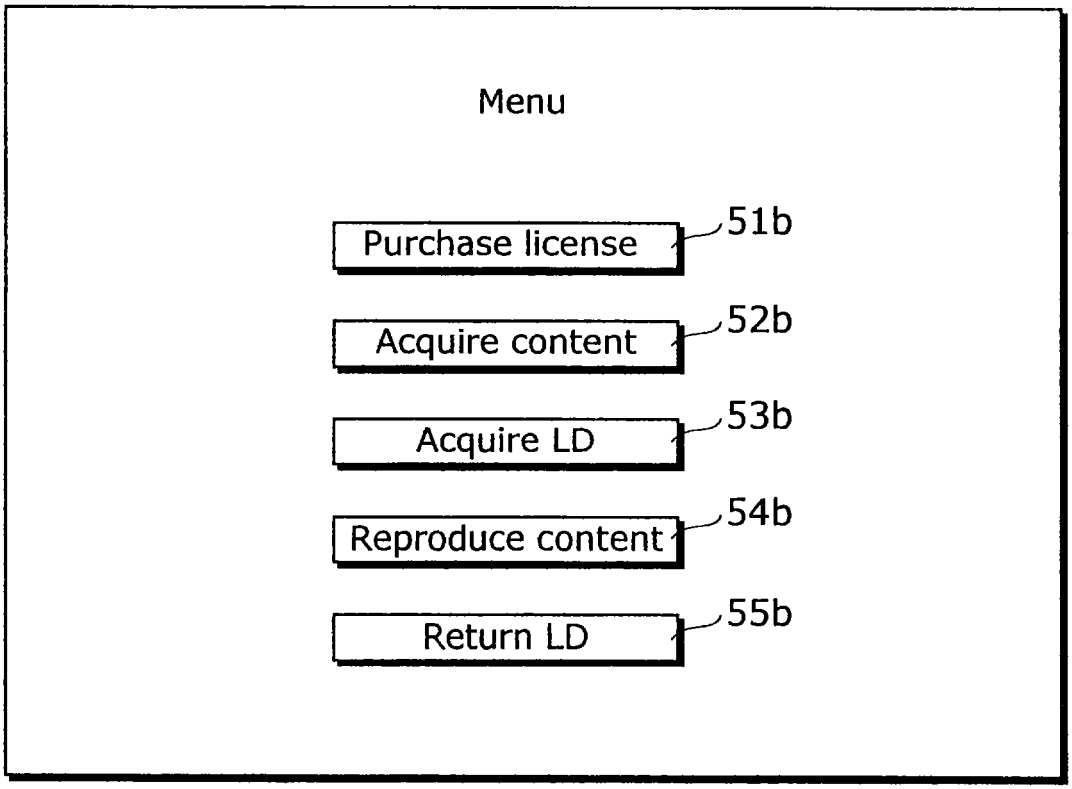

Menu
Purchase license
51b
Acquire content
52b
Acquire LD
53b
Reproduce content
54b
Return LD
55b

Fig. 29

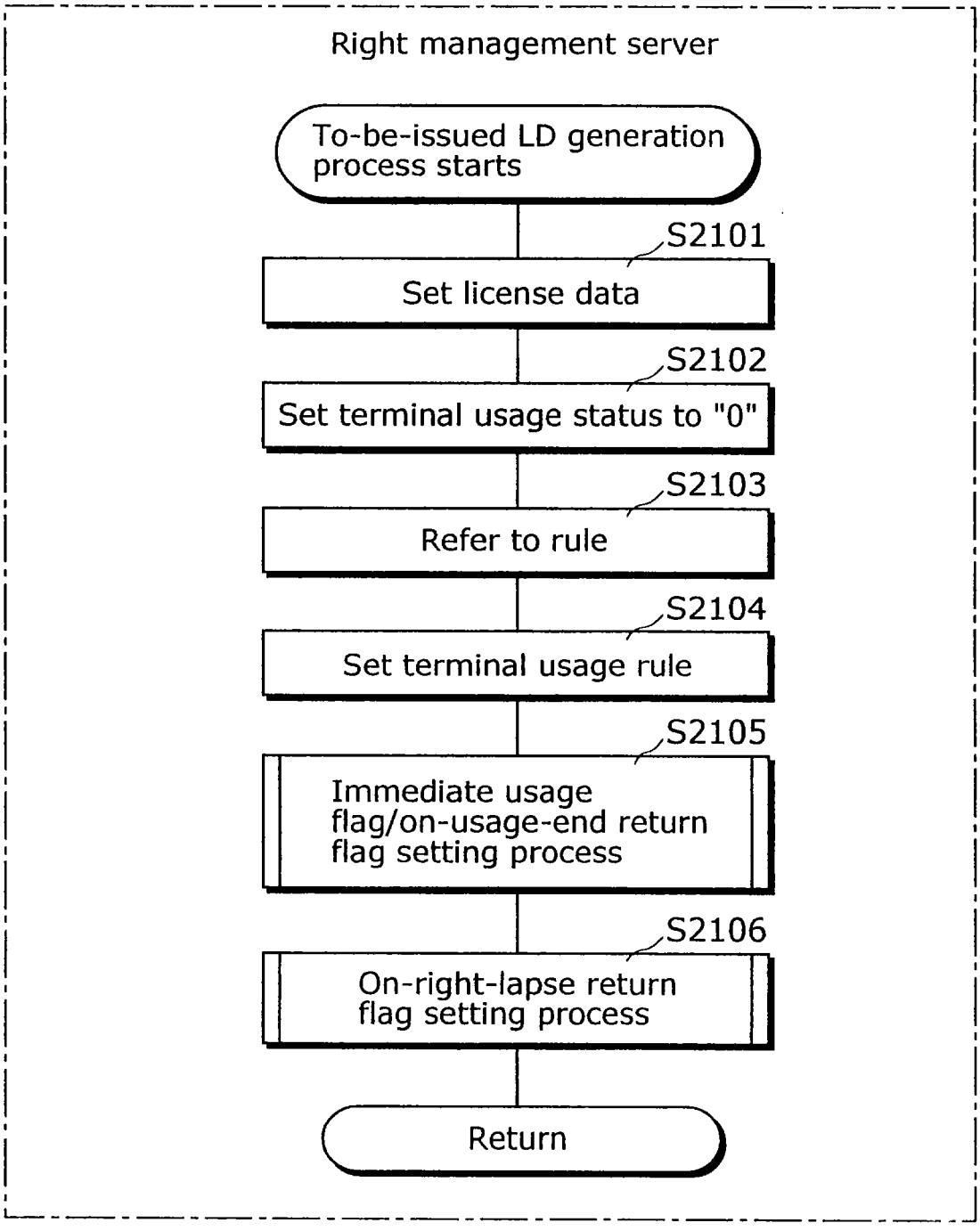

Right management server
To-be-issued LD generation process starts
S2101
Set license data
S2102
Set terminal usage status to "0"
S2103
Refer to rule
S2104
Set terminal usage rule
S2105
Immediate usage flag/on-usage-end return flag setting process
S2106
On-right-lapse return flag setting process
Return

Fig. 30

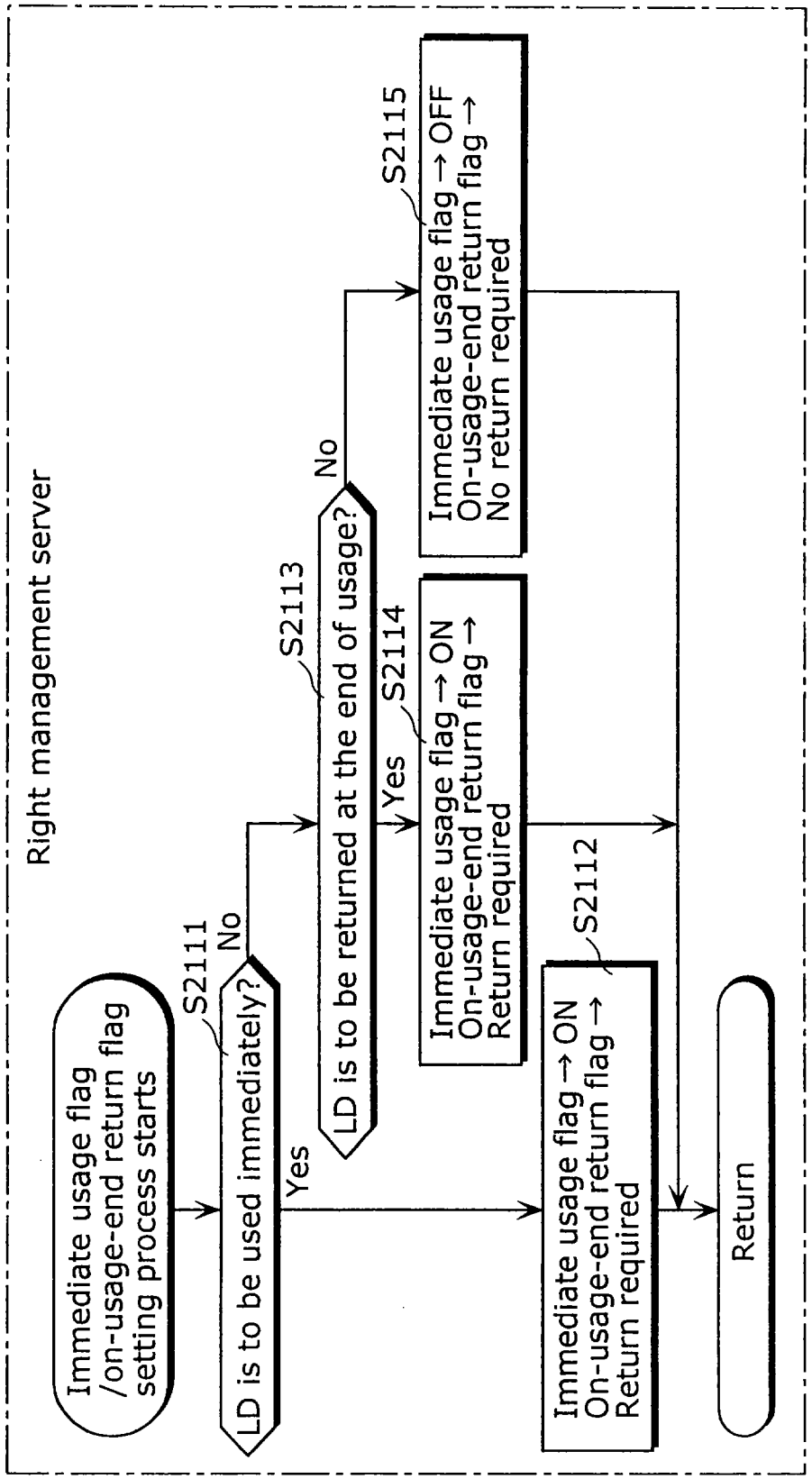

Right management server
Immediate usage flag /on-usage-end return flag setting process starts
S2111
LD is to be used immediately?
No
Yes
S2113
LD is to be returned at the end of usage?
No
Yes
S2114
Immediate usage flag → ON On-usage-end return flag → Return required
S2115
Immediate usage flag → OFF On-usage-end return flag → No return required
S2112
Immediate usage flag → ON On-usage-end return flag → Return required
Return

Fig. 31

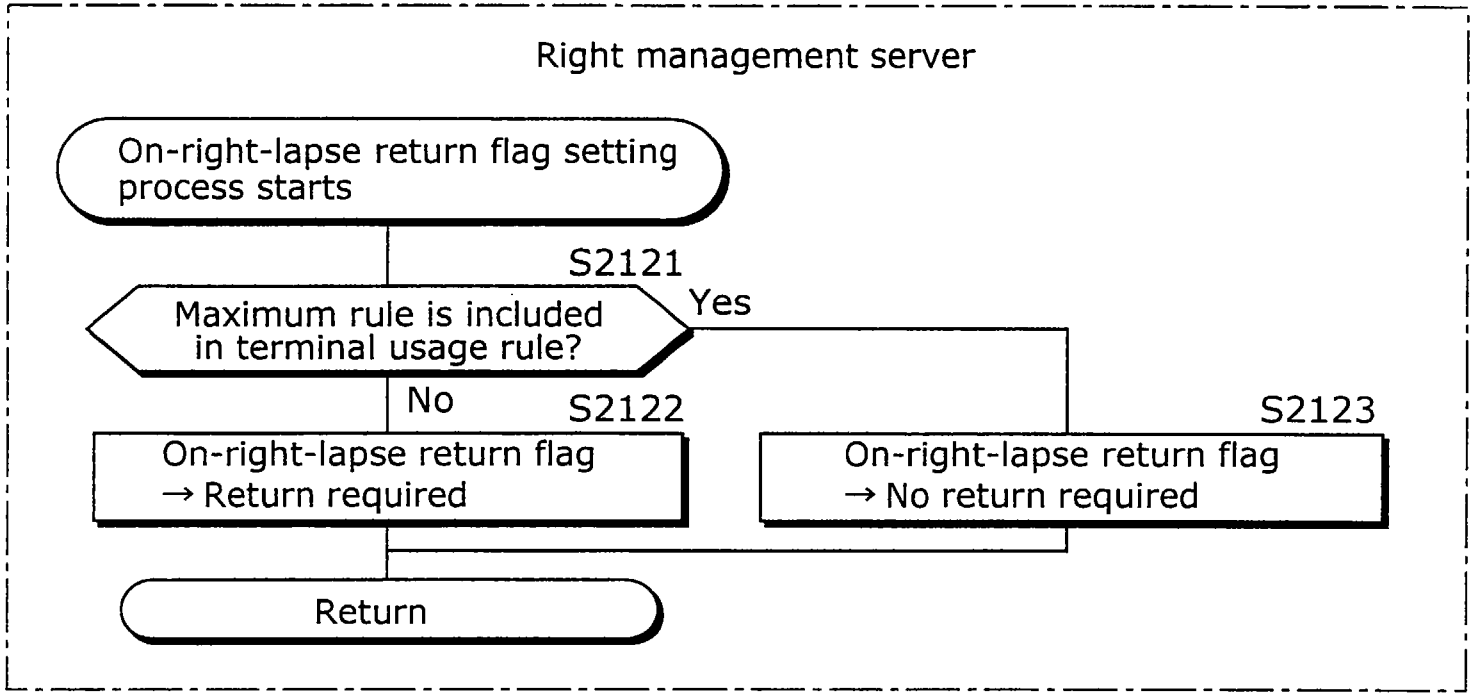

Right management server
On-right-lapse return flag setting process starts
S2121
Maximum rule is included in terminal usage rule?
Yes
No
S2122
On-right-lapse return flag → Return required
S2123
On-right-lapse return flag → No return required
Return

Fig. 32

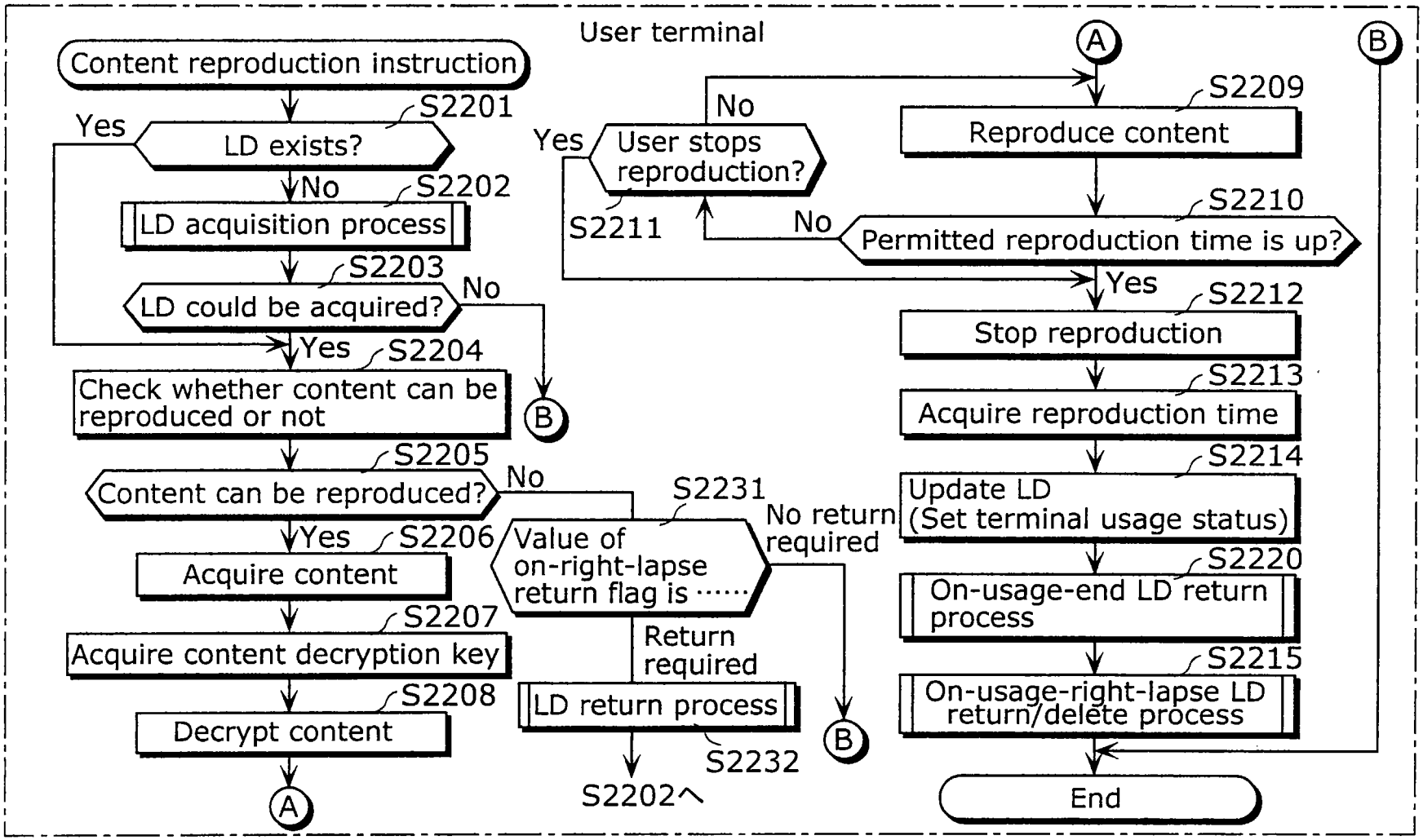

User terminal
Content reproduction instruction
S2201
LD exists?
Yes
No
S2202
LD acquisition process
S2203
LD could be acquired?
No
Yes
S2204
Check whether content can be reproduced or not
S2205
Content can be reproduced?
No
Yes
S2206
Acquire content
S2207
Acquire content decryption key
S2208
Decrypt content
A
B
S2231
Value of on-right-lapse return flag is ……
No return required
Return required
LD return process
S2232
S2202へ
B
A
No
S2211
User stops reproduction?
Yes
S2209
Reproduce content
S2210
Permitted reproduction time is up?
No
Yes
S2212
Stop reproduction
S2213
Acquire reproduction time
S2214
Update LD (Set terminal usage status)
S2220
On-usage-end LD return process
S2215
On-usage-right-lapse LD return/delete process
B
End

Fig. 33

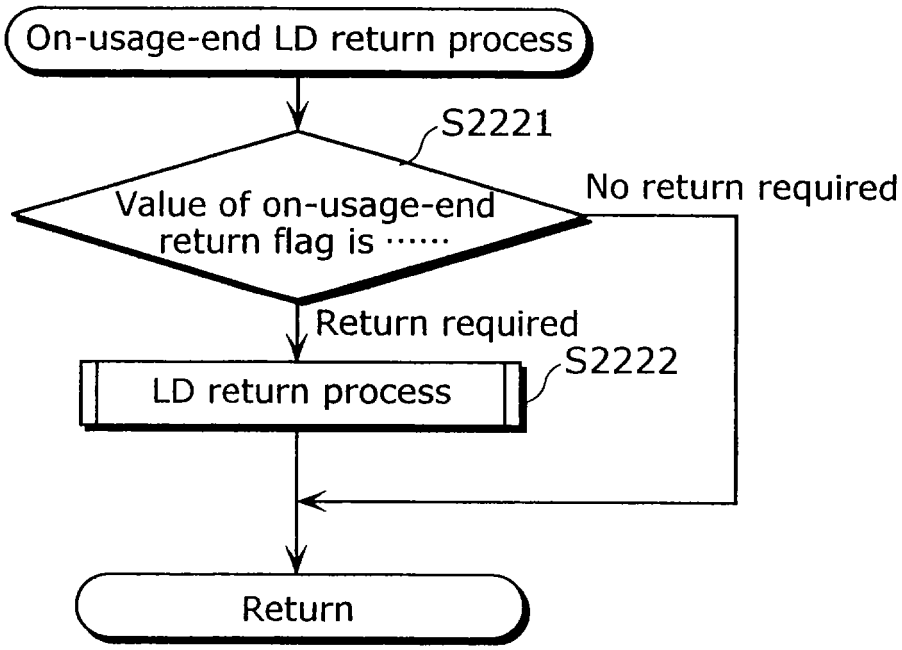

On-usage-end LD return process
S2221
Value of on-usage-end return flag is ……
No return required
Return required
S2222
LD return process
Return

Fig. 34

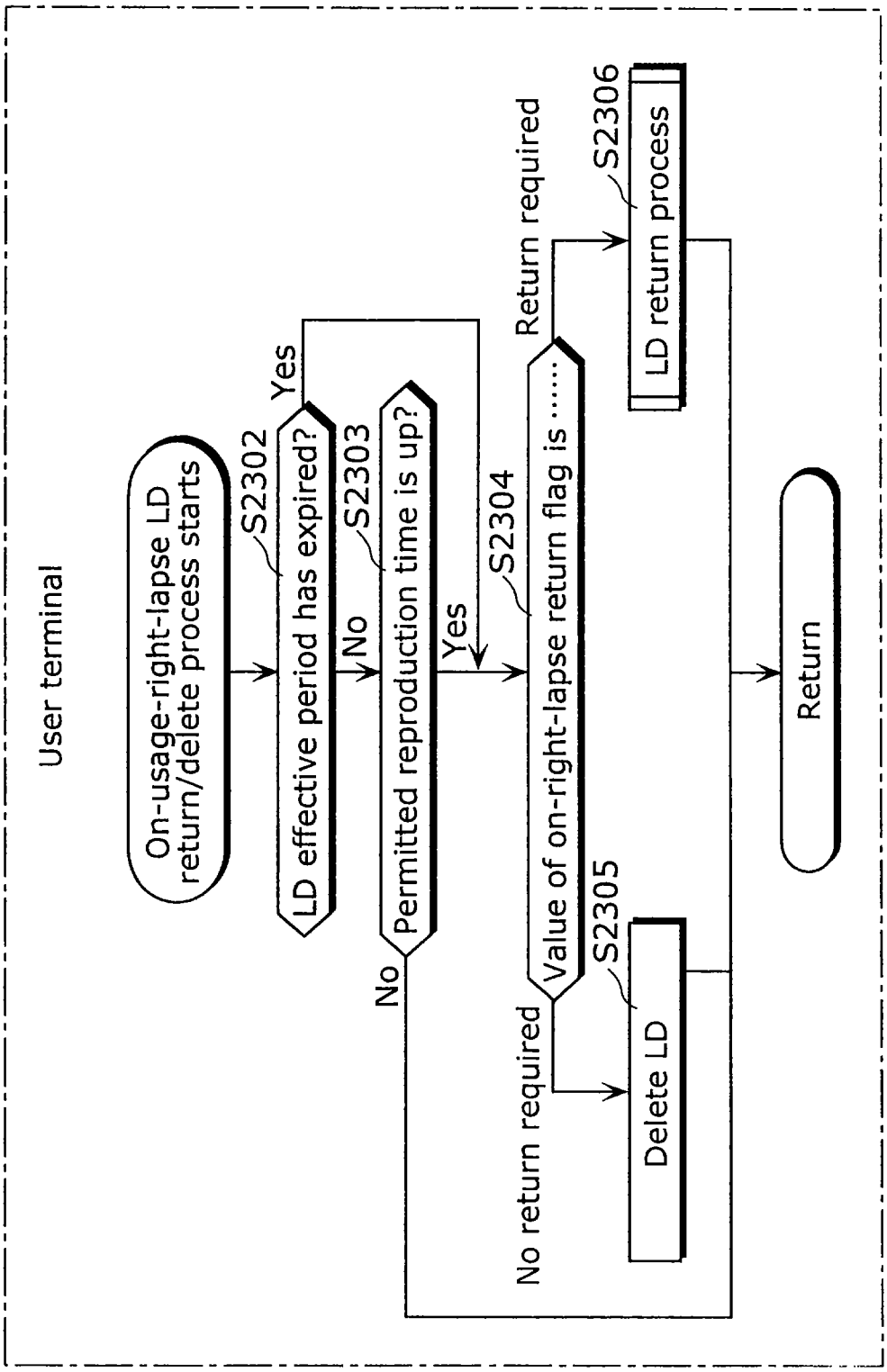

User terminal
On-usage-right-lapse LD return/delete process starts
S2302
LD effective period has expired?
Yes
No
S2303
Permitted reproduction time is up?
Yes
No
S2304
Value of on-right-lapse return flag is ……
Return required
No return required
S2306
LD return process
S2305
Delete LD
Return

Fig. 35

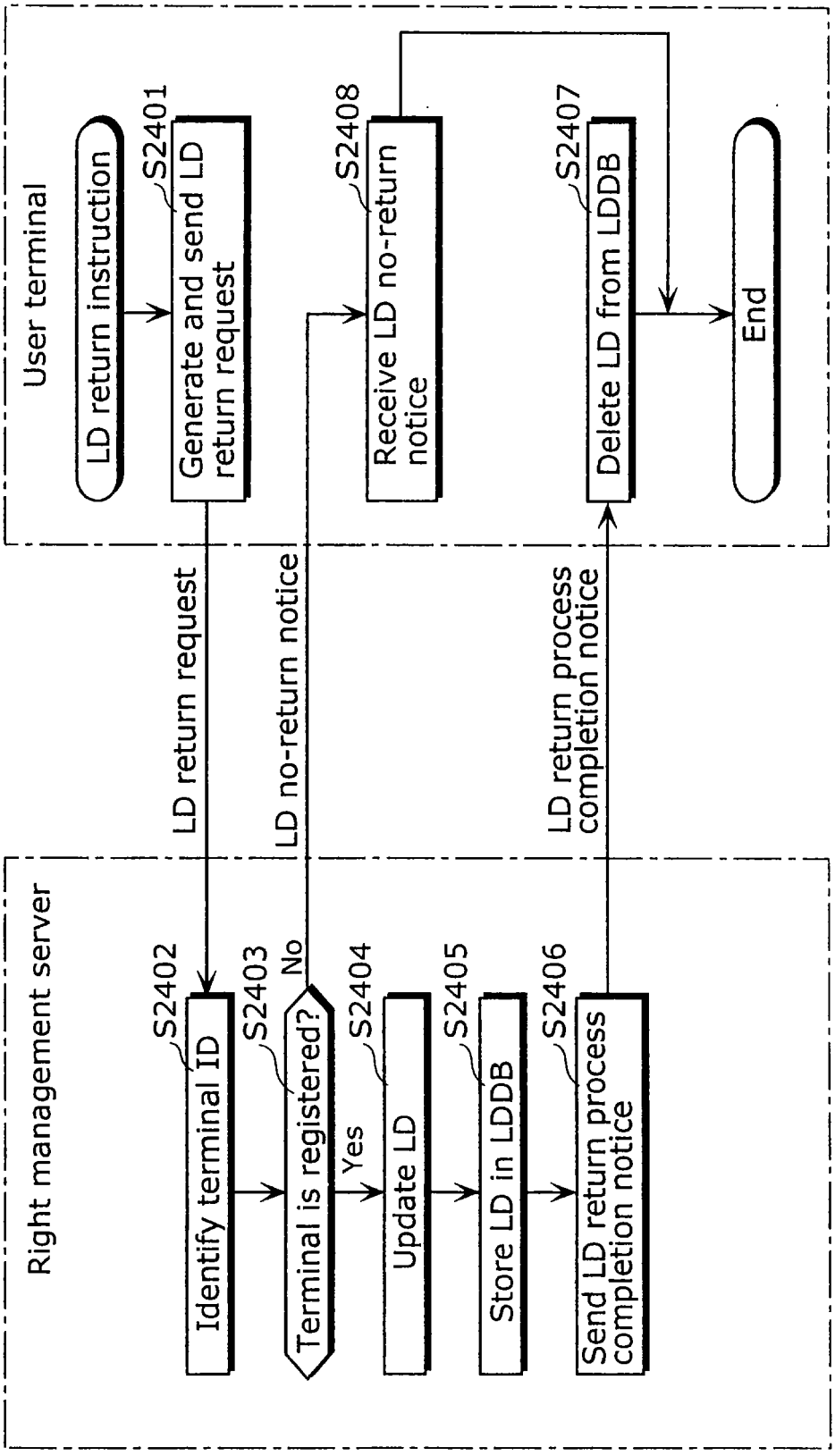

User terminal
LD return instruction
S2401
Generate and send LD return request
S2408
Receive LD no-return notice
S2407
Delete LD from LDDB
End
LD return request
LD no-return notice
LD return process completion notice
Right management server
S2402
Identify terminal ID
S2403
Terminal is registered?
No
Yes
S2404
Update LD
S2405
Store LD in LDDB
S2406
Send LD return process completion notice

Fig. 36

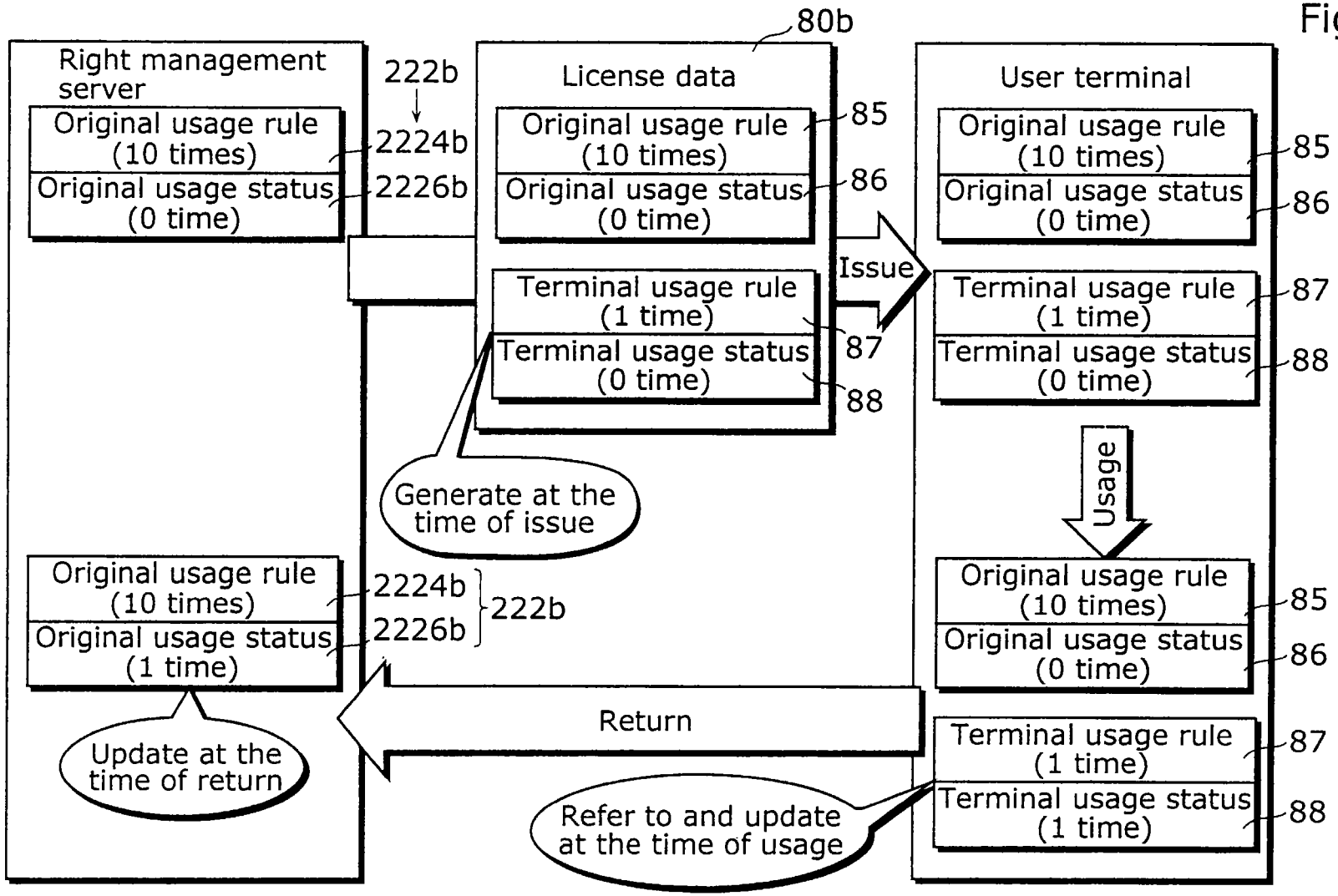

Right management server
Original usage rule (10 times)
Original usage status (0 time)
222b
2224b
2226b
80b
License data
Original usage rule (10 times)
Original usage status (0 time)
85
86
Terminal usage rule (1 time)
Terminal usage status (0 time)
87
88
Issue
User terminal
Original usage rule (10 times)
Original usage status (0 time)
Terminal usage rule (1 time)
Terminal usage status (0 time)
Usage
Generate at the time of issue
Original usage rule (10 times)
Original usage status (1 time)
Update at the time of return
Return
Refer to and update at the time of usage

Fig. 37

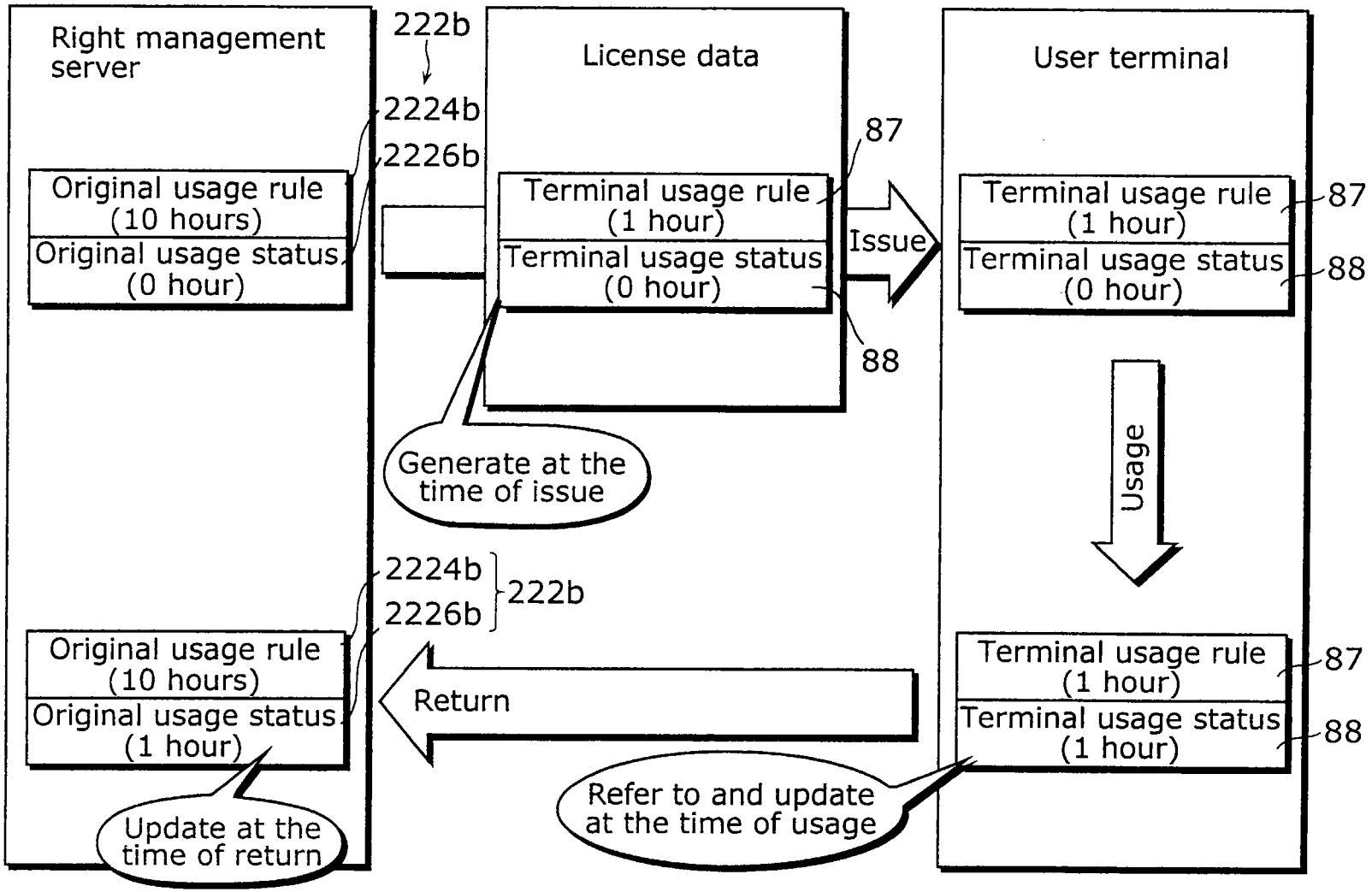
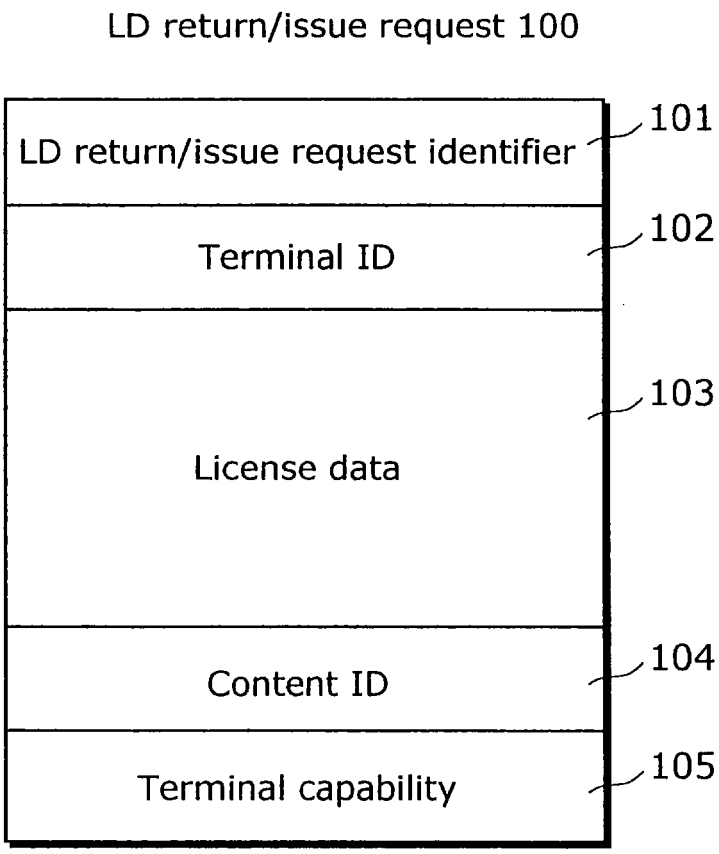

Right management server
222b
License data
User terminal
2224b
2226b
87
Original usage rule (10 hours)
Original usage status (0 hour)
Terminal usage rule (1 hour)
Terminal usage status (0 hour)
Issue
Terminal usage rule (1 hour)
Terminal usage status (0 hour)
88
Generate at the time of issue
Usage
2224b
2226b
222b
Original usage rule (10 hours)
Original usage status (1 hour)
Return
Terminal usage rule (1 hour)
Terminal usage status (1 hour)
Update at the time of return
Refer to and update at the time of usage

Fig. 38


LD return/issue request 100
LD return/issue request identifier
101
Terminal ID
102
License data
103
Content ID
104
Terminal capability
105