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SDT System file rw C:\bran\rlcsdl_v02r00\sdl_only__rlc_v02r00.sdt

Source directory rw C:\bran\rlcsdl_v02r00\

Chapter RLC SDL specification 4

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- Depending on ASN.1 Text RLCprotocolPrimitives

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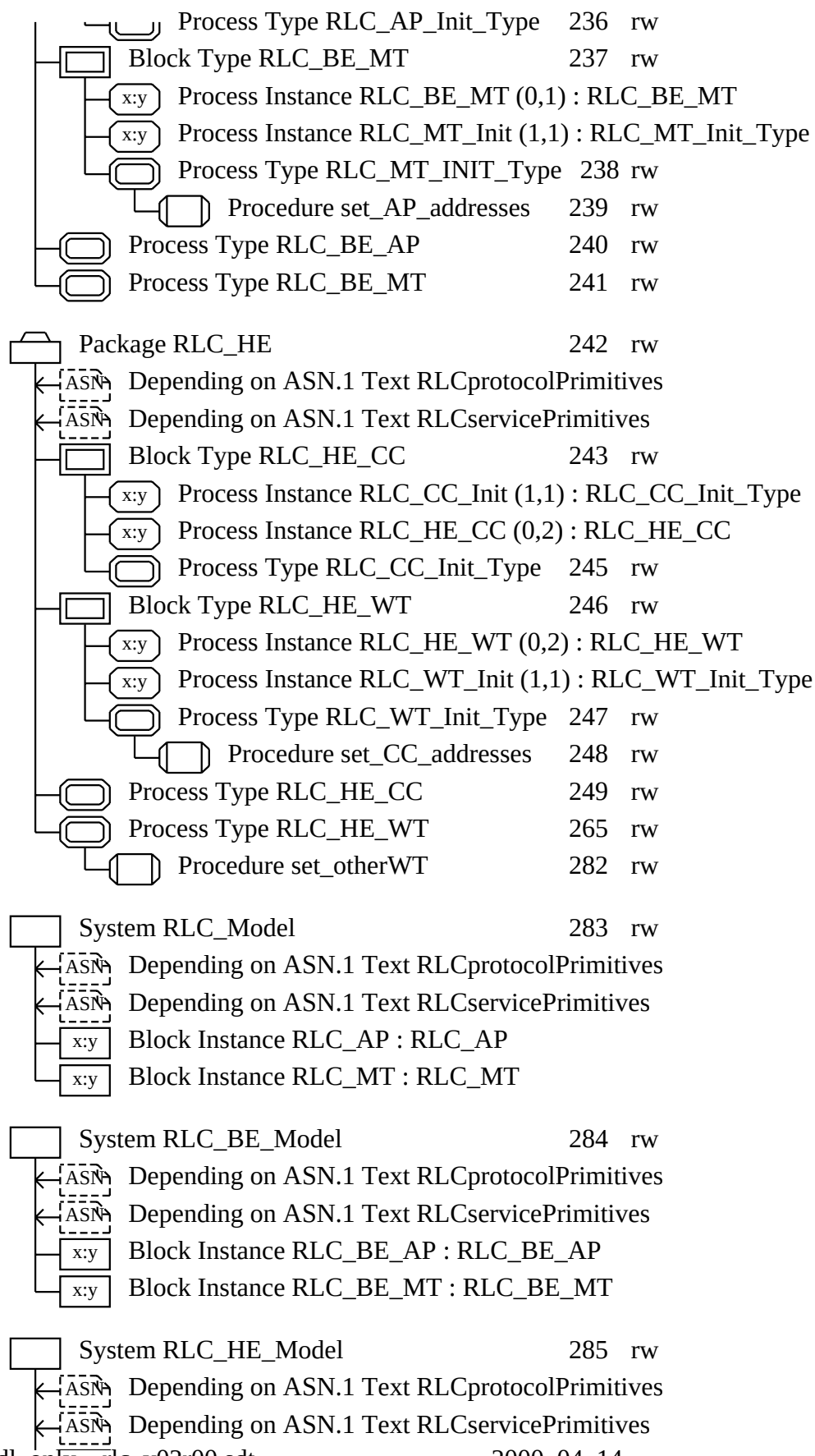
  - Process Instance RLC_AP_Init (1,1) : RLC_AP_Init_Type
  - Process Instance RLC_BE_AP (0,2) : RLC_BE_AP


Process Type RLC_AP_Init_Type 236 rw
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x:y Process Instance RLC_BE_MT (0,1) : RLC_BE_MT
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Procedure set_otherWT 282 rw
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System RLC_BE_Model 284 rw
ASN Depending on ASN.1 Text RLCprotocolPrimitives
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x:y Block Instance RLC_BE_AP : RLC_BE_AP
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System RLC_HE_Model 285 rw
ASN Depending on ASN.1 Text RLCprotocolPrimitives
ASN Depending on ASN.1 Text RLCservicePrimitives

x:y Block Instance RLC_HE_CC : RLC_HE_CC
x:y Block Instance RLC_HE_WT : RLC_HE_WT

Chapter Other Documents

ASN.1 Text RLCservicePrimitives

```
RLCservicePrimitives DEFINITIONS ::=

-- ************************************************************************
--  RLC SDL model        ASN.1 Data type definitions
--  This module defines the ASN.1 types for RLC service primitive types
-- ************************************************************************
BEGIN

IMPORTS DUC−DESCR−LIST,CL−ID, DLCC−ID−LIST, INFO−COUNT,
MAC−ID,FRAME−NUM,SLEEP−GROUP,FRAME−COUNTER,KEY−ID,
TX−LEVEL−OF−REPORT, ERROR−CORR−MODE, MAC−ID−AND−CL−DATA−LIST,
MAXIMUM−AGE−OF−BCH−MEASUREMENT, MEAN−RX−LEVEL,
AGE−OF−MEASUREMENT,POSITION−OF−MEASUREMENT,LAST−OWN−BCH−RX−LEVEL,
RSS−STATISTICS,TRAFFIC−LOAD,BCH−RX−LEVEL,ADJACENT−CH−INTERFERENCE,
MEASUREMENT−WINDOW,RSS−INDEX, MEASUREMENT−TYPE, MT−AUTH−ID,
START−OF−MEASUREMENT,FIRST−MAC−FRAME, FREQUENCY−INDEX,
LAST−MAC−FRAME,AP−CONTINUES−TRANSMITTING−BCH, CC−HO−CAP, HO−CAP,
NET−ID,AP−ID, REPORTING−INITIALIZED, DUTY−CYCLE,
SECTOR−ID, RSS−STATISTICS−LIST, RSS−INDEX−LIST,
TIME−GAP−ACH−UPLINK, AUTHENTICATION−ENCRYPTION−LIST,
DIRECT−MODE−CAP, DLC−VERSION, RSS−VALUE, MAGIC,
CL−ATTRIBUTES, MT−ID, CHALLENGE, BCH−FOUND,
AUTH−RESPONSE, SEND−MT−ID, AUTH−ENCR−INFO,
ENCR−INFO, MAC−ID−CHOICE, NUMBER−OF−SAMPLES,
NETWORK−OPERATOR−ID,
PC−OFFSET, MT−ABSENCE−TIME, MT−ALIVE−INTERVAL, CARE−OF−BROADCAST,
TX−LEVEL, OMNI−ANTENNA−USED, REPORTED−PHY−MODE, STATUS−BIT, RESET−FILTERS,
USE−OMNI−ANTENNA, FIRST−MAC−FRAME, LAST−MAC−FRAME, TOKEN,
AP−TOKEN−AUTH−ENCR,
MT−TOKEN−AUTH−ENCR,INCLUDE−MT−ID, START−DUC−SET−UP, KEEP−CONNECTIONS,
START−INFO−TRANSFER,
SEND−NW−TOKEN, START−AUTHENTICATION, START−ENCRYPTION, DUC−ESTABLISHED,
HANDOVER−CAUSE, FORCE−HANDOVER−CAUSE, RETURN−FLAG, CL−COMMON−ATTR,
RELEASE−CAUSE, DLCC−DESCR−LIST, DUC−EXT−IND, MORE−JOINS, MD5−ON−KEY,
MD5−ON−NONCE, NONCE, COMMON−KEY, BROAD−WINDOW,
ENCRYPTION−ALGORITHM−PROPOSAL, DISASSOCIATION−CAUSE,
DLC−ATTRIBUTES, CL−DATA, MT−AUTH−ID−TYPE, MORE−AUTH,
REJECT−CAUSE, DM−USE−COMMON−KEY, APT−ADDRESS−LENGTH,
DM−ATTRIBUTES, ARQ−DELAY, RADIO−HO−CAP, NETWORK−HO−CAP, SECTOR−HO−CAP,
SUPPORTED−FSA, SUPPORTED−FCA, CYCLIC−PREFIX, FREQUENCY−BAND,
SUPPORTED64QAM, RLC−VERSION, CL−VID−LIST

 FROM RLCprotocolPrimitives;

-- ****************************************************************
-- ASSOCIATION−AUTHENTICATION PARAMETERS
-- ****************************************************************


ACF−RBCH−ASSOCIATION−ARG ::= SEQUENCE  {
     network−operator−id     [1]     NETWORK−OPERATOR−ID OPTIONAL,
     cl−vid−list     [2]     CL−VID−LIST  }

ACF−RBCH−ASSOCIATION−REQ−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     ap−id          AP−ID,
     net−id          NET−ID }

ACF−MAC−ID−ASSIGN−ARG ::= SEQUENCE {
     magic     MAGIC,
     rlc−version     RLC−VERSION }
```

```
ACF−MAC−ID−ASSIGN−ACK−ARG ::= SEQUENCE {
     magic     MAGIC,
     mac−id     MAC−ID }

ACF−MAC−ID−ASSIGN−NACK−ARG ::= SEQUENCE {
     magic     MAGIC }

ACF−LINK−CAPABILITY−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     dlc−version     DLC−VERSION,
     rlc−version     RLC−VERSION,
     cl−vid−list     CL−VID−LIST,
     rss−value     RSS−VALUE,
     support64QAM     SUPPORTED64QAM,
     freq−band     FREQUENCY−BAND,
     direct−mode−cap     DIRECT−MODE−CAP,
     cyclic−prefix     CYCLIC−PREFIX,
     support−fca     SUPPORTED−FCA,
     support−fsa     SUPPORTED−FSA,
     ho−cap      HO−CAP,
      cc−ho−cap   CC−HO−CAP,
     time−gap−ach−uplink     TIME−GAP−ACH−UPLINK,
     duty−cycle          DUTY−CYCLE,
     arq−delay−rx     ARQ−DELAY,
     arq−delay−tx     ARQ−DELAY,
     authentication−encryption−list      AUTHENTICATION−ENCRYPTION−LIST,
     dm−attributes     DM−ATTRIBUTES OPTIONAL }

ACF−LINK−CAPABILITY−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     dlc−version−selected     DLC−VERSION,
     rlc−version−selected     RLC−VERSION,
     rss−value     RSS−VALUE,
     apt−address−length     APT−ADDRESS−LENGTH,
     support64QAM     SUPPORTED64QAM,
     freq−band     FREQUENCY−BAND,
     send−mt−id     SEND−MT−ID,
     direct−mode−cap     DIRECT−MODE−CAP,
     dm−use−common−key     DM−USE−COMMON−KEY,
     cyclic−prefix     CYCLIC−PREFIX,
     support−fca     SUPPORTED−FCA,
     support−fsa     SUPPORTED−FSA,
      cc−ho−cap   CC−HO−CAP,
     arq−delay−rx     ARQ−DELAY,
     arq−delay−tx     ARQ−DELAY,
     auth−encr−selected     AUTH−ENCR−INFO,
     dm−attributes     DM−ATTRIBUTES OPTIONAL }

ACF−KEY−EXCHANGE−MT−ARG ::= SEQUENCE {
     mac−id               MAC−ID,
     mt−dh−public−value     DH−PUBLIC−VALUE}

ACF−KEY−EXCHANGE−AP−ARG ::= SEQUENCE {
     mac−id               MAC−ID,
     ap−dh−public−value     DH−PUBLIC−VALUE }

BCAST−KEY ::= CHOICE {
     des−encr          [0]     OCTET STRING(SIZE(8)),
     tripledes          [1]     OCTET STRING(SIZE(24)) }

ACF−AUTHENTICATION−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     mt−auth−id−type     MT−AUTH−ID−TYPE,
     mt−auth−id          MT−AUTH−ID      }
```

```
ACF−AUTHENTICATION−ACK−ARG ::= SEQUENCE {
     mac−id               MAC−ID,
     ap−response               AUTH−RESPONSE }

ACF−AUTHENTICATION−MT−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     challenge−to−mt     CHALLENGE }

ACF−AUTHENTICATION−AP−ARG ::= SEQUENCE {
     mac−id               MAC−ID,
     mt−response               AUTH−RESPONSE,
     challenge−to−ap          CHALLENGE }

ACF−DM−COMMON−KEY−DISTR−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     dm−encr−alg          ENCR−INFO,
     key−id          KEY−ID,
     common−key          COMMON−KEY }

ACF−DM−COMMON−KEY−DISTR−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     dm−encr−alg          ENCR−INFO,
     md5−on−key          MD5−ON−KEY }

ACF−INFO−ARG ::= SEQUENCE {
     mac−id          [0]     MAC−ID,
     info−count          [1]     INFO−COUNT,
     cl−data          [2]     CL−DATA  OPTIONAL,
     dlc−attributes     [3]     DLC−ATTRIBUTES OPTIONAL }

ACF−INFO−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     cl−data     [1]     CL−DATA  OPTIONAL,
     dlc−attributes     [2]     DLC−ATTRIBUTES OPTIONAL }

ACF−DISASSOCIATION−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     disassociation−cause     DISASSOCIATION−CAUSE }

ACF−DISASSOCIATION−ACK−ARG ::= SEQUENCE {
     mac−id     MAC−ID }

ACF−NW−OPERATOR−ID−ARG ::= SEQUENCE {
     mac−id     MAC−ID }

ACF−NW−OPERATOR−ID−ACK−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     net−op−id     NETWORK−OPERATOR−ID }

−− ************************************************************
−− Broadcast
−− ************************************************************

ACF−CL−BROADCAST−JOIN−ARG ::= SEQUENCE  {
     mac−id     MAC−ID,
     cl−data     CL−DATA,
     encryption−algorithm−proposal     ENCRYPTION−ALGORITHM−PROPOSAL }

ACF−CL−BROADCAST−JOIN−ACK−ARG::= SEQUENCE {
     mac−id     MAC−ID,
     more−joins               MORE−JOINS,
     window−size               BROAD−WINDOW,
     mac−id−and−cl−data−list          MAC−ID−AND−CL−DATA−LIST,
     encryption−algorithm−selected     ENCR−INFO,
     key−id                    KEY−ID,
```

```
     common-key               COMMON-KEY,
        error-corr-mode                ERROR-CORR-MODE }

ACF-CL-BROADCAST-LEAVE-ARG ::= SEQUENCE  {
     mac-id     MAC-ID,
     cl-data     CL-DATA }

ACF-CL-BROADCAST-LEAVE-ACK-ARG ::= SEQUENCE  {
     mac-id     MAC-ID,
     cl-data     CL-DATA }

-- ***************************************************************
-- Key refresh
-- ***************************************************************

ACF-UNICAST-KEY-REFRESH-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     nonce     NONCE }

ACF-UNICAST-KEY-REFRESH-ACK-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     md5-on-nonce     MD5-ON-NONCE }

ACF-COMMON-KEY-REFRESH-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     encr-info     ENCR-INFO,
     key-id     KEY-ID,
     common-key     COMMON-KEY }

ACF-COMMON-KEY-REFRESH-ACK-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     encr-info     ENCR-INFO,
     md5-on-key     MD5-ON-KEY }

ACF-COMMON-KEY-ACTIVATE-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     key-id     KEY-ID }

-- ***************************************************************
-- Multicast
-- ***************************************************************

ACF-GROUP-JOIN-ARG ::= SEQUENCE  {
     mac-id          MAC-ID,
     cl-data     CL-DATA,
     encryption-algorithm-proposal     ENCRYPTION-ALGORITHM-PROPOSAL }

ACF-GROUP-JOIN-ACK-ARG::= SEQUENCE {
     mac-id          MAC-ID,
     more-joins          MORE-JOINS,
     mac-id-and-cl-data-list     MAC-ID-AND-CL-DATA-LIST,
     encryption-algorithm-selected     ENCR-INFO,
     key-id               KEY-ID,
     common-key          COMMON-KEY }

ACF-GROUP-JOIN-NACK-ARG::= SEQUENCE {
     mac-id          MAC-ID,
     more-joins     MORE-JOINS,
     cl-data     CL-DATA }

ACF-GROUP-LEAVE-ARG::=SEQUENCE {
     mac-id          MAC-ID,
     cl-data     CL-DATA }

ACF-GROUP-LEAVE-ACK-ARG::=SEQUENCE {
```

```
     mac-id          MAC-ID,
     cl-data     CL-DATA }

-- ***************************************************************
-- RLC DUC related PDUs
-- ***************************************************************

DUC-SETUP-ARG ::= SEQUENCE {
     mac-id     MAC-ID,
     cl-id     CL-ID,
     duc-ext-ind     DUC-EXT-IND,
     cl-conn-attr-length     INTEGER(0..31),
     duc-descr-list     DUC-DESCR-LIST }

DUC-CONNECT-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     cl-id     CL-ID,
     cl-conn-attr-length     INTEGER(0..31),
     duc-descr-list     DUC-DESCR-LIST }

DUC-CONNECT-ACK-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     cl-id     CL-ID,
     cl-conn-attr-length     INTEGER(0..31),
     dlcc-descr-list     DLCC-DESCR-LIST }

DUC-RELEASE-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     dlcc-id-list     DLCC-ID-LIST,
     release-cause     RELEASE-CAUSE }

DUC-RELEASE-ACK-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     dlcc-id-list     DLCC-ID-LIST }

DUC-MODIFY-REQ-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     duc-ext-ind     DUC-EXT-IND,
     cl-conn-attr-length     INTEGER(0..31),
     duc-descr-list     DUC-DESCR-LIST }

DUC-MODIFY-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     cl-conn-attr-length     INTEGER(0..31),
     duc-descr-list     DUC-DESCR-LIST }

DUC-MODIFY-ACK-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     cl-conn-attr-length     INTEGER(0..31),
     dlcc-descr-list     DLCC-DESCR-LIST }

DUC-RESET-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     dlcc-id-list     DLCC-ID-LIST }

DUC-RESET-ACK-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
     dlcc-id-list     DLCC-ID-LIST }

-- ***************************************************************
-- RLC Direct mode PDUs
-- ***************************************************************

DUC-DM-SETUP-ARG ::= SEQUENCE {
     mac-id          MAC-ID,
```

```
     peer−mac−id     MAC−ID,
     cl−id     CL−ID,
     duc−ext−ind     DUC−EXT−IND,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST,
     cl−common−attr     CL−COMMON−ATTR }

DUC−DM−CONNECT−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     cl−id     CL−ID,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

DUC−DM−CONNECT−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     cl−id     CL−ID,
     cl−conn−attr−length     INTEGER(0..31),
     dlcc−descr−list     DLCC−DESCR−LIST }

DUC−DM−CONNECT−COMPLETE−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     dlcc−id−list     DLCC−DESCR−LIST }

DUC−DM−CONNECT−COMPLETE−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID }

DUC−DM−RELEASE−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     dlcc−id−list     DLCC−ID−LIST,
     release−cause     RELEASE−CAUSE }

DUC−DM−RELEASE−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     dlcc−id−list     DLCC−ID−LIST }

DUC−DM−MODIFY−REQ−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

DUC−DM−MODIFY−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

DUC−DM−MODIFY−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     cl−conn−attr−length     INTEGER(0..31),
     dlcc−descr−list     DLCC−DESCR−LIST }

DUC−DM−MODIFY−COMPLETE−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     dlcc−id−list     DLCC−ID−LIST }

DUC−DM−MODIFY−COMPLETE−ACK−ARG ::= SEQUENCE {
```

```
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID }

DUC−RELAY−SETUP−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     cl−id     CL−ID,
     duc−ext−ind     DUC−EXT−IND,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST,
     cl−common−attr     CL−COMMON−ATTR }

DUC−RELAY−SETUP−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     cl−conn−attr−length     INTEGER(0..31),
     dlcc−descr−list     DLCC−DESCR−LIST }

DUC−RELAY−MODIFY−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

DUC−RELAY−MODIFY−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id     MAC−ID,
     cl−conn−attr−length     INTEGER(0..31),
     dlcc−descr−list     DLCC−DESCR−LIST }

DUC−RELAY−RELEASE−ARG ::= SEQUENCE {
    mac−id          MAC−ID,
    peer−mac−id     MAC−ID,
    dlcc−id−list     DLCC−ID−LIST,
    release−cause     RELEASE−CAUSE }

DUC−RELAY−RELEASE−ACK−ARG ::= SEQUENCE {
    mac−id          MAC−ID,
    peer−mac−id     MAC−ID,
    dlcc−id−list     DLCC−ID−LIST }

DUC−DM−RESET−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id          MAC−ID,
     dlcc−id−list     DLCC−ID−LIST }

DUC−DM−RESET−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     peer−mac−id          MAC−ID,
     dlcc−id−list     DLCC−ID−LIST }


−− ***************************************************************
−− RRC related PDUs
−− ***************************************************************

−− ***************************************************************
−− Sector Handover
−− ***************************************************************

RRC−SECTOR−HANDOVER−REQUEST−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     sector−id−new     SECTOR−ID }
```

```
RRC−SECTOR−HANDOVER−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID }

RRC−HANDOVER−REQUEST−NACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID }

−− ************************************************************
−− Forced Handover
−− ************************************************************

RRC−FORCE−HANDOVER−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     return−flag     RETURN−FLAG,
     force−handover−cause     FORCE−HANDOVER−CAUSE,
     ap−id           AP−ID,
     net−id     NET−ID,
     frequency−index          FREQUENCY−INDEX }

RRC−FORCE−HANDOVER−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID }

−− ************************************************************
−− Radio handover
−− ************************************************************

RRC−HANDOVER−NOTIFY−ARG ::= SEQUENCE  {
     mac−id          [0]     MAC−ID,
     handover−cause     [1]     HANDOVER−CAUSE,
     ap−id               [2]     AP−ID OPTIONAL,
     net−id          [3]     NET−ID OPTIONAL }

RRC−HANDOVER−REQUEST−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     mac−id−old          MAC−ID,
     ap−id−old          AP−ID,
     net−id−old          NET−ID,
     duc−established     DUC−ESTABLISHED }

RRC−RADIO−HANDOVER−COMPLETE−ARG ::= SEQUENCE {
     mac−id−old          MAC−ID,
     ap−id−old          AP−ID,
     mac−id−new          MAC−ID,
     cl−id               CL−ID,     −− set to 0 if not used
     duc−ext−ind          DUC−EXT−IND,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

−− ************************************************************
−− Network Handover
−− ************************************************************

RRC−HANDOVER−ASSOCIATION−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     mac−id−old          MAC−ID,
     ap−id−old          AP−ID,
     net−id−old          NET−ID,
     mac−id−new          MAC−ID }

RRC−HANDOVER−LINK−CAPABILITY−ACK−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     dlc−version−selected     DLC−VERSION,
     rlc−version−selected     RLC−VERSION,
     rss−value     RSS−VALUE,
     apt−address−length     APT−ADDRESS−LENGTH,
     support64QAM     SUPPORTED64QAM,
```

```
     freq−band     FREQUENCY−BAND,
     send−mt−id     SEND−MT−ID,
     direct−mode−cap     DIRECT−MODE−CAP,
     cyclic−prefix     CYCLIC−PREFIX,
     support−fca     SUPPORTED−FCA,
     support−fsa     SUPPORTED−FSA,
     sector−ho−cap     SECTOR−HO−CAP,
     network−ho−cap     NETWORK−HO−CAP,
     radio−ho−cap     RADIO−HO−CAP,
     arq−delay−rx     ARQ−DELAY,
     arq−delay−tx     ARQ−DELAY,
     auth−encr−selected     AUTH−ENCR−INFO,
     start−encryption     START−ENCRYPTION,
     start−authentication     START−AUTHENTICATION,
     send−NW−Token     SEND−NW−TOKEN,
     start−info−transfer     START−INFO−TRANSFER,
     keep−connections     KEEP−CONNECTIONS,
     start−DUC−set−up     START−DUC−SET−UP,
     include−MT−ID     INCLUDE−MT−ID,
     dm−attributes     DM−ATTRIBUTES        OPTIONAL }

RRC−NW−SIGNALLING−HANDOVER−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     mt−token−auth−encr     MT−TOKEN−AUTH−ENCR}

RRC−NW−SIGNALLING−HANDOVER−ACK−ARG ::= SEQUENCE {
     mac−id               MAC−ID,
     ap−token−auth−encr     AP−TOKEN−AUTH−ENCR }

RRC−NETWORK−HANDOVER−COMPLETE−ARG ::= SEQUENCE {
     mac−id               MAC−ID,
     cl−id                    CL−ID,
     duc−ext−ind               DUC−EXT−IND,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list          DUC−DESCR−LIST }

RRC−HO−INFO−DISTRIBUTION−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     token      TOKEN }

RRC−HO−INFO−DISTRIBUTION−ACK−ARG ::= SEQUENCE {
     mac−id     MAC−ID }

RRC−HO−ASSOCIATION−REJECT−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     mac−id−old     MAC−ID,
     ap−id−old     AP−ID,
     net−id−old     NET−ID,
     reject−cause      REJECT−CAUSE }

−− ***************************************************************
−− DFS
−− ***************************************************************

RRC−AP−ABSENCE−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     first−mac−frame     FIRST−MAC−FRAME,
     last−mac−frame       LAST−MAC−FRAME }

RRC−CHANGE−FREQUENCY−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     last−mac−frame      LAST−MAC−FRAME,
     first−mac−frame     FIRST−MAC−FRAME,
     frequency−index     FREQUENCY−INDEX }
```

```
RRC−DFS−MT−INIT−REPORT−REQUEST−ACK−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     reporting−initialized           REPORTING−INITIALIZED }

RRC−DFS−MEASUREMENT−COMPLETE−REQUEST−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     frequency−index     FREQUENCY−INDEX,
     use−omni−antenna     USE−OMNI−ANTENNA,
     start−of−measurement     START−OF−MEASUREMENT,
     measurement−window     MEASUREMENT−WINDOW,
     maximum−age−of−bch−measurement     MAXIMUM−AGE−OF−BCH−MEASUREMENT,
     rss−index−list     RSS−INDEX−LIST }

RRC−DFS−MEASUREMENT−SHORT−REQUEST−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     frequency−index     FREQUENCY−INDEX,
     use−omni−antenna     USE−OMNI−ANTENNA,
     start−of−measurement     START−OF−MEASUREMENT,
     measurement−window     MEASUREMENT−WINDOW,
     maximum−age−of−bch−measurement     MAXIMUM−AGE−OF−BCH−MEASUREMENT }

RRC−DFS−MEASUREMENT−PERCENTILES−REQUEST−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     frequency−index     FREQUENCY−INDEX,
     use−omni−antenna     USE−OMNI−ANTENNA,
     start−of−measurement     START−OF−MEASUREMENT,
     measurement−window     MEASUREMENT−WINDOW,
     maximum−age−of−bch−measurement     MAXIMUM−AGE−OF−BCH−MEASUREMENT,
     rss−index−list     RSS−INDEX−LIST }

RRC−DFS−MT−INIT−REPORT−REQUEST−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     measurement−type     MEASUREMENT−TYPE,
     frequency−index     FREQUENCY−INDEX,
     adjacent−ch−interference     ADJACENT−CH−INTERFERENCE }

RRC−DFS−REPORT−COMPLETE−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     frequency−index     FREQUENCY−INDEX,
     omni−antenna−used     OMNI−ANTENNA−USED,
     age−of−measurement     AGE−OF−MEASUREMENT,
     last−own−bch−rx−level     LAST−OWN−BCH−RX−LEVEL,
     bch−found          BCH−FOUND,
     traffic−load     TRAFFIC−LOAD,
     ap−id     AP−ID,
     tx−level     TX−LEVEL,
     net−id     NET−ID,
     bch−rx−level     BCH−RX−LEVEL,
     number−of−samples     NUMBER−OF−SAMPLES,
     rss−index−list     RSS−INDEX−LIST,
     rss−statistics−list     RSS−STATISTICS−LIST }

RRC−DFS−REPORT−SHORT−ARG ::= SEQUENCE  {
     mac−id          MAC−ID,
     frequency−index     FREQUENCY−INDEX,
     omni−antenna−used     OMNI−ANTENNA−USED,
     age−of−measurement     AGE−OF−MEASUREMENT,
     last−own−bch−rx−level     LAST−OWN−BCH−RX−LEVEL,
     bch−found          BCH−FOUND,
     traffic−load     TRAFFIC−LOAD,
     ap−id     AP−ID,
     tx−level     TX−LEVEL,
     net−id     NET−ID,
     bch−rx−level     BCH−RX−LEVEL }
```

```
RRC−DFS−REPORT−PERCENTILES−ARG ::= SEQUENCE  {
     mac−id          MAC−ID,
     frequency−index     FREQUENCY−INDEX,
     omni−antenna−used     OMNI−ANTENNA−USED,
     age−of−measurement     AGE−OF−MEASUREMENT,
     last−own−bch−rx−level     LAST−OWN−BCH−RX−LEVEL,
     number−of−samples     NUMBER−OF−SAMPLES,
     rss−index−list     RSS−INDEX−LIST,
     rss−statistics−list     RSS−STATISTICS−LIST }

−− ***************************************************************
−− Power save
−− ***************************************************************

RRC−SLEEP−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     sleep−group               SLEEP−GROUP,
     care−of−broadcast     CARE−OF−BROADCAST }

RRC−SLEEP−ACK−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     sleep−group               SLEEP−GROUP,
     care−of−broadcast      CARE−OF−BROADCAST,
     offset               FRAME−NUM }

RRC−MT−ALIVE−ARG ::= SEQUENCE {
     mac−id          MAC−ID }

RRC−MT−ALIVE−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID }

RRC−MT−ALIVE−REQUEST−ARG ::= SEQUENCE {
     mac−id          MAC−ID,
     mt−alive−interval     [1]     MT−ALIVE−INTERVAL     OPTIONAL      }

RRC−MT−ALIVE−REQUEST−ACK−ARG ::= SEQUENCE {
     mac−id          MAC−ID }

RRC−MT−ABSENCE−ARG ::= SEQUENCE {
     mac−id     MAC−ID,
     mt−absence−time     MT−ABSENCE−TIME }

RRC−MT−ABSENCE−ACK−ARG ::= SEQUENCE {
     mac−id     MAC−ID }

RRC−UPLINK−PC−CALIBRATION−ARG ::=SEQUENCE {
     mac−id     MAC−ID,
     pc−offset     PC−OFFSET }

DH−PUBLIC−VALUE ::= OCTET STRING (SIZE(96))

END
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 1(12)

```
/*  SIGNALLIST DEFINITIONS  BASIC*/
```

```
/* SERVICE REQUESTS */

SIGNALLIST ACF_APrequests =
   ACF_common_key_activate_req,
   ACF_common_key_refresh_req,
   ACF_disassociation_req,
   ACF_dm_common_key_distr_req,
   ACF_info_req,
   ACF_rbch_association_req,
   ACF_unicast_key_refresh_req;

SIGNALLIST RRC_APrequests =
   RRC_ap_absence_req,
   RRC_change_frequency_req,
   RRC_dfs_measurement_complete_req,
   RRC_dfs_measurement_percentiles_req,
   RRC_dfs_measurement_short_req,
   RRC_force_handover_req,
   RRC_ho_info_distribution_req,
   RRC_mt_alive_request_req,
   RRC_uplink_pc_calibration_req;

SIGNALLIST DUC_APrequests =
   DUC_connect_req,
   DUC_modify_req,
   DUC_modifyreq_req,
   DUC_release_req,
   DUC_reset_req,
   DUC_setup_req;

SIGNALLIST RLC_APrequests =
    (ACF_APrequests), (RRC_APrequests),  (DUC_APrequests);

SIGNALLIST ACF_MTrequests =
   ACF_auth_ap_req,
   ACF_auth_mt_req,
   ACF_cl_broadcast_join_req,
   ACF_cl_broadcast_leave_req,
   ACF_disassociation_req,
   ACF_group_join_req,
   ACF_group_leave_req,
   ACF_info_req,
   ACF_key_exchange_MT_req,
   ACF_link_capability_req,
   ACF_mac_id_assign_req,
   ACF_rbch_associationreq_req;

SIGNALLIST RRC_MTrequests =
   RRC_dfs_mt_init_report_request_req,
   RRC_handover_notify_req,
   RRC_handover_req,
   RRC_mt_absence_req,
   RRC_mt_alive_req,
   RRC_nw_signalling_handover_req,
   RRC_sector_handover_req,
   RRC_sleep_req;

SIGNALLIST DUC_MTrequests =
   DUC_connect_req,
   DUC_modify_req,
   DUC_modifyreq_req,
   DUC_release_req,
   DUC_reset_req,
   DUC_setup_req;

SIGNALLIST RLC_MTrequests =
    (ACF_MTrequests), (RRC_MTrequests), (DUC_MTrequests);
```

```
/* SERVICE INDICATIONS */

SIGNALLIST ACF_APindications =
   ACF_auth_ap_ind,
   ACF_auth_mt_ind,
   ACF_cl_broadcast_join_ind,
   ACF_cl_broadcast_leave_ind,
   ACF_disassociation_ind,
   ACF_group_join_ind,
   ACF_group_leave_ind,
   ACF_info_ind,
   ACF_key_exchange_mt_ind,
   ACF_link_capability_ind,
   ACF_mac_id_assign_ind,
   ACF_rbch_associationreq_ind,
   ACF_retransmission_failed_ind;

SIGNALLIST RRC_APindications =
   RRC_dfs_mt_init_report_request_ind,
   RRC_handover_ind,
   RRC_handover_notify_ind,
   RRC_mt_absence_ind,
   RRC_mt_alive_ind,
   RRC_mt_not_alive_ind,
   RRC_nw_signalling_handover_ind,
   RRC_sector_handover_request_ind,
   RRC_sleep_ind, RRC_retransmission_failed_ind;

SIGNALLIST DUC_APindications =
   DUC_connect_ind,
   DUC_modify_ind,
   DUC_modifyreq_ind,
   DUC_release_ind,
   DUC_reset_ind,
   DUC_setup_ind, DUC_retransmission_failed_ind;

SIGNALLIST RLC_APindications =
    (ACF_APindications), (RRC_APindications),  (DUC_APindications);

SIGNALLIST ACF_MTindications =
   ACF_common_key_activate_ind,
   ACF_common_key_refresh_ind,
   ACF_disassociation_ind,
   ACF_dm_common_key_distr_ind,
   ACF_info_ind,
   ACF_rbch_association_ind,
   ACF_unicast_key_refresh_ind, ACF_retransmission_failed_ind;

SIGNALLIST RRC_MTindications =
   RRC_ap_absence_ind,
   RRC_change_frequency_ind,
   RRC_dfs_measurement_complete_ind,
   RRC_dfs_measurement_percentiles_ind,
   RRC_dfs_measurement_short_ind,
   RRC_force_handover_ind,
   RRC_ho_info_distribution_ind,
   RRC_mt_alive_request_ind,
   RRC_uplink_pc_calibration_ind, RRC_retransmission_failed_ind;

SIGNALLIST DUC_MTindications =
   DUC_connect_ind,
   DUC_modify_ind,
   DUC_modifyreq_ind,
   DUC_release_ind,
   DUC_reset_ind,
   DUC_setup_ind, DUC_retransmission_failed_ind;

SIGNALLIST RLC_MTindications =
    (ACF_MTindications), (RRC_MTindications), (DUC_MTindications);
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 2(12)

```
/* SERVICE RESPONSES */

SIGNALLIST ACF_APresponses =
   ACF_auth_ap_rsp,
   ACF_auth_mt_rsp,
   ACF_cl_broadcast_join_rsp,
   ACF_cl_broadcast_leave_rsp,
   ACF_disassociation_rsp,
   ACF_group_join_nack_rsp,
   ACF_group_join_rsp,
   ACF_group_leave_rsp,
   ACF_info_rsp,
   ACF_key_exchange_ap_rsp,
   ACF_link_capability_rsp,
   ACF_mac_id_assign_nack_rsp,
   ACF_mac_id_assign_rsp;

SIGNALLIST RRC_APresponses=
   RRC_dfs_mt_init_report_request_rsp,
   RRC_handover_association_rsp,
   RRC_handover_link_capability_rsp,
   RRC_handover_request_nack_rsp,
   RRC_mt_absence_rsp,
   RRC_mt_alive_rsp,
   RRC_network_handover_complete_rsp,
   RRC_nw_signalling_handover_rsp,
   RRC_radio_handover_rsp,
   RRC_sector_handover_rsp,
   RRC_sleep_rsp;

SIGNALLIST DUC_APresponses =
   DUC_connect_rsp,
   DUC_modify_rsp,
   DUC_release_rsp,
   DUC_reset_rsp;

SIGNALLIST RLC_APresponses =
    (ACF_APresponses), (RRC_APresponses), (DUC_APresponses);

SIGNALLIST ACF_MTresponses =
   ACF_common_key_refresh_rsp,
   ACF_disassociation_rsp,
   ACF_dm_common_key_distr_rsp,
   ACF_info_rsp,
   ACF_unicast_key_refresh_rsp;

SIGNALLIST RRC_MTresponses=
   RRC_dfs_report_complete_rsp,
   RRC_dfs_report_percentiles_rsp,
   RRC_dfs_report_short_rsp,
   RRC_force_handover_rsp,
   RRC_ho_info_distribution_rsp,
   RRC_mt_alive_request_rsp;

SIGNALLIST DUC_MTresponses =
   DUC_connect_rsp,
   DUC_modify_rsp,
   DUC_release_rsp,
   DUC_reset_rsp;

SIGNALLIST RLC_MTresponses =
    (ACF_MTresponses), (RRC_MTresponses), (DUC_MTresponses);
```

```
/* SERVICE CONFIRMATIONS */

SIGNALLIST ACF_APconfirms =
   ACF_common_key_refresh_cnf,
   ACF_disassociation_cnf,
   ACF_dm_common_key_distr_cnf,
   ACF_info_cnf,
   ACF_unicast_key_refresh_cnf;

SIGNALLIST RRC_APconfirms=
   RRC_dfs_report_complete_cnf,
   RRC_dfs_report_percentiles_cnf,
   RRC_dfs_report_short_cnf,
   RRC_force_handover_cnf,
   RRC_ho_info_distribution_cnf,
   RRC_mt_alive_request_cnf;

SIGNALLIST DUC_APconfirms =
   DUC_connect_cnf,
   DUC_modify_cnf,
   DUC_release_cnf,
   DUC_reset_cnf;

SIGNALLIST RLC_APconfirms =
    (ACF_APconfirms), (RRC_APconfirms), (DUC_APconfirms);

SIGNALLIST ACF_MTconfirms =
   ACF_auth_ap_cnf,
   ACF_auth_mt_cnf,
   ACF_cl_broadcast_join_cnf,
   ACF_cl_broadcast_leave_cnf,
   ACF_disassociation_cnf,
   ACF_group_join_cnf,
   ACF_group_join_nack_cnf,
   ACF_group_leave_cnf,
   ACF_info_cnf,
   ACF_key_exchange_ap_cnf,
   ACF_link_capability_cnf,
   ACF_mac_id_assign_cnf,
   ACF_mac_id_assign_nack_cnf;

SIGNALLIST RRC_MTconfirms=
   RRC_dfs_mt_init_report_request_cnf,
   RRC_handover_association_cnf,
   RRC_handover_link_capability_cnf,
   RRC_handover_request_nack_cnf,
   RRC_mt_absence_cnf,
   RRC_mt_alive_cnf,
   RRC_network_handover_complete_cnf,
   RRC_nw_signalling_handover_cnf,
   RRC_radio_handover_cnf,
   RRC_sector_handover_cnf,
   RRC_sleep_cnf;

SIGNALLIST DUC_MTconfirms =
   DUC_connect_cnf,
   DUC_modify_cnf,
   DUC_release_cnf,
   DUC_reset_cnf;

SIGNALLIST RLC_MTconfirms =
    (ACF_MTconfirms), (RRC_MTconfirms), (DUC_MTconfirms);
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 3(12)

```
/*  SIGNAL DEFINITIONS  BASIC*/

SIGNAL Dummy;
```

```
/* SERVICE REQUESTS */

SIGNAL

/* ACF */

ACF_auth_ap_req(ACF_AUTHENTICATION_AP_ARG),
ACF_auth_mt_req(ACF_AUTHENTICATION_ARG),
ACF_cl_broadcast_join_req(ACF_CL_BROADCAST_JOIN_ARG),
ACF_cl_broadcast_leave_req(ACF_CL_BROADCAST_LEAVE_ARG),
ACF_common_key_activate_req(ACF_COMMON_KEY_ACTIVATE_ARG),
ACF_common_key_refresh_req(ACF_COMMON_KEY_REFRESH_ARG),
ACF_disassociation(ACF_DISASSOCIATION_ARG),
ACF_disassociation_req(ACF_DISASSOCIATION_ARG),
ACF_dm_common_key_distr_req(ACF_DM_COMMON_KEY_DISTR_ARG),
ACF_group_join_req(ACF_GROUP_JOIN_ARG),
ACF_group_leave_req(ACF_GROUP_LEAVE_ARG),
ACF_info_req(ACF_INFO_ARG),
ACF_key_exchange_mt_req(ACF_KEY_EXCHANGE_MT_ARG),
ACF_link_capability_req(ACF_LINK_CAPABILITY_ARG),
ACF_mac_id_assign_req(ACF_MAC_ID_ASSIGN_ARG),
ACF_rbch_association_req(ACF_RBCH_ASSOCIATION_ARG),
ACF_rbch_associationreq_req(ACF_RBCH_ASSOCIATION_REQ_ARG),
ACF_unicast_key_refresh_req(ACF_UNICAST_KEY_REFRESH_ARG),

/* DUC */

DUC_connect_req(DUC_CONNECT_ARG),
DUC_modify_req(DUC_MODIFY_ARG),
DUC_modifyreq_req(DUC_MODIFY_REQ_ARG),
DUC_release_req(DUC_RELEASE_ARG),
DUC_reset_req(DUC_RESET_ARG),
DUC_setup_req(DUC_SETUP_ARG),

/* RRC */

RRC_AP_Absence_req(RRC_AP_ABSENCE_ARG),
RRC_change_frequency_req(RRC_CHANGE_FREQUENCY_ARG),
RRC_DFS_Measurement_Complete_req(RRC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG),
RRC_DFS_Measurement_Percentiles_req(RRC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG),
RRC_DFS_Measurement_Short_req(RRC_DFS_MEASUREMENT_SHORT_REQUEST_ARG),
RRC_dfs_mt_init_report_request_req(RRC_DFS_MT_INIT_REPORT_REQUEST_ARG),
RRC_mt_absence_req(RRC_MT_ABSENCE_ARG),
RRC_mt_alive_req(RRC_MT_ALIVE_ARG),
RRC_mt_alive_request_req(RRC_MT_ALIVE_REQUEST_ARG),
RRC_sleep_req(RRC_SLEEP_ARG),
RRC_uplink_pc_calibration_req(RRC_UPLINK_PC_CALIBRATION_ARG);
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 4(12)

```
/* SERVICE INDICATIONS */

SIGNAL

/* ACF */

ACF_auth_ap_ind(ACF_AUTHENTICATION_AP_ARG),
ACF_auth_mt_ind(ACF_AUTHENTICATION_ARG),
ACF_cl_broadcast_join_ind(ACF_CL_BROADCAST_JOIN_ARG),
ACF_cl_broadcast_leave_ind(ACF_CL_BROADCAST_LEAVE_ARG),
ACF_common_key_activate_ind(ACF_COMMON_KEY_ACTIVATE_ARG),
ACF_common_key_refresh_ind(ACF_COMMON_KEY_REFRESH_ARG),
ACF_disassociation_ind(ACF_DISASSOCIATION_ARG),
ACF_dm_common_key_distr_ind(ACF_DM_COMMON_KEY_DISTR_ARG),
ACF_group_join_ind(ACF_GROUP_JOIN_ARG),
ACF_group_leave_ind(ACF_GROUP_LEAVE_ARG),
ACF_info_ind(ACF_INFO_ARG),
ACF_key_exchange_MT_ind(ACF_KEY_EXCHANGE_MT_ARG),
ACF_link_capability_ind(ACF_LINK_CAPABILITY_ARG),
ACF_mac_id_assign_ind(ACF_MAC_ID_ASSIGN_ARG),
ACF_rbch_association_ind(ACF_RBCH_ASSOCIATION_ARG),
ACF_rbch_associationreq_ind(ACF_RBCH_ASSOCIATION_REQ_ARG),
ACF_retransmission_failed_ind,
ACF_unicast_key_refresh_ind(ACF_UNICAST_KEY_REFRESH_ARG),

/* DUC */

DUC_connect_ind(DUC_CONNECT_ARG),
DUC_modify_ind(DUC_MODIFY_ARG),
DUC_modifyreq_ind(DUC_MODIFY_REQ_ARG),
DUC_release_ind(DUC_RELEASE_ARG),
DUC_reset_ind(DUC_RESET_ARG),
DUC_retransmission_failed_ind,
DUC_setup_ind(DUC_SETUP_ARG),

/* RRC */

RRC_ap_absence_ind(RRC_AP_ABSENCE_ARG),
RRC_change_frequency_ind(RRC_CHANGE_FREQUENCY_ARG),
RRC_dfs_measurement_complete_ind(RRC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG),
RRC_dfs_measurement_percentiles_ind(RRC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG),
RRC_dfs_measurement_short_ind(RRC_DFS_MEASUREMENT_SHORT_REQUEST_ARG),
RRC_dfs_mt_init_report_request_ind(RRC_DFS_MT_INIT_REPORT_REQUEST_ARG),
RRC_mt_absence_ind(RRC_MT_ABSENCE_ARG),
RRC_mt_alive_ind(RRC_MT_ALIVE_ARG),
RRC_mt_alive_request_ind(RRC_MT_ALIVE_REQUEST_ARG),
RRC_mt_not_alive_ind,
RRC_retransmission_failed_ind,
RRC_sleep_ind(RRC_SLEEP_ARG),
RRC_uplink_pc_calibration_ind(RRC_UPLINK_PC_CALIBRATION_ARG);
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 5(12)

```
/* SERVICE RESPONSES */

SIGNAL

/* ACF */

ACF_auth_ap_rsp(ACF_AUTHENTICATION_ACK_ARG),
ACF_auth_mt_rsp(ACF_AUTHENTICATION_MT_ARG),
ACF_cl_broadcast_join_rsp(ACF_CL_BROADCAST_JOIN_ACK_ARG),
ACF_cl_broadcast_leave_rsp(ACF_CL_BROADCAST_LEAVE_ACK_ARG),
ACF_common_key_refresh_rsp(ACF_COMMON_KEY_REFRESH_ACK_ARG),
ACF_disassociation_rsp(ACF_DISASSOCIATION_ACK_ARG),
ACF_dm_common_key_distr_rsp(ACF_DM_COMMON_KEY_DISTR_ACK_ARG),
ACF_group_join_nack_rsp(ACF_GROUP_JOIN_NACK_ARG),
ACF_group_join_rsp(ACF_GROUP_JOIN_ACK_ARG),
ACF_group_leave_rsp(ACF_GROUP_LEAVE_ACK_ARG),
ACF_info_rsp(ACF_INFO_ACK_ARG),
ACF_key_exchange_AP_rsp(ACF_KEY_EXCHANGE_AP_ARG),
ACF_link_capability_rsp(ACF_LINK_CAPABILITY_ACK_ARG),
ACF_mac_id_assign_nack_rsp(ACF_MAC_ID_ASSIGN_NACK_ARG),
ACF_mac_id_assign_rsp(ACF_MAC_ID_ASSIGN_ACK_ARG),
ACF_unicast_key_refresh_rsp(ACF_UNICAST_KEY_REFRESH_ACK_ARG),

/* DUC */

DUC_connect_rsp(DUC_CONNECT_ACK_ARG),
DUC_modify_rsp(DUC_MODIFY_ACK_ARG),
DUC_release_rsp(DUC_RELEASE_ACK_ARG),
DUC_reset_rsp(DUC_RESET_ACK_ARG),

/* RRC */

RRC_dfs_mt_init_report_request_rsp(RRC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG),
RRC_dfs_report_complete_rsp(RRC_DFS_REPORT_COMPLETE_ARG),
RRC_dfs_report_percentiles_rsp(RRC_DFS_REPORT_PERCENTILES_ARG),
RRC_dfs_report_short_rsp(RRC_DFS_REPORT_SHORT_ARG),
RRC_mt_absence_rsp(RRC_MT_ABSENCE_ACK_ARG),
RRC_mt_alive_request_rsp(RRC_MT_ALIVE_REQUEST_ACK_ARG),
RRC_mt_alive_rsp(RRC_MT_ALIVE_ACK_ARG),
RRC_sleep_rsp(RRC_SLEEP_ACK_ARG);
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 6(12)

```
/* SERVICE CONFIRMATIONS */

SIGNAL

/* ACF */

ACF_auth_ap_cnf(ACF_AUTHENTICATION_ACK_ARG),
ACF_auth_mt_cnf(ACF_AUTHENTICATION_MT_ARG),
ACF_authentication_cnf(ACF_AUTHENTICATION_ACK_ARG),
ACF_cl_broadcast_join_cnf(ACF_CL_BROADCAST_JOIN_ACK_ARG),
ACF_cl_broadcast_leave_cnf(ACF_CL_BROADCAST_LEAVE_ACK_ARG),
ACF_common_key_refresh_cnf(ACF_COMMON_KEY_REFRESH_ACK_ARG),
ACF_disassociation_cnf(ACF_DISASSOCIATION_ACK_ARG),
ACF_dm_common_key_distr_cnf(ACF_DM_COMMON_KEY_DISTR_ACK_ARG),
ACF_group_join_cnf(ACF_GROUP_JOIN_ACK_ARG),
ACF_group_join_nack_cnf(ACF_GROUP_JOIN_NACK_ARG),
ACF_group_leave_cnf(ACF_GROUP_LEAVE_ACK_ARG),
ACF_info_cnf(ACF_INFO_ACK_ARG),
ACF_key_exchange_ap_cnf(ACF_KEY_EXCHANGE_AP_ARG),
ACF_link_capability_cnf(ACF_LINK_CAPABILITY_ACK_ARG),
ACF_mac_id_assign_cnf(ACF_MAC_ID_ASSIGN_ACK_ARG),
ACF_mac_id_assign_nack_cnf(ACF_MAC_ID_ASSIGN_NACK_ARG),
ACF_unicast_key_refresh_cnf(ACF_UNICAST_KEY_REFRESH_ACK_ARG),

/* DUC */

DUC_connect_cnf(DUC_CONNECT_ACK_ARG),
DUC_modify_cnf(DUC_MODIFY_ACK_ARG),
DUC_release_cnf(DUC_RELEASE_ACK_ARG),
DUC_reset_cnf(DUC_RESET_ACK_ARG),

/* RRC */

RRC_dfs_mt_init_report_request_cnf(RRC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG),
RRC_dfs_report_complete_cnf(RRC_DFS_REPORT_COMPLETE_ARG),
RRC_dfs_report_percentiles_cnf(RRC_DFS_REPORT_PERCENTILES_ARG),
RRC_dfs_report_short_cnf(RRC_DFS_REPORT_SHORT_ARG),
RRC_mt_absence_cnf(RRC_MT_ABSENCE_ACK_ARG),
RRC_mt_alive_cnf(RRC_MT_ALIVE_ACK_ARG),
RRC_mt_alive_request_cnf(RRC_MT_ALIVE_REQUEST_ACK_ARG),
RRC_sleep_cnf(RRC_SLEEP_ACK_ARG);
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 7(12)

```
/*  SIGNALLIST DEFINITIONS */
```

```
/* SERVICE REQUESTS */

SIGNALLIST ACF_BE_APrequests = (ACF_APrequests);

SIGNALLIST ACF_CCrequests = (ACF_APrequests);

SIGNALLIST RRC_BE_APrequests = (RRC_APrequests),(RRC_BEA_APrequests);

SIGNALLIST RRC_BEA_APrequests = Dummy;

SIGNALLIST RRC_CCrequests = (RRC_APrequests);

SIGNALLIST DUC_BE_APrequests = (DUC_APrequests);

SIGNALLIST DUC_CCrequests = (DUC_APrequests), (DUC_CCArequests);

SIGNALLIST DUC_CCArequests =
   DUC_dm_connect_complete_req,
   DUC_dm_connect_req,
   DUC_dm_modify_complete_req,
   DUC_dm_modify_req,
   DUC_dm_modifyreq_req,
   DUC_dm_release_req,
   DUC_dm_reset_req,
   DUC_dm_setup_req;

SIGNALLIST RLC_BE_APrequests =
    (ACF_BE_APrequests),(RRC_BE_APrequests),
    (DUC_BE_APrequests);

SIGNALLIST RLC_CCrequests =
    (ACF_CCrequests), (RRC_CCrequests),
    (DUC_CCrequests);

SIGNALLIST ACF_BE_MTrequests = (ACF_MTrequests);

SIGNALLIST ACF_WTrequests = (ACF_MTrequests);

SIGNALLIST RRC_BE_MTrequests = (RRC_MTrequests), (RRC_BEA_MTrequests);

SIGNALLIST RRC_BEA_MTrequests = Dummy;

SIGNALLIST RRC_WTrequests = (RRC_MTrequests);

SIGNALLIST DUC_BE_MTrequests = (DUC_MTrequests);

SIGNALLIST DUC_WTrequests = (DUC_MTrequests), (DUC_WTArequests);

SIGNALLIST DUC_WTArequests =
   DUC_dm_connect_req,
   DUC_dm_modify_req,
   DUC_dm_modifyreq_req,
   DUC_dm_release_req,
   DUC_dm_setup_req,
   DUC_dm_reset_req,
   DUC_relay_modify_req,
   DUC_relay_release_req,
   DUC_relay_setup_req;

SIGNALLIST RLC_BE_MTrequests =
    (ACF_BE_MTrequests), (RRC_BE_MTrequests), (DUC_BE_MTrequests);

SIGNALLIST RLC_WTrequests =
    (ACF_WTrequests), (RRC_WTrequests), (DUC_WTrequests);
```

```
/* SERVICE INDICATIONS */

SIGNALLIST ACF_BE_APindications = (ACF_APindications);

SIGNALLIST ACF_CCindications = (ACF_APindications);

SIGNALLIST RRC_BE_APindications =
(RRC_APindications), (RRC_BEA_APindications);

SIGNALLIST RRC_BEA_APindications = dummy;

SIGNALLIST RRC_CCindications = (RRC_APindications);

SIGNALLIST DUC_BE_APindications = (DUC_APindications);

SIGNALLIST DUC_CCindications = (DUC_APindications),
(DUC_CCAindications);

SIGNALLIST DUC_CCAindications =
   DUC_dm_connect_ind,
   DUC_dm_modify_ind,
   DUC_dm_modifyreq_ind,
   DUC_dm_release_ind,
   DUC_dm_reset_ind,
   DUC_dm_setup_ind,
   DUC_relay_modify_ind,
   DUC_relay_release_ind,
   DUC_relay_setup_ind;

SIGNALLIST RLC_BE_APindications =
    (ACF_BE_APindications), (RRC_BE_APindications),
    (DUC_BE_APindications);

SIGNALLIST RLC_CCindications =
    (ACF_CCindications), (RRC_CCindications),  (DUC_CCindications);

SIGNALLIST ACF_BE_MTindications = (ACF_MTindications);
SIGNALLIST ACF_WTindications = (ACF_MTindications);

SIGNALLIST RRC_BE_MTindications = (RRC_MTindications),
(RRC_BEA_MTindications);

SIGNALLIST RRC_BEA_MTindications = dummy;

SIGNALLIST RRC_WTindications = (RRC_MTindications);

SIGNALLIST DUC_BE_MTindications = (DUC_MTindications);

SIGNALLIST DUC_WTindications = (DUC_MTindications),
(DUC_WTAindications);

SIGNALLIST DUC_WTAindications =
   DUC_dm_connect_complete_ind,
   DUC_dm_connect_ind,
   DUC_dm_modify_complete_ind,
   DUC_dm_modify_ind,
   DUC_dm_modifyreq_ind,
   DUC_dm_release_ind,
   DUC_dm_reset_ind,
   DUC_dm_setup_ind;

SIGNALLIST RLC_BE_MTindications =
    (ACF_BE_MTindications), (RRC_BE_MTindications),
    (DUC_BE_MTindications);

SIGNALLIST RLC_WTindications =
    (ACF_WTindications), (RRC_WTindications), (DUC_WTindications);
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 8(12)

```
/* SERVICE RESPONSES */

SIGNALLIST ACF_BE_APresponses = (ACF_APresponses);
SIGNALLIST ACF_CCresponses = (ACF_APresponses);

SIGNALLIST RRC_BE_APresponses= (RRC_APresponses),
(RRC_BEA_APresponses);

SIGNALLIST RRC_BEA_APresponses =
dummy;

SIGNALLIST RRC_CCresponses= (RRC_APresponses);

SIGNALLIST DUC_BE_APresponses = (DUC_APresponses);

SIGNALLIST DUC_CCresponses = (DUC_APresponses),
(DUC_CCAresponses);

SIGNALLIST DUC_CCAresponses =
   DUC_dm_connect_rsp,
   DUC_dm_modify_rsp,
   DUC_dm_release_rsp,
   DUC_dm_reset_rsp,
   DUC_relay_modify_rsp,
   DUC_relay_release_rsp,
   DUC_relay_setup_rsp;

SIGNALLIST RLC_BE_APresponses =
    (ACF_BE_APresponses), (RRC_BE_APresponses),
    (DUC_BE_APresponses);

SIGNALLIST RLC_CCresponses =
    (ACF_CCresponses), (RRC_CCresponses),
    (DUC_CCresponses);

SIGNALLIST ACF_BE_MTresponses = (ACF_MTresponses);
SIGNALLIST ACF_WTresponses = (ACF_MTresponses);

SIGNALLIST RRC_BE_MTresponses = (RRC_MTresponses),
(RRC_BEA_MTresponses);

SIGNALLIST RRC_BEA_MTresponses =
dummy;

SIGNALLIST RRC_WTresponses= (RRC_MTresponses);

SIGNALLIST DUC_BE_MTresponses = (DUC_MTresponses);

SIGNALLIST DUC_WTresponses = (DUC_MTresponses),
(DUC_WTAresponses);

SIGNALLIST DUC_WTAresponses =
   DUC_dm_connect_complete_rsp,
   DUC_dm_connect_rsp,
   DUC_dm_modify_complete_rsp,
   DUC_dm_modify_rsp,
   DUC_dm_release_rsp,
   DUC_dm_reset_rsp;

SIGNALLIST RLC_BE_MTresponses =
    (ACF_BE_MTresponses), (RRC_BE_MTresponses),
    (DUC_BE_MTresponses);

SIGNALLIST RLC_WTresponses =
    (ACF_WTresponses), (RRC_WTresponses),
    (DUC_WTresponses);
```

```
/* SERVICE CONFIRMATIONS */

SIGNALLIST ACF_BE_APconfirms = (ACF_APconfirms);

SIGNALLIST ACF_CCconfirms = (ACF_APconfirms);

SIGNALLIST RRC_BE_APconfirms = (RRC_APconfirms),(RRC_BEA_APconfirms);

SIGNALLIST RRC_BEA_APconfirms =
dummy;

SIGNALLIST RRC_CCconfirms = (RRC_APconfirms);

SIGNALLIST DUC_BE_APconfirms = (DUC_APconfirms);

SIGNALLIST DUC_CCconfirms = (DUC_APconfirms),
(DUC_CCAconfirms);

SIGNALLIST DUC_CCAconfirms =
   DUC_dm_connect_cnf,
   DUC_dm_connect_complete_cnf,
   DUC_dm_modify_cnf,
   DUC_dm_modify_complete_cnf,
   DUC_dm_release_cnf,
   DUC_dm_reset_cnf;

SIGNALLIST RLC_BE_APconfirms =
    (ACF_BE_APconfirms), (RRC_BE_APconfirms),
    (DUC_BE_APconfirms);

SIGNALLIST RLC_CCconfirms =
    (ACF_CCconfirms), (RRC_CCconfirms),
    (DUC_CCconfirms);

SIGNALLIST ACF_BE_MTconfirms = (ACF_MTconfirms);
SIGNALLIST ACF_WTconfirms = (ACF_MTconfirms);

SIGNALLIST RRC_BE_MTconfirms = (RRC_MTconfirms),
(RRC_BEA_MTconfirms);

SIGNALLIST RRC_BEA_MTconfirms =
dummy;

SIGNALLIST RRC_WTconfirms = (RRC_MTconfirms);

SIGNALLIST DUC_BE_MTconfirms = (DUC_MTconfirms);

SIGNALLIST DUC_WTconfirms = (DUC_MTconfirms),
(DUC_WTAconfirms);

SIGNALLIST DUC_WTAconfirms =
   DUC_dm_connect_cnf,
   DUC_dm_modify_cnf,
   DUC_dm_release_cnf,
   DUC_dm_reset_cnf,
   DUC_relay_modify_cnf,
   DUC_relay_release_cnf,
   DUC_relay_setup_cnf;

SIGNALLIST RLC_BE_MTconfirms =
    (ACF_BE_MTconfirms), (RRC_BE_MTconfirms),
    (DUC_BE_MTconfirms);

SIGNALLIST RLC_WTconfirms =
    (ACF_WTconfirms), (RRC_WTconfirms),
    (DUC_WTconfirms);
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 9(12)

```
/*  SIGNAL DEFINITIONS  */
```

```
/* SERVICE REQUESTS Handover*/

SIGNAL

/* RRC */

RRC_force_handover_req(RRC_FORCE_HANDOVER_ARG),
RRC_handover_notify_req(RRC_HANDOVER_NOTIFY_ARG),
RRC_handover_req(RRC_HANDOVER_REQUEST_ARG),
RRC_ho_info_distribution_req(RRC_HO_INFO_DISTRIBUTION_ARG),
RRC_nw_signalling_handover_req(RRC_NW_SIGNALLING_HANDOVER_ARG),
RRC_sector_handover_req(RRC_SECTOR_HANDOVER_REQUEST_ARG),

/* SERVICE REQUESTS HE*/

/* DUC */


DUC_dm_connect_complete_req(DUC_DM_CONNECT_COMPLETE_ARG),
DUC_dm_connect_req(DUC_DM_CONNECT_ARG),
DUC_dm_modify_complete_req(DUC_DM_MODIFY_COMPLETE_ARG),
DUC_dm_modify_req(DUC_DM_MODIFY_ARG),
DUC_dm_modifyreq_req(DUC_DM_MODIFY_REQ_ARG),
DUC_dm_release_req(DUC_DM_RELEASE_ARG),
DUC_dm_reset_req(DUC_DM_RESET_ARG),
DUC_dm_setup_req(DUC_DM_SETUP_ARG),
DUC_relay_modify_req(DUC_RELAY_MODIFY_ARG),
DUC_relay_release_req(DUC_RELAY_RELEASE_ARG),
DUC_relay_setup_req(DUC_RELAY_SETUP_ARG);
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 10(12)

```
/* SERVICE INDICATIONS Handover*/

SIGNAL

/* RRC */

RRC_Force_Handover_ind(RRC_FORCE_HANDOVER_ARG),
RRC_handover_ind(RRC_HANDOVER_REQUEST_ARG),
RRC_handover_notify_ind(RRC_HANDOVER_NOTIFY_ARG),
RRC_ho_info_distribution_ind(RRC_HO_INFO_DISTRIBUTION_ARG),
RRC_nw_signalling_handover_ind(RRC_NW_SIGNALLING_HANDOVER_ARG),
RRC_sector_handover_request_ind(RRC_SECTOR_HANDOVER_REQUEST_ARG),

/* SERVICE INDICATIONS HE*/

DUC_dm_connect_complete_ind(DUC_DM_CONNECT_COMPLETE_ARG),
DUC_dm_connect_ind(DUC_DM_CONNECT_ARG),
DUC_dm_modify_complete_ind(DUC_DM_MODIFY_COMPLETE_ARG),
DUC_dm_modify_ind(DUC_DM_MODIFY_ARG),
DUC_dm_modifyreq_ind(DUC_DM_MODIFY_REQ_ARG),
DUC_dm_release_ind(DUC_DM_RELEASE_ARG),
DUC_dm_reset_ind(DUC_DM_RESET_ARG),
DUC_dm_setup_ind(DUC_DM_SETUP_ARG),
DUC_relay_modify_ind(DUC_RELAY_MODIFY_ARG),
DUC_relay_release_ind(DUC_RELAY_RELEASE_ARG),
DUC_relay_setup_ind(DUC_RELAY_SETUP_ARG);
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 11(12)

```
/* SERVICE RESPONSES Handover */

SIGNAL

/* RRC */

RRC_force_handover_rsp(RRC_FORCE_HANDOVER_ACK_ARG),
RRC_handover_association_rsp(RRC_HANDOVER_ASSOCIATION_ARG),
RRC_handover_link_capability_rsp(RRC_HANDOVER_LINK_CAPABILITY_ACK_ARG),
RRC_handover_request_nack_rsp,
RRC_ho_info_distribution_rsp,
RRC_network_handover_complete_rsp(RRC_NETWORK_HANDOVER_COMPLETE_ARG),
RRC_nw_signalling_handover_rsp(RRC_NW_SIGNALLING_HANDOVER_ACK_ARG),
RRC_radio_handover_rsp(RRC_RADIO_HANDOVER_COMPLETE_ARG),
RRC_sector_handover_rsp(RRC_SECTOR_HANDOVER_ACK_ARG),

/* SERVICE RESPONSES HE */

/* DUC */

DUC_dm_connect_complete_rsp(DUC_DM_CONNECT_COMPLETE_ACK_ARG),
DUC_dm_connect_rsp(DUC_DM_CONNECT_ACK_ARG),
DUC_dm_modify_complete_rsp(DUC_DM_MODIFY_COMPLETE_ACK_ARG),
DUC_dm_modify_rsp(DUC_DM_MODIFY_ACK_ARG),
DUC_dm_release_rsp(DUC_DM_RELEASE_ACK_ARG),
DUC_dm_reset_rsp(DUC_DM_RESET_ACK_ARG),
DUC_relay_modify_rsp(DUC_RELAY_MODIFY_ACK_ARG),
DUC_relay_release_rsp(DUC_RELAY_RELEASE_ACK_ARG),
DUC_relay_setup_rsp(DUC_RELAY_SETUP_ACK_ARG);
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives/MAC_ID;
```

Package RLCservicePrimitivesDefinitions 12(12)

```
/* SERVICE CONFIRMATIONS Handover */

SIGNAL

/* RRC */

RRC_force_handover_cnf(RRC_FORCE_HANDOVER_ACK_ARG),
RRC_handover_association_cnf(RRC_HANDOVER_ASSOCIATION_ARG),
RRC_handover_link_capability_cnf(RRC_HANDOVER_LINK_CAPABILITY_ACK_ARG),
RRC_handover_request_nack_cnf,
RRC_ho_info_distribution_cnf,
RRC_network_handover_complete_cnf(RRC_NETWORK_HANDOVER_COMPLETE_ARG),
RRC_nw_signalling_handover_cnf(RRC_NW_SIGNALLING_HANDOVER_ACK_ARG),
RRC_radio_handover_cnf(RRC_RADIO_HANDOVER_COMPLETE_ARG),
RRC_sector_handover_cnf(RRC_SECTOR_HANDOVER_ACK_ARG),

/* SERVICE CONFIRMATIONS HE */

/* DUC */

DUC_dm_connect_cnf(DUC_DM_CONNECT_ACK_ARG),
DUC_dm_connect_complete_cnf(DUC_DM_CONNECT_COMPLETE_ACK_ARG),
DUC_dm_modify_cnf(DUC_DM_MODIFY_ACK_ARG),
DUC_dm_modify_complete_cnf(DUC_DM_MODIFY_COMPLETE_ACK_ARG),
DUC_dm_release_cnf(DUC_DM_RELEASE_ACK_ARG),
DUC_dm_reset_cnf(DUC_DM_RESET_ACK_ARG),
DUC_relay_modify_cnf(DUC_RELAY_MODIFY_ACK_ARG),
DUC_relay_release_cnf(DUC_RELAY_RELEASE_ACK_ARG),
DUC_relay_setup_cnf(DUC_RELAY_SETUP_ACK_ARG);
```

ASN.1 Text RLCprotocolPrimitives

```
RLCprotocolPrimitives DEFINITIONS ::=
BEGIN

-- RLC message types ******************************************

RLC-LCH-PDU-TYPE ::= ENUMERATED {
     -- AFC messages 0+msg number
     cRLC-RBCH-ASSOCIATION-TYPE     (1),
     cRLC-LINK-CAPABILITY-TYPE     (2),
     cRLC-LINK-CAPABILITY-ACK-TYPE     (3),
     cRLC-KEY-EXCHANGE-MT-1-TYPE     (4),
     cRLC-KEY-EXCHANGE-MT-2-TYPE     (5),
     cRLC-KEY-EXCHANGE-AP-1-TYPE     (6),
     cRLC-KEY-EXCHANGE-AP-2-TYPE     (7),
     cRLC-AUTHENTICATION-TYPE     (8),
     cRLC-AUTHENTICATION-MT-TYPE     (9),
     cRLC-AUTHENTICATION-AP-1-TYPE     (10),
     cRLC-AUTHENTICATION-AP-2-TYPE     (11),
     cRLC-AUTHENTICATION-AP-3-TYPE     (12),
     cRLC-AUTHENTICATION-ACK-1-TYPE     (13),
     cRLC-AUTHENTICATION-ACK-2-TYPE     (14),
     cRLC-AUTHENTICATION-ACK-3-TYPE     (15),
     cRLC-DM-COMMON-KEY-DISTR-TYPE     (16),
     cRLC-DM-COMMON-KEY-DISTR-ACK-TYPE     (17),
     cRLC-INFO-TYPE     (18),
     cRLC-INFO-ACK-TYPE     (19),
     cRLC-UNICAST-KEY-REFRESH-TYPE     (20),
     cRLC-UNICAST-KEY-REFRESH-ACK-TYPE     (21),
     cRLC-COMMON-KEY-REFRESH-TYPE     (22),
     cRLC-COMMON-KEY-REFRESH-ACK-TYPE     (23),
     cRLC-GROUP-JOIN-TYPE     (24),
     cRLC-GROUP-JOIN-ACK-TYPE     (25),
     cRLC-GROUP-JOIN-NACK-TYPE     (26),
     cRLC-GROUP-LEAVE-TYPE     (27),
     cRLC-GROUP-LEAVE-ACK-TYPE     (28),
     cRLC-CL-BROADCAST-JOIN-TYPE     (29),
     cRLC-CL-BROADCAST-JOIN-ACK-TYPE     (30),
     cRLC-CL-BROADCAST-LEAVE-TYPE     (31),
     cRLC-CL-BROADCAST-LEAVE-ACK-TYPE     (32),

     -- RRC messages 64+msg number
     cRLC-RADIO-HANDOVER-COMPLETE-TYPE     (64),
     cRLC-HANDOVER-ASSOCIATION-TYPE     (65),
     cRLC-HANDOVER-LINK-CAPABILITY-ACK-TYPE     (66),
     cRLC-NW-SIGNALLING-HANDOVER-TYPE     (67),
     cRLC-NW-SIGNALLING-HANDOVER-ACK-TYPE     (68),
     cRLC-NETWORK-HANDOVER-COMPLETE-TYPE     (69),
     cRLC-HO-INFO-DISTRIBUTION-TYPE     (70),
     cRLC-DFS-MEASUREMENT-COMPLETE-REQUEST-TYPE     (71),
     cRLC-DFS-MEASUREMENT-PERCENTILES-REQUEST-TYPE     (72),
     cRLC-DFS-MEASUREMENT-SHORT-REQUEST-TYPE     (73),
     cRLC-DFS-REPORT-COMPLETE-TYPE     (74),
     cRLC-DFS-REPORT-PERCENTILES-TYPE     (75),
     cRLC-DFS-REPORT-SHORT-TYPE     (76),

     -- DUC messages 128+msg number
     cRLC-SETUP-TYPE     (128),
     cRLC-CONNECT-TYPE     (129),
     cRLC-CONNECT-ACK-TYPE     (130),
     cRLC-RELEASE-TYPE     (131),
     cRLC-RELEASE-ACK-TYPE     (132),
     cRLC-MODIFY-REQ-TYPE     (133),
```

```
     cRLC−MODIFY−TYPE      (134),
     cRLC−MODIFY−ACK−TYPE      (135),
     cRLC−RESET−TYPE     (136),
     cRLC−RESET−ACK−TYPE     (137),
     cRLC−DM−SETUP−TYPE     (138),
     cRLC−DM−CONNECT−TYPE     (139),
     cRLC−DM−CONNECT−ACK−TYPE     (140),
     cRLC−DM−CONNECT−COMPLETE−TYPE     (141),
     cRLC−RELAY−SETUP−TYPE                     (143),
     cRLC−RELAY−SETUP−ACK−TYPE                 (144),
     cRLC−DM−MODIFY−REQ−TYPE     (145),
     cRLC−DM−MODIFY−TYPE     (146),
     cRLC−DM−MODIFY−ACK−TYPE     (147),
     cRLC−DM−MODIFY−COMPLETE−TYPE     (148),
     cRLC−RELAY−MODIFY−TYPE                    (149),
     cRLC−RELAY−MODIFY−ACK−TYPE                (150),
     cRLC−DM−RELEASE−TYPE     (151),
     cRLC−DM−RELEASE−ACK−TYPE     (152),
     cRLC−RELAY−RELEASE−TYPE                   (153),
     cRLC−RELAY−RELEASE−ACK−TYPE               (154),
     cRLC−DM−RESET−TYPE     (155),
     cRLC−DM−RESET−ACK−TYPE     (156) }

RLC−SCH−PDU−TYPE ::= ENUMERATED {
     −− AFC messages 0+msg number
     cRLC−RBCH−ASSOCIATION−REQ−TYPE     (1),
     cRLC−MAC−ID−ASSIGN−TYPE          (2),
     cRLC−MAC−ID−ASSIGN−ACK−TYPE     (3),
     cRLC−MAC−ID−ASSIGN−NACK−TYPE     (4),
     cRLC−COMMON−KEY−ACTIVATE−TYPE     (5),
     cRLC−DISASSOCIATION−TYPE     (6),
     cRLC−DISASSOCIATION−ACK−TYPE     (7),
     cRLC−PROCEEDING−TYPE          (8),
     −− RRC messages 64+msg number
     cRLC−SECTOR−HANDOVER−REQUEST−TYPE     (64),
     cRLC−SECTOR−HANDOVER−ACK−TYPE     (65),
     cRLC−HANDOVER−NOTIFY−TYPE     (66),
     cRLC−HANDOVER−REQUEST−TYPE     (67),
     cRLC−HANDOVER−REQUEST−NACK−TYPE     (68),
     cRLC−HO−INFO−DISTRIBUTION−ACK−TYPE     (70),
     cRLC−FORCE−HANDOVER−TYPE     (71),
     cRLC−FORCE−HANDOVER−ACK−TYPE     (72),
     cRLC−AP−ABSENCE−TYPE     (73),
     cRLC−DFS−MT−INIT−REPORT−REQUEST−TYPE     (74),
     cRLC−DFS−MT−INIT−REPORT−REQUEST−ACK−TYPE     (75),
     cRLC−CHANGE−FREQUENCY−TYPE     (76),
     cRLC−UPLINK−PC−CALIBRATION−TYPE     (77),
     cRLC−MT−ALIVE−REQUEST−TYPE     (78),
     cRLC−MT−ALIVE−REQUEST−ACK−TYPE     (79),
     cRLC−MT−ALIVE−TYPE     (80),
     cRLC−MT−ALIVE−ACK−TYPE     (81),
     cRLC−MT−ABSENCE−TYPE     (82),
     cRLC−MT−ABSENCE−ACK−TYPE     (83),
     cRLC−SLEEP−TYPE     (84),
     cRLC−SLEEP−ACK−TYPE     (85),
     −− DUC messages 128+msg number
     cRLC−DM−CONNECT−COMPLETE−ACK−TYPE     (128),
     cRLC−DM−MODIFY−COMPLETE−ACK−TYPE     (129) }


−− ****************************************************************
−− ASSOCIATION−AUTHENTICATION PARAMETERS
−− ****************************************************************

RLC−RBCH−ASSOCIATION−ARG ::= SEQUENCE  {
```

```
     rlc−pdu−type     [0]     RLC−LCH−PDU−TYPE,
     network−operator−id     [1]     NETWORK−OPERATOR−ID OPTIONAL,
     cl−vid−list     [2]     CL−VID−LIST  }

RLC−RBCH−ASSOCIATION−REQ−ARG ::= SEQUENCE {
     rlc−pdu−type          RLC−SCH−PDU−TYPE,
     ap−id          AP−ID,
     net−id          NET−ID,
     mac−id          MAC−ID0 }

RLC−MAC−ID−ASSIGN−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     magic     MAGIC,
     rlc−version     RLC−VERSION,
     mac−id     MAC−ID0 }

RLC−MAC−ID−ASSIGN−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     magic     MAGIC,
     mac−id     MAC−ID,
     mac−id1     MAC−ID }

RLC−MAC−ID−ASSIGN−NACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     magic     MAGIC }

RLC−LINK−CAPABILITY−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     dlc−version     DLC−VERSION,
     rlc−version     RLC−VERSION,
     cl−vid−list     CL−VID−LIST,
     rss−value     RSS−VALUE,
     support64QAM     SUPPORTED64QAM,
     freq−band     FREQUENCY−BAND,
     direct−mode−cap     DIRECT−MODE−CAP,
     cyclic−prefix     CYCLIC−PREFIX,
     support−fca     SUPPORTED−FCA,
     support−fsa     SUPPORTED−FSA,
     ho−cap      HO−CAP,
      cc−ho−cap   CC−HO−CAP,
     time−gap−ach−uplink     TIME−GAP−ACH−UPLINK,
     duty−cycle          DUTY−CYCLE,
     arq−delay−rx     ARQ−DELAY,
     arq−delay−tx     ARQ−DELAY,
     authentication−encryption−list      AUTHENTICATION−ENCRYPTION−LIST,
     dm−attributes     DM−ATTRIBUTES OPTIONAL }

RLC−LINK−CAPABILITY−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     dlc−version−selected     DLC−VERSION,
     rlc−version−selected     RLC−VERSION,
     rss−value     RSS−VALUE,
     apt−address−length     APT−ADDRESS−LENGTH,
     support64QAM     SUPPORTED64QAM,
     freq−band     FREQUENCY−BAND,
     send−mt−id     SEND−MT−ID,
     direct−mode−cap     DIRECT−MODE−CAP,
     dm−use−common−key     DM−USE−COMMON−KEY,
     cyclic−prefix     CYCLIC−PREFIX,
     support−fca     SUPPORTED−FCA,
     support−fsa     SUPPORTED−FSA,
      cc−ho−cap   CC−HO−CAP,
     arq−delay−rx     ARQ−DELAY,
     arq−delay−tx     ARQ−DELAY,
     auth−encr−selected     AUTH−ENCR−INFO,
```

```
     dm−attributes     DM−ATTRIBUTES OPTIONAL }

RLC−KEY−EXCHANGE−MT−1−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     mt−dh−public−value−1     DH−PUBLIC−VALUE−HALF  }

RLC−KEY−EXCHANGE−MT−2−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     mt−dh−public−value−2     DH−PUBLIC−VALUE−HALF  }

RLC−KEY−EXCHANGE−AP−1−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     ap−dh−public−value−1     DH−PUBLIC−VALUE−HALF  }

RLC−KEY−EXCHANGE−AP−2−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     ap−dh−public−value−2     DH−PUBLIC−VALUE−HALF  }

RLC−AUTHENTICATION−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     more     MORE−AUTH,
     mt−auth−id−type     MT−AUTH−ID−TYPE,
     mt−auth−id−content     MT−AUTH−CONTENT      }

RLC−AUTHENTICATION−MT−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     challenge−to−mt     CHALLENGE }

RLC−AUTHENTICATION−AP−1−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     challenge−to−ap     CHALLENGE,
     mt−response−1     AUTH−RESPONSE−PART1      }

RLC−AUTHENTICATION−AP−2−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     mt−response−2     AUTH−RESPONSE−PART2      }

RLC−AUTHENTICATION−AP−3−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     mt−response−2     AUTH−RESPONSE−PART2      }

RLC−AUTHENTICATION−ACK−1−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     ap−response−2     AUTH−RESPONSE−PART2 }

RLC−AUTHENTICATION−ACK−2−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     ap−response−2     AUTH−RESPONSE−PART2 }

RLC−AUTHENTICATION−ACK−3−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     ap−response−2     AUTH−RESPONSE−PART2 }

RLC−DM−COMMON−KEY−DISTR−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     dm−encr−alg          ENCR−INFO,
     key−id          KEY−ID,
     common−key          COMMON−KEY }

RLC−DM−COMMON−KEY−DISTR−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     dm−encr−alg          ENCR−INFO,
     md5−on−key          MD5−ON−KEY }

RLC−INFO−ARG ::= SEQUENCE {
```

```
     rlc−pdu−type     [0]     RLC−LCH−PDU−TYPE,
     info−count          [1]     INFO−COUNT,
     info−type          [2]     INFO−TYPE,
     cl−data          [3]     CL−DATA        OPTIONAL,
     dlc−attributes     [4]     DLC−ATTRIBUTES OPTIONAL }

RLC−INFO−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     [0]     RLC−LCH−PDU−TYPE,
     info−count          [1]     INFO−COUNT,
     cl−data          [2]     CL−DATA        OPTIONAL,
     dlc−attributes     [3]     DLC−ATTRIBUTES OPTIONAL }

RLC−UNICAST−KEY−REFRESH−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     nonce               NONCE }

RLC−UNICAST−KEY−REFRESH−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     md5−on−nonce     MD5−ON−NONCE }

RLC−COMMON−KEY−REFRESH−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     encr−info     ENCR−INFO,
     key−id     KEY−ID,
     common−key     COMMON−KEY }

RLC−COMMON−KEY−REFRESH−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     encr−info     ENCR−INFO,
     md5−on−key     MD5−ON−KEY }

RLC−COMMON−KEY−ACTIVATE−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     key−id     KEY−ID }

RLC−DISASSOCIATION−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     mac−id     MAC−ID,
     disassociation−cause     DISASSOCIATION−CAUSE }

RLC−DISASSOCIATION−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     mac−id     MAC−ID }

RLC−GROUP−JOIN−ARG ::= SEQUENCE  {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     cl−data     CL−DATA,
     encryption−algorithm−proposal     ENCRYPTION−ALGORITHM−PROPOSAL }


RLC−GROUP−JOIN−NACK−ARG::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     more−joins     MORE−JOINS,
     cl−data     CL−DATA }

RLC−GROUP−LEAVE−ARG::=SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     cl−data     CL−DATA }

RLC−GROUP−LEAVE−ACK−ARG::=SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     cl−data     CL−DATA }

RLC−CL−BROADCAST−JOIN−ARG ::= SEQUENCE  {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
```

```
     cl−data     CL−DATA,
     encryption−algorithm−proposal     ENCRYPTION−ALGORITHM−PROPOSAL }

RLC−CL−BROADCAST−LEAVE−ARG ::= SEQUENCE  {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     cl−data     CL−DATA }

RLC−CL−BROADCAST−LEAVE−ACK−ARG ::= SEQUENCE  {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     cl−data     CL−DATA }


−− ***************************************************************
−− RLC DUC related PDUs
−− ***************************************************************

RLC−SETUP−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     cl−id     CL−ID,
     duc−ext−ind     DUC−EXT−IND,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

RLC−CONNECT−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     cl−id     CL−ID,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

RLC−CONNECT−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     cl−id     CL−ID,
     cl−conn−attr−length     INTEGER(0..31),
     dlcc−descr−list     DLCC−DESCR−LIST }

RLC−RELEASE−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     dlcc−id−list     DLCC−ID−LIST,
     release−cause     RELEASE−CAUSE }

RLC−RELEASE−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     dlcc−id−list     DLCC−ID−LIST }

RLC−MODIFY−REQ−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     duc−ext−ind     DUC−EXT−IND,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

RLC−MODIFY−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

RLC−MODIFY−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     cl−conn−attr−length     INTEGER(0..31),
     dlcc−descr−list     DLCC−DESCR−LIST }

RLC−RESET−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     dlcc−id−list     DLCC−ID−LIST }

RLC−RESET−ACK−ARG ::= SEQUENCE {
```

```
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     dlcc−id−list     DLCC−ID−LIST }

−− ************************************************************
−− RLC Direct mode PDUs
−− ************************************************************

RLC−DM−SETUP−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     cl−id     CL−ID,
     duc−ext−ind     DUC−EXT−IND,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST,
     cl−common−attr     CL−COMMON−ATTR }

RLC−DM−CONNECT−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     cl−id     CL−ID,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

RLC−DM−CONNECT−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     cl−id     CL−ID,
     cl−conn−attr−length     INTEGER(0..31),
     dlcc−descr−list     DLCC−DESCR−LIST }

RLC−DM−CONNECT−COMPLETE−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     dlcc−id−list     DLCC−DESCR−LIST }

RLC−DM−CONNECT−COMPLETE−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     peer−mac−id     MAC−ID }

RLC−DM−RELEASE−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     dlcc−id−list     DLCC−ID−LIST,
     release−cause     RELEASE−CAUSE }

RLC−DM−RELEASE−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     dlcc−id−list     DLCC−ID−LIST }

RLC−DM−MODIFY−REQ−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

RLC−DM−MODIFY−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

RLC−DM−MODIFY−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
```

```
     cl−conn−attr−length     INTEGER(0..31),
     dlcc−descr−list     DLCC−DESCR−LIST }

RLC−DM−MODIFY−COMPLETE−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     dlcc−id−list     DLCC−ID−LIST }

RLC−DM−MODIFY−COMPLETE−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     peer−mac−id     MAC−ID }

RLC−RELAY−SETUP−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     cl−id     CL−ID,
     duc−ext−ind     DUC−EXT−IND,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST,
     cl−common−attr     CL−COMMON−ATTR }

RLC−RELAY−SETUP−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     cl−conn−attr−length     INTEGER(0..31),
     dlcc−descr−list     DLCC−DESCR−LIST }

RLC−RELAY−MODIFY−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

RLC−RELAY−MODIFY−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id     MAC−ID,
     cl−conn−attr−length     INTEGER(0..31),
     dlcc−descr−list     DLCC−DESCR−LIST }

RLC−RELAY−RELEASE−ARG ::= SEQUENCE {
    rlc−pdu−type     RLC−LCH−PDU−TYPE,
    peer−mac−id     MAC−ID,
    dlcc−id−list     DLCC−ID−LIST,
    release−cause     RELEASE−CAUSE }

RLC−RELAY−RELEASE−ACK−ARG ::= SEQUENCE {
    rlc−pdu−type     RLC−LCH−PDU−TYPE,
    peer−mac−id     MAC−ID,
    dlcc−id−list     DLCC−ID−LIST }

RLC−DM−RESET−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id          MAC−ID,
     dlcc−id−list     DLCC−ID−LIST }

RLC−DM−RESET−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     peer−mac−id          MAC−ID,
     dlcc−id−list     DLCC−ID−LIST }


−− ***************************************************************
−− RRC related PDUs
−− ***************************************************************
```

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-- ************************************************************
-- Sector Handover
-- ************************************************************

RLC-SECTOR-HANDOVER-REQUEST-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE,
     sector-id-new     SECTOR-ID,
     mac-id     MAC-ID }

RLC-HANDOVER-REQUEST-NACK-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE }

RLC-SECTOR-HANDOVER-ACK-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE }

-- ************************************************************
-- Forced Handover
-- ************************************************************

RLC-FORCE-HANDOVER-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE,
     return-flag     RETURN-FLAG,
     force-handover-cause     FORCE-HANDOVER-CAUSE,
     ap-id          AP-ID,
     net-id     NET-ID,
     frequency-index          FREQUENCY-INDEX }


RLC-FORCE-HANDOVER-ACK-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE,
     mac-id          MAC-ID }

-- ************************************************************
-- Radio handover
-- ************************************************************

RLC-HANDOVER-NOTIFY-ARG ::= SEQUENCE  {
     rlc-pdu-type     [0]     RLC-SCH-PDU-TYPE,
     handover-cause     [1]     HANDOVER-CAUSE,
     mac-id          [2]     MAC-ID,
     ap-id               [3]     AP-ID OPTIONAL,
     net-id          [4]     NET-ID OPTIONAL }

RLC-HANDOVER-REQUEST-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE,
     mac-id-old     MAC-ID,
     ap-id-old     AP-ID,
     net-id-old     NET-ID,
     duc-established     DUC-ESTABLISHED,
     mac-id0     MAC-ID0 }

RLC-RADIO-HANDOVER-COMPLETE-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-LCH-PDU-TYPE,
     mac-id-old     MAC-ID,
     ap-id-old     AP-ID,
     net-id-old     NET-ID,
     mac-id-new     MAC-ID,
     cl-id     CL-ID,
     duc-ext-ind     DUC-EXT-IND,
     cl-conn-attr-length     INTEGER(0..31),
     duc-descr-list     DUC-DESCR-LIST }

-- ************************************************************
-- Network Handover
-- ************************************************************
```

```
RLC−HANDOVER−ASSOCIATION−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     mac−id−old     MAC−ID,
     ap−id−old     AP−ID,
     net−id−old     NET−ID,
     mac−id−new     MAC−ID }

RLC−HANDOVER−LINK−CAPABILITY−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     dlc−version−selected     DLC−VERSION,
     rlc−version−selected     RLC−VERSION,
     rss−value     RSS−VALUE,
     apt−address−length     APT−ADDRESS−LENGTH,
     support64QAM     SUPPORTED64QAM,
     freq−band     FREQUENCY−BAND,
     send−mt−id     SEND−MT−ID,
     direct−mode−cap     DIRECT−MODE−CAP,
     cyclic−prefix     CYCLIC−PREFIX,
     support−fca     SUPPORTED−FCA,
     support−fsa     SUPPORTED−FSA,
     sector−ho−cap     SECTOR−HO−CAP,
     network−ho−cap     NETWORK−HO−CAP,
     radio−ho−cap     RADIO−HO−CAP,
     arq−delay−rx     ARQ−DELAY,
     arq−delay−tx     ARQ−DELAY,
     auth−encr−selected     AUTH−ENCR−INFO,
     start−encryption     START−ENCRYPTION,
     start−authentication     START−AUTHENTICATION,
     send−NW−Token     SEND−NW−TOKEN,
     start−info−transfer     START−INFO−TRANSFER,
     keep−connections     KEEP−CONNECTIONS,
     start−DUC−set−up     START−DUC−SET−UP,
     include−MT−ID     INCLUDE−MT−ID,
     dm−attributes     DM−ATTRIBUTES        OPTIONAL }

RLC−NW−SIGNALLING−HANDOVER−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     mt−token−auth−encr     MT−TOKEN−AUTH−ENCR}

RLC−NW−SIGNALLING−HANDOVER−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     ap−token−auth−encr      AP−TOKEN−AUTH−ENCR }

RLC−NETWORK−HANDOVER−COMPLETE−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     cl−id     CL−ID,
     duc−ext−ind     DUC−EXT−IND,
     cl−conn−attr−length     INTEGER(0..31),
     duc−descr−list     DUC−DESCR−LIST }

RLC−HO−INFO−DISTRIBUTION−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     token           TOKEN }

RLC−HO−INFO−DISTRIBUTION−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     mac−id            MAC−ID }

−− ***************************************************************
−− DFS
−− ***************************************************************

RLC−AP−ABSENCE−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
```

```
     first−mac−frame     FIRST−MAC−FRAME,
     last−mac−frame       LAST−MAC−FRAME }

RLC−CHANGE−FREQUENCY−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     last−mac−frame      LAST−MAC−FRAME,
     first−mac−frame     FIRST−MAC−FRAME,
     frequency−index     FREQUENCY−INDEX }

RLC−DFS−MT−INIT−REPORT−REQUEST−ACK−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     reporting−initialized           REPORTING−INITIALIZED }

RLC−DFS−MEASUREMENT−COMPLETE−REQUEST−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     frequency−index     FREQUENCY−INDEX,
     use−omni−antenna     USE−OMNI−ANTENNA,
     start−of−measurement     START−OF−MEASUREMENT,
     measurement−window     MEASUREMENT−WINDOW,
     maximum−age−of−bch−measurement     MAXIMUM−AGE−OF−BCH−MEASUREMENT,
     rss−index−list     RSS−INDEX−LIST }

RLC−DFS−MEASUREMENT−SHORT−REQUEST−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     frequency−index     FREQUENCY−INDEX,
     use−omni−antenna     USE−OMNI−ANTENNA,
     start−of−measurement     START−OF−MEASUREMENT,
     measurement−window     MEASUREMENT−WINDOW,
     maximum−age−of−bch−measurement     MAXIMUM−AGE−OF−BCH−MEASUREMENT }

RLC−DFS−MEASUREMENT−PERCENTILES−REQUEST−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     frequency−index     FREQUENCY−INDEX,
     use−omni−antenna     USE−OMNI−ANTENNA,
     start−of−measurement     START−OF−MEASUREMENT,
     measurement−window     MEASUREMENT−WINDOW,
     maximum−age−of−bch−measurement     MAXIMUM−AGE−OF−BCH−MEASUREMENT,
     rss−index−list     RSS−INDEX−LIST }

RLC−DFS−MT−INIT−REPORT−REQUEST−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−SCH−PDU−TYPE,
     measurement−type     MEASUREMENT−TYPE,
     frequency−index     FREQUENCY−INDEX,
     adjacent−ch−interference     ADJACENT−CH−INTERFERENCE,
     mac−id     MAC−ID }

RLC−DFS−REPORT−COMPLETE−ARG ::= SEQUENCE {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     frequency−index     FREQUENCY−INDEX,
     omni−antenna−used     OMNI−ANTENNA−USED,
     age−of−measurement     AGE−OF−MEASUREMENT,
     last−own−bch−rx−level     LAST−OWN−BCH−RX−LEVEL,
     bch−found          BCH−FOUND,
     traffic−load     TRAFFIC−LOAD,
     ap−id     AP−ID,
     tx−level     TX−LEVEL,
     net−id     NET−ID,
     bch−rx−level     BCH−RX−LEVEL,
     number−of−samples     NUMBER−OF−SAMPLES,
     rss−index−list     RSS−INDEX−LIST,
     rss−statistics−list     RSS−STATISTICS−LIST }

RLC−DFS−REPORT−SHORT−ARG ::= SEQUENCE  {
     rlc−pdu−type     RLC−LCH−PDU−TYPE,
     frequency−index     FREQUENCY−INDEX,
```

```
     omni-antenna-used     OMNI-ANTENNA-USED,
     age-of-measurement     AGE-OF-MEASUREMENT,
     last-own-bch-rx-level     LAST-OWN-BCH-RX-LEVEL,
     bch-found          BCH-FOUND,
     traffic-load     TRAFFIC-LOAD,
     ap-id     AP-ID,
     tx-level     TX-LEVEL,
     net-id     NET-ID,
     bch-rx-level     BCH-RX-LEVEL }

RLC-DFS-REPORT-PERCENTILES-ARG ::= SEQUENCE  {
     rlc-pdu-type     RLC-LCH-PDU-TYPE,
     frequency-index     FREQUENCY-INDEX,
     omni-antenna-used     OMNI-ANTENNA-USED,
     age-of-measurement     AGE-OF-MEASUREMENT,
     last-own-bch-rx-level     LAST-OWN-BCH-RX-LEVEL,
     number-of-samples     NUMBER-OF-SAMPLES,
     rss-index-list     RSS-INDEX-LIST,
     rss-statistics-list     RSS-STATISTICS-LIST }

-- ***************************************************************
-- Power save
-- ***************************************************************

RLC-SLEEP-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE,
     sleep-group               SLEEP-GROUP,
     care-of-broadcast     CARE-OF-BROADCAST,
     mac-id     MAC-ID }

RLC-SLEEP-ACK-ARG ::= SEQUENCE {
     rlc-pdu-type          RLC-SCH-PDU-TYPE,
     sleep-group               SLEEP-GROUP,
     care-of-broadcast      CARE-OF-BROADCAST,
     offset               FRAME-NUM }

RLC-MT-ALIVE-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE,
     mac-id     MAC-ID }

RLC-MT-ALIVE-ACK-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE }

RLC-MT-ALIVE-REQUEST-ARG ::= SEQUENCE {
     rlc-pdu-type     [0]     RLC-SCH-PDU-TYPE,
     mt-alive-interval     [1]     MT-ALIVE-INTERVAL     OPTIONAL      }

RLC-MT-ALIVE-REQUEST-ACK-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE,
     mac-id     MAC-ID }

RLC-MT-ABSENCE-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE,
     mt-absence-time     MT-ABSENCE-TIME,
      mac-id          MAC-ID }

RLC-MT-ABSENCE-ACK-ARG ::= SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE }

RLC-UPLINK-PC-CALIBRATION-ARG ::=SEQUENCE {
     rlc-pdu-type     RLC-SCH-PDU-TYPE,
     pc-offset     PC-OFFSET }

-- ***************************************************************
-- Parameters
```

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-- ************************************************************

AP-CONTINUES-TRANSMITTING-BCH ::= INTEGER(0..31)

LAST-MAC-FRAME ::= INTEGER(0..65535) --16 bits

DUC-EXT-IND ::= ENUMERATED {
     no-duc-ext (0),
     duc-ext (1) }

START-ENCRYPTION ::= ENUMERATED {
     no-encryption-start (0),
     encryption-start (1) }

START-AUTHENTICATION ::= ENUMERATED {
     no-auth-start (0),
     auth-start (1) }

SEND-NW-TOKEN ::= ENUMERATED {
     no-token-send (0),
     send-nw-token (1) }

START-INFO-TRANSFER ::= ENUMERATED {
     no-info-transfer (0),
     start-info-transfer (1) }

KEEP-CONNECTIONS ::= ENUMERATED {
     donot-keep-conn (0),
     keep-connections (1) }

START-DUC-SET-UP ::= ENUMERATED {
     donot-start-setup (0),
     start-setup (1) }

INCLUDE-MT-ID ::= ENUMERATED {
     donot-include-mtid (0),
     include-mtid (1) }

CARE-OF-BROADCAST ::= ENUMERATED {
     donot-careof-broadcast (0),
     careof-broadcast (1) }


FREQUENCY-INDEX ::= ENUMERATED {     -- field size 6 bits
     frequency-index-1     (1) }     -- (0..63)

SUPPORTED-FCA ::= ENUMERATED {
     fca-not-supported     (0),
     fca-supported     (1) }

SUPPORTED-FSA ::= ENUMERATED {
     fsa-not-supported     (0),
     fsa-supported     (1) }

SECTOR-HO-CAP ::= ENUMERATED {
     sector-ho-not-supported     (0),
     sector-ho-supported     (1) }

NETWORK-HO-CAP ::= ENUMERATED {
     network-ho-not-supported     (0),
     network-ho-supported     (1) }

RADIO-HO-CAP ::= ENUMERATED {
     radio-ho-not-supported     (0),
     radio-ho-supported     (1) }
```

```
FREQUENCY−BAND ::= ENUMERATED {
     lower−band     (0),
     upper−band     (1),
     both−bands     (2) }

FIRST−MAC−FRAME ::= INTEGER(0..15)

BCH−OFFSET ::= INTEGER(0..8191) −− 13 bits

START−OF−MEASUREMENT ::= INTEGER(0..15)

MEASUREMENT−TYPE ::= ENUMERATED {
     type−a     (0),
     type−b     (1),
     type−c      (2),
     type−u     (3) }

RSS−INDEX ::= INTEGER(0..15)

RSS−INDEX−LIST ::= SEQUENCE (SIZE(0..5)) OF RSS−INDEX

MEASUREMENT−WINDOW ::= INTEGER(0..63)

ADJACENT−CH−INTERFERENCE ::= ENUMERATED {     −− field size 2 bits
     channel−inteference−0     (0) }                    −−(0..2)

BCH−RX−LEVEL ::= INTEGER(0..63)

RSS−STATISTICS ::= INTEGER(0..63)

RSS−STATISTICS−LIST ::= SEQUENCE (SIZE(0..4)) OF RSS−STATISTICS

LAST−OWN−BCH−RX−LEVEL ::= BCH−RX−LEVEL

POSITION−OF−MEASUREMENT ::= INTEGER(0..8191)

AGE−OF−MEASUREMENT ::= INTEGER(0..4095)

MAXIMUM−AGE−OF−BCH−MEASUREMENT ::= AGE−OF−MEASUREMENT

MEAN−RX−LEVEL ::= ENUMERATED {               −− field size 6 bits

     mean−rx−level−0          (0) }          −−(0..63)

REPORTED−PHY−MODE ::= ENUMERATED {     −− field size 4 bits
     bpsk−1−2     (0),
     bpsk−3−4     (1),
     qpsk−1−2         (2),
     qpsk−3−4         (3),
     a16qam−9−16       (4),
     a16qam−3−4        (5),
     a64qam−3−4        (6),
     res−until       (15) }

TX−LEVEL−OF−REPORT ::=ENUMERATED {     −− field size 4 bits
     tx−level−0     (0) }     −−(0..15)

AP−ID ::= INTEGER (0 .. 1023)     −− 10 bit.

SECTOR−ID ::= INTEGER (0 .. 7)
−− 3 bits. The value 0 means that sector antenna is not used

NETWORK−OPERATOR−ID ::= SEQUENCE {
     identifier−format     IDENTIFIER−FORMAT,
```

```
     identifier     IDENTIFYER }

IDENTIFYER ::= CHOICE {
     empty     NULL,
     full     OP-ID }

OP-ID ::= SEQUENCE {
     unique-length     UNIQUE-LENGTH,
     c-u-g     C-U-G,     --Closed user group.1 bit.
     netw-op-id-local     NETW-OP-ID-LOCAL,
     netw-op-id-global     NETW-OP-ID-GLOBAL }

IDENTIFIER-FORMAT ::= ENUMERATED {
     network-id-available     (0),
     network-id-unavailable     (1) }

UNIQUE-LENGTH ::= INTEGER(0..31)

C-U-G ::= ENUMERATED {
     open-user-group     (0),
     closed-user-group (1) }

NETW-OP-ID-GLOBAL ::= IA5String (SIZE(0..31))

NETW-OP-ID-LOCAL ::= IA5String (SIZE(0..31))

CL-VERSION ::= INTEGER(0..255)

SEED ::= BIT STRING (SIZE(29))
--A full downlink SCH

MAGIC ::= INTEGER (0..65535)  -- random number

SUPPORTED64QAM ::= ENUMERATED     {     -- field size 1 bits
     suppot64QAM(1),
     no-support64QAM(0) }

RSS-VALUE ::= INTEGER(0..63) -- 6 bits

DLC-VERSION ::= INTEGER (0..255)

RLC-VERSION ::= INTEGER (0..255)

AUTH-ENCR-INFO ::= SEQUENCE  {
     auth-info     AUTH-INFO,
     encr-info     ENCR-INFO }

AUTH-INFO ::= ENUMERATED {          -- 4 bits field size
     no-authentication      (0),
     pre-shared-key-based     (1),
     signature-based-512     (2),
     signature-based-768     (3),
     signature-based-1024     (4) }

ENCR-INFO ::= ENUMERATED {          -- 4 bits field size
     no-encryption      (0),
     des      (1),
     tripleDES      (2) }

SEND-MT-ID ::= ENUMERATED {
no-mt-sending     (0),
send-mt-id     (1) }

DH-PUBLIC-VALUE-HALF ::= OCTET STRING (SIZE(48))
```

```
MT−ID ::= OCTET STRING (SIZE(1..32))

AUTH−RESPONSE ::= CHOICE {
     pre−shared     [0]     OCTET STRING (SIZE(16)),
     rsa−signature512     [1]     OCTET STRING (SIZE(64)),
     rsa−signature768     [2]     OCTET STRING (SIZE(96)),
     rsa−signature1024     [3]     OCTET STRING (SIZE(128)) }

MT−AUTH−ID ::= CHOICE  {
     ieee     [0]     OCTET STRING (SIZE(6)),
     ext−ieee     [1]     OCTET STRING (SIZE(8)),
     net−acc−id     [2]     OCTET STRING (SIZE(1..72)),
     dist−name     [3]     OCTET STRING (SIZE(1..9)),
     compressed     [4]     OCTET STRING (SIZE(1..94)),
     generic     [5]     OCTET STRING (SIZE(1..94))}

MT−AUTH−CONTENT ::= CHOICE {
     ieee     [0]     OCTET STRING (SIZE(6)),
     ext−ieee     [1]     OCTET STRING (SIZE(8)),
     net−acc−id     [2]     OCTET STRING (SIZE(1..47)),
     dist−name     [3]     OCTET STRING (SIZE(1..47)),
     compressed     [4]     OCTET STRING (SIZE(1..47)),
     generic     [5]     OCTET STRING (SIZE(1..47))}

MT−AUTH−ID−TYPE ::= ENUMERATED {
     ieee          (0),
     ext−ieee     (1),
     net−acc−id     (2),
     dist−name     (3),
     compressed     (4),
     generic     (5) }

MORE−JOINS ::= ENUMERATED {
     no−more−joins     (0),
     more−joins          (1) }

INFO−COUNT ::= INTEGER (0..7)

CHALLENGE::= OCTET STRING (SIZE (16))     −− random value.

TIME−GAP−ACH−UPLINK ::= INTEGER (0..7)

CL−ATTRIBUTES ::= OCTET STRING (SIZE(0..44))

CL−DATA ::= SEQUENCE {
     cl−id     CL−ID,
     cl−attributes     CL−ATTRIBUTES }

DIRECT−MODE−CAP ::= ENUMERATED {          −− 1 bit field size
     no−dm−capabilities     (0),
     dm−capabilities          (1) }


PC−OFFSET ::= ENUMERATED { −−3 bits
     future−use0  (0),
     plus6db     (1),
     plus3db     (2),
     minus3db     (3),
     minus6db     (4),
     reset−tx−level     (7) }

SLEEP−GROUP ::= INTEGER (0..31)     −− Sleeptime = 2^SLEEP−INTERVAL (5 bits)

FRAME−NUM ::= INTEGER (0..65535)     −− Integer value with unit FRAMES (16 Bit)
```

```
DLCC-ID-LIST ::= SEQUENCE (SIZE(1 .. cMAX-ID-LIST)) OF DLCC-ID

cMAX-ID-LIST INTEGER ::= 16

DUC-DESCR-LIST ::= SEQUENCE (SIZE(1 .. cMAX-DESCR-LIST)) OF DUC-DESCR

cMAX-DESCR-LIST INTEGER ::= 16

DUC-DESCR ::= SEQUENCE {
     direction     [0]     DIRECTION,
     dlcc-id     [1]     DLCC-ID,
     cl-conn-attr     [2]     CL-CONN-ATTR,
     forward-descr     [3]     DUC-DIRECTION-DESCR-FW OPTIONAL,
     backward-descr      [4]      DUC-DIRECTION-DESCR-BW OPTIONAL }

CL-CONN-ATTR ::= OCTET STRING (SIZE(0..31))

CL-ID ::= ENUMERATED {     -- 4 bits field size
     ethernet     (0), -- packet based CL, ethernet service
     ip          (1),      -- packet based CL, ip service
     ppp          (2), -- packet based CL, ppp service
     atm          (3), -- cell based CL, ATM service
     ieee1394     (4), -- IEEE 1394 CL
     umts          (5) }     -- UMTS CL

DLCC-ID ::= INTEGER (0 .. 63)

PHY-GUARD-INTERVAL ::= ENUMERATED {
     normal     (0),
     short     (1) }

PHY-MODE ::= ENUMERATED {     -- 4 bits field size
     cBPSK1-2     (1),          -- BPSK, code rate 1/2
     cBPSK3-4     (2),          -- BPSK, code rate 3/4
     cQPSK1-2     (3),          -- QPSK, code rate 1/2
     cQPSK1-3     (4),          -- QPSK, code rate 3/4
     c16QAM9-16     (5),          -- 16QAM, code rate 9/16
     c16QAM3-4     (6),          -- 16QAM, code rate 3/4
     c64QAM3-4     (7) }          -- 64QAM, code rate 3/4

PHY-MODE-PROPOSED ::= ENUMERATED {     -- 4 bits field size
     no-phy-mode-proposal     (0),
     cpBPSK1-2     (1),          -- BPSK, code rate 1/2
     cpBPSK3-4     (2),          -- BPSK, code rate 3/4
     cpQPSK1-2     (3),          -- QPSK, code rate 1/2
     cpQPSK1-3     (4),          -- QPSK, code rate 3/4
     cp16QAM9-16     (5),          -- 16QAM, code rate 9/16
     cp16QAM3-4     (6),          -- 16QAM, code rate 3/4
     cp64QAM3-4     (7) }          -- 64QAM, code rate 3/4

-- DIRECTION

DIRECTION ::= ENUMERATED {
     simplex-forward     (0),
     simplex-backward     (1),
     duplex          (2),
     duplex-symetric     (3) }

ALLOCATION-TYPE ::= ENUMERATED { -- 3 bits
    basic                (0),
    fca                   (1),
    fsa                  (2) }

DUC-DIRECTION-DESCR ::= SEQUENCE {
     allocation-type          [0]     ALLOCATION-TYPE,
```

```
     cyclic−prefix          [1]     CYCLIC−PREFIX,
      ec−mode               [2]     EC−MODE,
      fec−used               [3]     FEC−USED,
     arq−data               [4]     ARQ−DATA     OPTIONAL,
     fec                    [5]     FEC−DESCR      OPTIONAL,
     fca−descr               [6]     FCA−DESCR      OPTIONAL }

FEC−USED ::= ENUMERATED {
     fec−not−used     (0),
     fec−used     (1) }

FCA−USED ::= ENUMERATED {
     fca−not−used     (0),
     fca−used     (1) }

FEC−DESCR ::= SEQUENCE {
     coder−type          CODER−TYPE,
     interleaver−type     INTERLEAVER−TYPE }

CODER−TYPE ::= ENUMERATED {     −− 2 bits
     reed−Solomon−188−204     (0) }

INTERLEAVER−TYPE ::= ENUMERATED {     −− 2 bits
     no−interleaver     (0) }

ARQ−DATA ::= SEQUENCE {
     arq−window−size     WINDOW−SIZE,     −− 3 bits
     arq−nr−of−retr     INTEGER (0..15) }

FCA−DESCR ::= SEQUENCE {
     nb−of−sch     INTEGER (0 .. 1),
     sch−per−nb−frames     INTEGER (1 .. 15),
     phy−mode−sch     PHY−MODE−PROPOSED,
     phy−mode−lch     PHY−MODE−PROPOSED,
     lch−per−nb−frames     INTEGER (1 .. 15),
     nb−of−lch     INTEGER (0 .. 255),
     min−nb−of−lch     INTEGER (0 .. 255) }


DUC−DIRECTION−DESCR−FW ::= DUC−DIRECTION−DESCR
DUC−DIRECTION−DESCR−BW ::= DUC−DIRECTION−DESCR

MAC−ID ::= INTEGER (0 .. 255)     −− 8 bit

NET−ID ::= INTEGER (0 .. 1023)     −− 10 bit
     −− identifies a network on DLC−level

MT−TOKEN−AUTH−ENCR ::= OCTET STRING (SIZE(16))

MD5−ON−NONCE ::= OCTET STRING (SIZE(16))

SSK−TOKEN ::= OCTET STRING (SIZE(16))

NONCE ::= OCTET STRING (SIZE(16))

CL−VID−LIST ::= SEQUENCE (SIZE(0..5)) OF CL−VID

CL−VID ::= SEQUENCE {
     cl−id     CL−ID,
     cl−version     CL−VERSION }

DLC−ATTRIBUTES ::= OCTET STRING (SIZE(0..44))

PHY−ATTIBUTES ::= OCTET STRING (SIZE(0..44))
```

```
CYCLIC−PREFIX ::= ENUMERATED {
     t400ns     (0),
     t800ns     (1) }

TX−LEVEL ::= ENUMERATED {     −− 4 bits
     dbm30      (0),
     dbm27      (1),
     dbm24      (2),
     dbm21      (3),
     dbm18      (4),
     dbm15      (5),
     dbm12      (6),
     dbm9      (7),
     dbm6      (8),
     dbm3      (9),
     dbm0      (10),
     dbmm3      (11),
     dbmm6      (12),
     dbmm9     (13),
     dbmm12     (14),
     dbmm15     (15) }

TRAFFIC−LOAD ::= ENUMERATED {       −− 3 bits not used in phase 1
     notused0 (0),
     notused7 (7)  }


WINDOW−SIZE ::= ENUMERATED {     −− 3 bits
     no−arq     (0),
     w−size32     (1),
     w−size64     (2),
     w−size128     (3),
     w−size256     (4),
     w−size512     (5) }

APT−ADDRESS−LENGTH ::= INTEGER (0..10) −− 4 bits field

ARQ−DELAY ::= INTEGER (0..3)

KEY−ID ::= INTEGER (0..255)

COMMON−KEY ::= CHOICE {
     no−encr     [0]     NULL,
     des−encr     [1]     OCTET STRING(SIZE(8)),
     tripledes     [2]     OCTET STRING(SIZE(24)) }

REJECT−CAUSE ::= ENUMERATED {     −− 4 bits
     tryAgain     (0),
     overLoaded     (1),
     auth−incompatibilty     (2),
     encr−incompatibility     (3),
     unknown     (4),
     dlc−incompatibility     (5) }

MORE−AUTH ::= ENUMERATED {
     more−auth−pdu     (1),
     last−auth−pdu     (0) }

AUTH−RESPONSE−PART1     ::= OCTET STRING (SIZE(16..32))

AUTH−RESPONSE−PART2     ::= OCTET STRING (SIZE(1..48))

DISASSOCIATION−CAUSE ::= ENUMERATED     {     −− 4 bits
     unknown−dis−cause     (0),
     user−disassociation     (1),
```

```
     operator−disassociation     (2),
     low−qos−dis     (3),
     trafic−overload−dis     (4),
     authentication−failed     (5),
     mt−powerdown     (6),
     ap−powerdown     (7) }

DLCC−DESCR−LIST ::= SEQUENCE (SIZE(1..16)) OF DLCC−DESCR

DLCC−DESCR ::= SEQUENCE {
     dlcc−id     DLCC−ID,
     cl−conn−attr     CL−CONN−ATTR }

RELEASE−CAUSE ::= ENUMERATED {     −− 4 bits
     unknown−release−cause     (0),
     normal−release     (1),
     low−qos     (2),
     timed−out     (3),
     lack−of−resources     (4),
     network−operator−release     (5) }

BROAD−WINDOW ::= ENUMERATED {     −− 2 bits
     bw−size32     (0),
     bw−size64     (1),
     bw−size128     (2),
     bw−size256     (3) }

GROUP−MAC−ID ::= MAC−ID (224..255)

ENCRYPTION−ALGORITHM−PROPOSAL     ::=SEQUENCE (SIZE(1..15)) OF ENCR−INFO

RETURN−FLAG ::= ENUMERATED {     −− 1 bit
     return−not−allowed     (0),
     return−allowed     (1) }

FORCE−HANDOVER−CAUSE ::= ENUMERATED {     −− 3 bits
     unspec−fho−cause     (0),
     traffic−overload     (1),
     bad−link     (2),
     operator−action     (3),
     cell−closure     (4),
     mt−behaviour     (5),
     qos−not−achived     (6) }

RETURN−TIME ::= INTEGER(0..63)

RESET−FILTERS ::= ENUMERATED {
     no−filer−reset     (0),
     reset−filters     (1) }

MAC−ID−CHOICE ::= CHOICE {
     group−mac−id     [0]     GROUP−MAC−ID,
     unicast−mac−id     [1]     MAC−ID,
     broadcast−mac−id     [2]     MAC−ID }

DUC−ESTABLISHED ::= ENUMERATED {     −− 1 bit
     no−duc−established     (0),
     ducs−established     (1) }

MT−ALIVE−INTERVAL ::= INTEGER (0..1677215)  −− 3 octets

AUTHENTICATION−ENCRYPTION−LIST ::= SEQUENCE (SIZE(1..15)) OF AUTH−ENCR−INFO

DM−ATTRIBUTES ::= OCTET STRING (SIZE(8))
```

```
MD5−ON−KEY ::= OCTET STRING (SIZE(16))

DM−USE−COMMON−KEY ::= ENUMERATED {     −− 1 bit
     no−common−key     (0),
     use−common−key     (1) }

CL−COMMON−ATTR ::= OCTET STRING (SIZE(0..31))

MT−ABSENCE−TIME ::= INTEGER (0..63)

OMNI−ANTENNA−USED ::= ENUMERATED {
     omni−antenna−not−used     (0),
     omni−antenna−used     (1) }

USE−OMNI−ANTENNA ::= ENUMERATED {
     dont−use−omni−antenna     (0),
     use−omni−antenna     (1) }

STATUS−BIT ::= ENUMERATED {
     filter−not−stable     (0),
     filter−stable     (1) }

HANDOVER−CAUSE ::= ENUMERATED {     −− 4 bits
     unspec−ho−cause     (0),
     interference     (1),
     link−quality     (2),
     better−link     (3),
     not−enough−resourcess     (4) }

TOKEN ::= OCTET STRING (SIZE(16))

AP−TOKEN−AUTH−ENCR ::= SEQUENCE {
     token     TOKEN,
     authentication−encryption−list      AUTHENTICATION−ENCRYPTION−LIST,
     auth−encr−selected     AUTH−ENCR−INFO }

NUMBER−OF−SAMPLES ::= INTEGER (0..16383)

BCH−FOUND ::= ENUMERATED {
     bch−not−found     (0),
     bch−found          (1) }

EC−MODE ::= ENUMERATED {
     arq−not−used     (0),
     arq−used          (1),
     repetition−mode     (2) }

MAC−ID0 ::= MAC−ID(0)

ERROR−CORR−MODE ::= ENUMERATED {
       repetit−mode           (0),
       unacknowledged−mode      (1)}


−− ********************************************************
MAC−ID−AND−CL−DATA−LIST ::= SEQUENCE (SIZE(1..7)) OF MAC−ID−AND−CL−DATA

MAC−ID−AND−CL−DATA ::= SEQUENCE {
     mac−id−choice     MAC−ID−CHOICE,
     cl−data          CL−DATA }

RLC−GROUP−JOIN−ACK−ARG::= SEQUENCE {
     rlc−pdu−type          RLC−LCH−PDU−TYPE,
     more−joins          MORE−JOINS,
     mac−id−and−cl−data−list     MAC−ID−AND−CL−DATA−LIST,
```

```
     encryption−algorithm−selected     ENCR−INFO,
     key−id               KEY−ID,
     common−key          COMMON−KEY }

RLC−CL−BROADCAST−JOIN−ACK−ARG::= SEQUENCE {
     rlc−pdu−type               RLC−LCH−PDU−TYPE,
     more−joins               MORE−JOINS,
     window−size               BROAD−WINDOW,
     mac−id−and−cl−data−list          MAC−ID−AND−CL−DATA−LIST,
     encryption−algorithm−selected     ENCR−INFO,
     key−id                    KEY−ID,
     common−key               COMMON−KEY,
        error−corr−mode                ERROR−CORR−MODE }

REPORTING−INITIALIZED ::= ENUMERATED {
     reporting−not−initialized     (0),
     reporting−initialized          (1) }

DUTY−CYCLE ::= ENUMERATED  {
     fiveper      (0),
     tenper      (1),
     twentyper      (2),
     thirtyper      (3),
     fortyper      (5),
     sixtyper      (6),
     eightyper      (7),
     hundredper      (8) }

INFO−TYPE ::= ENUMERATED {
     new−info               (0),
     retrans−info          (1) }

CC−HO−CAP ::= ENUMERATED {
     cc−ho−not−supported     (0),
     cc−ho−supported          (1) }

HO−CAP ::= ENUMERATED {
     ho−not−supported          (0),
     ho−supported          (1) }

EXTENSION−TYPE ::=ENUMERATED {
     basic−rlc                (0),
     home−extension                (1),
     business−extension      (2) }


END
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 1(52)

```
/* Definition of some useful operators */

NEWTYPE hlp
   OPERATORS
      getAuthInfo: RLC_LINK_CAPABILITY_ACK_ARG ->
                   AUTH_INFO;
      getEncrInfo: RLC_LINK_CAPABILITY_ACK_ARG ->
                   ENCR_INFO;
      getCommonKeyUse: RLC_LINK_CAPABILITY_ACK_ARG ->
                   DM_USE_COMMON_KEY;
      stepSeq : INFO_COUNT -> INFO_COUNT;

   OPERATOR stepSeq;
      FPAR vin INFO_COUNT;
      RETURNS INFO_COUNT;
      START;
      RETURN(IF vin = 7 THEN 0 ELSE vin + 1 FI);
   ENDOPERATOR;


   OPERATOR getAuthInfo;
     FPAR pdu  RLC_LINK_CAPABILITY_ACK_ARG;
     RETURNS AUTH_INFO;
     START;
     RETURN pdu!auth_encr_selected!auth_info;
   ENDOPERATOR;
   OPERATOR getEncrInfo;
     FPAR pdu  RLC_LINK_CAPABILITY_ACK_ARG;
     RETURNS ENCR_INFO;
     START;
     RETURN pdu!auth_encr_selected!encr_info;
   ENDOPERATOR;
   OPERATOR getCommonKeyUse;
     FPAR pdu  RLC_LINK_CAPABILITY_ACK_ARG;
     RETURNS DM_USE_COMMON_KEY;
     START;
     RETURN pdu!dm_use_common_key;
   ENDOPERATOR;

ENDNEWTYPE;
```

```
/* Auxiliary data structures */

NEWTYPE AUTH_SIG_LIST
   STRING(RLC_AUTHENTICATION_ARG, empty)
ENDNEWTYPE;

NEWTYPE RLC_GROUP_JOIN_ACK_LIST
   STRING(RLC_GROUP_JOIN_ACK_ARG, emptyList)
   DEFAULT emptyList
ENDNEWTYPE;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 2(52)

```
NEWTYPE ACF_related_protocol_primitives_operators_1

OPERATORS
   buildRbchAssocReq: ACF_RBCH_ASSOCIATION_REQ_ARG −> RLC_RBCH_ASSOCIATION_REQ_ARG;
   buildRbchAssociation:    ACF_RBCH_ASSOCIATION_ARG     −> RLC_RBCH_ASSOCIATION_ARG;
   buildMacIdAssign:        ACF_MAC_ID_ASSIGN_ARG        −> RLC_MAC_ID_ASSIGN_ARG;
   buildMacIdAssignAck:     ACF_MAC_ID_ASSIGN_ACK_ARG    −> RLC_MAC_ID_ASSIGN_ACK_ARG;
   buildMacIdAssignNack:    ACF_MAC_ID_ASSIGN_NACK_ARG   −> RLC_MAC_ID_ASSIGN_NACK_ARG;

OPERATOR buildRbchAssocReq;
   FPAR      sp  ACF_RBCH_ASSOCIATION_REQ_ARG;
   RETURNS   pp  RLC_RBCH_ASSOCIATION_REQ_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_RBCH_ASSOCIATION_REQ_TYPE;
   TASK pp!ap_id        := sp!ap_id;
   TASK pp!net_id       := sp!net_id;
   TASK pp!mac_id       := 0;
   RETURN;
ENDOPERATOR;

OPERATOR buildRbchAssociation;
   FPAR      sp  ACF_RBCH_ASSOCIATION_ARG;
   RETURNS   pp  RLC_RBCH_ASSOCIATION_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_RBCH_ASSOCIATION_TYPE;
   TASK pp!cl_vid_list  := sp!cl_vid_list;
   DECISION network_operator_idPresent(sp);
   (True): TASK pp!network_operator_id := sp!network_operator_id;
   (False):
   ENDDECISION;
   RETURN;
ENDOPERATOR;

OPERATOR buildMacidAssign;
   FPAR      sp  ACF_MAC_ID_ASSIGN_ARG;
   RETURNS   pp  RLC_MAC_ID_ASSIGN_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_MAC_ID_ASSIGN_TYPE;
   TASK pp!magic        := sp!magic;
   TASK pp!rlc_version  := sp!rlc_version;
   TASK pp!mac_id       := 0;
   RETURN;
ENDOPERATOR;

OPERATOR buildMacIdAssignAck;
   FPAR      sp  ACF_MAC_ID_ASSIGN_ACK_ARG;
   RETURNS   pp  RLC_MAC_ID_ASSIGN_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_MAC_ID_ASSIGN_ACK_TYPE;
   TASK pp!magic        := sp!magic;
   TASK pp!mac_id       := sp!mac_id;
   TASK pp!mac_id1      := sp!mac_id;
   RETURN;
ENDOPERATOR;

OPERATOR buildMacIdAssignNack;
   FPAR      sp  ACF_MAC_ID_ASSIGN_NACK_ARG;
   RETURNS   pp  RLC_MAC_ID_ASSIGN_NACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_MAC_ID_ASSIGN_NACK_TYPE;
   TASK pp!magic        := sp!magic;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE ACF_related_protocol_primitives_operators_1;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 3(52)

```
NEWTYPE ACF_related_protocol_primitives_operators_2

OPERATORS
   buildLinkCapability:    ACF_LINK_CAPABILITY_ARG       −> RLC_LINK_CAPABILITY_ARG;
   buildLinkCapabilityAck: ACF_LINK_CAPABILITY_ACK_ARG   −> RLC_LINK_CAPABILITY_ACK_ARG;

OPERATOR buildLinkCapability;
   FPAR      sp  ACF_LINK_CAPABILITY_ARG;
   RETURNS   pp  RLC_LINK_CAPABILITY_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_LINK_CAPABILITY_TYPE;
   TASK pp!dlc_version         := sp!dlc_version;
   TASK pp!rlc_version         := sp!rlc_version;
   TASK pp!cl_vid_list         := sp!cl_vid_list;
   TASK pp!rss_value           := sp!rss_value;
   TASK pp!support64QAM        := sp!support64QAM;
   TASK pp!freq_band           := sp!freq_band;
   TASK pp!direct_mode_cap     := sp!direct_mode_cap;
   TASK pp!cyclic_prefix       := sp!cyclic_prefix;
   TASK pp!support_fca         := sp!support_fca;
   TASK pp!support_fsa         := sp!support_fsa;
   TASK pp!ho_cap          := sp!ho_cap;
   TASK pp!cc_ho_cap           := sp!cc_ho_cap;
   TASK pp!duty_cycle          := sp!duty_cycle;
   TASK pp!time_gap_ach_uplink := sp!time_gap_ach_uplink;
   TASK pp!arq_delay_rx        := sp!arq_delay_rx;
   TASK pp!arq_delay_tx        := sp!arq_delay_tx;
   TASK pp!authentication_encryption_list :=
                               sp!authentication_encryption_list;
   DECISION dm_attributesPresent(sp);
   (True): TASK pp!dm_attributes := sp!dm_attributes;
   (False):
   ENDDECISION;
   RETURN;
ENDOPERATOR;

OPERATOR buildLinkCapabilityAck;
   FPAR      sp  ACF_LINK_CAPABILITY_ACK_ARG;
   RETURNS   pp  RLC_LINK_CAPABILITY_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_LINK_CAPABILITY_ACK_TYPE;
   TASK pp!dlc_version_selected := sp!dlc_version_selected;
   TASK pp!rlc_version_selected := sp!rlc_version_selected;
   TASK pp!rss_value           := sp!rss_value;
   TASK pp!apt_address_length   := sp!apt_address_length;
   TASK pp!support64QAM        := sp!support64QAM;
   TASK pp!freq_band           := sp!freq_band;
   TASK pp!send_mt_id          := sp!send_mt_id;
   TASK pp!direct_mode_cap     := sp!direct_mode_cap;
   TASK pp!dm_use_common_key   := sp!dm_use_common_key;
   TASK pp!cyclic_prefix       := sp!cyclic_prefix;
   TASK pp!support_fca         := sp!support_fca;
   TASK pp!support_fsa         := sp!support_fsa;
   TASK pp!cc_ho_cap           := sp!cc_ho_cap;
   TASK pp!arq_delay_rx        := sp!arq_delay_rx;
   TASK pp!arq_delay_tx        := sp!arq_delay_tx;
   TASK pp!auth_encr_selected  := sp!auth_encr_selected;
   DECISION dm_attributesPresent(sp);
   (True): TASK pp!dm_attributes := sp!dm_attributes;
   (False):
   ENDDECISION;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE ACF_related_protocol_primitives_operators_2;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 4(52)

```
NEWTYPE ACF_related_protocol_primitives_operators_3

OPERATORS
   buildKeyExchangeMT1:   ACF_KEY_EXCHANGE_MT_ARG  −> RLC_KEY_EXCHANGE_MT_1_ARG ;
   buildKeyExchangeMT2:   ACF_KEY_EXCHANGE_MT_ARG  −> RLC_KEY_EXCHANGE_MT_2_ARG ;
   buildKeyExchangeAP1:   ACF_KEY_EXCHANGE_AP_ARG  −> RLC_KEY_EXCHANGE_AP_1_ARG ;
   buildKeyExchangeAP2:   ACF_KEY_EXCHANGE_AP_ARG  −> RLC_KEY_EXCHANGE_AP_2_ARG ;

OPERATOR buildKeyExchangeMT1;
   FPAR       acf_key    ACF_KEY_EXCHANGE_MT_ARG ;
   RETURNS    rlc_key    RLC_KEY_EXCHANGE_MT_1_ARG ;
   START;
   TASK
   rlc_key!rlc_pdu_type        := cRLC_KEY_EXCHANGE_MT_1_TYPE;
   TASK rlc_key!mt_dh_public_value_1 := substring(acf_key!mt_dh_public_value, 0, 48);
   RETURN;
ENDOPERATOR;

OPERATOR buildKeyExchangeMT2;
   FPAR       acf_key    ACF_KEY_EXCHANGE_MT_ARG ;
   RETURNS    rlc_key    RLC_KEY_EXCHANGE_MT_2_ARG ;
   START;
   TASK
   rlc_key!rlc_pdu_type        := cRLC_KEY_EXCHANGE_MT_2_TYPE;
   TASK rlc_key!mt_dh_public_value_2 := substring(acf_key!mt_dh_public_value, 48, 48);
   RETURN;
ENDOPERATOR;

OPERATOR buildKeyExchangeAP1;
   FPAR       acf_key    ACF_KEY_EXCHANGE_AP_ARG ;
   RETURNS    rlc_key    RLC_KEY_EXCHANGE_AP_1_ARG ;
   START;
   TASK
   rlc_key!rlc_pdu_type        := cRLC_KEY_EXCHANGE_AP_1_TYPE;
   TASK rlc_key!ap_dh_public_value_1 := substring(acf_key!ap_dh_public_value, 0, 48);
   RETURN;
ENDOPERATOR;

OPERATOR buildKeyExchangeAP2;
   FPAR       acf_key    ACF_KEY_EXCHANGE_AP_ARG ;
   RETURNS    rlc_key    RLC_KEY_EXCHANGE_AP_2_ARG ;
   START;
   TASK
   rlc_key!rlc_pdu_type        := cRLC_KEY_EXCHANGE_AP_2_TYPE;
   TASK rlc_key!ap_dh_public_value_2 := substring(acf_key!ap_dh_public_value, 48, 48);
   RETURN;
ENDOPERATOR;

ENDNEWTYPE ACF_related_protocol_primitives_operators_3;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 5(52)

```
NEWTYPE authentication_operator

OPERATORS
   buildAuthentication: ACF_AUTHENTICATION_ARG −> AUTH_SIG_LIST;

OPERATOR buildAuthentication;
   FPAR      acf_authentication    ACF_AUTHENTICATION_ARG; RETURNS     auth_sigs  AUTH_SIG_LIST;
   DCL rlc_authentication  RLC_AUTHENTICATION_ARG; START; TASK auth_sigs := empty;
   TASK rlc_authentication!rlc_pdu_type := cRLC_AUTHENTICATION_TYPE;
   DECISION (acf_authentication!mt_auth_id_type);
    (ieee): TASK rlc_authentication!mt_auth_id_content!ieee := acf_authentication!mt_auth_id!ieee;
            JOIN LAB1;
    (ext_ieee): TASK rlc_authentication!mt_auth_id_content!ext_ieee := acf_authentication!mt_auth_id!ext_ieee;
            JOIN LAB1;
    (compressed): TASK rlc_authentication!mt_auth_id_content!compressed := acf_authentication!mt_auth_id!compressed;
      LAB1: TASK rlc_authentication!more := last_auth_pdu;
             TASK rlc_authentication!mt_auth_id_type := acf_authentication!mt_auth_id_type;
             TASK auth_sigs := Mkstring(rlc_authentication); RETURN;
    (net_acc_id):
      DECISION (Length(acf_authentication!mt_auth_id!net_acc_id) > 46);
       (True): TASK rlc_authentication!more := more_auth_pdu;
          TASK rlc_authentication!mt_auth_id_type:= acf_authentication!mt_auth_id_type;
          TASK rlc_authentication!mt_auth_id_content!net_acc_id:= substring(acf_authentication!mt_auth_id!net_acc_id, 0, 46);
          TASK auth_sigs := Mkstring(rlc_authentication);
          TASK rlc_authentication!more := last_auth_pdu;
          TASK rlc_authentication!mt_auth_id_type:= acf_authentication!mt_auth_id_type;
          TASK rlc_authentication!mt_auth_id_content!net_acc_id:= substring(acf_authentication!mt_auth_id!net_acc_id, 46,
                Length(acf_authentication!mt_auth_id!net_acc_id) − 46);
          TASK auth_sigs := auth_sigs //Mkstring(rlc_authentication); RETURN;
       (False): TASK rlc_authentication!more := last_auth_pdu;
          TASK rlc_authentication!mt_auth_id_type:= acf_authentication!mt_auth_id_type;
          TASK rlc_authentication!mt_auth_id_content!net_acc_id:= substring(acf_authentication!mt_auth_id!net_acc_id, 0,
                Length(acf_authentication!mt_auth_id!net_acc_id));
          TASK auth_sigs := Mkstring(rlc_authentication); RETURN;
      ENDDECISION;
    (dist_name):
      DECISION (Length(acf_authentication!mt_auth_id!dist_name) > 46);
       (True): TASK rlc_authentication!more := more_auth_pdu;
          TASK rlc_authentication!mt_auth_id_type:= acf_authentication!mt_auth_id_type;
          TASK rlc_authentication!mt_auth_id_content!dist_name:= substring(acf_authentication!mt_auth_id!dist_name, 0, 46);
          TASK auth_sigs := Mkstring(rlc_authentication);
          TASK rlc_authentication!more := last_auth_pdu;
          TASK rlc_authentication!mt_auth_id_type:= acf_authentication!mt_auth_id_type;
          TASK rlc_authentication!mt_auth_id_content!dist_name:= substring(acf_authentication!mt_auth_id!dist_name, 46,
                Length(acf_authentication!mt_auth_id!dist_name) − 46);
          TASK auth_sigs := auth_sigs //Mkstring(rlc_authentication); RETURN;
       (False): TASK rlc_authentication!more := last_auth_pdu;
          TASK rlc_authentication!mt_auth_id_type:= acf_authentication!mt_auth_id_type;
          TASK rlc_authentication!mt_auth_id_content!dist_name:= substring(acf_authentication!mt_auth_id!dist_name, 0,
                Length(acf_authentication!mt_auth_id!dist_name));
          TASK auth_sigs := Mkstring(rlc_authentication); RETURN;
      ENDDECISION;
    (generic):
      DECISION (Length(acf_authentication!mt_auth_id!generic) > 46);
       (True): TASK rlc_authentication!more := more_auth_pdu;
          TASK rlc_authentication!mt_auth_id_type:= acf_authentication!mt_auth_id_type;
          TASK rlc_authentication!mt_auth_id_content!generic:= substring(acf_authentication!mt_auth_id!generic, 0, 46);
          TASK auth_sigs := Mkstring(rlc_authentication);
          TASK rlc_authentication!more := last_auth_pdu;
          TASK rlc_authentication!mt_auth_id_type:= acf_authentication!mt_auth_id_type;
          TASK rlc_authentication!mt_auth_id_content!generic:= substring(acf_authentication!mt_auth_id!generic, 46,
                Length(acf_authentication!mt_auth_id!generic) − 46);
          TASK auth_sigs := auth_sigs //Mkstring(rlc_authentication); RETURN;
       (False): TASK rlc_authentication!more := last_auth_pdu;
          TASK rlc_authentication!mt_auth_id_type:= acf_authentication!mt_auth_id_type;
          TASK rlc_authentication!mt_auth_id_content!generic:= substring(acf_authentication!mt_auth_id!generic, 0,
                Length(acf_authentication!mt_auth_id!generic));
          TASK auth_sigs := Mkstring(rlc_authentication); RETURN;
      ENDDECISION;
   ENDDECISION;
 ENDOPERATOR;

ENDNEWTYPE;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 6(52)

```
NEWTYPE authentication_Ack_operators

OPERATORS
   buildAuthenticationAck1: ACF_AUTHENTICATION_ACK_ARG -> RLC_AUTHENTICATION_ACK_1_ARG;
   buildAuthenticationAck2: ACF_AUTHENTICATION_ACK_ARG -> RLC_AUTHENTICATION_ACK_2_ARG;
   buildAuthenticationAck3: ACF_AUTHENTICATION_ACK_ARG -> RLC_AUTHENTICATION_ACK_3_ARG;

OPERATOR buildAuthenticationAck1;
   FPAR       sp    ACF_AUTHENTICATION_ACK_ARG;
   RETURNS     pdu   RLC_AUTHENTICATION_ACK_1_ARG;
   START;
   RETURN;
ENDOPERATOR;
OPERATOR buildAuthenticationAck2;
   FPAR       sp    ACF_AUTHENTICATION_ACK_ARG;
   RETURNS     pdu   RLC_AUTHENTICATION_ACK_2_ARG;
   START;
   RETURN;
ENDOPERATOR;
OPERATOR buildAuthenticationAck3;
   FPAR       sp    ACF_AUTHENTICATION_ACK_ARG;
   RETURNS     pdu   RLC_AUTHENTICATION_ACK_3_ARG;
   START;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE authentication_Ack_operators;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 7(52)

```
NEWTYPE ACF_related_protocol_primitives_operators_4

OPERATORS
   buildAuthenticationMt:  ACF_AUTHENTICATION_MT_ARG -> RLC_AUTHENTICATION_MT_ARG;
   buildAuthenticationAp1: ACF_AUTHENTICATION_AP_ARG -> RLC_AUTHENTICATION_AP_1_ARG;
   buildAuthenticationAp2: ACF_AUTHENTICATION_AP_ARG -> RLC_AUTHENTICATION_AP_2_ARG;
   buildAuthenticationAp3: ACF_AUTHENTICATION_AP_ARG -> RLC_AUTHENTICATION_AP_3_ARG;

OPERATOR buildAuthenticationMt;
   FPAR       acf_auth_mt    ACF_AUTHENTICATION_MT_ARG;
   RETURNS    rlc_auth_mt    RLC_AUTHENTICATION_MT_ARG;
   START;
   TASK rlc_auth_mt!rlc_pdu_type    := cRLC_AUTHENTICATION_MT_TYPE;
   TASK rlc_auth_mt!challenge_to_mt := acf_auth_mt!challenge_to_mt;
   RETURN;
ENDOPERATOR;
OPERATOR buildAuthenticationAp1;
   FPAR       acf_authentication_ap       ACF_AUTHENTICATION_AP_ARG;
   RETURNS    rlc_authentication_ap       RLC_AUTHENTICATION_AP_1_ARG;
   START;
   TASK rlc_authentication_ap!rlc_pdu_type    := cRLC_AUTHENTICATION_AP_1_TYPE;
   TASK rlc_authentication_ap!challenge_to_ap := acf_authentication_ap!challenge_to_ap;
   DECISION pre_sharedPresent(acf_authentication_ap!mt_response);
     (True): TASK rlc_authentication_ap!mt_response_1 := substring(acf_authentication_ap!mt_response!pre_shared, 0, 16);
             RETURN;
     (False):ENDDECISION;
   DECISION rsa_signature1024Present(acf_authentication_ap!mt_response);
     (True): TASK rlc_authentication_ap!mt_response_1 := substring(acf_authentication_ap!mt_response!rsa_signature1024, 0, 32);
             RETURN;
     (False): ENDDECISION;
   DECISION rsa_signature768Present(acf_authentication_ap!mt_response);
     (True): TASK rlc_authentication_ap!mt_response_1 := substring(acf_authentication_ap!mt_response!rsa_signature768, 0, 32);
             RETURN;
     (False): ENDDECISION;
   DECISION rsa_signature512Present(acf_authentication_ap!mt_response);
     (True): TASK rlc_authentication_ap!mt_response_1 := substring(acf_authentication_ap!mt_response!rsa_signature512, 0, 32);
     (False): ENDDECISION; RETURN;
ENDOPERATOR;
OPERATOR buildAuthenticationAp2;
   FPAR       acf_authentication_ap       ACF_AUTHENTICATION_AP_ARG;
   RETURNS    rlc_authentication_ap       RLC_AUTHENTICATION_AP_2_ARG;
   START;
   TASK rlc_authentication_ap!rlc_pdu_type    := cRLC_AUTHENTICATION_AP_2_TYPE;
   DECISION rsa_signature512Present(acf_authentication_ap!mt_response);
     (True): TASK rlc_authentication_ap!mt_response_2 := substring(acf_authentication_ap!mt_response!rsa_signature512, 32, 32);
             RETURN;
     (False): ENDDECISION;
   DECISION rsa_signature768Present(acf_authentication_ap!mt_response);
     (True): TASK rlc_authentication_ap!mt_response_2 := substring(acf_authentication_ap!mt_response!rsa_signature768, 32, 48);
             RETURN;
     (False): ENDDECISION;
   DECISION rsa_signature1024Present(acf_authentication_ap!mt_response);
     (True): TASK rlc_authentication_ap!mt_response_2 := substring(acf_authentication_ap!mt_response!rsa_signature1024, 32, 48);
     (False): ENDDECISION; RETURN;
ENDOPERATOR;
OPERATOR buildAuthenticationAp3;
   FPAR       acf_authentication_ap       ACF_AUTHENTICATION_AP_ARG;
   RETURNS    rlc_authentication_ap       RLC_AUTHENTICATION_AP_3_ARG;
   START;
   TASK rlc_authentication_ap!rlc_pdu_type    := cRLC_AUTHENTICATION_AP_3_TYPE;
   DECISION rsa_signature768Present(acf_authentication_ap!mt_response);
     (True): TASK rlc_authentication_ap!mt_response_2 := substring(acf_authentication_ap!mt_response!rsa_signature768, 80, 16);
             RETURN;
     (False): ENDDECISION;
   DECISION rsa_signature1024Present(acf_authentication_ap!mt_response);
     (True): TASK rlc_authentication_ap!mt_response_2 := substring(acf_authentication_ap!mt_response!rsa_signature1024, 80, 48);
     (False): ENDDECISION; RETURN;
ENDOPERATOR;
ENDNEWTYPE ACF_related_protocol_primitives_operators_4;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 8(52)

```
NEWTYPE ACF_related_protocol_primitives_operators_5

OPERATORS
   buildInfo:            ACF_INFO_ARG              -> RLC_INFO_ARG;
   buildInfoAck:         ACF_INFO_ACK_ARG          -> RLC_INFO_ACK_ARG;
   buildDisassociation:    ACF_DISASSOCIATION_ARG     -> RLC_DISASSOCIATION_ARG;
   buildDisassociationAck: ACF_DISASSOCIATION_ACK_ARG -> RLC_DISASSOCIATION_ACK_ARG;
   buildCKdistr:         ACF_DM_COMMON_KEY_DISTR_ARG -> RLC_DM_COMMON_KEY_DISTR_ARG;
   buildCKdistrAck:       ACF_DM_COMMON_KEY_DISTR_ACK_ARG -> RLC_DM_COMMON_KEY_DISTR_ACK_ARG;

OPERATOR buildInfo;
   FPAR      sp  ACF_INFO_ARG;
   RETURNS   pp  RLC_INFO_ARG;
   START; TASK pp!rlc_pdu_type      := cRLC_INFO_TYPE;
   TASK pp!info_count := sp!info_count;
   TASK pp!info_type := new_info;
   DECISION cl_dataPresent(sp);
   (True):  TASK pp!cl_data  := sp!cl_data;
   (False):
   ENDDECISION;
   DECISION dlc_attributesPresent(sp);
   (True):  TASK pp!dlc_attributes := sp!dlc_attributes;
   (False):
   ENDDECISION;
   RETURN;
ENDOPERATOR;
OPERATOR buildInfoAck;
   FPAR      sp  ACF_INFO_ACK_ARG;
   RETURNS   pp  RLC_INFO_ACK_ARG;
   START; TASK pp!rlc_pdu_type      := cRLC_INFO_ACK_TYPE;
   DECISION cl_dataPresent(sp);
   (True):  TASK pp!cl_data  := sp!cl_data;
   (False):
   ENDDECISION;
   DECISION dlc_attributesPresent(sp);
   (True):  TASK pp!dlc_attributes := sp!dlc_attributes;
   (False):
   ENDDECISION;
   RETURN;
ENDOPERATOR;
OPERATOR buildDisassociation;
   FPAR      sp  ACF_DISASSOCIATION_ARG;
   RETURNS   pp  RLC_DISASSOCIATION_ARG;
   START; TASK pp!rlc_pdu_type        := cRLC_DISASSOCIATION_TYPE;
   TASK pp!mac_id              := sp!mac_id;
   TASK pp!disassociation_cause := sp!disassociation_cause;
   RETURN;
ENDOPERATOR;
OPERATOR buildDisassociationAck;
   FPAR      sp  ACF_DISASSOCIATION_ACK_ARG;
   RETURNS   pp  RLC_DISASSOCIATION_ACK_ARG;
   START;TASK pp!rlc_pdu_type := cRLC_DISASSOCIATION_TYPE;
   TASK pp!mac_id       := sp!mac_id;
   RETURN;
ENDOPERATOR;
OPERATOR     buildCKdistr;
   FPAR     sp   ACF_DM_COMMON_KEY_DISTR_ARG;
   RETURNS  pdu  RLC_DM_COMMON_KEY_DISTR_ARG;
   START; TASK pdu!rlc_pdu_type        := cRLC_DM_COMMON_KEY_DISTR_TYPE;
   TASK pdu!dm_encr_alg     := sp!dm_encr_alg;
   TASK pdu!key_id  := sp!key_id;
   TASK pdu!common_key  := sp!common_key;
   RETURN;
ENDOPERATOR;
OPERATOR     buildCKdistrAck;
   FPAR     sp   ACF_DM_COMMON_KEY_DISTR_ACK_ARG;
   RETURNS  pdu  RLC_DM_COMMON_KEY_DISTR_ACK_ARG;
   START; TASK pdu!rlc_pdu_type        := cRLC_DM_COMMON_KEY_DISTR_ACK_TYPE;
   TASK pdu!dm_encr_alg     := sp!dm_encr_alg;
   TASK pdu!md5_on_key  := sp!md5_on_key;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE ACF_related_protocol_primitives_operators_5;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 9(52)

```
NEWTYPE Unicast_key_refresh_operators
   OPERATORS
   buildUKeyRefresh: ACF_UNICAST_KEY_REFRESH_ARG  −> RLC_UNICAST_KEY_REFRESH_ARG;
   buildUKeyRefreshAck: ACF_UNICAST_KEY_REFRESH_ACK_ARG  −> RLC_UNICAST_KEY_REFRESH_ACK_ARG;
   build_ukey_refresh_ind: RLC_UNICAST_KEY_REFRESH_ARG, MAC_ID −> ACF_UNICAST_KEY_REFRESH_ARG;
   build_ukey_refresh_cnf: RLC_UNICAST_KEY_REFRESH_ACK_ARG, MAC_ID −> ACF_UNICAST_KEY_REFRESH_ACK_ARG;
OPERATOR buildUKeyRefresh;
   FPAR    sp   ACF_UNICAST_KEY_REFRESH_ARG;
   RETURNS pdu  RLC_UNICAST_KEY_REFRESH_ARG;
   START; TASK pdu!rlc_pdu_type := cRLC_UNICAST_KEY_REFRESH_TYPE;
   TASK pdu!nonce := sp!nonce;
   RETURN;
ENDOPERATOR;
OPERATOR buildUKeyRefreshAck;
   FPAR    sp   ACF_UNICAST_KEY_REFRESH_ACK_ARG;
   RETURNS pdu  RLC_UNICAST_KEY_REFRESH_ACK_ARG;
   START; TASK pdu!rlc_pdu_type := cRLC_UNICAST_KEY_REFRESH_ACK_TYPE;
   TASK pdu!md5_on_nonce := sp!md5_on_nonce;
   RETURN;
ENDOPERATOR;
OPERATOR build_ukey_refresh_ind;
   FPAR    pdu   RLC_UNICAST_KEY_REFRESH_ARG, mac_id  MAC_ID;
   RETURNS sp  ACF_UNICAST_KEY_REFRESH_ARG;
   START; TASK sp!mac_id := mac_id;
   TASK sp!nonce := pdu!nonce;
   RETURN;
ENDOPERATOR;
OPERATOR build_ukey_refresh_cnf;
   FPAR    pdu   RLC_UNICAST_KEY_REFRESH_ACK_ARG, mac_id  MAC_ID;
   RETURNS sp  ACF_UNICAST_KEY_REFRESH_ACK_ARG;
   START; TASK sp!mac_id := mac_id;
   TASK sp!md5_on_nonce := pdu!md5_on_nonce;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE Unicast_key_refresh_operators;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 10(52)

```
NEWTYPE Common_key_refresh_operators
   OPERATORS
   buildCKeyRefresh: ACF_COMMON_KEY_REFRESH_ARG  −> RLC_COMMON_KEY_REFRESH_ARG;
   buildCKeyRefreshAck: ACF_COMMON_KEY_REFRESH_ACK_ARG  −> RLC_COMMON_KEY_REFRESH_ACK_ARG;
   build_ckey_refresh_ind: RLC_COMMON_KEY_REFRESH_ARG, MAC_ID −> ACF_COMMON_KEY_REFRESH_ARG;
   build_ckey_refresh_cnf: RLC_COMMON_KEY_REFRESH_ACK_ARG, MAC_ID −> ACF_COMMON_KEY_REFRESH_ACK_ARG;
   buildCKeyActivate: ACF_COMMON_KEY_ACTIVATE_ARG  −> RLC_COMMON_KEY_ACTIVATE_ARG;
   build_ckey_activate_ind: RLC_COMMON_KEY_ACTIVATE_ARG, MAC_ID  −> ACF_COMMON_KEY_ACTIVATE_ARG;
OPERATOR buildCKeyRefresh;
   FPAR    sp   ACF_COMMON_KEY_REFRESH_ARG;
   RETURNS pdu  RLC_COMMON_KEY_REFRESH_ARG;
   START; TASK pdu!rlc_pdu_type := cRLC_COMMON_KEY_REFRESH_TYPE;
   TASK pdu!encr_info := sp!encr_info;
   TASK pdu!key_id := sp!key_id;
   TASK pdu!common_key := sp!common_key;
   RETURN;
ENDOPERATOR;
OPERATOR buildCKeyRefreshAck;
   FPAR    sp   ACF_COMMON_KEY_REFRESH_ACK_ARG;
   RETURNS pdu  RLC_COMMON_KEY_REFRESH_ACK_ARG;
   START; TASK pdu!rlc_pdu_type := cRLC_COMMON_KEY_REFRESH_ACK_TYPE;
   TASK pdu!encr_info := sp!encr_info;
   TASK pdu!md5_on_key := sp!md5_on_key;
   RETURN;
ENDOPERATOR;
OPERATOR build_ckey_refresh_ind;
   FPAR    pdu   RLC_COMMON_KEY_REFRESH_ARG, mac_id  MAC_ID;
   RETURNS sp  ACF_COMMON_KEY_REFRESH_ARG;
   START; TASK sp!mac_id := mac_id;
   TASK sp!encr_info := pdu!encr_info;
   TASK sp!key_id := pdu!key_id;
   TASK sp!common_key := pdu!common_key;
   RETURN;
ENDOPERATOR;
OPERATOR build_ckey_refresh_cnf;
   FPAR    pdu   RLC_COMMON_KEY_REFRESH_ACK_ARG, mac_id  MAC_ID;
   RETURNS sp  ACF_COMMON_KEY_REFRESH_ACK_ARG;
   START; TASK sp!mac_id := mac_id;
   TASK sp!encr_info := pdu!encr_info;
   TASK sp!md5_on_key := pdu!md5_on_key;
   RETURN;
ENDOPERATOR;
OPERATOR buildCKeyActivate;
   FPAR    sp   ACF_COMMON_KEY_ACTIVATE_ARG;
   RETURNS pdu  RLC_COMMON_KEY_ACTIVATE_ARG;
   START; TASK pdu!rlc_pdu_type := cRLC_COMMON_KEY_ACTIVATE_TYPE;
   TASK pdu!key_id := sp!key_id;
   RETURN;
ENDOPERATOR;
OPERATOR build_ckey_activate_ind;
   FPAR    pdu   RLC_COMMON_KEY_ACTIVATE_ARG, mac_id MAC_ID;
   RETURNS sp  ACF_COMMON_KEY_ACTIVATE_ARG;
   START; TASK sp!mac_id := mac_id;
   TASK sp!key_id := pdu!key_id;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE Common_key_refresh_operators;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 11(52)

```
NEWTYPE ACF_multicast_protocol_primitives_operators

OPERATORS
   buildGroupJoin:     ACF_GROUP_JOIN_ARG      −> RLC_GROUP_JOIN_ARG;
   buildGroupJoinAck:  ACF_GROUP_JOIN_ACK_ARG  −> RLC_GROUP_JOIN_ACK_ARG;
   buildGroupJoinNack:  ACF_GROUP_JOIN_NACK_ARG  −> RLC_GROUP_JOIN_NACK_ARG;
   buildGroupLeave:    ACF_GROUP_LEAVE_ARG     −> RLC_GROUP_LEAVE_ARG;
   buildGroupLeaveAck: ACF_GROUP_LEAVE_ACK_ARG −> RLC_GROUP_LEAVE_ACK_ARG;

OPERATOR buildGroupJoin;
   FPAR      sp  ACF_GROUP_JOIN_ARG;
   RETURNS   pp  RLC_GROUP_JOIN_ARG;
   START;
   TASK pp!rlc_pdu_type           := cRLC_GROUP_JOIN_TYPE;
   TASK pp!cl_data                := sp!cl_data;
   TASK pp!encryption_algorithm_proposal := sp!encryption_algorithm_proposal;
   RETURN;
ENDOPERATOR;
OPERATOR buildGroupJoinAck;
   FPAR      sp  ACF_GROUP_JOIN_ACK_ARG;
   RETURNS   pp  RLC_GROUP_JOIN_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type           := cRLC_GROUP_JOIN_ACK_TYPE;
   TASK pp!more_joins             := sp!more_joins;
   TASK pp!mac_id_and_cl_data_list          := sp!mac_id_and_cl_data_list;
   TASK pp!encryption_algorithm_selected := sp!encryption_algorithm_selected;
   TASK pp!key_id                 := sp!key_id;
   TASK pp!common_key             := sp!common_key;
   RETURN;
ENDOPERATOR;
OPERATOR buildGroupJoinNack;
   FPAR      sp  ACF_GROUP_JOIN_NACK_ARG;
   RETURNS   pp  RLC_GROUP_JOIN_NACK_ARG;
   START;
   TASK pp!rlc_pdu_type           := cRLC_GROUP_JOIN_NACK_TYPE;
   TASK pp!more_joins             := sp!more_joins;
   TASK pp!cl_data                := sp!cl_data;
   RETURN;
ENDOPERATOR;
OPERATOR buildGroupLeave;
   FPAR      sp  ACF_GROUP_LEAVE_ARG;
   RETURNS   pp  RLC_GROUP_LEAVE_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_GROUP_LEAVE_TYPE;
   TASK pp!cl_data      := sp!cl_data;
   RETURN;
ENDOPERATOR;

OPERATOR buildGroupLeaveAck;
   FPAR      sp  ACF_GROUP_LEAVE_ACK_ARG;
   RETURNS   pp  RLC_GROUP_LEAVE_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_GROUP_LEAVE_ACK_TYPE;
   TASK pp!cl_data      := sp!cl_data;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE ACF_multicast_protocol_primitives_operators;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 12(52)

```
NEWTYPE ACF_broadcast_protocol_primitives_operators

OPERATORS
   buildBroadcastJoin:     ACF_CL_BROADCAST_JOIN_ARG      −> RLC_CL_BROADCAST_JOIN_ARG;
   buildBroadcastJoinAck:  ACF_CL_BROADCAST_JOIN_ACK_ARG  −> RLC_CL_BROADCAST_JOIN_ACK_ARG;
   buildBroadcastLeave:    ACF_CL_BROADCAST_LEAVE_ARG     −> RLC_CL_BROADCAST_LEAVE_ARG;
   buildBroadcastLeaveAck: ACF_CL_BROADCAST_LEAVE_ACK_ARG −> RLC_CL_BROADCAST_LEAVE_ACK_ARG;

OPERATOR buildBroadcastJoin;
   FPAR      sp  ACF_CL_BROADCAST_JOIN_ARG;
   RETURNS   pp  RLC_CL_BROADCAST_JOIN_ARG;
   START;
   TASK pp!rlc_pdu_type           := cRLC_CL_BROADCAST_JOIN_TYPE;
   TASK pp!cl_data                := sp!cl_data;
   TASK pp!encryption_algorithm_proposal := sp!encryption_algorithm_proposal;
   RETURN;
ENDOPERATOR;

OPERATOR buildBroadcastJoinAck;
   FPAR      sp  ACF_CL_BROADCAST_JOIN_ACK_ARG;
   RETURNS   pp  RLC_CL_BROADCAST_JOIN_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type           := cRLC_CL_BROADCAST_JOIN_ACK_TYPE;
   TASK pp!window_size            := sp!window_size;
   TASK pp!mac_id_and_cl_data_list := sp!mac_id_and_cl_data_list;
   TASK pp!encryption_algorithm_selected := sp!encryption_algorithm_selected;
   TASK pp!key_id                 := sp!key_id;
   TASK pp!common_key             := sp!common_key;
   TASK pp!error_corr_mode        := sp!error_corr_mode;
   RETURN;
ENDOPERATOR;

OPERATOR buildBroadcastLeave;
   FPAR      sp  ACF_CL_BROADCAST_LEAVE_ARG;
   RETURNS   pp  RLC_CL_BROADCAST_LEAVE_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_CL_BROADCAST_LEAVE_TYPE;
   TASK pp!cl_data      := sp!cl_data;
   RETURN;
ENDOPERATOR;

OPERATOR buildBroadcastLeaveAck;
   FPAR      sp  ACF_CL_BROADCAST_LEAVE_ACK_ARG;
   RETURNS   pp  RLC_CL_BROADCAST_LEAVE_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_CL_BROADCAST_LEAVE_ACK_TYPE;
   TASK pp!cl_data      := sp!cl_data;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE ACF_broadcast_protocol_primitives_operators;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 13(52)

```
NEWTYPE DUC_related_protocol_primitives_operators_1

OPERATORS
   buildSetup:      DUC_SETUP_ARG       −> RLC_SETUP_ARG;
   buildConnect:    DUC_CONNECT_ARG     −> RLC_CONNECT_ARG;
   buildConnectAck: DUC_CONNECT_ACK_ARG −> RLC_CONNECT_ACK_ARG;
   buildRelease:    DUC_RELEASE_ARG     −> RLC_RELEASE_ARG;
   buildReleaseAck: DUC_RELEASE_ACK_ARG −> RLC_RELEASE_ACK_ARG;

OPERATOR buildSetup;
   FPAR      sp  DUC_SETUP_ARG;
   RETURNS   pp  RLC_SETUP_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_SETUP_TYPE;
   TASK pp!cl_id               := sp!cl_id;
   TASK pp!duc_ext_ind         := sp!duc_ext_ind;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!duc_descr_list      := sp!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildConnect;
   FPAR      sp  DUC_CONNECT_ARG;
   RETURNS   pp  RLC_CONNECT_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_CONNECT_TYPE;
   TASK pp!cl_id               := sp!cl_id;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!duc_descr_list      := sp!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildConnectAck;
   FPAR      sp  DUC_CONNECT_ACK_ARG;
   RETURNS   pp  RLC_CONNECT_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_CONNECT_ACK_TYPE;
   TASK pp!cl_id               := sp!cl_id;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!dlcc_descr_list     := sp!dlcc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildRelease;
   FPAR      sp  DUC_RELEASE_ARG;
   RETURNS   pp  RLC_RELEASE_ARG;
   START;
   TASK pp!rlc_pdu_type  := cRLC_RELEASE_TYPE;
   TASK pp!dlcc_id_list  := sp!dlcc_id_list;
   TASK pp!release_cause := sp!release_cause;
   RETURN;
ENDOPERATOR;

OPERATOR buildReleaseAck;
   FPAR      sp  DUC_RELEASE_ACK_ARG;
   RETURNS   pp  RLC_RELEASE_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_RELEASE_ACK_TYPE;
   TASK pp!dlcc_id_list := sp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE DUC_related_protocol_primitives_operators_1;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 14(52)

```
NEWTYPE DUC_related_protocol_primitives_operators_2

OPERATORS
   buildModifyReq: DUC_MODIFY_REQ_ARG −> RLC_MODIFY_REQ_ARG;
   buildModify:    DUC_MODIFY_ARG     −> RLC_MODIFY_ARG;
   buildModifyAck: DUC_MODIFY_ACK_ARG −> RLC_MODIFY_ACK_ARG;
   buildReset:     DUC_RESET_ARG      −> RLC_RESET_ARG;
   buildResetAck:  DUC_RESET_ACK_ARG  −> RLC_RESET_ACK_ARG;

OPERATOR buildModifyReq;
   FPAR      sp  DUC_MODIFY_REQ_ARG;
   RETURNS   pp  RLC_MODIFY_REQ_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_MODIFY_REQ_TYPE;
   TASK pp!duc_ext_ind         := sp!duc_ext_ind;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!duc_descr_list      := sp!duc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR buildModify;
   FPAR      sp  DUC_MODIFY_ARG;
   RETURNS   pp  RLC_MODIFY_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_MODIFY_TYPE;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!duc_descr_list      := sp!duc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR buildModifyAck;
   FPAR      sp  DUC_MODIFY_ACK_ARG;
   RETURNS   pp  RLC_MODIFY_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_MODIFY_ACK_TYPE;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!dlcc_descr_list     := sp!dlcc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR buildReset;
   FPAR      sp  DUC_RESET_ARG;
   RETURNS   pp  RLC_RESET_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_RESET_TYPE;
   TASK pp!dlcc_id_list := sp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildResetAck;
   FPAR      sp  DUC_RESET_ACK_ARG;
   RETURNS   pp  RLC_RESET_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_RESET_ACK_TYPE;
   TASK pp!dlcc_id_list := sp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE DUC_related_protocol_primitives_operators_2;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 15(52)

```
NEWTYPE DUC_DM_related_protocol_primitives_operators_1

OPERATORS
   buildDMSetup:         DUC_DM_SETUP_ARG              -> RLC_DM_SETUP_ARG;
   buildDMConnect:       DUC_DM_CONNECT_ARG            -> RLC_DM_CONNECT_ARG;
   buildDMConnectAck:    DUC_DM_CONNECT_ACK_ARG        -> RLC_DM_CONNECT_ACK_ARG;
   buildDMConnectCmpl:   DUC_DM_CONNECT_COMPLETE_ARG   -> RLC_DM_CONNECT_COMPLETE_ARG;
   buildDMConnectCmplAck: DUC_DM_CONNECT_COMPLETE_ACK_ARG -> RLC_DM_CONNECT_COMPLETE_ACK_ARG;

OPERATOR buildDMSetup;
   FPAR     sp  DUC_DM_SETUP_ARG;
   RETURNS   pp  RLC_DM_SETUP_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_DM_SETUP_TYPE;
   TASK pp!peer_mac_id         := sp!peer_mac_id;
   TASK pp!cl_id               := sp!cl_id;
   TASK pp!duc_ext_ind         := sp!duc_ext_ind;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!duc_descr_list      := sp!duc_descr_list;
   TASK pp!cl_common_attr      := sp!cl_common_attr;
   RETURN;
ENDOPERATOR;

OPERATOR buildDMConnect;
   FPAR     sp  DUC_DM_CONNECT_ARG;
   RETURNS   pp  RLC_DM_CONNECT_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_DM_CONNECT_TYPE;
   TASK pp!peer_mac_id         := sp!peer_mac_id;
   TASK pp!cl_id               := sp!cl_id;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!duc_descr_list      := sp!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildDMConnectAck;
   FPAR     sp  DUC_DM_CONNECT_ACK_ARG;
   RETURNS   pp  RLC_DM_CONNECT_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_DM_CONNECT_TYPE;
   TASK pp!peer_mac_id         := sp!peer_mac_id;
   TASK pp!cl_id               := sp!cl_id;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!dlcc_descr_list     := sp!dlcc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildDMConnectCmpl;
   FPAR     sp  DUC_DM_CONNECT_COMPLETE_ARG;
   RETURNS   pp  RLC_DM_CONNECT_COMPLETE_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_DM_CONNECT_TYPE;
   TASK pp!peer_mac_id  := sp!peer_mac_id;
   TASK pp!dlcc_id_list := sp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildDMConnectCmplAck;
   FPAR     sp  DUC_DM_CONNECT_COMPLETE_ACK_ARG;
   RETURNS   pp  RLC_DM_CONNECT_COMPLETE_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_DM_CONNECT_COMPLETE_ACK_TYPE;
   TASK pp!peer_mac_id  := sp!peer_mac_id;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE DUC_DM_related_protocol_primitives_operators_1;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 16(52)

```
NEWTYPE DUC_DM_related_protocol_primitives_operators_2

OPERATORS
   buildRelaySetup:      DUC_RELAY_SETUP_ARG       −> RLC_RELAY_SETUP_ARG;
   buildRelaySetupAck:   DUC_RELAY_SETUP_ACK_ARG   −> RLC_RELAY_SETUP_ACK_ARG;
   buildRelayModify:     DUC_RELAY_MODIFY_ARG      −> RLC_RELAY_MODIFY_ARG;
   buildRelayModifyAck:  DUC_RELAY_MODIFY_ACK_ARG  −> RLC_RELAY_MODIFY_ACK_ARG;
   buildRelayRelease:    DUC_RELAY_RELEASE_ARG     −> RLC_RELAY_RELEASE_ARG;
   buildRelayReleaseAck: DUC_RELAY_RELEASE_ACK_ARG −> RLC_RELAY_RELEASE_ACK_ARG;

OPERATOR buildRelaySetup;
   FPAR      sp  DUC_RELAY_SETUP_ARG;
   RETURNS   pp  RLC_RELAY_SETUP_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_RELAY_SETUP_TYPE;
   TASK pp!peer_mac_id         := sp!peer_mac_id;
   TASK pp!cl_id               := sp!cl_id;
   TASK pp!duc_ext_ind         := sp!duc_ext_ind;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!duc_descr_list      := sp!duc_descr_list;
   TASK pp!cl_common_attr      := sp!cl_common_attr;
   RETURN;
ENDOPERATOR;
OPERATOR buildRelaySetupAck;
   FPAR      sp  DUC_RELAY_SETUP_ACK_ARG;
   RETURNS   pp  RLC_RELAY_SETUP_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_RELAY_SETUP_TYPE;
   TASK pp!peer_mac_id         := sp!peer_mac_id;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!dlcc_descr_list     := sp!dlcc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR buildRelayModify;
   FPAR      sp  DUC_RELAY_MODIFY_ARG;
   RETURNS   pp  RLC_RELAY_MODIFY_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_RELAY_MODIFY_TYPE;
   TASK pp!peer_mac_id         := sp!peer_mac_id;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!duc_descr_list      := sp!duc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR buildRelayModifyAck;
   FPAR      sp  DUC_RELAY_MODIFY_ACK_ARG;
   RETURNS   pp  RLC_RELAY_MODIFY_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_RELAY_MODIFY_TYPE;
   TASK pp!peer_mac_id         := sp!peer_mac_id;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!dlcc_descr_list     := sp!dlcc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR buildRelayRelease;
   FPAR      sp  DUC_RELAY_RELEASE_ARG;
   RETURNS   pp  RLC_RELAY_RELEASE_ARG;
   START;
   TASK pp!rlc_pdu_type  := cRLC_RELAY_RELEASE_TYPE;
   TASK pp!peer_mac_id   := sp!peer_mac_id;
   TASK pp!dlcc_id_list  := sp!dlcc_id_list;
   TASK pp!release_cause := sp!release_cause;
   RETURN;
ENDOPERATOR;
OPERATOR buildRelayReleaseAck;
   FPAR      sp  DUC_RELAY_RELEASE_ACK_ARG;
   RETURNS   pp  RLC_RELAY_RELEASE_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_RELAY_RELEASE_TYPE;
   TASK pp!peer_mac_id  := sp!peer_mac_id;
   TASK pp!dlcc_id_list := sp!dlcc_id_list;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE DUC_DM_related_protocol_primitives_operators_2;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 17(52)

```
NEWTYPE DUC_DM_related_protocol_primitives_operators_3

OPERATORS
   buildDMModifyReq:     DUC_DM_MODIFY_REQ_ARG          −> RLC_DM_MODIFY_REQ_ARG;
   buildDMModify:        DUC_DM_MODIFY_ARG              −> RLC_DM_MODIFY_ARG;
   buildDMModifyAck:     DUC_DM_MODIFY_ACK_ARG          −> RLC_DM_MODIFY_ACK_ARG;
   buildDMModifyCmpl:    DUC_DM_MODIFY_COMPLETE_ARG     −> RLC_DM_MODIFY_COMPLETE_ARG;
   buildDMModifyCmplAck: DUC_DM_MODIFY_COMPLETE_ACK_ARG −> RLC_DM_MODIFY_COMPLETE_ACK_ARG;

OPERATOR buildDMModifyReq;
   FPAR      sp  DUC_DM_MODIFY_REQ_ARG;
   RETURNS   pp  RLC_DM_MODIFY_REQ_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_DM_MODIFY_REQ_TYPE;
   TASK pp!peer_mac_id         := sp!peer_mac_id;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!duc_descr_list      := sp!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildDMModify;
   FPAR      sp  DUC_DM_MODIFY_ARG;
   RETURNS   pp  RLC_DM_MODIFY_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_DM_MODIFY_TYPE;
   TASK pp!peer_mac_id         := sp!peer_mac_id;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!duc_descr_list      := sp!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildDMModifyAck;
   FPAR      sp  DUC_DM_MODIFY_ACK_ARG;
   RETURNS   pp  RLC_DM_MODIFY_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type        := cRLC_DM_MODIFY_ACK_TYPE;
   TASK pp!peer_mac_id         := sp!peer_mac_id;
   TASK pp!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pp!dlcc_descr_list     := sp!dlcc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildDMModifyCmpl;
   FPAR      sp  DUC_DM_MODIFY_COMPLETE_ARG;
   RETURNS   pp  RLC_DM_MODIFY_COMPLETE_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_DM_MODIFY_COMPLETE_TYPE;
   TASK pp!peer_mac_id  := sp!peer_mac_id;
   TASK pp!dlcc_id_list := sp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildDMModifyCmplAck;
   FPAR      sp  DUC_DM_MODIFY_COMPLETE_ACK_ARG;
   RETURNS   pp  RLC_DM_MODIFY_COMPLETE_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_DM_MODIFY_COMPLETE_ACK_TYPE;
   TASK pp!peer_mac_id  := sp!peer_mac_id;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE DUC_DM_related_protocol_primitives_operators_3;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 18(52)

```
NEWTYPE DUC_DM_related_protocol_primitives_operators_4

OPERATORS
   buildDMRelease:    DUC_DM_RELEASE_ARG     -> RLC_DM_RELEASE_ARG;
   buildDMReleaseAck: DUC_DM_RELEASE_ACK_ARG -> RLC_DM_RELEASE_ACK_ARG;
   buildDMReset:      DUC_DM_RESET_ARG       -> RLC_DM_RESET_ARG;
   buildDMResetAck:   DUC_DM_RESET_ACK_ARG   -> RLC_DM_RESET_ACK_ARG;

OPERATOR buildDMRelease;
   FPAR      sp  DUC_DM_RELEASE_ARG;
   RETURNS   pp  RLC_DM_RELEASE_ARG;
   START;
   TASK pp!rlc_pdu_type  := cRLC_DM_RELEASE_TYPE;
   TASK pp!peer_mac_id   := sp!peer_mac_id;
   TASK pp!dlcc_id_list  := sp!dlcc_id_list;
   TASK pp!release_cause := sp!release_cause;
   RETURN;
ENDOPERATOR;

OPERATOR buildDMReleaseAck;
   FPAR      sp  DUC_DM_RELEASE_ACK_ARG;
   RETURNS   pp  RLC_DM_RELEASE_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_DM_RELEASE_ACK_TYPE;
   TASK pp!peer_mac_id  := sp!peer_mac_id;
   TASK pp!dlcc_id_list := sp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildDMReset;
   FPAR      sp  DUC_DM_RESET_ARG;
   RETURNS   pp  RLC_DM_RESET_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_DM_RESET_TYPE;
   TASK pp!peer_mac_id  := sp!peer_mac_id;
   TASK pp!dlcc_id_list := sp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildDMResetAck;
   FPAR      sp  DUC_DM_RESET_ACK_ARG;
   RETURNS   pp  RLC_DM_RESET_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_DM_RESET_ACK_TYPE;
   TASK pp!peer_mac_id  := sp!peer_mac_id;
   TASK pp!dlcc_id_list := sp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE DUC_DM_related_protocol_primitives_operators_4;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 19(52)

```
NEWTYPE pc_calibration_operators
   OPERATORS
      buildPCcal: RRC_UPLINK_PC_CALIBRATION_ARG −> RLC_UPLINK_PC_CALIBRATION_ARG;
      build_pc_cal_ind: RLC_UPLINK_PC_CALIBRATION_ARG, MAC_ID −> RRC_UPLINK_PC_CALIBRATION_ARG;
OPERATOR buildPCcal;
   FPAR    sp  RRC_UPLINK_PC_CALIBRATION_ARG;
   RETURNS pdu RLC_UPLINK_PC_CALIBRATION_ARG;
   START;
   TASK pdu!rlc_pdu_type  := cRLC_UPLINK_PC_CALIBRATION_TYPE;
   TASK pdu!pc_offset  := sp!pc_offset;
   RETURN;
ENDOPERATOR;
OPERATOR build_pc_cal_ind;
   FPAR    pdu  RLC_UPLINK_PC_CALIBRATION_ARG,
           mac_id  MAC_ID;
   RETURNS sp RRC_UPLINK_PC_CALIBRATION_ARG;
   START;
   TASK sp!mac_id  := mac_id;
   TASK sp!pc_offset  := pdu!pc_offset;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE pc_calibration_operators;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 20(52)

```
NEWTYPE DFS_related_protocol_primitives_operators_1

OPERATORS
   buildApAbsence:         RRC_AP_ABSENCE_ARG       −> RLC_AP_ABSENCE_ARG;
   buildChangeFrequency:    RRC_CHANGE_FREQUENCY_ARG −> RLC_CHANGE_FREQUENCY_ARG;
   buildDfsCompleteRequest: RRC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG
                                 −> RLC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG;
   buildDfsShortRequest:    RRC_DFS_MEASUREMENT_SHORT_REQUEST_ARG
                                 −> RLC_DFS_MEASUREMENT_SHORT_REQUEST_ARG;
   buildDfsPercentilesRequest: RRC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG
                                 −> RLC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG;
OPERATOR buildApAbsence;
   FPAR      rrc_dfs_ap_absence    RRC_AP_ABSENCE_ARG;
   RETURNS    rlc_dfs_ap_absence    RLC_AP_ABSENCE_ARG;
   START;
   TASK rlc_dfs_ap_absence!rlc_pdu_type := cRLC_AP_ABSENCE_TYPE;
   TASK rlc_dfs_ap_absence!first_mac_frame :=
      rrc_dfs_ap_absence!first_mac_frame;
   TASK rlc_dfs_ap_absence!last_mac_frame :=
      rrc_dfs_ap_absence!last_mac_frame;
   RETURN;
ENDOPERATOR;
OPERATOR buildChangeFrequency;
   FPAR      rrc_change_frequency    RRC_CHANGE_FREQUENCY_ARG;
   RETURNS    rlc_change_frequency    RLC_CHANGE_FREQUENCY_ARG;
   START;
   TASK
   rlc_change_frequency!rlc_pdu_type    := cRLC_CHANGE_FREQUENCY_TYPE;
   TASK rlc_change_frequency!last_mac_frame  := rrc_change_frequency!last_mac_frame;
   TASK rlc_change_frequency!frequency_index := rrc_change_frequency!frequency_index;
   TASK rlc_change_frequency!first_mac_frame := rrc_change_frequency!first_mac_frame;
   RETURN;
ENDOPERATOR;
OPERATOR buildDfsCompleteRequest;
   FPAR      rrc_dfs    RRC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG;
   RETURNS   rlc_dfs    RLC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG;
   START;
   TASK
   rlc_dfs!rlc_pdu_type := cRLC_DFS_MEASUREMENT_COMPLETE_REQUEST_TYPE;
   TASK rlc_dfs!frequency_index           := rrc_dfs!frequency_index;
   TASK rlc_dfs!use_omni_antenna := rrc_dfs!use_omni_antenna;
   TASK rlc_dfs!start_of_measurement       := rrc_dfs!start_of_measurement;
   TASK rlc_dfs!measurement_window := rrc_dfs!measurement_window;
   TASK rlc_dfs!maximum_age_of_bch_measurement := rrc_dfs!maximum_age_of_bch_measurement ;
   TASK rlc_dfs!rss_index_list := rrc_dfs!rss_index_list;
   RETURN;
ENDOPERATOR;
OPERATOR buildDfsShortRequest;
   FPAR      rrc_dfs    RRC_DFS_MEASUREMENT_SHORT_REQUEST_ARG;
   RETURNS    rlc_dfs    RLC_DFS_MEASUREMENT_SHORT_REQUEST_ARG;
   START;
   TASK
   rlc_dfs!rlc_pdu_type              := cRLC_DFS_MEASUREMENT_SHORT_REQUEST_TYPE;
   TASK rlc_dfs!frequency_index           := rrc_dfs!frequency_index;
   TASK rlc_dfs!start_of_measurement       := rrc_dfs!start_of_measurement;
   TASK rlc_dfs!measurement_window      := rrc_dfs!measurement_window;
   TASK rlc_dfs!maximum_age_of_bch_measurement := rrc_dfs!maximum_age_of_bch_measurement ;
   RETURN;
ENDOPERATOR;
OPERATOR buildDfsPercentilesRequest;
   FPAR      rrc_dfs    RRC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG;
   RETURNS    rlc_dfs    RLC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG;
   START;
   TASK
   rlc_dfs!rlc_pdu_type              := cRLC_DFS_MEASUREMENT_PERCENTILES_REQUEST_TYPE;
   TASK rlc_dfs!frequency_index           := rrc_dfs!frequency_index;
   TASK rlc_dfs!use_omni_antenna := rrc_dfs!use_omni_antenna;
   TASK rlc_dfs!start_of_measurement       := rrc_dfs!start_of_measurement;
   TASK rlc_dfs!measurement_window := rrc_dfs!measurement_window;
   TASK rlc_dfs!maximum_age_of_bch_measurement := rrc_dfs!maximum_age_of_bch_measurement ;
   TASK rlc_dfs!rss_index_list:= rrc_dfs!rss_index_list;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE DFS_related_protocol_primitives_operators_1;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 21(52)

```
NEWTYPE DFS_related_protocol_primitives_operators_2

OPERATORS
   buildDfsMtInitReportRequest:  RRC_DFS_MT_INIT_REPORT_REQUEST_ARG
                                 −> RLC_DFS_MT_INIT_REPORT_REQUEST_ARG;
   buildDfsMtInitReportRequestAck:  RRC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG
                                 −> RLC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG;

OPERATOR buildDfsMtInitReportRequestAck;
   FPAR      sp  RRC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG;
   RETURNS   pp  RLC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type            := cRLC_DFS_MT_INIT_REPORT_REQUEST_ACK_TYPE;
   TASK pp!reporting_initialized := sp!reporting_initialized;
   RETURN;
ENDOPERATOR;
OPERATOR buildDfsMtInitReportRequest;
   FPAR      sp  RRC_DFS_MT_INIT_REPORT_REQUEST_ARG;
   RETURNS   pp  RLC_DFS_MT_INIT_REPORT_REQUEST_ARG;
   START;
   TASK pp!rlc_pdu_type            := cRLC_DFS_MT_INIT_REPORT_REQUEST_TYPE;
   TASK pp!measurement_type         := sp!measurement_type;
   TASK pp!frequency_index          := sp!frequency_index;
   TASK pp!adjacent_ch_interference := sp!adjacent_ch_interference;
   TASK pp!mac_id                   := sp!mac_id;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE DFS_related_protocol_primitives_operators_2;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 22(52)

```
NEWTYPE DFS_related_protocol_primitives_operators_3

OPERATORS
   buildDfs_Report_Complete:    RRC_DFS_REPORT_COMPLETE_ARG    −> RLC_DFS_REPORT_COMPLETE_ARG;
   buildDfs_Report_Short:       RRC_DFS_REPORT_SHORT_ARG       −> RLC_DFS_REPORT_SHORT_ARG;
   buildDfs_Report_Percentiles: RRC_DFS_REPORT_PERCENTILES_ARG −> RLC_DFS_REPORT_PERCENTILES_ARG;

OPERATOR buildDfs_Report_Complete;
   FPAR       rrc_dfs    RRC_DFS_REPORT_COMPLETE_ARG;
   RETURNS    rlc_dfs    RLC_DFS_REPORT_COMPLETE_ARG;
   START; TASK
   rlc_dfs!rlc_pdu_type            := cRLC_DFS_REPORT_COMPLETE_TYPE;
   TASK rlc_dfs!frequency_index         := rrc_dfs!frequency_index;
   TASK rlc_dfs!omni_antenna_used := rrc_dfs!omni_antenna_used;
   TASK rlc_dfs!age_of_measurement      := rrc_dfs!age_of_measurement;
   TASK rlc_dfs!last_own_bch_rx_level   := rrc_dfs!last_own_bch_rx_level;
   TASK rlc_dfs! bch_found := rrc_dfs! bch_found;
   TASK rlc_dfs!traffic_load            := rrc_dfs!traffic_load;
   TASK rlc_dfs!ap_id                   := rrc_dfs!ap_id;
   TASK rlc_dfs! tx_level := rrc_dfs! tx_level;
   TASK rlc_dfs!net_id                  := rrc_dfs!net_id;
   TASK rlc_dfs!bch_rx_level            := rrc_dfs!bch_rx_level;
   TASK rlc_dfs!number_of_samples   := rrc_dfs!number_of_samples;
   TASK rlc_dfs!rss_index_list          := rrc_dfs!rss_index_list;
   TASK rlc_dfs!rss_statistics_list     := rrc_dfs!rss_statistics_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildDfs_Report_Short;
   FPAR       rrc_dfs     RRC_DFS_REPORT_SHORT_ARG;
   RETURNS    rlc_dfs     RLC_DFS_REPORT_SHORT_ARG;
   START; TASK
   rlc_dfs!rlc_pdu_type            := cRLC_DFS_REPORT_SHORT_TYPE;
   TASK rlc_dfs!frequency_index         := rrc_dfs!frequency_index;
   TASK rlc_dfs! omni_antenna_used := rrc_dfs! omni_antenna_used;
   TASK rlc_dfs!age_of_measurement      := rrc_dfs!age_of_measurement;
   TASK rlc_dfs!last_own_bch_rx_level   := rrc_dfs!last_own_bch_rx_level;
   TASK rlc_dfs! bch_found := rrc_dfs! bch_found;
   TASK rlc_dfs! traffic_load := rrc_dfs! traffic_load;
   TASK rlc_dfs!ap_id                   := rrc_dfs!ap_id;
   TASK rlc_dfs!net_id                  := rrc_dfs!net_id;
   TASK rlc_dfs!bch_rx_level            := rrc_dfs!bch_rx_level;
   RETURN;
ENDOPERATOR;

OPERATOR buildDfs_Report_Percentiles;
   FPAR       rrc_dfs       RRC_DFS_REPORT_PERCENTILES_ARG;
   RETURNS    rlc_dfs       RLC_DFS_REPORT_PERCENTILES_ARG;
   START; TASK
   rlc_dfs!rlc_pdu_type          := cRLC_DFS_REPORT_PERCENTILES_TYPE;
   TASK rlc_dfs!frequency_index       := rrc_dfs!frequency_index;
   TASK rlc_dfs!number_of_samples := rrc_dfs!number_of_samples;
   TASK rlc_dfs!rss_index_list        := rrc_dfs!rss_index_list;
   TASK rlc_dfs!age_of_measurement    := rrc_dfs!age_of_measurement;
   TASK rlc_dfs!rss_statistics_list   := rrc_dfs!rss_statistics_list;
   TASK rlc_dfs!last_own_bch_rx_level := rrc_dfs!last_own_bch_rx_level;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE DFS_related_protocol_primitives_operators_3;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 23(52)

```
NEWTYPE RRC_handover_related_protocol_primitives_operators_1

OPERATORS
   buildSectorHandoverRequest: RRC_SECTOR_HANDOVER_REQUEST_ARG
                        −> RLC_SECTOR_HANDOVER_REQUEST_ARG;
   buildSectorHandoverAck:    RRC_SECTOR_HANDOVER_ACK_ARG
                        −> RLC_SECTOR_HANDOVER_ACK_ARG;
   buildForceHandover:        RRC_FORCE_HANDOVER_ARG
                        −> RLC_FORCE_HANDOVER_ARG;
   buildForceHandoverAck:     RRC_FORCE_HANDOVER_ACK_ARG
                        −> RLC_FORCE_HANDOVER_ACK_ARG;
   buildHandoverNotify:       RRC_HANDOVER_NOTIFY_ARG
                        −> RLC_HANDOVER_NOTIFY_ARG;
   buildHandoverRequest:      RRC_HANDOVER_REQUEST_ARG
                        −> RLC_HANDOVER_REQUEST_ARG;
OPERATOR buildSectorHandoverRequest;
   FPAR       sp   RRC_SECTOR_HANDOVER_REQUEST_ARG;
   RETURNS    pdu  RLC_SECTOR_HANDOVER_REQUEST_ARG;
   START;    TASK pdu!rlc_pdu_type  := cRLC_SECTOR_HANDOVER_REQUEST_TYPE;
   TASK pdu!sector_id_new := sp!sector_id_new; TASK pdu!mac_id := sp!mac_id; RETURN;
ENDOPERATOR;
OPERATOR buildSectorHandoverAck;
   FPAR       sp    RRC_SECTOR_HANDOVER_ACK_ARG;
   RETURNS    pdu   RLC_SECTOR_HANDOVER_ACK_ARG;
   START;    TASK pdu!rlc_pdu_type := cRLC_SECTOR_HANDOVER_ACK_TYPE; RETURN;
ENDOPERATOR;
OPERATOR buildForceHandover;
   FPAR       sp   RRC_FORCE_HANDOVER_ARG;
   RETURNS    pdu  RLC_FORCE_HANDOVER_ARG;
   START;    TASK
   pdu!rlc_pdu_type := cRLC_FORCE_HANDOVER_TYPE;
   TASK pdu!return_flag  := sp!return_flag;
   TASK pdu!force_handover_cause := sp!force_handover_cause;
   TASK pdu!ap_id := sp!ap_id; TASK pdu!net_id := sp!net_id;
   TASK pdu!frequency_index := sp!frequency_index; RETURN;
ENDOPERATOR;
OPERATOR buildForceHandoverAck;
   FPAR       sp   RRC_FORCE_HANDOVER_ACK_ARG;
   RETURNS    pdu  RLC_FORCE_HANDOVER_ACK_ARG;
   START; TASK pdu!rlc_pdu_type := cRLC_FORCE_HANDOVER_ACK_TYPE;
   TASK pdu!mac_id := sp!mac_id; RETURN;
ENDOPERATOR;
OPERATOR buildHandoverNotify;
   FPAR       sp   RRC_HANDOVER_NOTIFY_ARG;
   RETURNS    pdu  RLC_HANDOVER_NOTIFY_ARG;
   START;    TASK
   pdu!rlc_pdu_type := cRLC_HANDOVER_NOTIFY_TYPE;
   TASK pdu!handover_cause       := sp!handover_cause;
   TASK pdu!mac_id := sp!mac_id;
   TASK pdu!ap_id    := sp!ap_id;
   TASK pdu!net_id := sp!net_id;RETURN;
ENDOPERATOR;
OPERATOR buildHandoverRequest;
   FPAR       sp   RRC_HANDOVER_REQUEST_ARG;
   RETURNS    pdu  RLC_HANDOVER_REQUEST_ARG;
   START;    TASK pdu!rlc_pdu_type    := cRLC_HANDOVER_REQUEST_TYPE;
   TASK pdu!net_id_old := sp!net_id_old;
   TASK pdu!ap_id_old := sp!ap_id_old; TASK pdu!mac_id_old := sp!mac_id_old;
   TASK pdu!duc_established := sp!duc_established; RETURN;
ENDOPERATOR;
ENDNEWTYPE RRC_handover_related_protocol_primitives_operators_1;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 24(52)

```
NEWTYPE RRC_handover_related_protocol_primitives_operators_2

OPERATORS
   buildRadioHandoverComplete:  RRC_RADIO_HANDOVER_COMPLETE_ARG
                        −> RLC_RADIO_HANDOVER_COMPLETE_ARG;
   buildNetworkHandoverComplete: RRC_NETWORK_HANDOVER_COMPLETE_ARG
                        −> RLC_NETWORK_HANDOVER_COMPLETE_ARG;
   buildHandoverAssociation:    RRC_HANDOVER_ASSOCIATION_ARG
                        −> RLC_HANDOVER_ASSOCIATION_ARG;

OPERATOR buildRadioHandoverComplete;
   FPAR       sp     RRC_RADIO_HANDOVER_COMPLETE_ARG;
   RETURNS    pdu    RLC_RADIO_HANDOVER_COMPLETE_ARG;
   START;    TASK
   pdu!rlc_pdu_type := cRLC_RADIO_HANDOVER_COMPLETE_TYPE;
   TASK pdu!mac_id_old   := sp!mac_id_old;
   TASK pdu!ap_id_old    := sp!ap_id_old;
   TASK pdu!mac_id_new   := sp!mac_id_new;
   TASK pdu!cl_id := sp!cl_id;
   TASK pdu!duc_ext_ind := sp!duc_ext_ind;
   TASK pdu!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pdu!duc_descr_list := sp!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildNetworkHandoverComplete;
   FPAR       sp   RRC_NETWORK_HANDOVER_COMPLETE_ARG;
   RETURNS     pdu  RLC_NETWORK_HANDOVER_COMPLETE_ARG;
   START;    TASK
   pdu!rlc_pdu_type := cRLC_NETWORK_HANDOVER_COMPLETE_TYPE;
   TASK pdu!cl_id := sp!cl_id;
   TASK pdu!duc_ext_ind := sp!duc_ext_ind;
   TASK pdu!cl_conn_attr_length := sp!cl_conn_attr_length;
   TASK pdu!duc_descr_list := sp!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR buildHandoverAssociation;
   FPAR       sp   RRC_HANDOVER_ASSOCIATION_ARG;
   RETURNS     pdu  RLC_HANDOVER_ASSOCIATION_ARG;
   START;
   TASK
   pdu!rlc_pdu_type := cRLC_HANDOVER_ASSOCIATION_TYPE;
   TASK pdu!net_id_old   := sp!net_id_old;
   TASK pdu!ap_id_old    := sp!ap_id_old;
   TASK pdu!mac_id_old   := sp!mac_id_old;
   TASK pdu!mac_id_new   := sp!mac_id_new;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE RRC_handover_related_protocol_primitives_operators_2;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 25(52)

```
NEWTYPE RRC_handover_related_protocol_primitives_operators_3
OPERATORS
   buildHOLinkCapabilityAck: RRC_HANDOVER_LINK_CAPABILITY_ACK_ARG
                             −> RLC_HANDOVER_LINK_CAPABILITY_ACK_ARG;
   buildNwSignallingHandover:      RRC_NW_SIGNALLING_HANDOVER_ARG
                             −> RLC_NW_SIGNALLING_HANDOVER_ARG;
   buildNwSignallingHandoverAck:   RRC_NW_SIGNALLING_HANDOVER_ACK_ARG
                             −> RLC_NW_SIGNALLING_HANDOVER_ACK_ARG;
   buildHO_Info:                   RRC_HO_INFO_DISTRIBUTION_ARG
                             −> RLC_HO_INFO_DISTRIBUTION_ARG;
OPERATOR buildHOLinkCapabilityAck;
   FPAR      sp  RRC_HANDOVER_LINK_CAPABILITY_ACK_ARG;
   RETURNS   pp  RLC_HANDOVER_LINK_CAPABILITY_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type         := cRLC_HANDOVER_LINK_CAPABILITY_ACK_TYPE;
   TASK pp!dlc_version_selected := sp!dlc_version_selected;
   TASK pp!rlc_version_selected := sp!rlc_version_selected;
   TASK pp!rss_value            := sp!rss_value;
   TASK pp!apt_address_length   := sp!apt_address_length;
   TASK pp!support64QAM         := sp!support64QAM;
   TASK pp!freq_band            := sp!freq_band;
   TASK pp!send_mt_id           := sp! send_mt_id;
   TASK pp!direct_mode_cap      := sp!direct_mode_cap;
   TASK pp!cyclic_prefix        := sp!cyclic_prefix;
   TASK pp!support_fca          := sp!support_fca;
   TASK pp!support_fsa          := sp!support_fsa;
   TASK pp!sector_ho_cap        := sp!sector_ho_cap;
   TASK pp!network_ho_cap       := sp!network_ho_cap;
   TASK pp!radio_ho_cap         := sp!radio_ho_cap;
   TASK pp!arq_delay_rx         := sp!arq_delay_rx;
   TASK pp!arq_delay_tx         := sp!arq_delay_tx;
   TASK pp!auth_encr_selected   := sp!auth_encr_selected;
   TASK pp!start_encryption     := sp!start_encryption;
   TASK pp!start_authentication := sp!start_authentication;
   TASK pp!send_NW_Token        := sp!send_NW_Token;
   TASK pp!start_info_transfer  := sp!start_info_transfer;
   TASK pp!keep_connections     := sp!keep_connections;
   TASK pp!start_DUC_set_up     := sp!start_DUC_set_up;
   TASK pp!include_MT_ID        := sp!include_MT_ID;
   DECISION dm_attributesPresent(sp);
   (True): TASK pp!dm_attributes := sp!dm_attributes;
   (False):
   ENDDECISION;
   RETURN;
ENDOPERATOR;
OPERATOR buildNwSignallingHandover;
   FPAR      sp  RRC_NW_SIGNALLING_HANDOVER_ARG;
   RETURNS   pp  RLC_NW_SIGNALLING_HANDOVER_ARG;
   START;
   TASK pp!rlc_pdu_type   := cRLC_NW_SIGNALLING_HANDOVER_TYPE;
   TASK pp!mt_token_auth_encr := sp!mt_token_auth_encr;
   RETURN;
ENDOPERATOR;
OPERATOR buildNwSignallingHandoverAck;
   FPAR      sp  RRC_NW_SIGNALLING_HANDOVER_ACK_ARG;
   RETURNS   pp  RLC_NW_SIGNALLING_HANDOVER_ACK_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_NW_SIGNALLING_HANDOVER_ACK_TYPE;
   TASK pp!ap_token_auth_encr       := sp!ap_token_auth_encr;
   RETURN;
ENDOPERATOR;
OPERATOR     buildHO_Info;
   FPAR      sp  RRC_HO_INFO_DISTRIBUTION_ARG;
   RETURNS   pp  RLC_HO_INFO_DISTRIBUTION_ARG;
   START;
   TASK pp!rlc_pdu_type := cRLC_HO_INFO_DISTRIBUTION_TYPE;
   TASK pp!token    := sp!token;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE RRC_handover_related_protocol_primitives_operators_3;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 26(52)

```
NEWTYPE RRC_MTalive_related_operators_1
OPERATORS
   build_mt_alive_request_ind: RLC_MT_ALIVE_REQUEST_ARG, MAC_ID
                        −> RRC_MT_ALIVE_REQUEST_ARG;
   build_mt_alive_ind:        RLC_MT_ALIVE_ARG,         MAC_ID
                        −> RRC_MT_ALIVE_ARG;
   build_mt_alive_cnf:        RLC_MT_ALIVE_ACK_ARG,MAC_ID
                        −> RRC_MT_ALIVE_ACK_ARG;
   build_mt_alive_request_cnf: RLC_MT_ALIVE_REQUEST_ACK_ARG,
            MAC_ID    −> RRC_MT_ALIVE_REQUEST_ACK_ARG;
   buildMtAliveRequest:       RRC_MT_ALIVE_REQUEST_ARG
                        −> RLC_MT_ALIVE_REQUEST_ARG;
   buildMtAliveRequestAck:    RRC_MT_ALIVE_REQUEST_ACK_ARG
                        −> RLC_MT_ALIVE_REQUEST_ACK_ARG;

   buildMtAlive:              RRC_MT_ALIVE_ARG
                        −> RLC_MT_ALIVE_ARG;
   buildMtAliveAck:           RRC_MT_ALIVE_ACK_ARG
                        −> RLC_MT_ALIVE_ACK_ARG;
OPERATOR    build_mt_alive_request_ind;
   FPAR  pdu      RLC_MT_ALIVE_REQUEST_ARG,  mac_id    MAC_ID;
   RETURNS    sdu      RRC_MT_ALIVE_REQUEST_ARG;
   START; TASK sdu!mac_id := mac_id; RETURN;
ENDOPERATOR;
OPERATOR    build_mt_alive_ind;
   FPAR      pdu      RLC_MT_ALIVE_ARG, mac_id    MAC_ID;
   RETURNS    sdu      RRC_MT_ALIVE_ARG;
   START; TASK sdu!mac_id := pdu!mac_id; RETURN;
ENDOPERATOR;
OPERATOR    build_mt_alive_cnf;
   FPAR      pdu      RLC_MT_ALIVE_ACK_ARG, mac_id    MAC_ID;
   RETURNS    sdu      RRC_MT_ALIVE_ACK_ARG;
   START; TASK sdu!mac_id := mac_id; RETURN;
ENDOPERATOR;
OPERATOR    build_mt_alive_request_cnf;
   FPAR      pdu RLC_MT_ALIVE_REQUEST_ACK_ARG, mac_id MAC_ID;
   RETURNS    sdu RRC_MT_ALIVE_REQUEST_ACK_ARG;
   START; TASK sdu!mac_id := mac_id; RETURN;
ENDOPERATOR;
OPERATOR    buildMtAliveRequest;
   FPAR       sdu    RRC_MT_ALIVE_REQUEST_ARG;
   RETURNS     pdu    RLC_MT_ALIVE_REQUEST_ARG;
   START;    TASK pdu!rlc_pdu_type :=
            cRLC_MT_ALIVE_REQUEST_TYPE;
   DECISION mt_alive_intervalPresent(sdu);
   (True): TASK pdu!mt_alive_interval := sdu!mt_alive_interval;
   (False): ENDDECISION; RETURN;
ENDOPERATOR;
OPERATOR    buildMtAliveRequestAck;
   FPAR       sdu    RRC_MT_ALIVE_REQUEST_ACK_ARG;
   RETURNS     pdu    RLC_MT_ALIVE_REQUEST_ACK_ARG;
   START; TASK pdu!rlc_pdu_type:=
    cRLC_MT_ALIVE_REQUEST_ACK_TYPE;
   TASK pdu!mac_id := sdu!mac_id;  RETURN;
ENDOPERATOR;
OPERATOR    buildMTalive;
   FPAR       sdu    RRC_MT_ALIVE_ARG;
   RETURNS     pdu    RLC_MT_ALIVE_ARG;
   START; TASK pdu!rlc_pdu_type := cRLC_MT_ALIVE_TYPE;
   TASK pdu!mac_id := sdu!mac_id; RETURN;
ENDOPERATOR;
OPERATOR    buildMTaliveAck;
   FPAR       sdu    RRC_MT_ALIVE_ACK_ARG;
   RETURNS     pdu    RLC_MT_ALIVE_ACK_ARG;
   START; TASK pdu!rlc_pdu_type := cRLC_MT_ALIVE_ACK_TYPE;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE RRC_MTalive_related_operators_1;
```

```
NEWTYPE RRC_MTabsence_related_operators_1
OPERATORS
   buildMtAbsence:            RRC_MT_ABSENCE_ARG
                        −> RLC_MT_ABSENCE_ARG;
   build_mt_absence_ind:      RLC_MT_ABSENCE_ARG, MAC_ID
                        −> RRC_MT_ABSENCE_ARG;
   buildMtAbsenceAck:         RRC_MT_ABSENCE_ACK_ARG
                        −> RLC_MT_ABSENCE_ACK_ARG;
   build_mt_absence_cnf:      RLC_MT_ABSENCE_ACK_ARG, MAC_ID
                        −> RRC_MT_ABSENCE_ACK_ARG;
OPERATOR buildMtAbsence;
   FPAR      sp     RRC_MT_ABSENCE_ARG;
   RETURNS    pdu    RLC_MT_ABSENCE_ARG;
   START; TASK pdu!rlc_pdu_type := cRLC_MT_ABSENCE_TYPE;
   TASK pdu!mt_absence_time := sp!mt_absence_time;
   TASK pdu!mac_id := sp!mac_id;
   RETURN;
ENDOPERATOR;
OPERATOR build_mt_absence_ind;
   FPAR      pdu     RLC_MT_ABSENCE_ARG, mac_id MAC_ID;
   RETURNS    sp    RRC_MT_ABSENCE_ARG;
   START; TASK sp!mt_absence_time := pdu!mt_absence_time;
   TASK sp!mac_id := mac_id;
   RETURN;
ENDOPERATOR;
OPERATOR buildMtAbsenceAck;
   FPAR      sp     RRC_MT_ABSENCE_ACK_ARG;
   RETURNS    pdu     RLC_MT_ABSENCE_ACK_ARG;
   START;
   TASK pdu!rlc_pdu_type := cRLC_MT_ABSENCE_ACK_TYPE;
   RETURN;
ENDOPERATOR;
OPERATOR build_mt_absence_cnf;
   FPAR      pdu     RLC_MT_ABSENCE_ACK_ARG, mac_id MAC_ID;
   RETURNS    sdu     RRC_MT_ABSENCE_ACK_ARG;
   START; TASK sdu!mac_id := mac_id;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE RRC_MTabsence_related_operators_1;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 27(52)

```
NEWTYPE RRC_Sleep_related_operators
OPERATORS
   buildSleep:            RRC_SLEEP_ARG
                       −> RLC_SLEEP_ARG;
   buildSleepAck:         RRC_SLEEP_ACK_ARG
                       −> RLC_SLEEP_ACK_ARG;
   build_sleep_ind:       RLC_SLEEP_ARG, MAC_ID
                       −> RRC_SLEEP_ARG;
   build_sleep_cnf:     RLC_SLEEP_ACK_ARG, MAC_ID
                       −> RRC_SLEEP_ACK_ARG;
OPERATOR buildSleep;
  FPAR sp   RRC_SLEEP_ARG;
  RETURNS pdu RLC_SLEEP_ARG;
  START;
  TASK pdu!rlc_pdu_type := cRLC_SLEEP_TYPE;
  TASK pdu!sleep_group := sp!sleep_group;
  TASK pdu!care_of_broadcast := sp!care_of_broadcast;
  TASK pdu!mac_id := sp!mac_id;
  RETURN;
ENDOPERATOR;
OPERATOR buildSleepAck;
  FPAR sp     RRC_SLEEP_ACK_ARG;
  RETURNS pdu  RLC_SLEEP_ACK_ARG;
  START;
  TASK pdu!rlc_pdu_type := cRLC_SLEEP_ACK_TYPE;
  TASK pdu!sleep_group := sp!sleep_group;
  TASK pdu!care_of_broadcast := sp!care_of_broadcast;
  TASK pdu!offset := sp!offset;
  RETURN;
ENDOPERATOR;
OPERATOR build_sleep_ind;
  FPAR pdu   RLC_SLEEP_ARG, mac_id MAC_ID;
  RETURNS sp RRC_SLEEP_ARG;
  START;
  TASK sp!sleep_group := pdu!sleep_group;
  TASK sp!care_of_broadcast := pdu!care_of_broadcast;
  TASK sp!mac_id := pdu!mac_id;
  RETURN;
ENDOPERATOR;
OPERATOR build_sleep_cnf;
  FPAR pdu   RLC_SLEEP_ACK_ARG,
       mac_id MAC_ID;
  RETURNS sp  RRC_SLEEP_ACK_ARG;
  START;
  TASK sp!sleep_group := pdu!sleep_group;
  TASK sp!care_of_broadcast := pdu!care_of_broadcast;
  TASK sp!mac_id := mac_id;
  TASK sp!offset := pdu!offset;
  RETURN;
ENDOPERATOR;
ENDNEWTYPE RRC_Sleep_related_operators;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 28(52)

```
NEWTYPE ACF_related_service_primitives_operators_1

OPERATORS
   build_rbch_association_req_ind: RLC_RBCH_ASSOCIATION_REQ_ARG
                                −> ACF_RBCH_ASSOCIATION_REQ_ARG;
   build_rbch_association_ind:     RLC_RBCH_ASSOCIATION_ARG
                                −> ACF_RBCH_ASSOCIATION_ARG;
   build_mac_id_assign_ind:        RLC_MAC_ID_ASSIGN_ARG
                                −> ACF_MAC_ID_ASSIGN_ARG;
   build_mac_id_assign_cnf:    RLC_MAC_ID_ASSIGN_ACK_ARG
                                −> ACF_MAC_ID_ASSIGN_ACK_ARG;
   build_mac_id_assign_nack_cnf:   RLC_MAC_ID_ASSIGN_NACK_ARG
                                −> ACF_MAC_ID_ASSIGN_NACK_ARG;

OPERATOR build_rbch_association_req_ind;
   FPAR         rlc_rbch_association_req  RLC_RBCH_ASSOCIATION_REQ_ARG;
   RETURNS      acf_rbch_association_req  ACF_RBCH_ASSOCIATION_REQ_ARG;
   START;
   TASK acf_rbch_association_req!ap_id := rlc_rbch_association_req!ap_id;
   TASK acf_rbch_association_req!net_id := rlc_rbch_association_req!net_id;
   TASK acf_rbch_association_req!mac_id := rlc_rbch_association_req!mac_id;
   RETURN;
ENDOPERATOR;

OPERATOR build_rbch_association_ind;
   FPAR         rlc_rbch_association  RLC_RBCH_ASSOCIATION_ARG;
   RETURNS      acf_rbch_association  ACF_RBCH_ASSOCIATION_ARG;
   START;
   TASK acf_rbch_association!cl_vid_list := rlc_rbch_association!cl_vid_list;
   DECISION network_operator_idPresent(rlc_rbch_association);
   (True):    TASK acf_rbch_association!network_operator_id
                 := rlc_rbch_association!network_operator_id;
   (False):
   ENDDECISION;
   RETURN;
ENDOPERATOR;

OPERATOR build_mac_id_assign_ind;
   FPAR       rlc_mac_id_assign    RLC_MAC_ID_ASSIGN_ARG;
   RETURNS    acf_mac_id_assign    ACF_MAC_ID_ASSIGN_ARG;
   START;
   TASK acf_mac_id_assign!magic  := rlc_mac_id_assign!magic;
   TASK acf_mac_id_assign!rlc_version  := rlc_mac_id_assign!rlc_version;
   RETURN;
ENDOPERATOR;

OPERATOR build_mac_id_assign_cnf;
   FPAR        rlc_mac_id_assign_ack       RLC_MAC_ID_ASSIGN_ACK_ARG;
   RETURNS     acf_mac_id_assign_cnf       ACF_MAC_ID_ASSIGN_ACK_ARG;
   START;
   TASK acf_mac_id_assign_cnf!magic     := rlc_mac_id_assign_ack!magic;
   TASK acf_mac_id_assign_cnf!mac_id    := rlc_mac_id_assign_ack!mac_id;
   RETURN;
ENDOPERATOR;

OPERATOR build_mac_id_assign_nack_cnf;
   FPAR        rlc_mac_id_assign_ack       RLC_MAC_ID_ASSIGN_NACK_ARG;
   RETURNS     acf_mac_id_assign_cnf       ACF_MAC_ID_ASSIGN_NACK_ARG;
   START;
   TASK acf_mac_id_assign_cnf!magic     := rlc_mac_id_assign_ack!magic;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE ACF_related_service_primitives_operators_1;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 29(52)

```
NEWTYPE ACF_related_service_primitives_operators_2

OPERATORS
   build_link_capability_ind:    RLC_LINK_CAPABILITY_ARG,     MAC_ID
                                 -> ACF_LINK_CAPABILITY_ARG;
   build_link_capability_cnf:    RLC_LINK_CAPABILITY_ACK_ARG, MAC_ID
                                 -> ACF_LINK_CAPABILITY_ACK_ARG;
OPERATOR build_link_capability_ind;
   FPAR      pp      RLC_LINK_CAPABILITY_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      ACF_LINK_CAPABILITY_ARG;
   START;
   TASK sp!mac_id                        := mac_id;
   TASK sp!dlc_version                   := pp!dlc_version;
   TASK sp!rlc_version                   := pp!rlc_version;
   TASK sp!cl_vid_list                   := pp!cl_vid_list;
   TASK sp!rss_value                     := pp!rss_value;
   TASK sp!support64QAM                  := pp!support64QAM;
   TASK sp!freq_band                     := pp!freq_band;
   TASK sp!direct_mode_cap               := pp!direct_mode_cap;
   TASK sp!cyclic_prefix                 := pp!cyclic_prefix;
   TASK sp!support_fca                   := pp!support_fca;
   TASK sp!support_fsa                   := pp!support_fsa;
   TASK sp!duty_cycle                    := pp!duty_cycle;
   TASK sp!time_gap_ach_uplink           := pp!time_gap_ach_uplink;
   TASK sp!arq_delay_rx                  := pp!arq_delay_rx;
   TASK sp!arq_delay_tx                  := pp!arq_delay_tx;
   TASK sp!authentication_encryption_list := pp!authentication_encryption_list;
   DECISION dm_attributesPresent(pp);
   (True):    TASK sp!dm_attributes       := pp!dm_attributes;
   (False):
   ENDDECISION;    RETURN;
ENDOPERATOR;

OPERATOR build_link_capability_cnf;
   FPAR      pp      RLC_LINK_CAPABILITY_ACK_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      ACF_LINK_CAPABILITY_ACK_ARG;
   START;
   TASK sp!mac_id                 := mac_id;
   TASK sp!dlc_version_selected := pp!dlc_version_selected;
   TASK sp!rlc_version_selected := pp!rlc_version_selected;
   TASK sp!rss_value              := pp!rss_value;
   TASK sp!apt_address_length   := pp!apt_address_length;
   TASK sp!support64QAM           := pp!support64QAM;
   TASK sp!freq_band              := pp!freq_band;
   TASK sp!send_mt_id             := pp!send_mt_id;
   TASK sp!direct_mode_cap        := pp!direct_mode_cap;
   TASK sp!cyclic_prefix          := pp!cyclic_prefix;
   TASK sp!support_fca            := pp!support_fca;
   TASK sp!support_fsa            := pp!support_fsa;
   TASK sp!arq_delay_rx           := pp!arq_delay_rx;
   TASK sp!arq_delay_tx           := pp!arq_delay_tx;
   TASK sp!auth_encr_selected     := pp!auth_encr_selected;
   DECISION dm_attributesPresent(pp);
   (True):    TASK sp!dm_attributes := pp!dm_attributes;
   (False):
   ENDDECISION;    RETURN;
ENDOPERATOR;
ENDNEWTYPE ACF_related_service_primitives_operators_2;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 30(52)

```
NEWTYPE ACF_related_service_primitives_operators_3

OPERATORS
      build_key_exchangeMT_ind: RLC_KEY_EXCHANGE_MT_1_ARG,
                                RLC_KEY_EXCHANGE_MT_2_ARG, MAC_ID
                                −> ACF_KEY_EXCHANGE_MT_ARG ;
      build_key_exchangeAP_cnf: RLC_KEY_EXCHANGE_AP_1_ARG,
                                RLC_KEY_EXCHANGE_AP_2_ARG, MAC_ID
                                −> ACF_KEY_EXCHANGE_AP_ARG ;

OPERATOR build_key_exchangeMT_ind;
   FPAR    rlc_key1    RLC_KEY_EXCHANGE_MT_1_ARG,
           rlc_key2    RLC_KEY_EXCHANGE_MT_2_ARG,
           mac_id      MAC_ID;
   RETURNS acf_key     ACF_KEY_EXCHANGE_MT_ARG ;
   START;
   TASK
   acf_key!mac_id            := mac_id;
   TASK acf_key!mt_dh_public_value := rlc_key1!mt_dh_public_value_1//rlc_key2!mt_dh_public_value_2;
   RETURN;
ENDOPERATOR;

OPERATOR build_key_exchangeAP_cnf;
   FPAR    rlc_key1    RLC_KEY_EXCHANGE_AP_1_ARG,
           rlc_key2    RLC_KEY_EXCHANGE_AP_2_ARG,
           mac_id      MAC_ID;
   RETURNS acf_key     ACF_KEY_EXCHANGE_AP_ARG;
   START;
   TASK
   acf_key!mac_id            := mac_id;
   TASK acf_key!ap_dh_public_value := rlc_key1!ap_dh_public_value_1//rlc_key2!ap_dh_public_value_2;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE ACF_related_service_primitives_operators_3;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 31(52)

```
NEWTYPE authentication_operator_1

OPERATORS
   build_authentication_ind:   AUTH_SIG_LIST, MAC_ID
                          −> ACF_AUTHENTICATION_ARG;

OPERATOR build_authentication_ind;
   FPAR     auth_sigs  AUTH_SIG_LIST, mac_id   MAC_ID;
   RETURNS  sp         ACF_AUTHENTICATION_ARG;
   DCL auth_sig, auth_last  RLC_AUTHENTICATION_ARG;
   START;
   TASK sp!mac_id := mac_id;
   TASK auth_sig := First(auth_sigs);
   TASK auth_last := Last(auth_sigs);
   TASK sp!mt_auth_id_type := auth_sig!mt_auth_id_type;
   DECISION (sp!mt_auth_id_type);
     (ieee): TASK sp!mt_auth_id!ieee := auth_sig!mt_auth_id_content!ieee; RETURN;
     (ext_ieee): TASK sp!mt_auth_id!ext_ieee := auth_sig!mt_auth_id_content!ext_ieee; RETURN;
     (compressed): TASK sp!mt_auth_id!compressed := auth_sig!mt_auth_id_content!compressed; RETURN;
     (net_acc_id): TASK sp!mt_auth_id!net_acc_id := auth_sig!mt_auth_id_content!net_acc_id;
       DECISION auth_sig!more = last_auth_pdu;
         (True): RETURN;
         (False): TASK sp!mt_auth_id!net_acc_id := sp!mt_auth_id!net_acc_id //
                  auth_last!mt_auth_id_content!net_acc_id; RETURN;
       ENDDECISION;
     (dist_name): TASK sp!mt_auth_id!dist_name := auth_sig!mt_auth_id_content!dist_name;
       DECISION auth_sig!more = last_auth_pdu;
         (True): RETURN;
         (False): TASK sp!mt_auth_id!dist_name := sp!mt_auth_id!dist_name //
                  auth_last!mt_auth_id_content!dist_name; RETURN;
       ENDDECISION;
     (generic):   TASK sp!mt_auth_id!generic := auth_sig!mt_auth_id_content!generic;
       DECISION auth_sig!more = last_auth_pdu;
         (True): RETURN;
         (False): TASK sp!mt_auth_id!generic := sp!mt_auth_id!generic //
                  auth_last!mt_auth_id_content!generic; RETURN;
       ENDDECISION;
   ENDDECISION;
ENDOPERATOR;
ENDNEWTYPE;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 32(52)

```
NEWTYPE ACF_related_service_primitives_operators_4

OPERATORS
   build_authenticationMt_cnf: RLC_AUTHENTICATION_MT_ARG,   MAC_ID
                        −> ACF_AUTHENTICATION_MT_ARG;
   build_authenticationAp_ind: AUTH_INFO, RLC_AUTHENTICATION_AP_1_ARG, RLC_AUTHENTICATION_AP_2_ARG,
                        RLC_AUTHENTICATION_AP_3_ARG, MAC_ID −> ACF_AUTHENTICATION_AP_ARG;
   build_authentication_cnf:   AUTH_INFO, RLC_AUTHENTICATION_ACK_1_ARG, RLC_AUTHENTICATION_ACK_2_ARG,
                        RLC_AUTHENTICATION_ACK_3_ARG,  MAC_ID −> ACF_AUTHENTICATION_ACK_ARG;
OPERATOR build_authenticationMt_cnf;
   FPAR     pp     RLC_AUTHENTICATION_MT_ARG, mac_id  MAC_ID;
   RETURNS   sp     ACF_AUTHENTICATION_MT_ARG;
   START; TASK sp!mac_id         := mac_id;
   TASK sp!challenge_to_mt := pp!challenge_to_mt; RETURN;
ENDOPERATOR;
OPERATOR build_authenticationAp_ind;
   FPAR     ai   AUTH_INFO, pdu_1    RLC_AUTHENTICATION_AP_1_ARG,
          pdu_2    RLC_AUTHENTICATION_AP_2_ARG, pdu_3    RLC_AUTHENTICATION_AP_3_ARG, mac_id  MAC_ID;
   RETURNS   sp     ACF_AUTHENTICATION_AP_ARG;
   DCL hlps OCTET_STRING;
   START; TASK sp!mac_id         := mac_id;
   TASK sp!challenge_to_ap := pdu_1!challenge_to_ap;
   DECISION (ai = pre_shared_key_based);
       (True): TASK sp!mt_response!pre_shared := pdu_1!mt_response_1; RETURN;
       (False): ENDDECISION;
   DECISION (ai = signature_based_512);
       (True): TASK hlps := pdu_1!mt_response_1//pdu_2!mt_response_2;
              TASK sp!mt_response!rsa_signature512 := hlps; RETURN;
       (False): ENDDECISION;
   DECISION (ai = signature_based_768);
       (True): TASK hlps := pdu_1!mt_response_1//pdu_2!mt_response_2;
              TASK sp!mt_response!rsa_signature768 := hlps; RETURN;
       (False): TASK hlps := pdu_1!mt_response_1//pdu_2!mt_response_2//pdu_3!mt_response_2;
               TASK sp!mt_response!rsa_signature1024 := hlps; RETURN;
   ENDDECISION;
ENDOPERATOR;
OPERATOR build_authentication_cnf;
   FPAR     ai   AUTH_INFO, pdu1   RLC_AUTHENTICATION_ACK_1_ARG,
          pdu2   RLC_AUTHENTICATION_ACK_2_ARG, pdu3   RLC_AUTHENTICATION_ACK_3_ARG, mac_id     MAC_ID;
   RETURNS   sp        ACF_AUTHENTICATION_ACK_ARG;
   DCL hos OCTET_STRING;
   START; TASK sp!mac_id      := mac_id;
   DECISION (ai = pre_shared_key_based);
       (True): TASK sp!ap_response!pre_shared := pdu1!ap_response_2; RETURN;
       (False): ENDDECISION;
   DECISION (ai = signature_based_512);
       (True): TASK hos := pdu1!ap_response_2//pdu2!ap_response_2;
              TASK sp!ap_response!rsa_signature512 := hos; RETURN;
       (False): ENDDECISION;
   DECISION (ai = signature_based_768);
       (True): TASK hos := pdu1!ap_response_2//pdu2!ap_response_2;
              TASK sp!ap_response!rsa_signature768 := hos; RETURN;
       (False): TASK hos := pdu1!ap_response_2//pdu2!ap_response_2//pdu3!ap_response_2;
               TASK sp!ap_response!rsa_signature1024 := hos; RETURN;
   ENDDECISION;
ENDOPERATOR;
ENDNEWTYPE ACF_related_service_primitives_operators_4;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 33(52)

```
NEWTYPE ACF_related_service_primitives_operators_5

OPERATORS
   build_info_ind:          RLC_INFO_ARG,     MAC_ID −> ACF_INFO_ARG;
   build_info_cnf:          RLC_INFO_ACK_ARG, MAC_ID −> ACF_INFO_ACK_ARG;


OPERATOR build_info_ind;
   FPAR       rlc_info    RLC_INFO_ARG,
              mac_id      MAC_ID;
   RETURNS    acf_info    ACF_INFO_ARG;
   START;    TASK
   acf_info!mac_id          := mac_id;
   TASK acf_info!info_count := rlc_info!info_count;
   DECISION cl_dataPresent(rlc_info);
   (True):    TASK acf_info!cl_data := rlc_info!cl_data;
   (False):
   ENDDECISION;
   DECISION dlc_attributesPresent(rlc_info);
   (True):    TASK acf_info!dlc_attributes := rlc_info!dlc_attributes;
   (False):
   ENDDECISION;
   RETURN;
ENDOPERATOR;

OPERATOR build_info_cnf;
   FPAR       rlc_info    RLC_INFO_ACK_ARG,
              mac_id      MAC_ID;
   RETURNS    acf_info    ACF_INFO_ACK_ARG;
   START;    TASK
   acf_info!mac_id          := mac_id;
    DECISION cl_dataPresent(rlc_info);
   (True):    TASK acf_info!cl_data := rlc_info!cl_data;
   (False):
   ENDDECISION;
   DECISION dlc_attributesPresent(rlc_info);
   (True):    TASK acf_info!dlc_attributes := rlc_info!dlc_attributes;
   (False):
   ENDDECISION;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE ACF_related_service_primitives_operators_5;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 34(52)

```
NEWTYPE ACF_related_service_primitives_operators_6

OPERATORS
   build_disassociation_ind: RLC_DISASSOCIATION_ARG,     MAC_ID
                        −> ACF_DISASSOCIATION_ARG;
   build_disassociation_cnf: RLC_DISASSOCIATION_ACK_ARG, MAC_ID
                        −> ACF_DISASSOCIATION_ACK_ARG;
   build_dm_CK_distr_ind: RLC_DM_COMMON_KEY_DISTR_ARG, MAC_ID
                        −> ACF_DM_COMMON_KEY_DISTR_ARG;
   build_dm_CK_distr_cnf: RLC_DM_COMMON_KEY_DISTR_ACK_ARG, MAC_ID
                        −> ACF_DM_COMMON_KEY_DISTR_ACK_ARG;

OPERATOR build_disassociation_ind;
   FPAR      rlc_dis  RLC_DISASSOCIATION_ARG,
             mac_id   MAC_ID;
   RETURNS   acf_dis  ACF_DISASSOCIATION_ARG;
   START;
   TASK acf_dis!mac_id               := mac_id;
   TASK acf_dis!mac_id               := rlc_dis!mac_id;
   TASK acf_dis!disassociation_cause  := rlc_dis!disassociation_cause;
   RETURN;
ENDOPERATOR;

OPERATOR build_disassociation_cnf;
   FPAR      rlc_dis  RLC_DISASSOCIATION_ACK_ARG,
             mac_id   MAC_ID;
   RETURNS   acf_dis  ACF_DISASSOCIATION_ACK_ARG;
   START;
   TASK acf_dis!mac_id := mac_id;
   TASK acf_dis!mac_id := rlc_dis!mac_id;
   RETURN;
ENDOPERATOR;

OPERATOR build_dm_CK_distr_ind;
   FPAR  pdu     RLC_DM_COMMON_KEY_DISTR_ARG,
         mac_id  MAC_ID;
   RETURNS sp    ACF_DM_COMMON_KEY_DISTR_ARG;
   START;
   TASK sp!mac_id := mac_id;
   TASK sp!dm_encr_alg     := pdu!dm_encr_alg;
   TASK sp!key_id  := pdu!key_id;
   TASK sp!common_key  := pdu!common_key;
   RETURN;
ENDOPERATOR;

OPERATOR build_dm_CK_distr_cnf;
   FPAR  pdu     RLC_DM_COMMON_KEY_DISTR_ACK_ARG,
         mac_id  MAC_ID;
   RETURNS sp    ACF_DM_COMMON_KEY_DISTR_ACK_ARG;
   START;
   TASK sp!mac_id := mac_id;
   TASK sp!dm_encr_alg     := pdu!dm_encr_alg;
   TASK sp!md5_on_key  := pdu!md5_on_key;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE ACF_related_service_primitives_operators_6;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 35(52)

```
NEWTYPE ACF_broadcast_service_primitives_operators

OPERATORS
  build_broadcast_join_ind:  RLC_CL_BROADCAST_JOIN_ARG,      MAC_ID
                    −> ACF_CL_BROADCAST_JOIN_ARG;
  build_broadcast_join_cnf:  RLC_CL_BROADCAST_JOIN_ACK_ARG, MAC_ID
                    −> ACF_CL_BROADCAST_JOIN_ACK_ARG;
  build_broadcast_leave_ind: RLC_CL_BROADCAST_LEAVE_ARG,     MAC_ID
                    −> ACF_CL_BROADCAST_LEAVE_ARG;
  build_broadcast_leave_cnf: RLC_CL_BROADCAST_LEAVE_ACK_ARG, MAC_ID
                    −> ACF_CL_BROADCAST_LEAVE_ACK_ARG
OPERATOR build_broadcast_join_ind;
   FPAR      pdu      RLC_CL_BROADCAST_JOIN_ARG,
             mac_id    MAC_ID;
   RETURNS    sp       ACF_CL_BROADCAST_JOIN_ARG;
   START;
   TASK sp!mac_id                  := mac_id;
   TASK sp!cl_data                 := pdu!cl_data;
   TASK sp!encryption_algorithm_proposal  := pdu!encryption_algorithm_proposal;
   RETURN;
ENDOPERATOR;
OPERATOR build_broadcast_join_cnf;
   FPAR      pdu      RLC_CL_BROADCAST_JOIN_ACK_ARG,
             mac_id    MAC_ID;
   RETURNS    sp       ACF_CL_BROADCAST_JOIN_ACK_ARG;
   START;
   TASK sp!mac_id                  := mac_id;
   TASK sp!window_size             := pdu!window_size;
   TASK sp!mac_id_and_cl_data_list  := pdu!mac_id_and_cl_data_list;
   TASK sp!encryption_algorithm_selected := pdu!encryption_algorithm_selected;
   TASK sp!key_id                  := pdu!key_id;
   TASK sp!common_key              := pdu!common_key;
   TASK sp!error_corr_mode         := pdu!error_corr_mode;
   RETURN;
ENDOPERATOR;
OPERATOR build_broadcast_leave_ind;
   FPAR      pdu      RLC_CL_BROADCAST_LEAVE_ARG,
             mac_id    MAC_ID;
   RETURNS    sp       ACF_CL_BROADCAST_LEAVE_ARG;
   START;
   TASK sp!mac_id  := mac_id;
   TASK sp!cl_data := pdu!cl_data;
   RETURN;
ENDOPERATOR;
OPERATOR build_broadcast_leave_cnf;
   FPAR      pdu      RLC_CL_BROADCAST_LEAVE_ACK_ARG,
             mac_id    MAC_ID;
   RETURNS    sp       ACF_CL_BROADCAST_LEAVE_ACK_ARG;
   START;
   TASK sp!mac_id  := mac_id;
   TASK sp!cl_data := pdu!cl_data;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE ACF_broadcast_service_primitives_operators;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 36(52)

```
NEWTYPE ACF_multicast_service_primitives_operators

OPERATORS
   build_group_join_ind:  RLC_GROUP_JOIN_ARG,      MAC_ID
                    −> ACF_GROUP_JOIN_ARG;
   build_group_join_cnf:  RLC_GROUP_JOIN_ACK_ARG, MAC_ID
                    −> ACF_GROUP_JOIN_ACK_ARG;
   build_group_join_nack_cnf:  RLC_GROUP_JOIN_NACK_ARG, MAC_ID
                    −> ACF_GROUP_JOIN_NACK_ARG;
   build_group_leave_ind: RLC_GROUP_LEAVE_ARG,     MAC_ID
                    −> ACF_GROUP_LEAVE_ARG;
   build_group_leave_cnf: RLC_GROUP_LEAVE_ACK_ARG, MAC_ID
                    −> ACF_GROUP_LEAVE_ACK_ARG
OPERATOR build_group_join_ind;
   FPAR      pdu      RLC_GROUP_JOIN_ARG,
             mac_id    MAC_ID;
   RETURNS    sp       ACF_GROUP_JOIN_ARG;
   START;
   TASK sp!mac_id                  := mac_id;
   TASK sp!cl_data                 := pdu!cl_data;
   TASK sp!encryption_algorithm_proposal  := pdu!encryption_algorithm_proposal;
   RETURN;
ENDOPERATOR;
OPERATOR build_group_join_cnf;
   FPAR      pdu      RLC_GROUP_JOIN_ACK_ARG,
             mac_id    MAC_ID;
   RETURNS    sp       ACF_GROUP_JOIN_ACK_ARG;
   START;
   TASK sp!mac_id                  := mac_id;
   TASK sp!more_joins              := pdu!more_joins;
   TASK sp!mac_id_and_cl_data_list  := pdu!mac_id_and_cl_data_list;
   TASK sp!encryption_algorithm_selected := pdu!encryption_algorithm_selected;
   TASK sp!key_id                  := pdu!key_id;
   TASK sp!common_key              := pdu!common_key;
   RETURN;
ENDOPERATOR;
OPERATOR build_group_join_nack_cnf;
   FPAR      pdu      RLC_GROUP_JOIN_NACK_ARG,
             mac_id    MAC_ID;
   RETURNS    sp       ACF_GROUP_JOIN_NACK_ARG;
   START;
   TASK sp!mac_id                  := mac_id;
   TASK sp!more_joins              := pdu!more_joins;
   TASK sp!cl_data := pdu!cl_data;
   RETURN;
ENDOPERATOR;

OPERATOR build_group_leave_ind;
   FPAR      pdu      RLC_GROUP_LEAVE_ARG,
             mac_id    MAC_ID;
   RETURNS    sp       ACF_GROUP_LEAVE_ARG;
   START;
   TASK sp!mac_id  := mac_id;
   TASK sp!cl_data := pdu!cl_data;
   RETURN;
ENDOPERATOR;
OPERATOR build_group_leave_cnf;
   FPAR      pdu      RLC_GROUP_LEAVE_ACK_ARG,
             mac_id    MAC_ID;
   RETURNS    sp       ACF_GROUP_LEAVE_ACK_ARG;
   START;
   TASK sp!mac_id  := mac_id;
   TASK sp!cl_data := pdu!cl_data;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE ACF_multicast_service_primitives_operators;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 37(52)

```
NEWTYPE DUC_related_service_primitives_operators_1

OPERATORS
   build_setup_ind:      RLC_SETUP_ARG,      MAC_ID −> DUC_SETUP_ARG;
   build_connect_ind:    RLC_CONNECT_ARG,    MAC_ID −> DUC_CONNECT_ARG;
   build_connect_cnf:    RLC_CONNECT_ACK_ARG, MAC_ID −> DUC_CONNECT_ACK_ARG;
   build_release_ind:    RLC_RELEASE_ARG,    MAC_ID −> DUC_RELEASE_ARG;
   build_release_cnf:    RLC_RELEASE_ACK_ARG, MAC_ID −> DUC_RELEASE_ACK_ARG;


OPERATOR build_setup_ind;
   FPAR      rlc_setup    RLC_SETUP_ARG,
             mac_id       MAC_ID;
   RETURNS   duc_setup    DUC_SETUP_ARG;
   START; TASK
   duc_setup!mac_id             := mac_id;
   TASK duc_setup!cl_id              := rlc_setup!cl_id;
   TASK duc_setup!duc_ext_ind        := rlc_setup!duc_ext_ind;
   TASK duc_setup!cl_conn_attr_length := rlc_setup!cl_conn_attr_length;
   TASK duc_setup!duc_descr_list     := rlc_setup!duc_descr_list;
      RETURN;
ENDOPERATOR;

OPERATOR build_connect_ind;
   FPAR      rlc_connect   RLC_CONNECT_ARG,
             mac_id        MAC_ID;
   RETURNS   duc_connect   DUC_CONNECT_ARG;
   START;   TASK
   duc_connect!mac_id             := mac_id;
   TASK duc_connect!cl_id              := rlc_connect!cl_id;
   TASK duc_connect!cl_conn_attr_length := rlc_connect!cl_conn_attr_length;
   TASK duc_connect!duc_descr_list     := rlc_connect!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR build_connect_cnf;
   FPAR      rlc_connect_ack    RLC_CONNECT_ACK_ARG,
             mac_id             MAC_ID;
   RETURNS   duc_connect_ack    DUC_CONNECT_ACK_ARG;
   START; TASK
   duc_connect_ack!mac_id             := mac_id;
   TASK duc_connect_ack!cl_id              := rlc_connect_ack!cl_id;
   TASK duc_connect_ack!cl_conn_attr_length := rlc_connect_ack!cl_conn_attr_length;
   TASK duc_connect_ack!dlcc_descr_list     := rlc_connect_ack!dlcc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR build_release_ind;
   FPAR      rlc_release   RLC_RELEASE_ARG,
             mac_id        MAC_ID;
   RETURNS   duc_release   DUC_RELEASE_ARG;
   START;   TASK
   duc_release!mac_id       := mac_id;
   TASK duc_release!dlcc_id_list := rlc_release!dlcc_id_list;
   TASK duc_release!release_cause := rlc_release!release_cause;
   RETURN;
ENDOPERATOR;

OPERATOR build_release_cnf;
   FPAR      rlc_release_ack   RLC_RELEASE_ACK_ARG,
             mac_id            MAC_ID;
   RETURNS   duc_release_ack   DUC_RELEASE_ACK_ARG;
   START;   TASK
   duc_release_ack!mac_id       := mac_id;
   TASK duc_release_ack!dlcc_id_list := rlc_release_ack!dlcc_id_list;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE DUC_related_service_primitives_operators_1;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 38(52)

```
NEWTYPE DUC_related_service_primitive_operators_2

OPERATORS
   build_modifyreq_ind: RLC_MODIFY_REQ_ARG, MAC_ID -> DUC_MODIFY_REQ_ARG;
   build_modify_ind:    RLC_MODIFY_ARG,     MAC_ID -> DUC_MODIFY_ARG;
   build_modify_cnf: RLC_MODIFY_ACK_ARG, MAC_ID -> DUC_MODIFY_ACK_ARG;
   build_reset_ind:     RLC_RESET_ARG,      MAC_ID -> DUC_RESET_ARG;
   build_reset_cnf:  RLC_RESET_ACK_ARG,  MAC_ID -> DUC_RESET_ACK_ARG;

OPERATOR build_modifyreq_ind;
   FPAR      pp      RLC_MODIFY_REQ_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_MODIFY_REQ_ARG;
   START;
   TASK sp!mac_id              := mac_id;
   TASK sp!duc_ext_ind         := pp!duc_ext_ind;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!duc_descr_list      := pp!duc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR build_modify_ind;
   FPAR      pp      RLC_MODIFY_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_MODIFY_ARG;
   START;
   TASK sp!mac_id              := mac_id;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!duc_descr_list      := pp!duc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR build_modify_cnf;
   FPAR      pp      RLC_MODIFY_ACK_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_MODIFY_ACK_ARG;
   START;
   TASK sp!mac_id              := mac_id;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!dlcc_descr_list     := pp!dlcc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR build_reset_ind;
   FPAR      pp      RLC_RESET_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_RESET_ARG;
   START;
   TASK sp!mac_id      := mac_id;
   TASK sp!dlcc_id_list := pp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

OPERATOR build_reset_cnf;
   FPAR       pp      RLC_RESET_ACK_ARG,
              mac_id  MAC_ID;
   RETURNS    sp      DUC_RESET_ACK_ARG;
   START;
   TASK sp!mac_id      := mac_id;
   TASK sp!dlcc_id_list := pp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE DUC_related_service_primitive_operators_2;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 39(52)

```
NEWTYPE build_DM_service_indication_operators_1

OPERATORS
   build_dm_setup_ind:        RLC_DM_SETUP_ARG,              MAC_ID
                        −> DUC_DM_SETUP_ARG ;
   build_dm_connect_ind:      RLC_DM_CONNECT_ARG,            MAC_ID
                        −> DUC_DM_CONNECT_ARG ;
   build_dm_connect_cnf:   RLC_DM_CONNECT_ACK_ARG,         MAC_ID
                        −> DUC_DM_CONNECT_ACK_ARG;
   build_dm_connect_cmpl_ind: RLC_DM_CONNECT_COMPLETE_ARG,     MAC_ID
                        −> DUC_DM_CONNECT_COMPLETE_ARG;
   build_dm_connect_cmpl_cnf: RLC_DM_CONNECT_COMPLETE_ACK_ARG, MAC_ID
                        −> DUC_DM_CONNECT_COMPLETE_ACK_ARG;

OPERATOR build_dm_setup_ind;
   FPAR      pp     RLC_DM_SETUP_ARG,
            mac_id  MAC_ID;
   RETURNS   sp     DUC_DM_SETUP_ARG;
   START;
   TASK sp!mac_id             := mac_id;
   TASK sp!peer_mac_id        := pp!peer_mac_id;
   TASK sp!cl_id              := pp!cl_id;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!duc_descr_list     := pp!duc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR build_dm_connect_ind;
   FPAR      pp     RLC_DM_CONNECT_ARG,
            mac_id  MAC_ID;
   RETURNS   sp     DUC_DM_CONNECT_ARG;
   START;
   TASK sp!mac_id             := mac_id;
   TASK sp!peer_mac_id        := pp!peer_mac_id;
   TASK sp!cl_id              := pp!cl_id;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!duc_descr_list     := pp!duc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR build_dm_connect_cnf;
   FPAR      pp     RLC_DM_CONNECT_ACK_ARG,
            mac_id  MAC_ID;
   RETURNS   sp     DUC_DM_CONNECT_ACK_ARG;
   START;
   TASK sp!mac_id             := mac_id;
   TASK sp!peer_mac_id        := pp!peer_mac_id;
   TASK sp!cl_id              := pp!cl_id;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!dlcc_descr_list    := pp!dlcc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR build_dm_connect_cmpl_ind;
   FPAR      pp     RLC_DM_CONNECT_COMPLETE_ARG,
            mac_id  MAC_ID;
   RETURNS   sp     DUC_DM_CONNECT_COMPLETE_ARG;
   START;
   TASK sp!mac_id       := mac_id;
   TASK sp!peer_mac_id  := pp!peer_mac_id;
   TASK sp!dlcc_id_list := pp!dlcc_id_list;
   RETURN;
ENDOPERATOR;
OPERATOR build_dm_connect_cmpl_cnf;
   FPAR      pp     RLC_DM_CONNECT_COMPLETE_ACK_ARG,
            mac_id  MAC_ID;
   RETURNS   sp     DUC_DM_CONNECT_COMPLETE_ACK_ARG;
   START;
   TASK sp!mac_id      := mac_id;
   TASK sp!peer_mac_id := pp!peer_mac_id;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE build_DM_service_indication_operators_1;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 40(52)

```
NEWTYPE build_DM_service_indication_operators_2

OPERATORS
   build_dm_modify_req_ind:  RLC_DM_MODIFY_REQ_ARG,          MAC_ID
                        −> DUC_DM_MODIFY_REQ_ARG;
   build_dm_modify_ind:      RLC_DM_MODIFY_ARG,              MAC_ID
                        −> DUC_DM_MODIFY_ARG;
   build_dm_modify_ack_cnf:  RLC_DM_MODIFY_ACK_ARG,          MAC_ID
                        −> DUC_DM_MODIFY_ACK_ARG;
   build_dm_modify_cmpl_ind: RLC_DM_MODIFY_COMPLETE_ARG,     MAC_ID
                        −> DUC_DM_MODIFY_COMPLETE_ARG;
   build_dm_modify_cmpl_cnf: RLC_DM_MODIFY_COMPLETE_ACK_ARG, MAC_ID
                        −> DUC_DM_MODIFY_COMPLETE_ACK_ARG;

OPERATOR build_dm_modify_req_ind;
   FPAR      pp      RLC_DM_MODIFY_REQ_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_DM_MODIFY_REQ_ARG;
   START;
   TASK sp!mac_id              := mac_id;
   TASK sp!peer_mac_id         := pp!peer_mac_id;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!duc_descr_list      := pp!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR build_dm_modify_ind;
   FPAR      pp      RLC_DM_MODIFY_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_DM_MODIFY_ARG;
   START;
   TASK
   sp!mac_id              := mac_id;
   TASK sp!peer_mac_id         := pp!peer_mac_id;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!duc_descr_list      := pp!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR build_dm_modify_ack_cnf;
   FPAR      pp      RLC_DM_MODIFY_ACK_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_DM_MODIFY_ACK_ARG;
   START;
   TASK sp!mac_id              := mac_id;
   TASK sp!peer_mac_id         := pp!peer_mac_id;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!dlcc_descr_list     := pp!dlcc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR build_dm_modify_cmpl_ind;
   FPAR      pp      RLC_DM_MODIFY_COMPLETE_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_DM_MODIFY_COMPLETE_ARG;
   START;
   TASK sp!mac_id            := mac_id;
   TASK sp!peer_mac_id       := pp!peer_mac_id;
   TASK sp!dlcc_id_list      := pp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

OPERATOR build_dm_modify_cmpl_cnf;
   FPAR      pp      RLC_DM_MODIFY_COMPLETE_ACK_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_DM_MODIFY_COMPLETE_ACK_ARG;
   START;
   TASK sp!mac_id            := mac_id;
   TASK sp!peer_mac_id       := pp!peer_mac_id;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 41(52)

```
NEWTYPE build_DM_service_indication_operators_3
   OPERATORS
   build_dm_release_ind: RLC_DM_RELEASE_ARG,     MAC_ID −> DUC_DM_RELEASE_ARG ;
   build_dm_release_cnf: RLC_DM_RELEASE_ACK_ARG, MAC_ID −> DUC_DM_RELEASE_ACK_ARG ;
   build_dm_reset_ind:   RLC_DM_RESET_ARG,       MAC_ID −> DUC_DM_RESET_ARG ;
   build_dm_reset_cnf:   RLC_DM_RESET_ACK_ARG,   MAC_ID −> DUC_DM_RESET_ACK_ARG ;

OPERATOR build_dm_release_ind;
   FPAR      pp      RLC_DM_RELEASE_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_DM_RELEASE_ARG;
   START;
   TASK sp!mac_id        := mac_id;
   TASK sp!peer_mac_id   := pp!peer_mac_id;
   TASK sp!dlcc_id_list  := pp!dlcc_id_list;
   TASK sp!release_cause := pp!release_cause;
   RETURN;
ENDOPERATOR;

OPERATOR build_dm_release_cnf;
   FPAR      pp      RLC_DM_RELEASE_ACK_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_DM_RELEASE_ACK_ARG;
   START;
   TASK sp!mac_id       := mac_id;
   TASK sp!peer_mac_id  := pp!peer_mac_id;
   TASK sp!dlcc_id_list := pp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

OPERATOR build_dm_reset_ind;
   FPAR      pp      RLC_DM_RESET_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_DM_RESET_ARG;
   START;
   TASK sp!mac_id       := mac_id;
   TASK sp!peer_mac_id  := pp!peer_mac_id;
   TASK sp!dlcc_id_list := pp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

OPERATOR build_dm_reset_cnf;
   FPAR      pp      RLC_DM_RESET_ACK_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      DUC_DM_RESET_ACK_ARG;
   START;
   TASK sp!mac_id       := mac_id;
   TASK sp!peer_mac_id  := pp!peer_mac_id;
   TASK sp!dlcc_id_list := pp!dlcc_id_list;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 42(52)

```
NEWTYPE DUC_DM_related_protocol_primitives_operators_5

OPERATORS
   build_relay_setup_ind:   RLC_RELAY_SETUP_ARG,       MAC_ID
                        −> DUC_RELAY_SETUP_ARG;
   build_relay_setup_cnf:   RLC_RELAY_SETUP_ACK_ARG,   MAC_ID
                        −> DUC_RELAY_SETUP_ACK_ARG;
   build_relay_modify_ind:  RLC_RELAY_MODIFY_ARG,      MAC_ID
                        −> DUC_RELAY_MODIFY_ARG;
   build_relay_modify_cnf:  RLC_RELAY_MODIFY_ACK_ARG,  MAC_ID
                        −> DUC_RELAY_MODIFY_ACK_ARG;
   build_relay_release_ind: RLC_RELAY_RELEASE_ARG,     MAC_ID
                        −> DUC_RELAY_RELEASE_ARG;
   build_relay_release_cnf: RLC_RELAY_RELEASE_ACK_ARG, MAC_ID
                        −> DUC_RELAY_RELEASE_ACK_ARG;
OPERATOR build_relay_setup_ind;
   FPAR       pp      RLC_RELAY_SETUP_ARG, mac_id  MAC_ID;
   RETURNS    sp      DUC_RELAY_SETUP_ARG;
   START; TASK sp!mac_id             := mac_id;
   TASK sp!peer_mac_id         := pp!peer_mac_id;
   TASK sp!cl_id               := pp!cl_id;
   TASK sp!duc_ext_ind         := pp!duc_ext_ind;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!duc_descr_list      := pp!duc_descr_list;
   TASK sp!cl_common_attr      := pp!cl_common_attr;
   RETURN;
ENDOPERATOR;
OPERATOR build_relay_setup_cnf;
   FPAR       pp      RLC_RELAY_SETUP_ACK_ARG, mac_id  MAC_ID;
   RETURNS    sp      DUC_RELAY_SETUP_ACK_ARG;
   START; TASK sp!mac_id             := mac_id;
   TASK sp!peer_mac_id         := pp!peer_mac_id;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!dlcc_descr_list     := pp!dlcc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR build_relay_modify_ind;
   FPAR       pp      RLC_RELAY_MODIFY_ARG, mac_id  MAC_ID;
   RETURNS    sp      DUC_RELAY_MODIFY_ARG;
   START; TASK sp!mac_id             := mac_id;
   TASK sp!peer_mac_id         := pp!peer_mac_id;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!duc_descr_list      := pp!duc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR build_relay_modify_cnf;
   FPAR       pp      RLC_RELAY_MODIFY_ACK_ARG, mac_id  MAC_ID;
   RETURNS    sp      DUC_RELAY_MODIFY_ACK_ARG;
   START; TASK sp!mac_id             := mac_id;
   TASK sp!peer_mac_id         := pp!peer_mac_id;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!dlcc_descr_list     := pp!dlcc_descr_list;
   RETURN;
ENDOPERATOR;
OPERATOR build_relay_release_ind;
   FPAR       pp      RLC_RELAY_RELEASE_ARG, mac_id  MAC_ID;
   RETURNS    sp      DUC_RELAY_RELEASE_ARG;
   START; TASK sp!mac_id         := mac_id;
   TASK sp!peer_mac_id    := pp!peer_mac_id;
   TASK sp!dlcc_id_list   := pp!dlcc_id_list;
   TASK sp!release_cause  := pp!release_cause;
   RETURN;
ENDOPERATOR;
OPERATOR build_relay_release_cnf;
   FPAR       pp      RLC_RELAY_RELEASE_ACK_ARG, mac_id  MAC_ID;
   RETURNS    sp      DUC_RELAY_RELEASE_ACK_ARG;
   START; TASK sp!mac_id       := mac_id;
   TASK sp!peer_mac_id  := pp!peer_mac_id;
   TASK sp!dlcc_id_list := pp!dlcc_id_list;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE DUC_DM_related_protocol_primitives_operators_5;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 43(52)

```
NEWTYPE DFS_related_service_primitives_operators_1

OPERATORS
   build_dfs_complete_request_ind:
         RLC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG,    MAC_ID
         −> RRC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG;
   build_dfs_short_request_ind:
         RLC_DFS_MEASUREMENT_SHORT_REQUEST_ARG,       MAC_ID
         −> RRC_DFS_MEASUREMENT_SHORT_REQUEST_ARG;
   build_dfs_percentiles_request_ind:
         RLC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG, MAC_ID
         −> RRC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG;

OPERATOR build_dfs_complete_request_ind;
   FPAR       rlc_dfs    RLC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG,
              mac_id    MAC_ID;
   RETURNS    rrc_dfs    RRC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG;
   START; TASK
   rrc_dfs!mac_id:= mac_id;
   TASK rrc_dfs!frequency_index := rlc_dfs!frequency_index;
   TASK rrc_dfs!use_omni_antenna := rlc_dfs!use_omni_antenna;
   TASK rrc_dfs!start_of_measurement := rlc_dfs!start_of_measurement;
   TASK rrc_dfs!measurement_window := rlc_dfs!measurement_window;
   TASK rrc_dfs!rss_index_list := rlc_dfs!rss_index_list;
   TASK rrc_dfs!maximum_age_of_bch_measurement := rlc_dfs!maximum_age_of_bch_measurement;
   RETURN;
ENDOPERATOR;
OPERATOR build_dfs_short_request_ind;
   FPAR       rlc_dfs    RLC_DFS_MEASUREMENT_SHORT_REQUEST_ARG,
              mac_id    MAC_ID;
   RETURNS    rrc_dfs    RRC_DFS_MEASUREMENT_SHORT_REQUEST_ARG;
   START;TASK
   rrc_dfs!mac_id:= mac_id;
   TASK rrc_dfs!frequency_index := rlc_dfs!frequency_index;
   TASK rrc_dfs!use_omni_antenna := rlc_dfs!use_omni_antenna;
   TASK rrc_dfs!start_of_measurement := rlc_dfs!start_of_measurement;
   TASK rrc_dfs!measurement_window := rlc_dfs!measurement_window;
   TASK rrc_dfs!maximum_age_of_bch_measurement := rlc_dfs!maximum_age_of_bch_measurement;
   RETURN;
ENDOPERATOR;
OPERATOR build_dfs_percentiles_request_ind;
   FPAR       rlc_dfs    RLC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG,
              mac_id    MAC_ID;
   RETURNS    rrc_dfs    RRC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG;
   START; TASK rrc_dfs!mac_id := mac_id;
   TASK rrc_dfs!frequency_index := rlc_dfs!frequency_index;
   TASK rrc_dfs!use_omni_antenna := rlc_dfs!use_omni_antenna;
   TASK rrc_dfs!start_of_measurement := rlc_dfs!start_of_measurement;
   TASK rrc_dfs!measurement_window := rlc_dfs!measurement_window;
   TASK rrc_dfs!rss_index_list := rlc_dfs!rss_index_list;
   TASK rrc_dfs!maximum_age_of_bch_measurement := rlc_dfs!maximum_age_of_bch_measurement;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE DFS_related_service_primitives_operators_1;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 44(52)

```
NEWTYPE DFS_related_service_primitives_operators_2

OPERATORS
   build_dfs_mt_init_report_request_ind:
      RLC_DFS_MT_INIT_REPORT_REQUEST_ARG, MAC_ID −> RRC_DFS_MT_INIT_REPORT_REQUEST_ARG;
   build_dfs_mt_init_report_request_cnf:
      RLC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG, MAC_ID −> RRC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG;
   build_dfs_report_complete_cnf:
      RLC_DFS_REPORT_COMPLETE_ARG,        MAC_ID −> RRC_DFS_REPORT_COMPLETE_ARG;
   build_dfs_report_short_cnf:
      RLC_DFS_REPORT_SHORT_ARG,           MAC_ID −> RRC_DFS_REPORT_SHORT_ARG;
   build_dfs_report_percentiles_cnf:
      RLC_DFS_REPORT_PERCENTILES_ARG,     MAC_ID −> RRC_DFS_REPORT_PERCENTILES_ARG;
OPERATOR build_dfs_mt_init_report_request_ind;
   FPAR      pp      RLC_DFS_MT_INIT_REPORT_REQUEST_ARG, mac_id  MAC_ID;
   RETURNS   sp      RRC_DFS_MT_INIT_REPORT_REQUEST_ARG;
   START; TASK sp!mac_id                  := pp!mac_id;
   TASK sp!frequency_index          := pp!frequency_index;
   TASK sp!measurement_type         := pp!measurement_type;
   TASK sp!adjacent_ch_interference := pp!adjacent_ch_interference;RETURN;
ENDOPERATOR;
OPERATOR build_dfs_mt_init_report_request_cnf;
   FPAR      pp      RLC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG, mac_id  MAC_ID;
   RETURNS   sp      RRC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG;
   START; TASK sp!mac_id                  := mac_id;
   TASK sp!reporting_initialized := pp!reporting_initialized; RETURN;
ENDOPERATOR;
OPERATOR build_dfs_report_complete_cnf;
   FPAR      pp      RLC_DFS_REPORT_COMPLETE_ARG, mac_id  MAC_ID;
   RETURNS   sp      RRC_DFS_REPORT_COMPLETE_ARG;
   START; TASK sp!mac_id                  := mac_id;
   TASK sp!frequency_index       := pp!frequency_index;
   TASK sp!omni_antenna_used     := pp!omni_antenna_used;
   TASK sp!age_of_measurement    := pp!age_of_measurement;
   TASK sp!last_own_bch_rx_level := pp!last_own_bch_rx_level;
   TASK sp!bch_found             := pp!bch_found;
   TASK sp!traffic_load          := pp!traffic_load;
   TASK sp!ap_id                 := pp!ap_id;
   TASK sp!tx_level              := pp!tx_level;
   TASK sp!net_id                := pp!net_id;
   TASK sp!bch_rx_level          := pp!bch_rx_level;
   TASK sp!number_of_samples := pp!number_of_samples;
   TASK sp!rss_index_list        := pp!rss_index_list;
   TASK sp!rss_statistics_list   := pp!rss_statistics_list; RETURN;
ENDOPERATOR;
OPERATOR build_dfs_report_short_cnf;
   FPAR      pp      RLC_DFS_REPORT_SHORT_ARG, mac_id  MAC_ID;
   RETURNS   sp      RRC_DFS_REPORT_SHORT_ARG;
   START; TASK sp!mac_id                  := mac_id;
   TASK sp!frequency_index       := pp!frequency_index;
   TASK sp!omni_antenna_used     := pp!omni_antenna_used;
   TASK sp!age_of_measurement    := pp!age_of_measurement;
   TASK sp!last_own_bch_rx_level := pp!last_own_bch_rx_level;
   TASK sp!bch_found             := pp!bch_found;
   TASK sp!traffic_load          := pp!traffic_load;
   TASK sp!ap_id                 := pp!ap_id;
   TASK sp!tx_level              := pp!tx_level;
   TASK sp!net_id                := pp!net_id;
   TASK sp!bch_rx_level          := pp!bch_rx_level; RETURN;
ENDOPERATOR;
OPERATOR build_dfs_report_percentiles_cnf;
   FPAR      pp      RLC_DFS_REPORT_PERCENTILES_ARG, mac_id  MAC_ID;
   RETURNS   sp      RRC_DFS_REPORT_PERCENTILES_ARG;
   START; TASK sp!mac_id                  := mac_id;
   TASK sp!frequency_index       := pp!frequency_index;
   TASK sp!omni_antenna_used     := pp!omni_antenna_used;
   TASK sp!age_of_measurement    := pp!age_of_measurement;
   TASK sp!last_own_bch_rx_level := pp!last_own_bch_rx_level;
   TASK sp!number_of_samples := pp!number_of_samples;
   TASK sp!rss_index_list        := pp!rss_index_list;
   TASK sp!rss_statistics_list   := pp!rss_statistics_list; RETURN;
ENDOPERATOR;
ENDNEWTYPE DFS_related_service_primitives_operators_2;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 45(52)

```
NEWTYPE DFS_related_service_primitives_operators_3

OPERATORS
   build_ap_absence_ind:   RLC_AP_ABSENCE_ARG,       MAC_ID
                           −> RRC_AP_ABSENCE_ARG;
   build_change_frequency_ind: RLC_CHANGE_FREQUENCY_ARG, MAC_ID
                           −> RRC_CHANGE_FREQUENCY_ARG;

OPERATOR build_ap_absence_ind;
   FPAR       pp      RLC_AP_ABSENCE_ARG,
            mac_id  MAC_ID;
   RETURNS    sp      RRC_AP_ABSENCE_ARG;
   START;
   TASK sp!mac_id           := mac_id;
   TASK sp!last_mac_frame  := pp!last_mac_frame;
   TASK sp!first_mac_frame := pp!first_mac_frame;
   RETURN;
ENDOPERATOR;
OPERATOR build_change_frequency_ind;
   FPAR       pp      RLC_CHANGE_FREQUENCY_ARG,
            mac_id  MAC_ID;
   RETURNS    sp      RRC_CHANGE_FREQUENCY_ARG;
   START;
   TASK sp!mac_id          := mac_id;
   TASK sp!last_mac_frame  := pp!last_mac_frame;
   TASK sp!first_mac_frame := pp!first_mac_frame;
   TASK sp!frequency_index := pp!frequency_index;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE DFS_related_service_primitives_operators_3;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 46(52)

```
NEWTYPE RRC_handover_related_service_primitives_operators_1

OPERATORS
   build_sectorHO_ind:        RLC_SECTOR_HANDOVER_REQUEST_ARG
                        −> RRC_SECTOR_HANDOVER_REQUEST_ARG;
   build_sectorHO_cnf:        RLC_SECTOR_HANDOVER_ACK_ARG, MAC_ID
                        −> RRC_SECTOR_HANDOVER_ACK_ARG;
   build_forceHO_ind:         RLC_FORCE_HANDOVER_ARG,      MAC_ID
                        −> RRC_FORCE_HANDOVER_ARG;
   build_forceHO_cnf:         RLC_FORCE_HANDOVER_ACK_ARG
                        −> RRC_FORCE_HANDOVER_ACK_ARG;
   build_handoverNotify_ind:  RLC_HANDOVER_NOTIFY_ARG
                        −> RRC_HANDOVER_NOTIFY_ARG;
   build_handoverRequest_ind: RLC_HANDOVER_REQUEST_ARG
                        −> RRC_HANDOVER_REQUEST_ARG;

OPERATOR build_sectorHO_ind;
   FPAR       pp  RLC_SECTOR_HANDOVER_REQUEST_ARG;
   RETURNS    sp  RRC_SECTOR_HANDOVER_REQUEST_ARG;
   START;
   TASK sp!mac_id        := pp!mac_id;
   TASK sp!sector_id_new := pp!sector_id_new;
  RETURN;
ENDOPERATOR;
OPERATOR build_sectorHO_cnf;
   FPAR       pp     RLC_SECTOR_HANDOVER_ACK_ARG,
            mac_id  MAC_ID;
   RETURNS    sp     RRC_SECTOR_HANDOVER_ACK_ARG;
   START; TASK sp!mac_id := mac_id; RETURN;
ENDOPERATOR;
OPERATOR build_forceHO_ind;
   FPAR       pp     RLC_FORCE_HANDOVER_ARG,
            mac_id  MAC_ID;
   RETURNS    sp     RRC_FORCE_HANDOVER_ARG;
   START;
   TASK sp!mac_id              := mac_id;
   TASK sp!return_flag         := pp!return_flag;
   TASK sp!force_handover_cause := pp!force_handover_cause;
   TASK sp!ap_id               := pp!ap_id;
   TASK sp!net_id              := pp!net_id;
   TASK sp!frequency_index     := pp!frequency_index;
   RETURN;
ENDOPERATOR;
OPERATOR build_forceHO_cnf;
   FPAR       pp     RLC_FORCE_HANDOVER_ACK_ARG;
   RETURNS    sp     RRC_FORCE_HANDOVER_ACK_ARG;
   START;
   TASK sp!mac_id              := pp!mac_id;
   RETURN;
ENDOPERATOR;
OPERATOR build_handoverNotify_ind;
   FPAR       pp  RLC_HANDOVER_NOTIFY_ARG;
   RETURNS    sp  RRC_HANDOVER_NOTIFY_ARG;
   START;
   TASK sp!mac_id        := pp!mac_id;
   TASK sp!handover_cause := pp!handover_cause;
   TASK sp!ap_id         := pp!ap_id;
   TASK sp!net_id        := pp!net_id;
   RETURN;
ENDOPERATOR;
OPERATOR build_handoverRequest_ind;
   FPAR       pp     RLC_HANDOVER_REQUEST_ARG;
   RETURNS    sp     RRC_HANDOVER_REQUEST_ARG;
   START;
   TASK sp!mac_id         := pp!mac_id0;
   TASK sp!mac_id_old     := pp!mac_id_old;
   TASK sp!ap_id_old      := pp!ap_id_old;
   TASK sp!net_id_old     := pp!net_id_old;
   TASK sp!duc_established := pp!duc_established;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE RRC_handover_related_service_primitives_operators_1;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 47(52)

```
NEWTYPE RRC_handover_related_service_primitives_operators_2

OPERATORS
   build_radioHO_cnf:       RLC_RADIO_HANDOVER_COMPLETE_ARG,   MAC_ID
                        −> RRC_RADIO_HANDOVER_COMPLETE_ARG;
   build_networkHO_cnf:     RLC_NETWORK_HANDOVER_COMPLETE_ARG, MAC_ID
                        −> RRC_NETWORK_HANDOVER_COMPLETE_ARG;
   build_HO_association_ind: RLC_HANDOVER_ASSOCIATION_ARG,      MAC_ID
                        −> RRC_HANDOVER_ASSOCIATION_ARG;

OPERATOR build_radioHO_cnf;
   FPAR      pp      RLC_RADIO_HANDOVER_COMPLETE_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      RRC_RADIO_HANDOVER_COMPLETE_ARG;
   START;
   TASK sp!mac_id_old          := pp!mac_id_old;
   TASK sp!ap_id_old           := pp!ap_id_old;
   TASK sp!mac_id_new          := pp!mac_id_new;
   TASK sp!cl_id               := pp!cl_id;
   TASK sp!duc_ext_ind         := pp!duc_ext_ind;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!duc_descr_list      := pp!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR build_networkHO_cnf;
   FPAR      pp      RLC_NETWORK_HANDOVER_COMPLETE_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      RRC_NETWORK_HANDOVER_COMPLETE_ARG;
   START;
   TASK sp!mac_id              := mac_id;
   TASK sp!cl_id               := pp!cl_id;
   TASK sp!duc_ext_ind         := pp!duc_ext_ind;
   TASK sp!cl_conn_attr_length := pp!cl_conn_attr_length;
   TASK sp!duc_descr_list      := pp!duc_descr_list;
   RETURN;
ENDOPERATOR;

OPERATOR build_HO_association_ind;
   FPAR      pp      RLC_HANDOVER_ASSOCIATION_ARG,
             mac_id  MAC_ID;
   RETURNS   sp      RRC_HANDOVER_ASSOCIATION_ARG;
   START;
   TASK sp!mac_id     := mac_id;
   TASK sp!mac_id_old := pp!mac_id_old;
   TASK sp!ap_id_old  := pp!ap_id_old;
   TASK sp!net_id_old := pp!net_id_old;
   TASK sp!mac_id_new := pp!mac_id_new;
   RETURN;
ENDOPERATOR;

ENDNEWTYPE RRC_handover_related_service_primitives_operators_2;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 48(52)

```
NEWTYPE RRC_handover_related_service_primitives_operators_3

OPERATORS
   build_ho_link_cap_cnf: RLC_HANDOVER_LINK_CAPABILITY_ACK_ARG, MAC_ID
                -> RRC_HANDOVER_LINK_CAPABILITY_ACK_ARG;
   build_nw_signallingHO_ind: RLC_NW_SIGNALLING_HANDOVER_ARG, MAC_ID
                -> RRC_NW_SIGNALLING_HANDOVER_ARG;
   build_nw_signallingHO_cnf: RLC_NW_SIGNALLING_HANDOVER_ACK_ARG,MAC_ID
                -> RRC_NW_SIGNALLING_HANDOVER_ACK_ARG;
   buildHO_Info_ind:        RLC_HO_INFO_DISTRIBUTION_ARG,MAC_ID
                -> RRC_HO_INFO_DISTRIBUTION_ARG;
OPERATOR build_ho_link_cap_cnf;
   FPAR     pp     RLC_HANDOVER_LINK_CAPABILITY_ACK_ARG,mac_id  MAC_ID;
   RETURNS   sp     RRC_HANDOVER_LINK_CAPABILITY_ACK_ARG;
   START;TASK sp!mac_id := mac_id;
   TASK sp!dlc_version_selected := pp!dlc_version_selected;
   TASK sp!rlc_version_selected := pp!rlc_version_selected;
   TASK sp!rss_value            := pp!rss_value;
   TASK sp!apt_address_length   := pp!apt_address_length;
   TASK sp!support64QAM         := pp!support64QAM;
   TASK sp!freq_band            := pp!freq_band;
   TASK sp!send_mt_id           := pp!send_mt_id;
   TASK sp!direct_mode_cap      := pp!direct_mode_cap;
   TASK sp!cyclic_prefix        := pp!cyclic_prefix;
   TASK sp!support_fca          := pp!support_fca;
   TASK sp!support_fsa          := pp!support_fsa;
   TASK sp!sector_ho_cap        := pp!sector_ho_cap;
   TASK sp!network_ho_cap       := pp!network_ho_cap;
   TASK sp!radio_ho_cap         := pp!radio_ho_cap;
   TASK sp!arq_delay_rx         := pp!arq_delay_rx;
   TASK sp!arq_delay_tx         := pp!arq_delay_tx;
   TASK sp!auth_encr_selected   := pp!auth_encr_selected;
   TASK sp!start_encryption     := pp!start_encryption;
   TASK sp!start_authentication := pp!start_authentication;
   TASK sp!send_NW_Token        := pp!send_NW_Token;
   TASK sp!start_info_transfer  := pp!start_info_transfer;
   TASK sp!keep_connections     := pp!keep_connections;
   TASK sp!start_DUC_set_up     := pp!start_DUC_set_up;
   TASK sp!include_MT_ID        := pp!include_MT_ID;
   DECISION dm_attributesPresent(pp);
   (True):  TASK sp!dm_attributes := pp!dm_attributes;
   (False):
   ENDDECISION;RETURN;
ENDOPERATOR;
OPERATOR build_nw_signallingHO_ind;
   FPAR     pp     RLC_NW_SIGNALLING_HANDOVER_ARG,mac_id  MAC_ID;
   RETURNS   sp     RRC_NW_SIGNALLING_HANDOVER_ARG;
   START;TASK sp!mac_id         := mac_id;
   TASK sp!mt_token_auth_encr := pp!mt_token_auth_encr;
   RETURN;
ENDOPERATOR;
OPERATOR build_nw_signallingHO_cnf;
   FPAR     pp     RLC_NW_SIGNALLING_HANDOVER_ACK_ARG,mac_id  MAC_ID;
   RETURNS   sp     RRC_NW_SIGNALLING_HANDOVER_ACK_ARG;
   START;TASK sp!mac_id  := mac_id;
   TASK sp!ap_token_auth_encr := pp!ap_token_auth_encr;
   RETURN;
ENDOPERATOR;
OPERATOR buildHO_Info_ind;
   FPAR     pp     RLC_HO_INFO_DISTRIBUTION_ARG,mac_id  MAC_ID;
   RETURNS   sp     RRC_HO_INFO_DISTRIBUTION_ARG;
   START;TASK sp!mac_id    := mac_id;
   TASK sp!token := pp!token;
   RETURN;
ENDOPERATOR;
ENDNEWTYPE RRC_handover_related_service_primitives_operators_3;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 49(52)

```
/*  SIGNAL LIST DEFINITIONS  */
```

```
/* RLC_APtoMT PDUs */

SIGNALLIST RLC_APtoMT_PDUs = RLC_PROCEEDING,

/* DUC related PDUs */

   RLC_CONNECT,
   RLC_CONNECT_ACK,
   RLC_MODIFY,
   RLC_MODIFY_ACK,
   RLC_MODIFY_REQ,
   RLC_RELEASE,
   RLC_RELEASE_ACK,
   RLC_RESET,
   RLC_RESET_ACK,
   RLC_SETUP,

/* ACF related PDUs*/

   RLC_AUTHENTICATION_ACK_1,
   RLC_AUTHENTICATION_ACK_2,
   RLC_AUTHENTICATION_ACK_3,
   RLC_AUTHENTICATION_MT,
   RLC_CL_BROADCAST_JOIN_ACK,
   RLC_CL_BROADCAST_LEAVE_ACK,
   RLC_COMMON_KEY_ACTIVATE,
   RLC_COMMON_KEY_REFRESH,
   RLC_DISASSOCIATION,
   RLC_DISASSOCIATION_ACK,
   RLC_DM_COMMON_KEY_DISTR,
   RLC_GROUP_JOIN_ACK,
   RLC_GROUP_JOIN_NACK,
   RLC_GROUP_LEAVE_ACK,
   RLC_INFO,
   RLC_INFO_ACK,
   RLC_KEY_EXCHANGE_AP_1,
   RLC_KEY_EXCHANGE_AP_2,
   RLC_LINK_CAPABILITY_ACK,
   RLC_MAC_ID_ASSIGN_ACK,
   RLC_MAC_ID_ASSIGN_NACK,
   RLC_RBCH_ASSOCIATION,
   RLC_UNICAST_KEY_REFRESH,

/* RRC related PDUs*/

   RLC_AP_ABSENCE,
   RLC_CHANGE_FREQUENCY,
   RLC_DFS_MEASUREMENT_COMPLETE_REQUEST,
   RLC_DFS_MEASUREMENT_PERCENTILES_REQUEST,
   RLC_DFS_MEASUREMENT_SHORT_REQUEST,
   RLC_DFS_MT_INIT_REPORT_REQUEST_ACK,
   RLC_FORCE_HANDOVER,
   RLC_HANDOVER_ASSOCIATION,
   RLC_HANDOVER_LINK_CAPABILITY_ACK,
   RLC_HANDOVER_REQUEST_NACK,
   RLC_HO_INFO_DISTRIBUTION,
   RLC_MT_ABSENCE_ACK,
   RLC_MT_ALIVE_ACK,
   RLC_MT_ALIVE_REQUEST,
   RLC_NETWORK_HANDOVER_COMPLETE,
   RLC_NW_SIGNALLING_HANDOVER_ACK,
   RLC_RADIO_HANDOVER_COMPLETE,
   RLC_SECTOR_HANDOVER_ACK,
   RLC_SLEEP_ACK,
   RLC_UPLINK_PC_CALIBRATION;
```

```
SIGNALLIST RLC_MTtoAP_PDUs = RLC_PROCEEDING,

/* DUC related PDUs */

   RLC_CONNECT,
   RLC_CONNECT_ACK,
   RLC_MODIFY,
   RLC_MODIFY_ACK,
   RLC_MODIFY_REQ,
   RLC_RELEASE,
   RLC_RELEASE_ACK,
   RLC_RESET,
   RLC_RESET_ACK,
   RLC_SETUP,

/* ACF related PDUs*/

   RLC_AUTHENTICATION,
   RLC_AUTHENTICATION_2,
   RLC_AUTHENTICATION_AP_1,
   RLC_AUTHENTICATION_AP_2,
   RLC_AUTHENTICATION_AP_3,
   RLC_CL_BROADCAST_JOIN,
   RLC_CL_BROADCAST_LEAVE,
   RLC_COMMON_KEY_REFRESH_ACK,
   RLC_DISASSOCIATION,
   RLC_DISASSOCIATION_ACK,
   RLC_DM_COMMON_KEY_DISTR_ACK,
   RLC_GROUP_JOIN,
   RLC_GROUP_LEAVE,
   RLC_INFO,
   RLC_INFO_ACK,
   RLC_KEY_EXCHANGE_MT_1,
   RLC_KEY_EXCHANGE_MT_2,
   RLC_LINK_CAPABILITY,
   RLC_MAC_ID_ASSIGN,
   RLC_RBCH_ASSOCIATION_REQ,
   RLC_UNICAST_KEY_REFRESH_ACK,

/* RRC related PDUs*/

   RLC_DFS_MT_INIT_REPORT_REQUEST,
   RLC_DFS_REPORT_COMPLETE,
   RLC_DFS_REPORT_PERCENTILES,
   RLC_DFS_REPORT_SHORT,
   RLC_FORCE_HANDOVER_ACK,
   RLC_HANDOVER_NOTIFY,
   RLC_HANDOVER_REQUEST,
   RLC_HO_INFO_DISTRIBUTION_ACK,
   RLC_MT_ABSENCE,
   RLC_MT_ALIVE,
   RLC_MT_ALIVE_REQUEST_ACK,
   RLC_NW_SIGNALLING_HANDOVER,
   RLC_SECTOR_HANDOVER_REQUEST,
   RLC_SLEEP;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 50(52)

```
/*  SIGNAL DEFINITIONS  */
```

```
/* RLC PDUs */

SIGNAL

/* Association and authentication PDUs */
RLC_RBCH_ASSOCIATION_REQ(RLC_RBCH_ASSOCIATION_REQ_ARG),
RLC_RBCH_ASSOCIATION(RLC_RBCH_ASSOCIATION_ARG),
RLC_MAC_ID_ASSIGN(RLC_MAC_ID_ASSIGN_ARG),
RLC_MAC_ID_ASSIGN_ACK(RLC_MAC_ID_ASSIGN_ACK_ARG),
RLC_MAC_ID_ASSIGN_NACK(RLC_MAC_ID_ASSIGN_NACK_ARG),
RLC_LINK_CAPABILITY(RLC_LINK_CAPABILITY_ARG),
RLC_LINK_CAPABILITY_ACK(RLC_LINK_CAPABILITY_ACK_ARG),
RLC_KEY_EXCHANGE_MT_1(RLC_KEY_EXCHANGE_MT_1_ARG),
RLC_KEY_EXCHANGE_MT_2(RLC_KEY_EXCHANGE_MT_2_ARG),
RLC_KEY_EXCHANGE_AP_1(RLC_KEY_EXCHANGE_AP_1_ARG),
RLC_KEY_EXCHANGE_AP_2(RLC_KEY_EXCHANGE_AP_2_ARG),
RLC_AUTHENTICATION(RLC_AUTHENTICATION_ARG),
RLC_AUTHENTICATION_2(RLC_AUTHENTICATION_ARG),
RLC_AUTHENTICATION_MT(RLC_AUTHENTICATION_MT_ARG),
RLC_AUTHENTICATION_AP_1(RLC_AUTHENTICATION_AP_1_ARG),
RLC_AUTHENTICATION_AP_2(RLC_AUTHENTICATION_AP_2_ARG),
RLC_AUTHENTICATION_AP_3(RLC_AUTHENTICATION_AP_3_ARG),
RLC_AUTHENTICATION_ACK_1(RLC_AUTHENTICATION_ACK_1_ARG),
RLC_AUTHENTICATION_ACK_2(RLC_AUTHENTICATION_ACK_2_ARG),
RLC_AUTHENTICATION_ACK_3(RLC_AUTHENTICATION_ACK_3_ARG),
RLC_DM_COMMON_KEY_DISTR(RLC_DM_COMMON_KEY_DISTR_ARG),
RLC_DM_COMMON_KEY_DISTR_ACK(RLC_DM_COMMON_KEY_DISTR_ACK_ARG),
RLC_INFO(RLC_INFO_ARG),
RLC_INFO_ACK(RLC_INFO_ACK_ARG),
RLC_UNICAST_KEY_REFRESH(RLC_UNICAST_KEY_REFRESH_ARG),
RLC_UNICAST_KEY_REFRESH_ACK(RLC_UNICAST_KEY_REFRESH_ACK_ARG),
RLC_COMMON_KEY_REFRESH(RLC_COMMON_KEY_REFRESH_ARG),
RLC_COMMON_KEY_REFRESH_ACK(RLC_COMMON_KEY_REFRESH_ACK_ARG),
RLC_COMMON_KEY_ACTIVATE(RLC_COMMON_KEY_ACTIVATE_ARG),
RLC_DISASSOCIATION(RLC_DISASSOCIATION_ARG),
RLC_DISASSOCIATION_ACK(RLC_DISASSOCIATION_ACK_ARG),
RLC_GROUP_JOIN(RLC_GROUP_JOIN_ARG),
RLC_GROUP_JOIN_ACK(RLC_GROUP_JOIN_ACK_ARG),
RLC_GROUP_JOIN_NACK(RLC_GROUP_JOIN_NACK_ARG),
RLC_GROUP_LEAVE(RLC_GROUP_LEAVE_ARG),
RLC_GROUP_LEAVE_ACK(RLC_GROUP_LEAVE_ACK_ARG),
RLC_CL_BROADCAST_JOIN(RLC_CL_BROADCAST_JOIN_ARG),
RLC_CL_BROADCAST_JOIN_ACK(RLC_CL_BROADCAST_JOIN_ACK_ARG),
RLC_CL_BROADCAST_LEAVE(RLC_CL_BROADCAST_LEAVE_ARG),
RLC_CL_BROADCAST_LEAVE_ACK(RLC_CL_BROADCAST_LEAVE_ACK_ARG);
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 51(52)

```
/* RLC PDUs */
/* RRC related PDUs */

SIGNAL
RLC_SECTOR_HANDOVER_REQUEST (RLC_SECTOR_HANDOVER_REQUEST_ARG),
RLC_SECTOR_HANDOVER_ACK(RLC_SECTOR_HANDOVER_ACK_ARG),
RLC_HANDOVER_NOTIFY(RLC_HANDOVER_NOTIFY_ARG),
RLC_HANDOVER_REQUEST(RLC_HANDOVER_REQUEST_ARG),
RLC_HANDOVER_REQUEST_NACK,
RLC_RADIO_HANDOVER_COMPLETE(RLC_RADIO_HANDOVER_COMPLETE_ARG),
RLC_HANDOVER_ASSOCIATION(RLC_HANDOVER_ASSOCIATION_ARG),
RLC_HANDOVER_LINK_CAPABILITY_ACK(RLC_HANDOVER_LINK_CAPABILITY_ACK_ARG),
RLC_NW_SIGNALLING_HANDOVER(RLC_NW_SIGNALLING_HANDOVER_ARG),
RLC_NW_SIGNALLING_HANDOVER_ACK(RLC_NW_SIGNALLING_HANDOVER_ACK_ARG),

RLC_NETWORK_HANDOVER_COMPLETE(RLC_NETWORK_HANDOVER_COMPLETE_ARG),
RLC_HO_INFO_DISTRIBUTION(RLC_HO_INFO_DISTRIBUTION_ARG),
RLC_HO_INFO_DISTRIBUTION_ACK,
RLC_FORCE_HANDOVER(RLC_FORCE_HANDOVER_ARG),
RLC_FORCE_HANDOVER_ACK(RLC_FORCE_HANDOVER_ACK_ARG),
RLC_AP_ABSENCE(RLC_AP_ABSENCE_ARG),
RLC_DFS_MEASUREMENT_COMPLETE_REQUEST(RLC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG),
RLC_DFS_MEASUREMENT_PERCENTILES_REQUEST(RLC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG),
RLC_DFS_MEASUREMENT_SHORT_REQUEST(RLC_DFS_MEASUREMENT_SHORT_REQUEST_ARG),
RLC_DFS_REPORT_COMPLETE(RLC_DFS_REPORT_COMPLETE_ARG),
RLC_DFS_REPORT_PERCENTILES(RLC_DFS_REPORT_PERCENTILES_ARG),
RLC_DFS_REPORT_SHORT(RLC_DFS_REPORT_SHORT_ARG),
RLC_DFS_MT_INIT_REPORT_REQUEST(RLC_DFS_MT_INIT_REPORT_REQUEST_ARG),
RLC_DFS_MT_INIT_REPORT_REQUEST_ACK(RLC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG),
RLC_CHANGE_FREQUENCY(RLC_CHANGE_FREQUENCY_ARG),
RLC_UPLINK_PC_CALIBRATION(RLC_UPLINK_PC_CALIBRATION_ARG),
RLC_MT_ALIVE_REQUEST(RLC_MT_ALIVE_REQUEST_ARG),
RLC_MT_ALIVE_REQUEST_ACK(RLC_MT_ALIVE_REQUEST_ACK_ARG),
RLC_MT_ALIVE(RLC_MT_ALIVE_ARG),
RLC_MT_ALIVE_ACK(RLC_MT_ALIVE_ACK_ARG),
RLC_MT_ABSENCE(RLC_MT_ABSENCE_ARG),
RLC_MT_ABSENCE_ACK(RLC_MT_ABSENCE_ACK_ARG),
RLC_SLEEP(RLC_SLEEP_ARG),
RLC_SLEEP_ACK(RLC_SLEEP_ACK_ARG);
```

```
/* RLC DM PDUs */

SIGNAL

RLC_DM_SETUP(RLC_DM_SETUP_ARG),
RLC_DM_CONNECT(RLC_DM_CONNECT_ARG),
RLC_DM_CONNECT_ACK(RLC_DM_CONNECT_ACK_ARG),
RLC_DM_CONNECT_COMPLETE(RLC_DM_CONNECT_COMPLETE_ARG),
RLC_DM_CONNECT_COMPLETE_ACK(RLC_DM_CONNECT_COMPLETE_ACK_ARG),
RLC_RELAY_SETUP(RLC_RELAY_SETUP_ARG),
RLC_RELAY_SETUP_ACK(RLC_RELAY_SETUP_ACK_ARG),
RLC_DM_MODIFY_REQ(RLC_DM_MODIFY_REQ_ARG),
RLC_DM_MODIFY(RLC_DM_MODIFY_ARG),
RLC_DM_MODIFY_ACK(RLC_DM_MODIFY_ACK_ARG),
RLC_DM_MODIFY_COMPLETE(RLC_DM_MODIFY_COMPLETE_ARG),
RLC_DM_MODIFY_COMPLETE_ACK(RLC_DM_MODIFY_COMPLETE_ACK_ARG),
RLC_RELAY_MODIFY(RLC_RELAY_MODIFY_ARG),
RLC_RELAY_MODIFY_ACK(RLC_RELAY_MODIFY_ACK_ARG),
RLC_DM_RELEASE(RLC_DM_RELEASE_ARG),
RLC_DM_RELEASE_ACK(RLC_DM_RELEASE_ACK_ARG),
RLC_RELAY_RELEASE(RLC_RELAY_RELEASE_ARG),
RLC_RELAY_RELEASE_ACK(RLC_RELAY_RELEASE_ACK_ARG),
RLC_DM_RESET(RLC_DM_RESET_ARG),
RLC_DM_RESET_ACK(RLC_DM_RESET_ACK_ARG);
```

```
/* DUC related PDUs */

SIGNAL

RLC_SETUP(RLC_SETUP_ARG),
RLC_CONNECT(RLC_CONNECT_ARG),
RLC_CONNECT_ACK(RLC_CONNECT_ACK_ARG),
RLC_RELEASE(RLC_RELEASE_ARG),
RLC_RELEASE_ACK(RLC_RELEASE_ACK_ARG),
RLC_MODIFY_REQ(RLC_MODIFY_REQ_ARG),
RLC_MODIFY(RLC_MODIFY_ARG),
RLC_MODIFY_ACK(RLC_MODIFY_ACK_ARG),
RLC_RESET(RLC_RESET_ARG),
RLC_RESET_ACK(RLC_RESET_ACK_ARG);
```

```
SIGNAL RLC_PROCEEDING;
```

```
use RLCprotocolPrimitives;
use RLCservicePrimitives;
```

Package RLCprotocolPrimitivesDefinitions 52(52)

```
/*  SIGNAL LIST DEFINITIONS  */

SIGNAL DummyPDU; /* needed for empty BE signal lists */
```

```
/* RLC_BE_APtoMT PDUs */

SIGNALLIST RLC_BE_APtoMT_PDUs = (RLC_APtoMT_PDUs), (RLC_BE_APtoMT_A_PDUs);

/* RRC related PDUs*/
SIGNALLIST RLC_BE_APtoMT_A_PDUs = DummyPDU;

/* RLC_HE_APtoMT PDUs */

SIGNALLIST RLC_CCtoWT_PDUs = (RLC_APtoMT_PDUs), (RLC_CCtoWT_A_PDUs);

/* DM PDUs*/

SIGNALLIST RLC_CCtoWT_A_PDUs =
   RLC_DM_CONNECT,
   RLC_DM_CONNECT_ACK,
   RLC_DM_CONNECT_COMPLETE,
   RLC_DM_MODIFY,
   RLC_DM_MODIFY_ACK,
   RLC_DM_MODIFY_COMPLETE,
   RLC_DM_MODIFY_REQ,
   RLC_DM_RELEASE,
   RLC_DM_RELEASE_ACK,
   RLC_DM_RESET,
   RLC_DM_RESET_ACK,
   RLC_DM_SETUP,
   RLC_RELAY_MODIFY_ACK,
   RLC_RELAY_RELEASE_ACK,
   RLC_RELAY_SETUP_ACK;
```

```
SIGNALLIST RLC_BE_MTtoAP_PDUs = (RLC_MTtoAP_PDUs), (RLC_BE_MTtoAP_A_PDUs);

/* RRC related PDUs*/
SIGNALLIST RLC_BE_MTtoAP_A_PDUs =
dummyPDU;

SIGNALLIST RLC_WTtoCC_PDUs = (RLC_MTtoAP_PDUs), (RLC_WTtoCC_A_PDUs);

/* DM PDUs*/

SIGNALLIST RLC_WTtoCC_A_PDUs =
   RLC_DM_CONNECT,
   RLC_DM_CONNECT_ACK,
   RLC_DM_CONNECT_COMPLETE_ACK,
   RLC_DM_MODIFY,
   RLC_DM_MODIFY_ACK,
   RLC_DM_MODIFY_COMPLETE_ACK,
   RLC_DM_MODIFY_REQ,
   RLC_DM_RELEASE,
   RLC_DM_RELEASE_ACK,
   RLC_DM_RESET,
   RLC_DM_RESET_ACK,
   RLC_DM_SETUP,
   RLC_RELAY_MODIFY,
   RLC_RELAY_RELEASE,
   RLC_RELAY_SETUP;
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives;
use RLCservicePrimitivesDefinitions;
use RLCprotocolPrimitivesDefinitions;
```

Package RLC 1(3)

RLC_AP

RLC_MT

RLC_AP

RLC_MT

```
REMOTE PROCEDURE set_MT_addresses;
FPAR PId, PId;
```

```
SYNONYM sec Duration = 1;
SYNONYM mins  = 60 *sec;/*minutes*/
SYNONYM hr  = 60*mins;/*hours*/
SYNONYM day  = 24 * hr;
SYNONYM month  = 30*day;
SYNONYM ms = 0.001*sec;/*milliseconds*/
SYNONYM FrameDuration Duration = 2 * ms;
```

```
REMOTE PROCEDURE set_AP_addresses;
FPAR PId, PId;
```

```
use RLCservicePrimitives;
use RLCprotocolPrimitives;
use RLCservicePrimitivesDefinitions;
use RLCprotocolPrimitivesDefinitions;
```

Package RLC 2(3)

```
/* Definition of timer durations */

SYNONYM T_rbch_association_req_duration DURATION = T_short_duration;
SYNONYM T_mac_id_assign_duration DURATION = T_short_duration;
SYNONYM T_link_capability_duration DURATION = T_short_duration;
SYNONYM T_key_exchange_mt_duration DURATION = T_short_duration;
SYNONYM T_authentication_duration DURATION = T_medium_duration;
SYNONYM T_authentication_ap_duration DURATION = T_medium_duration;
SYNONYM T_dm_common_key_distr_ack_duration DURATION = T_short_duration;
SYNONYM T_info_duration DURATION = T_short_duration;
SYNONYM T_group_join_duration DURATION = T_short_duration;
SYNONYM T_group_leave_duration DURATION = T_short_duration;
SYNONYM T_cl_broadcast_join_duration DURATION = T_short_duration;
SYNONYM T_cl_broadcast_duration DURATION = T_short_duration;
SYNONYM T_disassociation_mt_duration DURATION = T_short_duration;
SYNONYM T_connect_ack_duration DURATION = T_short_duration;
SYNONYM T_setup_mt_duration DURATION = T_short_duration;
SYNONYM T_connect_mt_duration DURATION = T_short_duration;
SYNONYM T_release_mt_duration DURATION = T_short_duration;
SYNONYM T_reset_mt_duration DURATION = T_short_duration;
SYNONYM T_modify_req_mt_duration DURATION = T_medium_duration;
SYNONYM T_modify_mt_duration DURATION = T_medium_duration;
SYNONYM T_dfs_mt_init_report_duration DURATION = T_short_duration;
SYNONYM T_sector_handover_duration DURATION = T_short_duration;
SYNONYM T_handover_request_duration DURATION = T_short_duration;
SYNONYM T_nw_handover_request_duration DURATION = T_short_duration;
SYNONYM T_nw_signalling_handover_duration DURATION = T_medium_duration;
SYNONYM T_sleep_duration DURATION = T_short_duration;
SYNONYM T_mt_alive_duration DURATION = T_short_duration;

SYNONYM T_short_duration DURATION = 16 * FrameDuration;
SYNONYM T_medium_duration DURATION = 128 * FrameDuration;
SYNONYM T_long_duration DURATION = 1024 * FrameDuration;
SYNONYM T_handover_notify_duration = 256 * FrameDuration;
SYNONYM T_force_handover_return_duration = 256 * FrameDuration;


SYNONYM T_mt_absence_duration DURATION = T_short_duration;
```

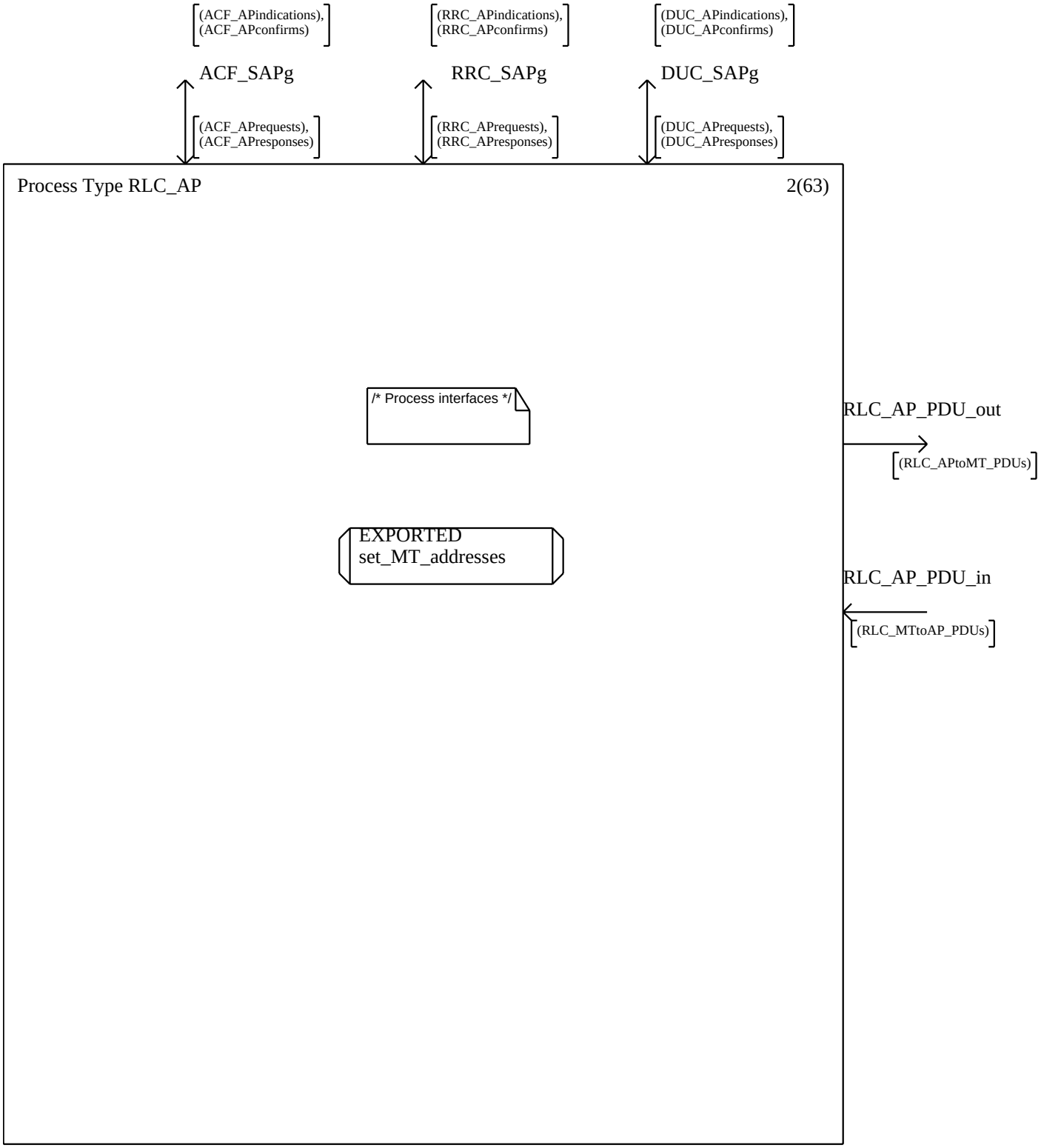
```
use RLCservicePrimitives;
use RLCprotocolPrimitives;
use RLCservicePrimitivesDefinitions;
use RLCprotocolPrimitivesDefinitions;
```

Package RLC 3(3)

```
SYNONYM T_mac_id_assign_ack_duration DURATION = T_short_duration;
SYNONYM T_link_capability_ack_duration DURATION = T_short_duration;
SYNONYM T_key_exchange_ap_duration DURATION = T_long_duration;
SYNONYM T_authentication_mt_duration DURATION = T_long_duration;
SYNONYM T_authentication_ack_duration DURATION = T_long_duration;
SYNONYM T_dm_common_key_distr_duration DURATION = T_short_duration;
SYNONYM T_nw_signalling_handover_ack_duration DURATION = T_short_duration;
SYNONYM T_info_ack_duration DURATION = T_short_duration;
SYNONYM T_disassociation_ap_duration DURATION = T_short_duration;
SYNONYM T_unicast_key_refresh_duration DURATION = T_medium_duration;
SYNONYM T_common_key_refresh_duration DURATION = T_medium_duration;
SYNONYM T_connect_ap_duration DURATION = T_short_duration;
SYNONYM T_setup_ap_duration DURATION = T_short_duration;
SYNONYM T_release_ap_duration DURATION = T_short_duration;
SYNONYM T_modify_ap_duration DURATION = T_medium_duration;
SYNONYM T_modify_req_ap_duration DURATION = T_medium_duration;
SYNONYM T_reset_ap_duration DURATION = T_short_duration;
SYNONYM T_own_channel_quality_report_duration DURATION = T_medium_duration;
SYNONYM T_force_handover_duration DURATION = T_short_duration;
SYNONYM T_handover_association_duration DURATION = T_short_duration;
SYNONYM T_handover_link_capability_ack_duration DURATION = T_short_duration;
SYNONYM T_nw_handover_complete_duration DURATION = T_short_duration;
SYNONYM T_ho_info_distribution_duration DURATION = T_short_duration;
SYNONYM T_mt_alive_request_duration DURATION = T_short_duration;

SYNONYM T_dfs_duration = T_medium_duration;
```

Process Type RLC_AP 1(63)

```
/*
This process is a model of RLC behaviour at the AP side.
*/
```


(ACF_APindications),
(ACF_APconfirms)
(RRC_APindications),
(RRC_APconfirms)
(DUC_APindications),
(DUC_APconfirms)
ACF_SAPg
RRC_SAPg
DUC_SAPg
(ACF_APrequests),
(ACF_APresponses)
(RRC_APrequests),
(RRC_APresponses)
(DUC_APrequests),
(DUC_APresponses)
Process Type RLC_AP
2(63)
/* Process interfaces */
RLC_AP_PDU_out
(RLC_APtoMT_PDUs)
EXPORTED
set_MT_addresses
RLC_AP_PDU_in
(RLC_MTtoAP_PDUs)

Process Type RLC_AP 3(63)

```
/*          Timers on AP side                    */

TIMER T_mac_id_assign_ack := T_mac_id_assign_ack_duration;
TIMER T_link_capability_ack := T_link_capability_ack_duration;
TIMER T_key_exchange_ap := T_key_exchange_ap_duration;
TIMER T_authentication_mt := T_authentication_mt_duration;
TIMER T_authentication_ack := T_authentication_ack_duration;
TIMER T_dm_common_key_distr := T_dm_common_key_distr_duration;
TIMER T_nw_signalling_handover_ack := T_nw_signalling_handover_ack_duration;
TIMER T_info := T_info_duration;
TIMER T_info_ack := T_info_ack_duration;
TIMER T_disassociation_ap := T_disassociation_ap_duration;
TIMER T_unicast_key_refresh := T_unicast_key_refresh_duration;
TIMER T_common_key_refresh := T_common_key_refresh_duration;
TIMER T_connect_ap := T_connect_ap_duration;
TIMER T_setup_ap := T_setup_ap_duration;
TIMER T_release_ap := T_release_ap_duration;
TIMER T_modify_ap := T_modify_ap_duration;
TIMER T_modify_req_ap := T_modify_req_ap_duration;
TIMER T_reset_ap := T_reset_ap_duration;
TIMER T_mt_alive_request := T_mt_alive_request_duration;
TIMER T_mt_absence := T_mt_absence_duration;
TIMER T_dm_common_key_distr_ack := T_dm_common_key_distr_ack_duration;
TIMER T_handover_notify := T_handover_notify_duration;
TIMER T_force_handover_return := T_force_handover_return_duration;

TIMER T_short := T_short_duration;
TIMER T_Absence_Frame_Counter;
TIMER T_Sleeping_Frame_Counter;
TIMER T_mt_alive_interval;
```

Process Type RLC_AP 4(63)

```
/*                    Local variables                    *.
```

```
/* Variable declaration */

DCL    MT_1, MT_2, selectedMT        PId;
DCL mac_id        MAC_ID := 1;
```

```
DCL

rlcSetup RLC_SETUP_ARG,
rlcConnect    RLC_CONNECT_ARG,
rlcRelease    RLC_RELEASE_ARG,
rlcModifyreq    RLC_MODIFY_REQ_ARG,
rlcModify    RLC_MODIFY_ARG,
rlcReset    RLC_RESET_ARG,
rlcConnectAck    RLC_CONNECT_ACK_ARG,
rlcReleaseAck    RLC_RELEASE_ACK_ARG,
rlcModifyAck    RLC_MODIFY_ACK_ARG,
rlcResetAck    RLC_RESET_ACK_ARG;
```

```
DCL

ducSetup DUC_SETUP_ARG,
ducConnect    DUC_CONNECT_ARG,
ducRelease    DUC_RELEASE_ARG,
ducModifyreq    DUC_MODIFY_REQ_ARG,
ducModify    DUC_MODIFY_ARG,
ducReset    DUC_RESET_ARG,
ducConnectAck    DUC_CONNECT_ACK_ARG,
ducReleaseAck    DUC_RELEASE_ACK_ARG,
ducModifyAck    DUC_MODIFY_ACK_ARG,
ducResetAck    DUC_RESET_ACK_ARG;
```

```
DCL retransCounter Integer;
DCL setupCounter    Integer;
DCL GjoinCounter     Integer;
DCL GleaveCounter Integer;
DCL BjoinCounter     Integer;

SYNONYM retransMax Integer = 4;
```

```
DCL

authInfo          AUTH_INFO,
encrInfo          ENCR_INFO,
infoCount         INFO_COUNT := 0,
infoRecCount  INFO_COUNT := 0,
dmCommonKeyUse     DM_USE_COMMON_KEY,
mtAliveInterval  DURATION;
```

Process Type RLC_AP 5(63)

/* Local variables */

```
DCL
rlcAuthAck1          RLC_AUTHENTICATION_ACK_1_ARG,
rlcAuthAck2          RLC_AUTHENTICATION_ACK_2_ARG,
rlcAuthAck3          RLC_AUTHENTICATION_ACK_3_ARG,
rlcAuthAp1           RLC_AUTHENTICATION_AP_1_ARG,
rlcAuthAp2           RLC_AUTHENTICATION_AP_2_ARG,
rlcAuthAp3           RLC_AUTHENTICATION_AP_3_ARG,
rlcAuth              RLC_AUTHENTICATION_ARG,
rlcAuthMt            RLC_AUTHENTICATION_MT_ARG,
rlcBjoinAck          RLC_CL_BROADCAST_JOIN_ACK_ARG,
rlcBjoin             RLC_CL_BROADCAST_JOIN_ARG,
rlcBleaveAck         RLC_CL_BROADCAST_LEAVE_ACK_ARG,
rlcBleave            RLC_CL_BROADCAST_LEAVE_ARG,
rlcCKactivate        RLC_COMMON_KEY_ACTIVATE_ARG,
rlcCKrefreshAck      RLC_COMMON_KEY_REFRESH_ACK_ARG,
rlcCKrefresh         RLC_COMMON_KEY_REFRESH_ARG,
rlcDisassocAck       RLC_DISASSOCIATION_ACK_ARG,
rlcDisassoc          RLC_DISASSOCIATION_ARG,
rlcCKdistrAck        RLC_DM_COMMON_KEY_DISTR_ACK_ARG,
rlcCKdistr           RLC_DM_COMMON_KEY_DISTR_ARG,
rlcGjoinAck          RLC_GROUP_JOIN_ACK_ARG,
rlcGjoin             RLC_GROUP_JOIN_ARG,
rlcGjoinNack         RLC_GROUP_JOIN_NACK_ARG,
rlcGleaveAck         RLC_GROUP_LEAVE_ACK_ARG,
rlcGleave            RLC_GROUP_LEAVE_ARG,
rlcInfoAck           RLC_INFO_ACK_ARG,
rlcInfo              RLC_INFO_ARG,
rlcKeyExch_ap1       RLC_KEY_EXCHANGE_AP_1_ARG,
rlcKeyExch_ap2       RLC_KEY_EXCHANGE_AP_2_ARG,
rlcKeyExch_mt1       RLC_KEY_EXCHANGE_MT_1_ARG,
rlcKeyExch_mt2       RLC_KEY_EXCHANGE_MT_2_ARG,
rlcLinkCapAck        RLC_LINK_CAPABILITY_ACK_ARG,
rlcLinkCap           RLC_LINK_CAPABILITY_ARG,
rlcMacIdAssignAck    RLC_MAC_ID_ASSIGN_ACK_ARG,
rlcMacIdAssign       RLC_MAC_ID_ASSIGN_ARG,
rlcMacIdAssignNack   RLC_MAC_ID_ASSIGN_NACK_ARG,
rlcRBCHassoc         RLC_RBCH_ASSOCIATION_ARG,
rlcRBCHassocreq      RLC_RBCH_ASSOCIATION_REQ_ARG,
rlcUkeyRefreshAck    RLC_UNICAST_KEY_REFRESH_ACK_ARG,
rlcUkeyRefresh       RLC_UNICAST_KEY_REFRESH_ARG;
```

```
DCL
acfAuthAck           ACF_AUTHENTICATION_ACK_ARG,
acfAuthAp            ACF_AUTHENTICATION_AP_ARG,
acfAuth              ACF_AUTHENTICATION_ARG,
acfAuthMt            ACF_AUTHENTICATION_MT_ARG,
acfBjoinAck          ACF_CL_BROADCAST_JOIN_ACK_ARG,
acfBjoin             ACF_CL_BROADCAST_JOIN_ARG,
acfBleaveAck         ACF_CL_BROADCAST_LEAVE_ACK_ARG,
acfBleave            ACF_CL_BROADCAST_LEAVE_ARG,
acfCKactivate        ACF_COMMON_KEY_ACTIVATE_ARG,
acfCKrefreshAck      ACF_COMMON_KEY_REFRESH_ACK_ARG,
acfCKrefresh         ACF_COMMON_KEY_REFRESH_ARG,
acfDisassocAck       ACF_DISASSOCIATION_ACK_ARG,
acfDisassoc          ACF_DISASSOCIATION_ARG,
acfCKdistrAck        ACF_DM_COMMON_KEY_DISTR_ACK_ARG,
acfCKdistr           ACF_DM_COMMON_KEY_DISTR_ARG,
acfGjoinAck          ACF_GROUP_JOIN_ACK_ARG,
acfGjoin             ACF_GROUP_JOIN_ARG,
acfGjoinNack         ACF_GROUP_JOIN_NACK_ARG,
acfGleaveAck         ACF_GROUP_LEAVE_ACK_ARG,
acfGleave            ACF_GROUP_LEAVE_ARG,
acfInfoAck           ACF_INFO_ACK_ARG,
acfInfo              ACF_INFO_ARG,
acfKeyExchAp         ACF_KEY_EXCHANGE_AP_ARG,
acfKeyExchMt         ACF_KEY_EXCHANGE_MT_ARG,
acfLinkCapAck        ACF_LINK_CAPABILITY_ACK_ARG,
acfLinkCap           ACF_LINK_CAPABILITY_ARG,
acfMacIdAssignAck    ACF_MAC_ID_ASSIGN_ACK_ARG,
acfMacIdAssign       ACF_MAC_ID_ASSIGN_ARG,
acfMacIdAssignNack   ACF_MAC_ID_ASSIGN_NACK_ARG,
acfRBCHassoc         ACF_RBCH_ASSOCIATION_ARG,
acfRBCHassocreq      ACF_RBCH_ASSOCIATION_REQ_ARG,
acfUkeyRefreshAck    ACF_UNICAST_KEY_REFRESH_ACK_ARG,
acfUkeyRefresh       ACF_UNICAST_KEY_REFRESH_ARG,
authsigs             AUTH_SIG_LIST;
```

```
DCL

rlcChangeF           RLC_CHANGE_FREQUENCY_ARG,
rlcApAbsence         RLC_AP_ABSENCE_ARG,
rlcCompleteReq       RLC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG,
rlcPercReq           RLC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG,
rlcShortReq          RLC_DFS_MEASUREMENT_SHORT_REQUEST_ARG,
rlcInit              RLC_DFS_MT_INIT_REPORT_REQUEST_ARG,
rlcInitAck           RLC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG,
rlcPCcal             RLC_UPLINK_PC_CALIBRATION_ARG,
rlcRepComplete       RLC_DFS_REPORT_COMPLETE_ARG,
rlcRepShort          RLC_DFS_REPORT_SHORT_ARG,
rlcRepPerc           RLC_DFS_REPORT_PERCENTILES_ARG,
rlcMTalive           RLC_MT_ALIVE_ARG,
rlcMTaliveAck        RLC_MT_ALIVE_ACK_ARG,
rlcMTaliveReq        RLC_MT_ALIVE_REQUEST_ARG,
rlcMTaliveReqAck     RLC_MT_ALIVE_REQUEST_ACK_ARG,
rlcMtAbsence         RLC_MT_ABSENCE_ARG,
rlcMTAbsenceAck      RLC_MT_ABSENCE_ACK_ARG,
rlcSleep             RLC_SLEEP_ARG,
rlcSleepAck          RLC_SLEEP_ACK_ARG;
```

```
DCL

rrcChangeF           RRC_CHANGE_FREQUENCY_ARG,
rrcApAbsence         RRC_AP_ABSENCE_ARG,
rrcCompleteReq       RRC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG,
rrcPercReq           RRC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG,
rrcShortReq          RRC_DFS_MEASUREMENT_SHORT_REQUEST_ARG,
rrcInit              RRC_DFS_MT_INIT_REPORT_REQUEST_ARG,
rrcInitAck           RRC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG,
rrcPCcal             RRC_UPLINK_PC_CALIBRATION_ARG,
rrcRepComplete       RRC_DFS_REPORT_COMPLETE_ARG,
rrcRepShort          RRC_DFS_REPORT_SHORT_ARG,
rrcRepPerc           RRC_DFS_REPORT_PERCENTILES_ARG,
rrcMTalive           RRC_MT_ALIVE_ARG,
rrcMTaliveAck        RRC_MT_ALIVE_ACK_ARG,
rrcMTaliveReq        RRC_MT_ALIVE_REQUEST_ARG,
rrcMTaliveReqAck     RRC_MT_ALIVE_REQUEST_ACK_ARG,
rrcMtAbsence         RRC_MT_ABSENCE_ARG,
rrcMtAbsenceAck      RRC_MT_ABSENCE_ACK_ARG,
rrcSleep             RRC_SLEEP_ARG,
rrcSleepAck          RRC_SLEEP_ACK_ARG;
```

Process Type RLC_AP 6(63)

```
/*      Local variables      */
```

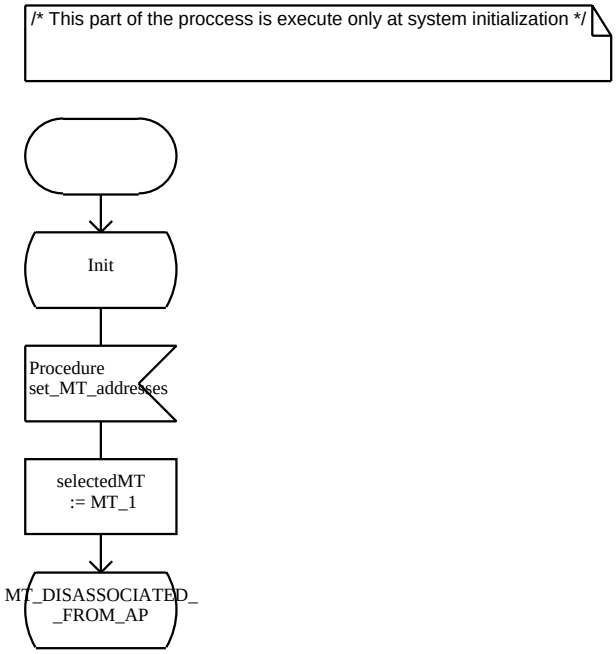
```
DCL

rlcSectorHOreq        RLC_SECTOR_HANDOVER_REQUEST_ARG,
rlcSectorHOack        RLC_SECTOR_HANDOVER_ACK_ARG,
rlcForceHO        RLC_FORCE_HANDOVER_ARG,
rlcForceHOAck        RLC_FORCE_HANDOVER_ACK_ARG,
rlcHOnotify        RLC_HANDOVER_NOTIFY_ARG,
rlcHOreq        RLC_HANDOVER_REQUEST_ARG,
rlcRadioHOcomplete    RLC_RADIO_HANDOVER_COMPLETE_ARG,
rlcHOassoc        RLC_HANDOVER_ASSOCIATION_ARG,
rlcHOlinkcap        RLC_HANDOVER_LINK_CAPABILITY_ACK_ARG,
rlcNWHO        RLC_NW_SIGNALLING_HANDOVER_ARG,
rlcNWHOack        RLC_NW_SIGNALLING_HANDOVER_ACK_ARG,
rlcNWHOcomplete    RLC_NETWORK_HANDOVER_COMPLETE_ARG,
rlcHOinfo        RLC_HO_INFO_DISTRIBUTION_ARG,
rlcHOinfoAck        RLC_HO_INFO_DISTRIBUTION_ACK_ARG;
```

```
DCL

rrcSectorHOreq        RRC_SECTOR_HANDOVER_REQUEST_ARG,
rrcSectorHOack        RRC_SECTOR_HANDOVER_ACK_ARG,
rrcForceHO        RRC_FORCE_HANDOVER_ARG,
rrcForceHOAck        RRC_FORCE_HANDOVER_ACK_ARG,
rrcHOnotify        RRC_HANDOVER_NOTIFY_ARG,
rrcHOreq        RRC_HANDOVER_REQUEST_ARG,
rrcRadioHOcomplete    RRC_RADIO_HANDOVER_COMPLETE_ARG,
rrcHOassoc        RRC_HANDOVER_ASSOCIATION_ARG,
rrcHOlinkcap        RRC_HANDOVER_LINK_CAPABILITY_ACK_ARG,
rrcNWHO        RRC_NW_SIGNALLING_HANDOVER_ARG,
rrcNWHOack        RRC_NW_SIGNALLING_HANDOVER_ACK_ARG,
rrcNWHOcomplete    RRC_NETWORK_HANDOVER_COMPLETE_ARG,
rrcHOinfo        RRC_HO_INFO_DISTRIBUTION_ARG,
rrcHOinfoAck        RRC_HO_INFO_DISTRIBUTION_ACK_ARG;
```

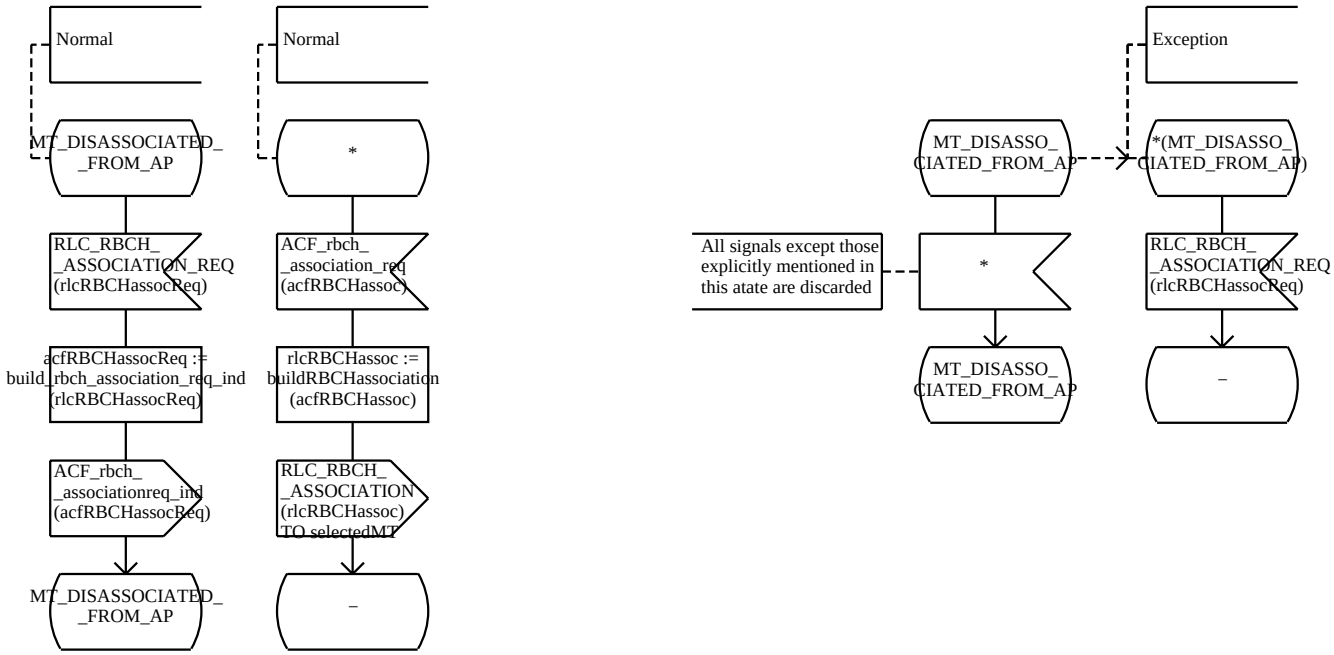
```
DCL

startEncryption  START_ENCRYPTION,

/*   no−encryption−start
     encryption−start*/

startAuthentication START_AUTHENTICATION,
/*   no−auth−start
     auth−start*/

sendNWtoken   SEND_NW_TOKEN,
/*   no−token−send
     send−nw−token*/

startInfotransfer  START_INFO_TRANSFER,
/*   no−info−transfer
     start−info−transfer*/

startDUCsetup START_DUC_SET_UP;
/*    donot−start−setup (0),
      start−setup*/
```

```
TIMER T_force_handover := T_force_handover_duration;
TIMER T_handover_association := T_handover_association_duration;
TIMER T_handover_link_capability_ack := T_handover_link_capability_ack_duration;
TIMER T_nw_handover_complete := T_nw_handover_complete_duration;
TIMER T_ho_info_distribution := T_ho_info_distribution_duration;
```

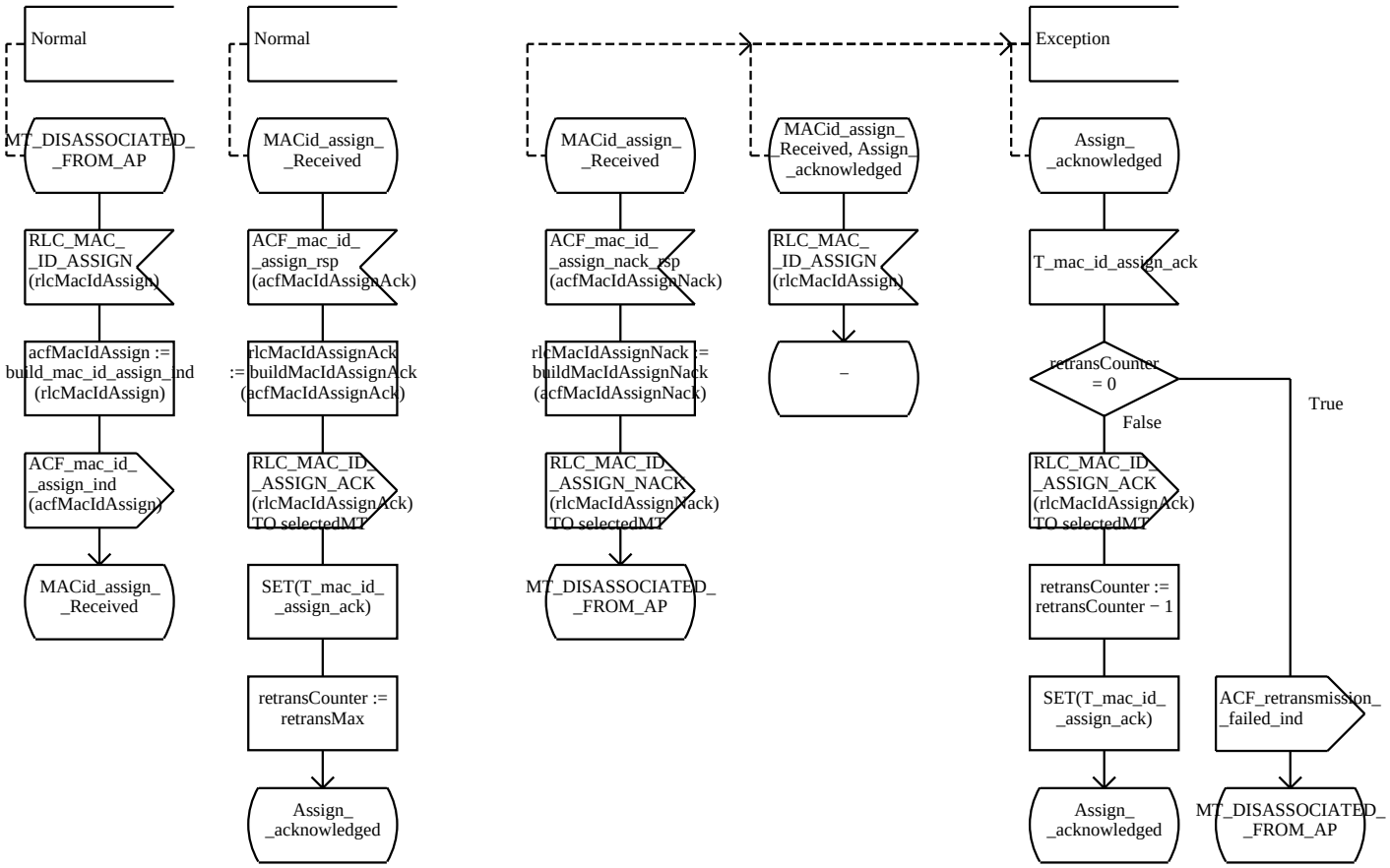
Process Type RLC_AP 7(63)



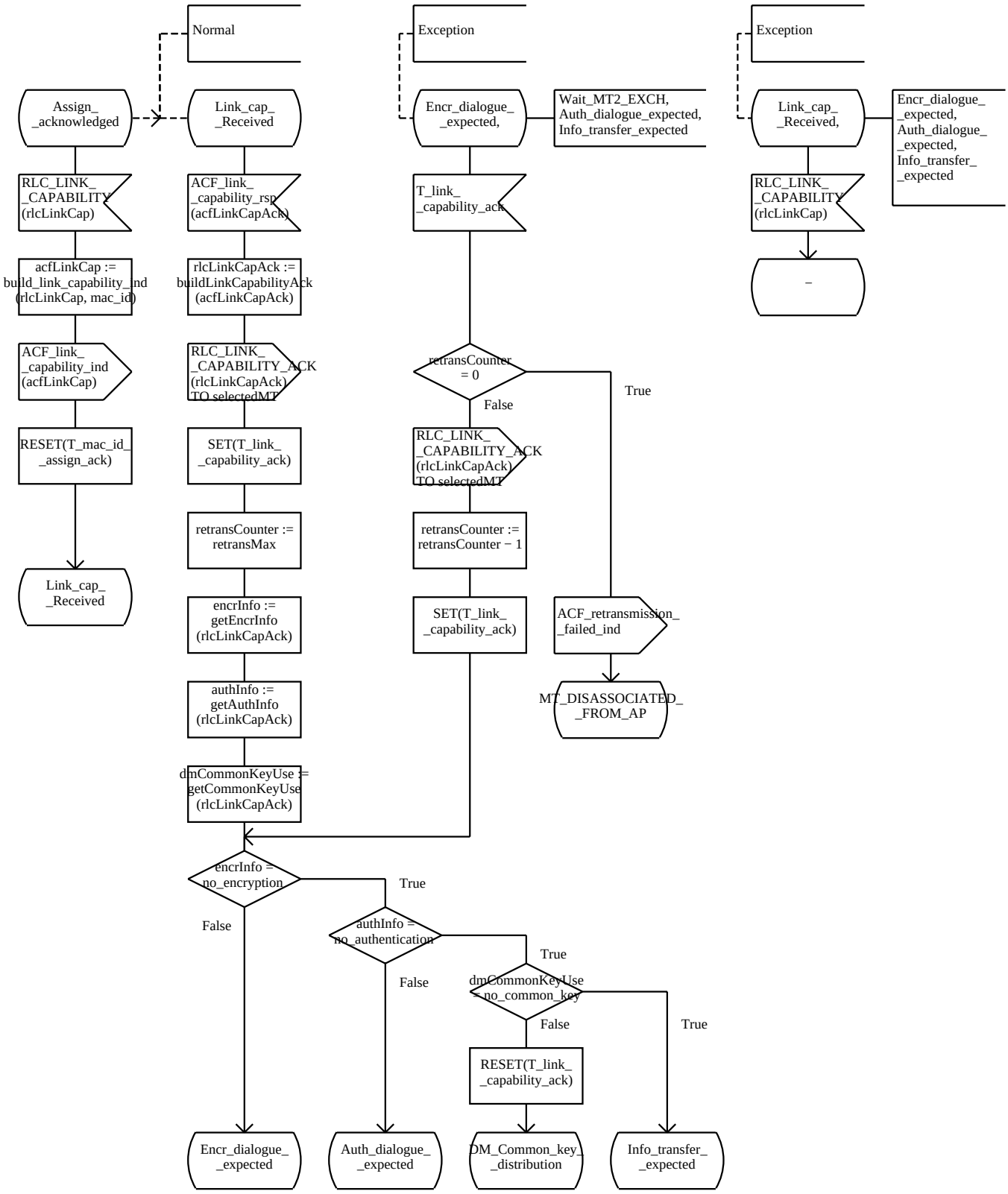
Process Type RLC_AP 8(63)



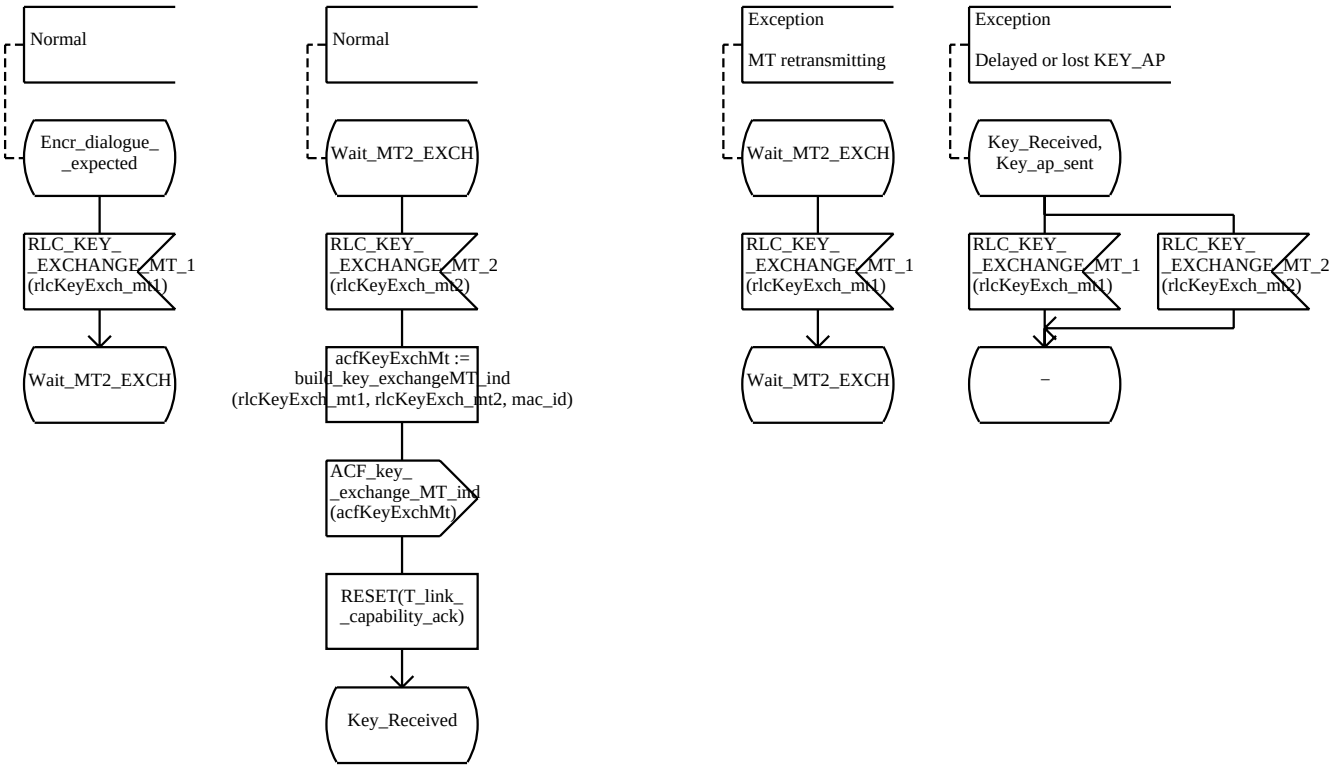
Process Type RLC_AP 9(63)



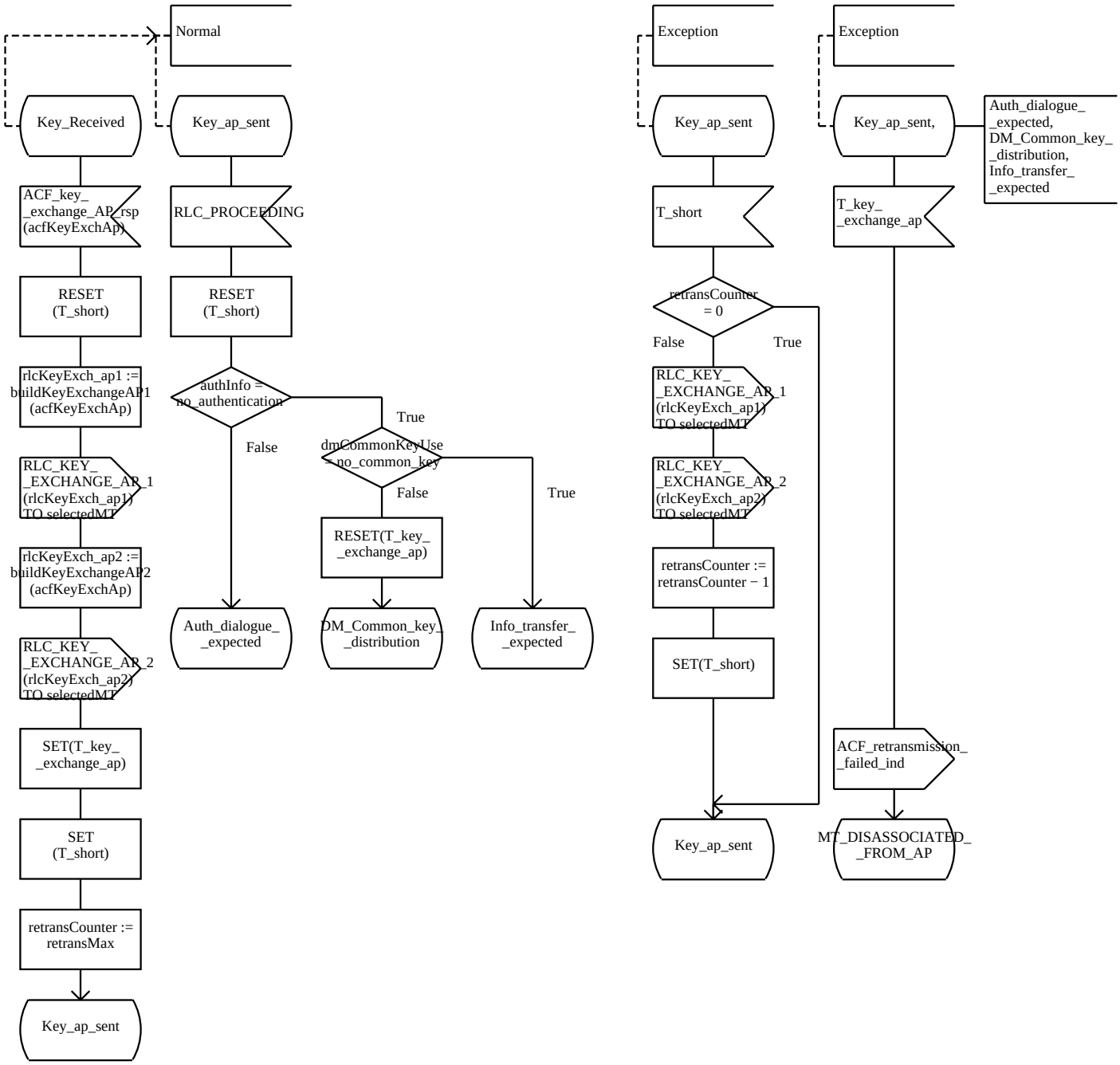
Process Type RLC_AP 10(63)



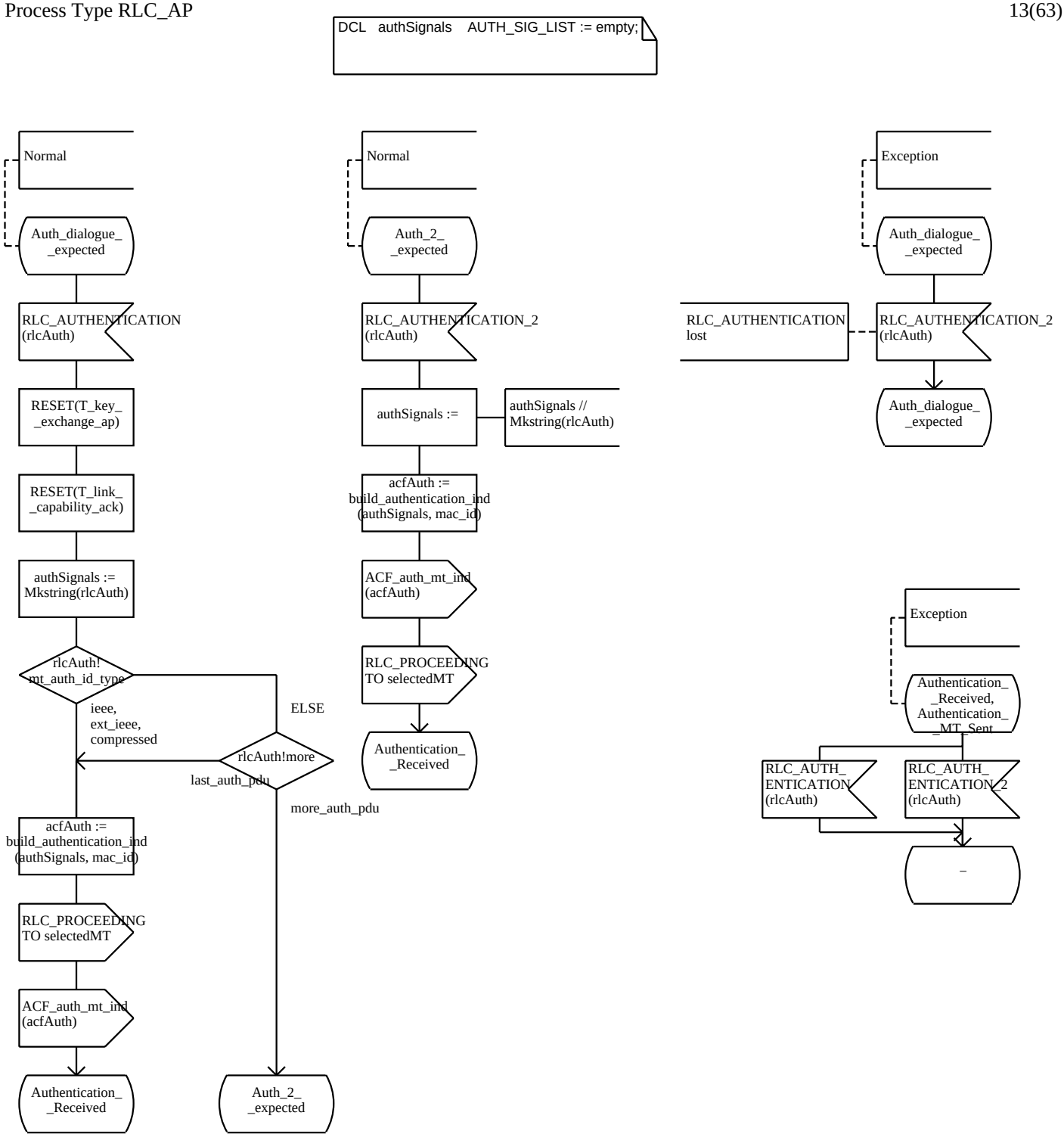
Process Type RLC_AP 11(63)



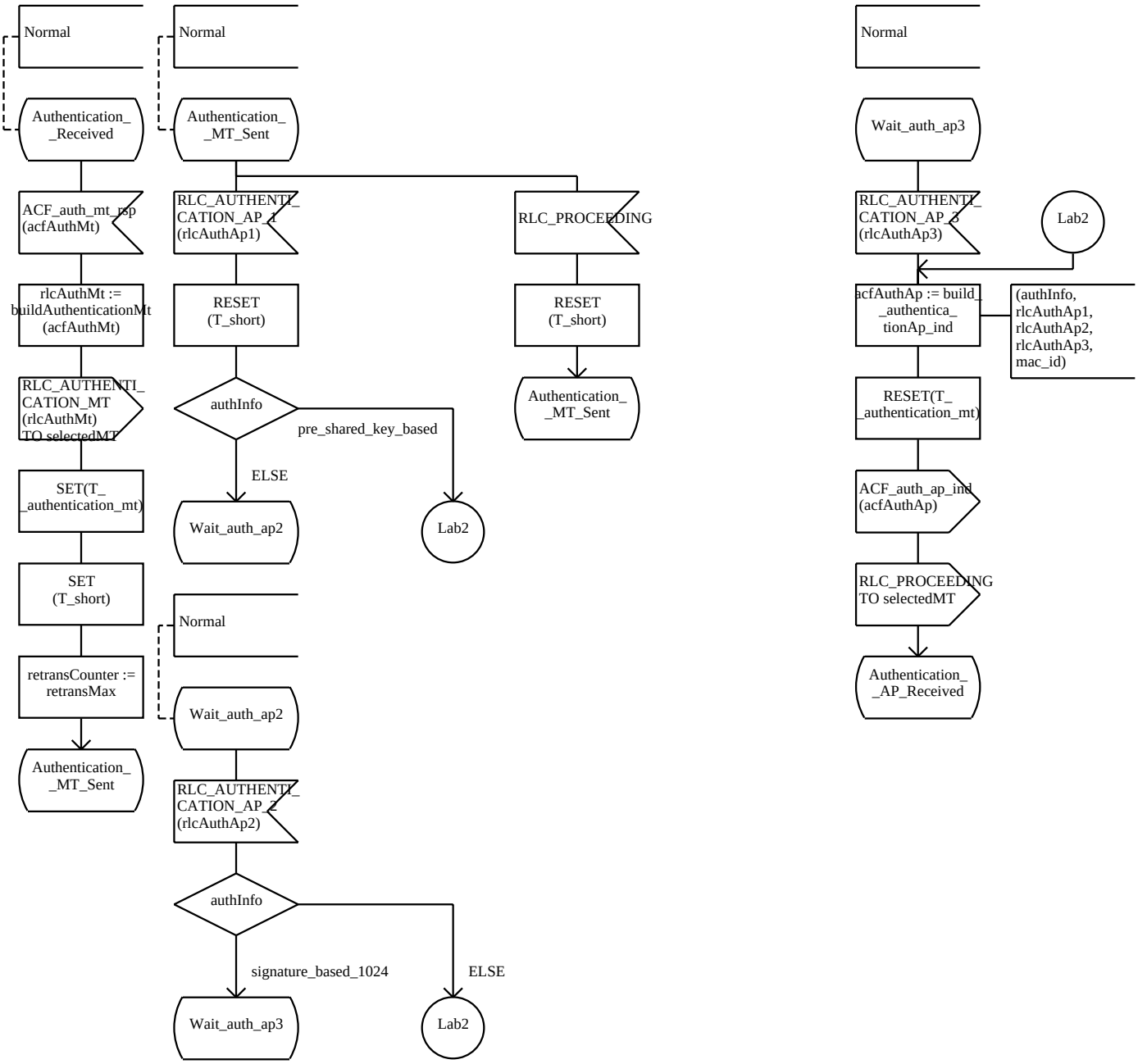
Process Type RLC_AP 12(63)



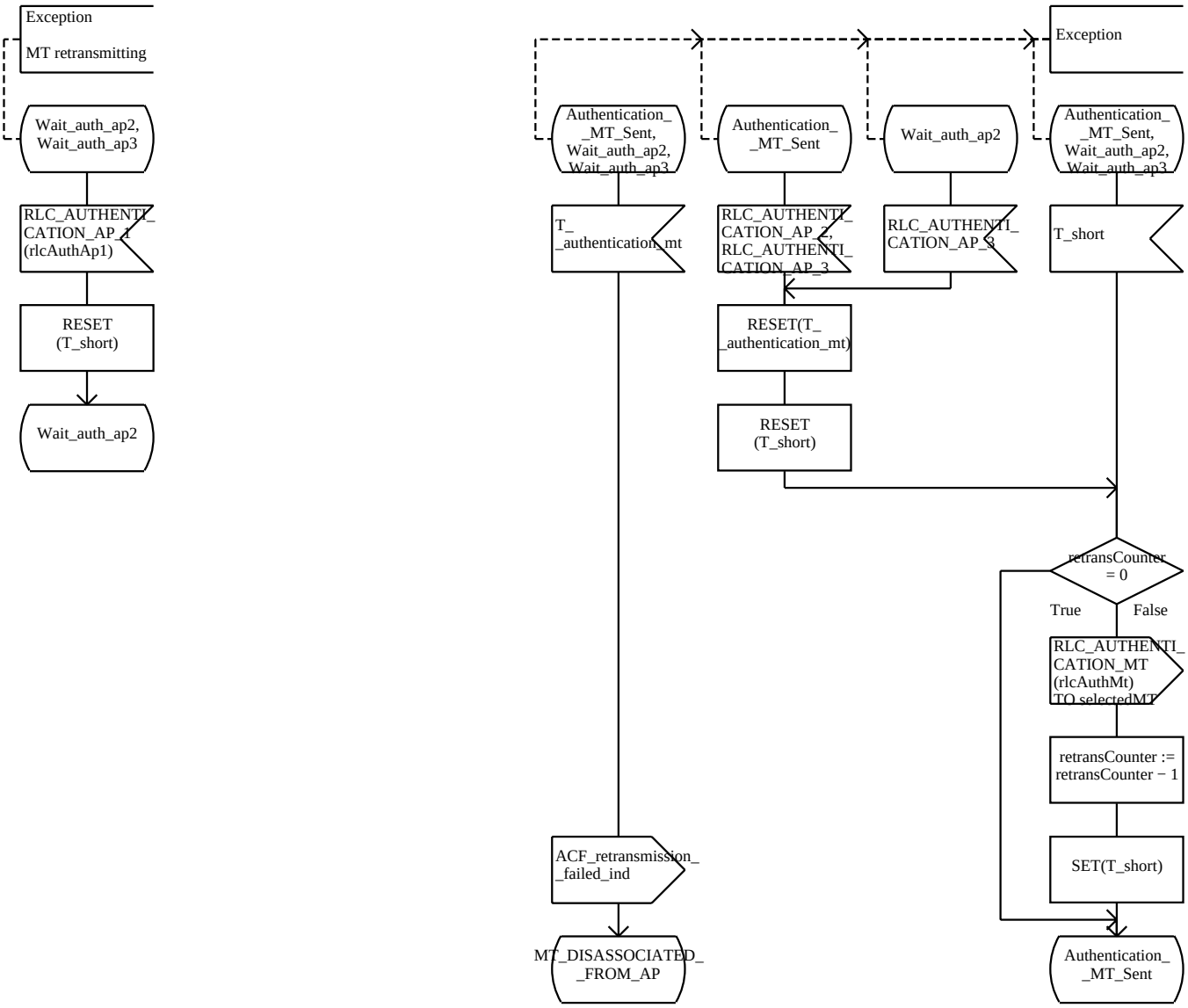
Process Type RLC_AP 13(63)



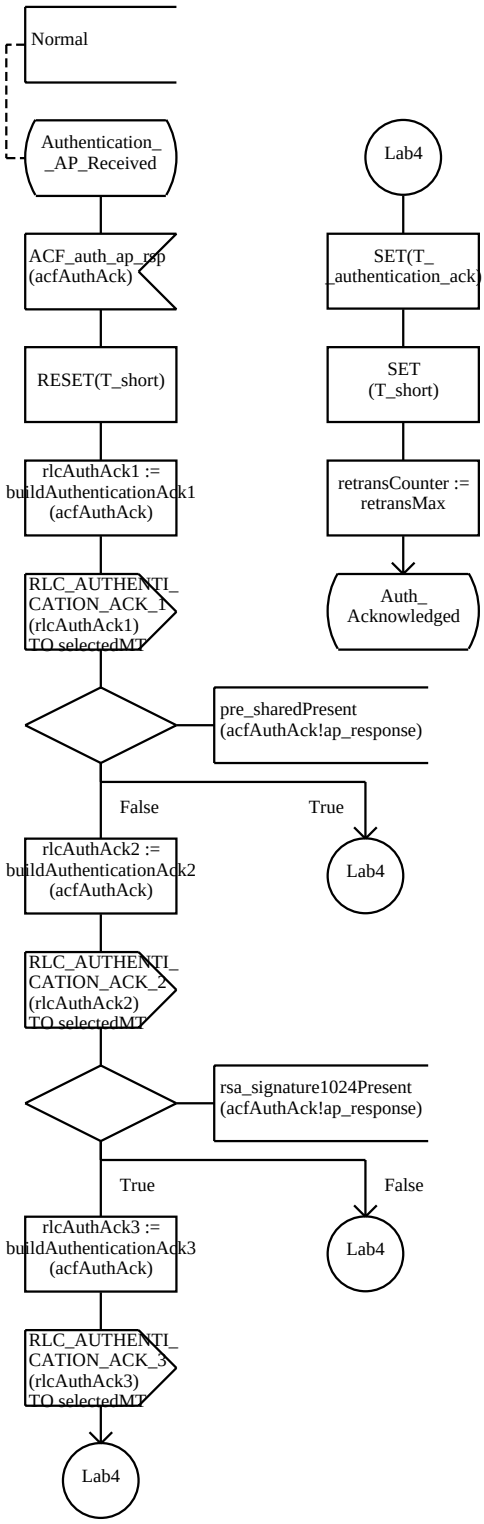
Process Type RLC_AP 14(63)



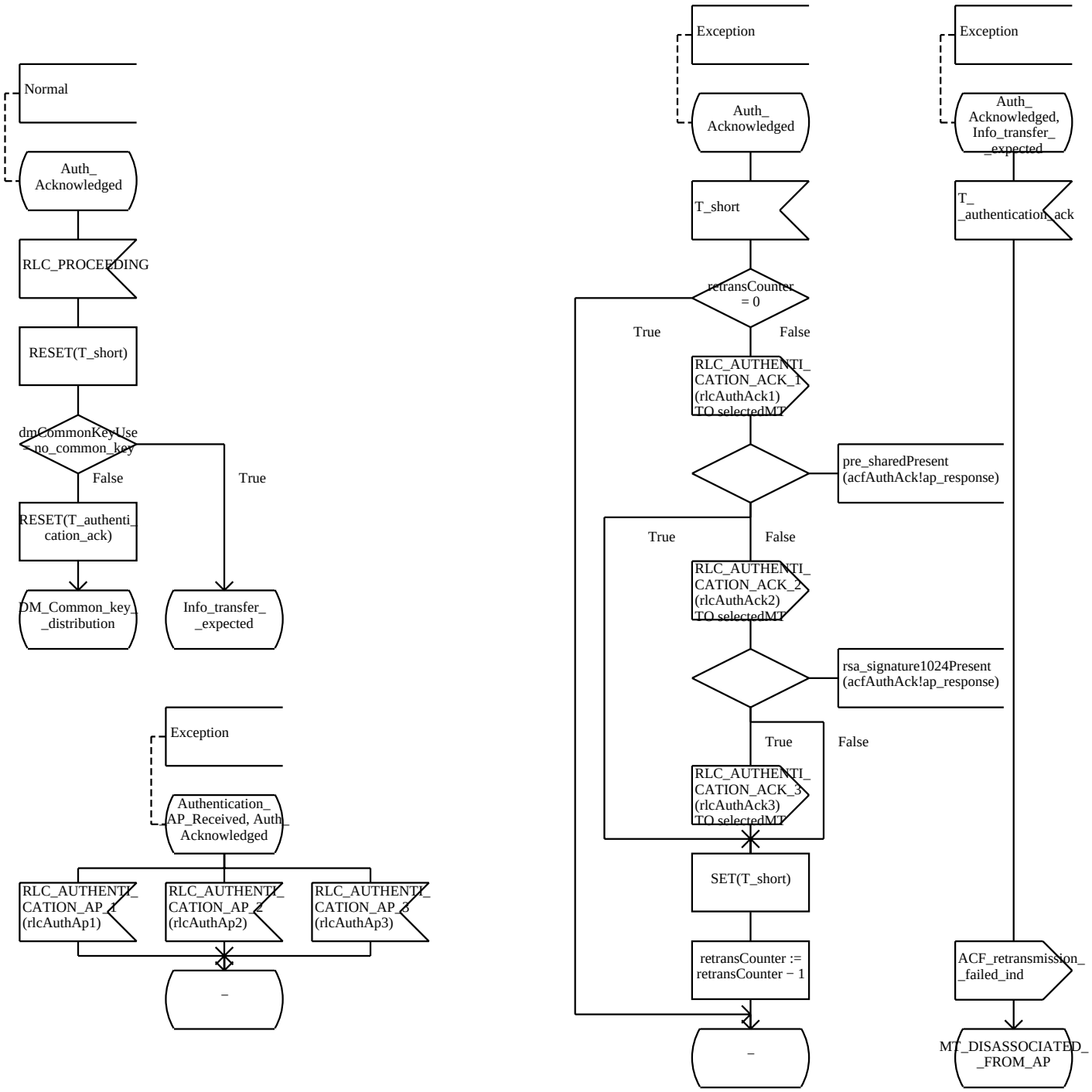
Process Type RLC_AP 15(63)



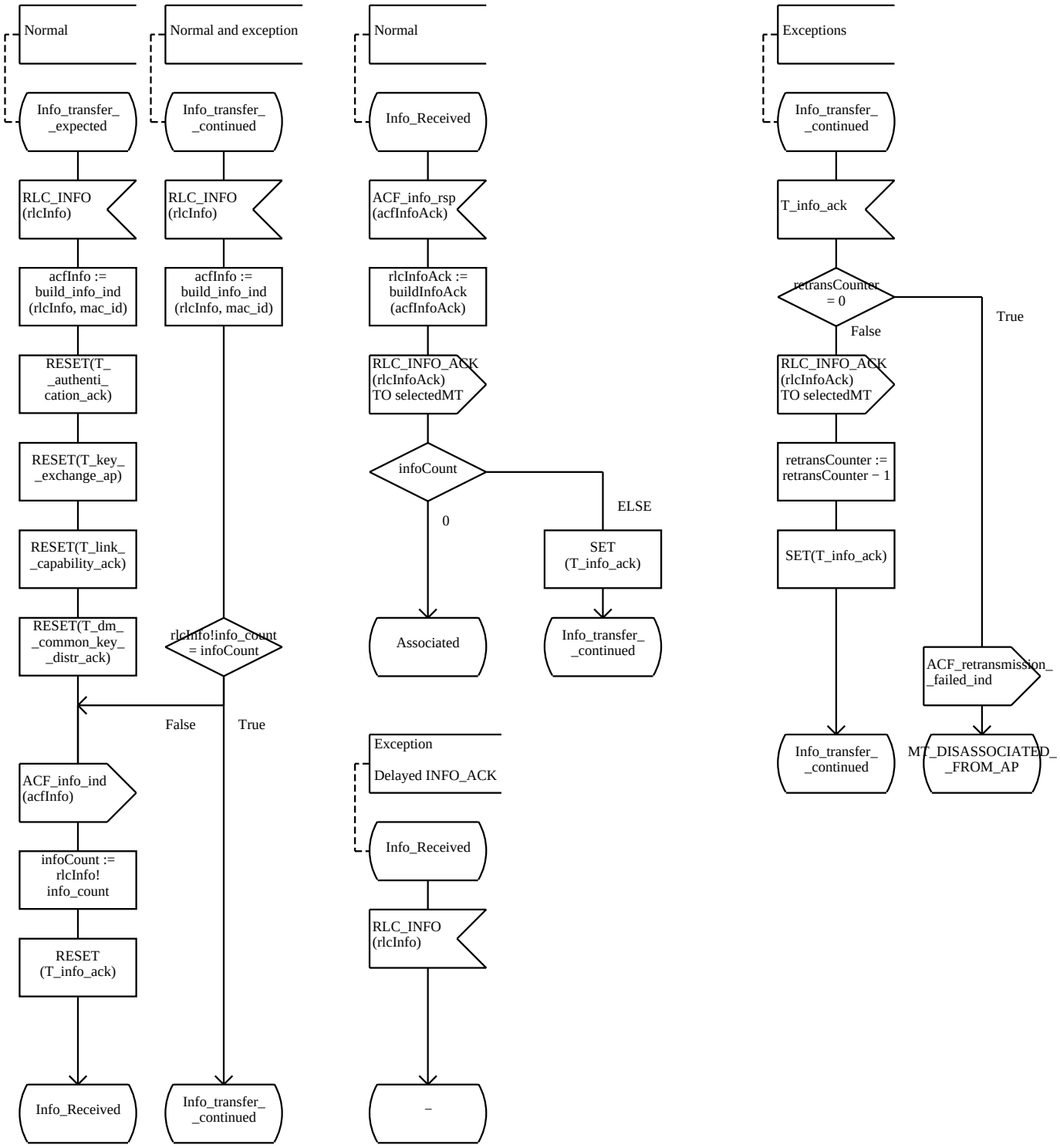
Process Type RLC_AP 16(63)



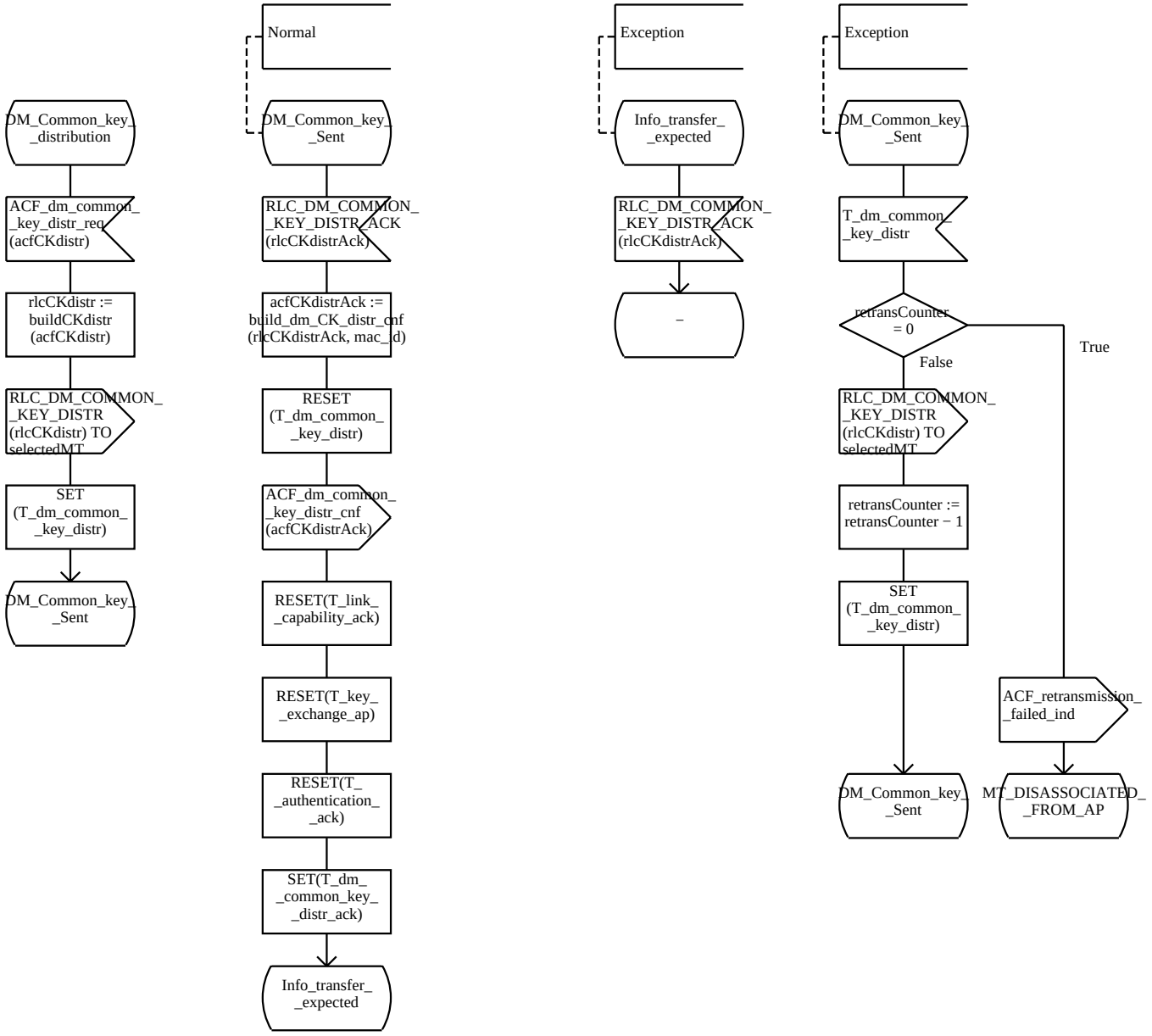
Process Type RLC_AP 17(63)



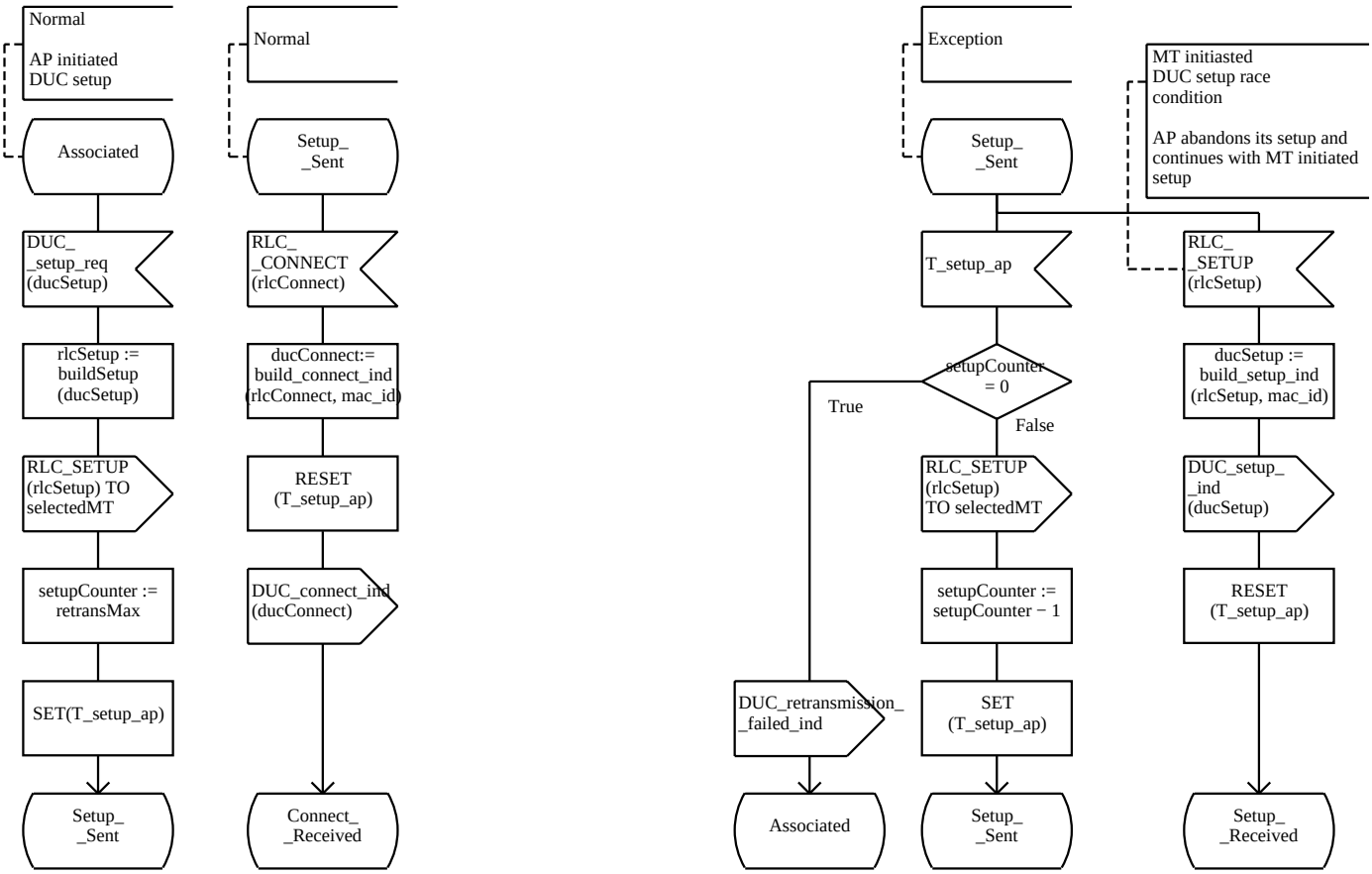
Process Type RLC_AP 18(63)



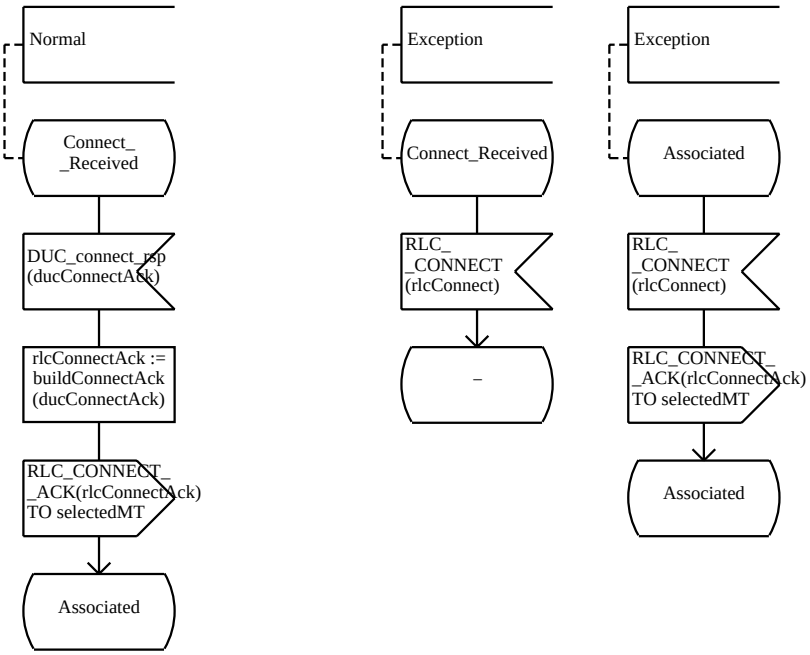
Process Type RLC_AP 19(63)



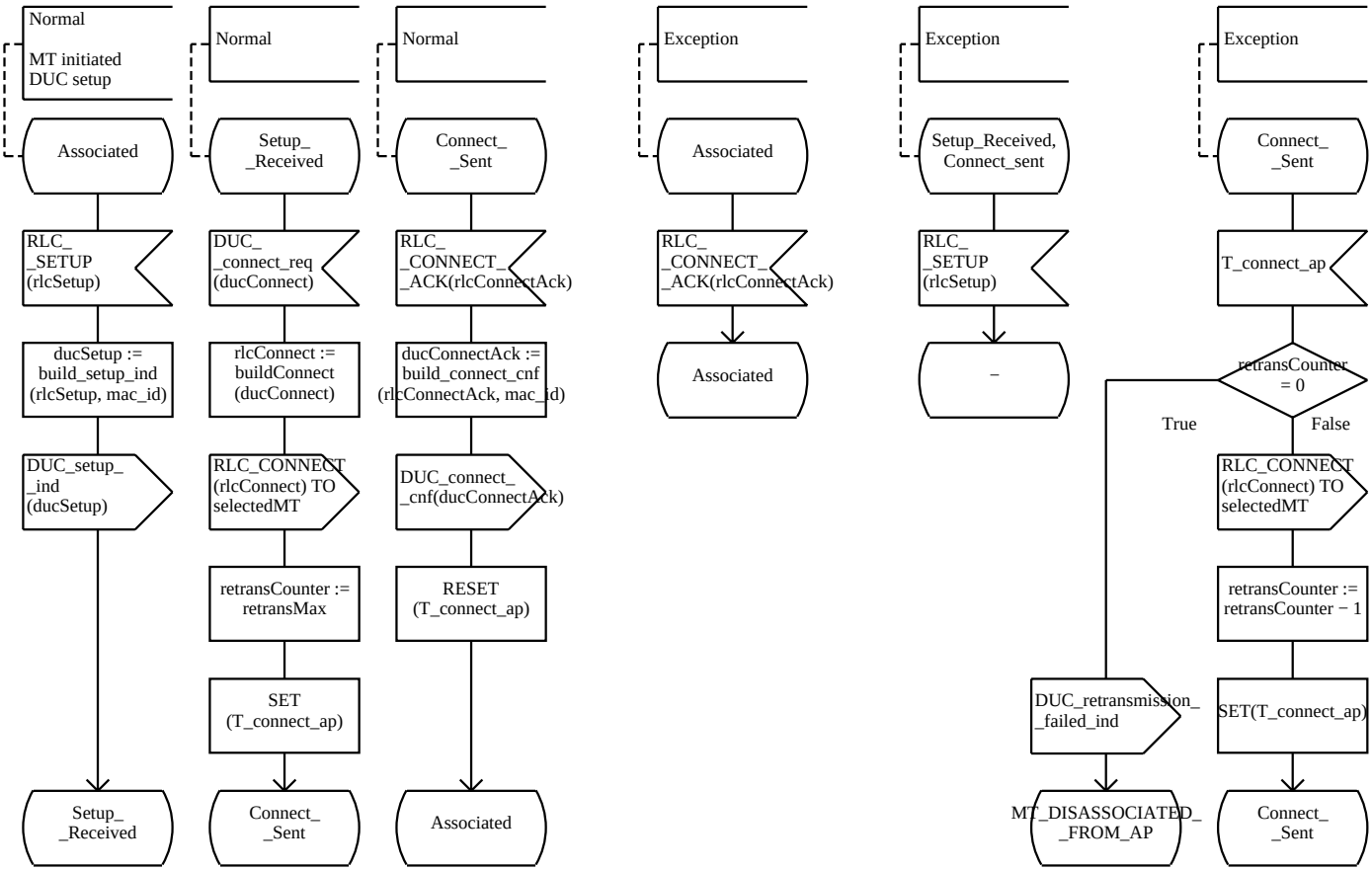
Process Type RLC_AP 20(63)



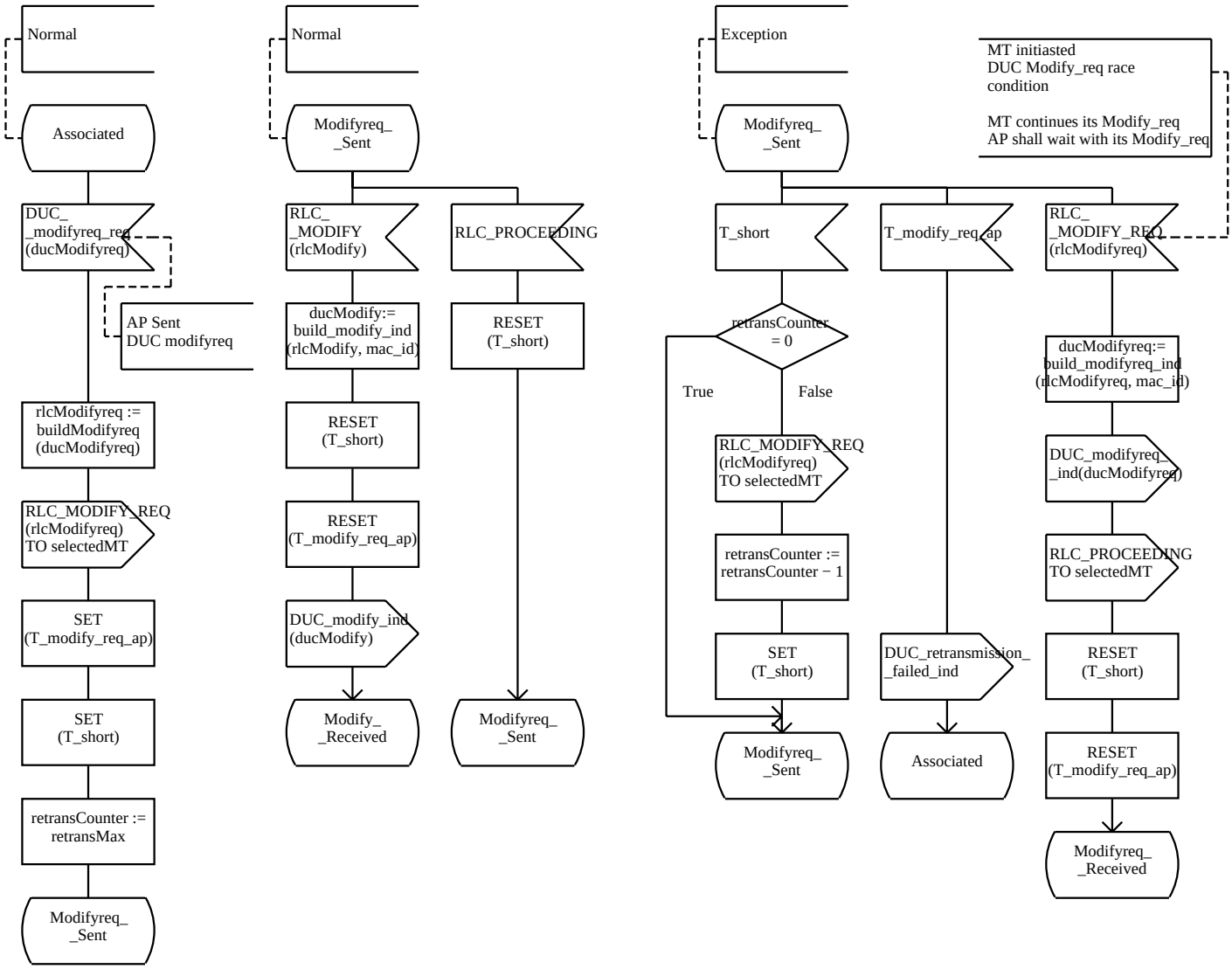
Process Type RLC_AP 21(63)



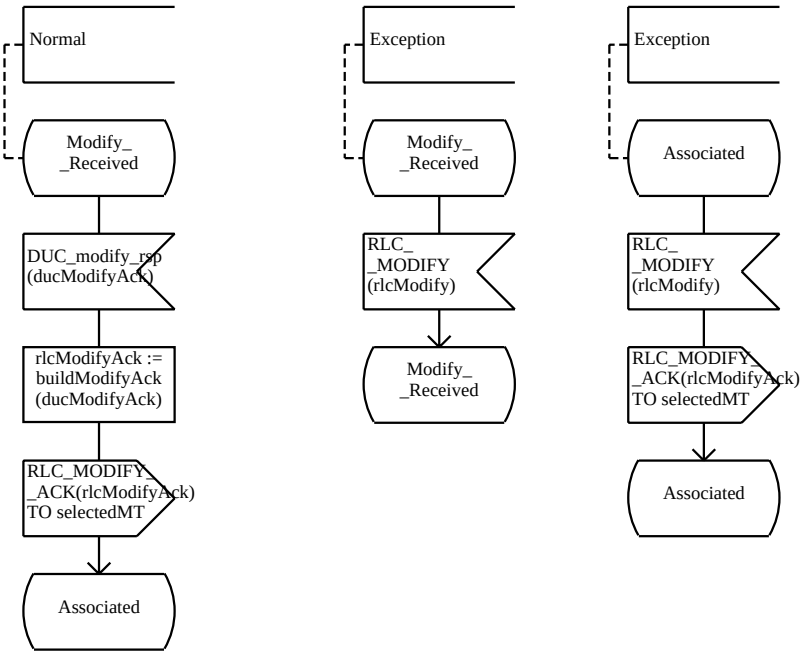
Process Type RLC_AP 22(63)



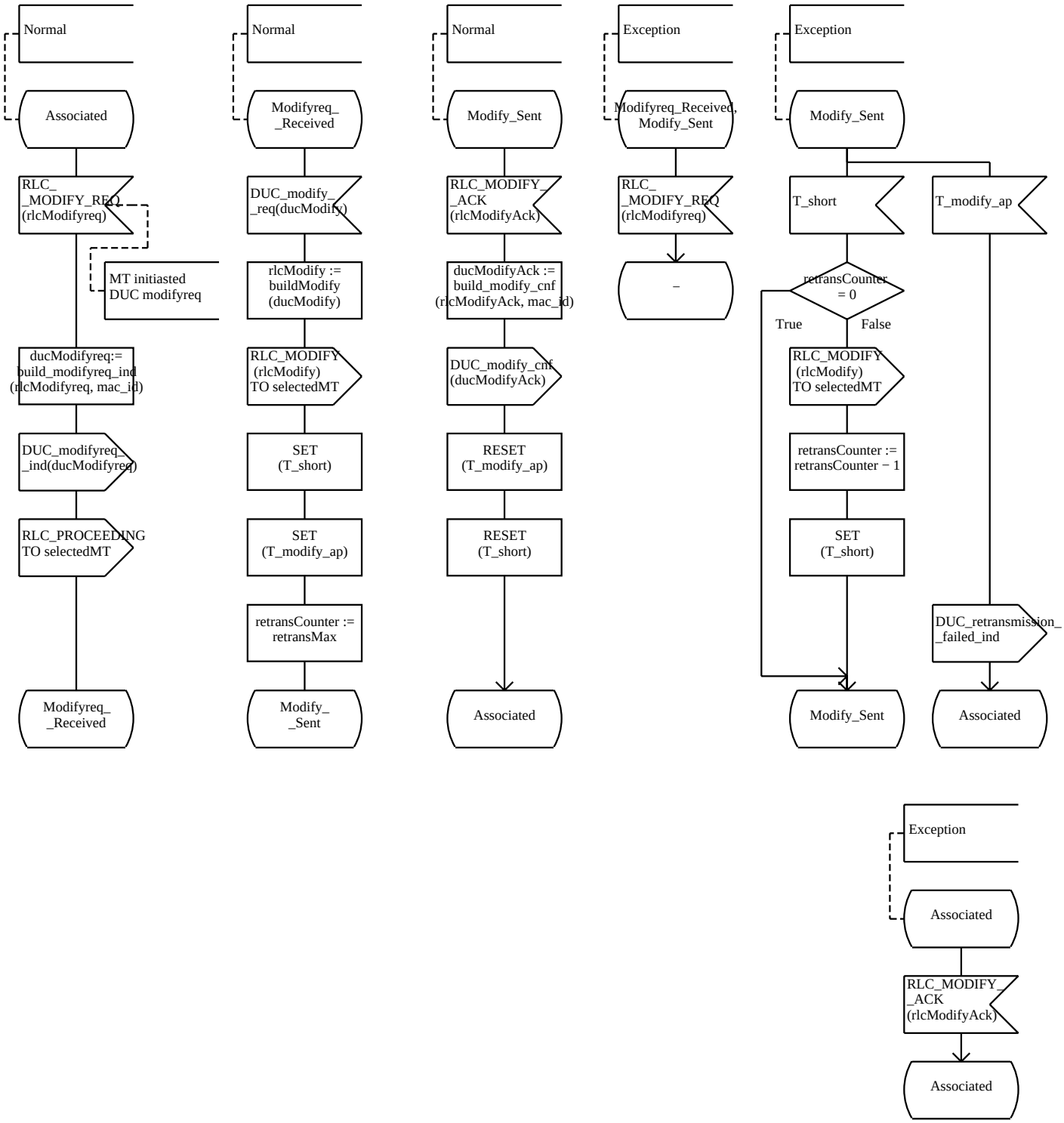
Process Type RLC_AP 23(63)



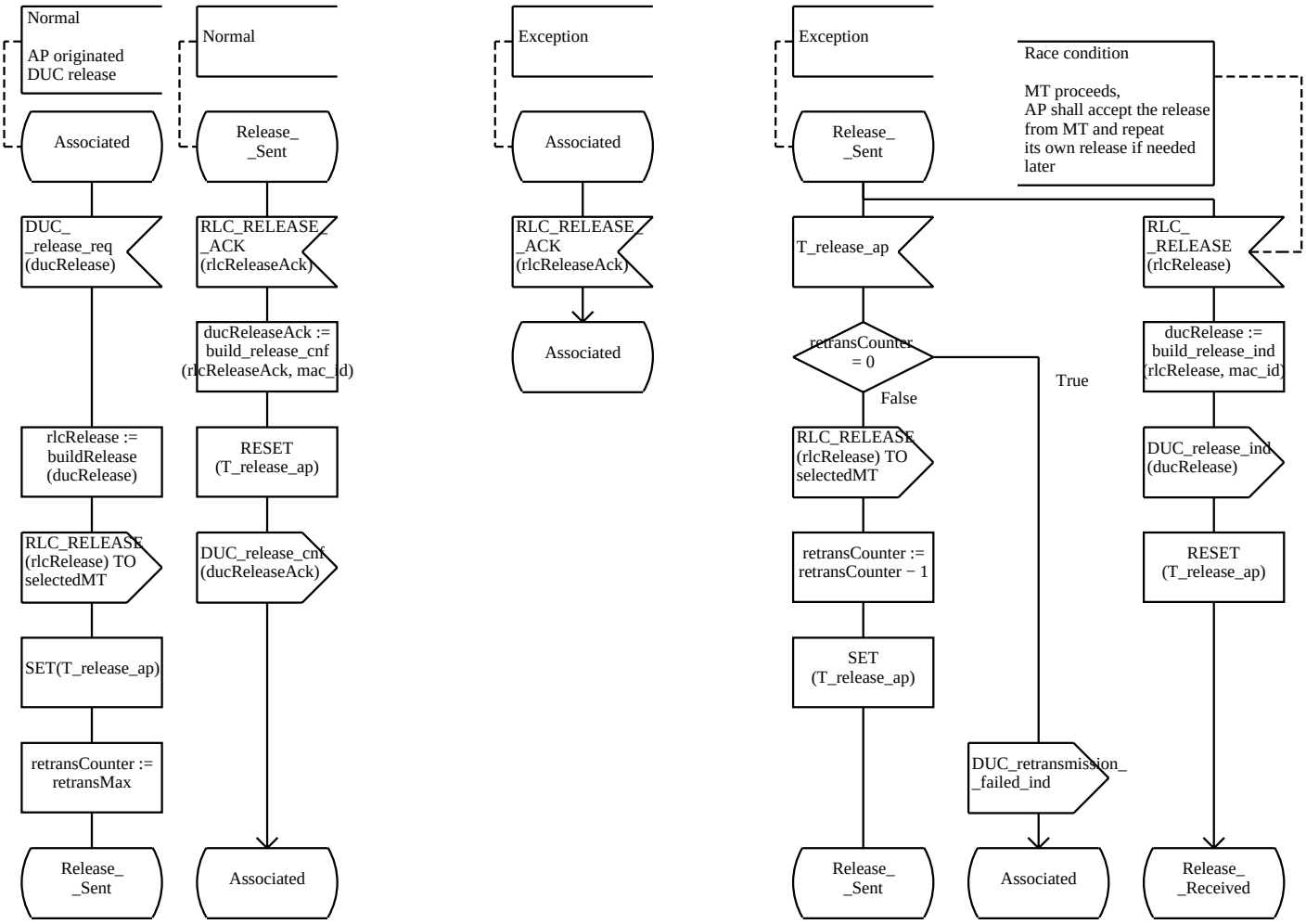
Process Type RLC_AP 24(63)



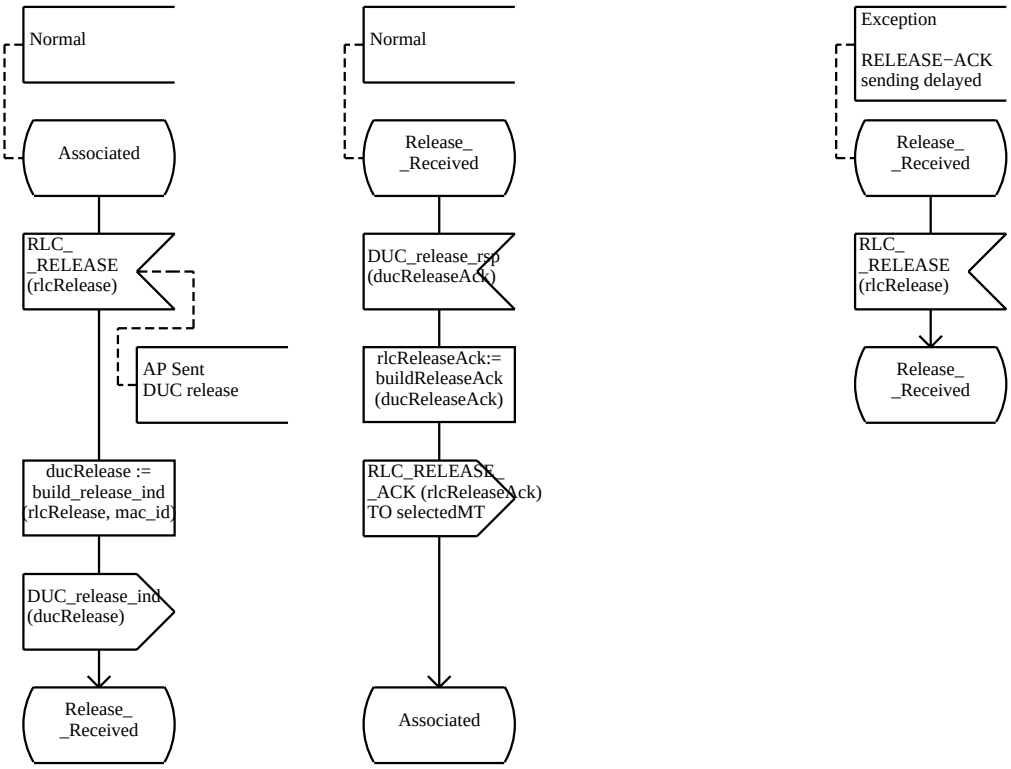
Process Type RLC_AP 25(63)



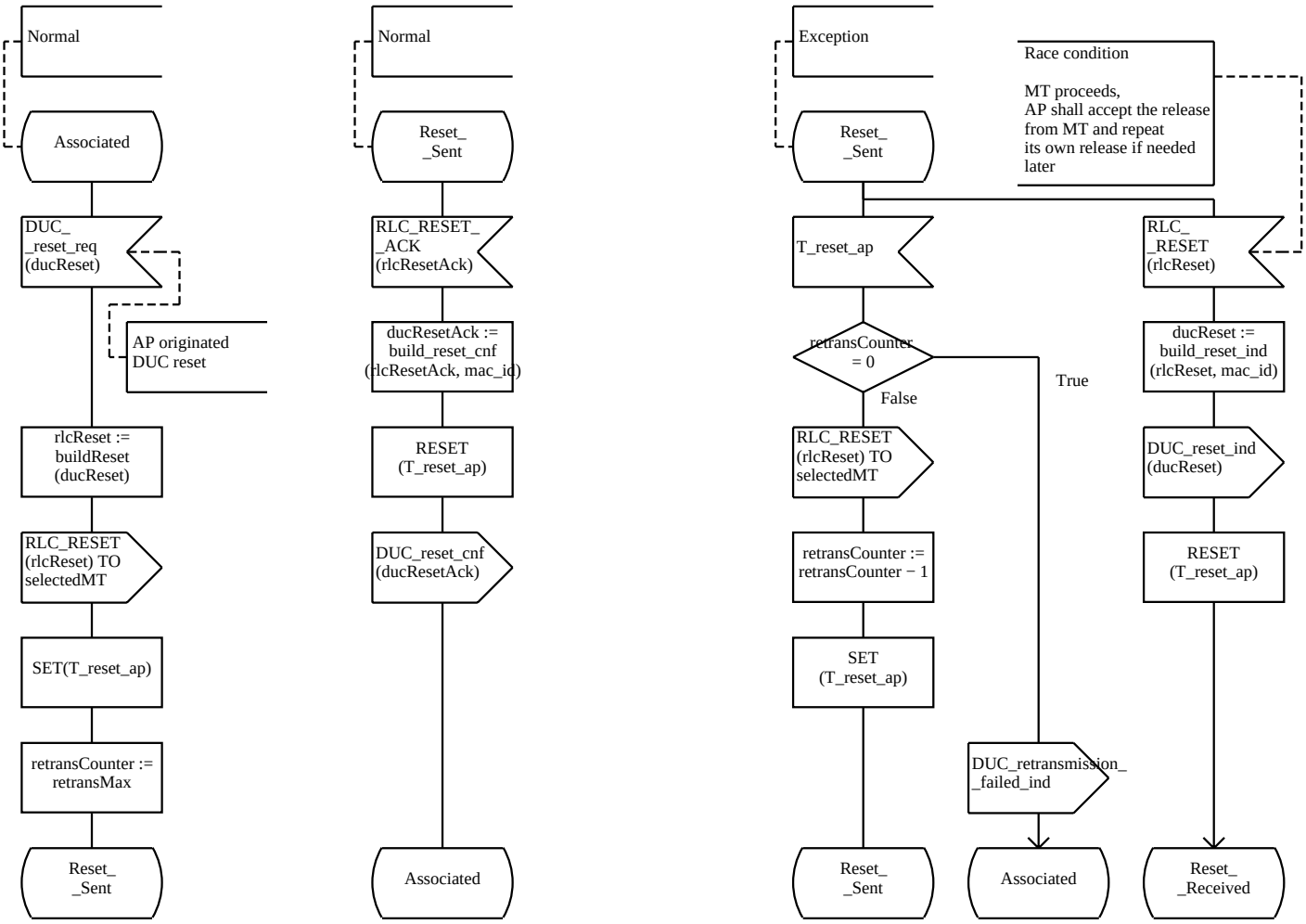
Process Type RLC_AP 26(63)



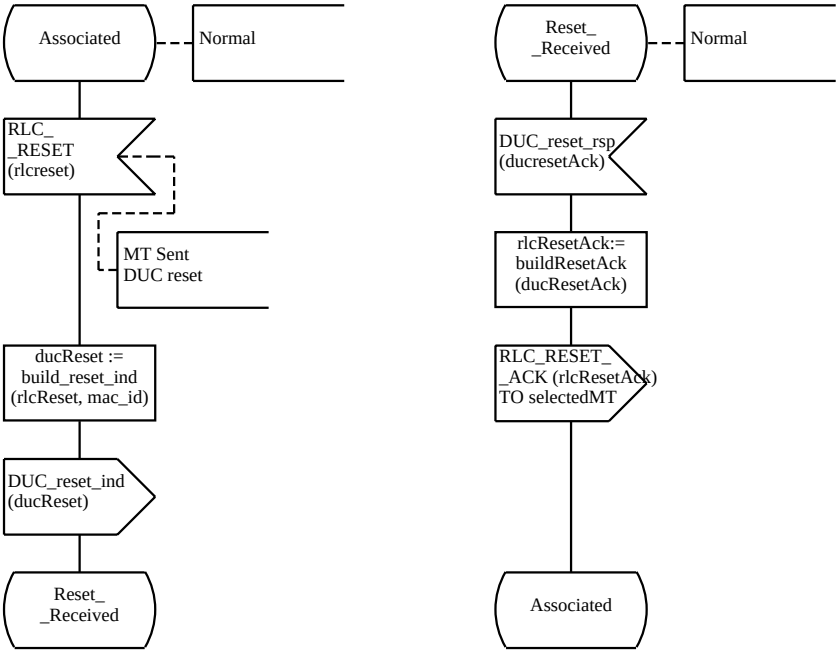
Process Type RLC_AP 27(63)



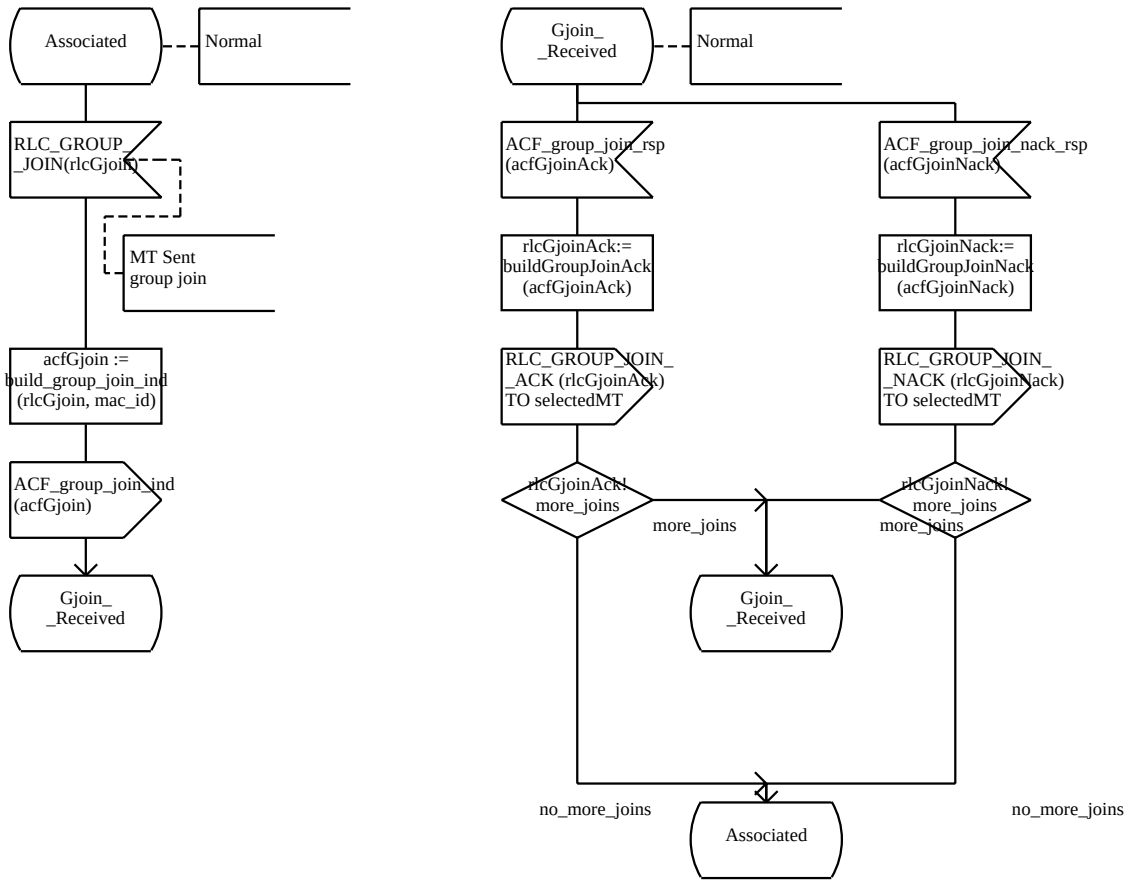
Process Type RLC_AP 28(63)



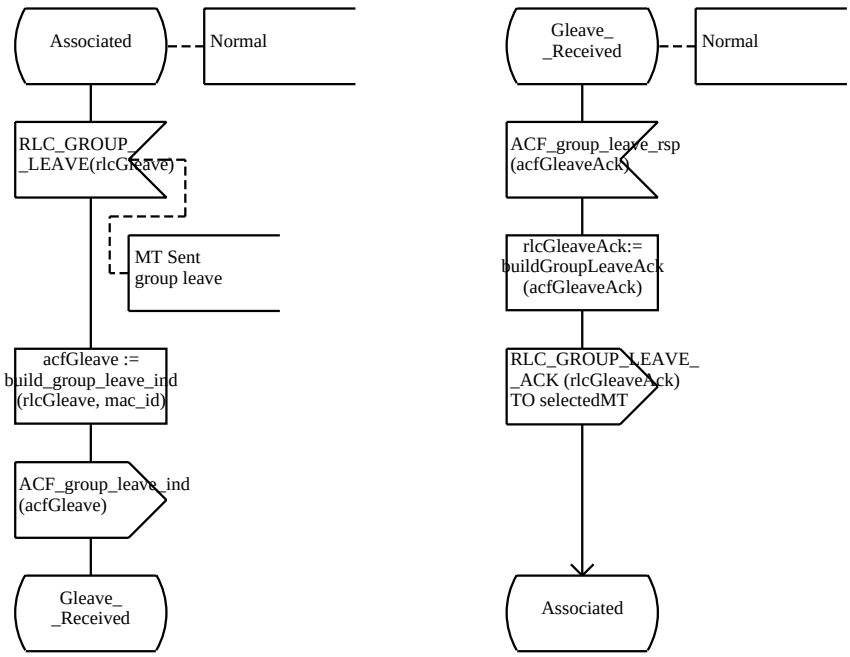
Process Type RLC_AP 29(63)



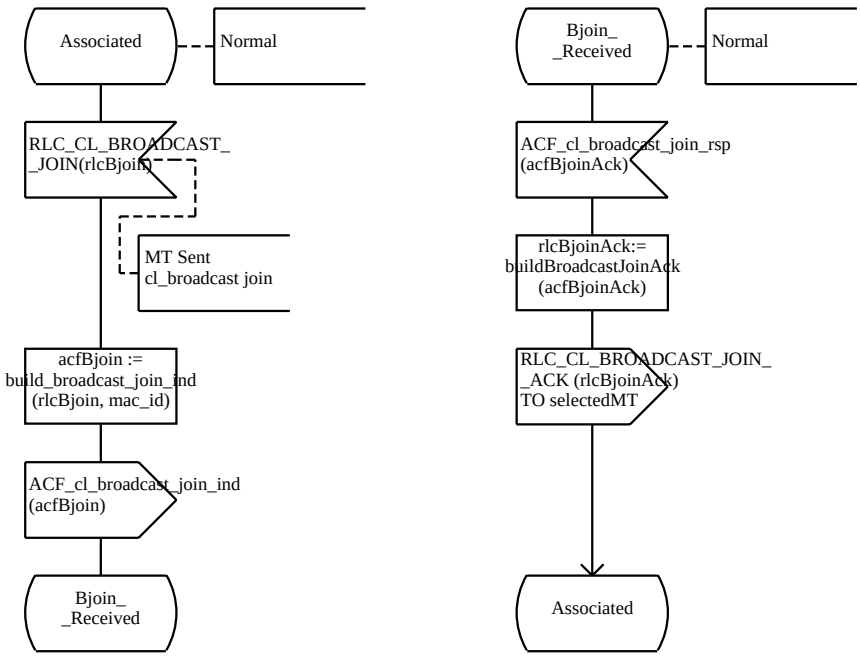
Process Type RLC_AP 30(63)



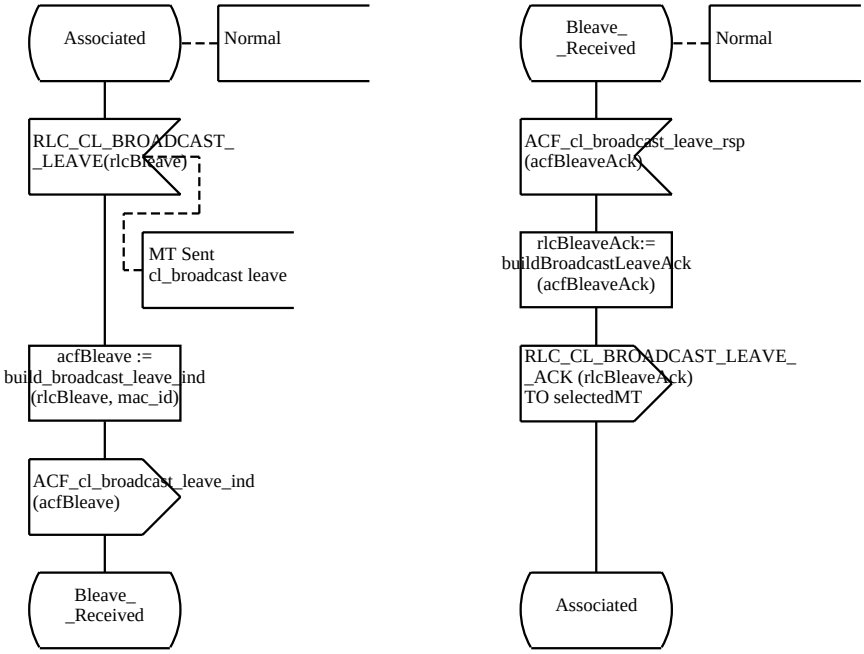
Process Type RLC_AP 31(63)



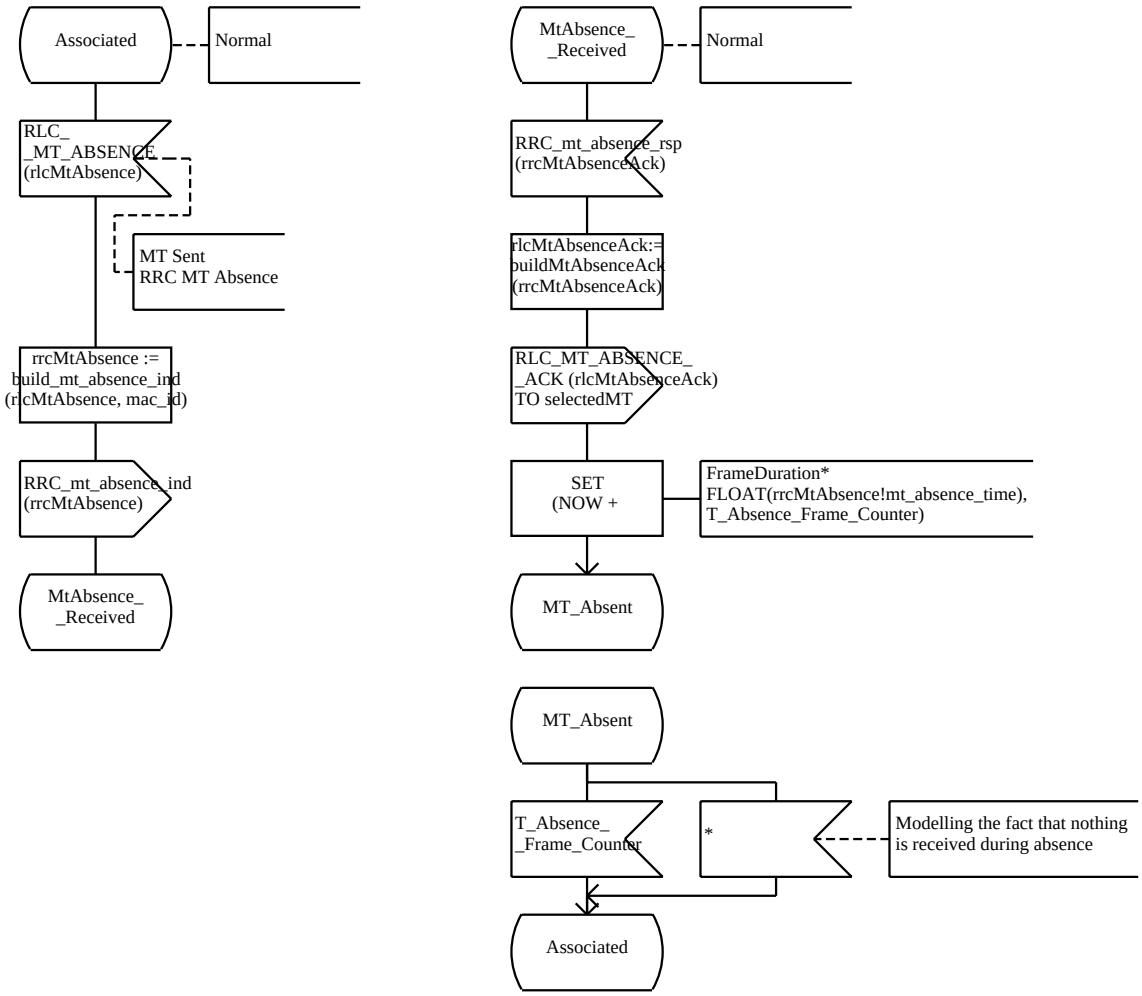
Process Type RLC_AP 32(63)



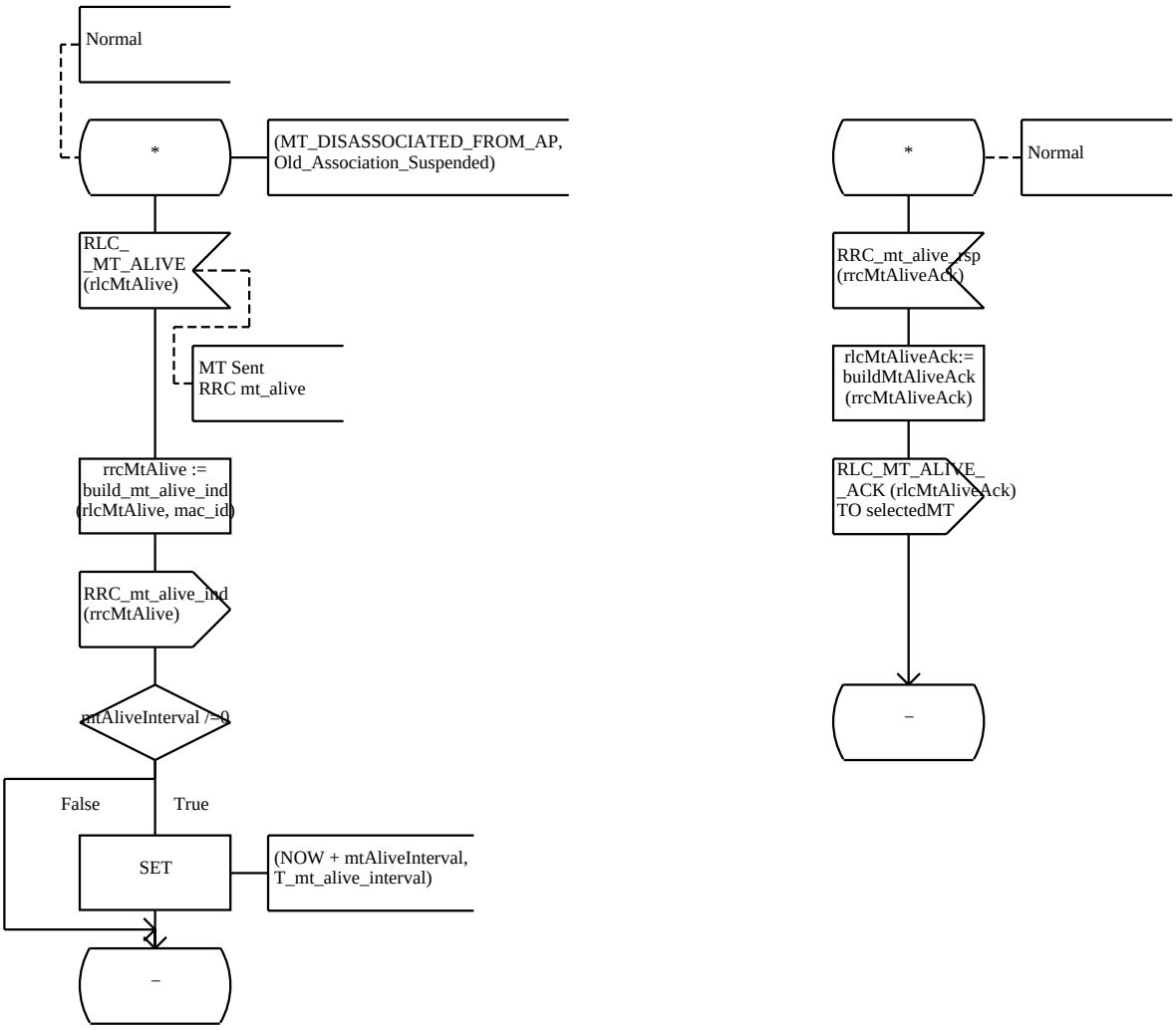
Process Type RLC_AP 33(63)



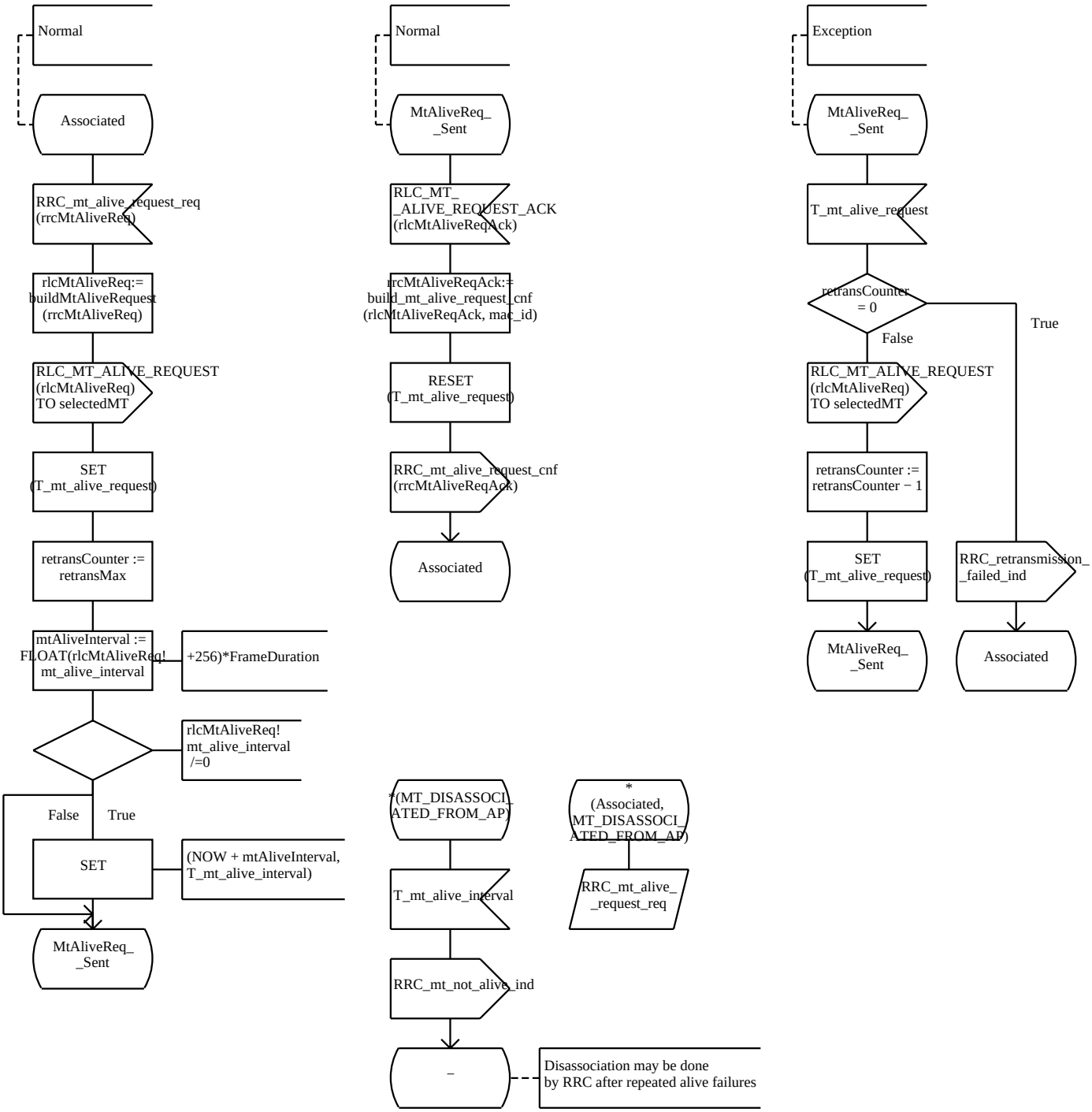
Process Type RLC_AP 34(63)



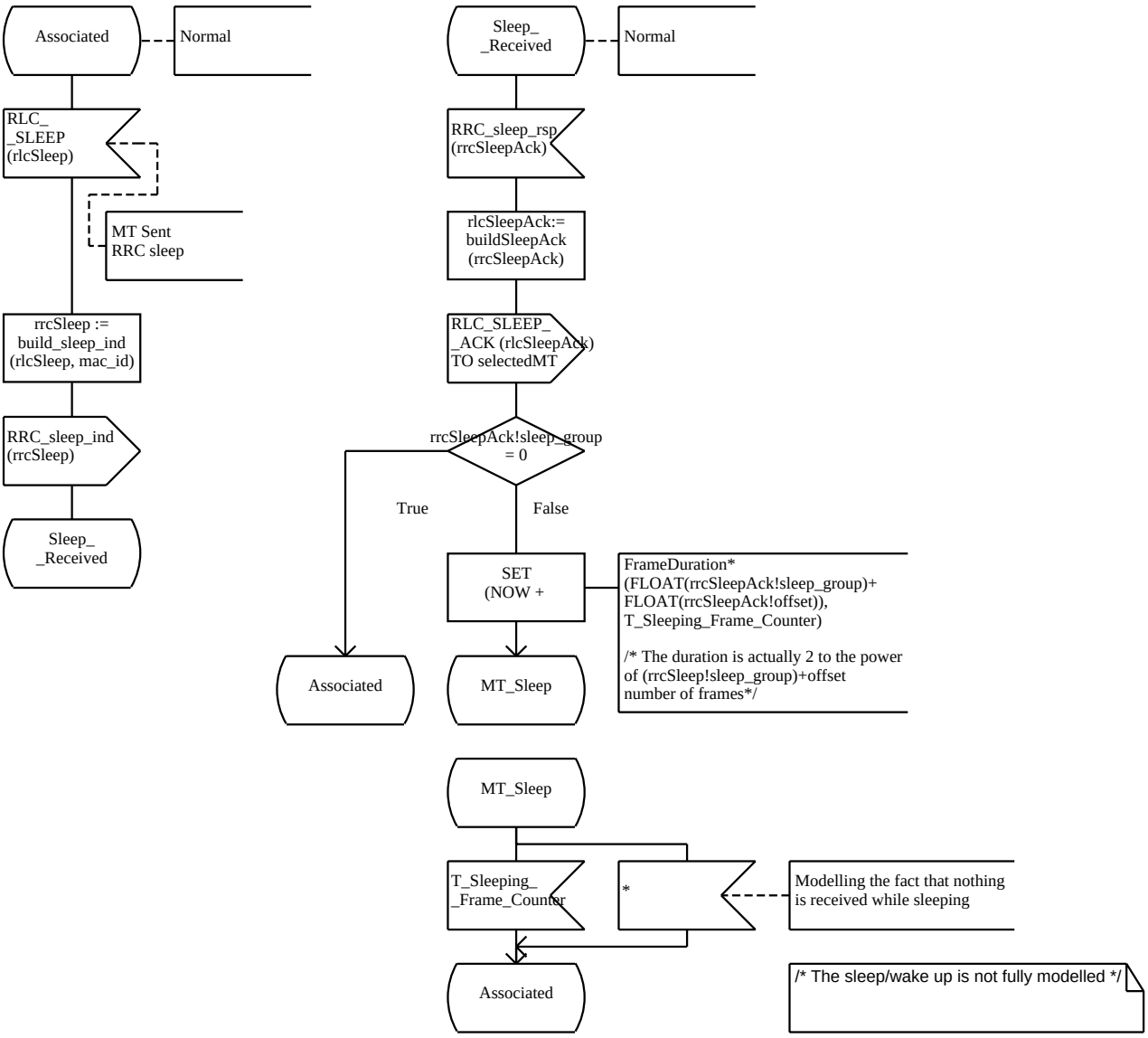
Process Type RLC_AP 35(63)



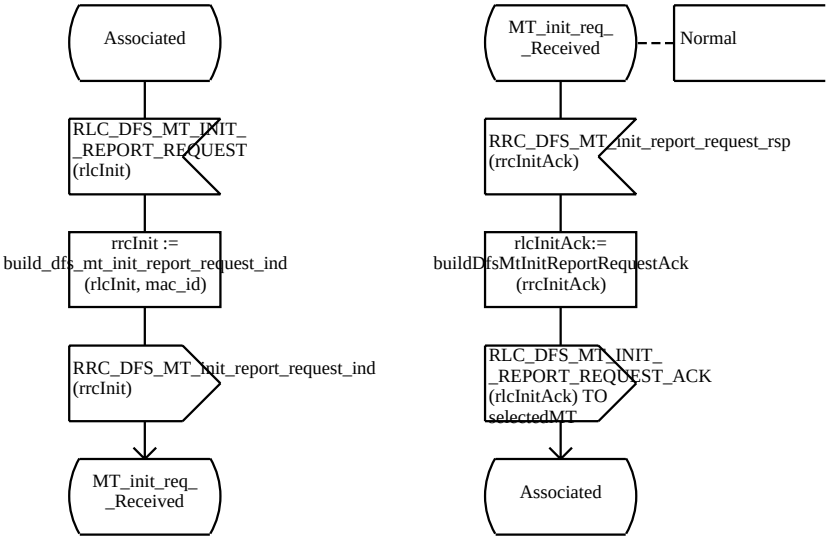
Process Type RLC_AP 36(63)



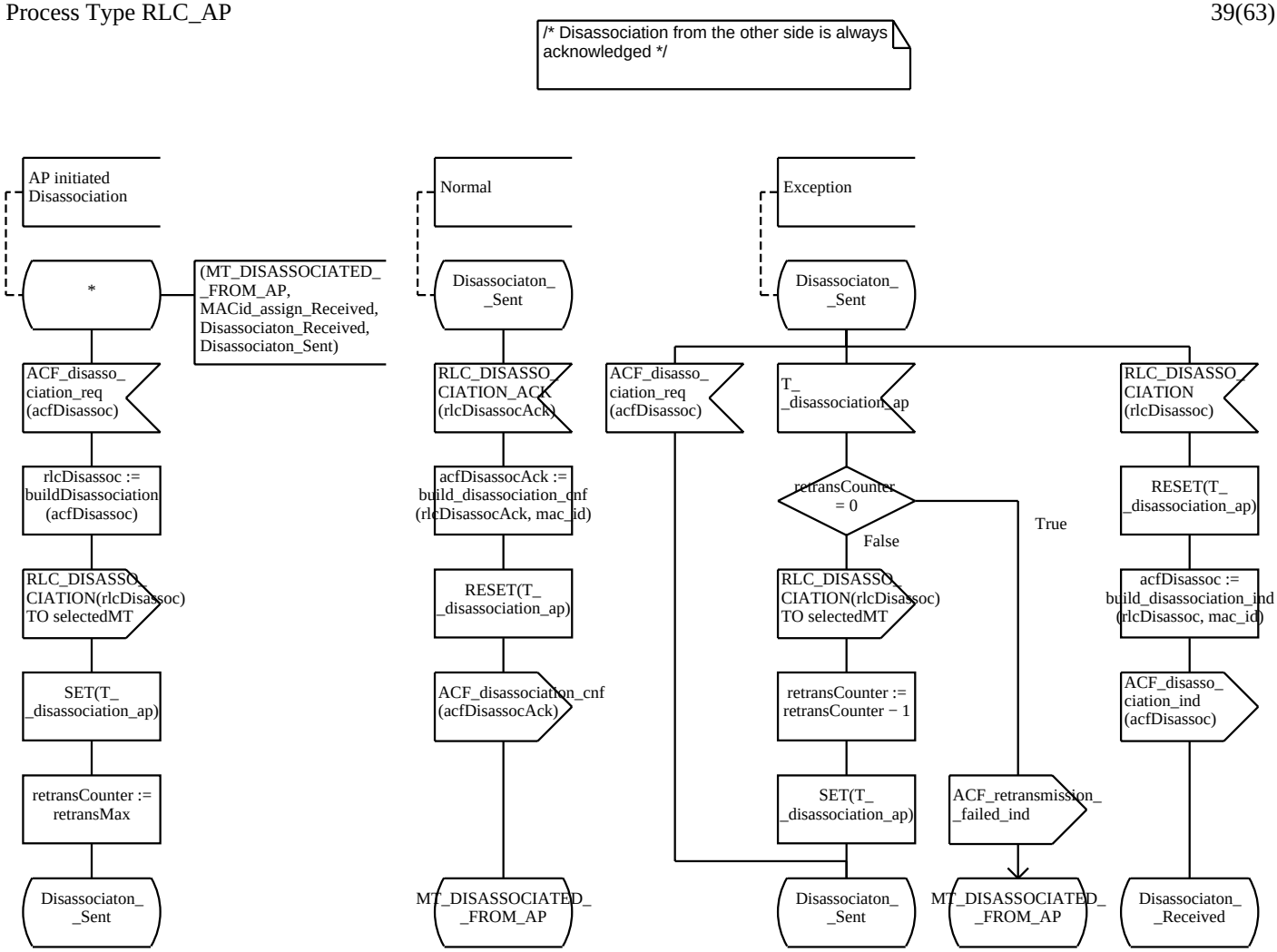
Process Type RLC_AP 37(63)



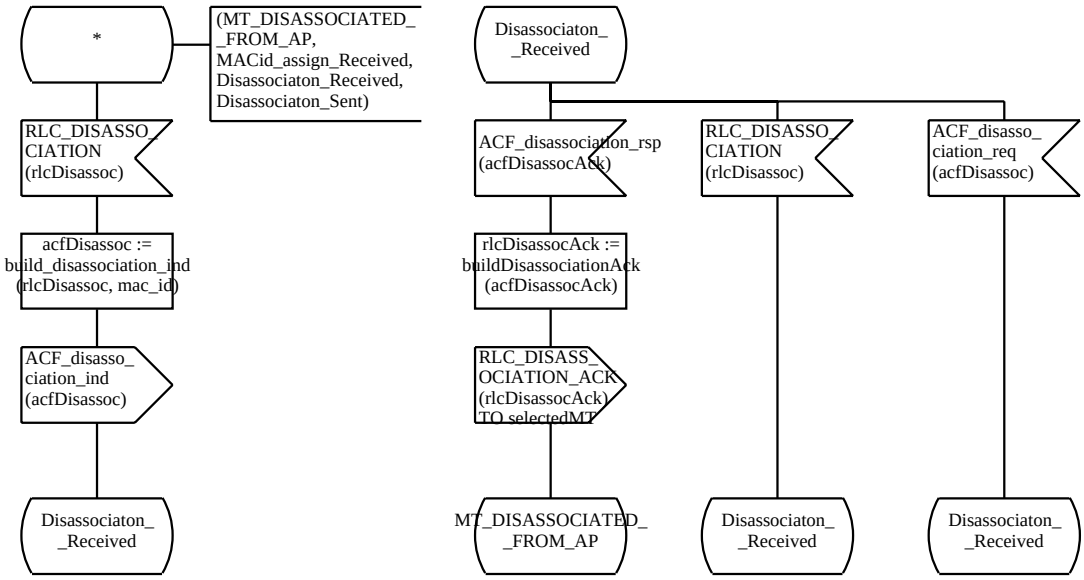
Process Type RLC_AP 38(63)



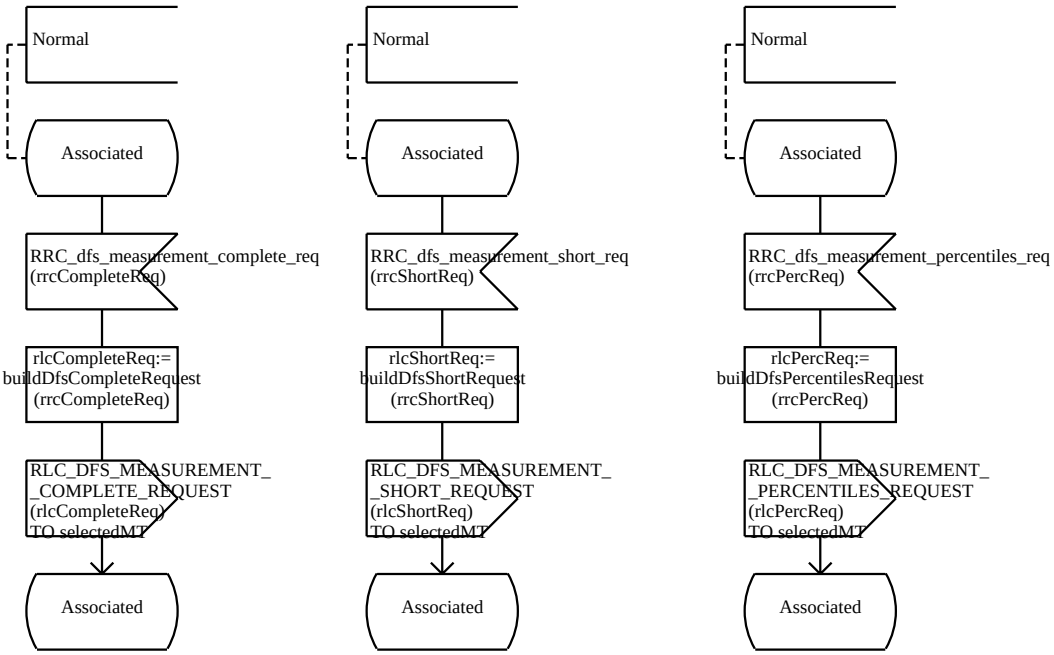
Process Type RLC_AP 39(63)



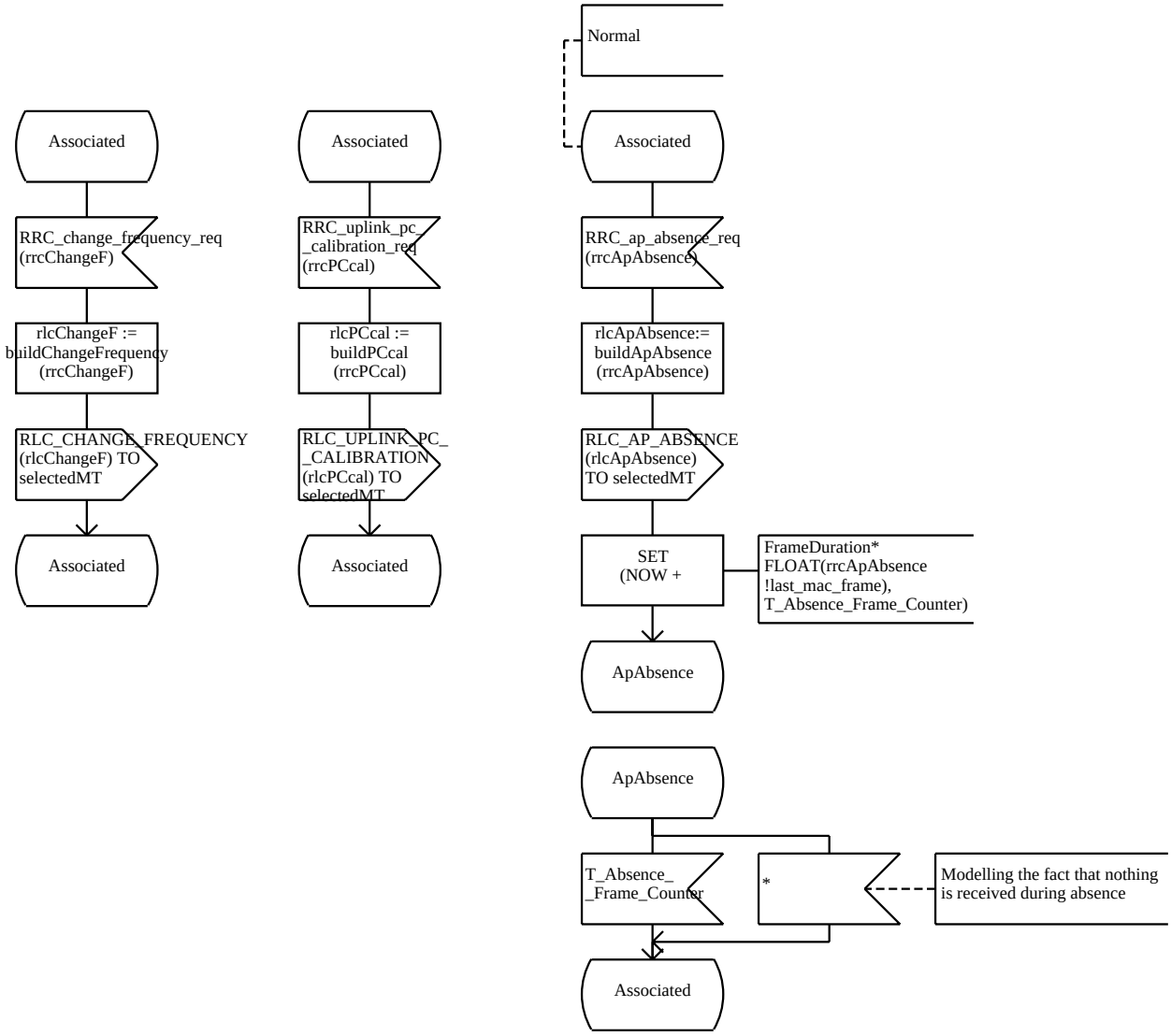
Process Type RLC_AP 40(63)



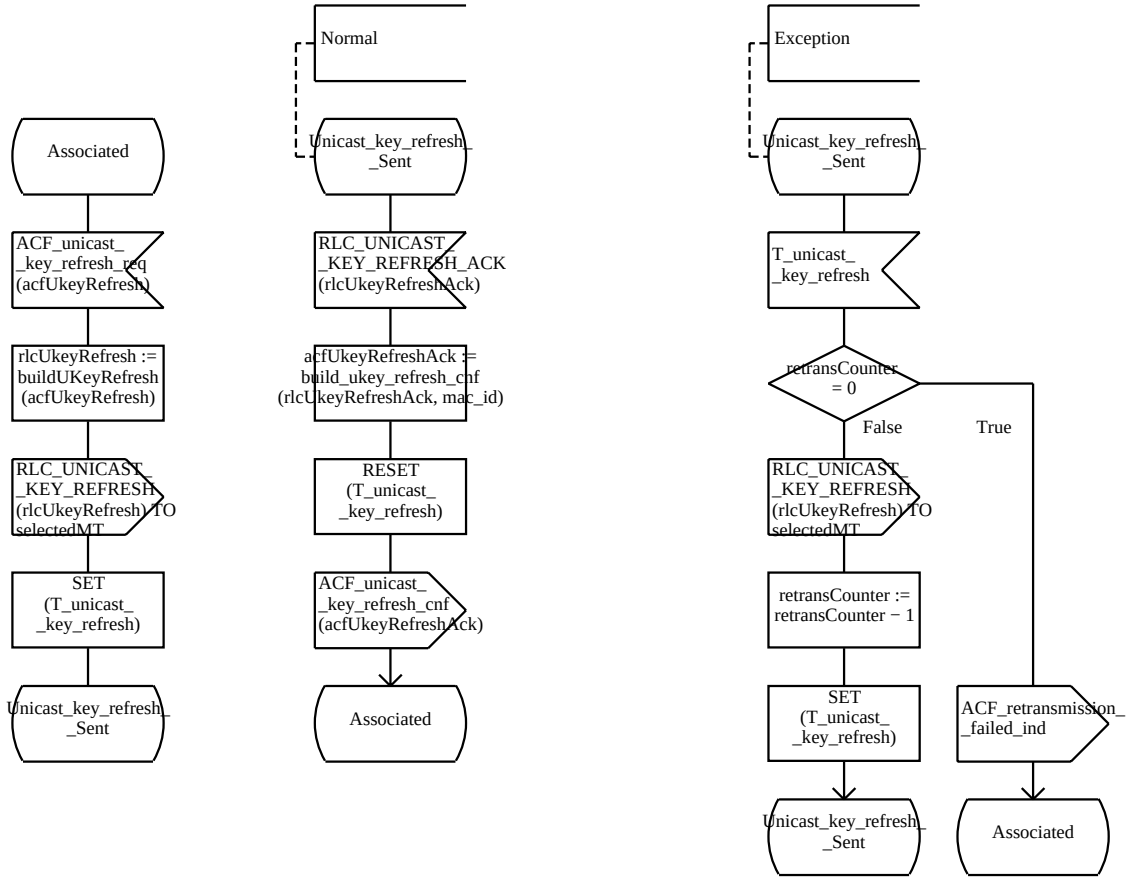
Process Type RLC_AP 41(63)



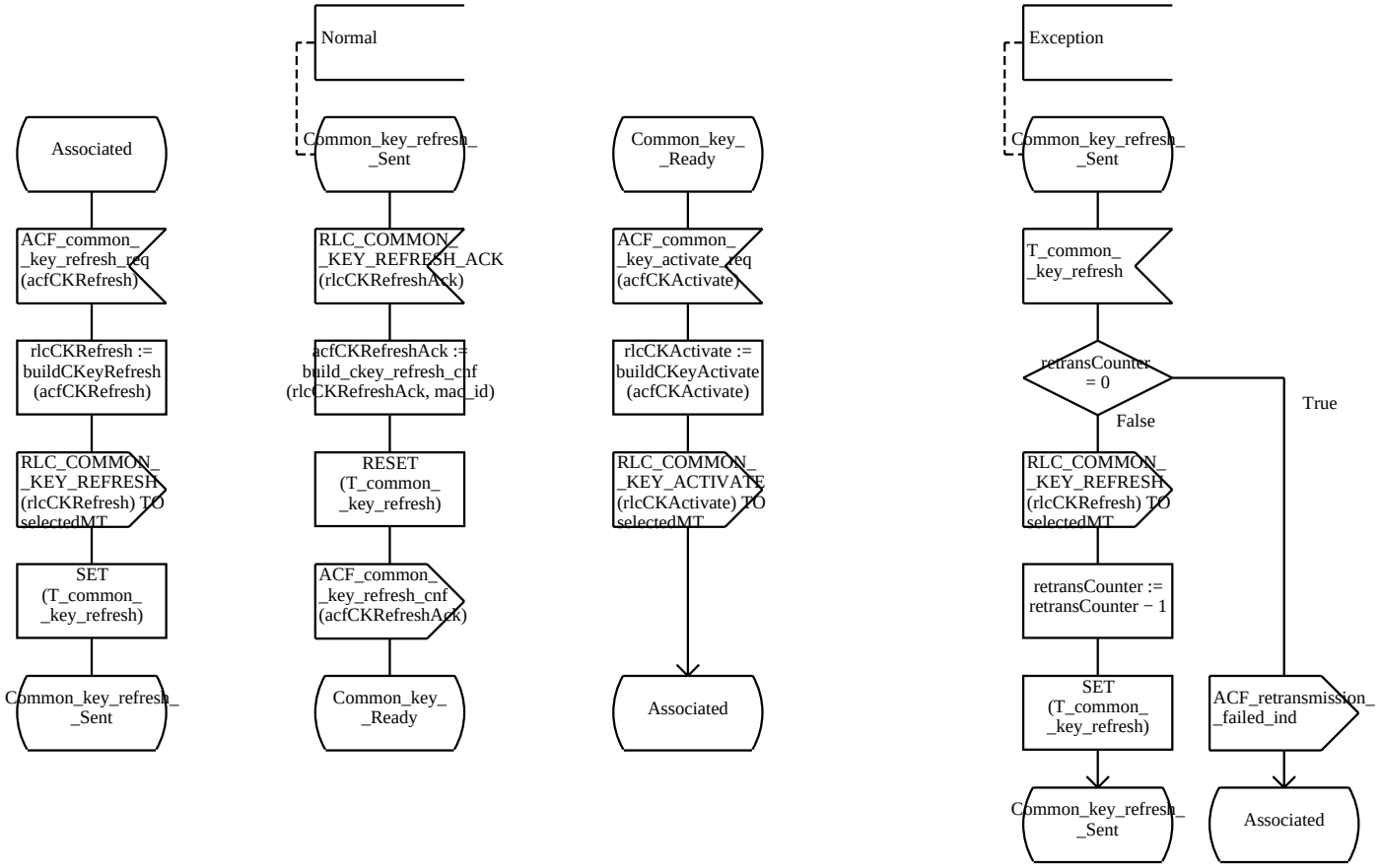
Process Type RLC_AP 42(63)



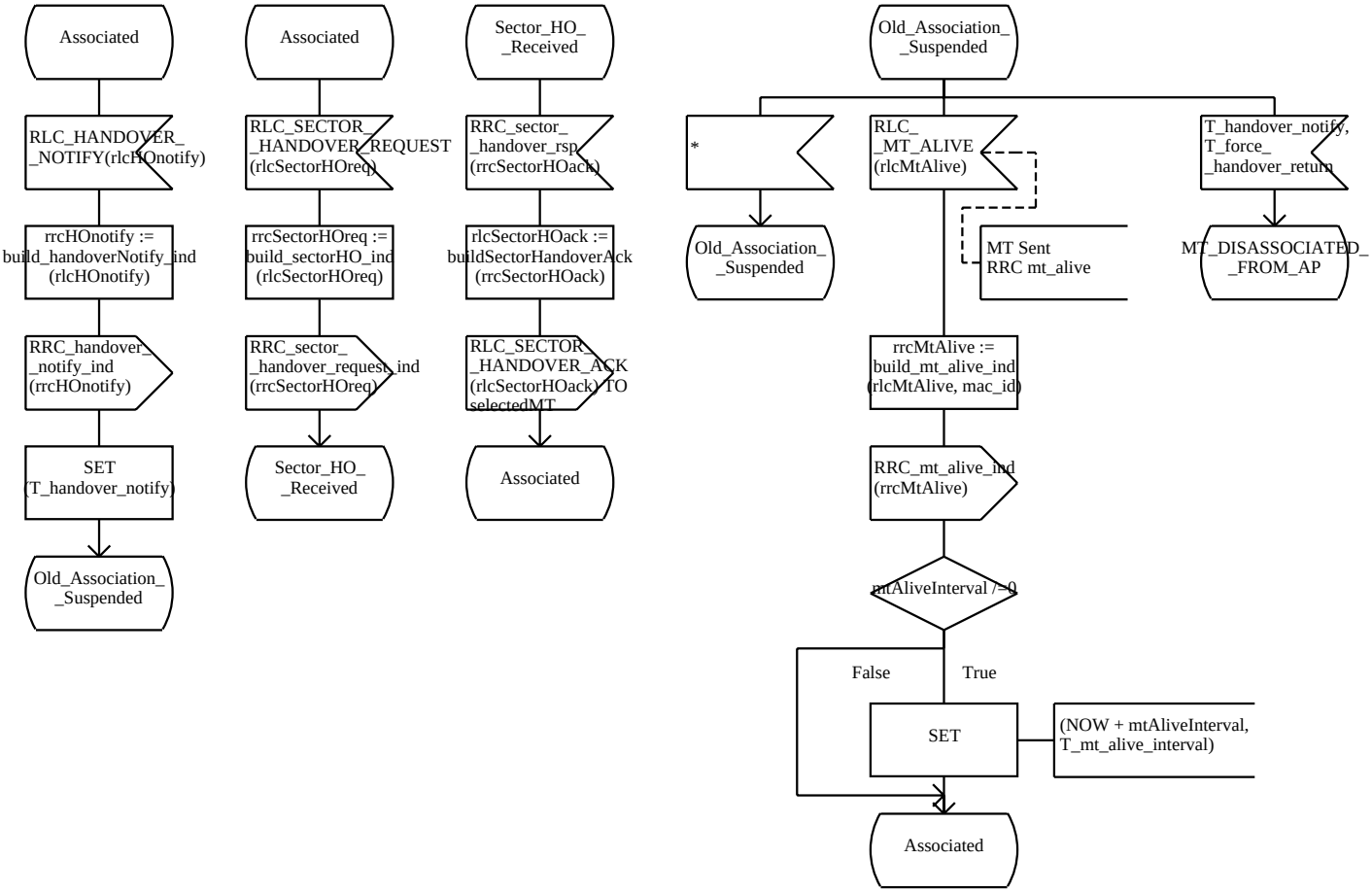
Process Type RLC_AP 43(63)



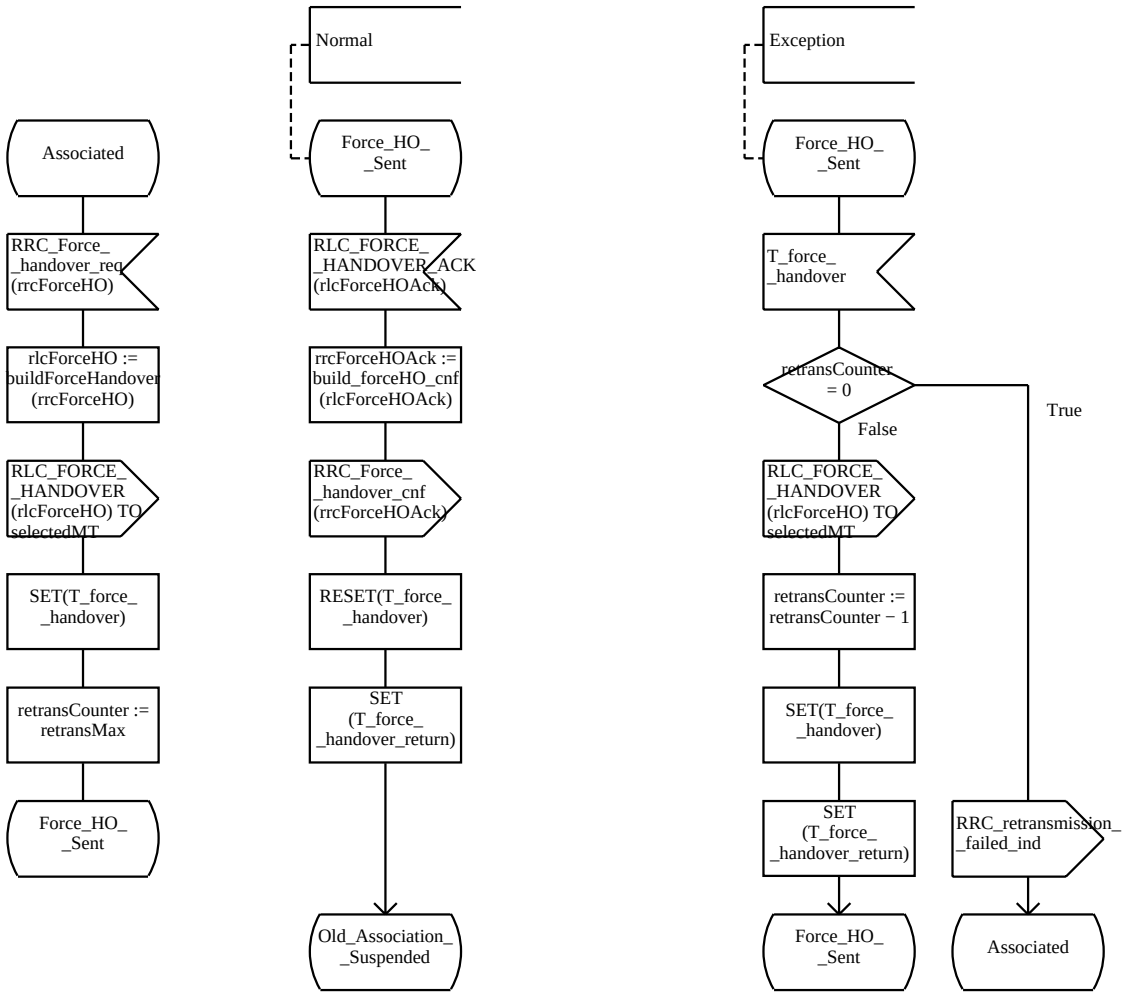
Process Type RLC_AP 44(63)



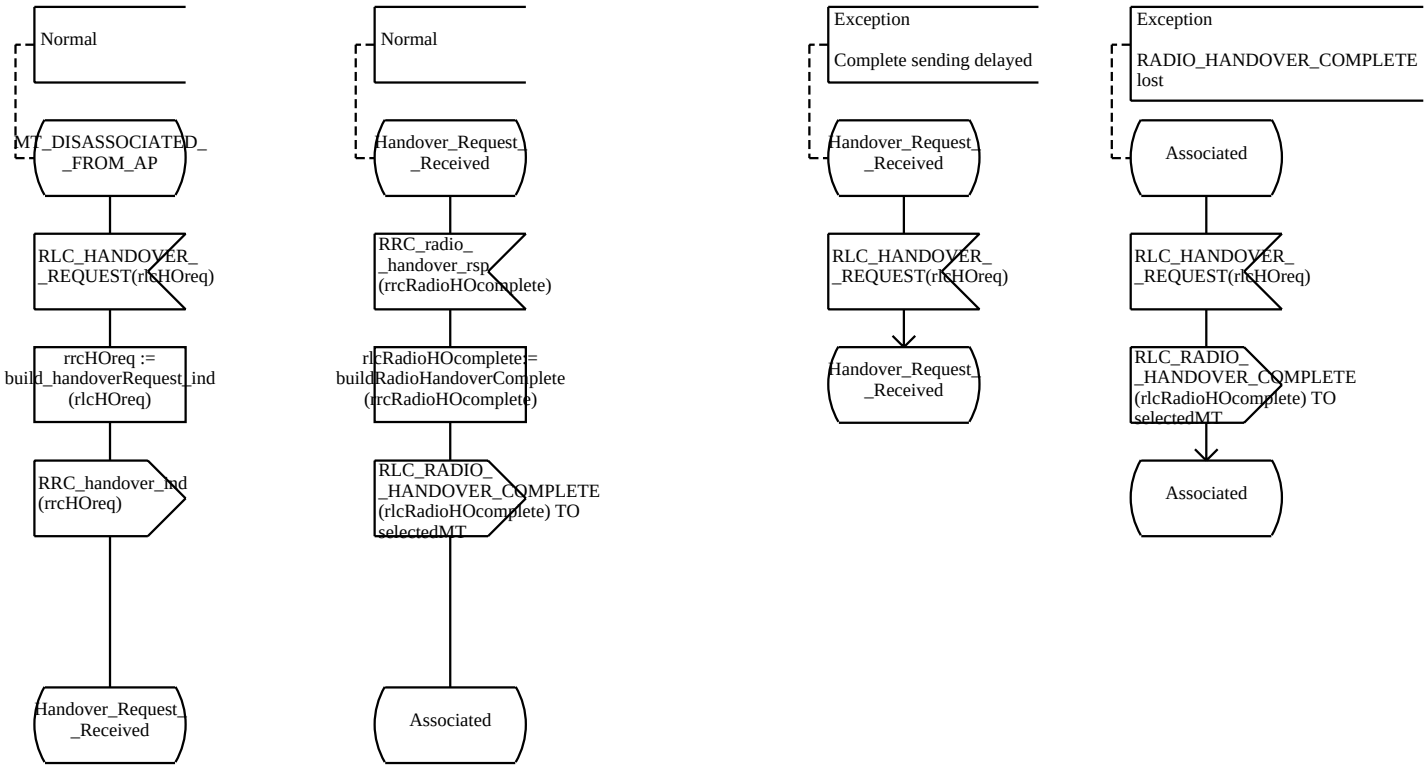
Process Type RLC_AP 45(63)



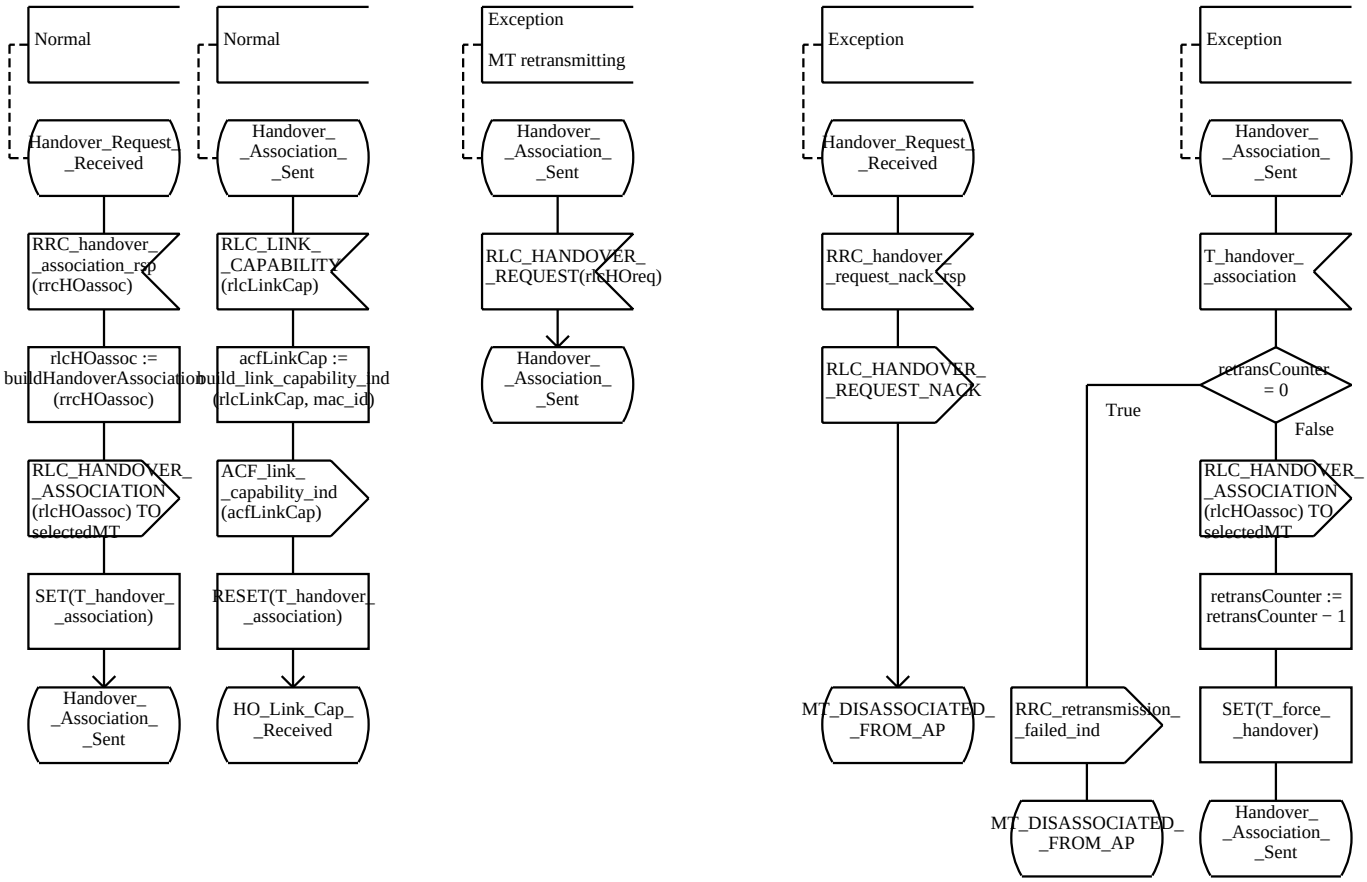
Process Type RLC_AP 46(63)



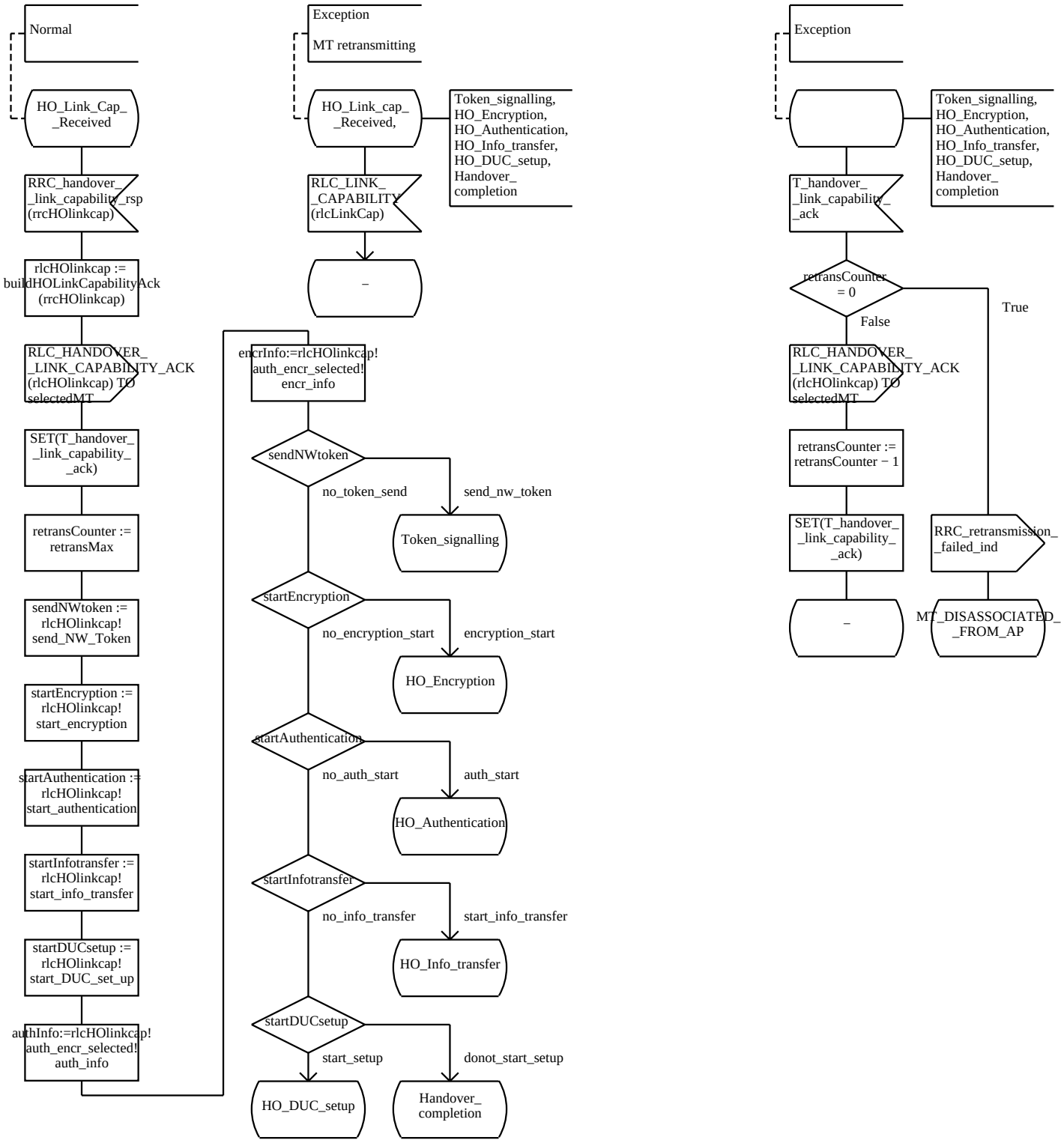
Process Type RLC_AP 47(63)



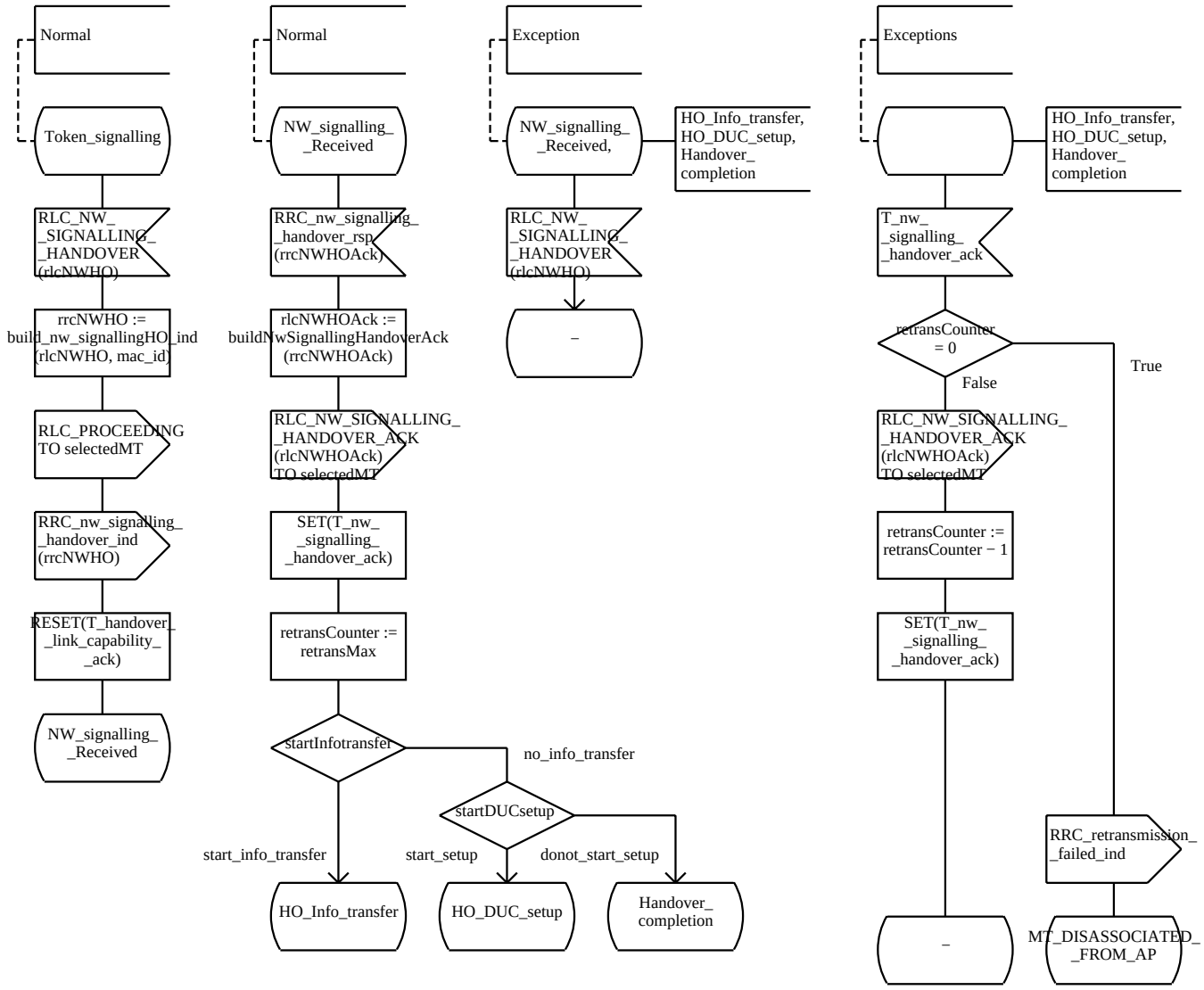
Process Type RLC_AP 48(63)



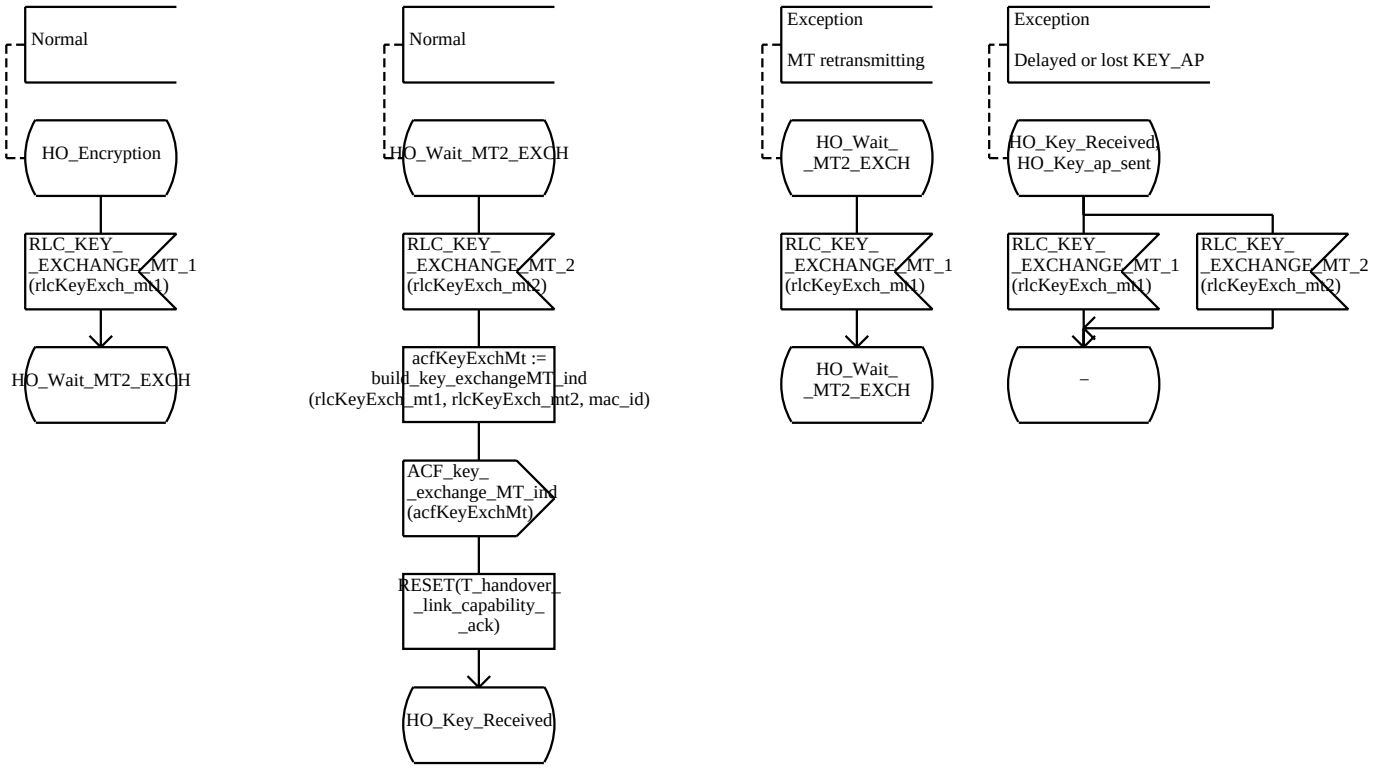
Process Type RLC_AP 49(63)



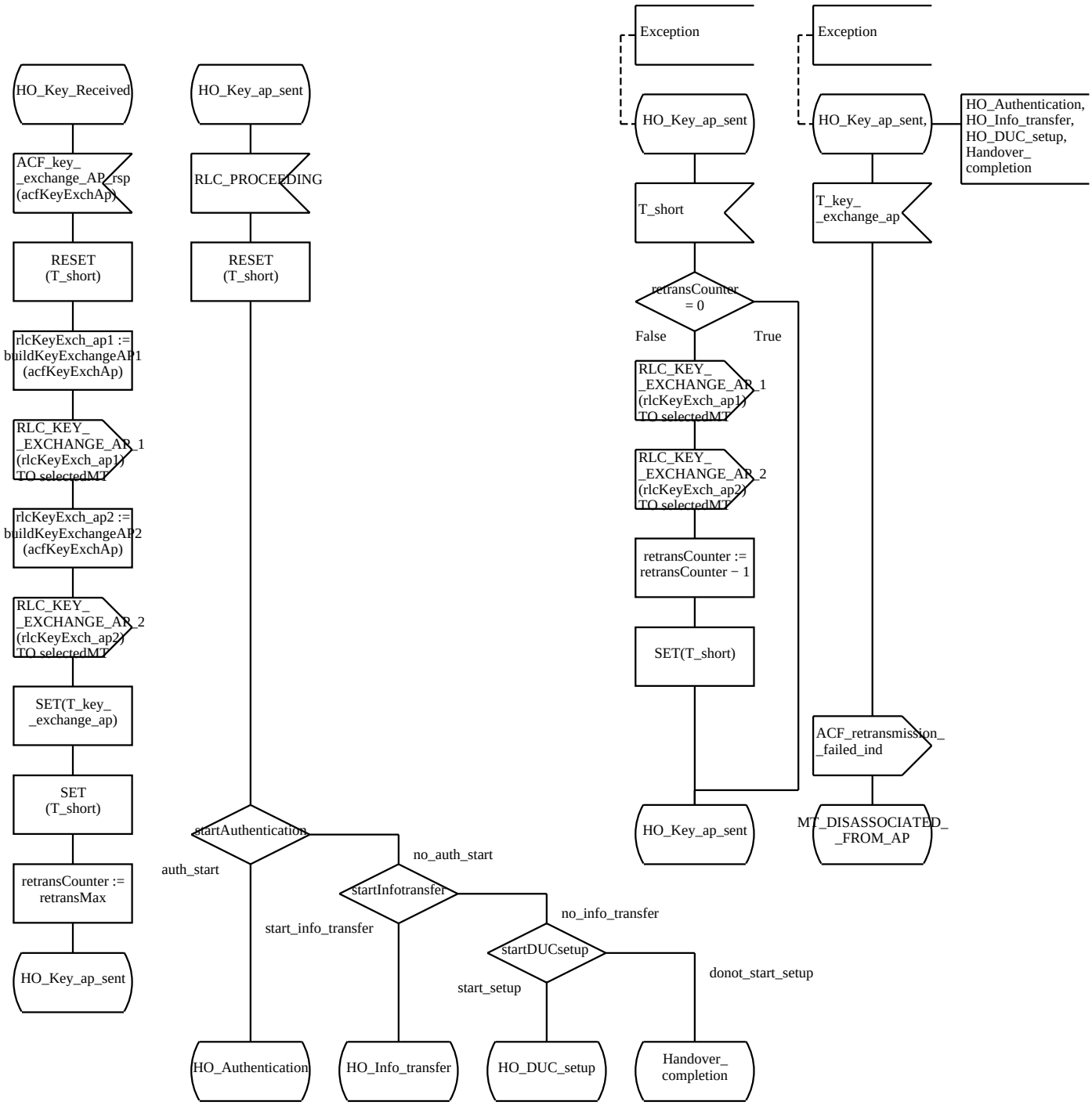
Process Type RLC_AP 50(63)



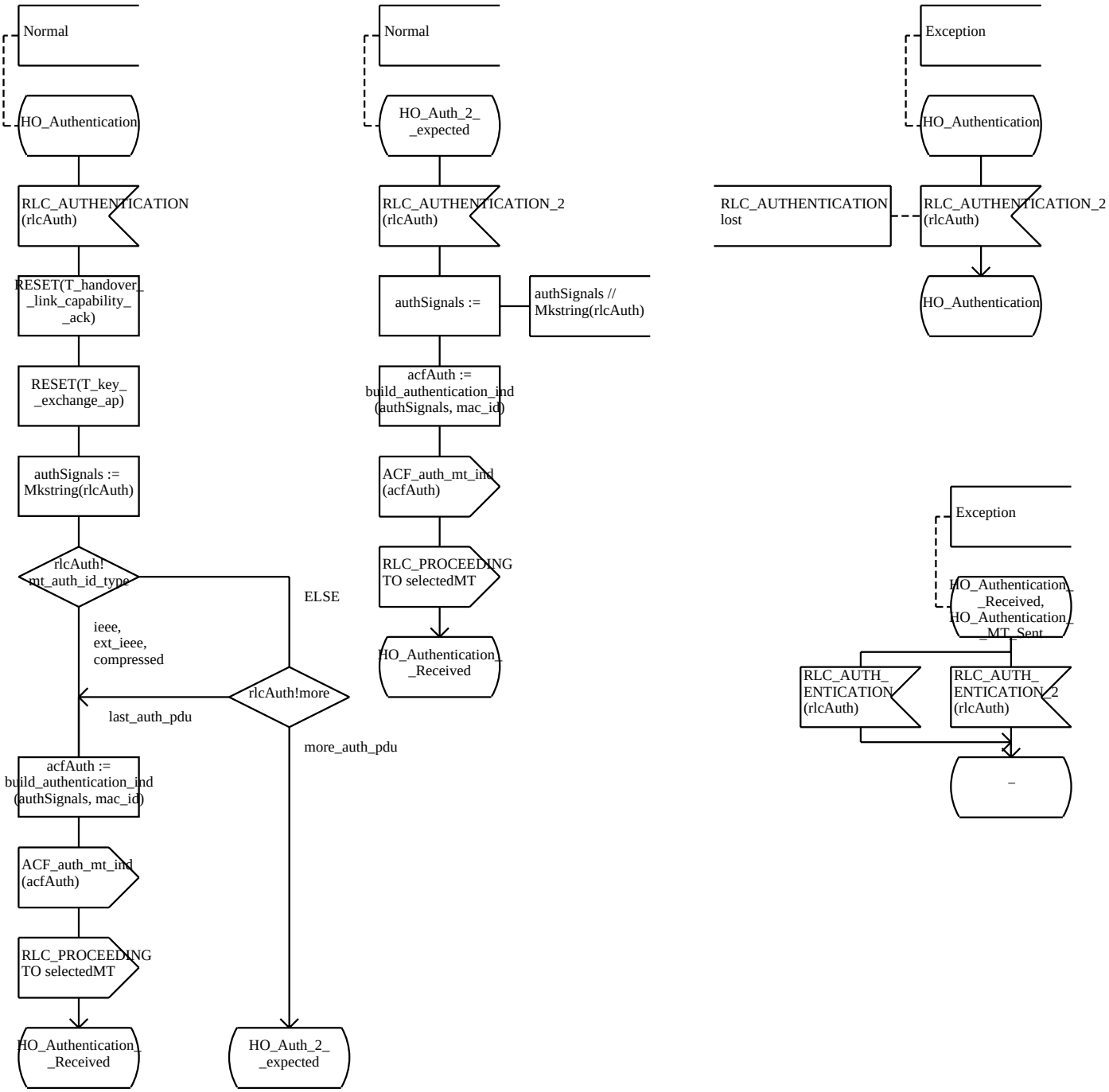
Process Type RLC_AP 51(63)



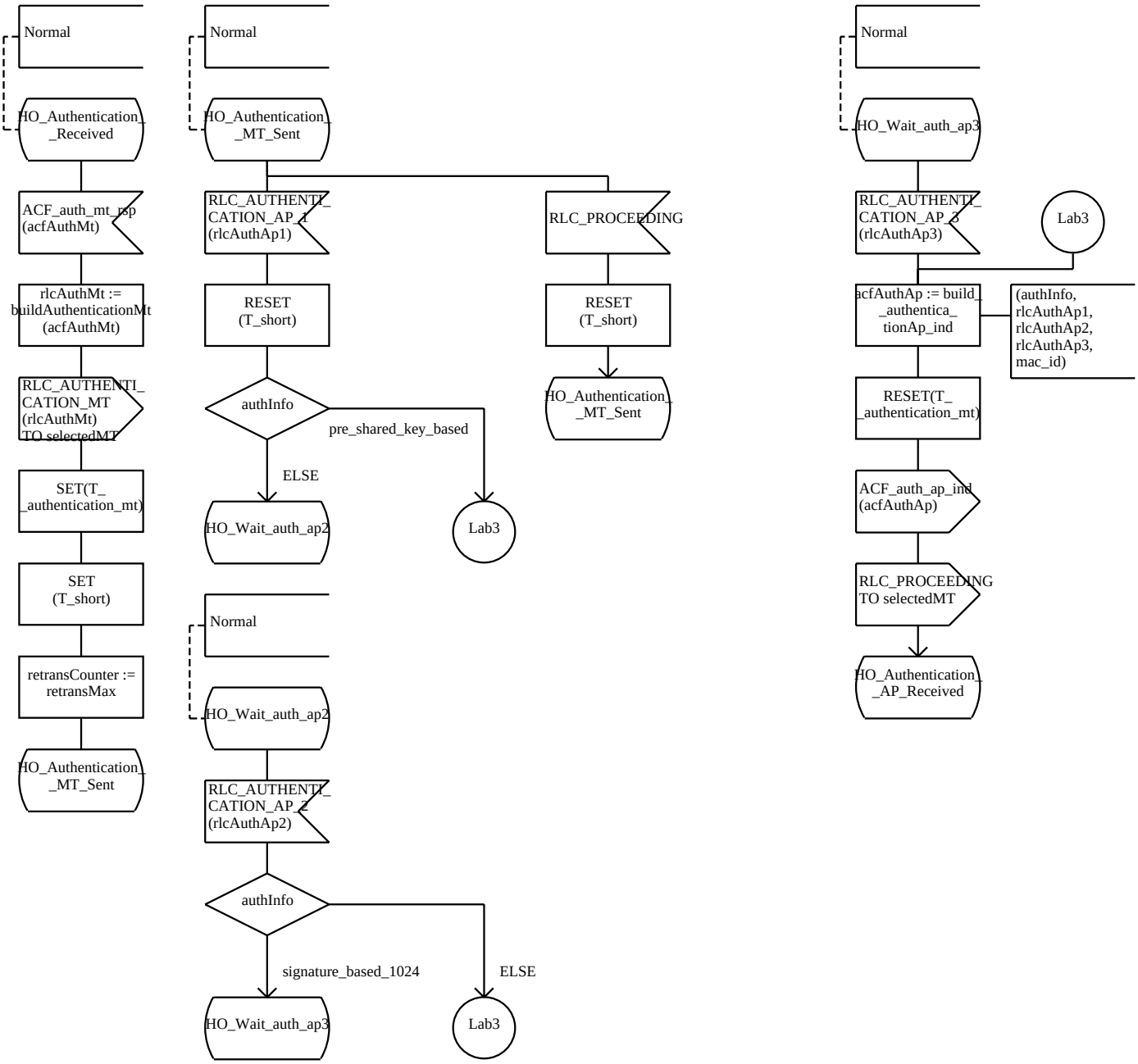
Process Type RLC_AP 52(63)



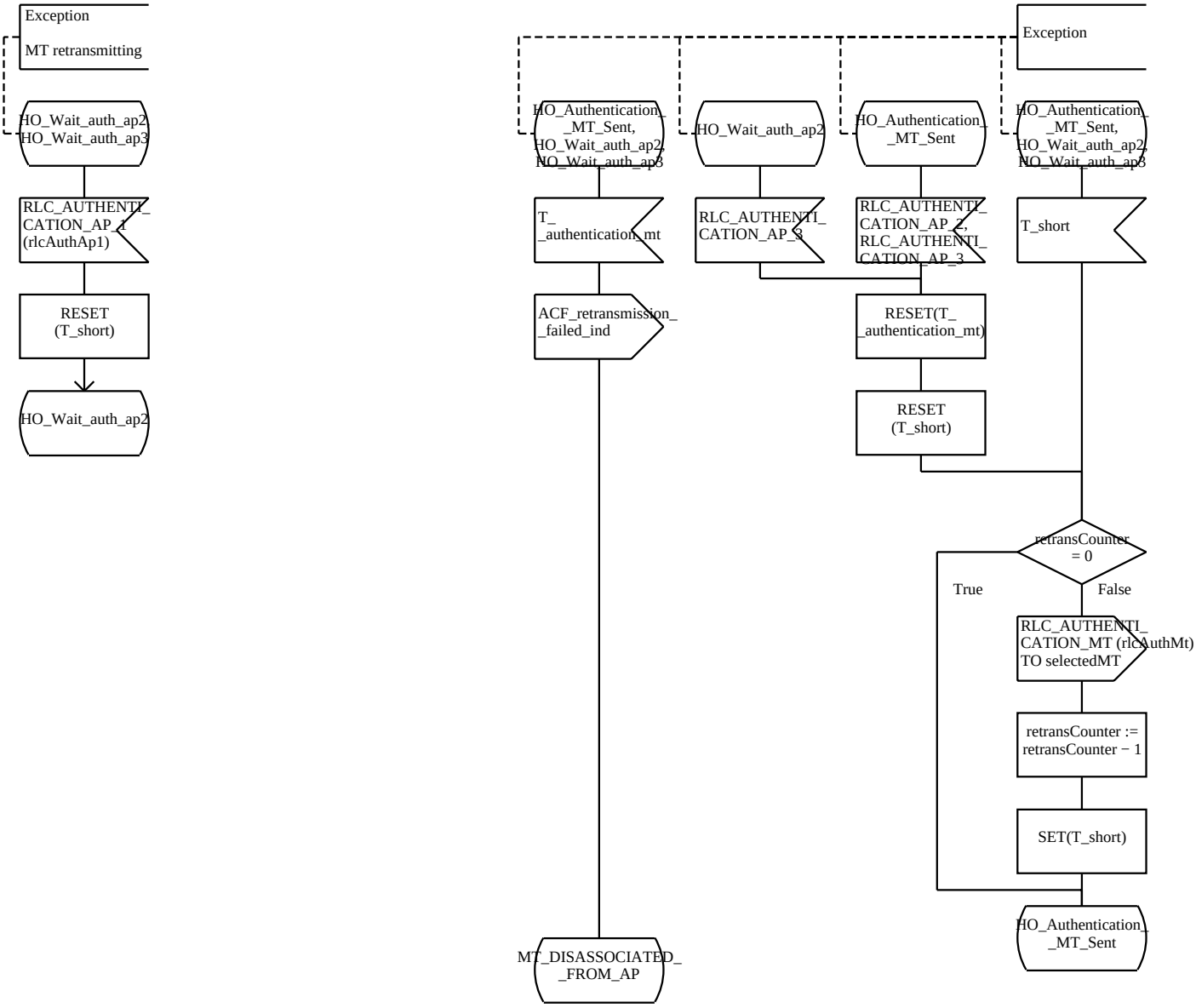
Process Type RLC_AP 53(63)



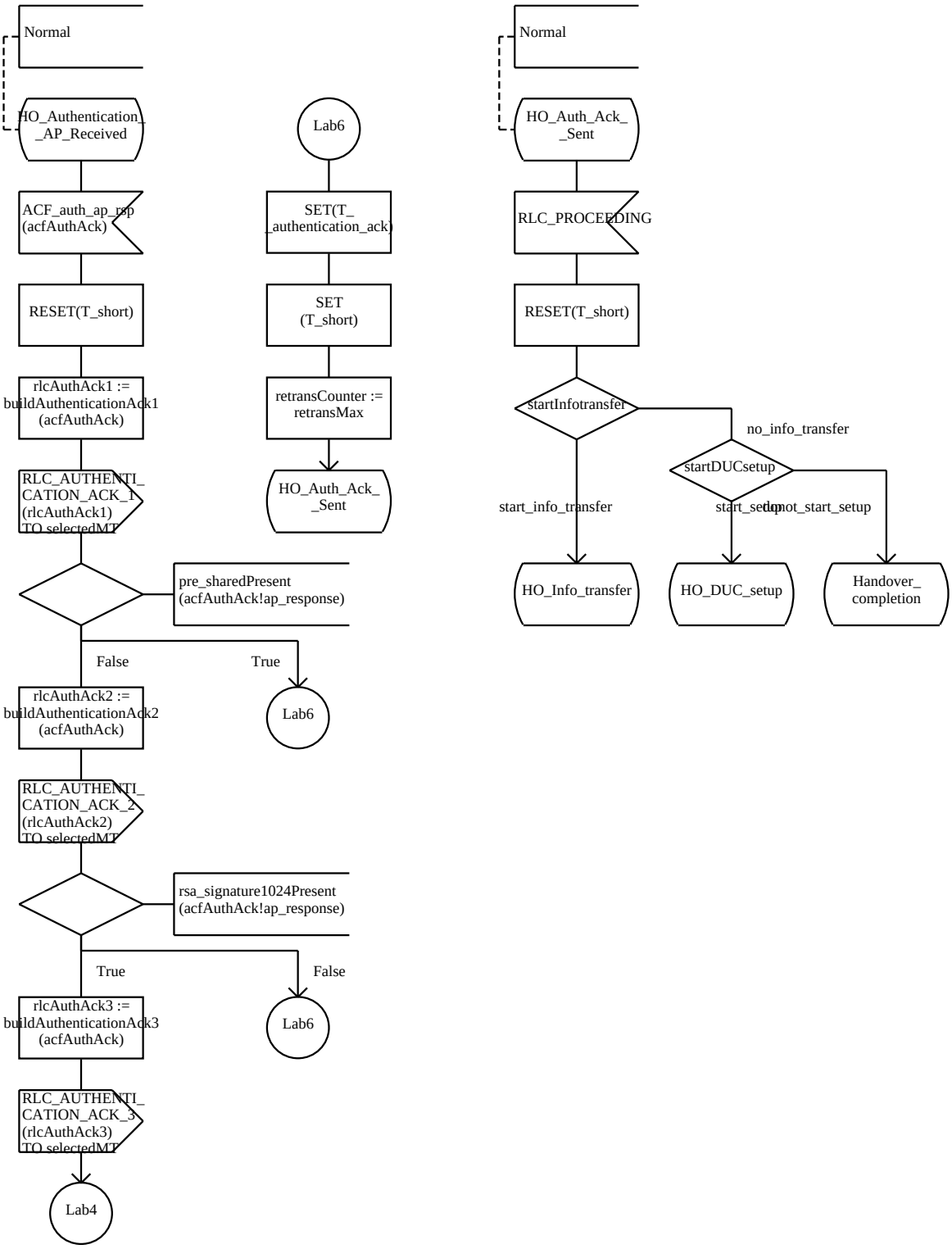
Process Type RLC_AP 54(63)



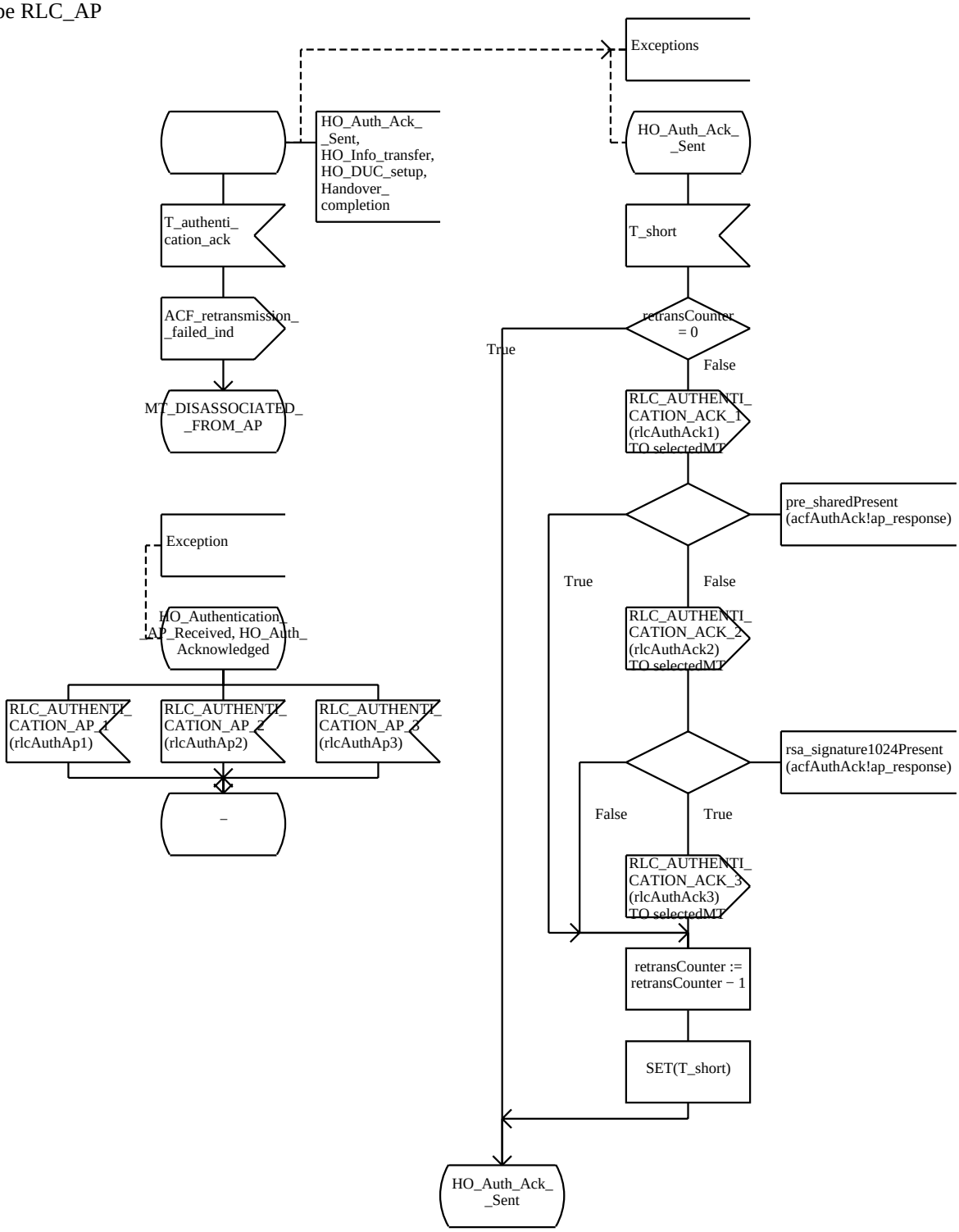
Process Type RLC_AP 55(63)



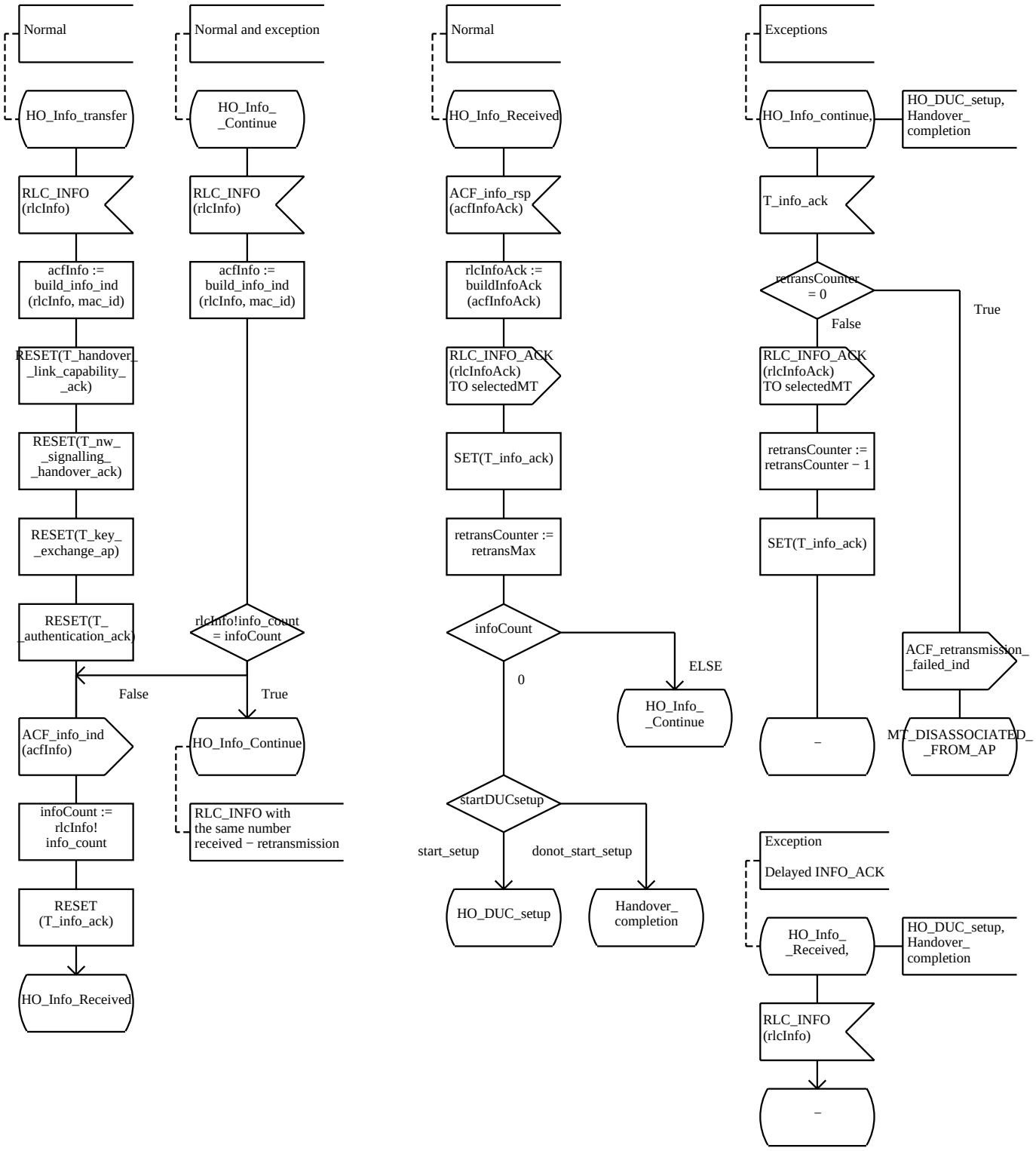
Process Type RLC_AP 56(63)



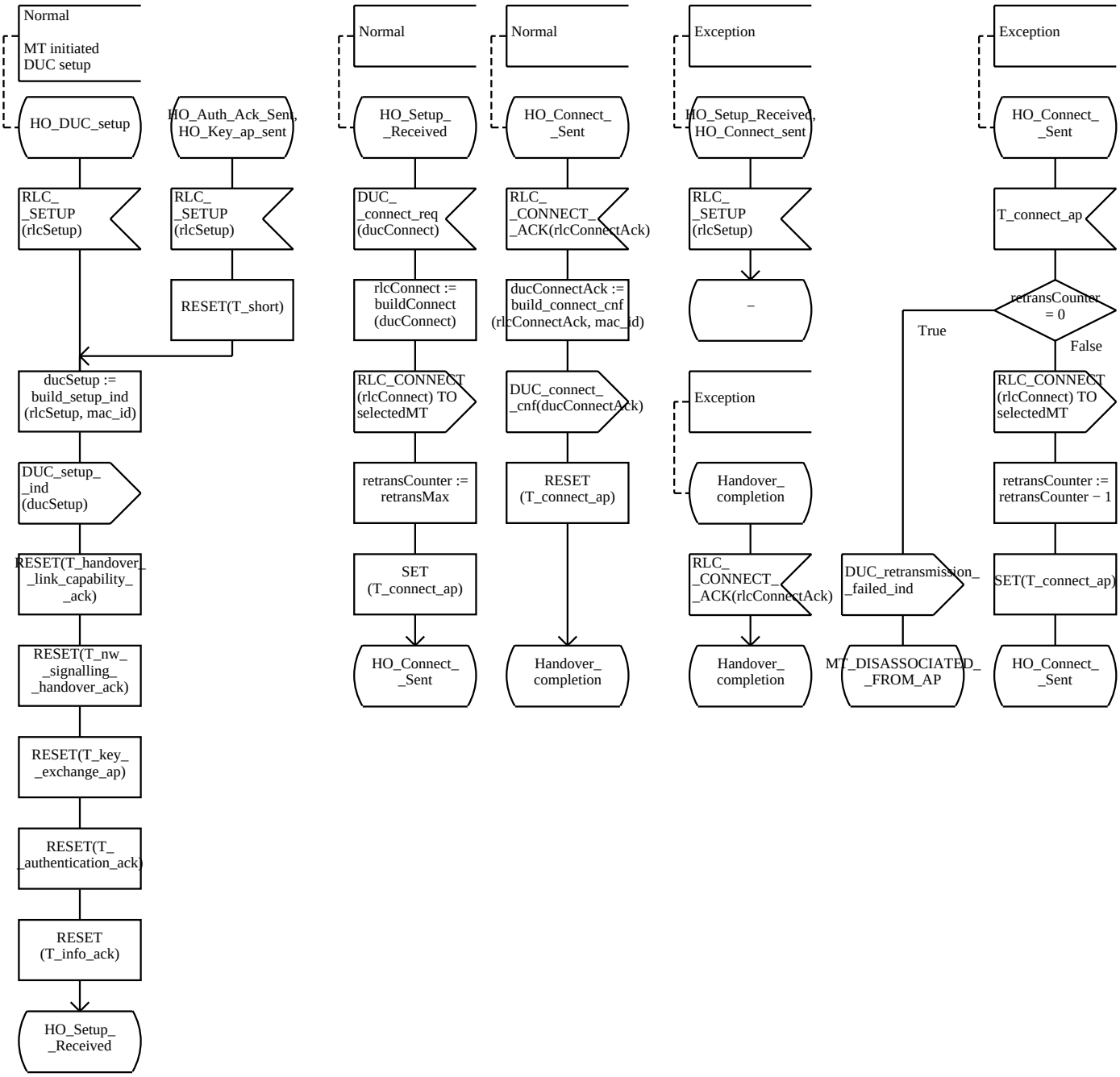
Process Type RLC_AP 57(63)



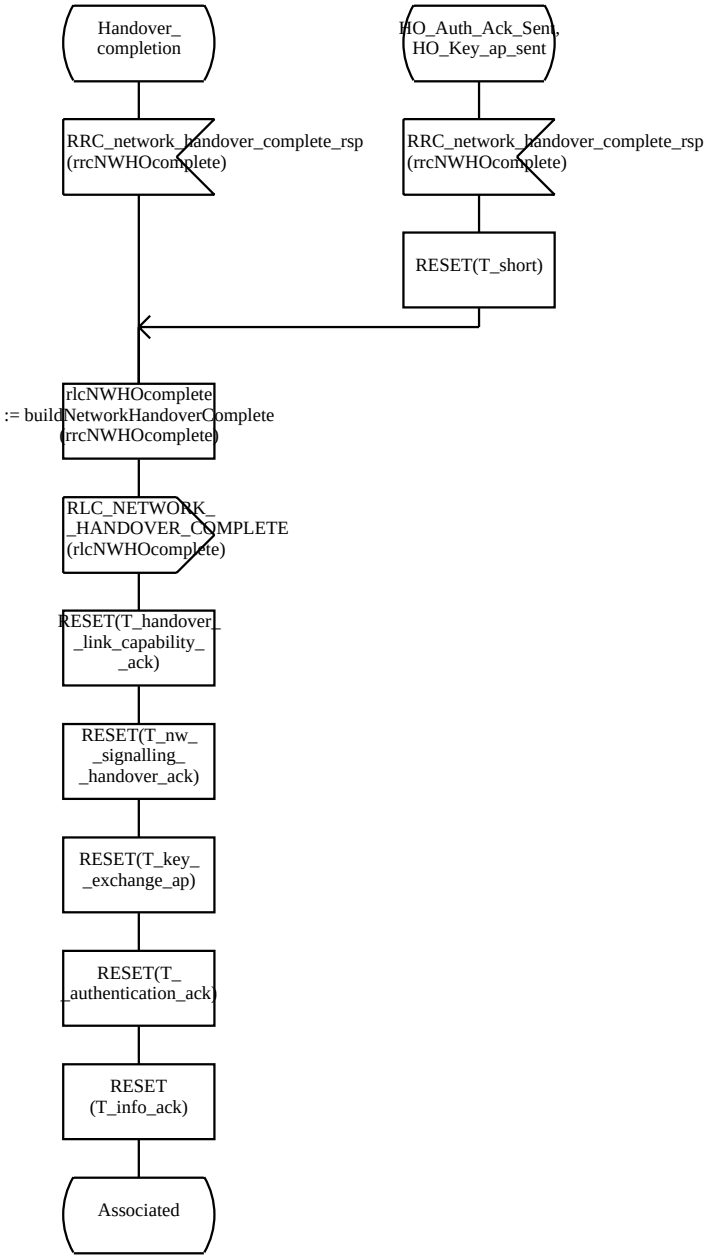
Process Type RLC_AP 58(63)



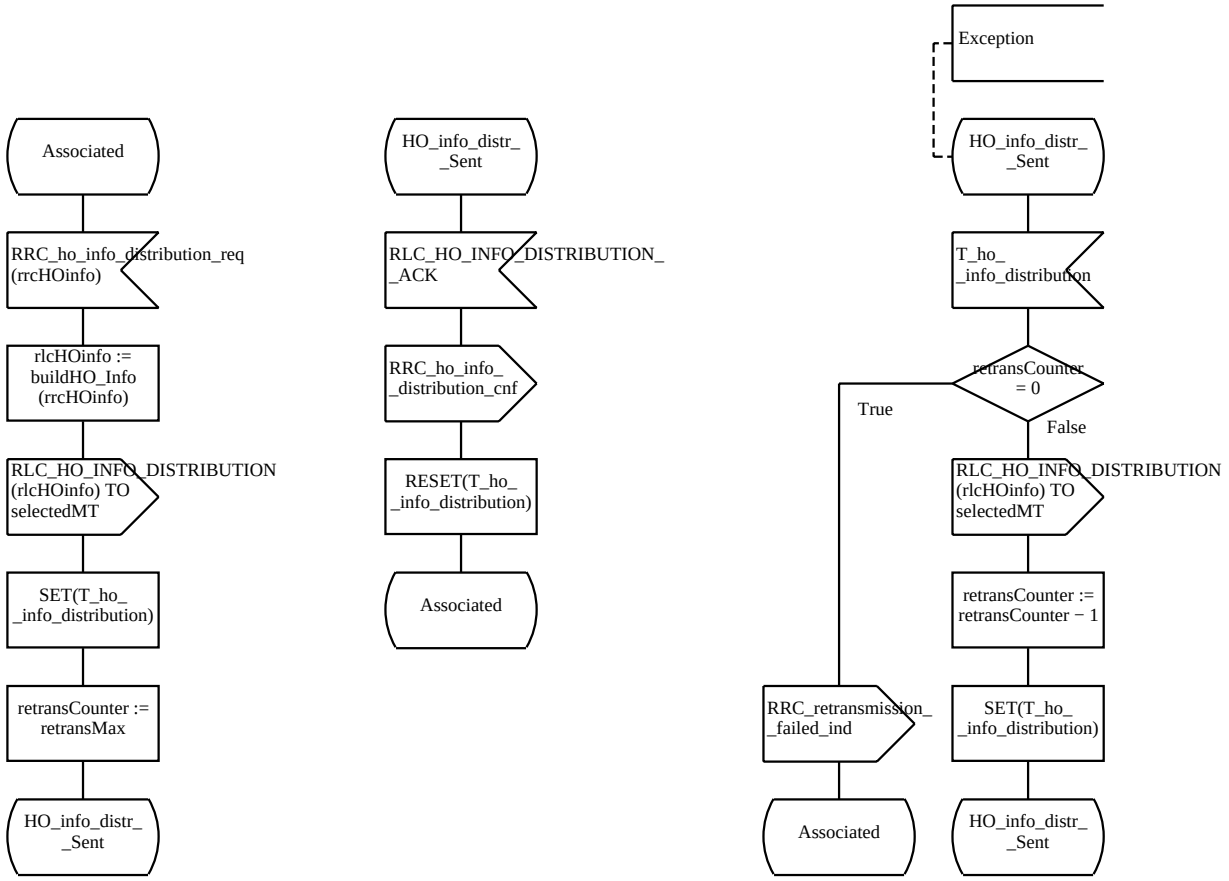
Process Type RLC_AP 59(63)



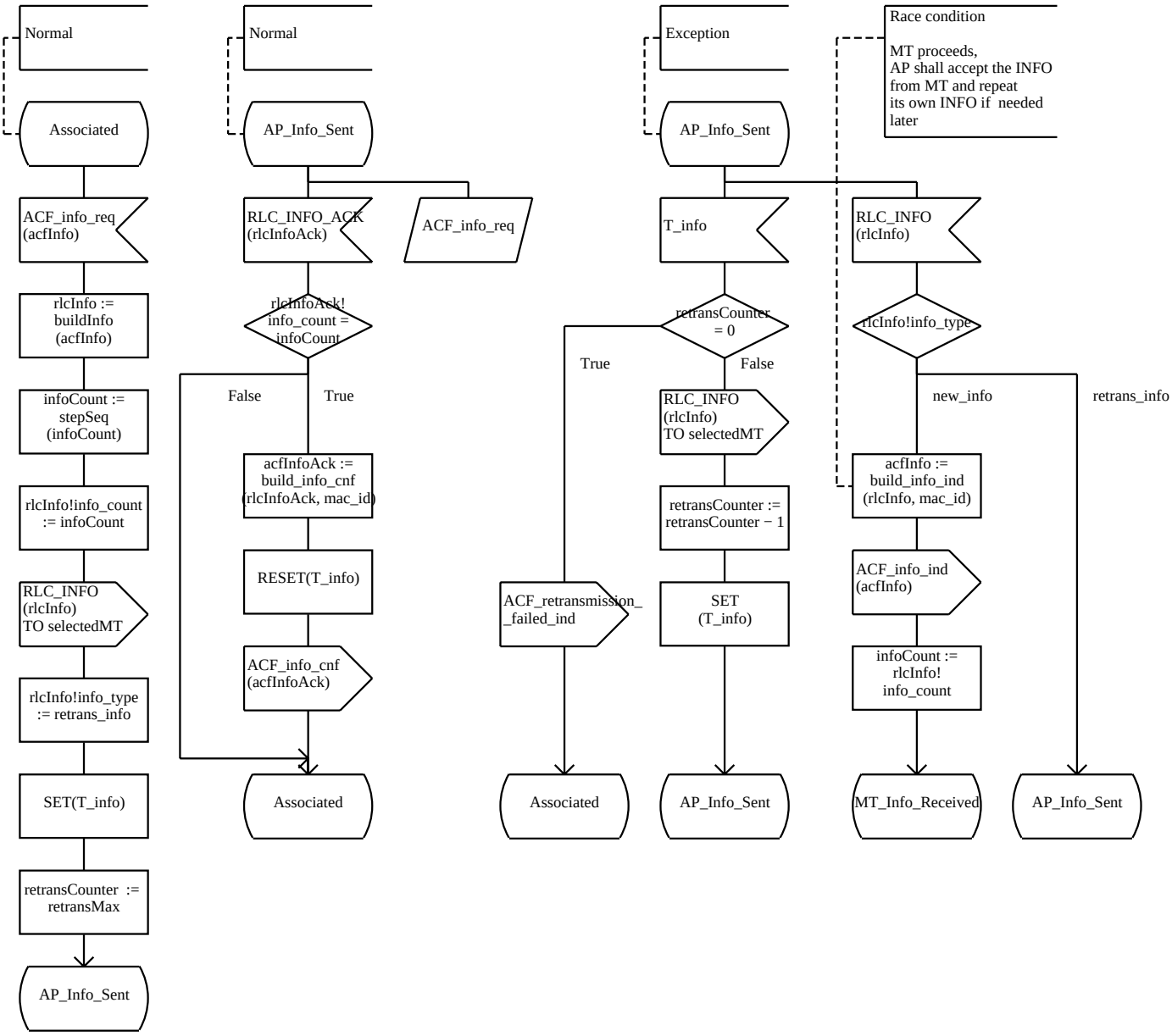
Process Type RLC_AP 60(63)



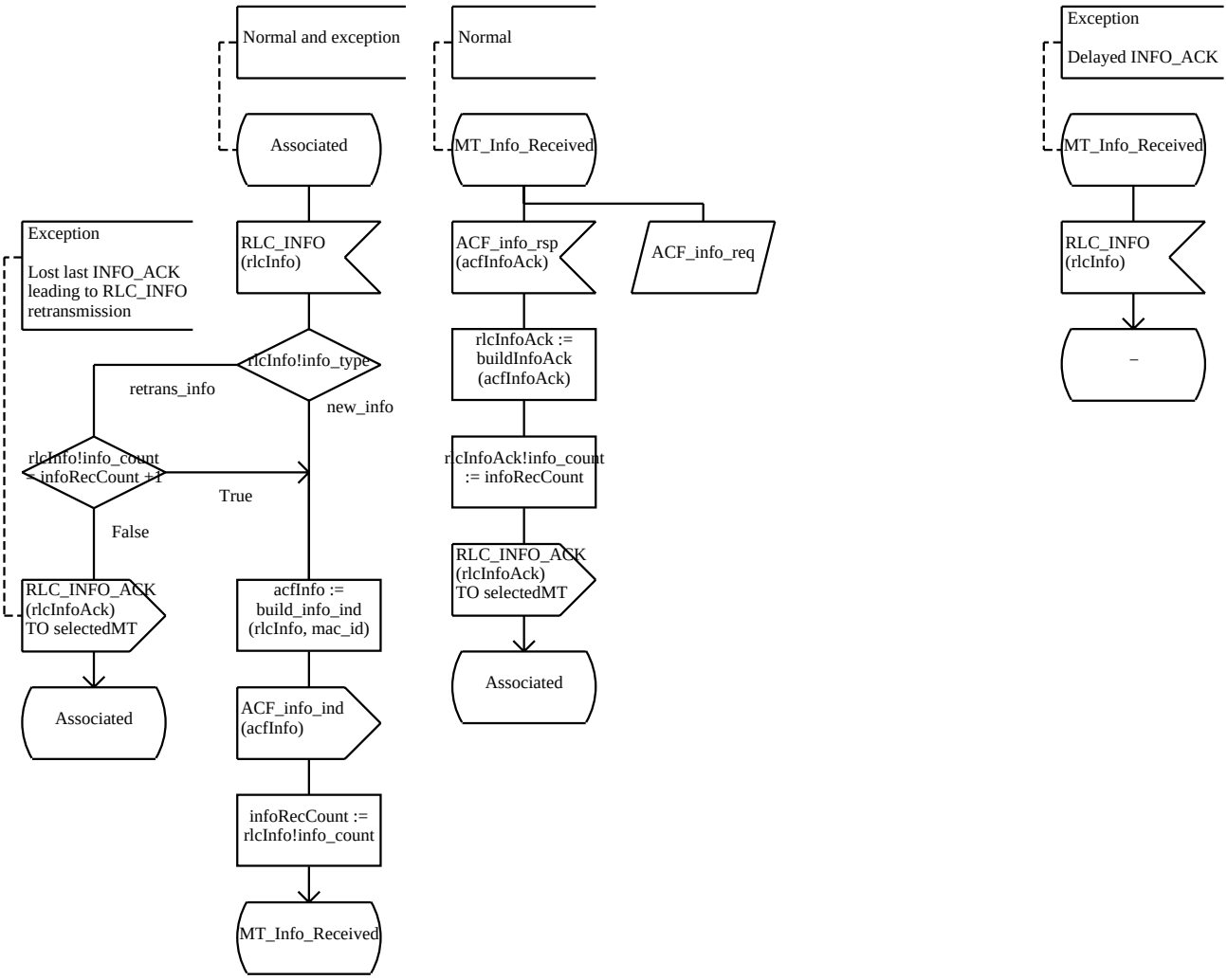
Process Type RLC_AP 61(63)



Process Type RLC_AP 62(63)

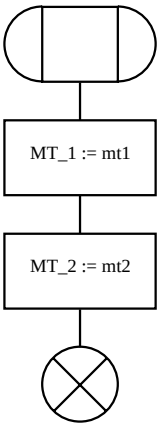


Process Type RLC_AP 63(63)



EXPORTED Procedure set_MT_addresses 1(1)

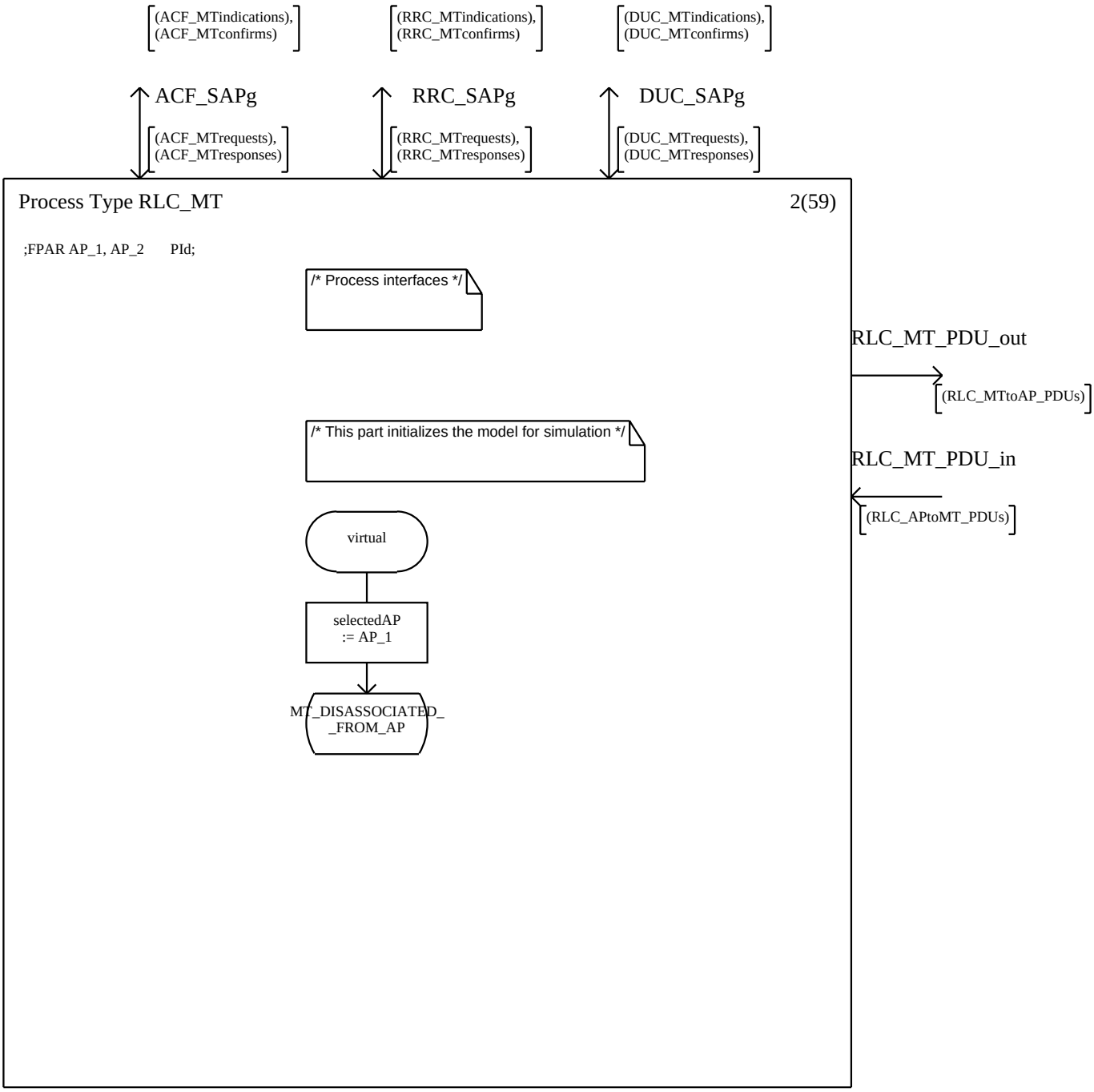
;FPAR mt1, mt2 PId;



Process Type RLC_MT 1(59)

;FPAR AP_1, AP_2 PId;

```
/*
This process is a model of RLC behaviour at the MT side.
*/
```


(ACF_MTindications),
(ACF_MTconfirms)
(RRC_MTindications),
(RRC_MTconfirms)
(DUC_MTindications),
(DUC_MTconfirms)
ACF_SAPg
RRC_SAPg
DUC_SAPg
(ACF_MTrequests),
(ACF_MTresponses)
(RRC_MTrequests),
(RRC_MTresponses)
(DUC_MTrequests),
(DUC_MTresponses)
Process Type RLC_MT
2(59)
;FPAR AP_1, AP_2 PId;
/* Process interfaces */
RLC_MT_PDU_out
(RLC_MTtoAP_PDUs)
/* This part initializes the model for simulation */
RLC_MT_PDU_in
(RLC_APtoMT_PDUs)
virtual
selectedAP
:= AP_1
MT_DISASSOCIATED_
_FROM_AP

Process Type RLC_MT 3(59)

;FPAR AP_1, AP_2 PId;

```
/*          Timers on the MT side       */

TIMER T_rbch_association_req := T_rbch_association_req_duration;
TIMER T_mac_id_assign := T_mac_id_assign_duration;
TIMER T_link_capability := T_link_capability_duration;
TIMER T_key_exchange_mt := T_key_exchange_mt_duration;
TIMER T_authentication := T_authentication_duration;
TIMER T_authentication_ap := T_authentication_ap_duration;
TIMER T_dm_common_key_distr_ack := T_dm_common_key_distr_ack_duration;
TIMER T_info := T_info_duration;
TIMER T_info_ack := T_info_ack_duration;
TIMER T_group_join := T_group_join_duration;
TIMER T_group_leave := T_group_leave_duration;
TIMER T_cl_broadcast_join := T_cl_broadcast_join_duration;
TIMER T_cl_broadcast_leave := T_cl_broadcast_duration;
TIMER T_disassociation_mt := T_disassociation_mt_duration;
TIMER T_connect_ack := T_connect_ack_duration;
TIMER T_setup_mt := T_setup_mt_duration;
TIMER T_connect_mt := T_connect_mt_duration;
TIMER T_release_mt := T_release_mt_duration;
TIMER T_reset_mt := T_reset_mt_duration;
TIMER T_modify_req_mt := T_modify_req_mt_duration;
TIMER T_modify_mt := T_modify_mt_duration;
TIMER T_dfs_mt_init_report := T_dfs_mt_init_report_duration;
TIMER T_sleep := T_sleep_duration;
TIMER T_mt_alive := T_mt_alive_duration;
TIMER T_short := T_short_duration;
TIMER T_handover_notify := T_handover_notify_duration;
TIMER T_force_handover_return := T_force_handover_return_duration;

TIMER T_mt_absence := T_mt_absence_duration;
TIMER T_Absence_Frame_Counter;
TIMER T_Sleeping_Frame_Counter;
TIMER T_mt_alive_interval;
```

Process Type RLC_MT 4(59)

;FPAR AP_1, AP_2 PId;

```
/*                    Local variables                    *.
```

```
DCL retransCounter Integer;
DCL setupCounter    Integer;
DCL GjoinCounter    Integer;
DCL GleaveCounter Integer;
DCL BjoinCounter    Integer;

SYNONYM retransMax Integer = 4;
```

```
DCL

rlcGjoinAckList RLC_GROUP_JOIN_ACK_LIST := emptyList,

authInfo          AUTH_INFO,
encrInfo          ENCR_INFO,
infoCount         INFO_COUNT := 0,
infoRecCount  INFO_COUNT := 0,
forceReturnFlag    RETURN_FLAG,
dmCommonKeyUse     DM_USE_COMMON_KEY,
rrcMtAliveDefault  RRC_MT_ALIVE_ARG :=
(. 1 .);/* just for this simplified model */
```

```
/* Variable declaration */

DCL    selectedAP        PId;
DCL mac_id        MAC_ID := 1;
DCL mtAliveInterval DURATION;
```

```
DCL

rlcSetup RLC_SETUP_ARG,
rlcConnect    RLC_CONNECT_ARG,
rlcRelease    RLC_RELEASE_ARG,
rlcModifyreq    RLC_MODIFY_REQ_ARG,
rlcModify    RLC_MODIFY_ARG,
rlcReset    RLC_RESET_ARG,
rlcConnectAck    RLC_CONNECT_ACK_ARG,
rlcReleaseAck    RLC_RELEASE_ACK_ARG,
rlcModifyAck    RLC_MODIFY_ACK_ARG,
rlcResetAck    RLC_RESET_ACK_ARG;
```

```
DCL

ducSetup DUC_SETUP_ARG,
ducConnect    DUC_CONNECT_ARG,
ducRelease    DUC_RELEASE_ARG,
ducModifyreq    DUC_MODIFY_REQ_ARG,
ducModify    DUC_MODIFY_ARG,
ducReset    DUC_RESET_ARG,
ducConnectAck    DUC_CONNECT_ACK_ARG,
ducReleaseAck    DUC_RELEASE_ACK_ARG,
ducModifyAck    DUC_MODIFY_ACK_ARG,
ducResetAck    DUC_RESET_ACK_ARG;
```

Process Type RLC_MT 5(59)

;FPAR AP_1, AP_2 PId;

```
/*      Local variables      */
```

```
DCL

rlcAuthAck1          RLC_AUTHENTICATION_ACK_1_ARG,
rlcAuthAck2          RLC_AUTHENTICATION_ACK_2_ARG,
rlcAuthAck3          RLC_AUTHENTICATION_ACK_3_ARG,
rlcAuthAp1           RLC_AUTHENTICATION_AP_1_ARG,
rlcAuthAp2           RLC_AUTHENTICATION_AP_2_ARG,
rlcAuthAp3           RLC_AUTHENTICATION_AP_3_ARG,
rlcAuth              RLC_AUTHENTICATION_ARG,
rlcAuthMt            RLC_AUTHENTICATION_MT_ARG,
rlcBjoinAck          RLC_CL_BROADCAST_JOIN_ACK_ARG,
rlcBjoin             RLC_CL_BROADCAST_JOIN_ARG,
rlcBleaveAck         RLC_CL_BROADCAST_LEAVE_ACK_ARG,
rlcBleave            RLC_CL_BROADCAST_LEAVE_ARG,
rlcCKactivate        RLC_COMMON_KEY_ACTIVATE_ARG,
rlcCKrefreshAck      RLC_COMMON_KEY_REFRESH_ACK_ARG,
rlcCKrefresh         RLC_COMMON_KEY_REFRESH_ARG,
rlcDisassocAck       RLC_DISASSOCIATION_ACK_ARG,
rlcDisassoc          RLC_DISASSOCIATION_ARG,
rlcCKdistrAck        RLC_DM_COMMON_KEY_DISTR_ACK_ARG,
rlcCKdistr           RLC_DM_COMMON_KEY_DISTR_ARG,
rlcGjoinAck          RLC_GROUP_JOIN_ACK_ARG,
rlcGjoin             RLC_GROUP_JOIN_ARG,
rlcGjoinNack         RLC_GROUP_JOIN_NACK_ARG,
rlcGleaveAck         RLC_GROUP_LEAVE_ACK_ARG,
rlcGleave            RLC_GROUP_LEAVE_ARG,
rlcInfoAck           RLC_INFO_ACK_ARG,
rlcInfo              RLC_INFO_ARG,
rlcKeyExch_ap1       RLC_KEY_EXCHANGE_AP_1_ARG,
rlcKeyExch_ap2       RLC_KEY_EXCHANGE_AP_2_ARG,
rlcKeyExch_mt1       RLC_KEY_EXCHANGE_MT_1_ARG,
rlcKeyExch_mt2       RLC_KEY_EXCHANGE_MT_2_ARG,
rlcLinkCapAck        RLC_LINK_CAPABILITY_ACK_ARG,
rlcLinkCap           RLC_LINK_CAPABILITY_ARG,
rlcMacIdAssignAck    RLC_MAC_ID_ASSIGN_ACK_ARG,
rlcMacIdAssign       RLC_MAC_ID_ASSIGN_ARG,
rlcMacIdAssignNack   RLC_MAC_ID_ASSIGN_NACK_ARG,
rlcRBCHassoc         RLC_RBCH_ASSOCIATION_ARG,
rlcRBCHassocreq      RLC_RBCH_ASSOCIATION_REQ_ARG,
rlcUkeyRefreshAck    RLC_UNICAST_KEY_REFRESH_ACK_ARG,
rlcUkeyRefresh       RLC_UNICAST_KEY_REFRESH_ARG;
```

```
DCL

acfAuthAck          ACF_AUTHENTICATION_ACK_ARG,
acfAuthAp           ACF_AUTHENTICATION_AP_ARG,
acfAuth             ACF_AUTHENTICATION_ARG,
acfAuthMt           ACF_AUTHENTICATION_MT_ARG,
acfBjoinAck         ACF_CL_BROADCAST_JOIN_ACK_ARG,
acfBjoin            ACF_CL_BROADCAST_JOIN_ARG,
acfBleaveAck        ACF_CL_BROADCAST_LEAVE_ACK_ARG,
acfBleave           ACF_CL_BROADCAST_LEAVE_ARG,
acfCKactivate       ACF_COMMON_KEY_ACTIVATE_ARG,
acfCKrefreshAck     ACF_COMMON_KEY_REFRESH_ACK_ARG,
acfCKrefresh        ACF_COMMON_KEY_REFRESH_ARG,
acfDisassocAck      ACF_DISASSOCIATION_ACK_ARG,
acfDisassoc         ACF_DISASSOCIATION_ARG,
acfCKdistrAck       ACF_DM_COMMON_KEY_DISTR_ACK_ARG,
acfCKdistr          ACF_DM_COMMON_KEY_DISTR_ARG,
acfGjoinAck         ACF_GROUP_JOIN_ACK_ARG,
acfGjoin            ACF_GROUP_JOIN_ARG,
acfGjoinNack        ACF_GROUP_JOIN_NACK_ARG,
acfGleaveAck        ACF_GROUP_LEAVE_ACK_ARG,
acfGleave           ACF_GROUP_LEAVE_ARG,
acfInfoAck          ACF_INFO_ACK_ARG,
acfInfo             ACF_INFO_ARG,
acfKeyExchAp        ACF_KEY_EXCHANGE_AP_ARG,
acfKeyExchMt        ACF_KEY_EXCHANGE_MT_ARG,
acfLinkCapAck       ACF_LINK_CAPABILITY_ACK_ARG,
acfLinkCap          ACF_LINK_CAPABILITY_ARG,
acfMacIdAssignAck   ACF_MAC_ID_ASSIGN_ACK_ARG,
acfMacIdAssign      ACF_MAC_ID_ASSIGN_ARG,
acfMacIdAssignNack  ACF_MAC_ID_ASSIGN_NACK_ARG,
acfRBCHassoc        ACF_RBCH_ASSOCIATION_ARG,
acfRBCHassocreq     ACF_RBCH_ASSOCIATION_REQ_ARG,
acfUkeyRefreshAck   ACF_UNICAST_KEY_REFRESH_ACK_ARG,
acfUkeyRefresh      ACF_UNICAST_KEY_REFRESH_ARG,
authsigs            AUTH_SIG_LIST;
```

```
DCL

rlcChangeF       RLC_CHANGE_FREQUENCY_ARG,
rlcApAbsence     RLC_AP_ABSENCE_ARG,
rlcCompleteReq   RLC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG,
rlcPercReq       RLC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG
rlcShortReq      RLC_DFS_MEASUREMENT_SHORT_REQUEST_ARG,
rlcInit          RLC_DFS_MT_INIT_REPORT_REQUEST_ARG,
rlcInitAck       RLC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG,
rlcPCcal         RLC_UPLINK_PC_CALIBRATION_ARG,
rlcRepComplete   RLC_DFS_REPORT_COMPLETE_ARG,
rlcRepShort      RLC_DFS_REPORT_SHORT_ARG,
rlcRepPerc       RLC_DFS_REPORT_PERCENTILES_ARG,
rlcMTalive       RLC_MT_ALIVE_ARG,
rlcMTaliveAck    RLC_MT_ALIVE_ACK_ARG,
rlcMTaliveReq    RLC_MT_ALIVE_REQUEST_ARG,
rlcMTaliveReqAck RLC_MT_ALIVE_REQUEST_ACK_ARG,
rlcMtAbsence     RLC_MT_ABSENCE_ARG,
rlcMTAbsenceAck  RLC_MT_ABSENCE_ACK_ARG,
rlcSleep         RLC_SLEEP_ARG,
rlcSleepAck      RLC_SLEEP_ACK_ARG;
```

```
DCL

rrcChangeF       RRC_CHANGE_FREQUENCY_ARG,
rrcApAbsence     RRC_AP_ABSENCE_ARG,
rrcCompleteReq   RRC_DFS_MEASUREMENT_COMPLETE_REQUEST_ARG,
rrcPercReq       RRC_DFS_MEASUREMENT_PERCENTILES_REQUEST_ARG,
rrcShortReq      RRC_DFS_MEASUREMENT_SHORT_REQUEST_ARG,
rrcInit          RRC_DFS_MT_INIT_REPORT_REQUEST_ARG,
rrcInitAck       RRC_DFS_MT_INIT_REPORT_REQUEST_ACK_ARG,
rrcPCcal         RRC_UPLINK_PC_CALIBRATION_ARG,
rrcRepComplete   RRC_DFS_REPORT_COMPLETE_ARG,
rrcRepShort      RRC_DFS_REPORT_SHORT_ARG,
rrcRepPerc       RRC_DFS_REPORT_PERCENTILES_ARG,
rrcMTalive       RRC_MT_ALIVE_ARG,
rrcMTaliveAck    RRC_MT_ALIVE_ACK_ARG,
rrcMTaliveReq    RRC_MT_ALIVE_REQUEST_ARG,
rrcMTaliveReqAck RRC_MT_ALIVE_REQUEST_ACK_ARG,
rrcMtAbsence     RRC_MT_ABSENCE_ARG,
rrcMtAbsenceAck  RRC_MT_ABSENCE_ACK_ARG,
rrcSleep         RRC_SLEEP_ARG,
rrcSleepAck      RRC_SLEEP_ACK_ARG;
```

Process Type RLC_MT 6(59)

;FPAR AP_1, AP_2 PId;

```
/*      Local variables      */
```

```
DCL

rlcSectorHOreq        RLC_SECTOR_HANDOVER_REQUEST_ARG,
rlcSectorHOack        RLC_SECTOR_HANDOVER_ACK_ARG,
rlcForceHO        RLC_FORCE_HANDOVER_ARG,
rlcForceHOAck        RLC_FORCE_HANDOVER_ACK_ARG,
rlcHOnotify        RLC_HANDOVER_NOTIFY_ARG,
rlcHOreq        RLC_HANDOVER_REQUEST_ARG,
rlcRadioHOcomplete    RLC_RADIO_HANDOVER_COMPLETE_ARG,
rlcHOassoc        RLC_HANDOVER_ASSOCIATION_ARG,
rlcHOlinkcap        RLC_HANDOVER_LINK_CAPABILITY_ACK_ARG,
rlcNWHO        RLC_NW_SIGNALLING_HANDOVER_ARG,
rlcNWHOack        RLC_NW_SIGNALLING_HANDOVER_ACK_ARG,
rlcNWHOcomplete    RLC_NETWORK_HANDOVER_COMPLETE_ARG,
rlcHOinfo        RLC_HO_INFO_DISTRIBUTION_ARG,
rlcHOinfoAck        RLC_HO_INFO_DISTRIBUTION_ACK_ARG;
```

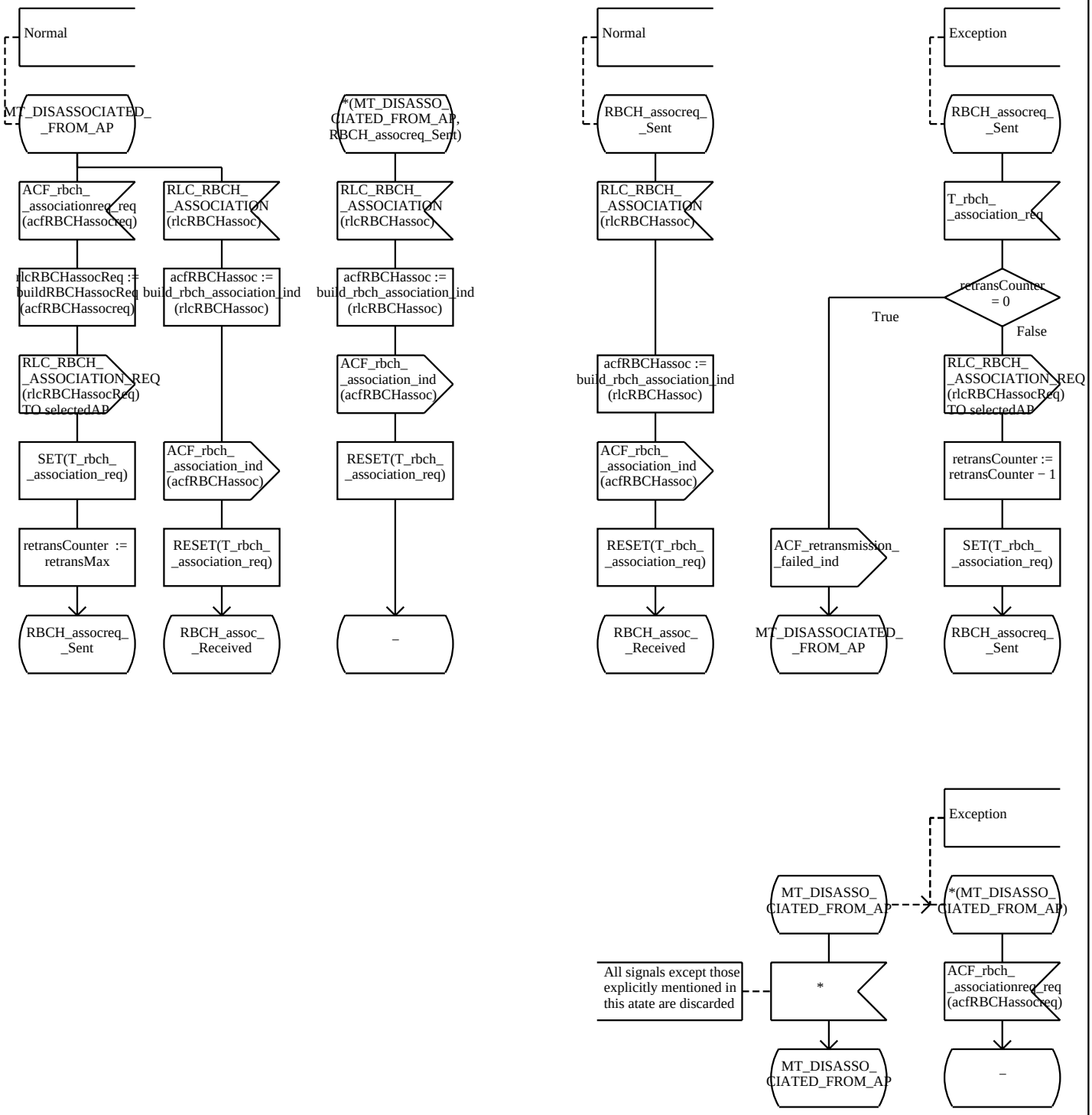
```
DCL

rrcSectorHOreq        RRC_SECTOR_HANDOVER_REQUEST_ARG,
rrcSectorHOack        RRC_SECTOR_HANDOVER_ACK_ARG,
rrcForceHO        RRC_FORCE_HANDOVER_ARG,
rrcForceHOAck        RRC_FORCE_HANDOVER_ACK_ARG,
rrcHOnotify        RRC_HANDOVER_NOTIFY_ARG,
rrcHOreq        RRC_HANDOVER_REQUEST_ARG,
rrcRadioHOcomplete    RRC_RADIO_HANDOVER_COMPLETE_ARG,
rrcHOassoc        RRC_HANDOVER_ASSOCIATION_ARG,
rrcHOlinkcap        RRC_HANDOVER_LINK_CAPABILITY_ACK_ARG,
rrcNWHO        RRC_NW_SIGNALLING_HANDOVER_ARG,
rrcNWHOack        RRC_NW_SIGNALLING_HANDOVER_ACK_ARG,
rrcNWHOcomplete    RRC_NETWORK_HANDOVER_COMPLETE_ARG,
rrcHOinfo        RRC_HO_INFO_DISTRIBUTION_ARG,
rrcHOinfoAck        RRC_HO_INFO_DISTRIBUTION_ACK_ARG;
```

```
TIMER T_sector_handover_req := T_sector_handover_duration;
TIMER T_handover_request := T_handover_request_duration;
TIMER T_nw_handover_request := T_nw_handover_request_duration;
TIMER T_nw_signalling_handover := T_nw_signalling_handover_duration;
```

```
DCL

startEncryption  START_ENCRYPTION,

/*   no−encryption−start
     encryption−start*/

startAuthentication START_AUTHENTICATION,
/*   no−auth−start
     auth−start*/

sendNWtoken   SEND_NW_TOKEN,
/*   no−token−send
     send−nw−token*/

startInfotransfer  START_INFO_TRANSFER,
/*   no−info−transfer
     start−info−transfer*/

startDUCsetup START_DUC_SET_UP;
/*    donot−start−setup (0),
      start−setup*/
```

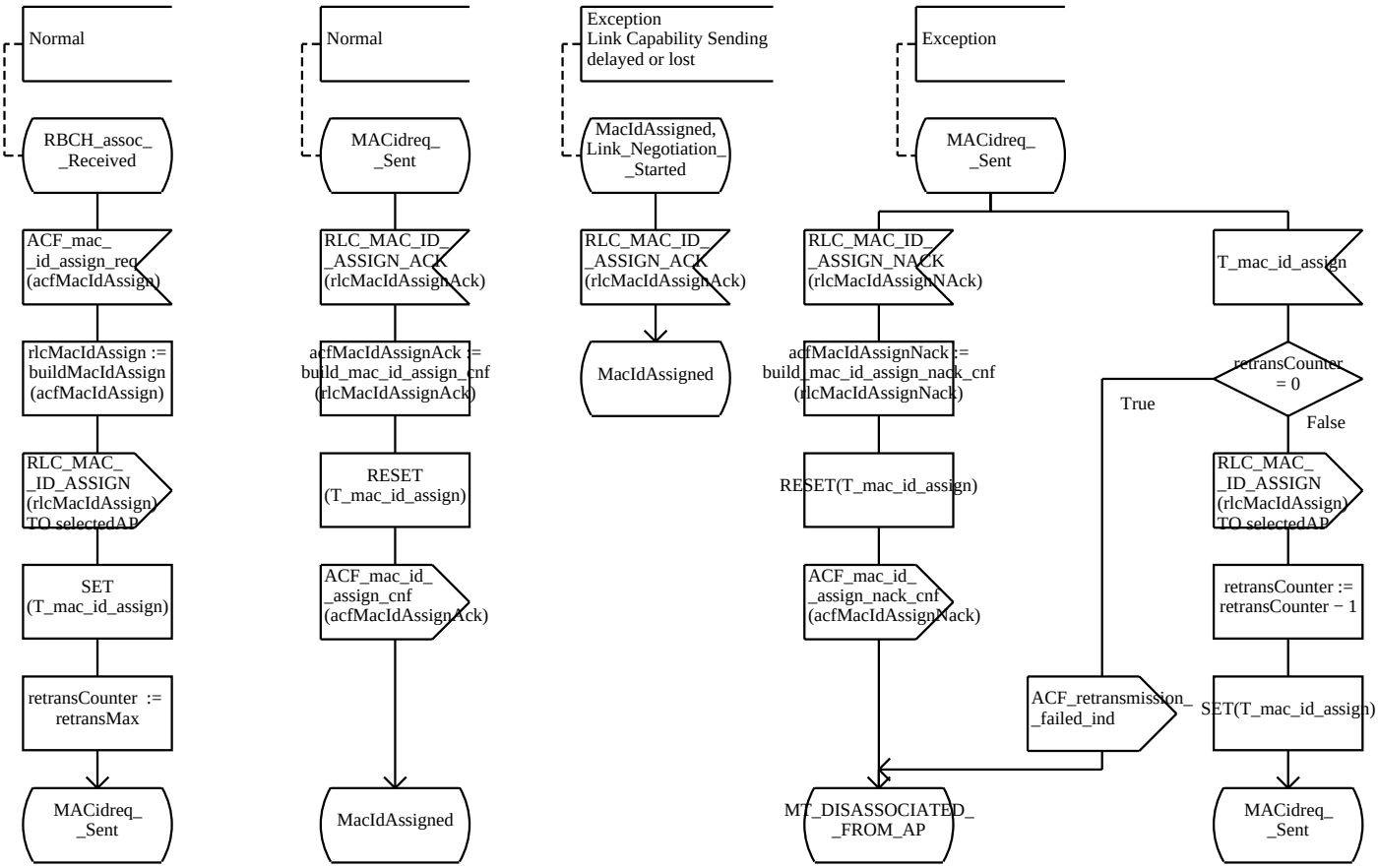
Process Type RLC_MT 7(59)

;FPAR AP_1, AP_2 PId;



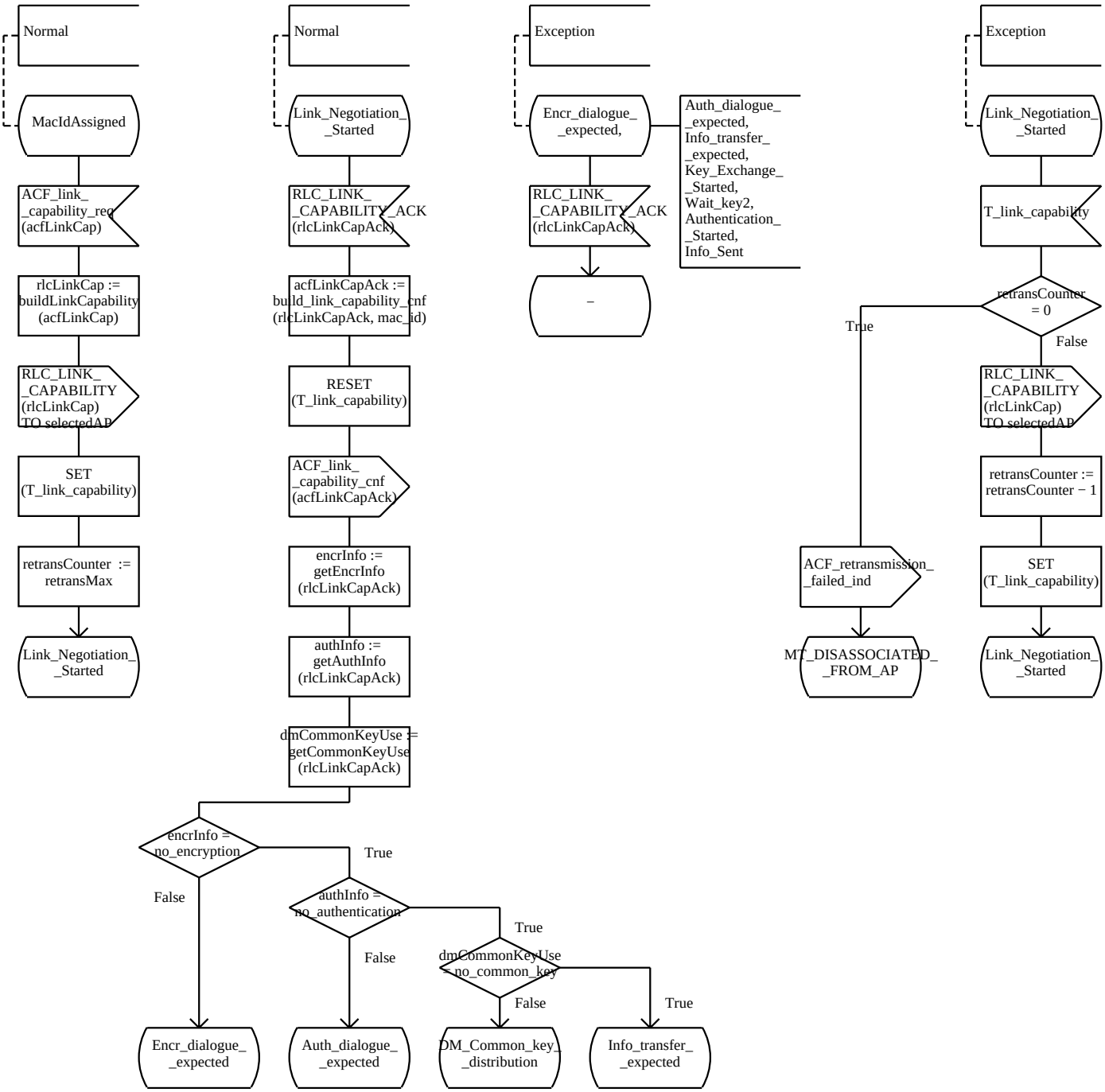
Process Type RLC_MT 8(59)

;FPAR AP_1, AP_2 PId;



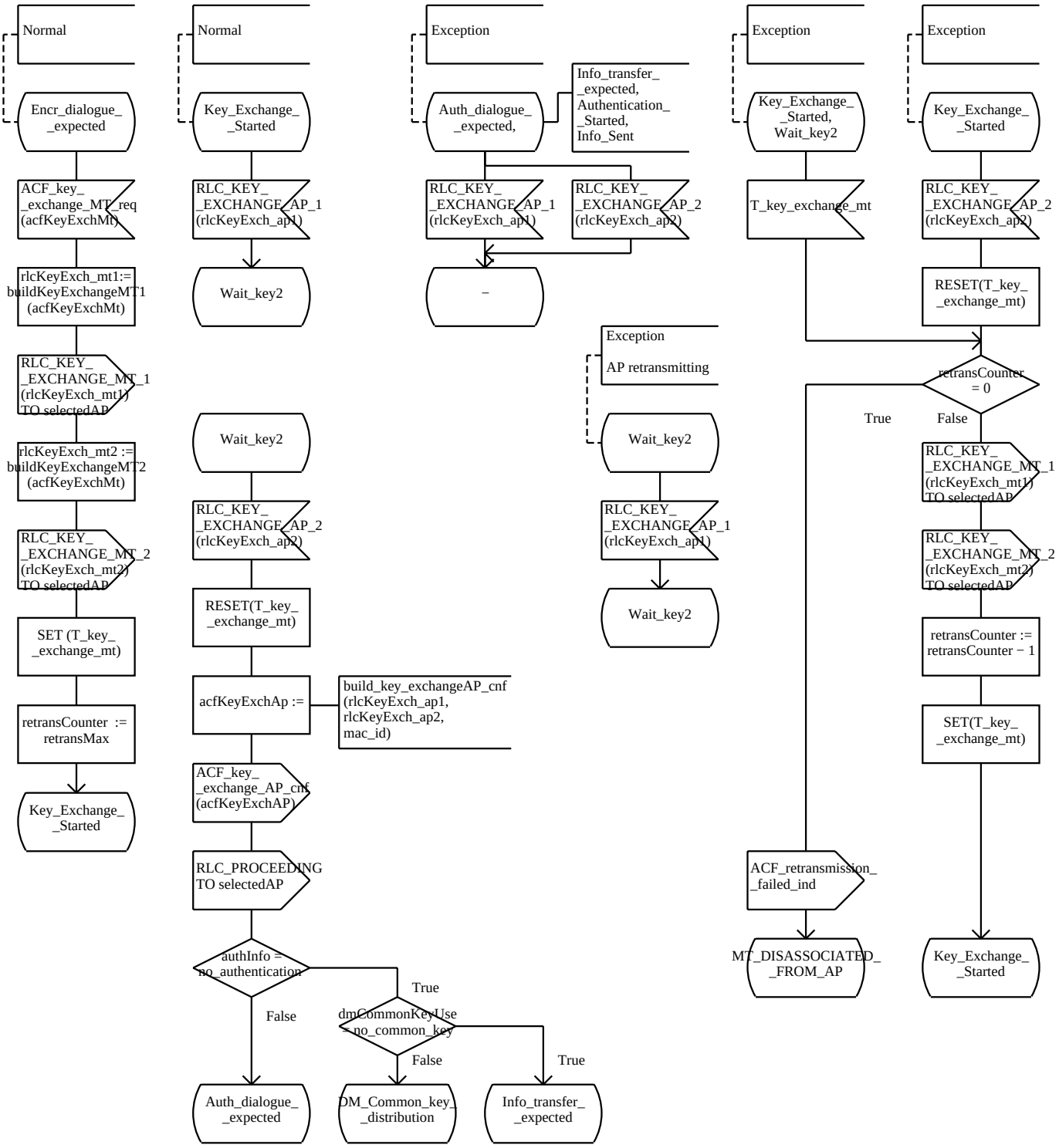
Process Type RLC_MT 9(59)

;FPAR AP_1, AP_2 PId;



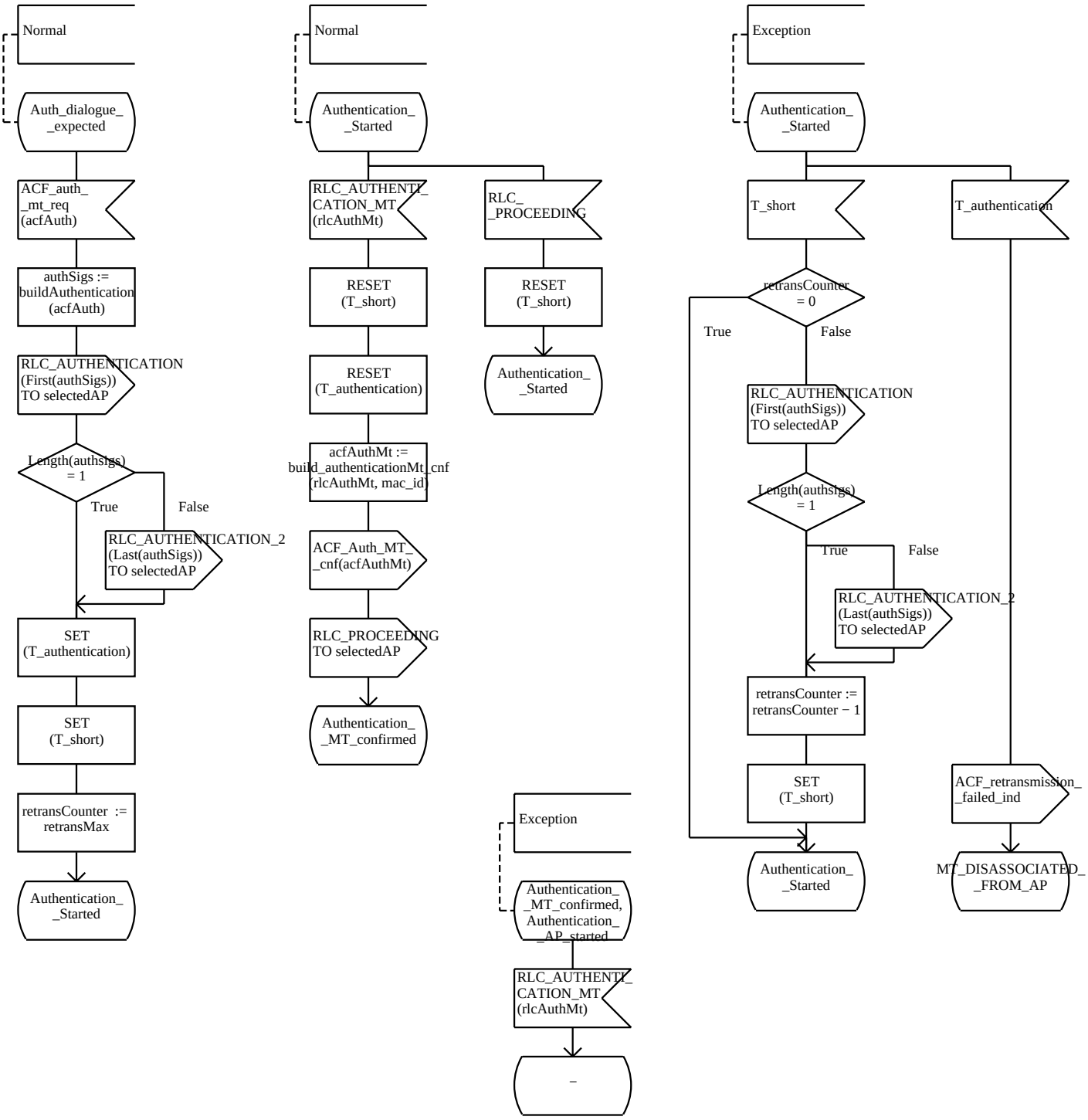
Process Type RLC_MT 10(59)

;FPAR AP_1, AP_2 PId;



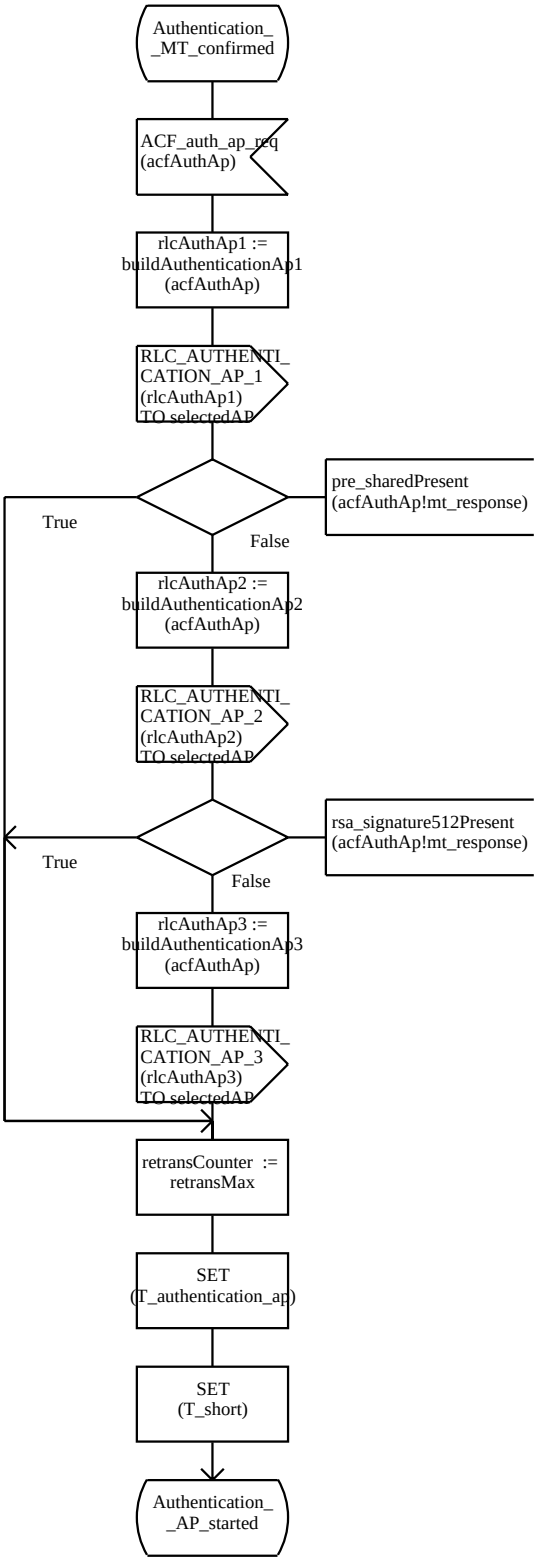
Process Type RLC_MT 11(59)

;FPAR AP_1, AP_2 PId;



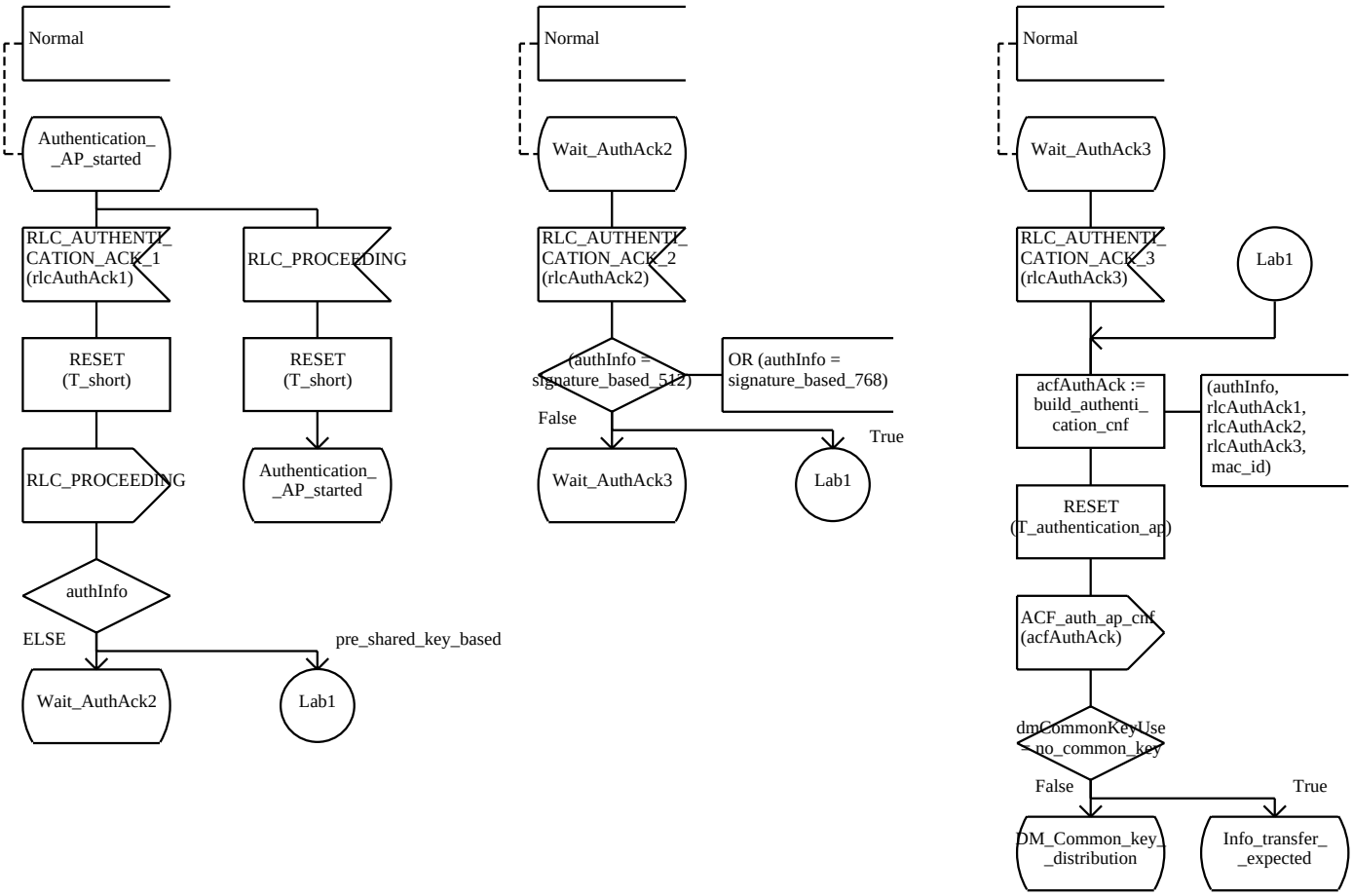
Process Type RLC_MT 12(59)

;FPAR AP_1, AP_2 PId;

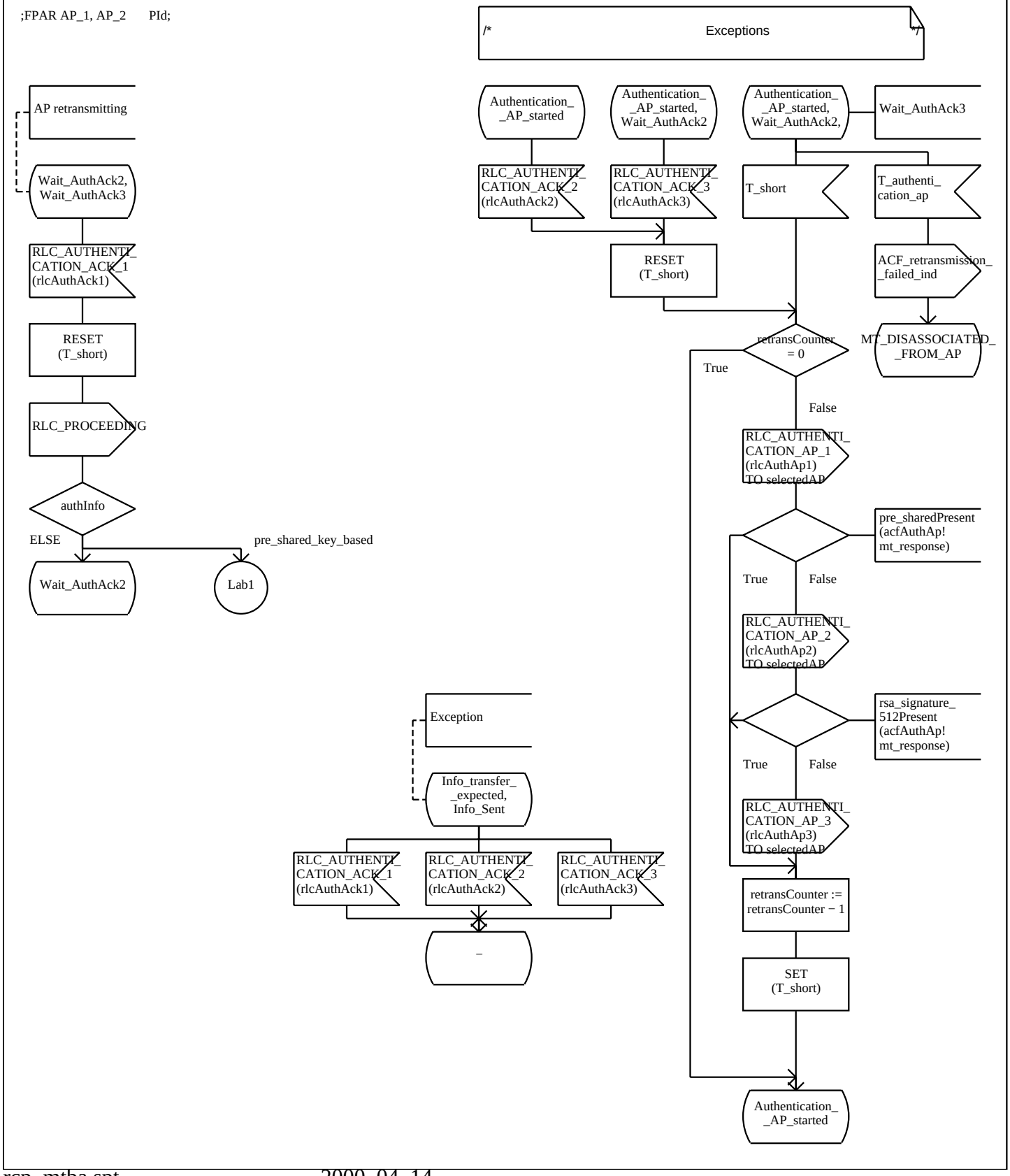


Process Type RLC_MT 13(59)

;FPAR AP_1, AP_2 PId;

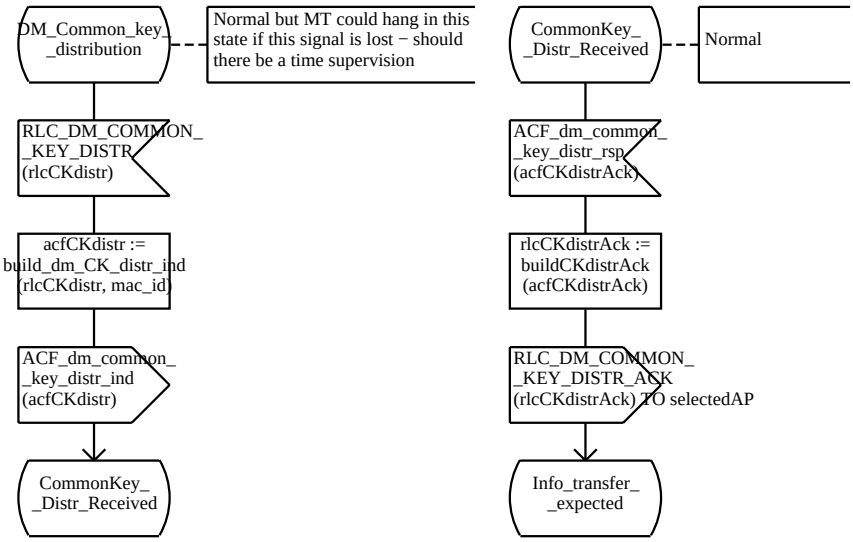


Process Type RLC_MT 14(59)



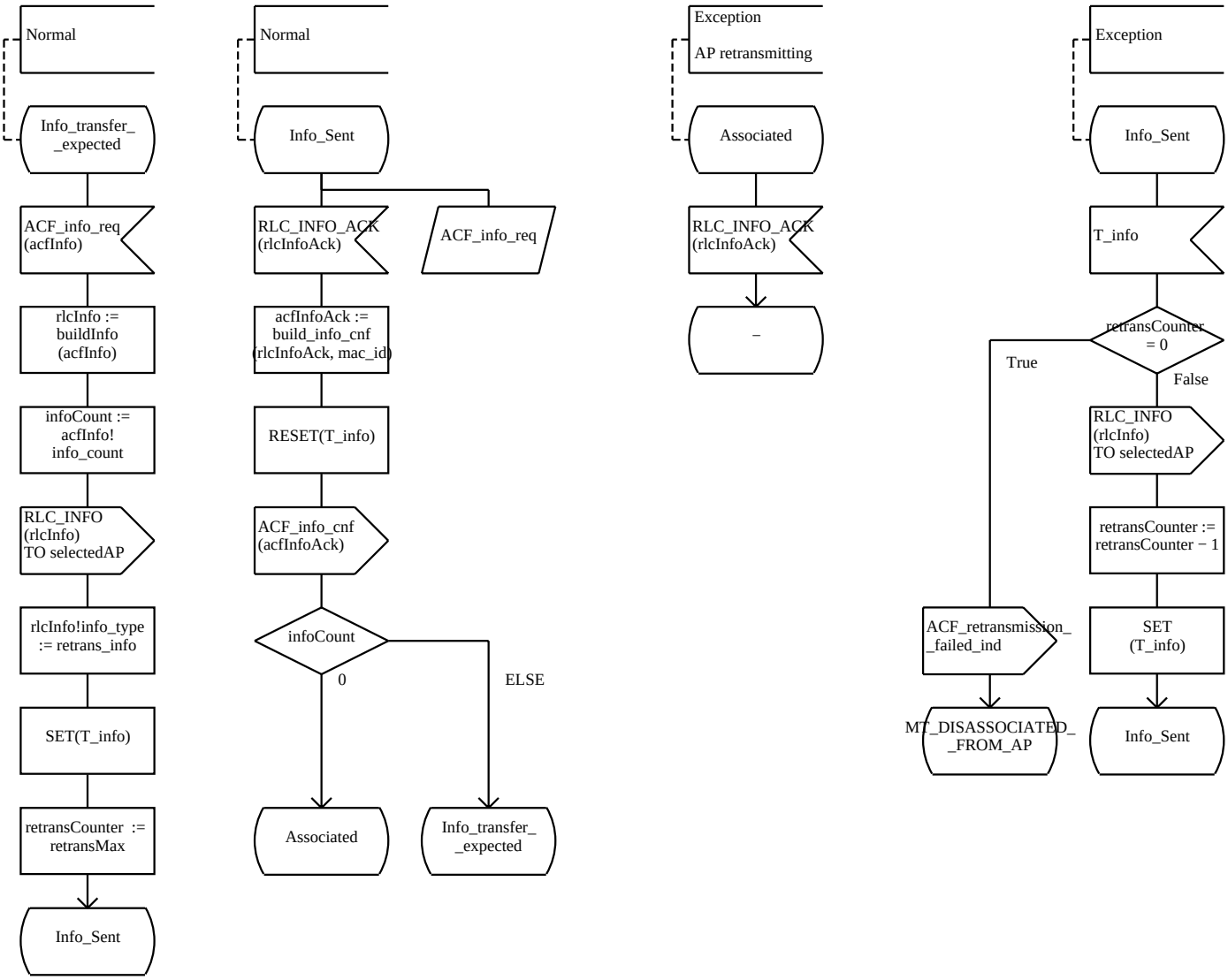
Process Type RLC_MT 15(59)

;FPAR AP_1, AP_2 PId;

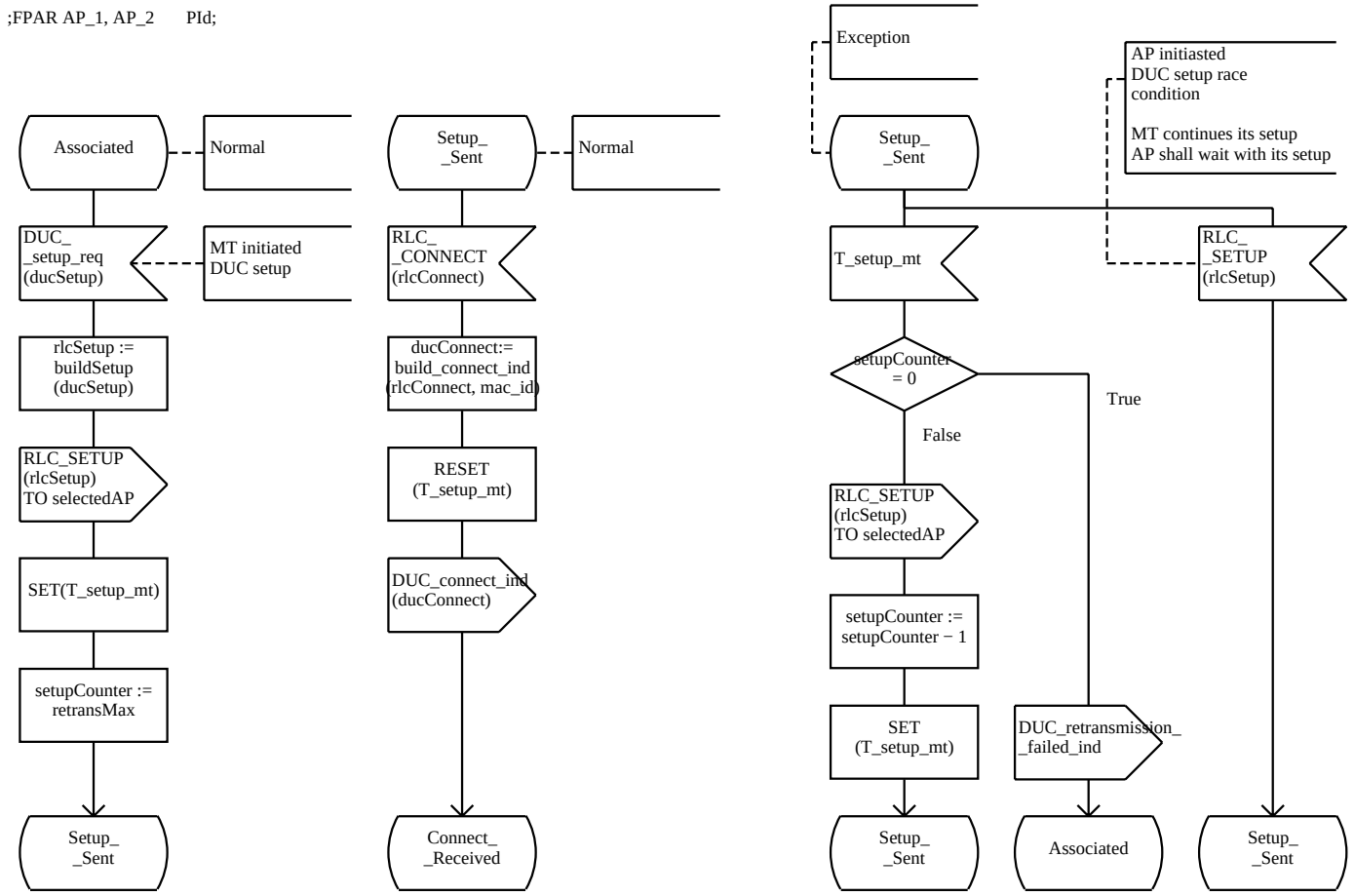


Process Type RLC_MT 16(59)

;FPAR AP_1, AP_2 PId;

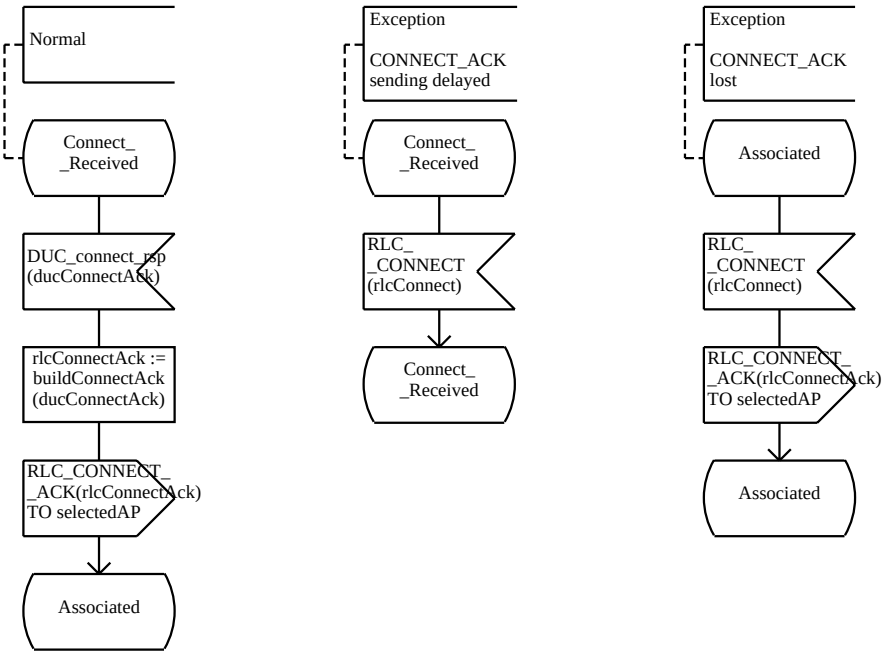


Process Type RLC_MT 17(59)



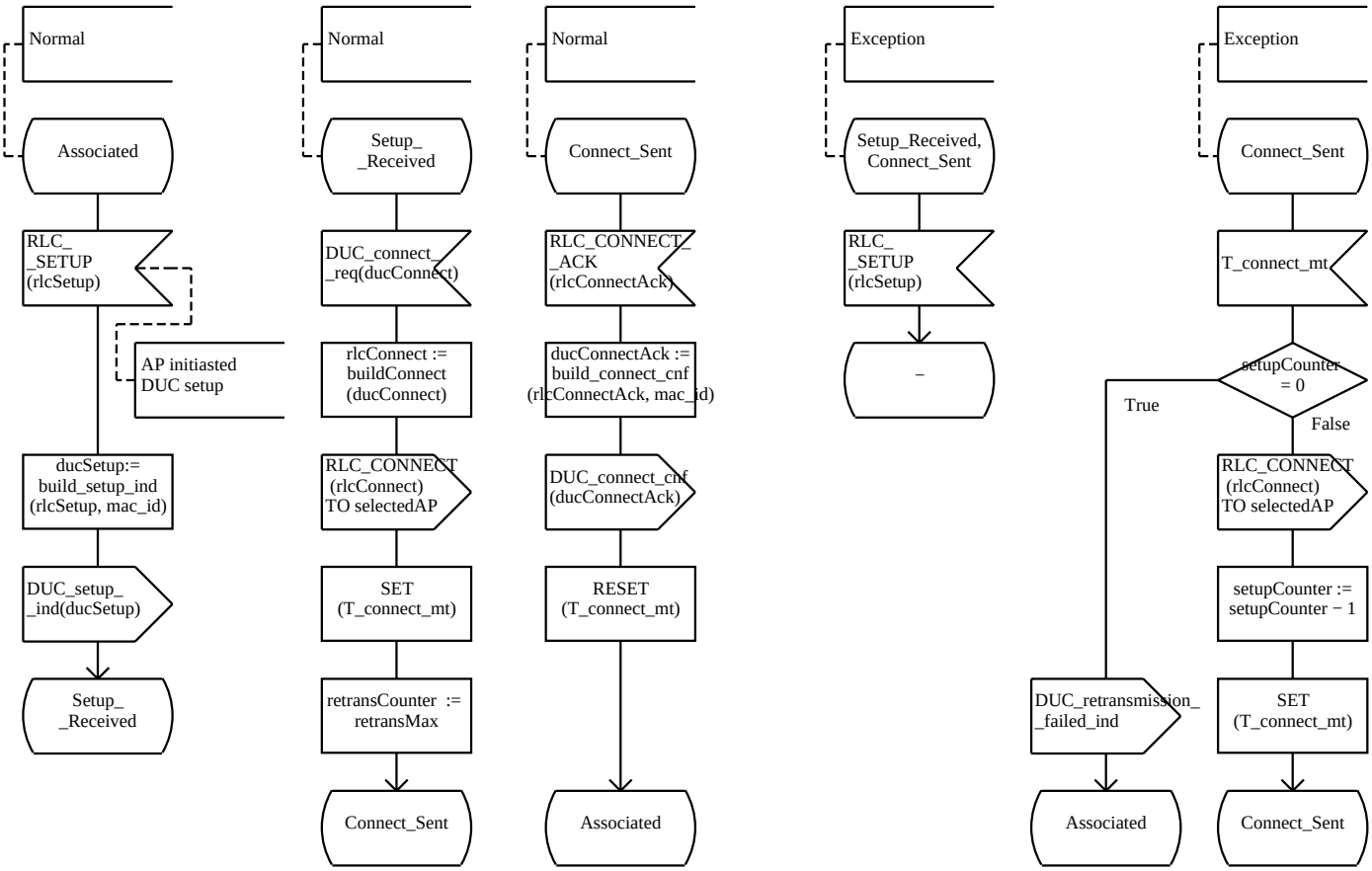
Process Type RLC_MT 18(59)

;FPAR AP_1, AP_2 PId;



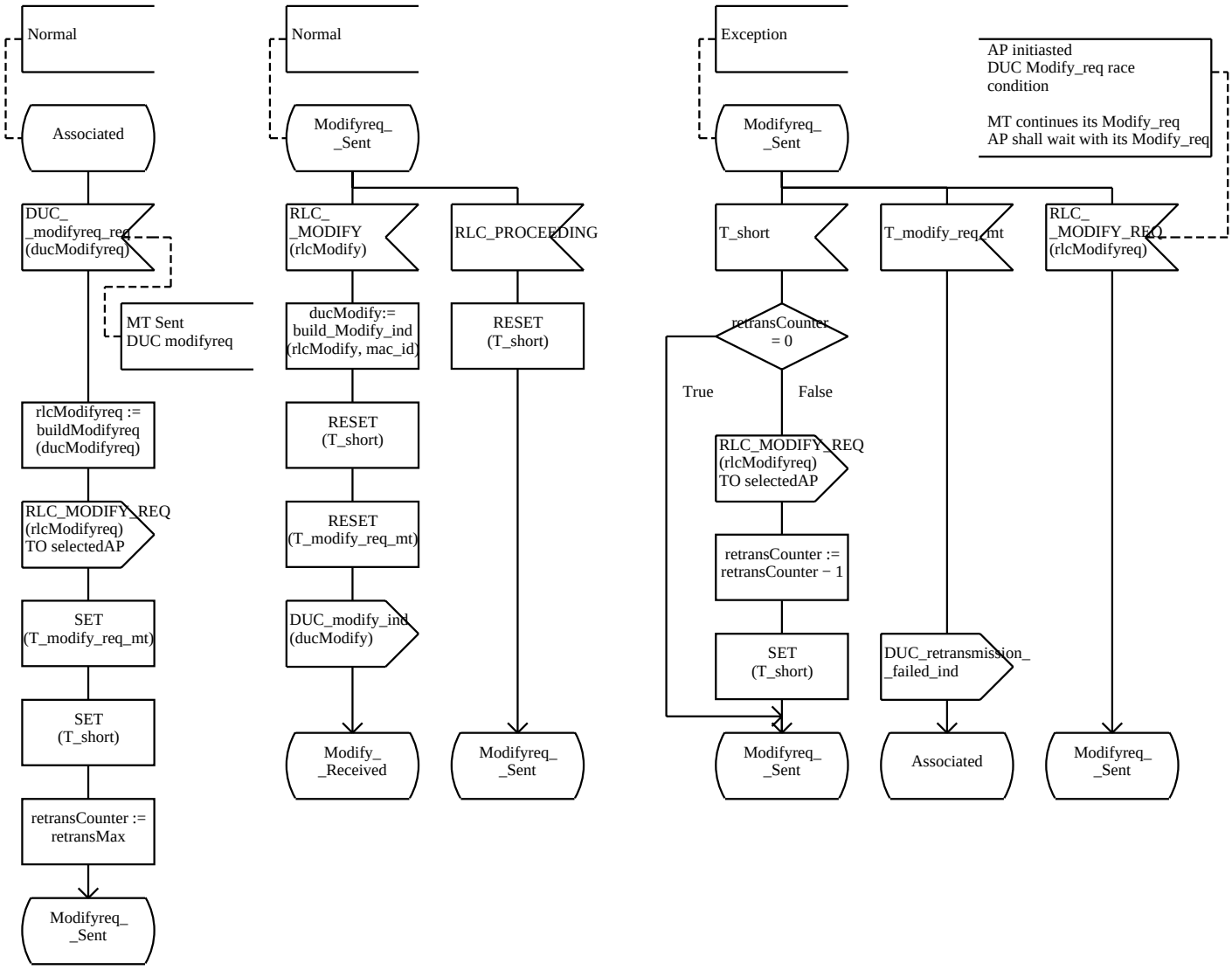
Process Type RLC_MT 19(59)

;FPAR AP_1, AP_2 PId;



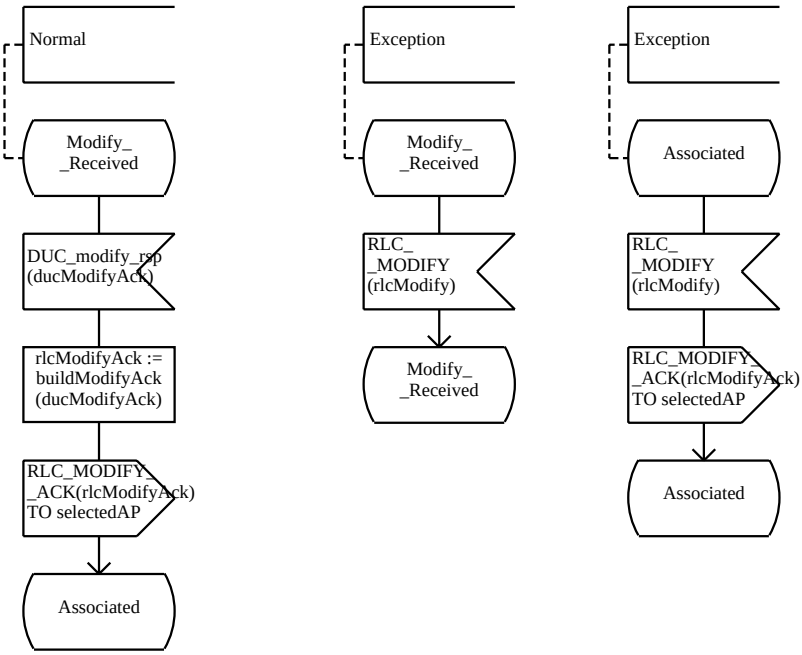
Process Type RLC_MT 20(59)

;FPAR AP_1, AP_2 PId;



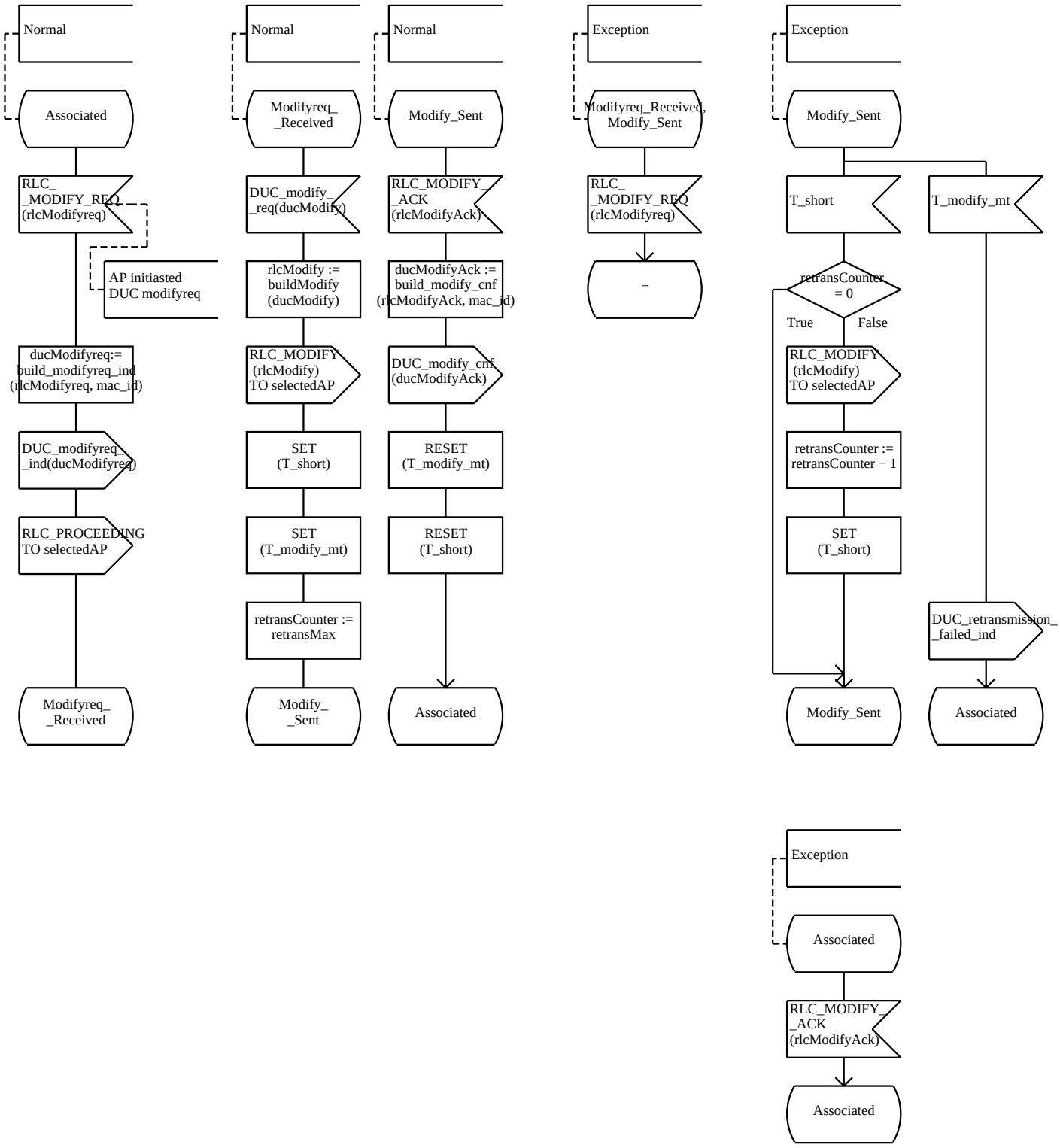
Process Type RLC_MT 21(59)

;FPAR AP_1, AP_2 PId;



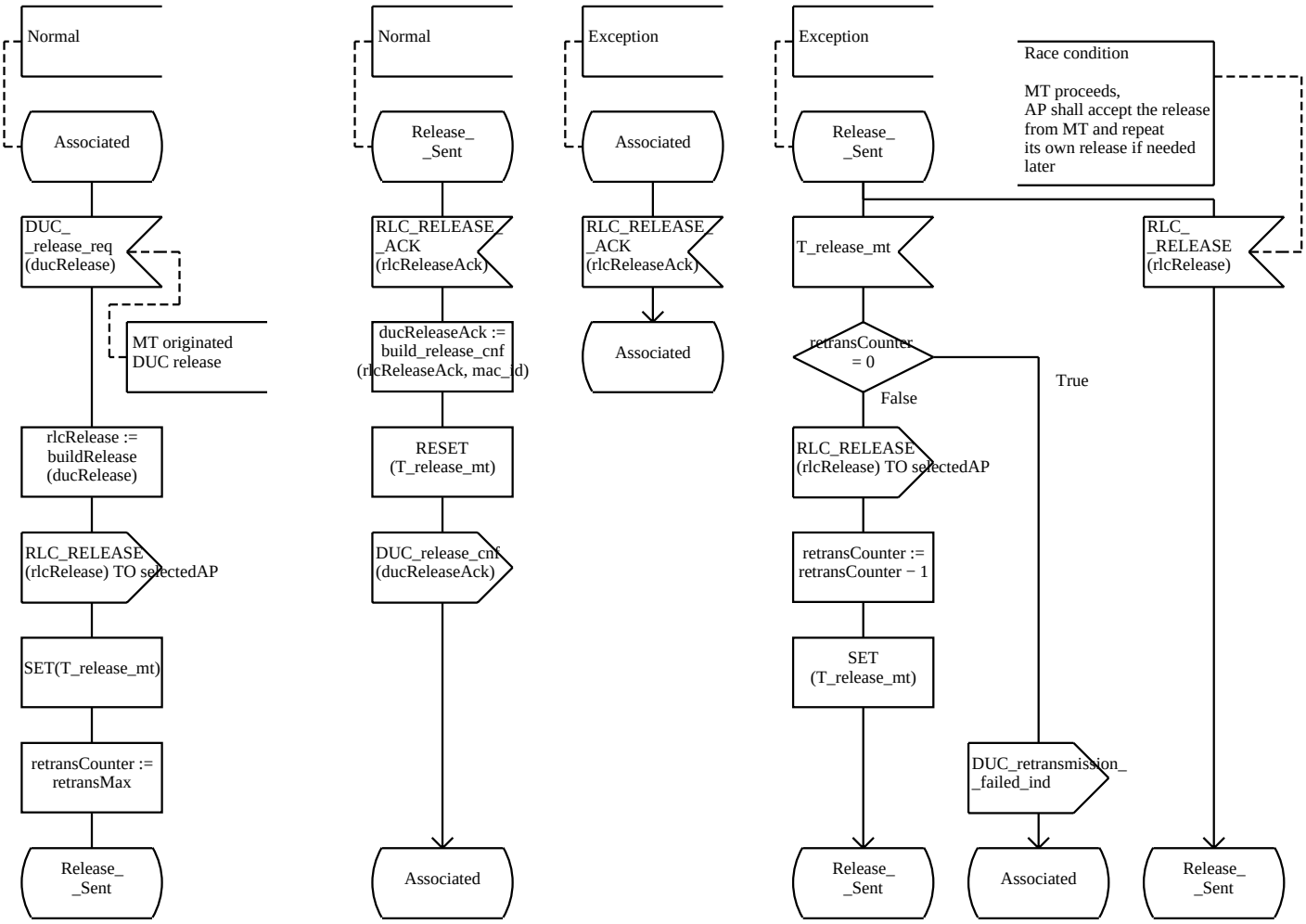
Process Type RLC_MT 22(59)

;FPAR AP_1, AP_2 PId;



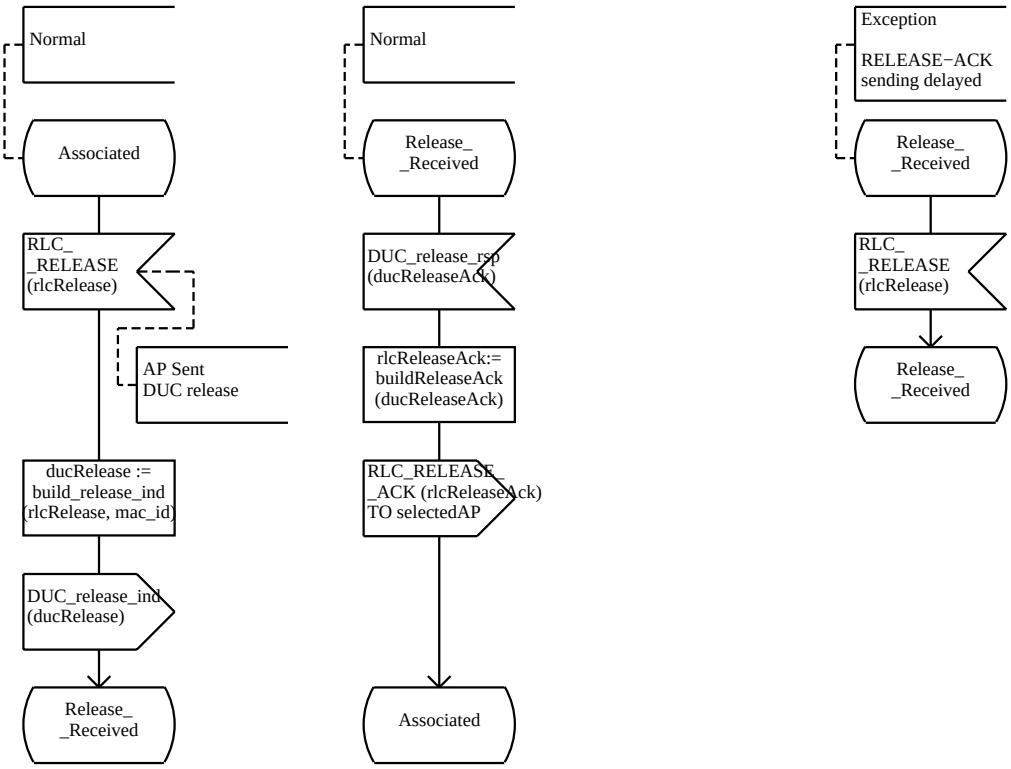
Process Type RLC_MT 23(59)

;FPAR AP_1, AP_2 PId;



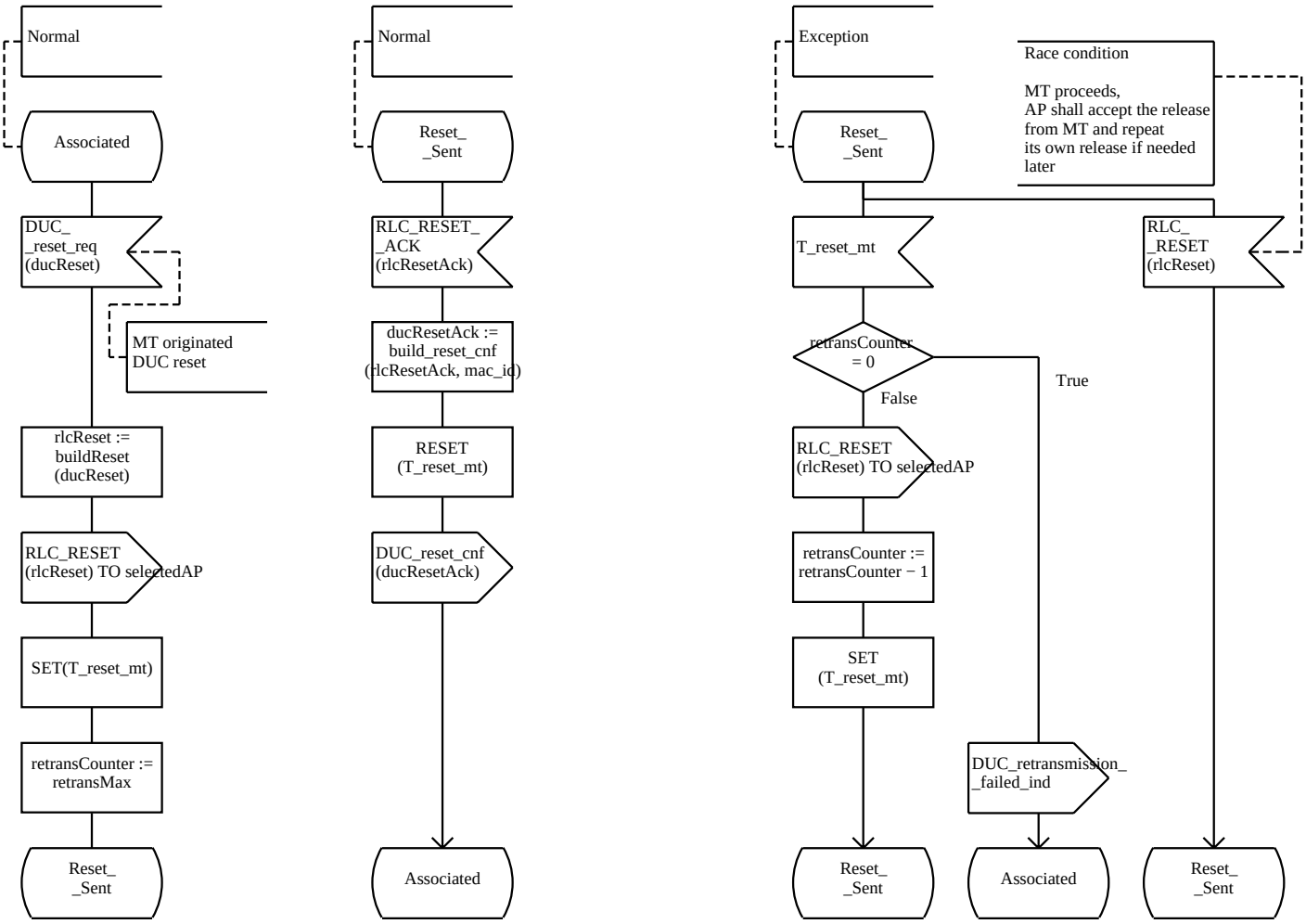
Process Type RLC_MT 24(59)

;FPAR AP_1, AP_2 PId;



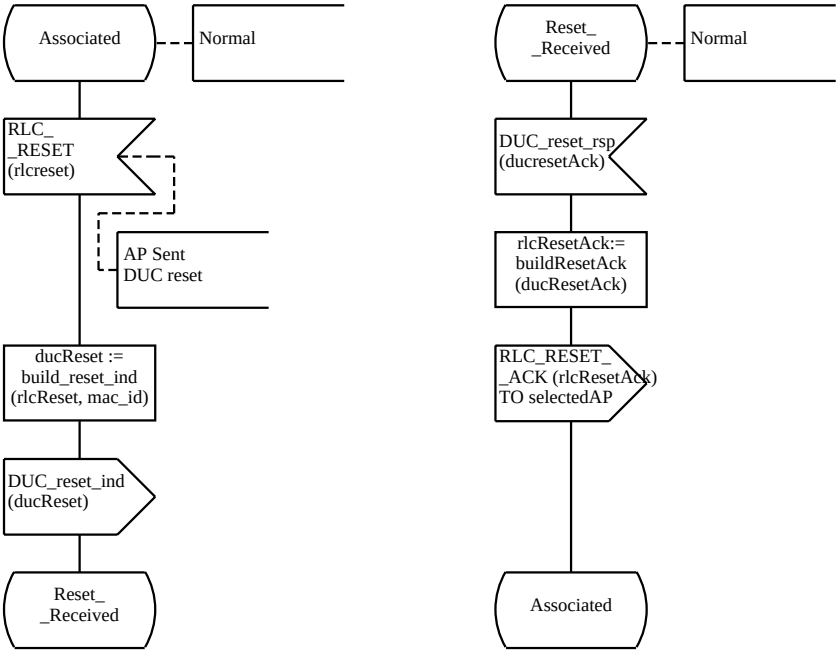
Process Type RLC_MT 25(59)

;FPAR AP_1, AP_2 PId;



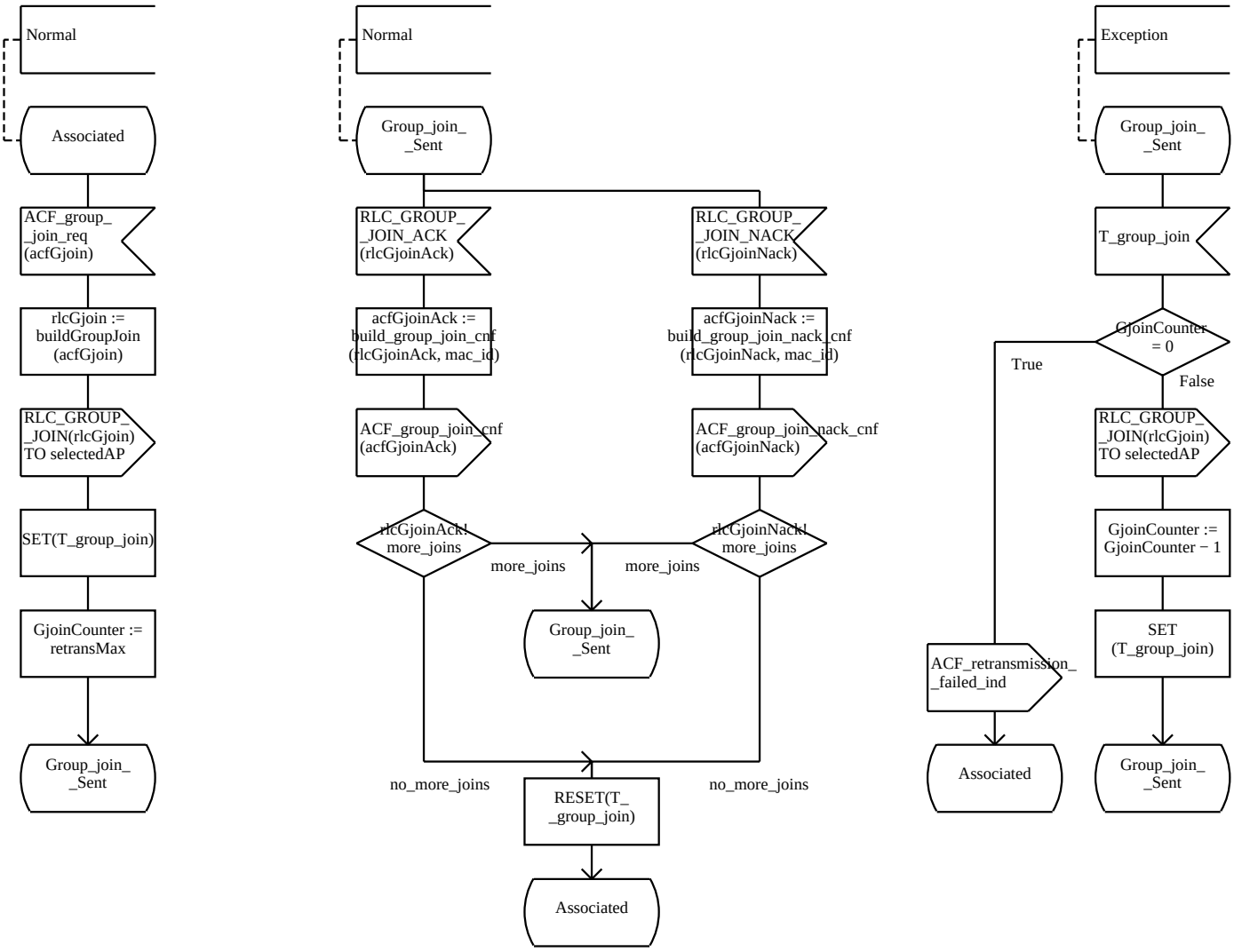
Process Type RLC_MT 26(59)

;FPAR AP_1, AP_2 PId;



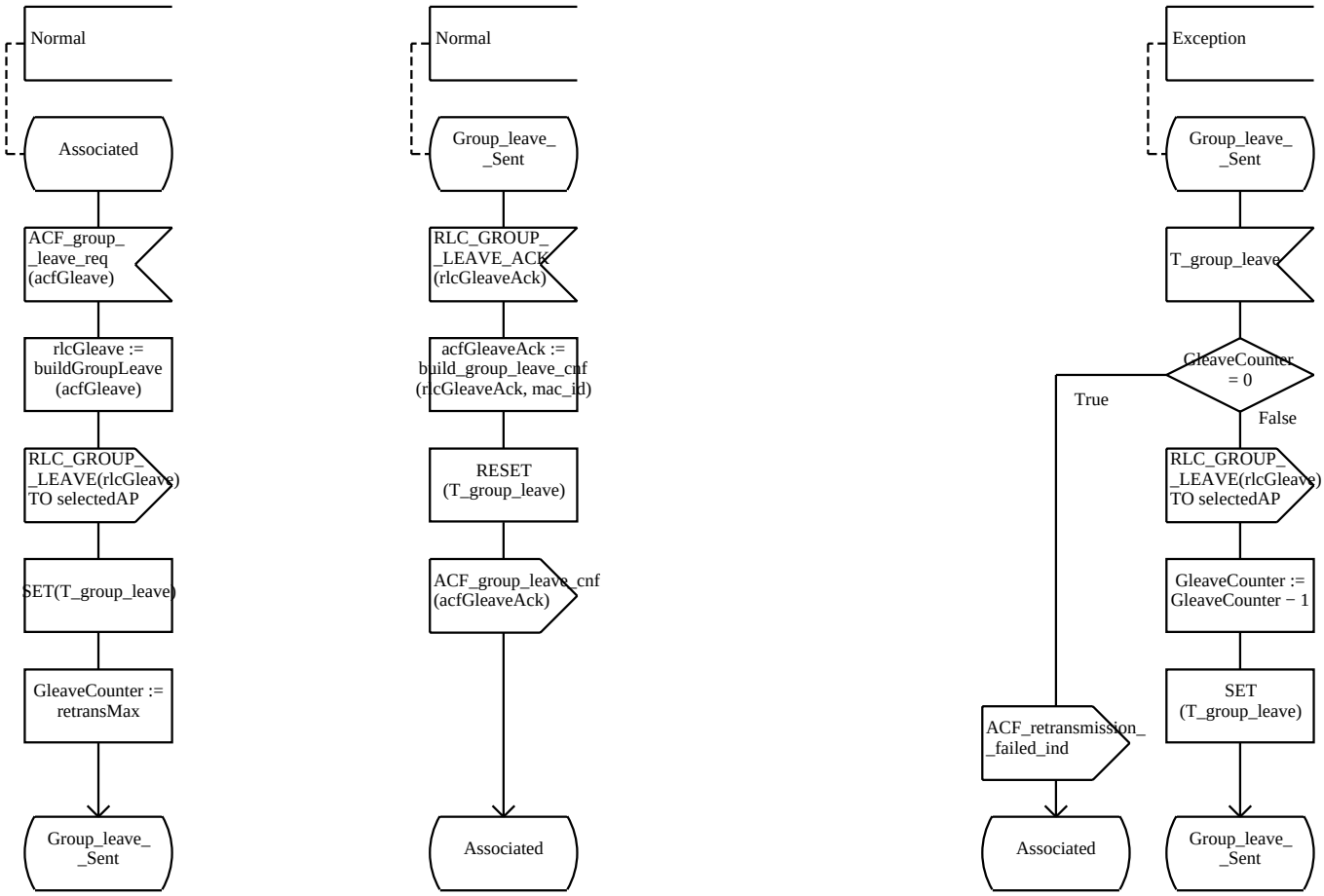
Process Type RLC_MT 27(59)

;FPAR AP_1, AP_2 PId;



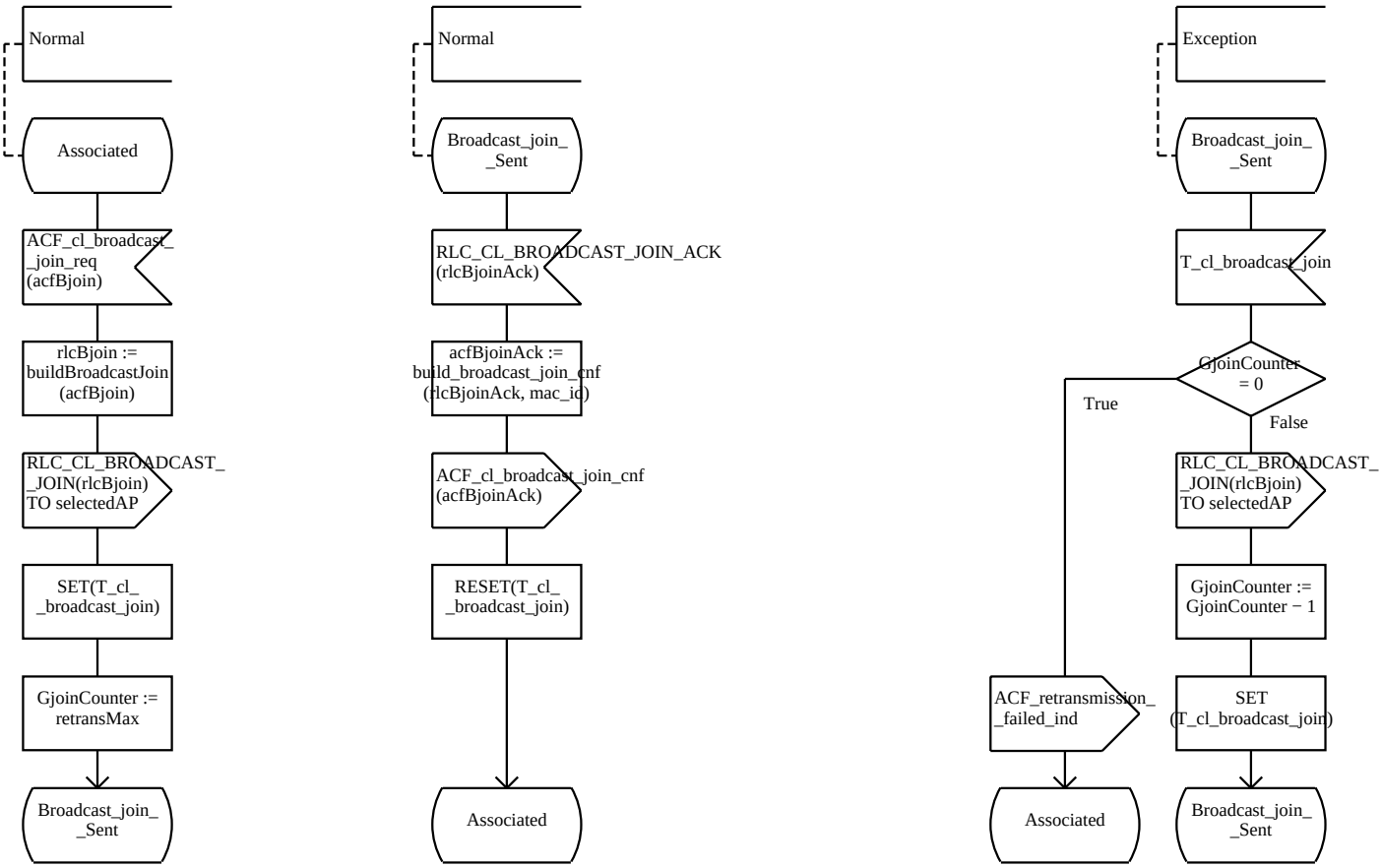
Process Type RLC_MT 28(59)

;FPAR AP_1, AP_2 PId;



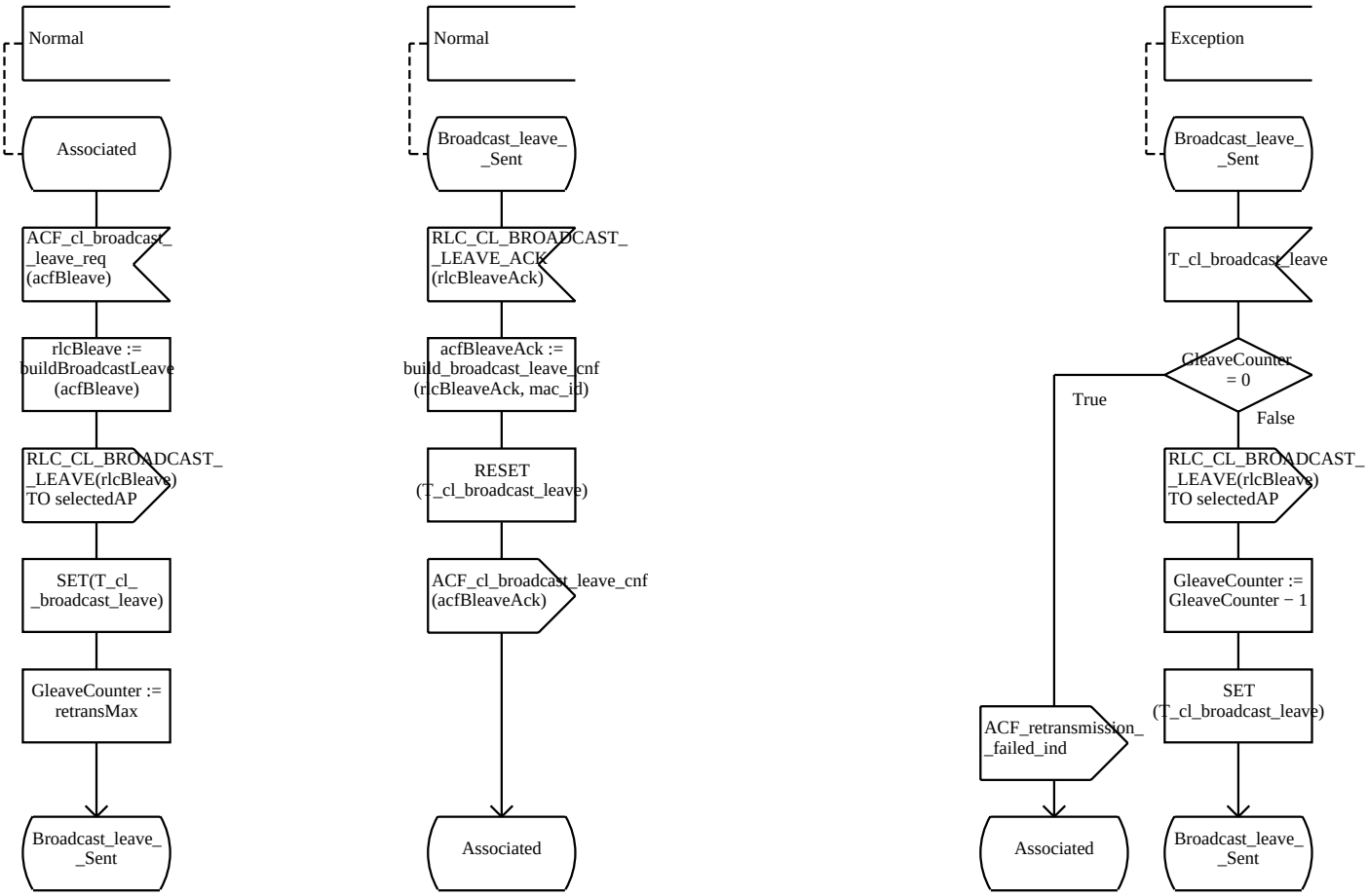
Process Type RLC_MT 29(59)

;FPAR AP_1, AP_2 PId;



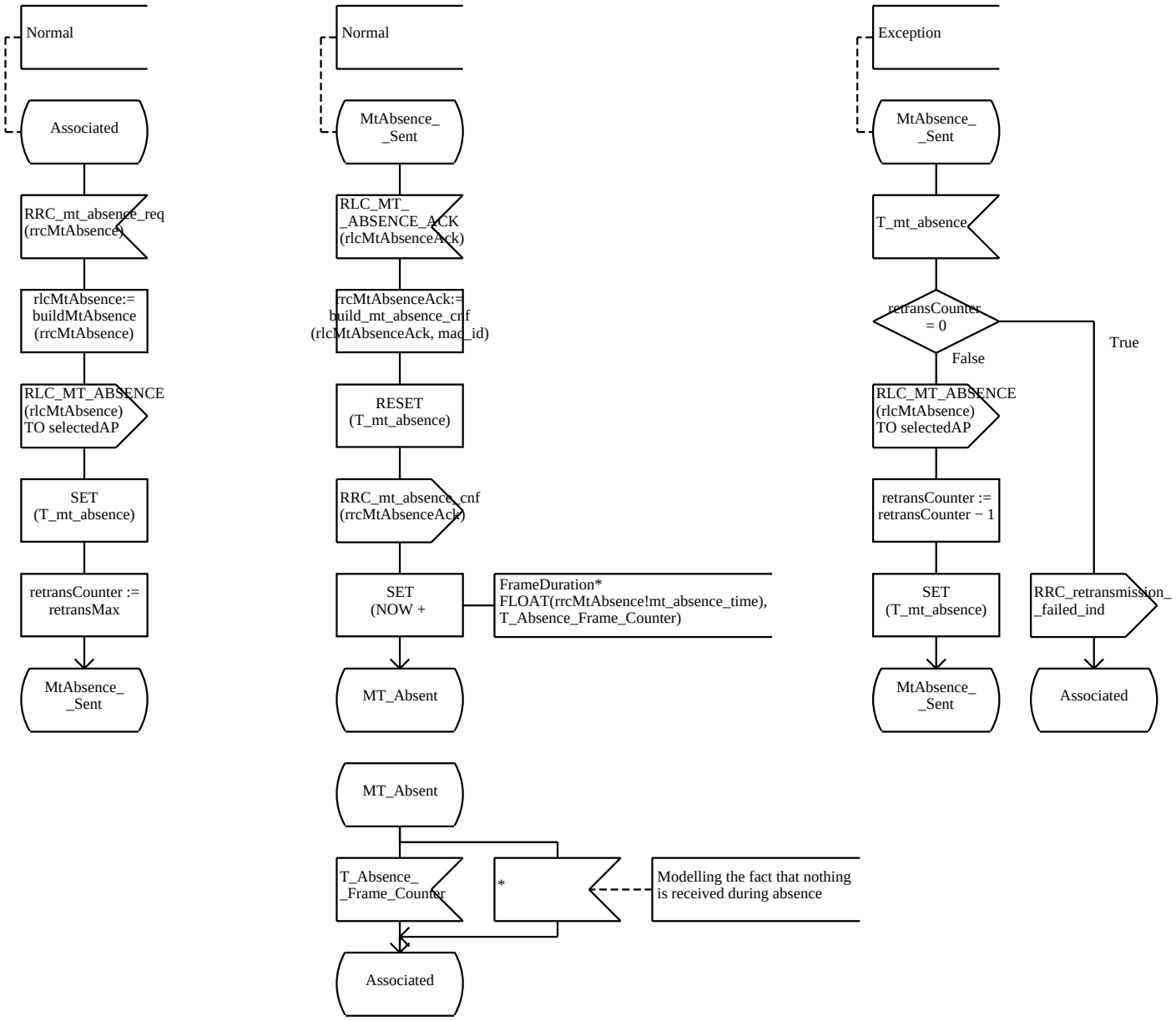
Process Type RLC_MT 30(59)

;FPAR AP_1, AP_2 PId;



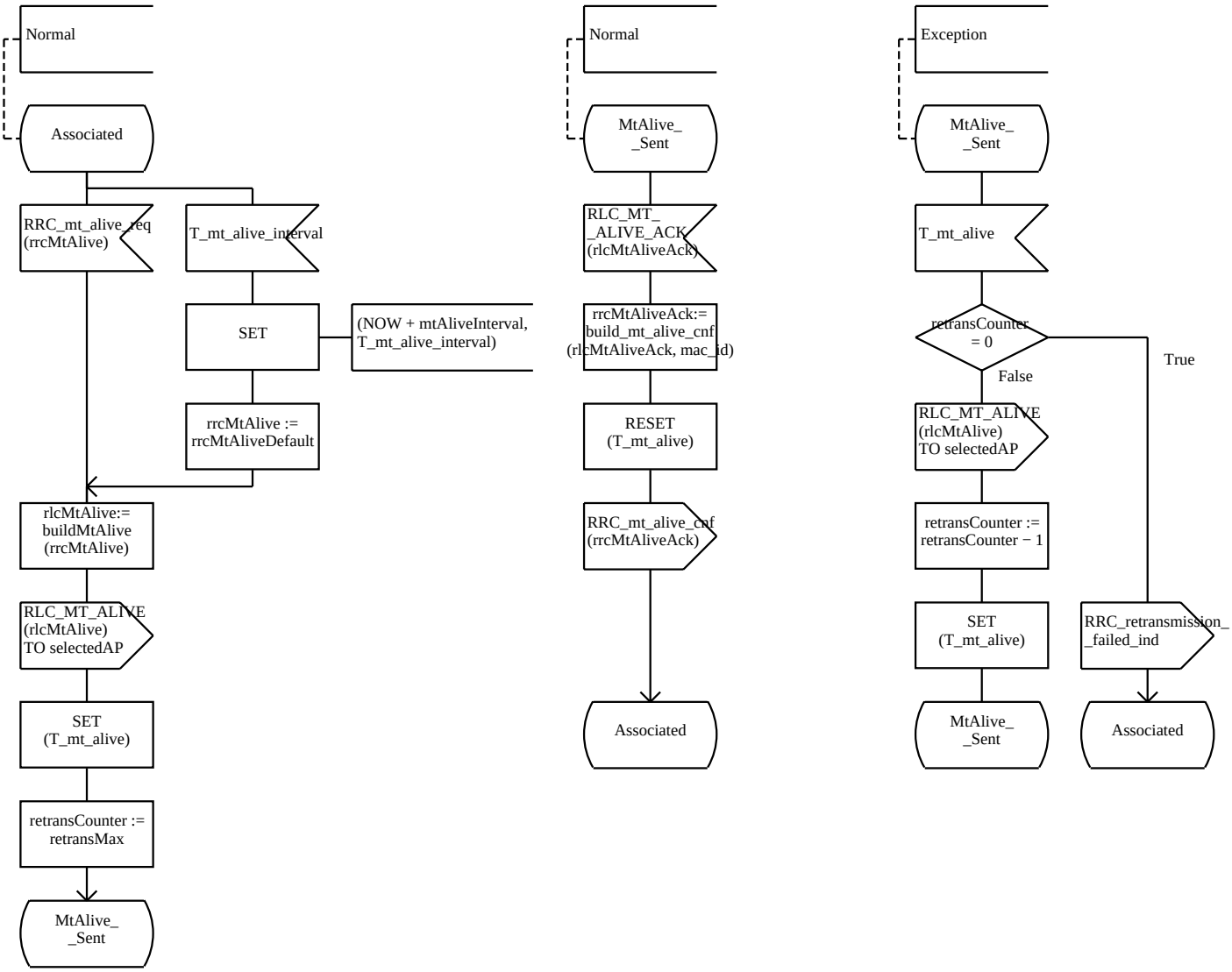
Process Type RLC_MT 31(59)

;FPAR AP_1, AP_2 PId;



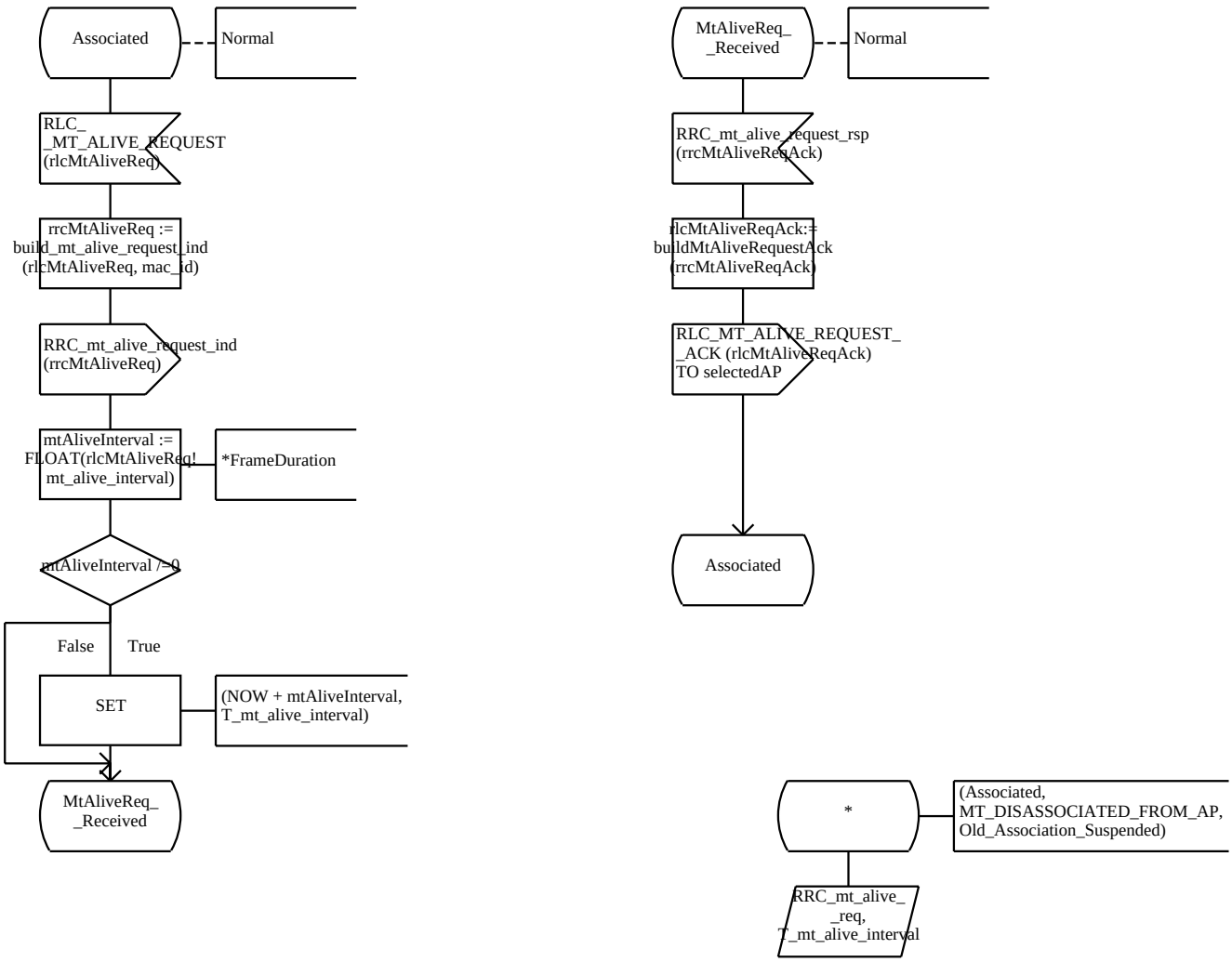
Process Type RLC_MT 32(59)

;FPAR AP_1, AP_2 PId;



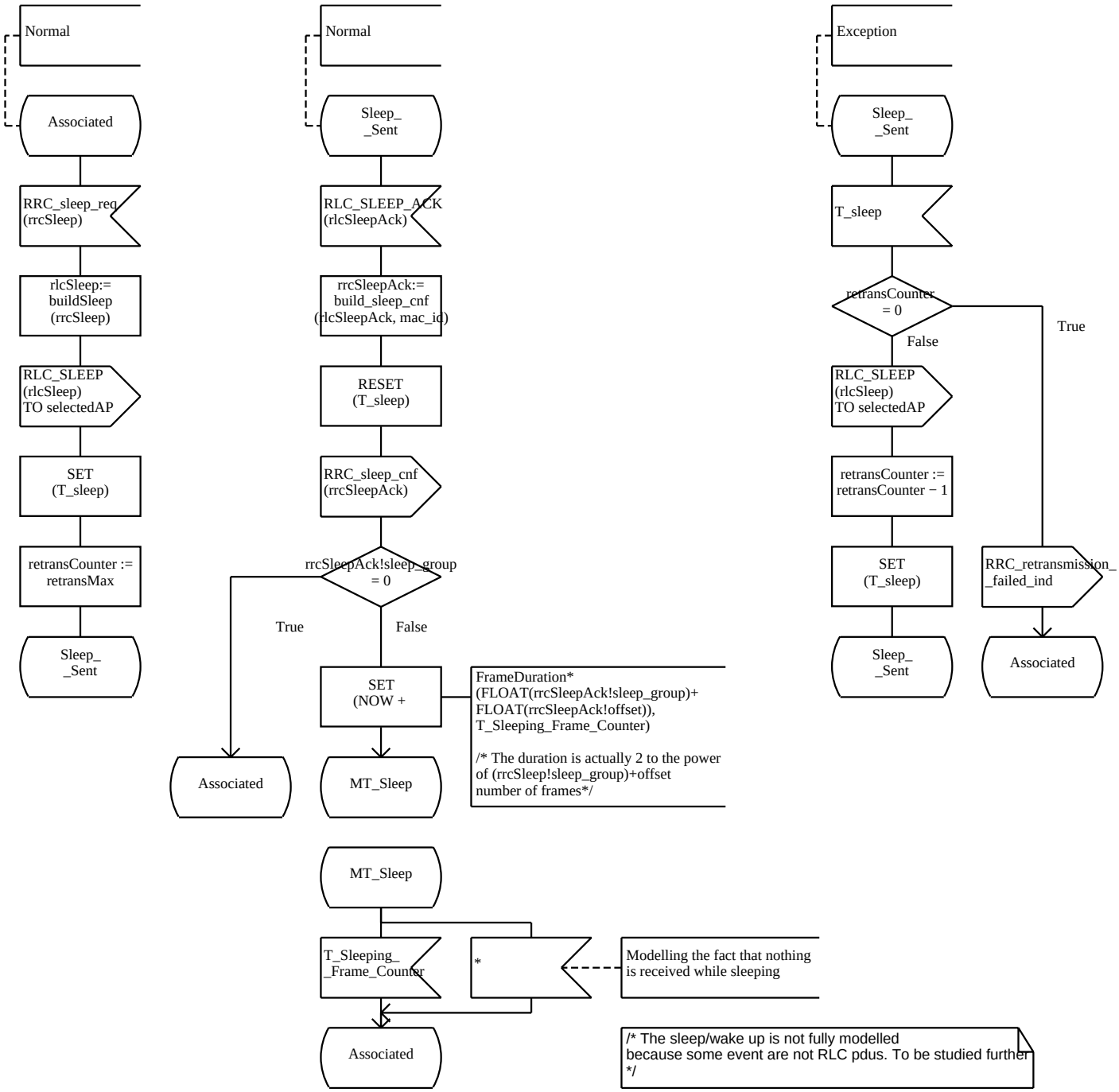
Process Type RLC_MT 33(59)

;FPAR AP_1, AP_2 PId;



Process Type RLC_MT 34(59)

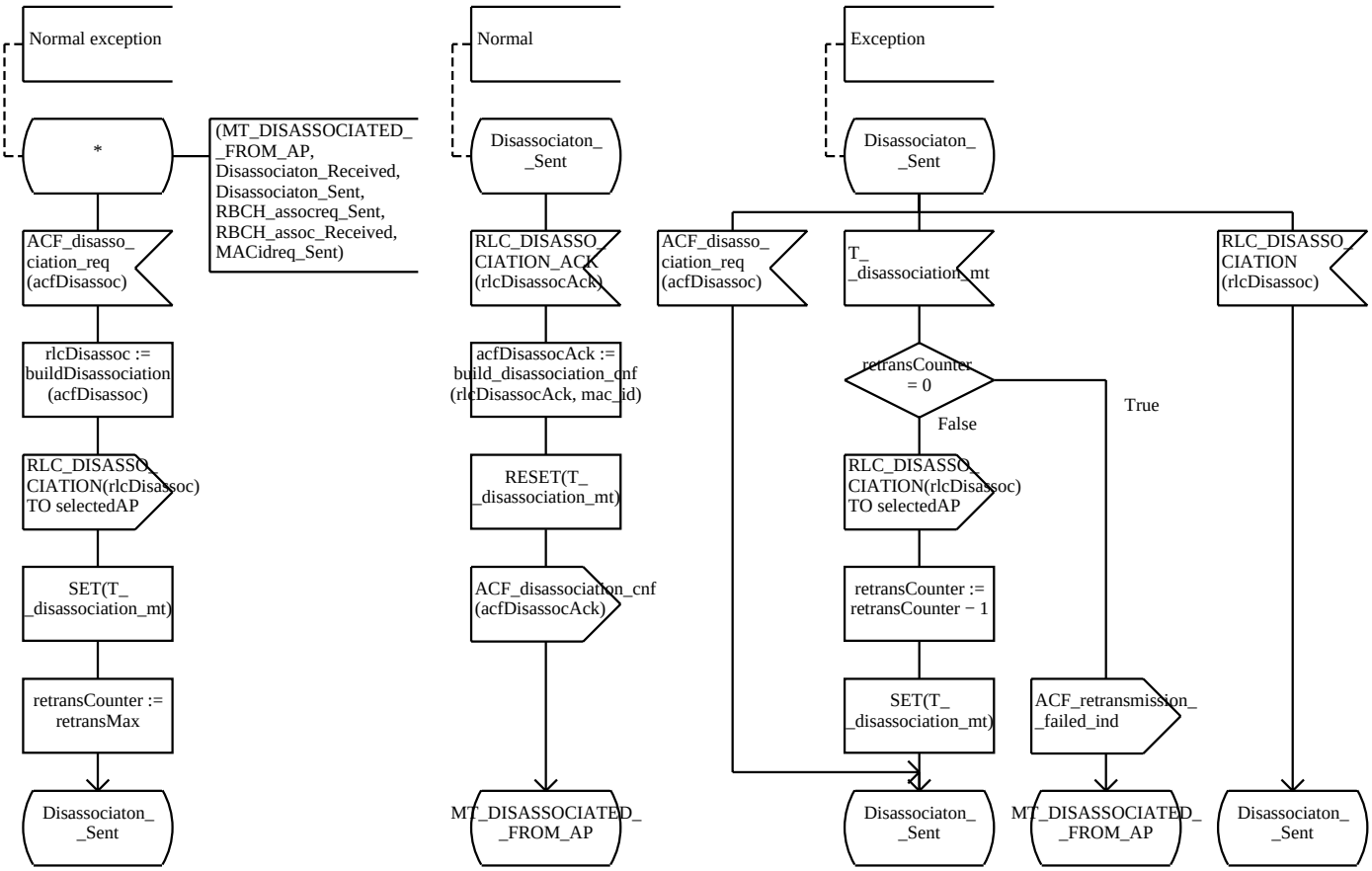
;FPAR AP_1, AP_2 PId;



Process Type RLC_MT 35(59)

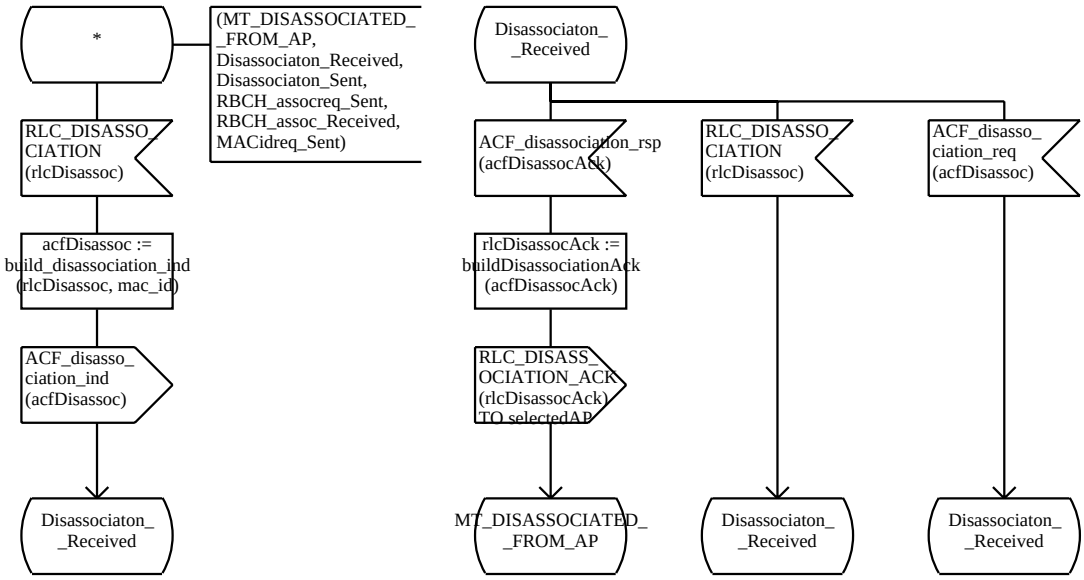
;FPAR AP_1, AP_2 PId;

/* Disassociation from the other side is always acknowledged */



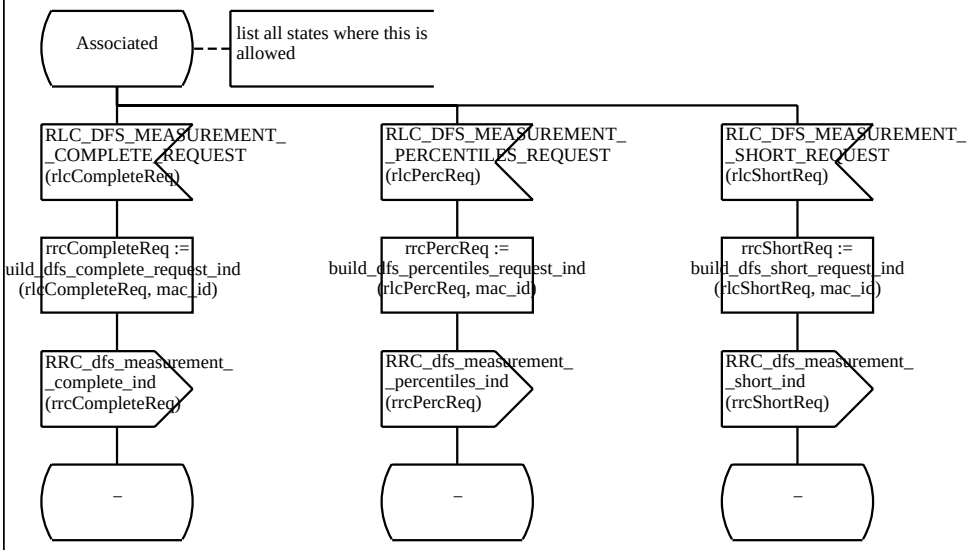
Process Type RLC_MT 36(59)

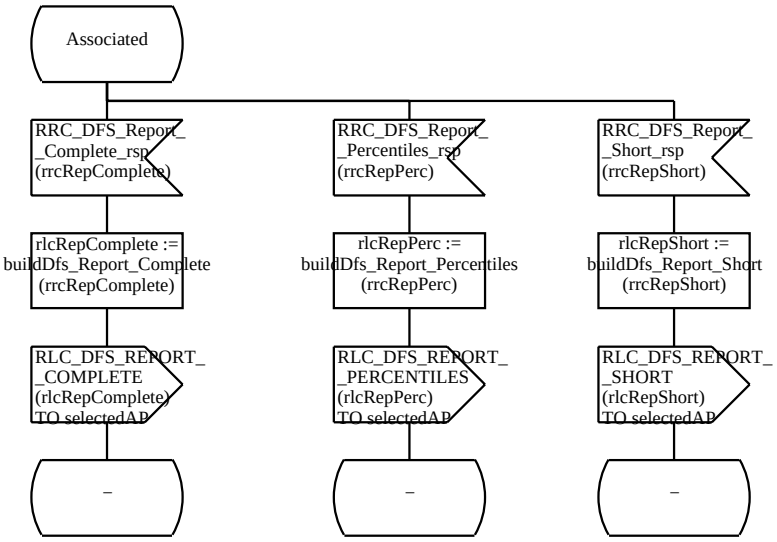
;FPAR AP_1, AP_2 PId;



Process Type RLC_MT 37(59)

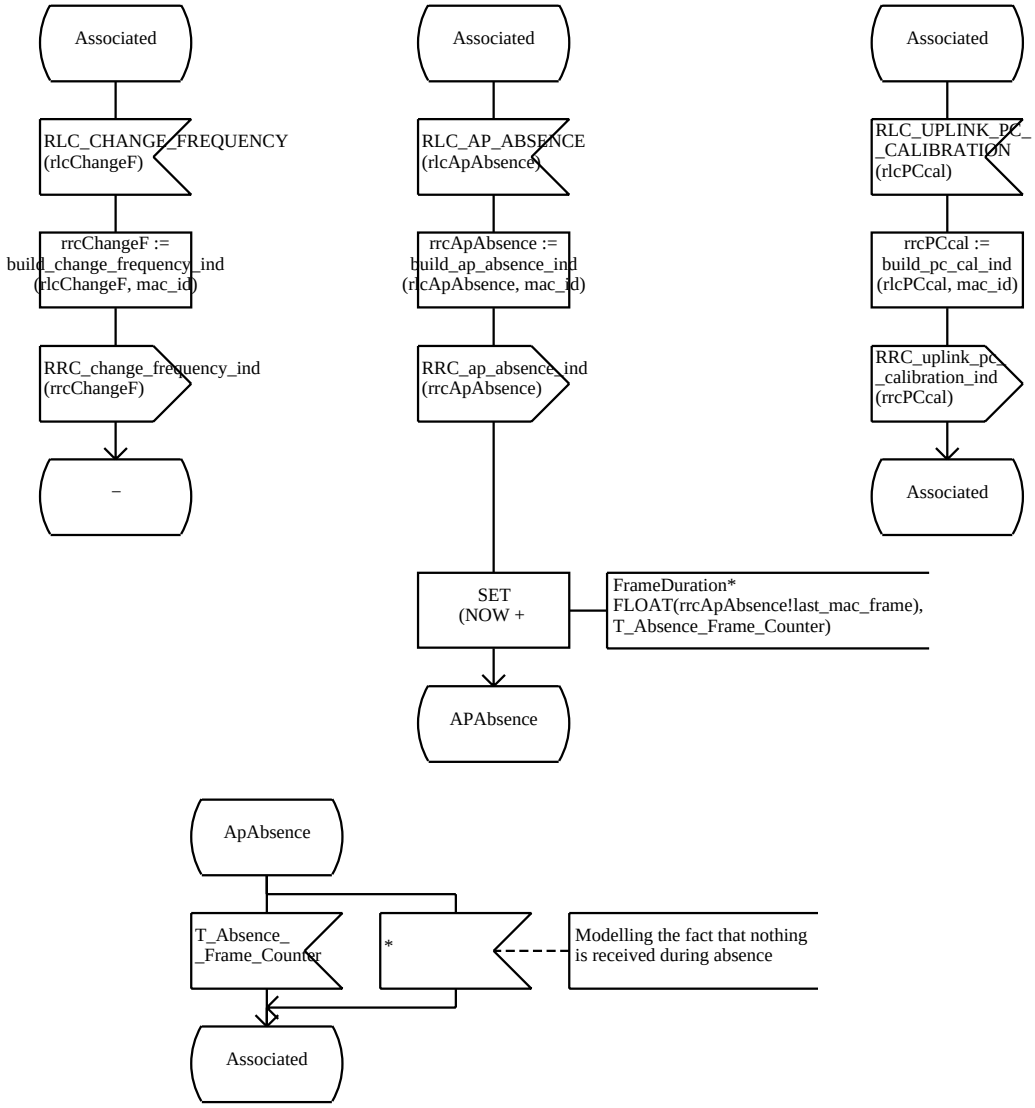
;FPAR AP_1, AP_2 PId;





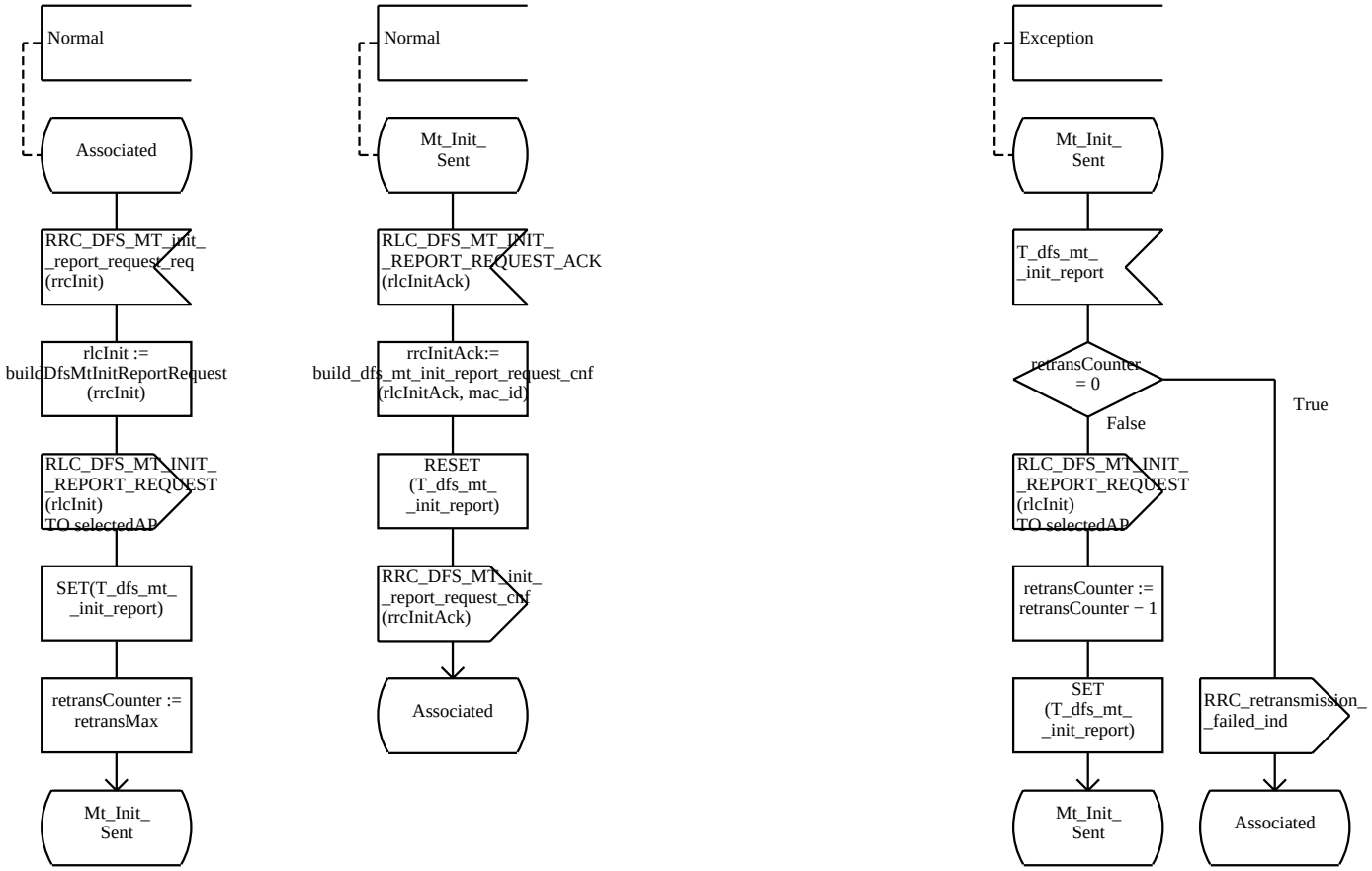
Process Type RLC_MT 38(59)

;FPAR AP_1, AP_2 PId;



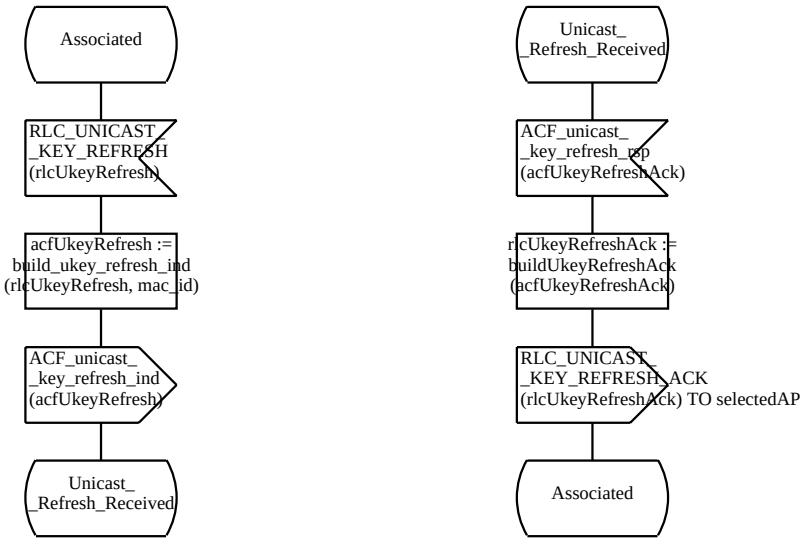
Process Type RLC_MT 39(59)

;FPAR AP_1, AP_2 PId;



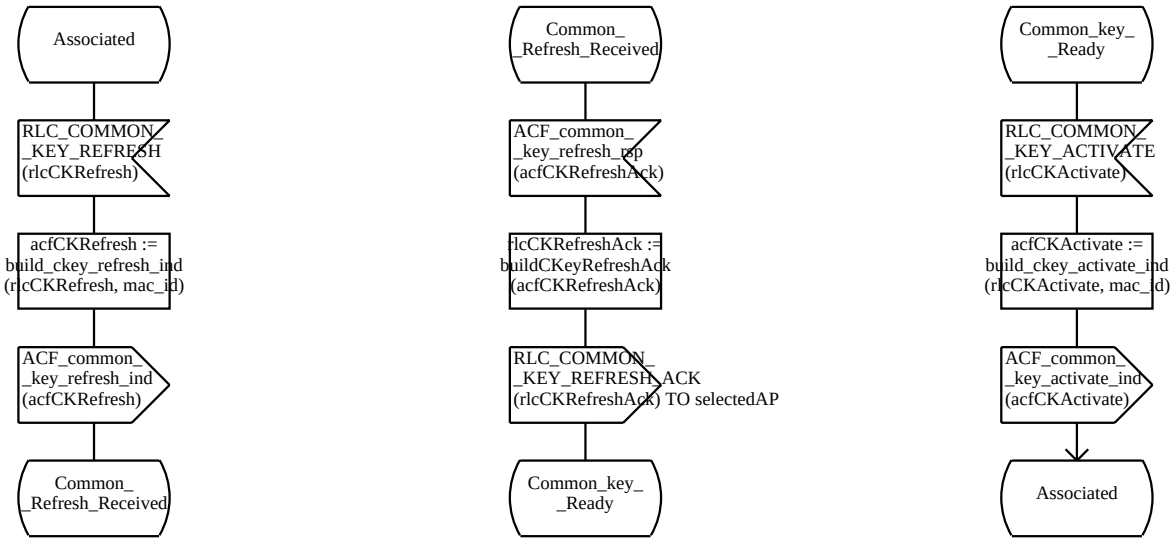
Process Type RLC_MT 40(59)

;FPAR AP_1, AP_2 PId;



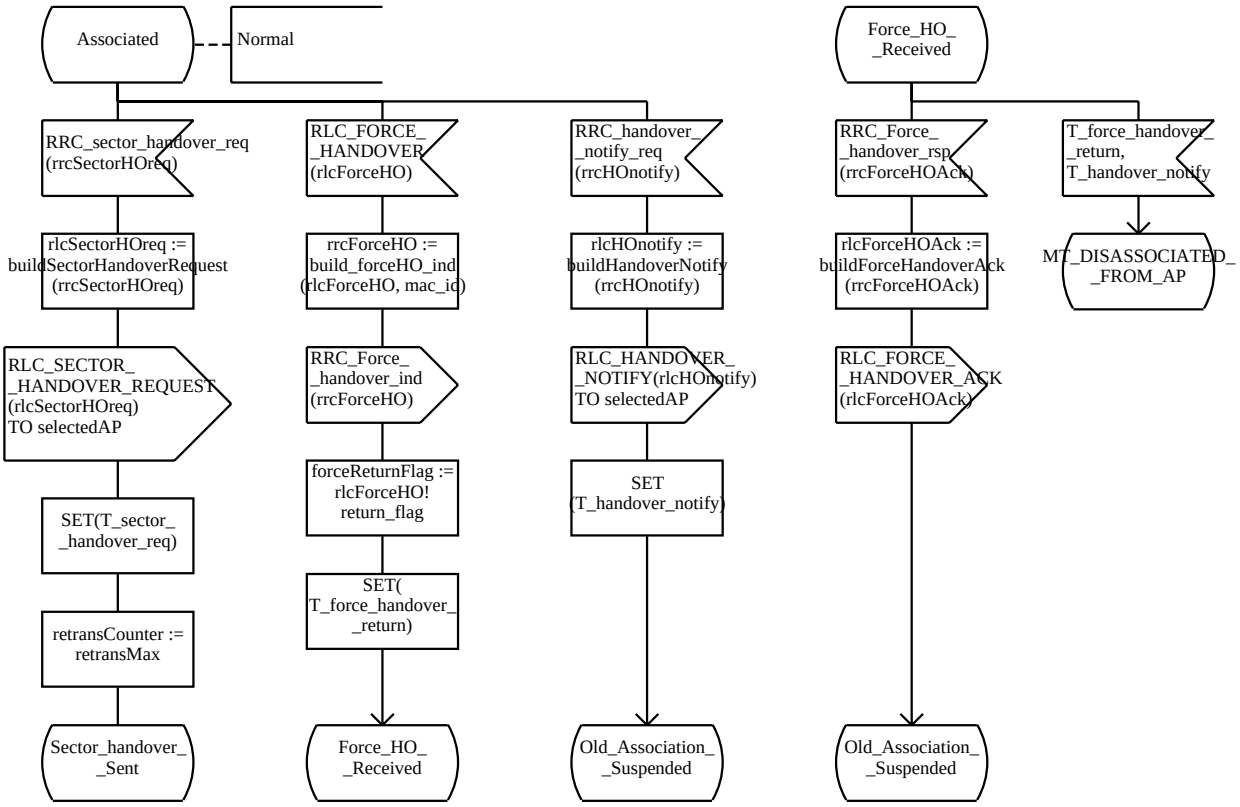
Process Type RLC_MT 41(59)

;FPAR AP_1, AP_2 PId;



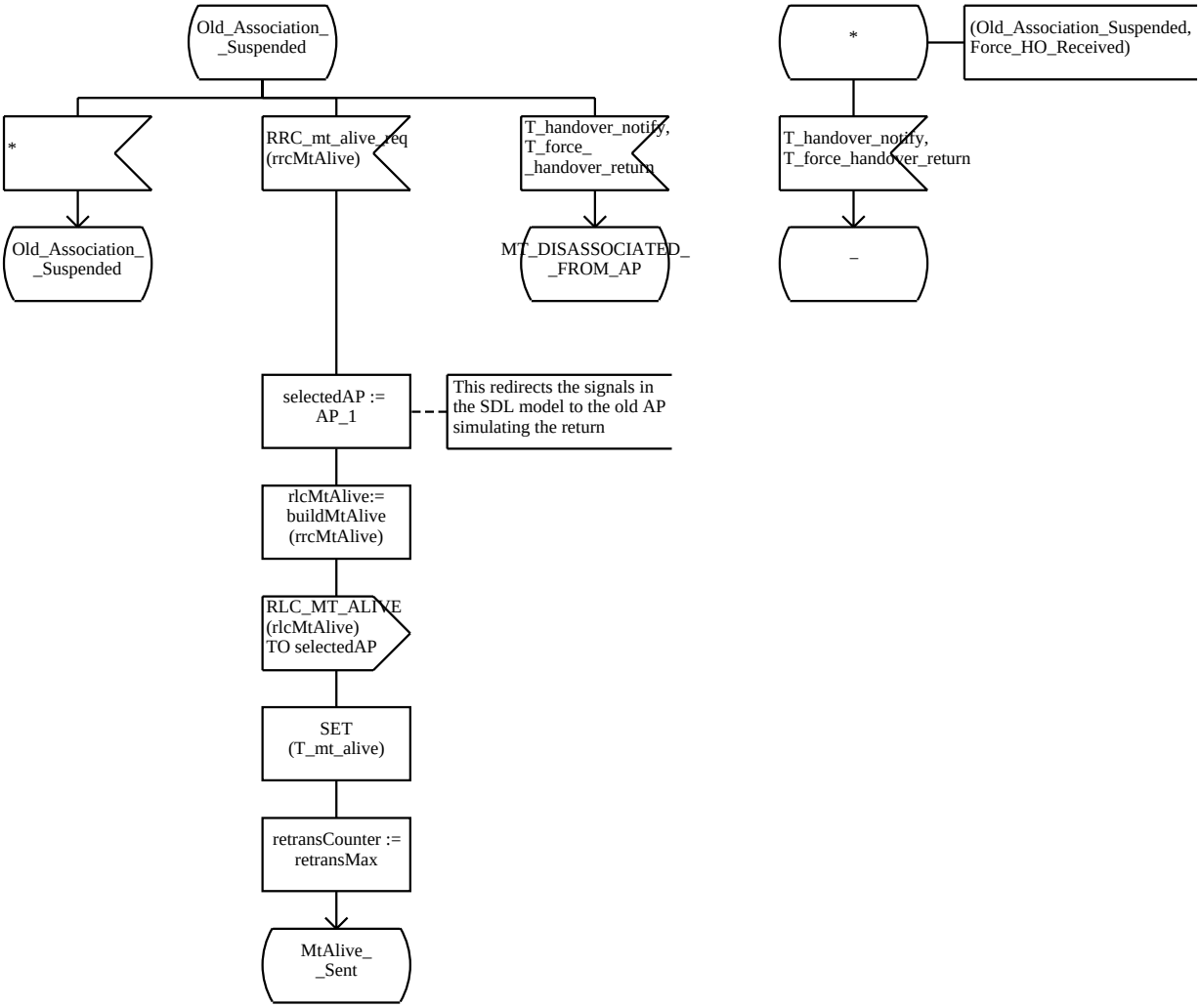
Process Type RLC_MT 42(59)

;FPAR AP_1, AP_2 PId;



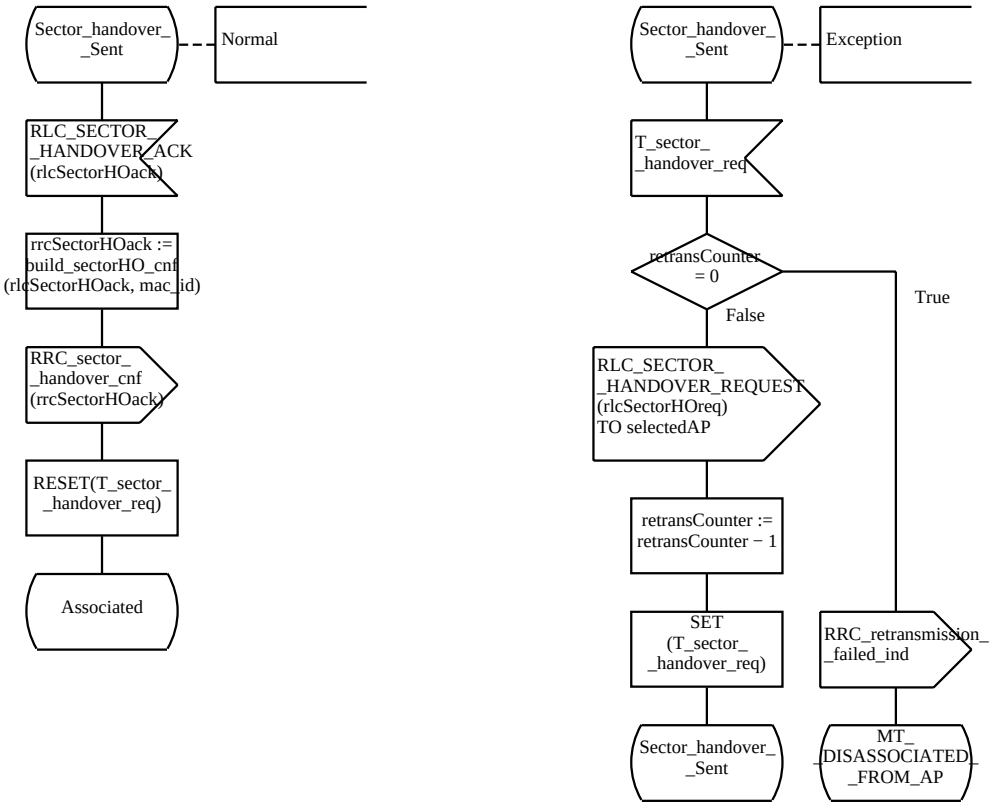
Process Type RLC_MT 43(59)

;FPAR AP_1, AP_2 PId;



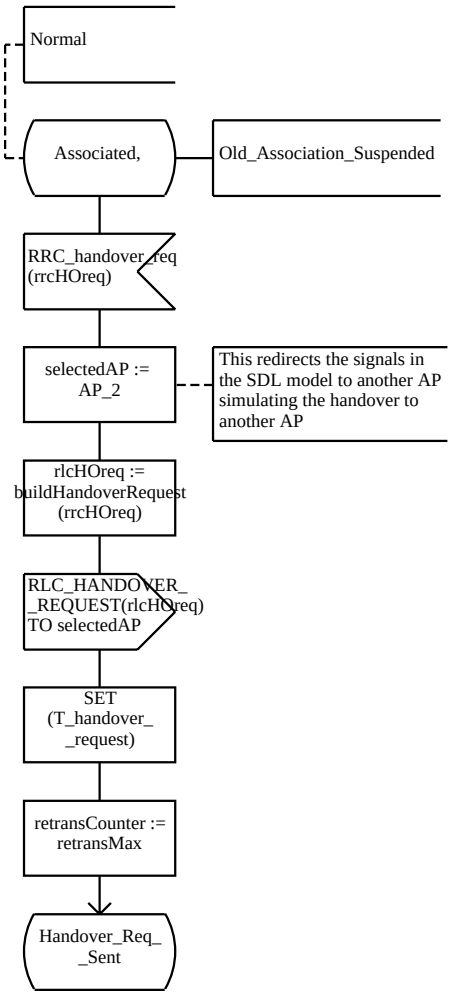
Process Type RLC_MT 44(59)

;FPAR AP_1, AP_2 PId;



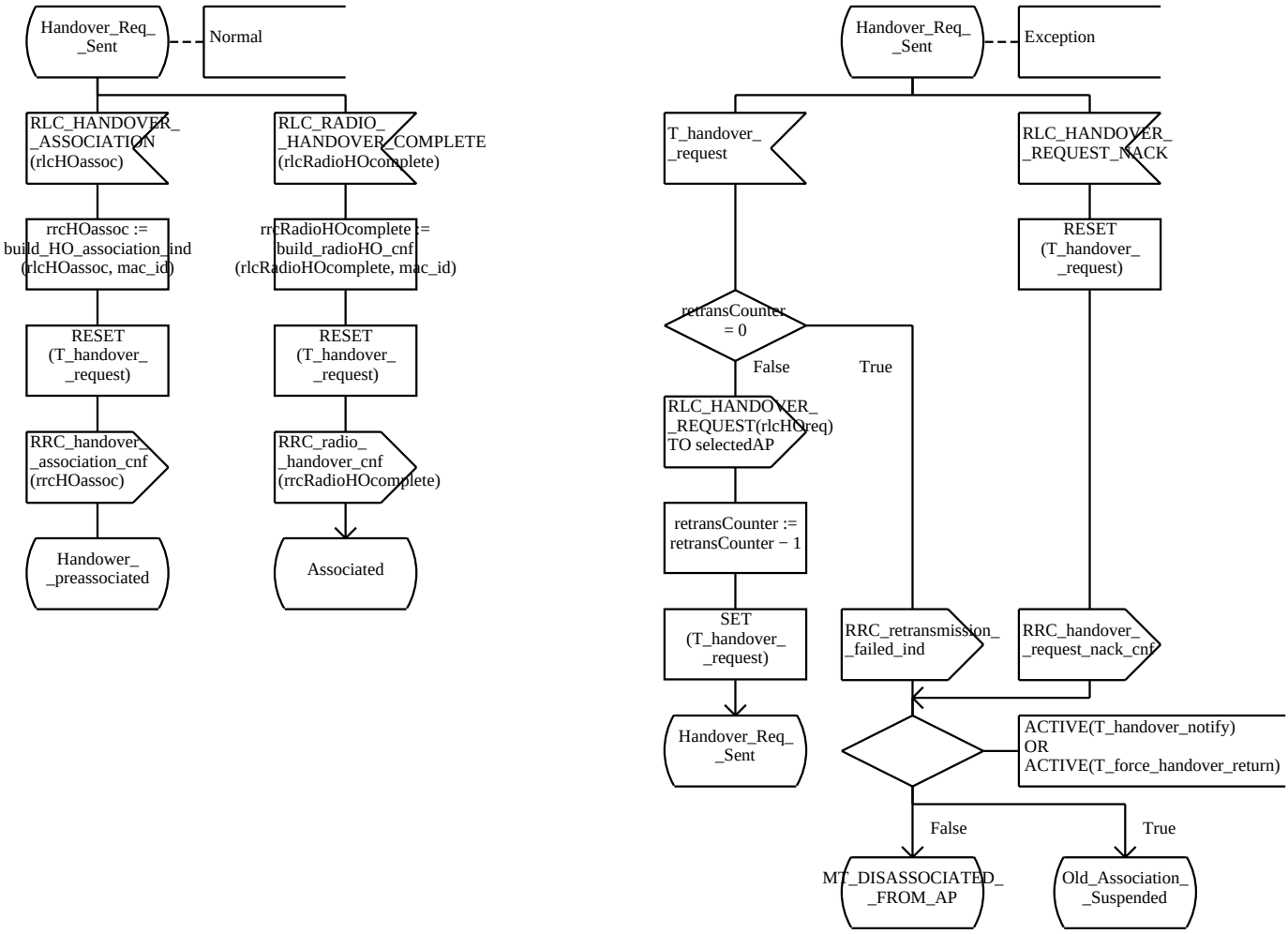
Process Type RLC_MT 45(59)

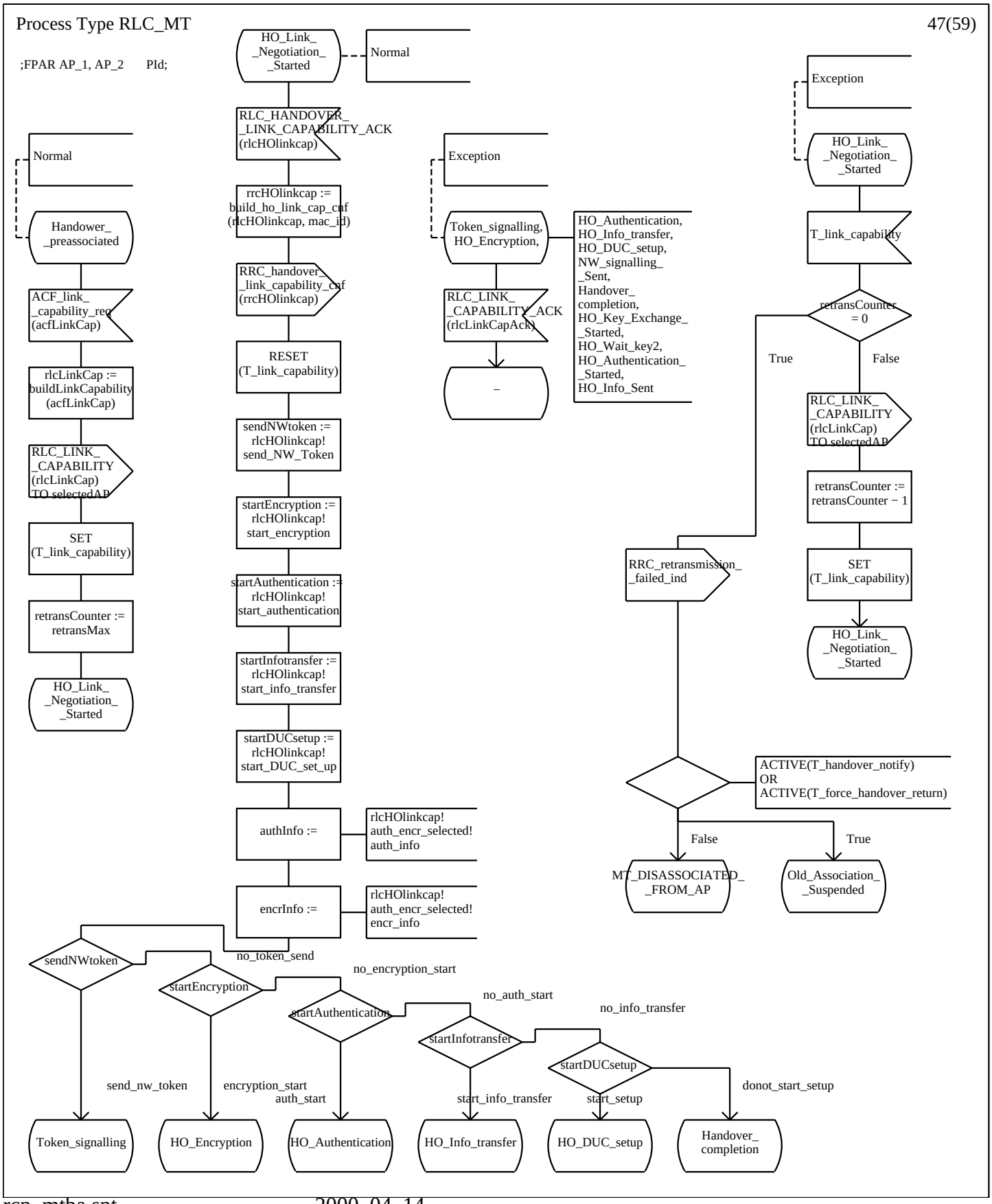
;FPAR AP_1, AP_2 PId;



Process Type RLC_MT 46(59)

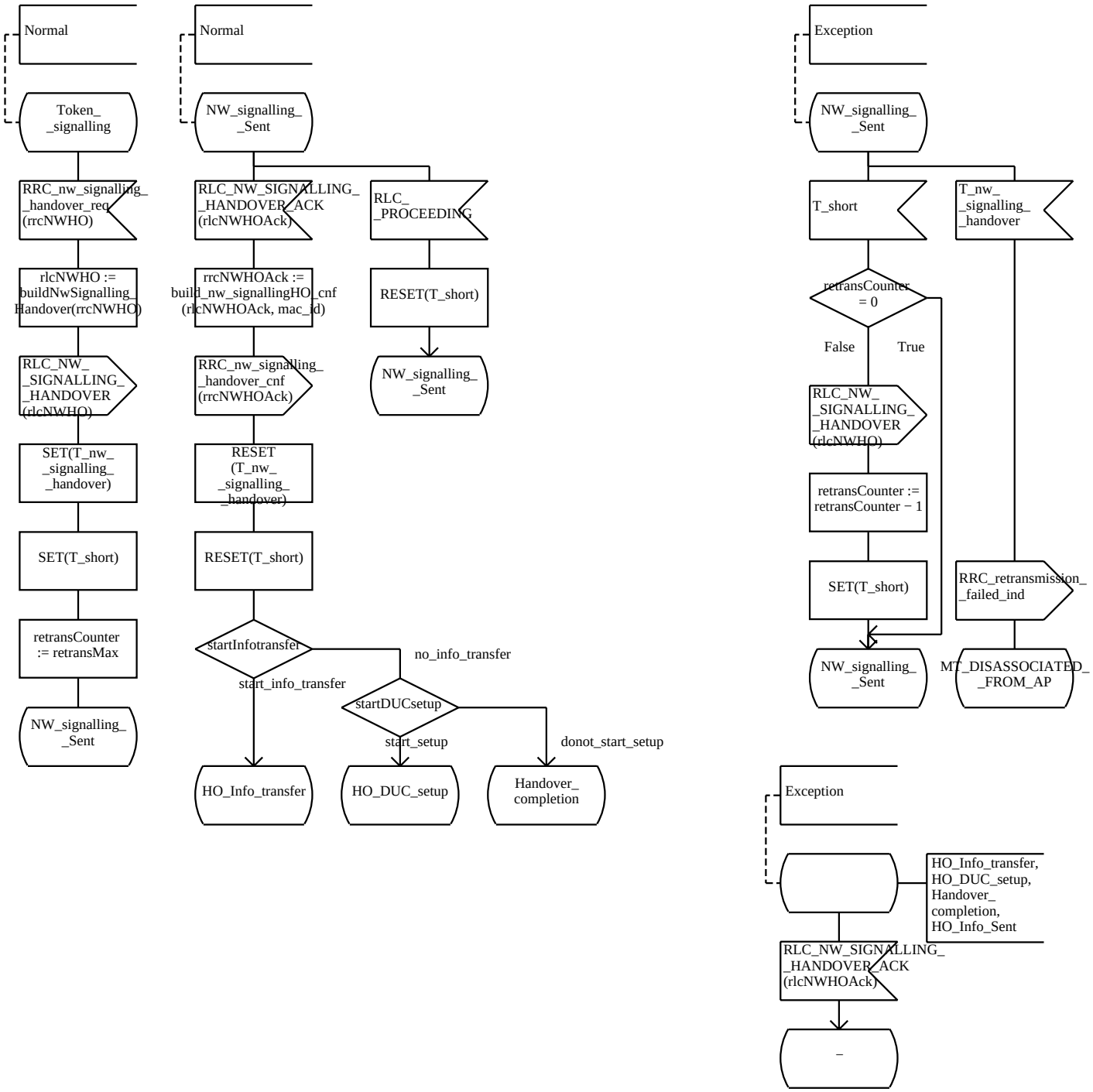
;FPAR AP_1, AP_2 PId;




Process Type RLC_MT
47(59)
;FPAR AP_1, AP_2 PId;
Normal
Handover_ _preassociated
ACF_link_ _capability_req (acfLinkCap)
rlcLinkCap := buildLinkCapability (acfLinkCap)
RLC_LINK_ _CAPABILITY (rlcLinkCap) TO selectedAP
SET (T_link_capability)
retransCounter := retransMax
HO_Link_ _Negotiation_ _Started
HO_Link_ _Negotiation_ _Started
Normal
RLC_HANDOVER_ _LINK_CAPABILITY_ACK (rlcHOlinkcap)
rrcHOlinkcap := build_ho_link_cap_cnf (rlcHOlinkcap, mac_id)
RRC_handover_ _link_capability_cnf (rrcHOlinkcap)
RESET (T_link_capability)
sendNWtoken := rlcHOlinkcap! send_NW_Token
startEncryption := rlcHOlinkcap! start_encryption
startAuthentication := rlcHOlinkcap! start_authentication
startInfotransfer := rlcHOlinkcap! start_info_transfer
startDUCsetup := rlcHOlinkcap! start_DUC_set_up
authInfo :=
rlcHOlinkcap! auth_encr_selected! auth_info
encrInfo :=
rlcHOlinkcap! auth_encr_selected! encr_info
Exception
Token_signalling, HO_Encryption,
RLC_LINK_ _CAPABILITY_ACK (rlcLinkCapAck)
–
HO_Authentication, HO_Info_transfer, HO_DUC_setup, NW_signalling_ _Sent, Handover_ completion, HO_Key_Exchange_ _Started, HO_Wait_key2, HO_Authentication_ _Started, HO_Info_Sent
Exception
HO_Link_ _Negotiation_ _Started
T_link_capability
retransCounter = 0
True
False
RLC_LINK_ _CAPABILITY (rlcLinkCap) TO selectedAP
retransCounter := retransCounter − 1
SET (T_link_capability)
HO_Link_ _Negotiation_ _Started
RRC_retransmission_ _failed_ind
ACTIVE(T_handover_notify) OR ACTIVE(T_force_handover_return)
False
True
MT_DISASSOCIATED_ _FROM_AP
Old_Association_ _Suspended
sendNWtoken
no_token_send
startEncryption
no_encryption_start
startAuthentication
no_auth_start
startInfotransfer
no_info_transfer
startDUCsetup
send_nw_token
encryption_start
auth_start
start_info_transfer
start_setup
donot_start_setup
Token_signalling
HO_Encryption
HO_Authentication
HO_Info_transfer
HO_DUC_setup
Handover_ completion

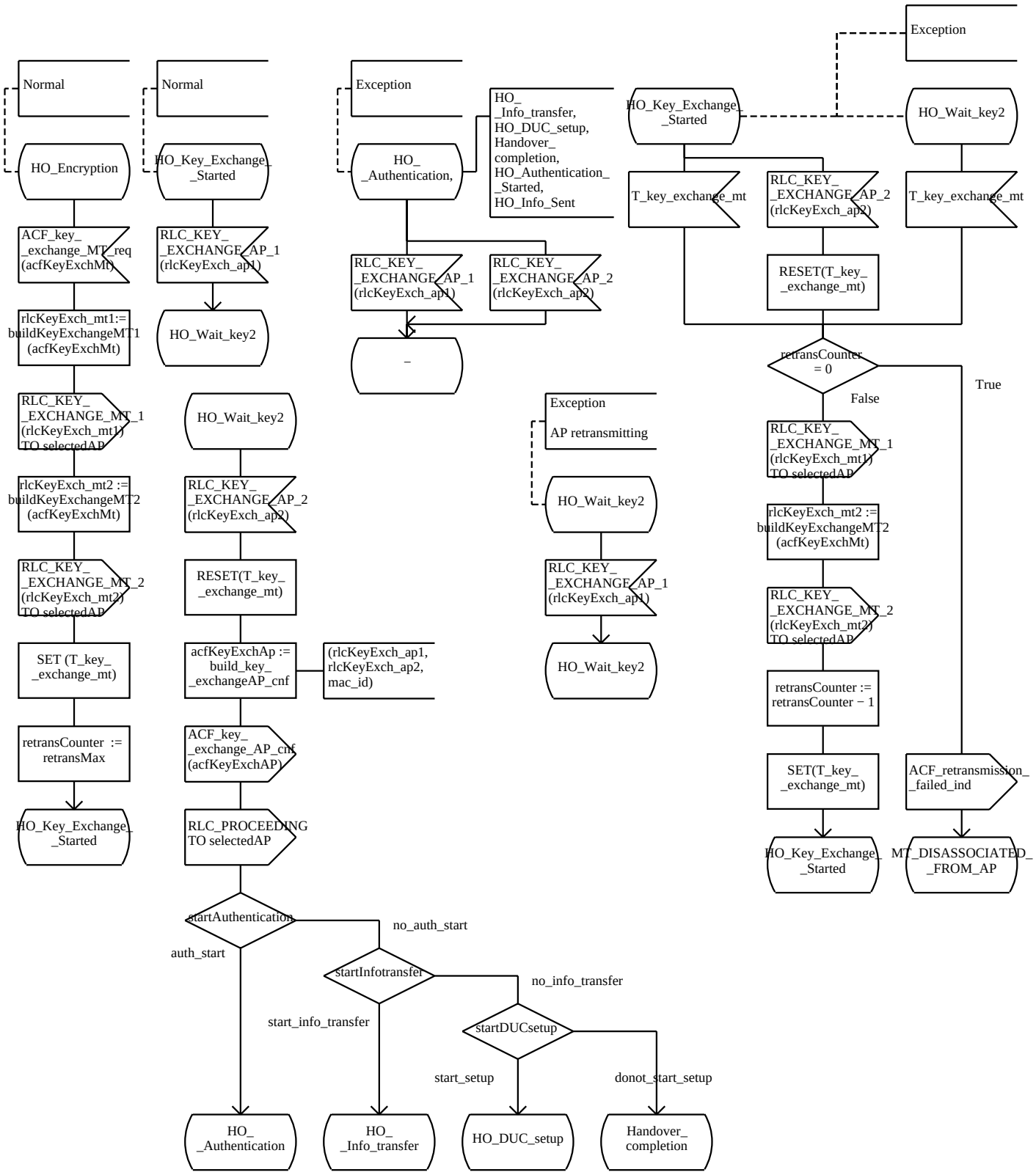
Process Type RLC_MT 48(59)

;FPAR AP_1, AP_2 PId;



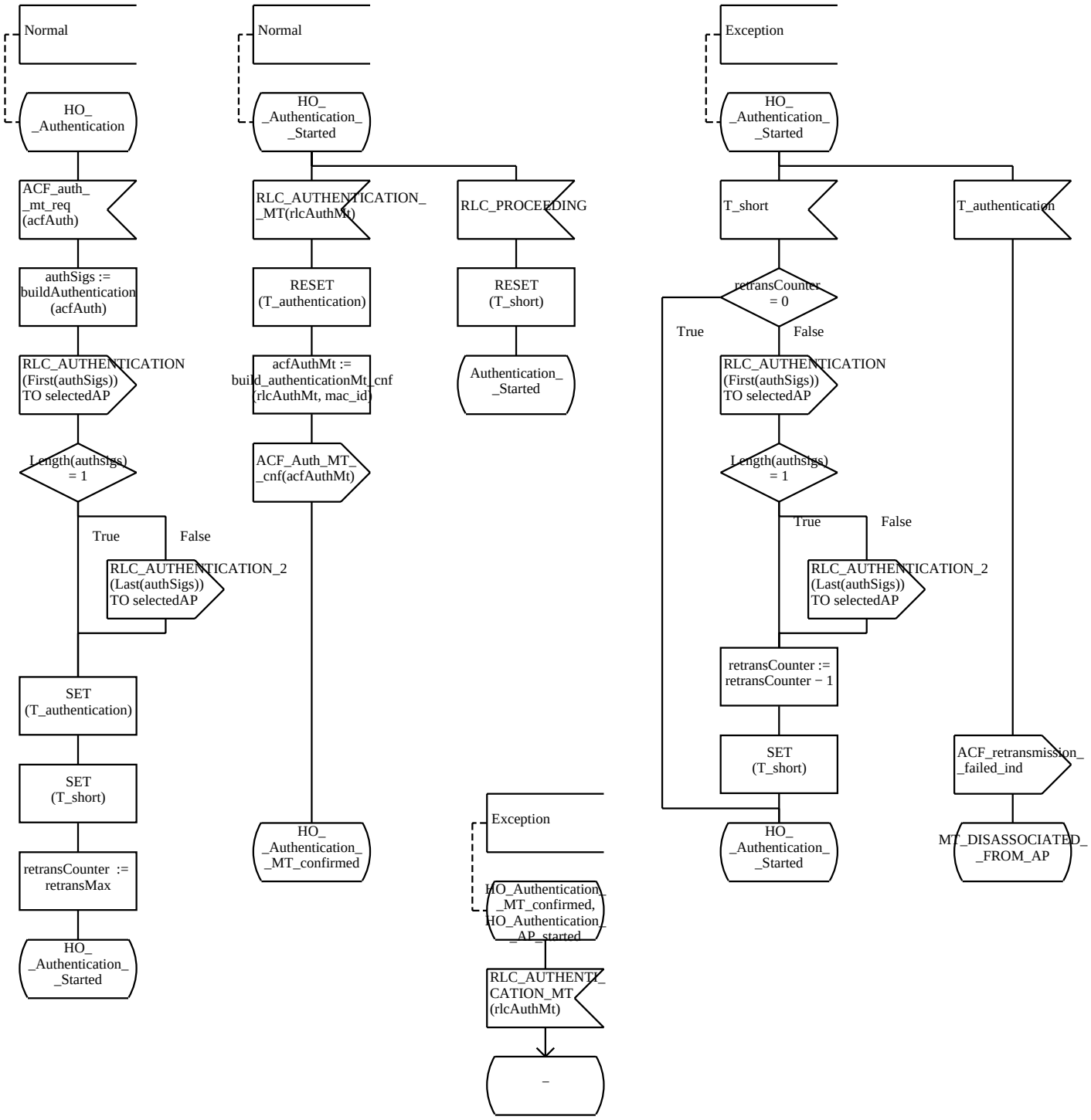
Process Type RLC_MT 49(59)

;FPAR AP_1, AP_2 PId;



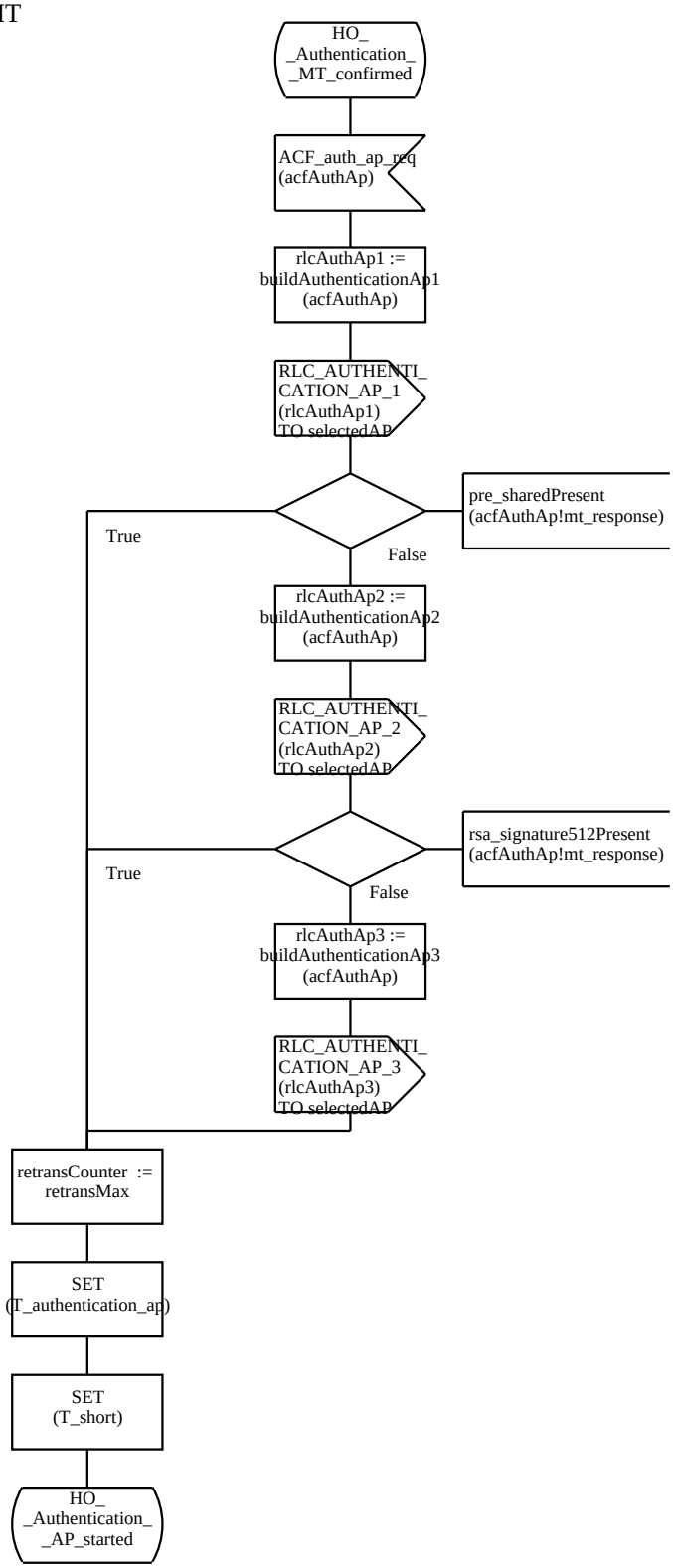
Process Type RLC_MT 50(59)

;FPAR AP_1, AP_2 PId;



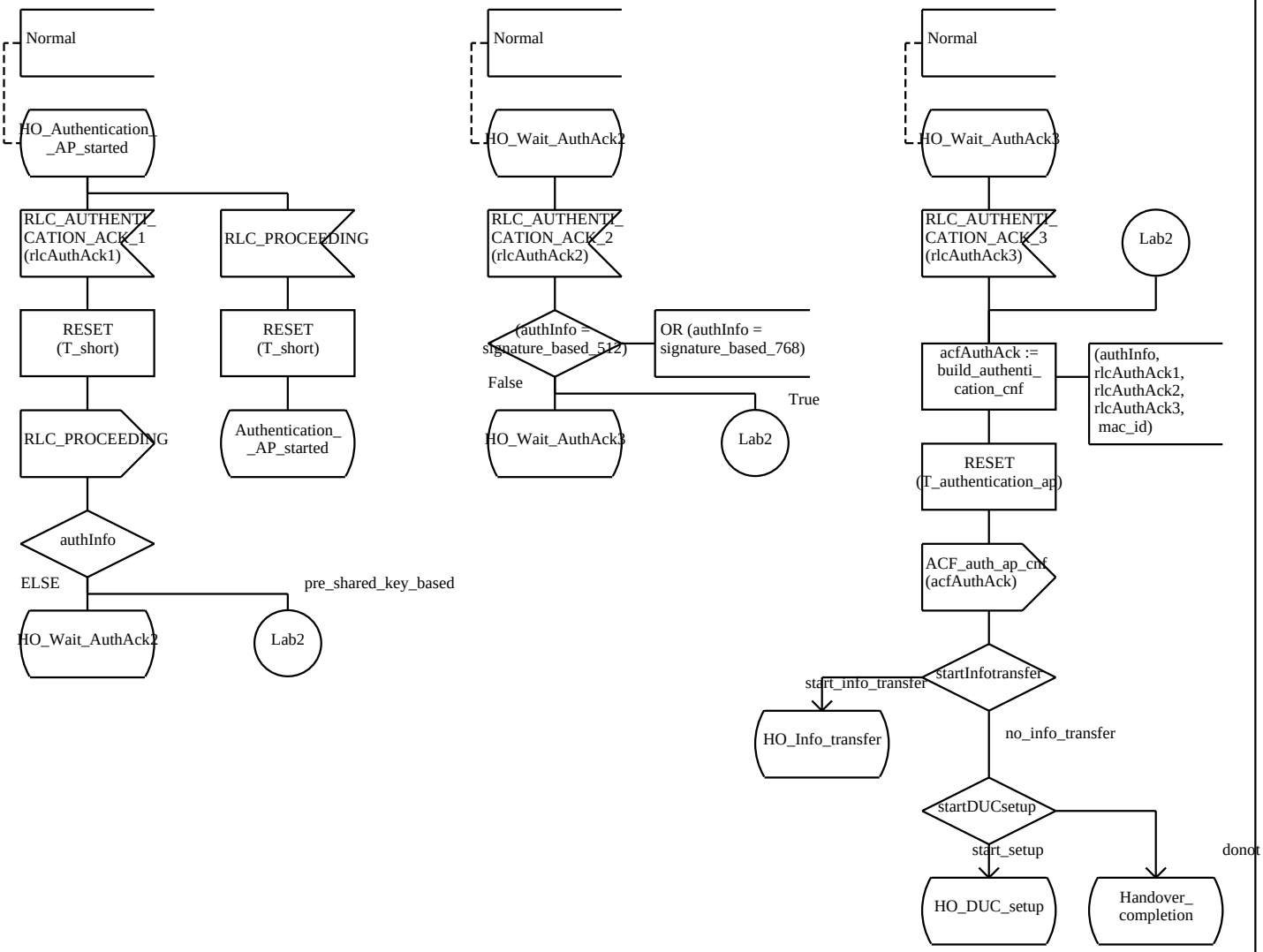
Process Type RLC_MT 51(59)

;FPAR AP_1, AP_2 PId;

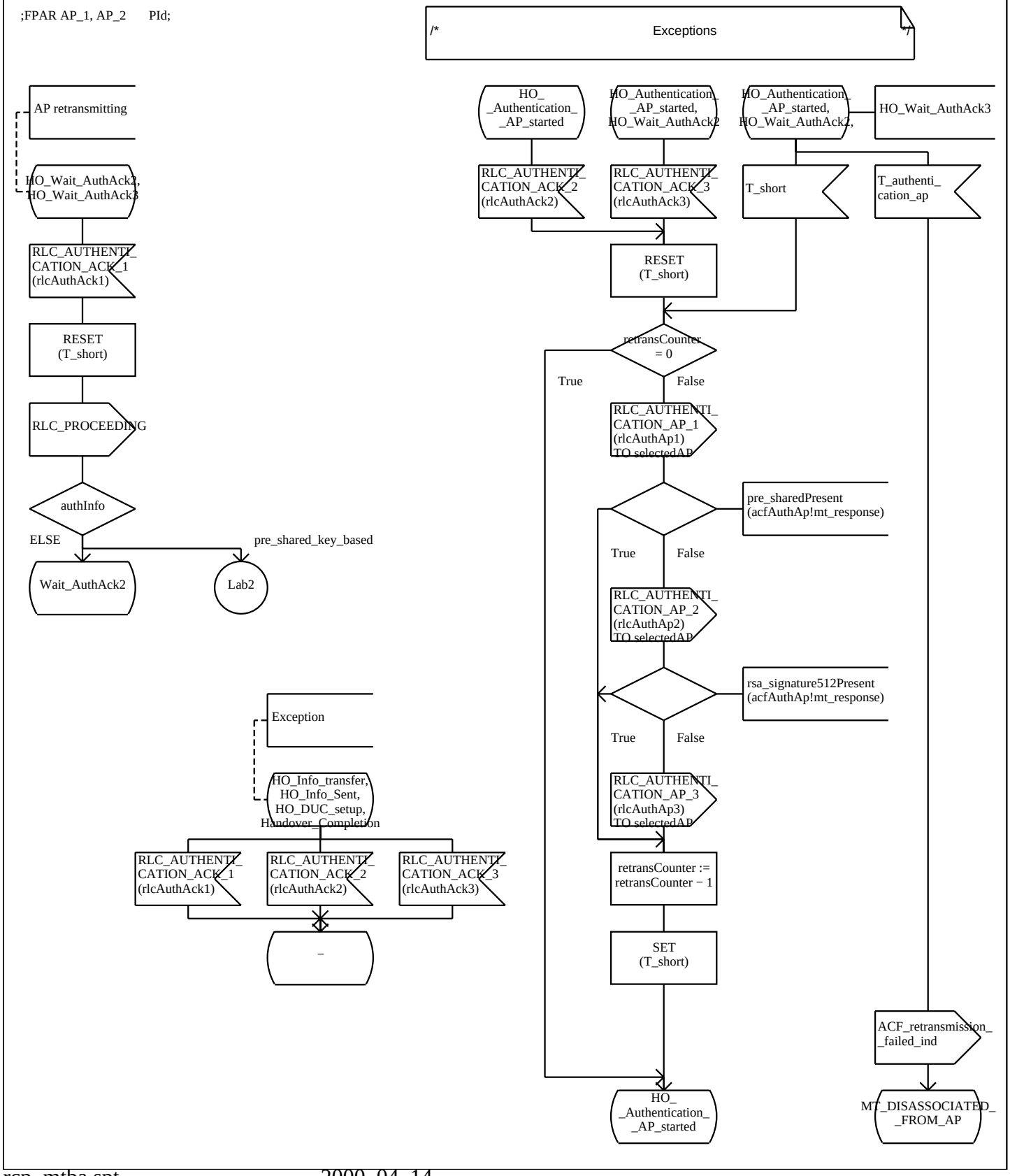


Process Type RLC_MT 52(59)

;FPAR AP_1, AP_2 PId;

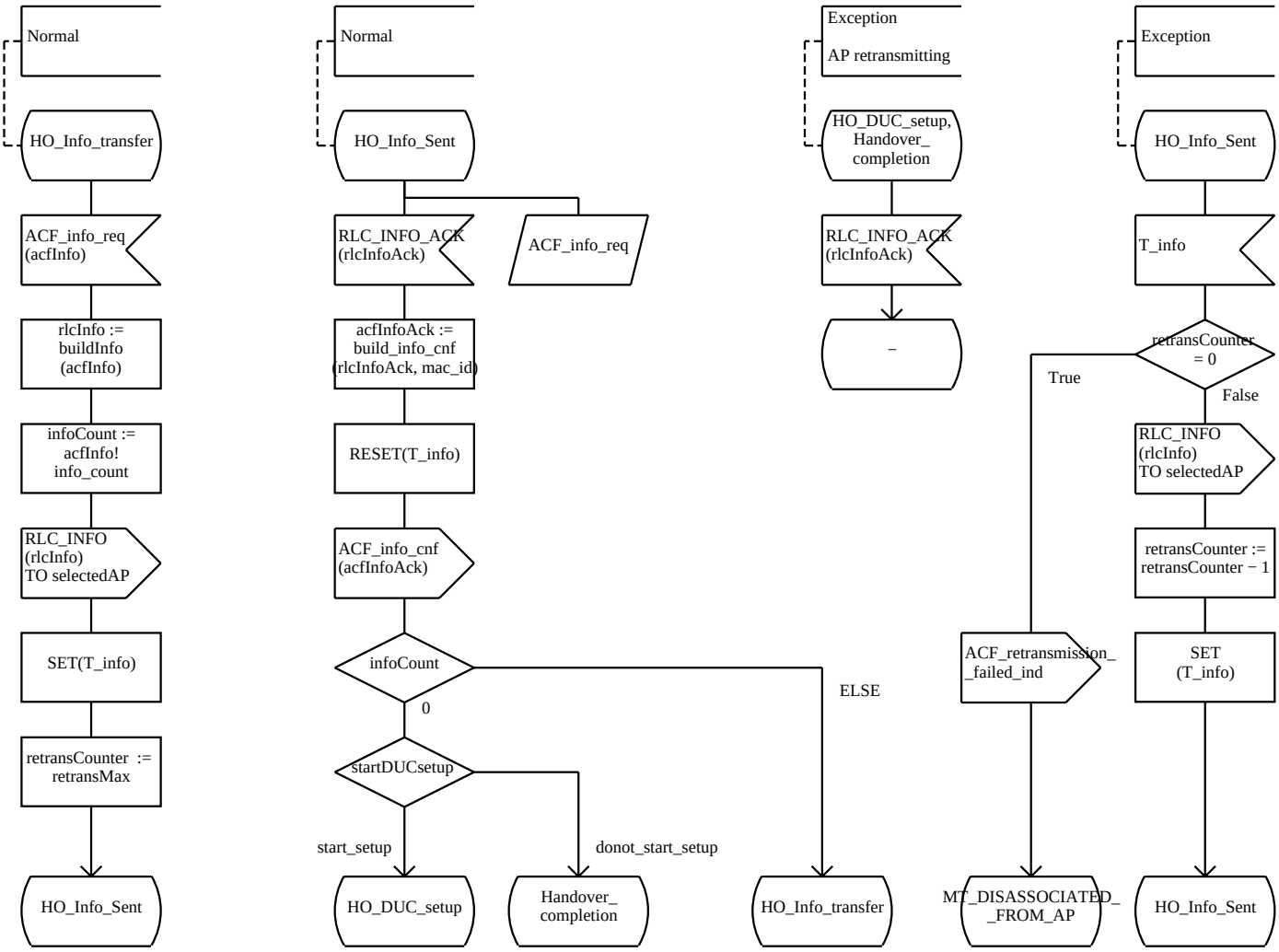


Process Type RLC_MT 53(59)



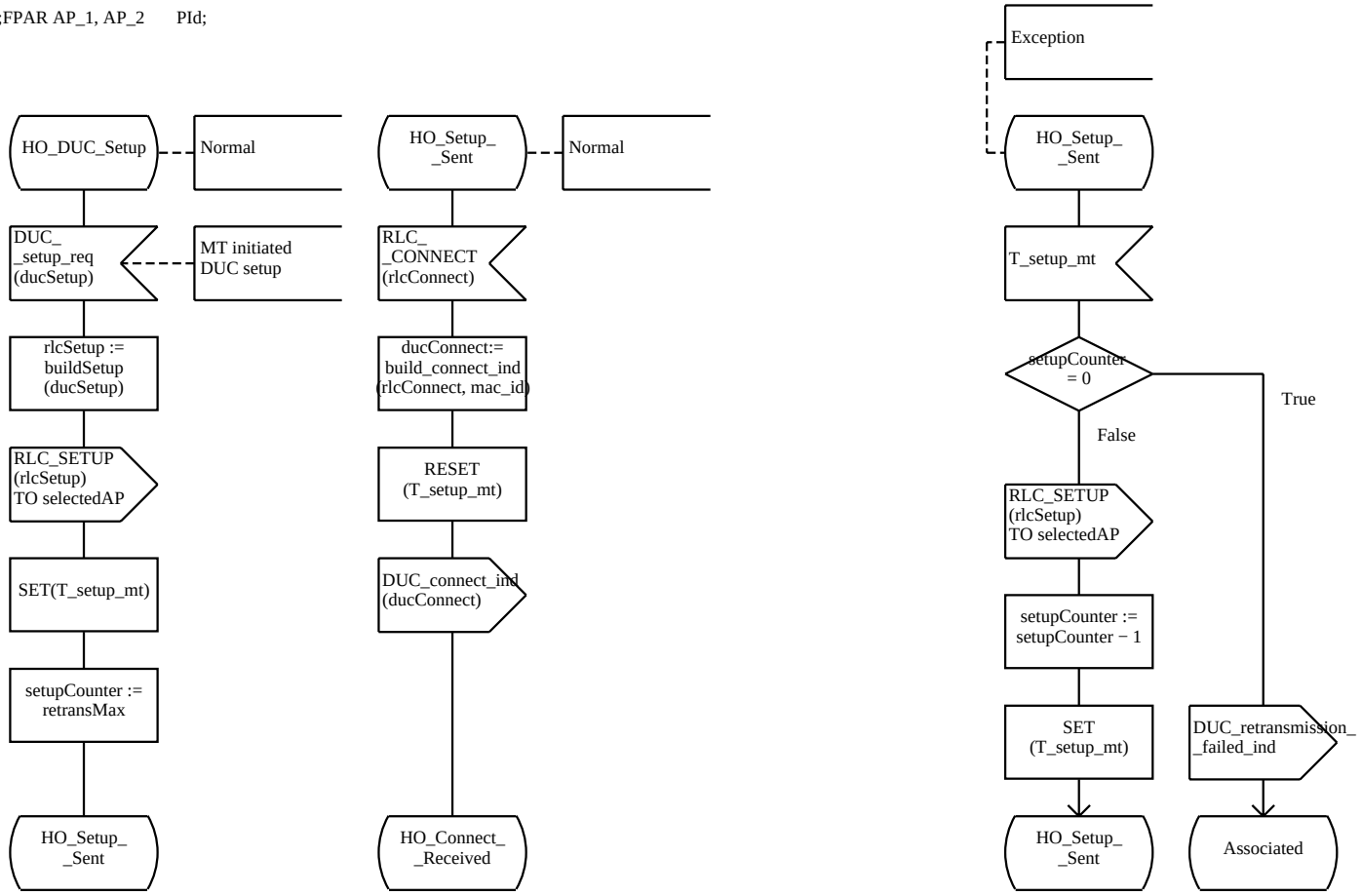
Process Type RLC_MT 54(59)

;FPAR AP_1, AP_2 PId;



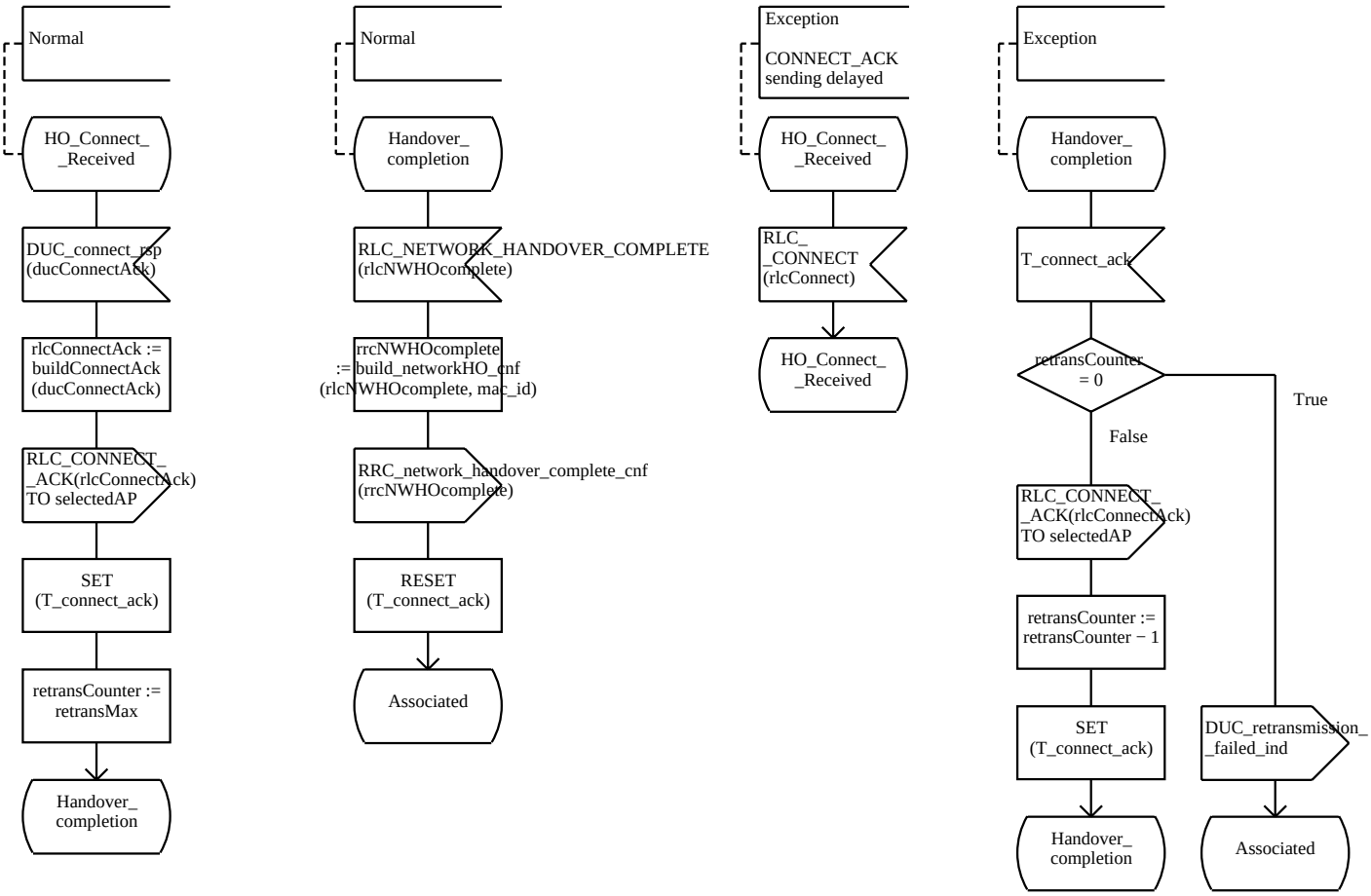
Process Type RLC_MT 55(59)

;FPAR AP_1, AP_2 PId;



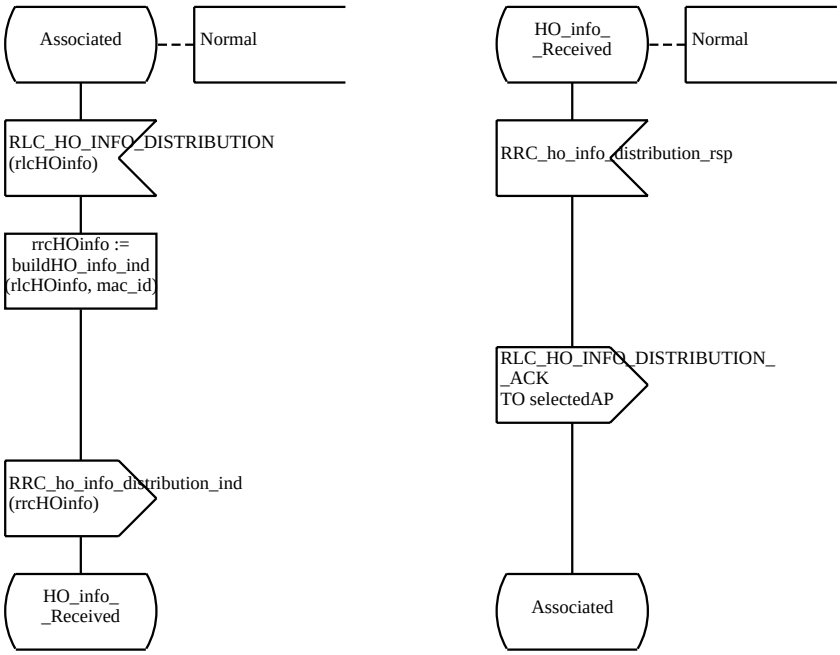
Process Type RLC_MT 56(59)

;FPAR AP_1, AP_2 PId;



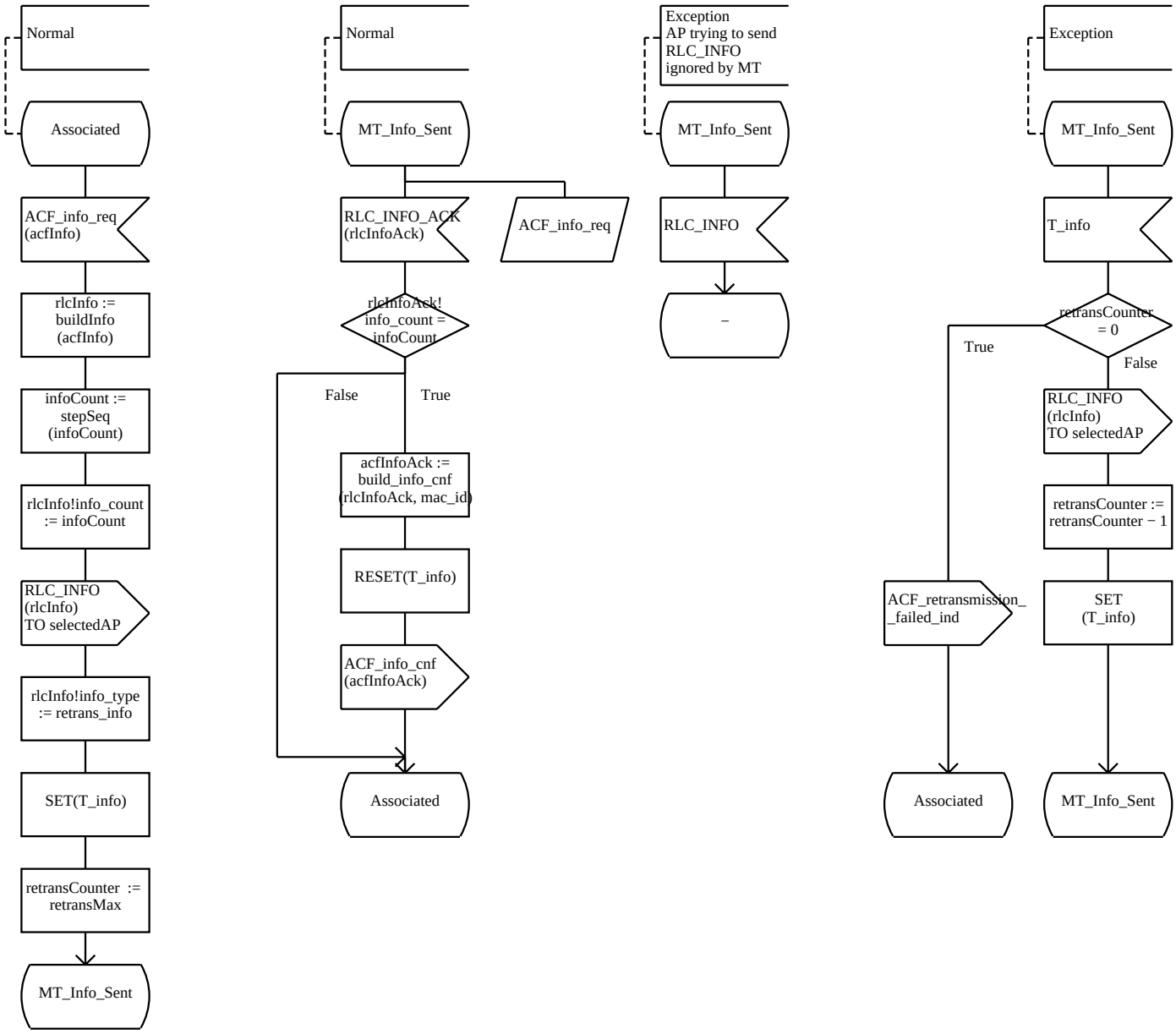
Process Type RLC_MT 57(59)

;FPAR AP_1, AP_2 PId;



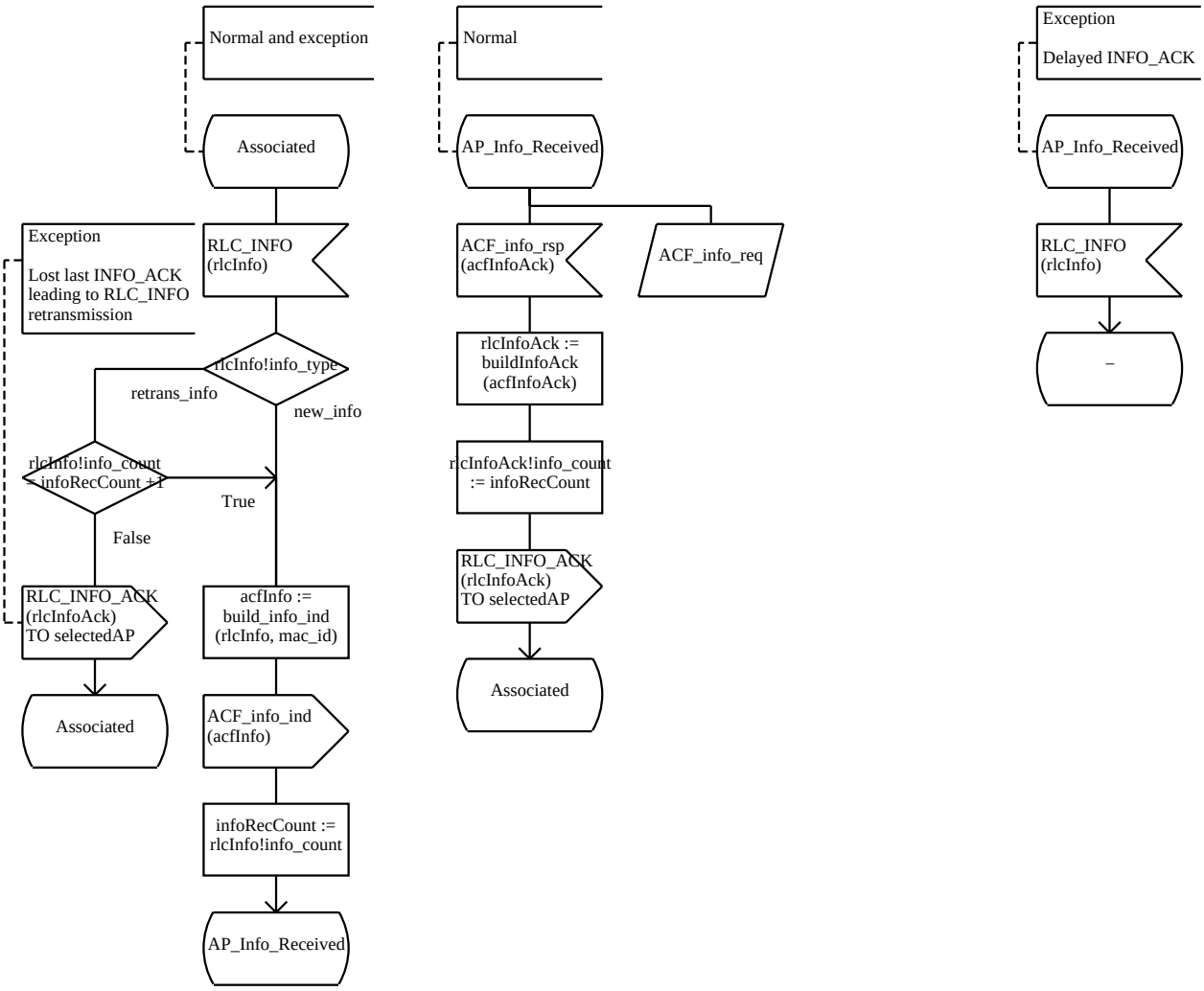
Process Type RLC_MT 58(59)

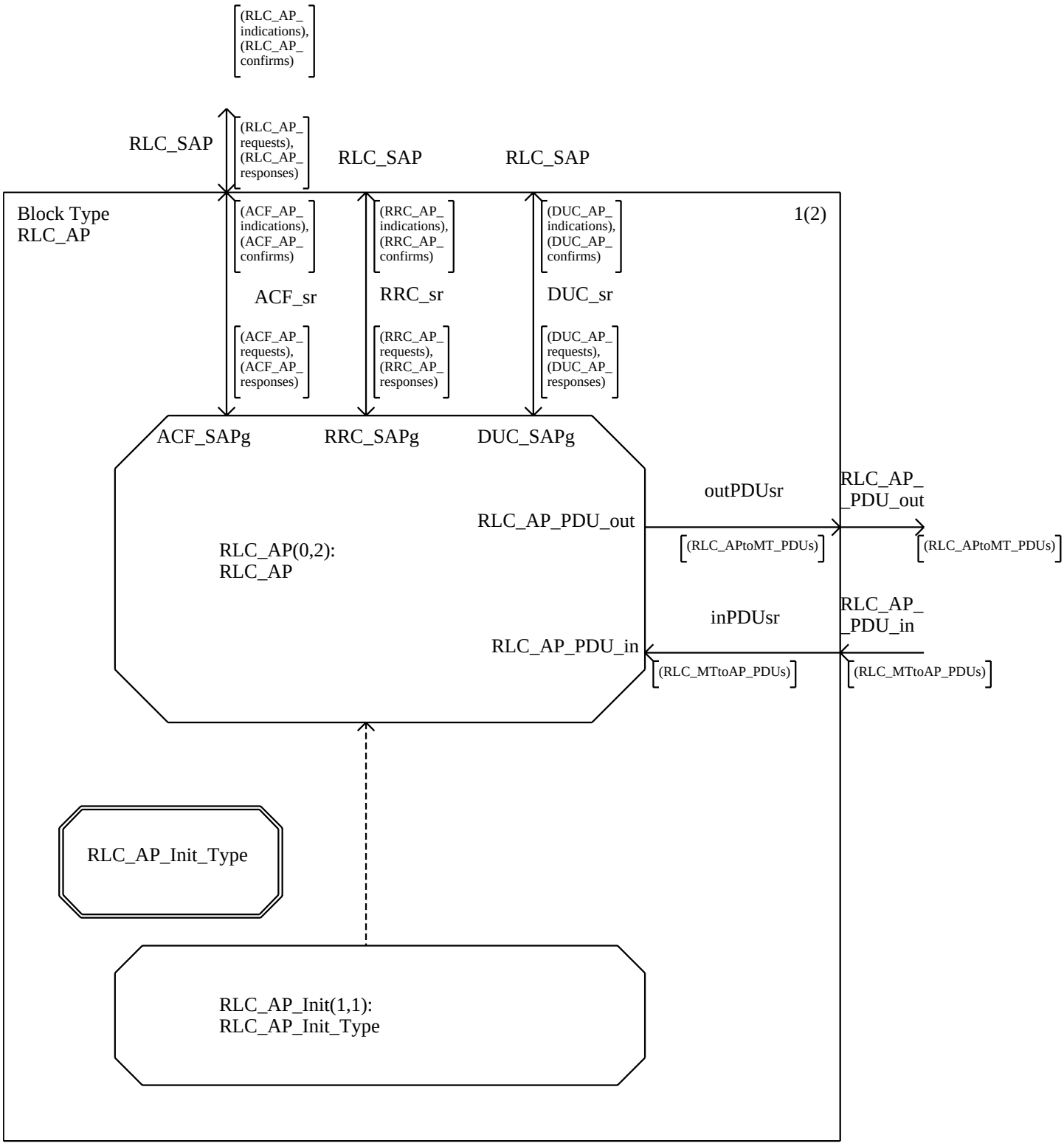
;FPAR AP_1, AP_2 PId;



Process Type RLC_MT 59(59)

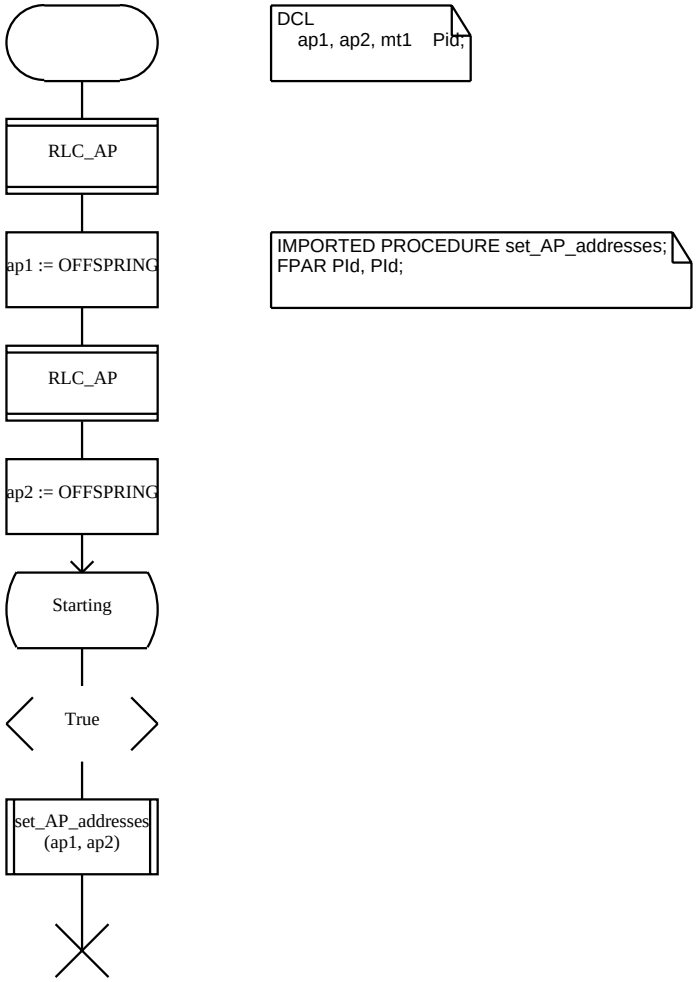
;FPAR AP_1, AP_2 PId;

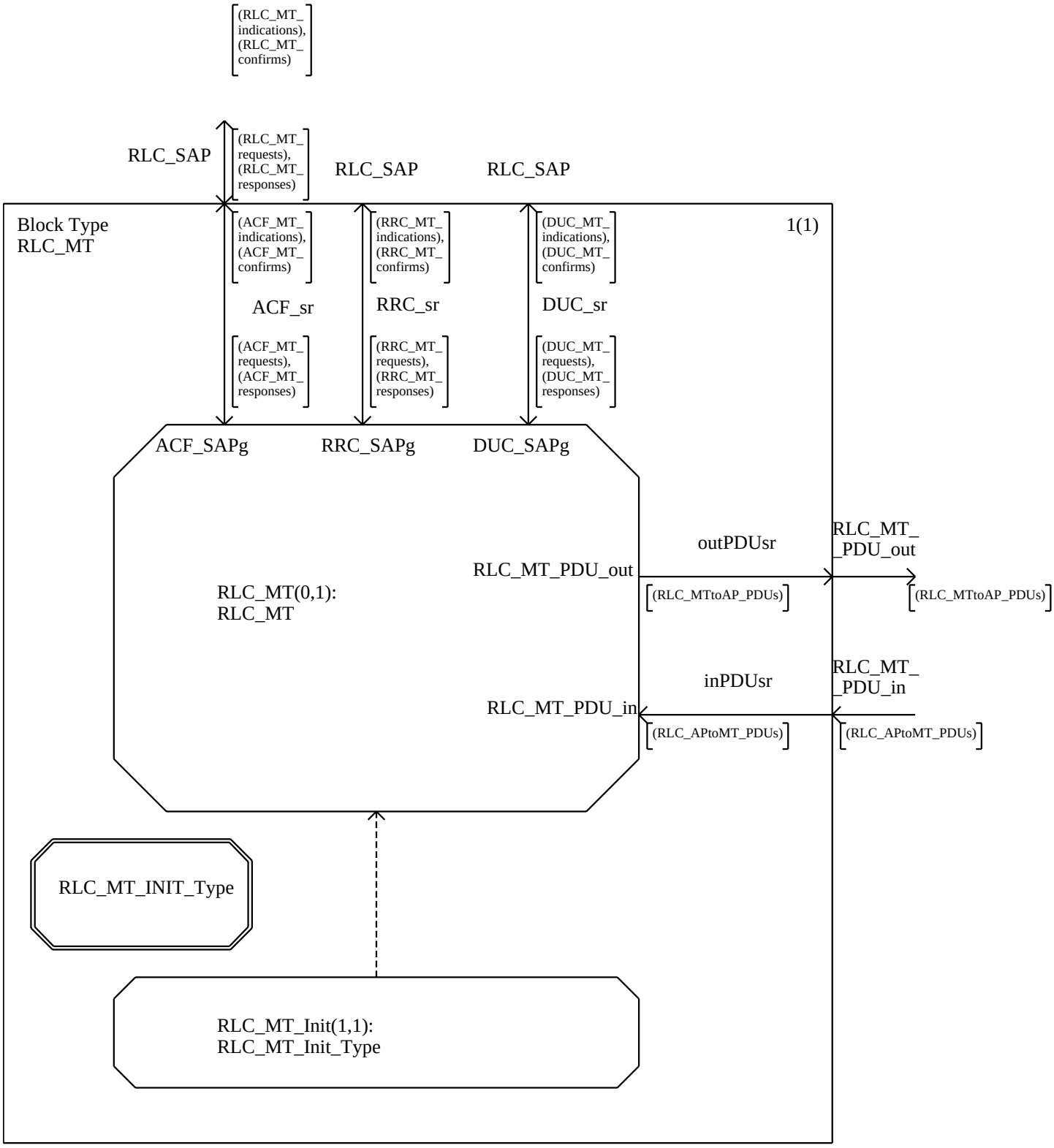



(RLC_AP_ indications), (RLC_AP_ confirms)
RLC_SAP
(RLC_AP_ requests), (RLC_AP_ responses)
RLC_SAP
RLC_SAP
Block Type RLC_AP
1(2)
(ACF_AP_ indications), (ACF_AP_ confirms)
(RRC_AP_ indications), (RRC_AP_ confirms)
(DUC_AP_ indications), (DUC_AP_ confirms)
ACF_sr
RRC_sr
DUC_sr
(ACF_AP_ requests), (ACF_AP_ responses)
(RRC_AP_ requests), (RRC_AP_ responses)
(DUC_AP_ requests), (DUC_AP_ responses)
ACF_SAPg
RRC_SAPg
DUC_SAPg
outPDUsr
RLC_AP_ _PDU_out
RLC_AP_PDU_out
(RLC_APtoMT_PDUs)
(RLC_APtoMT_PDUs)
RLC_AP(0,2): RLC_AP
inPDUsr
RLC_AP_ _PDU_in
RLC_AP_PDU_in
(RLC_MTtoAP_PDUs)
(RLC_MTtoAP_PDUs)
RLC_AP_Init_Type
RLC_AP_Init(1,1): RLC_AP_Init_Type

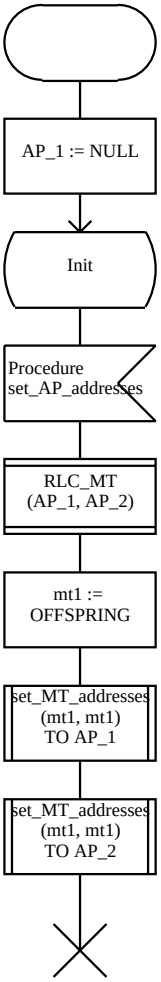
Block Type 2(2)
RLC_AP

Process Type RLC_AP_Init_Type 1(1)




(RLC_MT_ indications), (RLC_MT_ confirms)
RLC_SAP
(RLC_MT_ requests), (RLC_MT_ responses)
RLC_SAP
RLC_SAP
Block Type RLC_MT
1(1)
(ACF_MT_ indications), (ACF_MT_ confirms)
(RRC_MT_ indications), (RRC_MT_ confirms)
(DUC_MT_ indications), (DUC_MT_ confirms)
ACF_sr
RRC_sr
DUC_sr
(ACF_MT_ requests), (ACF_MT_ responses)
(RRC_MT_ requests), (RRC_MT_ responses)
(DUC_MT_ requests), (DUC_MT_ responses)
ACF_SAPg
RRC_SAPg
DUC_SAPg
outPDUsr
RLC_MT_ _PDU_out
RLC_MT_PDU_out
RLC_MT(0,1): RLC_MT
(RLC_MTtoAP_PDUs)
(RLC_MTtoAP_PDUs)
inPDUsr
RLC_MT_ _PDU_in
RLC_MT_PDU_in
(RLC_APtoMT_PDUs)
(RLC_APtoMT_PDUs)
RLC_MT_INIT_Type
RLC_MT_Init(1,1): RLC_MT_Init_Type

Process Type RLC_MT_INIT_Type 1(1)



Exported
set_AP_addresses

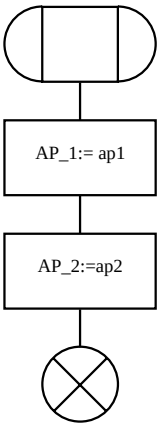
This procedure is needed for simulation of handover. It is used when the model is initialized to set the addresses (process identities on of the two AP processes used to model handover.

```
DCL AP_1, AP_2, mt1    PId;
```

```
IMPORTED PROCEDURE set_MT_addresses;
FPAR PId, PId;
```

EXPORTED Procedure set_AP_addresses 1(1)

```
;FPAR
    ap1, ap2     PId;
```



```
use RLCprotocolPrimitives;
use RLCservicePrimitivesDefinitions;
use RLCprotocolPrimitivesDefinitions;
use RLC;
```

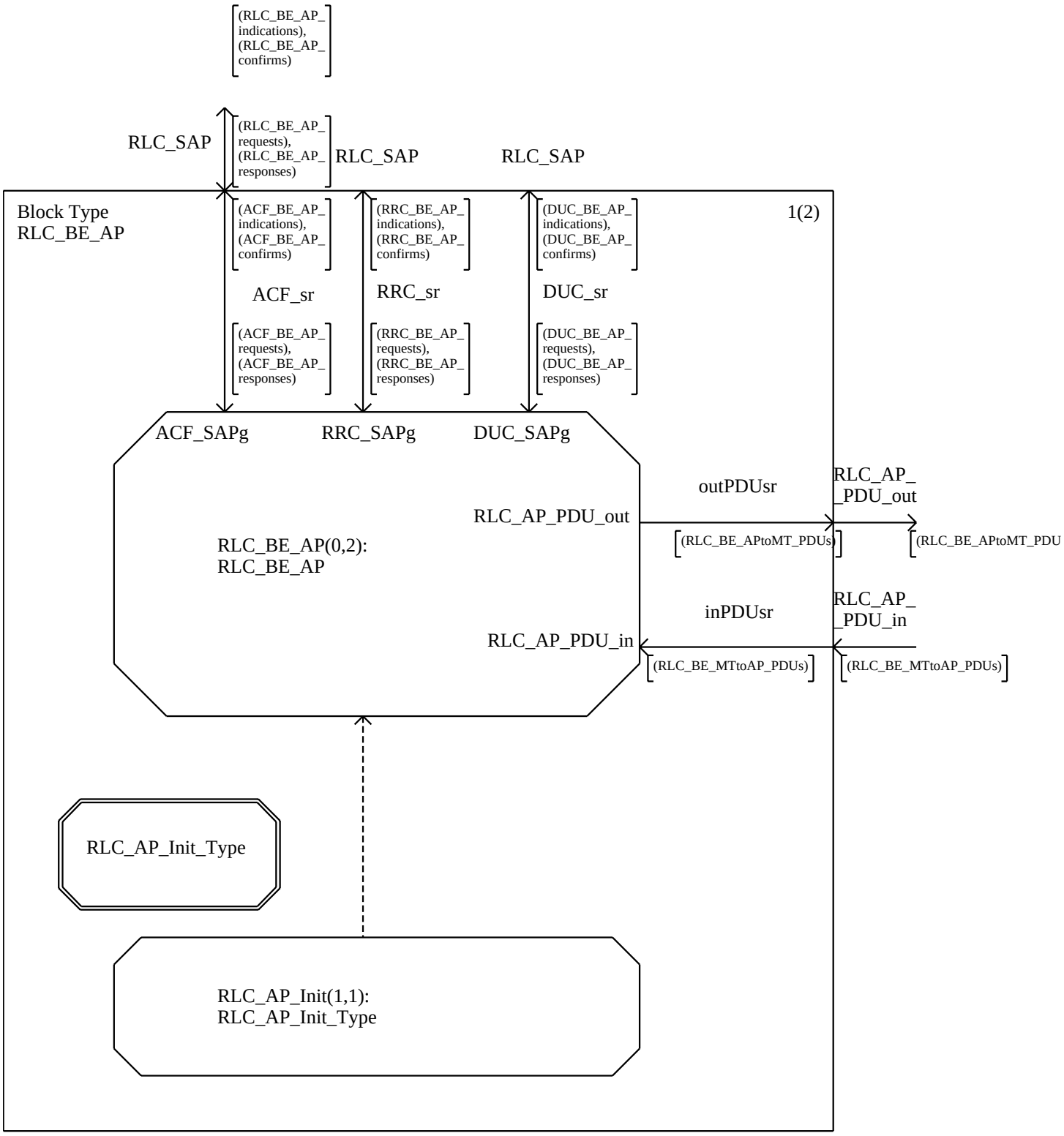
Package RLC_BE 1(1)

RLC_BE_AP

RLC_BE_MT

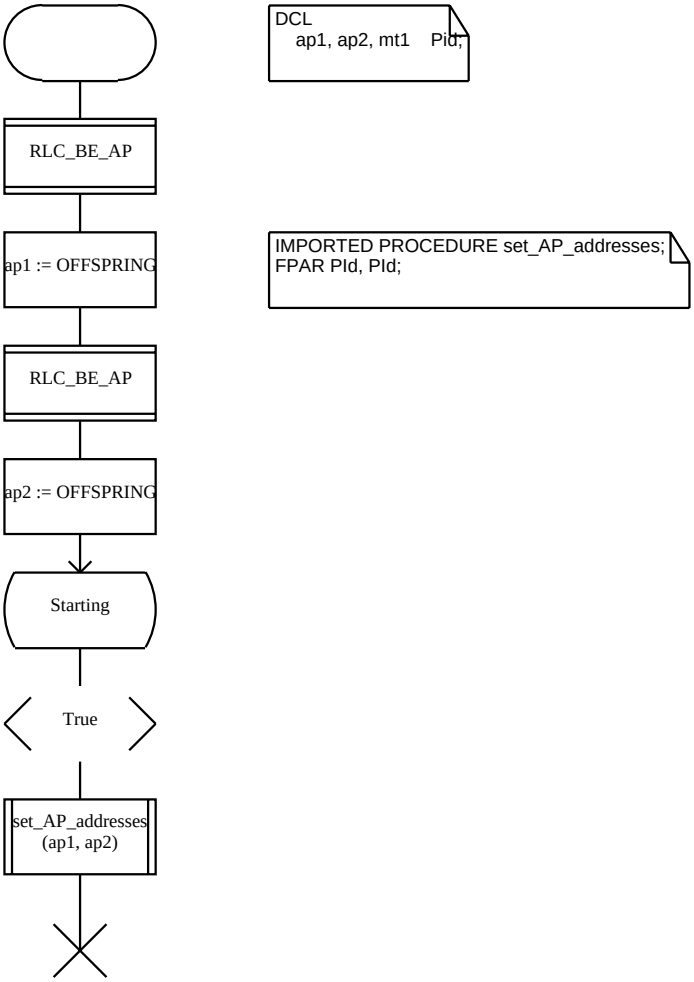
RLC_BE_AP

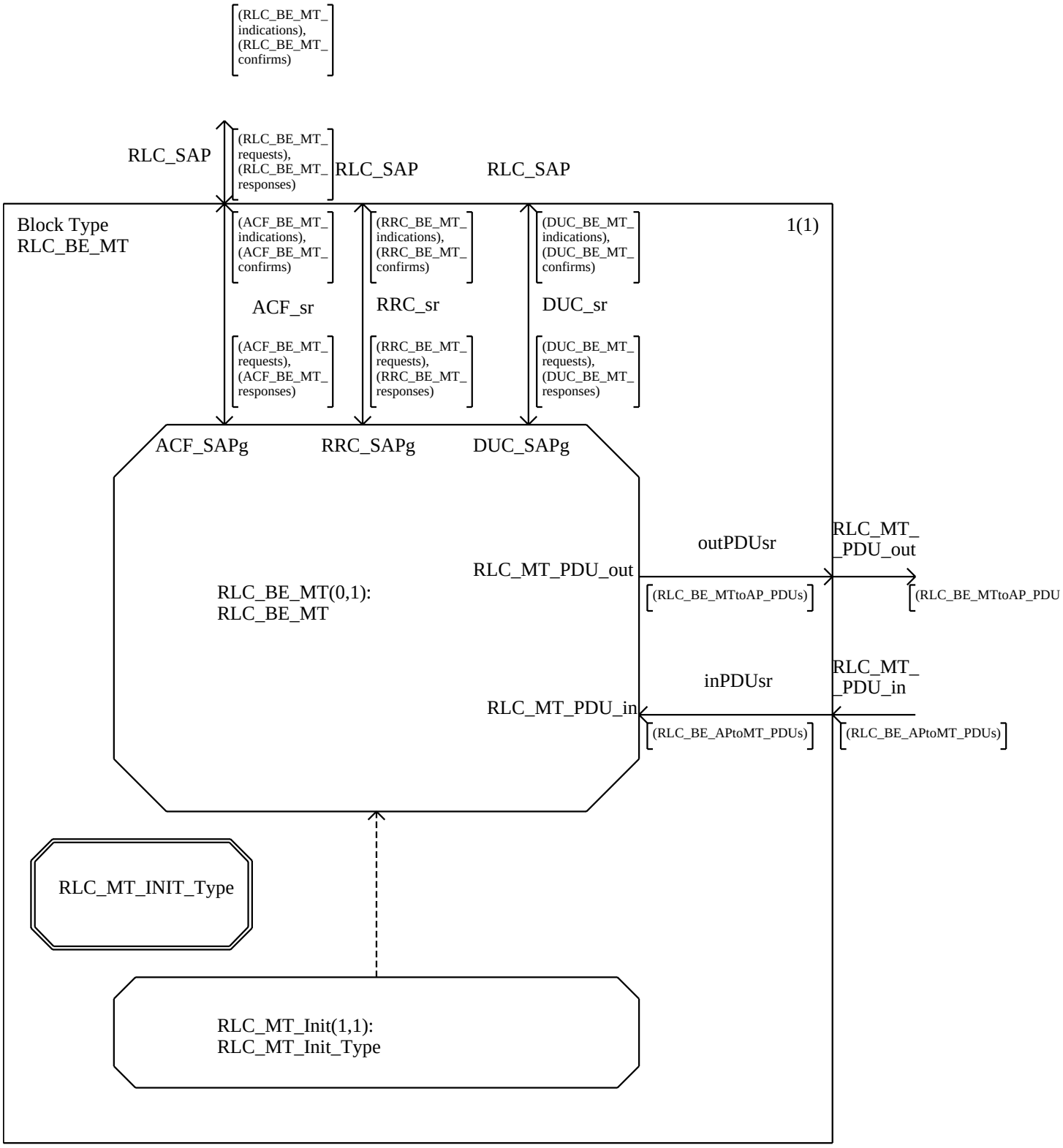
RLC_BE_MT


(RLC_BE_AP_ indications), (RLC_BE_AP_ confirms)
RLC_SAP
(RLC_BE_AP_ requests), (RLC_BE_AP_ responses)
RLC_SAP
RLC_SAP
Block Type RLC_BE_AP
1(2)
(ACF_BE_AP_ indications), (ACF_BE_AP_ confirms)
(RRC_BE_AP_ indications), (RRC_BE_AP_ confirms)
(DUC_BE_AP_ indications), (DUC_BE_AP_ confirms)
ACF_sr
RRC_sr
DUC_sr
(ACF_BE_AP_ requests), (ACF_BE_AP_ responses)
(RRC_BE_AP_ requests), (RRC_BE_AP_ responses)
(DUC_BE_AP_ requests), (DUC_BE_AP_ responses)
ACF_SAPg
RRC_SAPg
DUC_SAPg
outPDUsr
RLC_AP_ _PDU_out
RLC_AP_PDU_out
(RLC_BE_APtoMT_PDUs)
(RLC_BE_APtoMT_PDU
RLC_BE_AP(0,2): RLC_BE_AP
inPDUsr
RLC_AP_ _PDU_in
RLC_AP_PDU_in
(RLC_BE_MTtoAP_PDUs)
(RLC_BE_MTtoAP_PDUs)
RLC_AP_Init_Type
RLC_AP_Init(1,1): RLC_AP_Init_Type

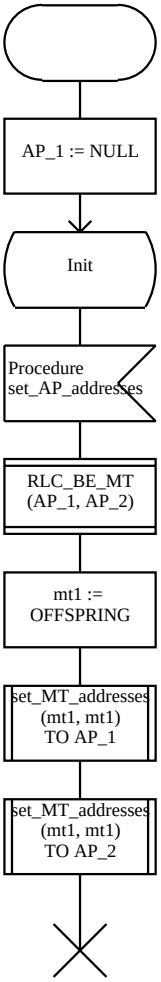
Block Type 2(2)
RLC_BE_AP

Process Type RLC_AP_Init_Type 1(1)




(RLC_BE_MT_ indications), (RLC_BE_MT_ confirms)
RLC_SAP
(RLC_BE_MT_ requests), (RLC_BE_MT_ responses)
RLC_SAP
RLC_SAP
Block Type RLC_BE_MT
1(1)
(ACF_BE_MT_ indications), (ACF_BE_MT_ confirms)
(RRC_BE_MT_ indications), (RRC_BE_MT_ confirms)
(DUC_BE_MT_ indications), (DUC_BE_MT_ confirms)
ACF_sr
RRC_sr
DUC_sr
(ACF_BE_MT_ requests), (ACF_BE_MT_ responses)
(RRC_BE_MT_ requests), (RRC_BE_MT_ responses)
(DUC_BE_MT_ requests), (DUC_BE_MT_ responses)
ACF_SAPg
RRC_SAPg
DUC_SAPg
outPDUsr
RLC_MT_ _PDU_out
RLC_MT_PDU_out
RLC_BE_MT(0,1): RLC_BE_MT
(RLC_BE_MTtoAP_PDUs)
(RLC_BE_MTtoAP_PDU
inPDUsr
RLC_MT_ _PDU_in
RLC_MT_PDU_in
(RLC_BE_APtoMT_PDUs)
(RLC_BE_APtoMT_PDUs)
RLC_MT_INIT_Type
RLC_MT_Init(1,1): RLC_MT_Init_Type

Process Type RLC_MT_INIT_Type 1(1)



Exported
set_AP_addresses

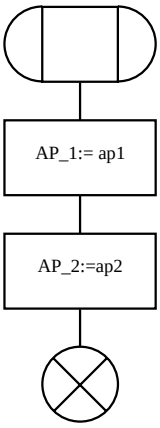
This procedure is needed for simulation of handover. It is used when the model is initialized to set the addresses (process identities on of the two AP processes used to model handover.

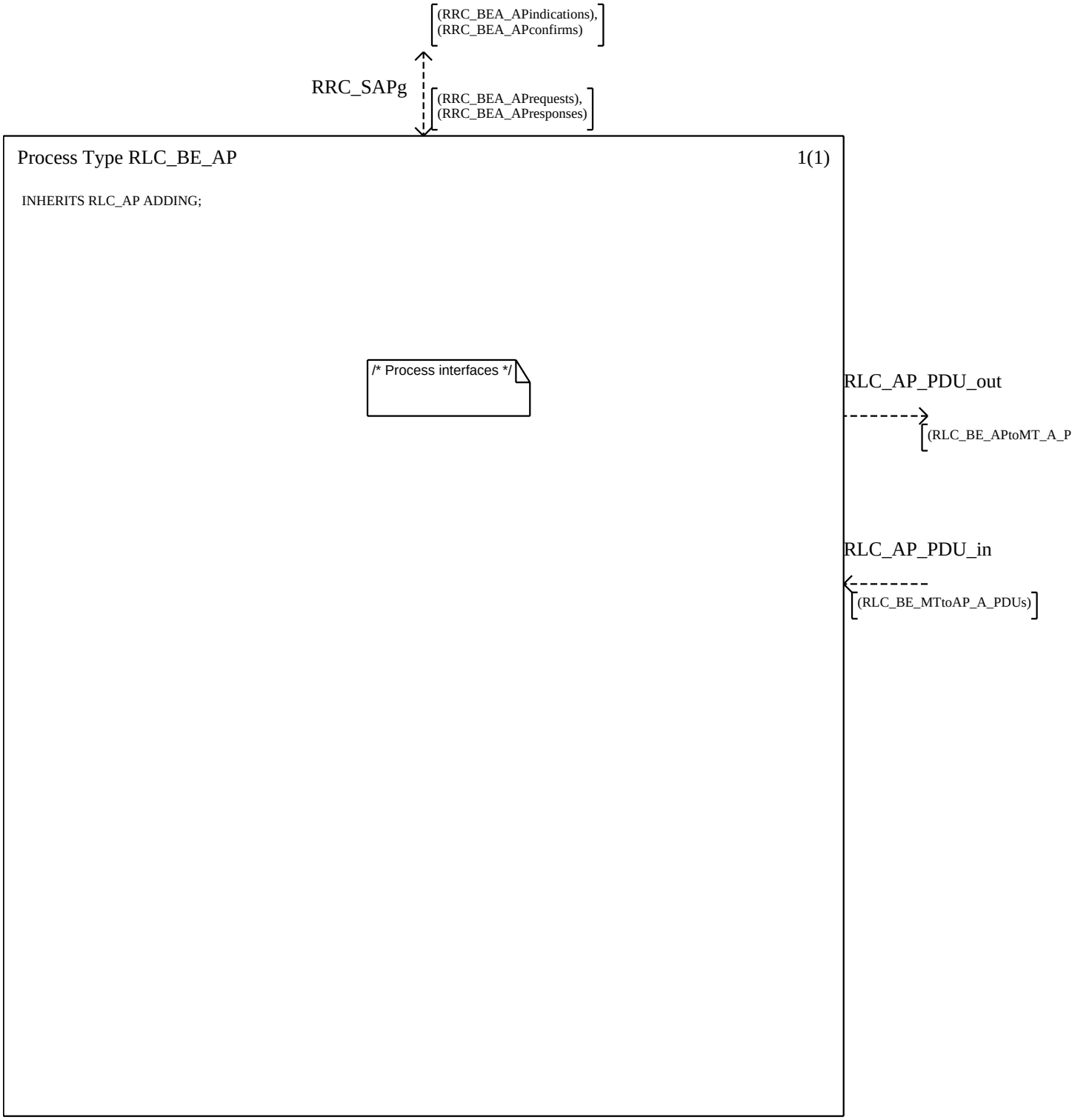
```
DCL AP_1, AP_2, mt1    PId;
```

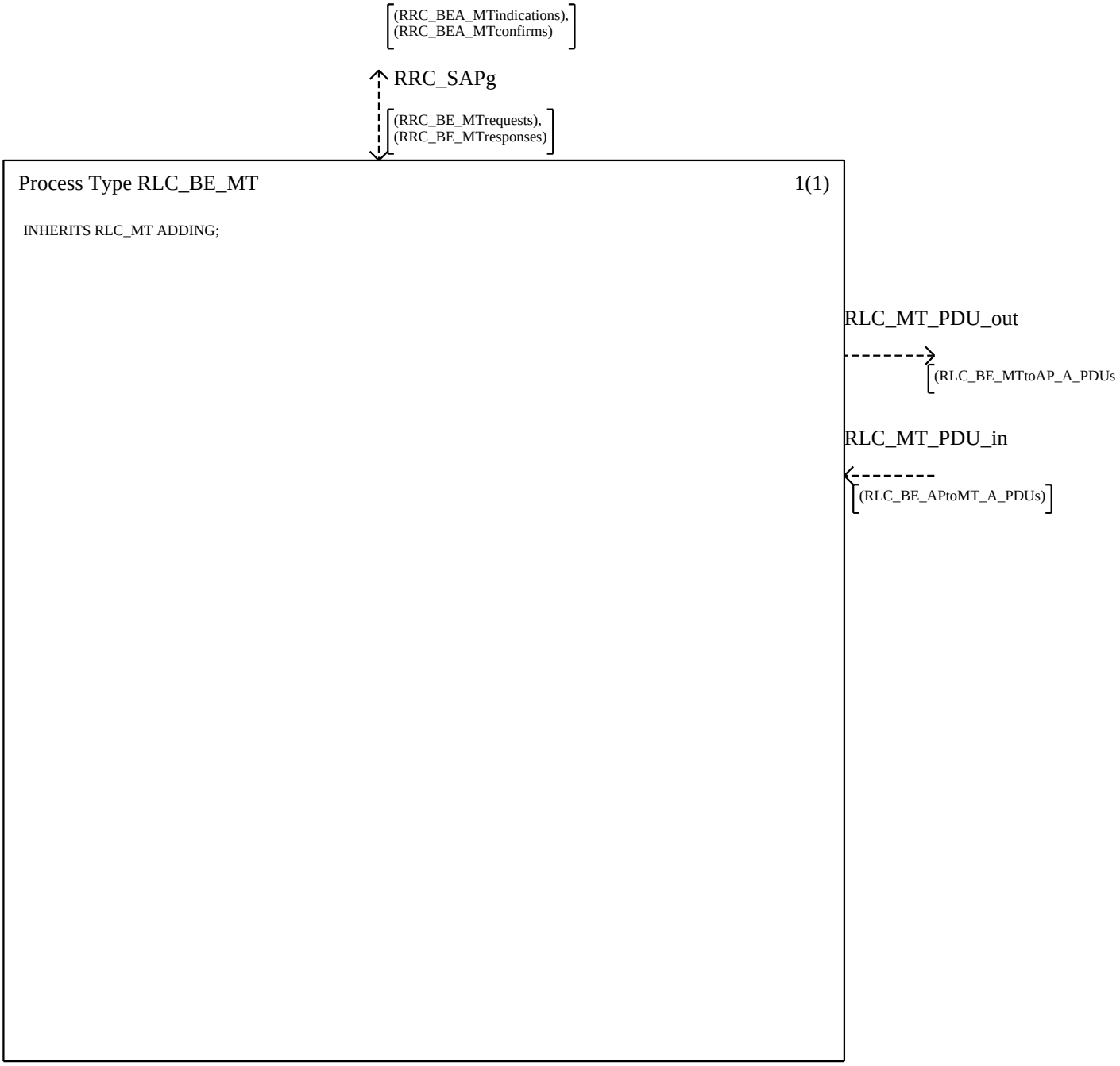
```
IMPORTED PROCEDURE set_MT_addresses;
FPAR PId, PId;
```

EXPORTED Procedure set_AP_addresses 1(1)

```
;FPAR
    ap1, ap2     PId;
```




(RRC_BEA_APindications),
(RRC_BEA_APconfirms)
RRC_SAPg
(RRC_BEA_APrequests),
(RRC_BEA_APresponses)
Process Type RLC_BE_AP
1(1)
INHERITS RLC_AP ADDING;
/* Process interfaces */
RLC_AP_PDU_out
(RLC_BE_APtoMT_A_P
RLC_AP_PDU_in
(RLC_BE_MTtoAP_A_PDUs)


(RRC_BEA_MTindications),
(RRC_BEA_MTconfirms)
RRC_SAPg
(RRC_BE_MTrequests),
(RRC_BE_MTresponses)
Process Type RLC_BE_MT
1(1)
INHERITS RLC_MT ADDING;
RLC_MT_PDU_out
(RLC_BE_MTtoAP_A_PDUs
RLC_MT_PDU_in
(RLC_BE_APtoMT_A_PDUs)

```
use RLCprotocolPrimitives;
use RLCservicePrimitivesDefinitions;
use RLCprotocolPrimitivesDefinitions;
use RLC;
```

Package RLC_HE 1(1)

```
SYNONYM T_dm_setup_ap_duration = T_short_duration;
SYNONYM T_dm_setup_mt_duration = T_short_duration;
SYNONYM T_dm_connect_ap_duration = T_short_duration;
SYNONYM T_dm_connect_mt_duration = T_short_duration;
SYNONYM T_dm_connect_cmpt_ap_duration = T_short_duration;
SYNONYM T_dm_connect_cmpt_mt_duration = T_medium_duration;
SYNONYM T_relay_setup_mt_duration = T_medium_duration;
SYNONYM T_dm_release_ap_duration = T_short_duration;
SYNONYM T_dm_release_mt_duration = T_short_duration;
SYNONYM T_relay_release_mt_duration = T_medium_duration;
SYNONYM T_dm_modify_req_ap_duration = T_short_duration;
SYNONYM T_dm_modify_req_mt_duration = T_short_duration;
SYNONYM T_dm_modify_ap_duration = T_short_duration;
SYNONYM T_dm_modify_mt_duration = T_short_duration;
SYNONYM T_dm_modify_cmpt_ap_duration = T_short_duration;
SYNONYM T_dm_modify_cmpt_mt_duration = T_medium_duration;
SYNONYM T_relay_modify_mt_duration = T_medium_duration;
SYNONYM T_dm_reset_ap_duration = T_short_duration;
SYNONYM T_dm_reset_mt_duration = T_medium_duration;
```

```
REMOTE PROCEDURE set_otherWT;
FPAR PId;
```

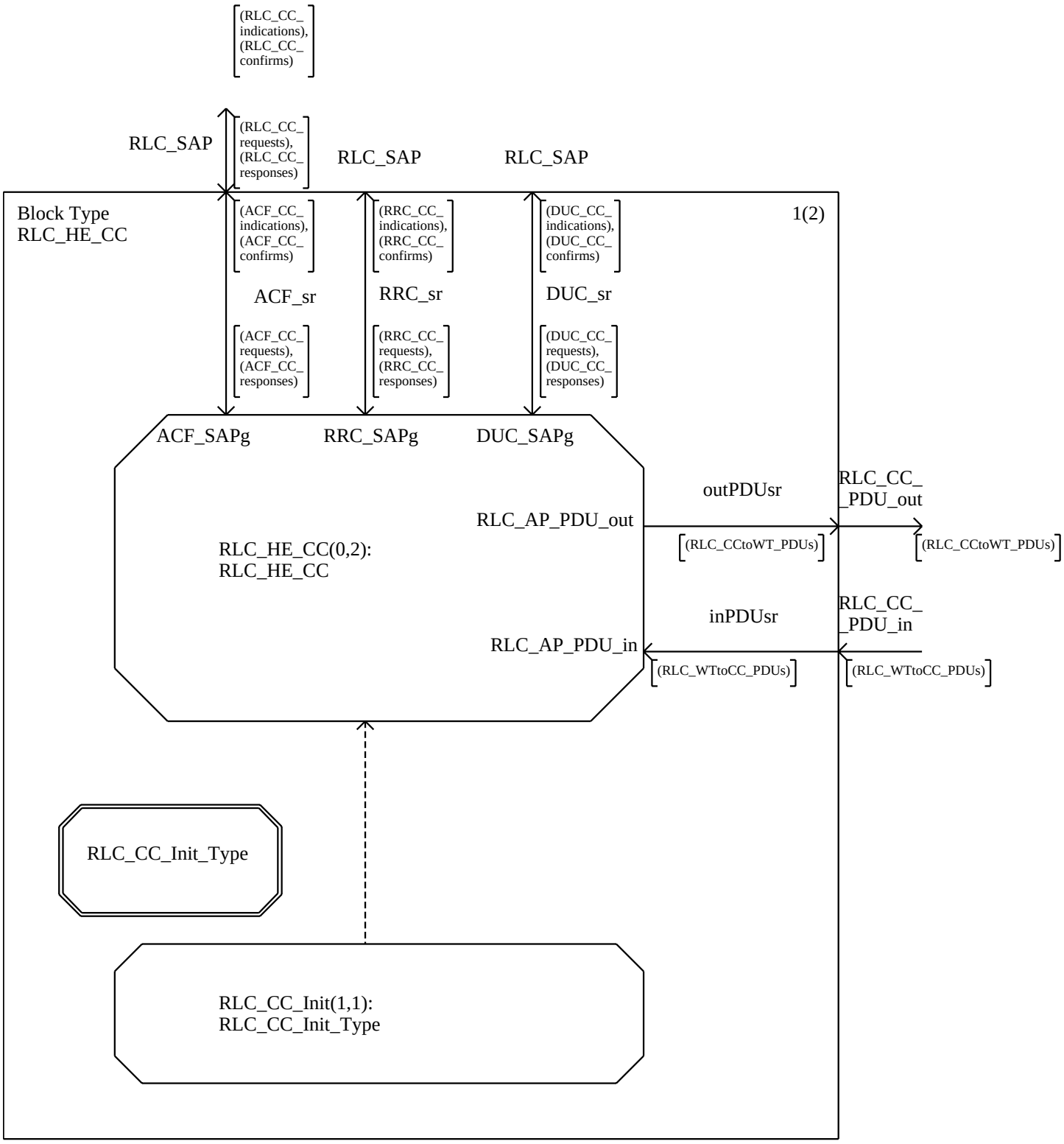
```
REMOTE PROCEDURE set_CC_addresses;FPAR PId, PId;
```

RLC_HE_CC

RLC_HE_WT

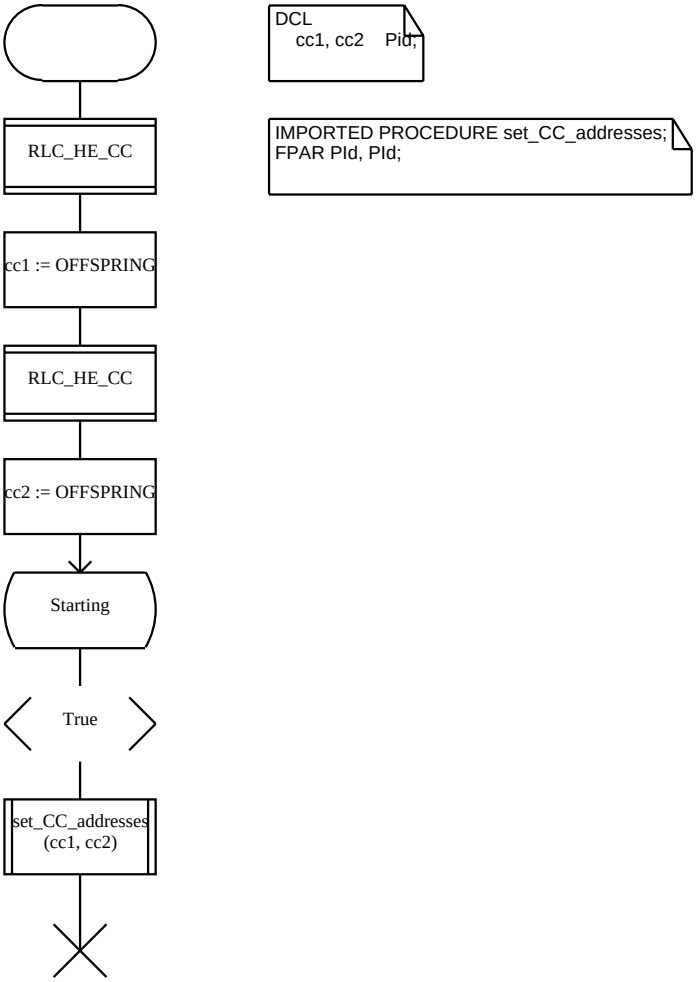
RLC_HE_CC

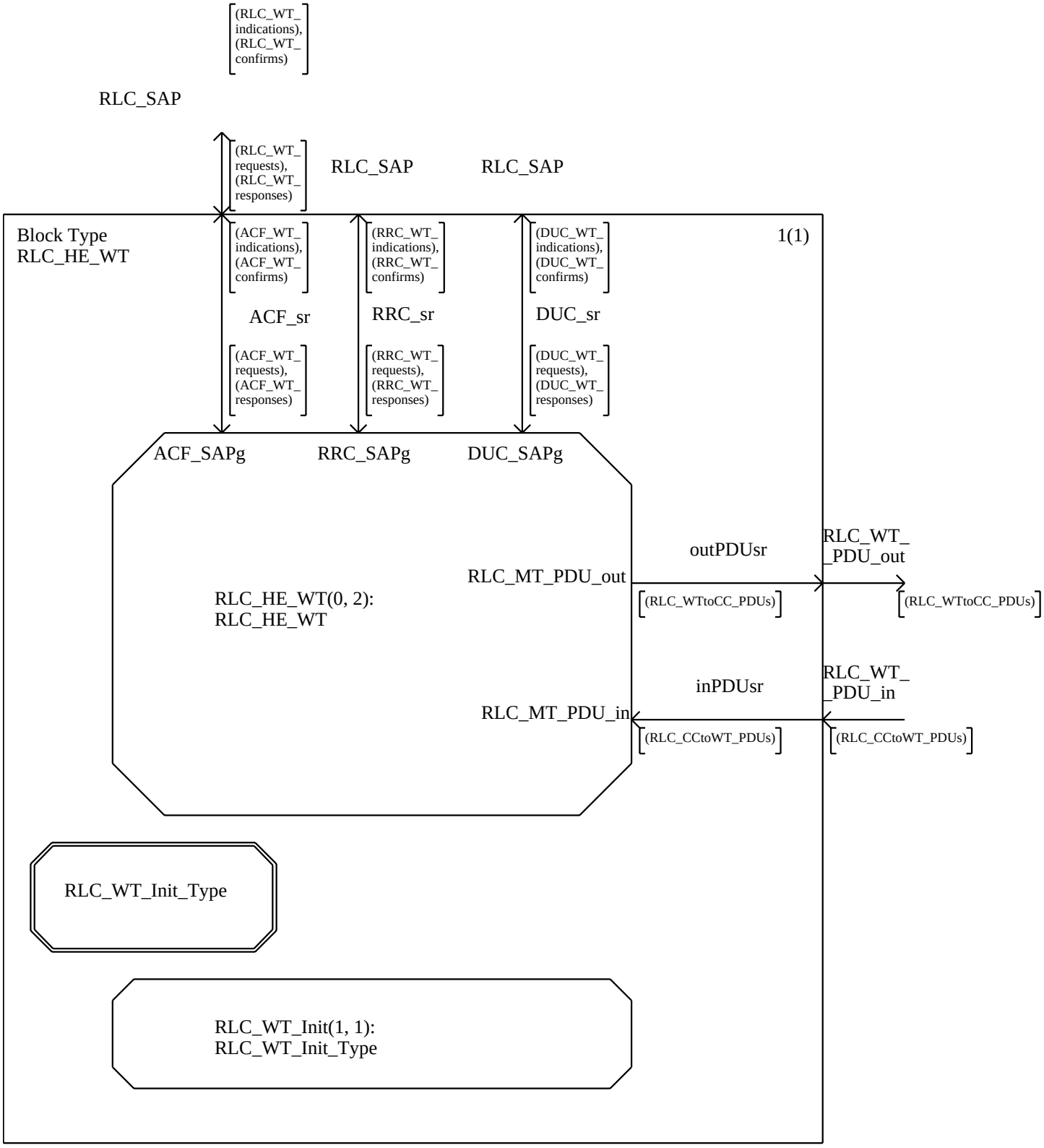
RLC_HE_WT


(RLC_CC_ indications), (RLC_CC_ confirms)
RLC_SAP
(RLC_CC_ requests), (RLC_CC_ responses)
RLC_SAP
RLC_SAP
Block Type RLC_HE_CC
1(2)
(ACF_CC_ indications), (ACF_CC_ confirms)
(RRC_CC_ indications), (RRC_CC_ confirms)
(DUC_CC_ indications), (DUC_CC_ confirms)
ACF_sr
RRC_sr
DUC_sr
(ACF_CC_ requests), (ACF_CC_ responses)
(RRC_CC_ requests), (RRC_CC_ responses)
(DUC_CC_ requests), (DUC_CC_ responses)
ACF_SAPg
RRC_SAPg
DUC_SAPg
outPDUsr
RLC_CC_ _PDU_out
RLC_AP_PDU_out
(RLC_CCtoWT_PDUs)
(RLC_CCtoWT_PDUs)
RLC_HE_CC(0,2): RLC_HE_CC
inPDUsr
RLC_CC_ _PDU_in
RLC_AP_PDU_in
(RLC_WTtoCC_PDUs)
(RLC_WTtoCC_PDUs)
RLC_CC_Init_Type
RLC_CC_Init(1,1): RLC_CC_Init_Type

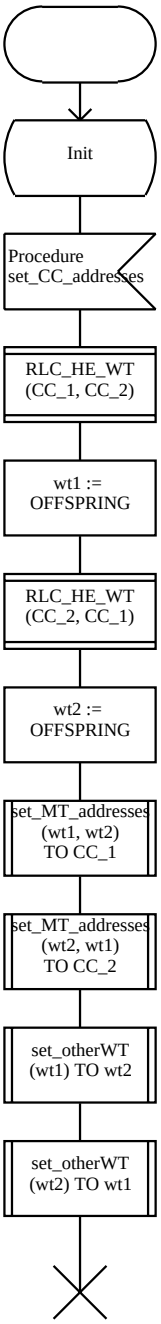
Block Type 2(2)
RLC_HE_CC

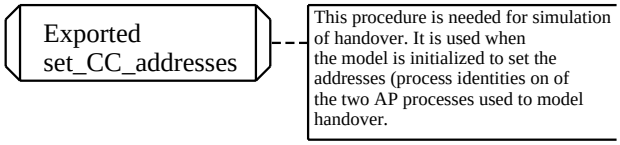
Process Type RLC_CC_Init_Type 1(1)




(RLC_WT_ indications), (RLC_WT_ confirms)
RLC_SAP
(RLC_WT_ requests), (RLC_WT_ responses)
RLC_SAP
RLC_SAP
Block Type
RLC_HE_WT
1(1)
(ACF_WT_ indications), (ACF_WT_ confirms)
(RRC_WT_ indications), (RRC_WT_ confirms)
(DUC_WT_ indications), (DUC_WT_ confirms)
ACF_sr
RRC_sr
DUC_sr
(ACF_WT_ requests), (ACF_WT_ responses)
(RRC_WT_ requests), (RRC_WT_ responses)
(DUC_WT_ requests), (DUC_WT_ responses)
ACF_SAPg
RRC_SAPg
DUC_SAPg
outPDUsr
RLC_WT_ _PDU_out
RLC_MT_PDU_out
(RLC_WTtoCC_PDUs)
(RLC_WTtoCC_PDUs)
RLC_HE_WT(0, 2):
RLC_HE_WT
inPDUsr
RLC_WT_ _PDU_in
RLC_MT_PDU_in
(RLC_CCtoWT_PDUs)
(RLC_CCtoWT_PDUs)
RLC_WT_Init_Type
RLC_WT_Init(1, 1):
RLC_WT_Init_Type

Process Type RLC_WT_INIT_Type 1(1)





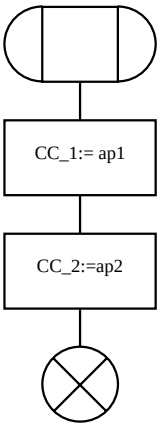

```
DCL CC_1, CC_2, wt1, wt2    PId;
```

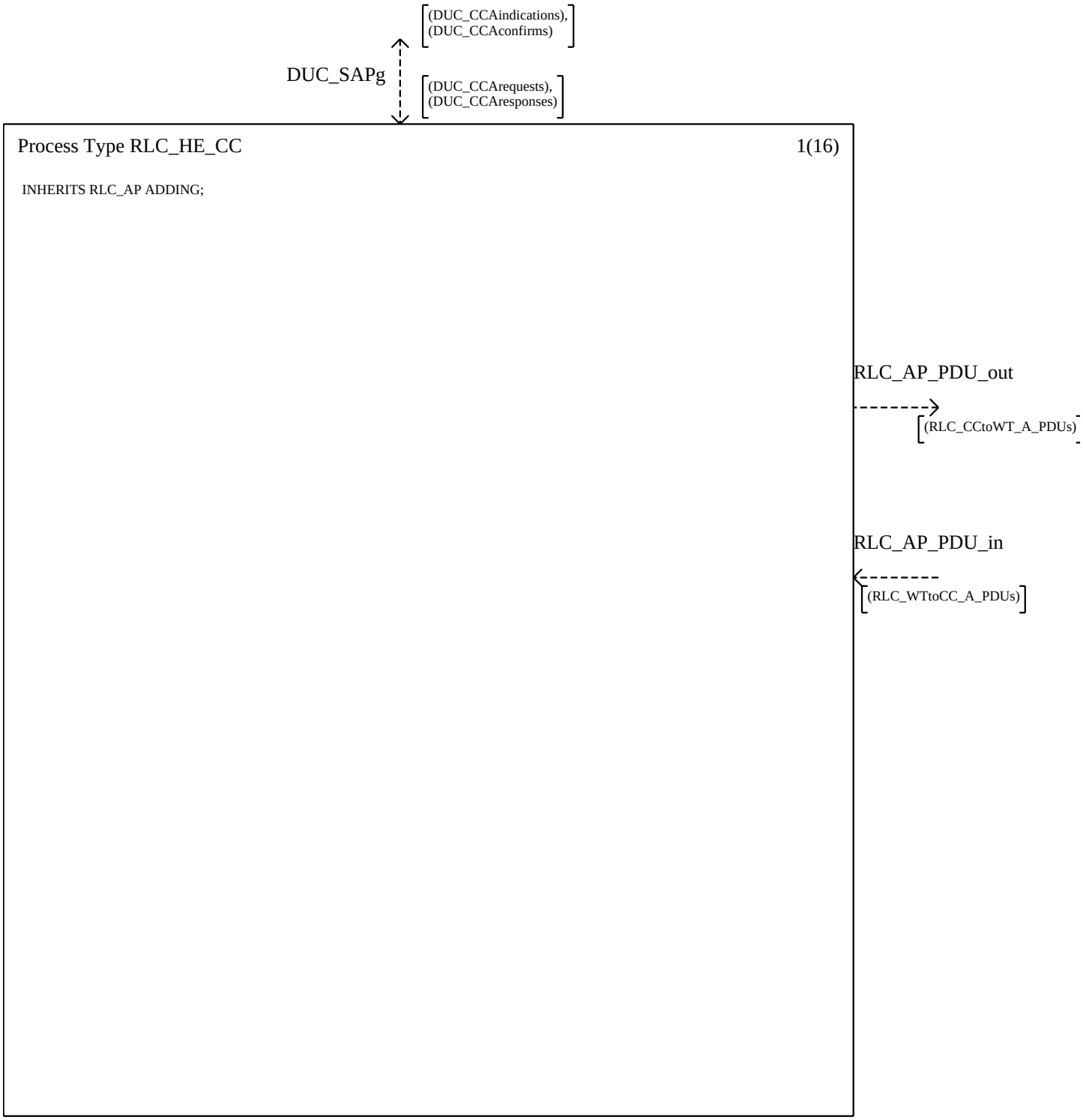
```
IMPORTED PROCEDURE set_MT_addresses;
FPAR PId, PId;
```

```
IMPORTED PROCEDURE set_otherWT;
FPAR PId;
```

EXPORTED Procedure set_CC_addresses 1(1)

```
;FPAR
    ap1, ap2     PId;
```




(DUC_CCAindications),
(DUC_CCAconfirms)
DUC_SAPg
(DUC_CCArequests),
(DUC_CCAresponses)
Process Type RLC_HE_CC
1(16)
INHERITS RLC_AP ADDING;
RLC_AP_PDU_out
(RLC_CCtoWT_A_PDUs)
RLC_AP_PDU_in
(RLC_WTtoCC_A_PDUs)

Process Type RLC_HE_CC 2(16)

INHERITS RLC_AP ADDING;

/* Process local variables */

```
DCL
    originatingWT, terminatingWT PID;
```

```
DCL dm_setup         RLC_DM_SETUP_ARG;
DCL dm_connect       RLC_DM_CONNECT_ARG;
DCL dm_connect_ack   RLC_DM_CONNECT_ACK_ARG;
DCL dm_connect_cmpl     RLC_DM_CONNECT_COMPLETE_ARG;
DCL dm_connect_cmpl_ack RLC_DM_CONNECT_COMPLETE_ACK_ARG;
DCL relay_setup      RLC_RELAY_SETUP_ARG;
DCL relay_setup_ack  RLC_RELAY_SETUP_ACK_ARG;

DCL dm_modreq       RLC_DM_MODIFY_REQ_ARG;
DCL dm_modify          RLC_DM_MODIFY_ARG;
DCL dm_modify_ack      RLC_DM_MODIFY_ACK_ARG;
DCL dm_modcmpl        RLC_DM_MODIFY_COMPLETE_ARG;
DCL dm_modcmpl_ack     RLC_DM_MODIFY_COMPLETE_ACK_ARG;
DCL relay_modify       RLC_RELAY_MODIFY_ARG;
DCL relay_modify_ack   RLC_RELAY_MODIFY_ACK_ARG;

DCL dm_release        RLC_DM_RELEASE_ARG;
DCL dm_release_ack    RLC_DM_RELEASE_ACK_ARG;
DCL relay_release     RLC_RELAY_RELEASE_ARG;
DCL relay_release_ack RLC_RELAY_RELEASE_ACK_ARG;

DCL dm_reset     RLC_DM_RESET_ARG;
DCL dm_reset_ack RLC_DM_RESET_ACK_ARG;
```

```
DCL dm_setup_req     DUC_DM_SETUP_ARG;
DCL dm_setup_ind     DUC_DM_SETUP_ARG;
DCL dm_connect_ind   DUC_DM_CONNECT_ARG;
DCL dm_connect_req   DUC_DM_CONNECT_ARG;
DCL dm_connect_rsp   DUC_DM_CONNECT_ACK_ARG;
DCL dm_connect_cnf   DUC_DM_CONNECT_ACK_ARG;
DCL dm_connect_cmpl_req DUC_DM_CONNECT_COMPLETE_ARG;
DCL dm_connect_cmpl_cnf DUC_DM_CONNECT_COMPLETE_ACK_ARG;
DCL relay_setup_ind  DUC_RELAY_SETUP_ARG;
DCL relay_setup_rsp  DUC_RELAY_SETUP_ACK_ARG;

DCL dm_modreq_req   DUC_DM_MODIFY_REQ_ARG;
DCL dm_modreq_ind   DUC_DM_MODIFY_REQ_ARG;
DCL dm_modify_ind      DUC_DM_MODIFY_ARG;
DCL dm_modify_req      DUC_DM_MODIFY_ARG;
DCL dm_modify_rsp      DUC_DM_MODIFY_ACK_ARG;
DCL dm_modify_cnf      DUC_DM_MODIFY_ACK_ARG;
DCL dm_mod_cmpl_req    DUC_DM_MODIFY_COMPLETE_ARG;
DCL dm_mod_cmpl_cnf    DUC_DM_MODIFY_COMPLETE_ACK_ARG;
DCL relay_modify_ind   DUC_RELAY_MODIFY_ARG;
DCL relay_modify_rsp   DUC_RELAY_MODIFY_ACK_ARG;

DCL dm_release_req    DUC_DM_RELEASE_ARG;
DCL dm_release_ind    DUC_DM_RELEASE_ARG;
DCL dm_release_cnf    DUC_DM_RELEASE_ACK_ARG;
DCL dm_release_rsp    DUC_DM_RELEASE_ACK_ARG;
DCL relay_release_ind DUC_RELAY_RELEASE_ARG;
DCL relay_release_rsp DUC_RELAY_RELEASE_ACK_ARG;

DCL dm_reset_req DUC_DM_RESET_ARG;
DCL dm_reset_ind DUC_DM_RESET_ARG;
DCL dm_reset_cnf DUC_DM_RESET_ACK_ARG;
DCL dm_reset_rsp DUC_DM_RESET_ACK_ARG;
```

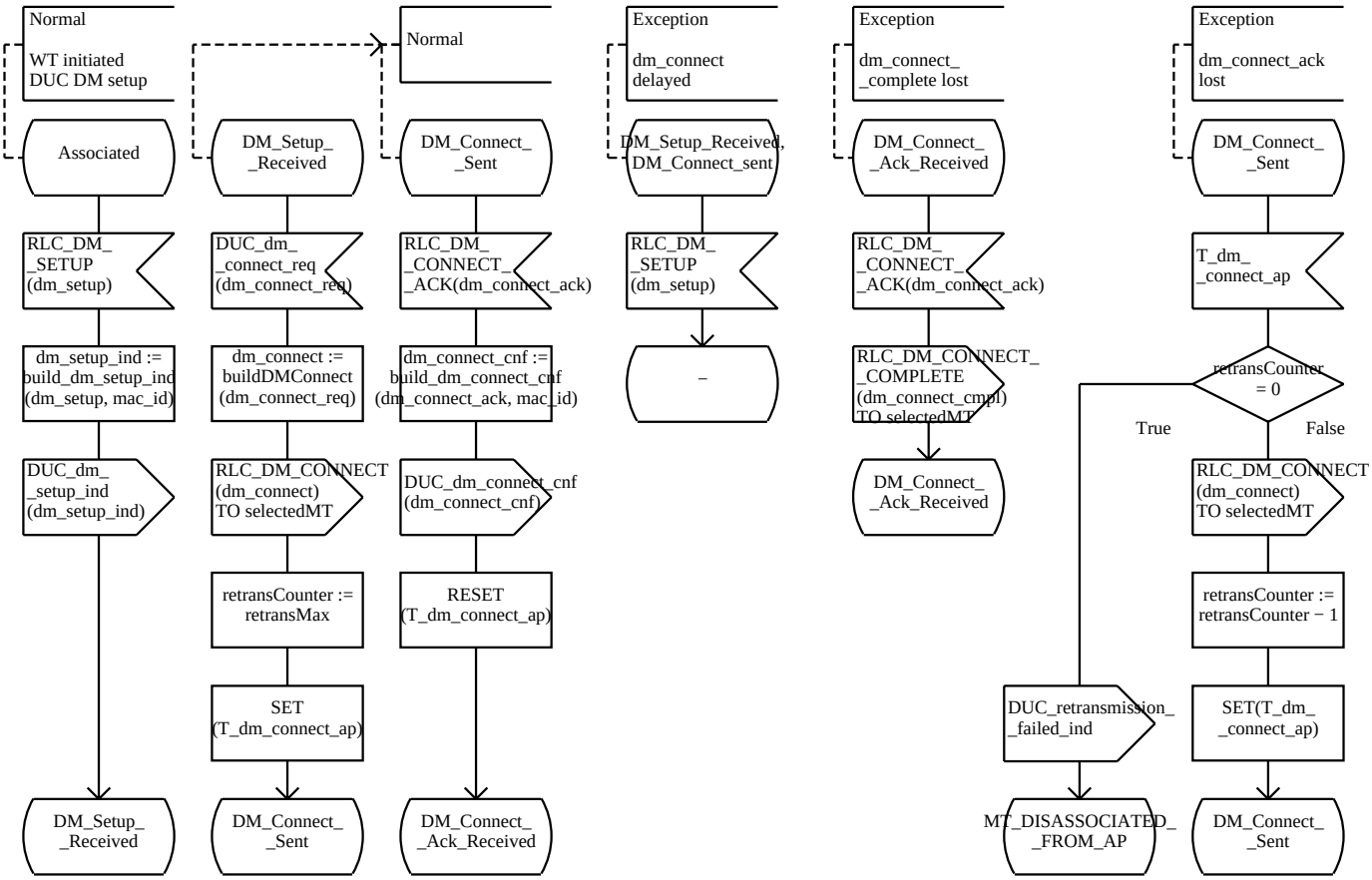
Process Type RLC_HE_CC 3(16)

INHERITS RLC_AP ADDING;

```
TIMER T_dm_setup_ap  := T_dm_setup_ap_duration ;
TIMER T_dm_connect_ap  := T_dm_connect_ap_duration ;
TIMER T_dm_connect_cmpt_ap := T_dm_connect_cmpt_ap_duration ;
TIMER T_dm_release_ap  := T_dm_release_ap_duration ;
TIMER T_dm_modify_req_ap  := T_dm_modify_req_ap_duration ;
TIMER T_dm_modify_ap  := T_dm_modify_ap_duration ;
TIMER T_dm_modify_cmpt_ap := T_dm_modify_cmpt_ap_duration ;
TIMER T_dm_reset_ap := T_dm_reset_ap_duration ;
TIMER T_dm_reset_mt := T_dm_reset_mt_duration ;
```

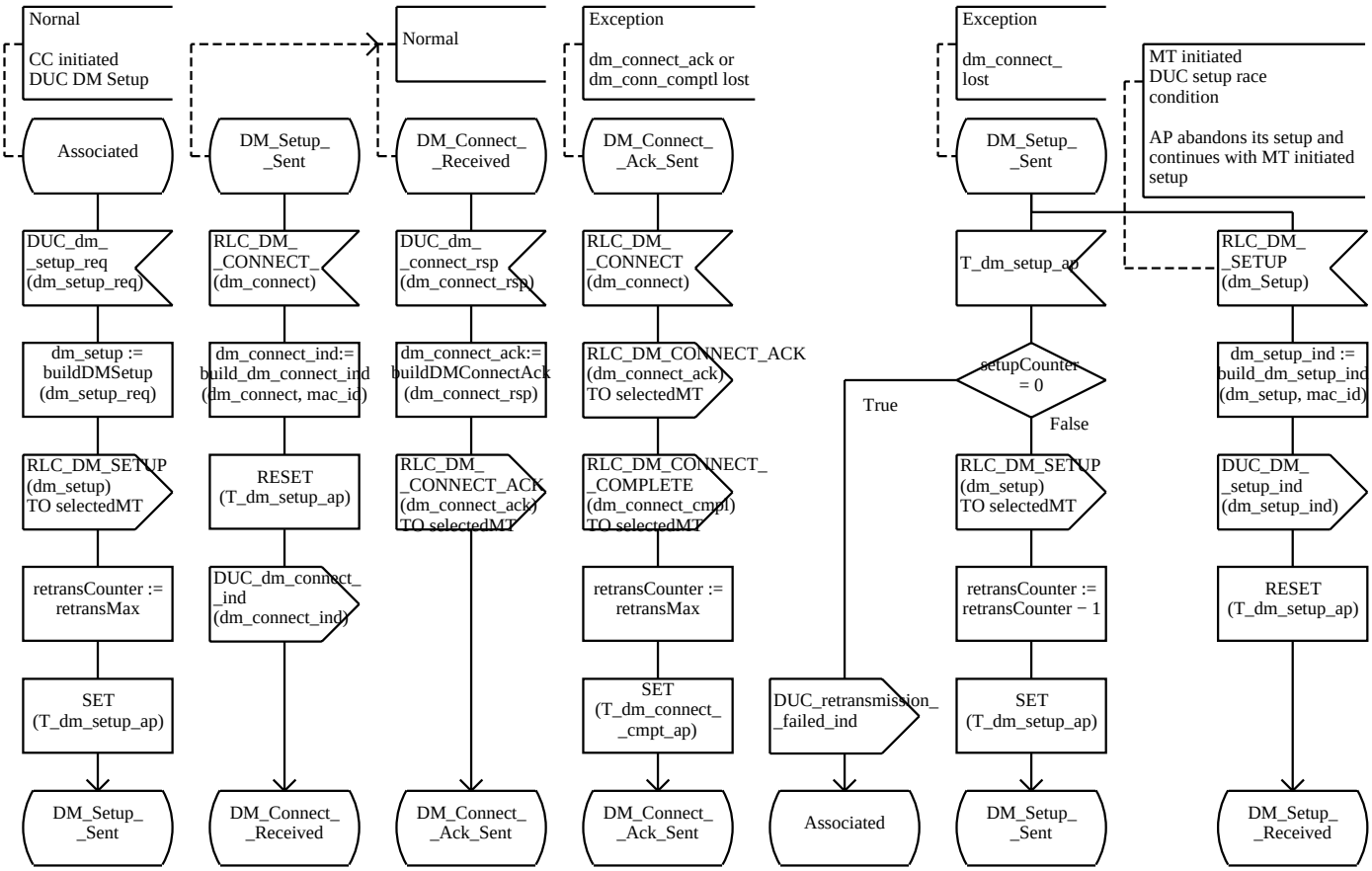
Process Type RLC_HE_CC 4(16)

INHERITS RLC_AP ADDING;



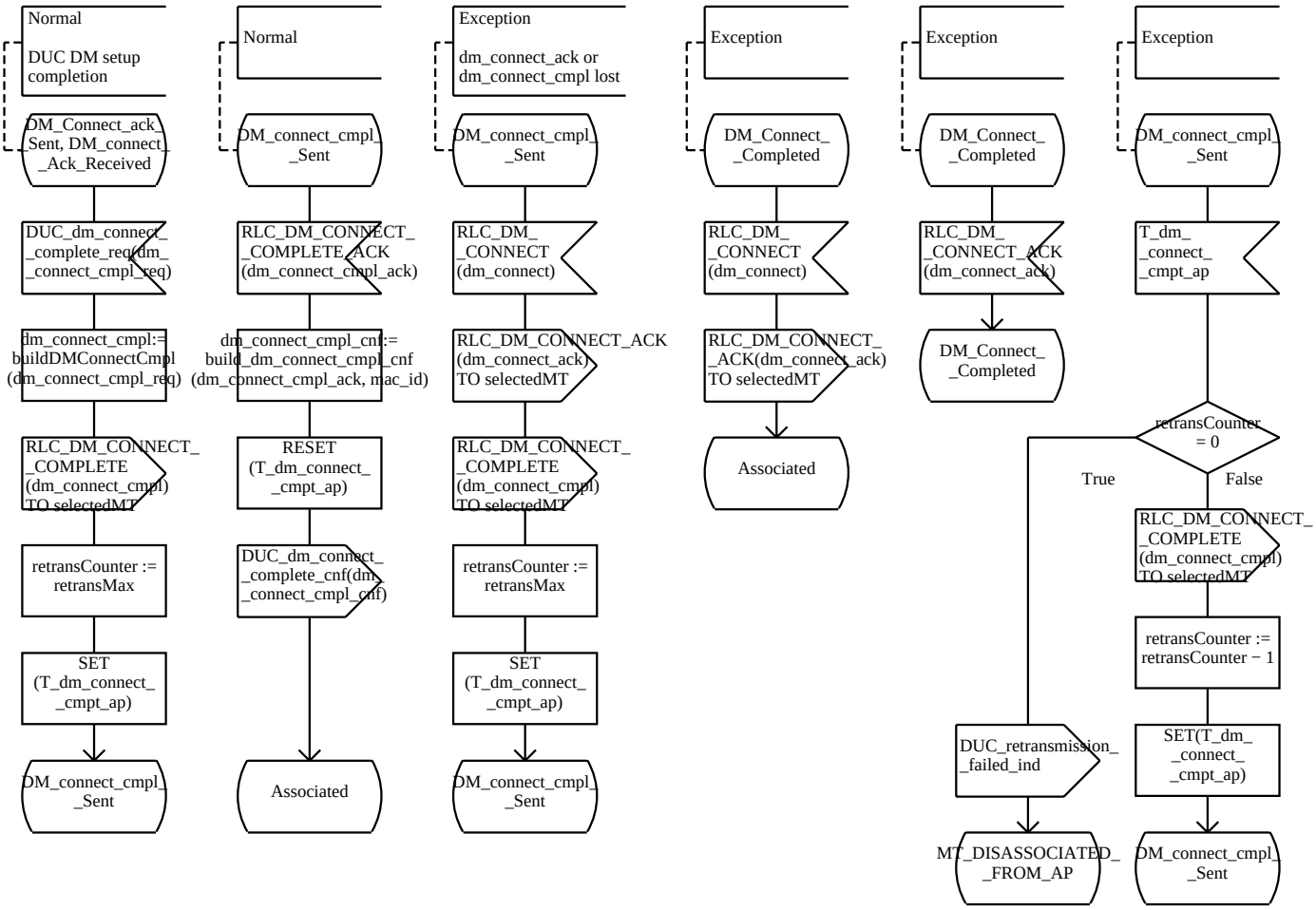
Process Type RLC_HE_CC 5(16)

INHERITS RLC_AP ADDING;



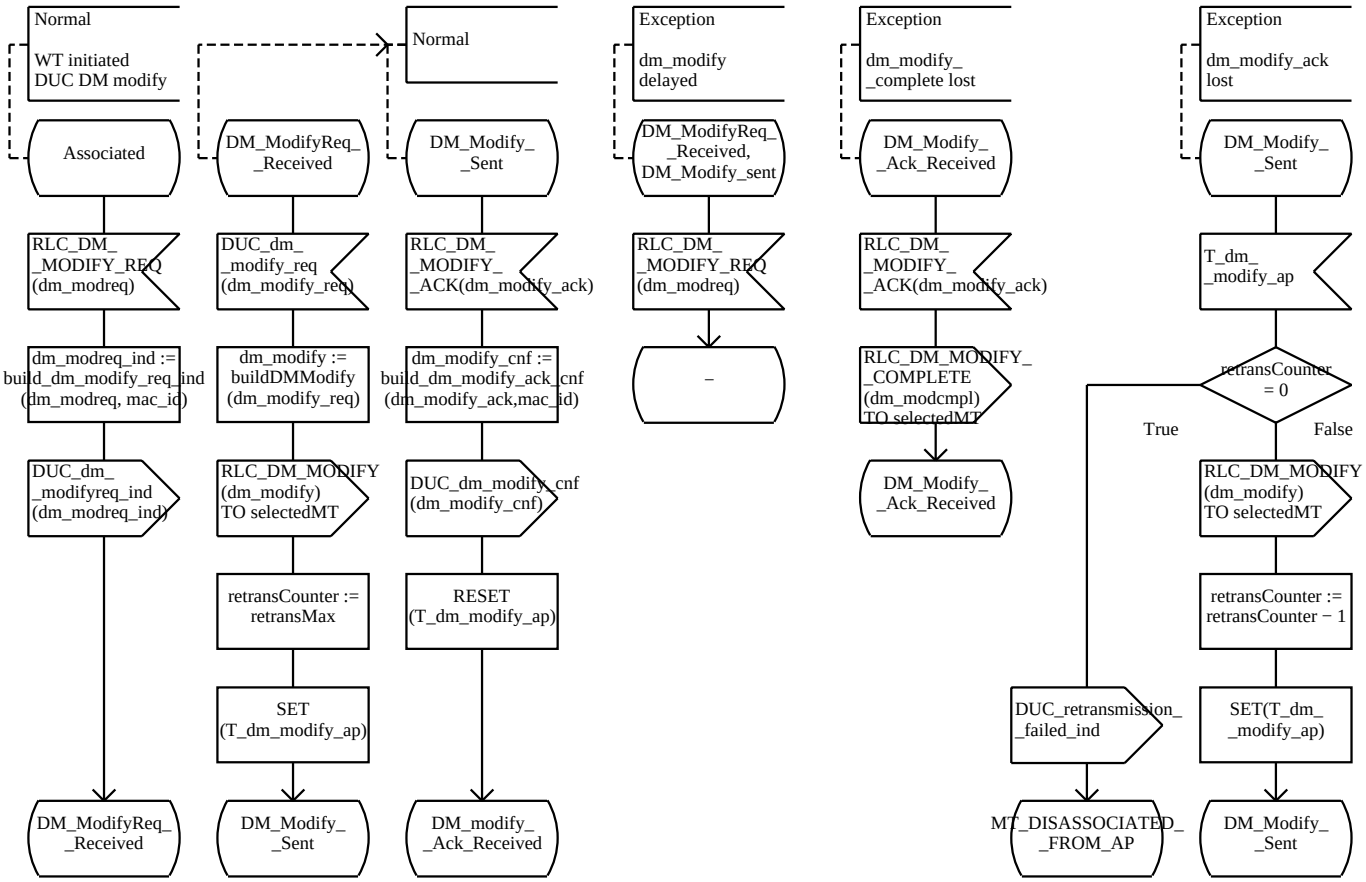
Process Type RLC_HE_CC 6(16)

INHERITS RLC_AP ADDING;



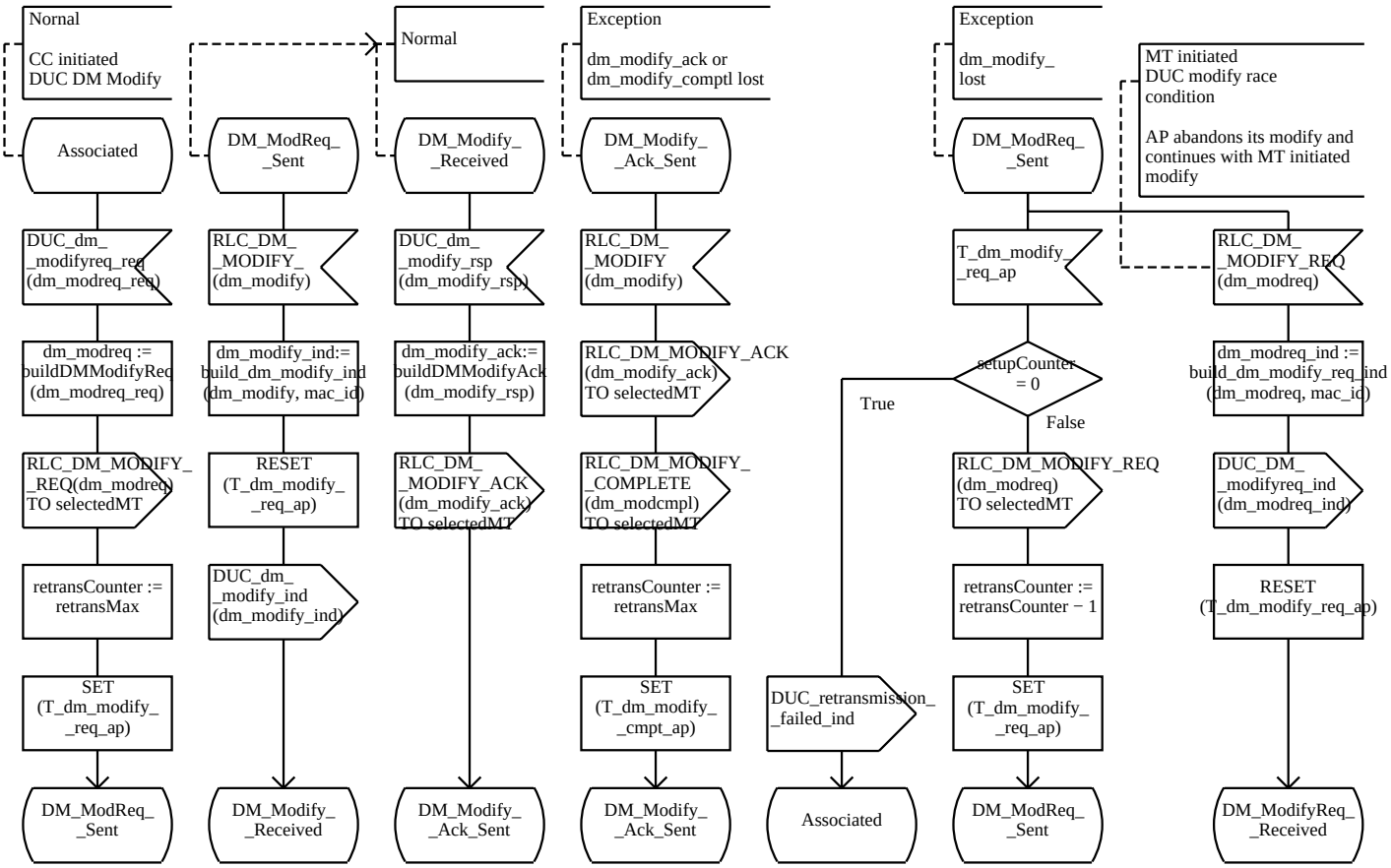
Process Type RLC_HE_CC 7(16)

INHERITS RLC_AP ADDING;



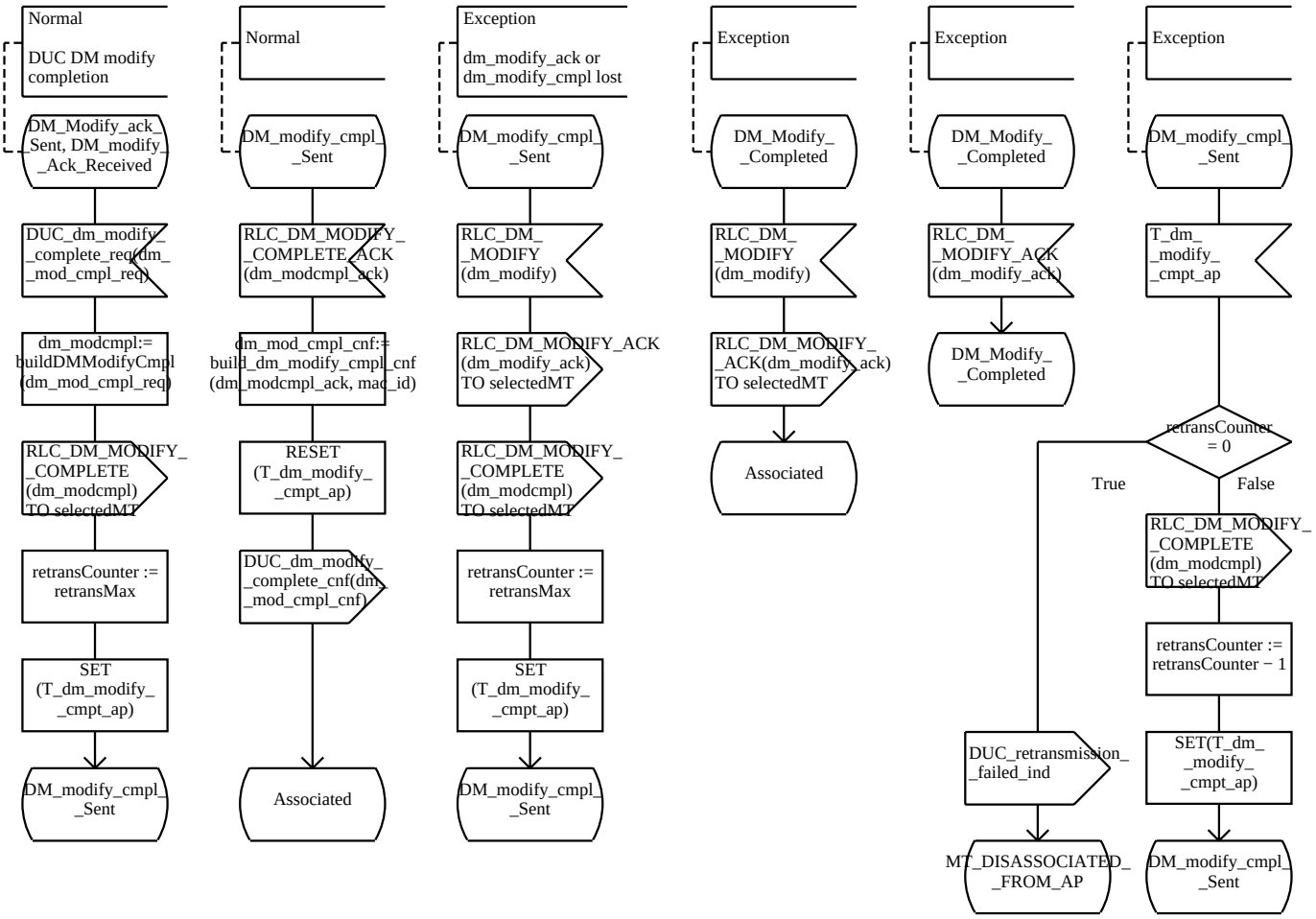
Process Type RLC_HE_CC 8(16)

INHERITS RLC_AP ADDING;



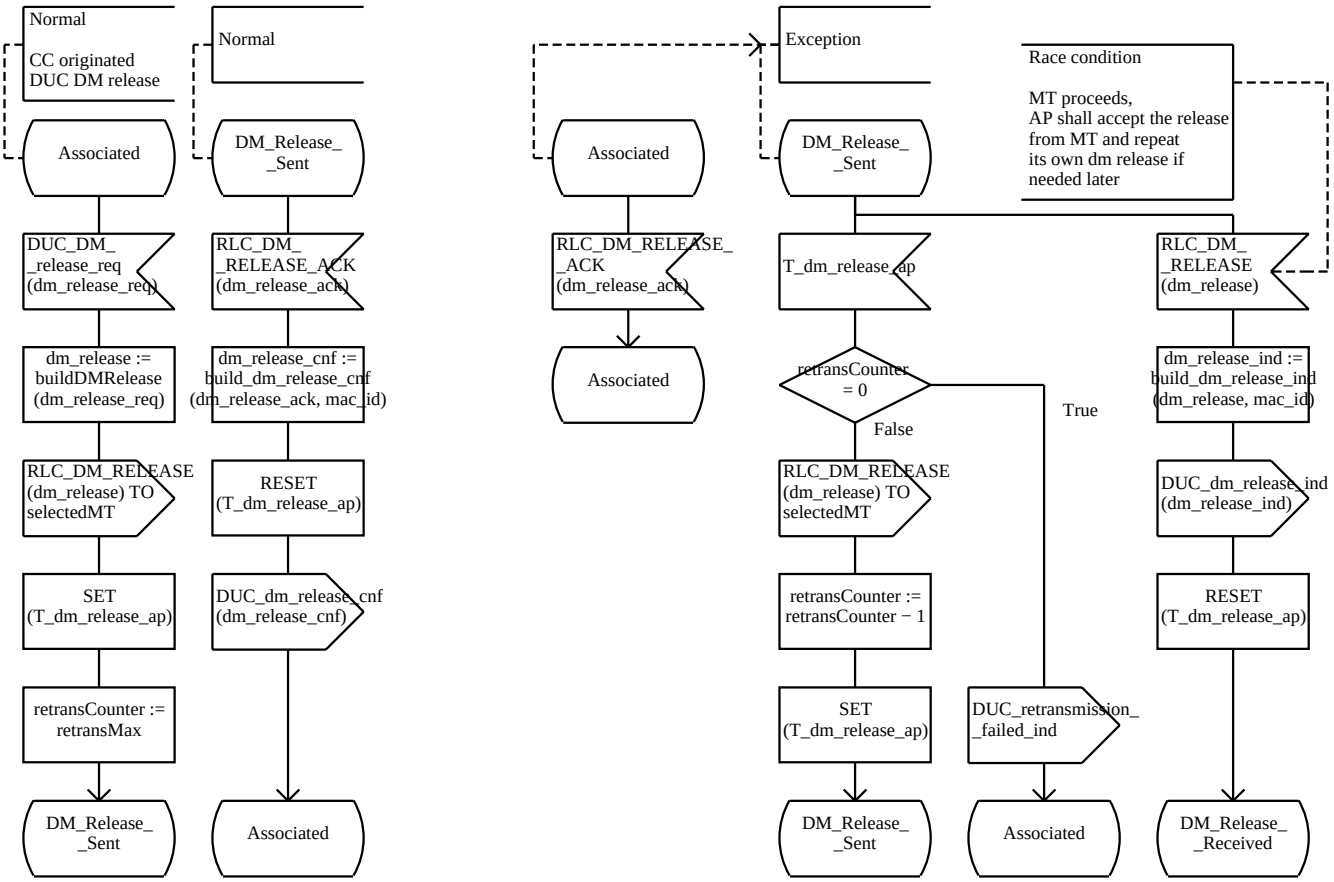
Process Type RLC_HE_CC 9(16)

INHERITS RLC_AP ADDING;



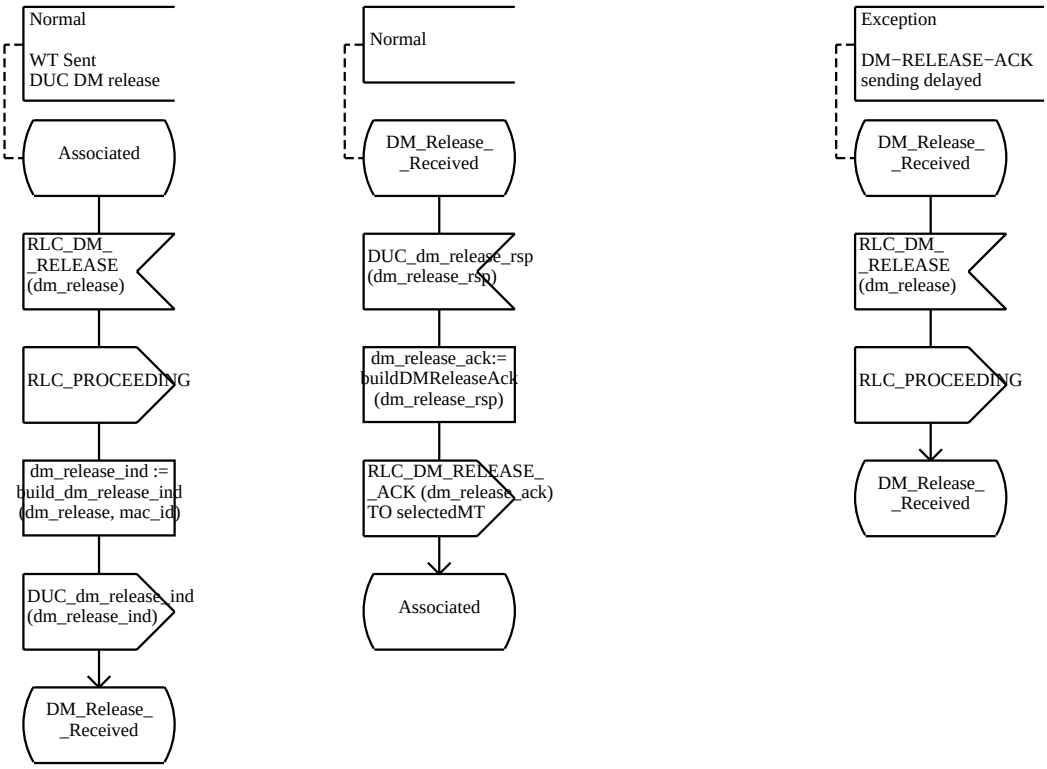
Process Type RLC_HE_CC 10(16)

INHERITS RLC_AP ADDING;



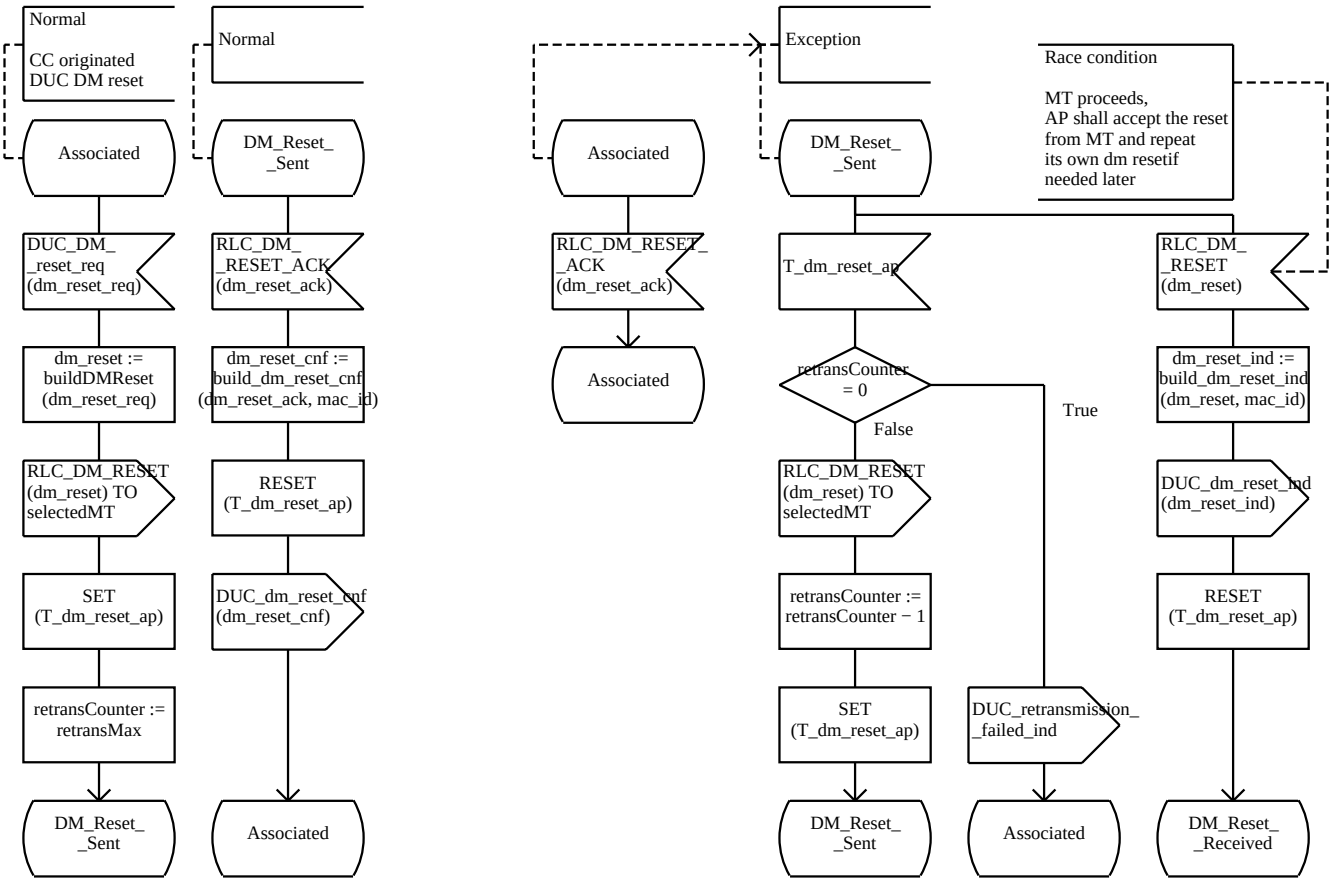
Process Type RLC_HE_CC 11(16)

INHERITS RLC_AP ADDING;



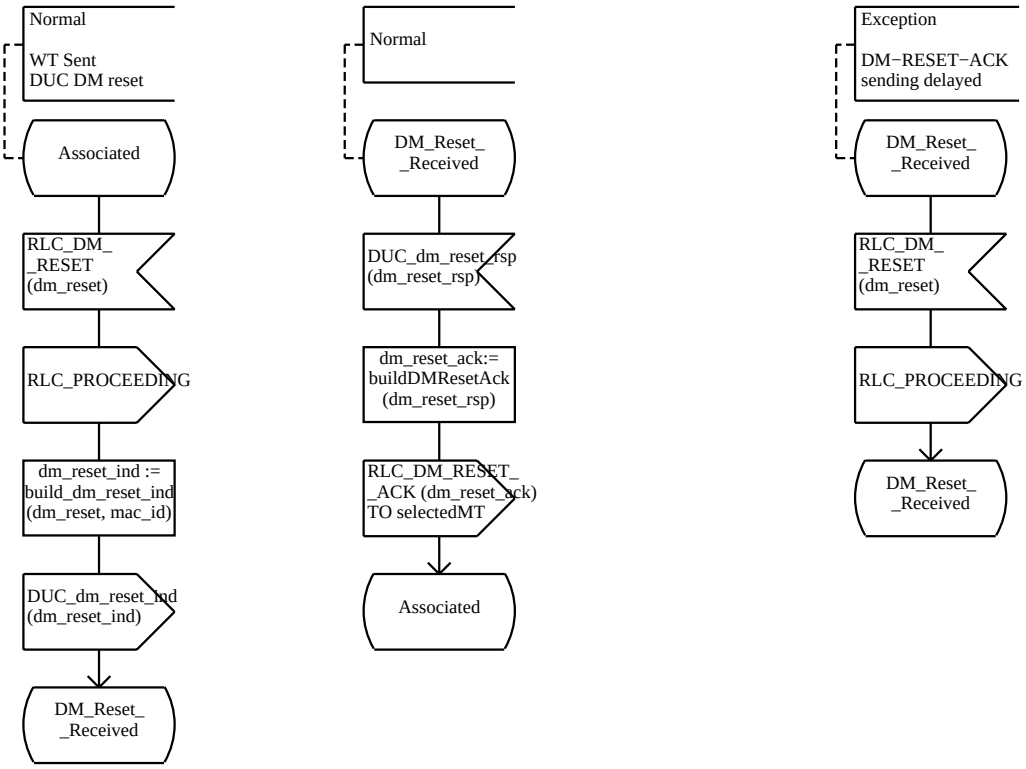
Process Type RLC_HE_CC 12(16)

INHERITS RLC_AP ADDING;



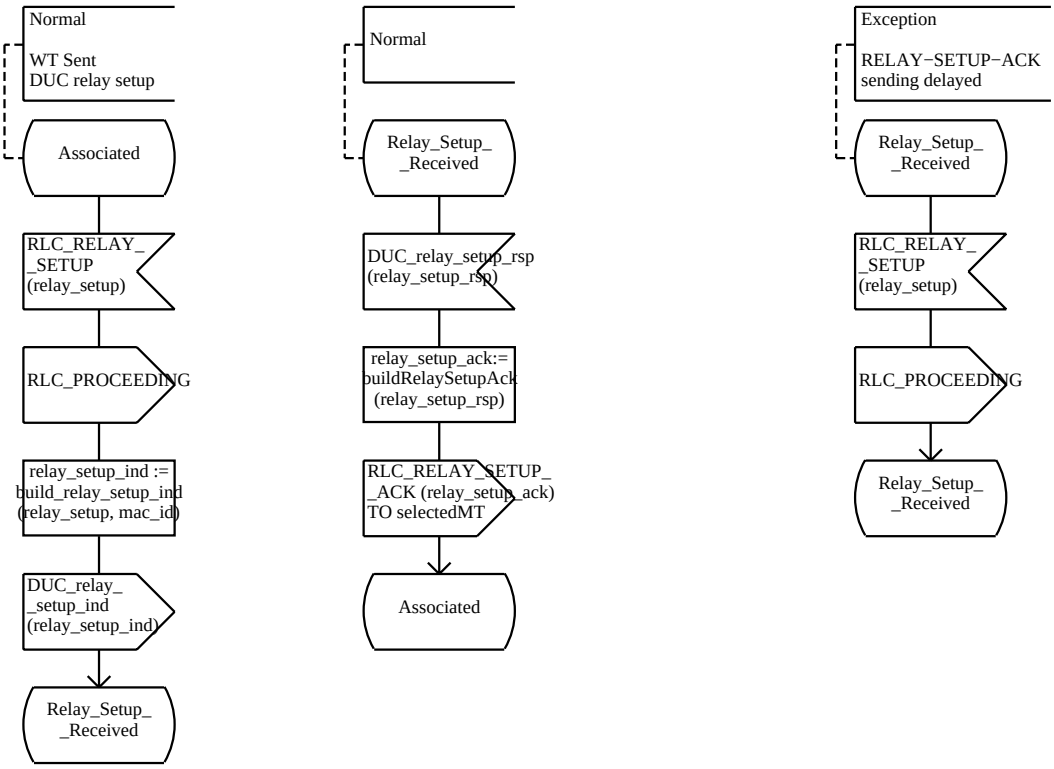
Process Type RLC_HE_CC 13(16)

INHERITS RLC_AP ADDING;



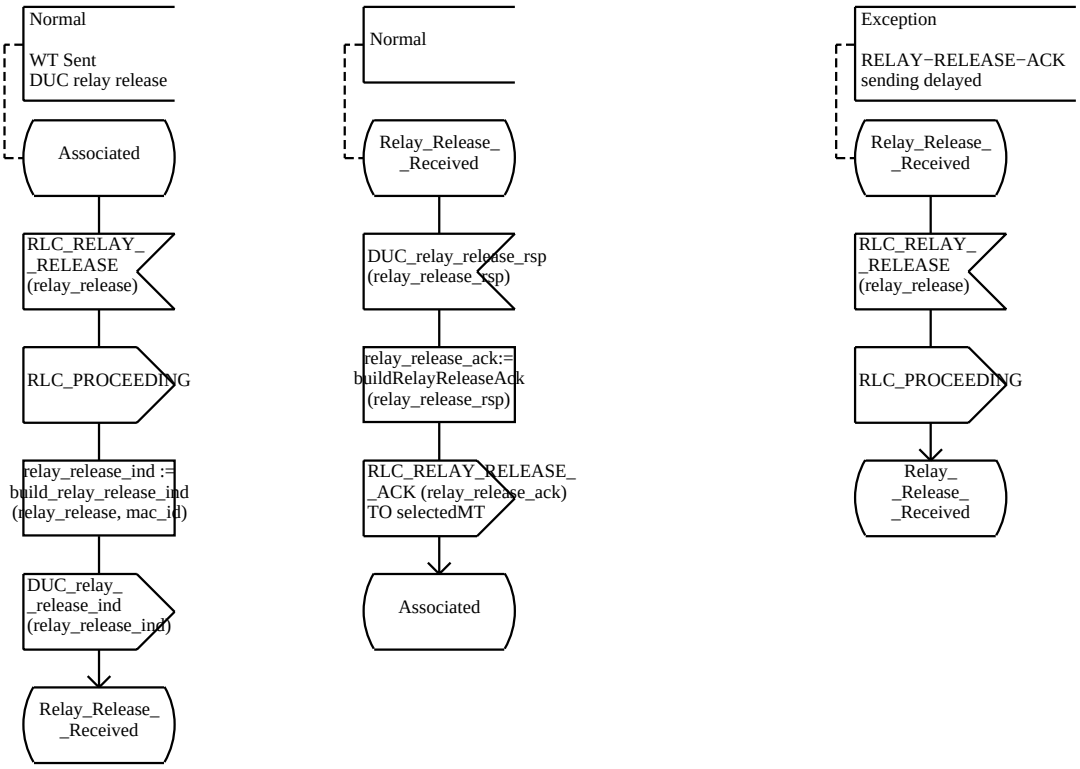
Process Type RLC_HE_CC 14(16)

INHERITS RLC_AP ADDING;



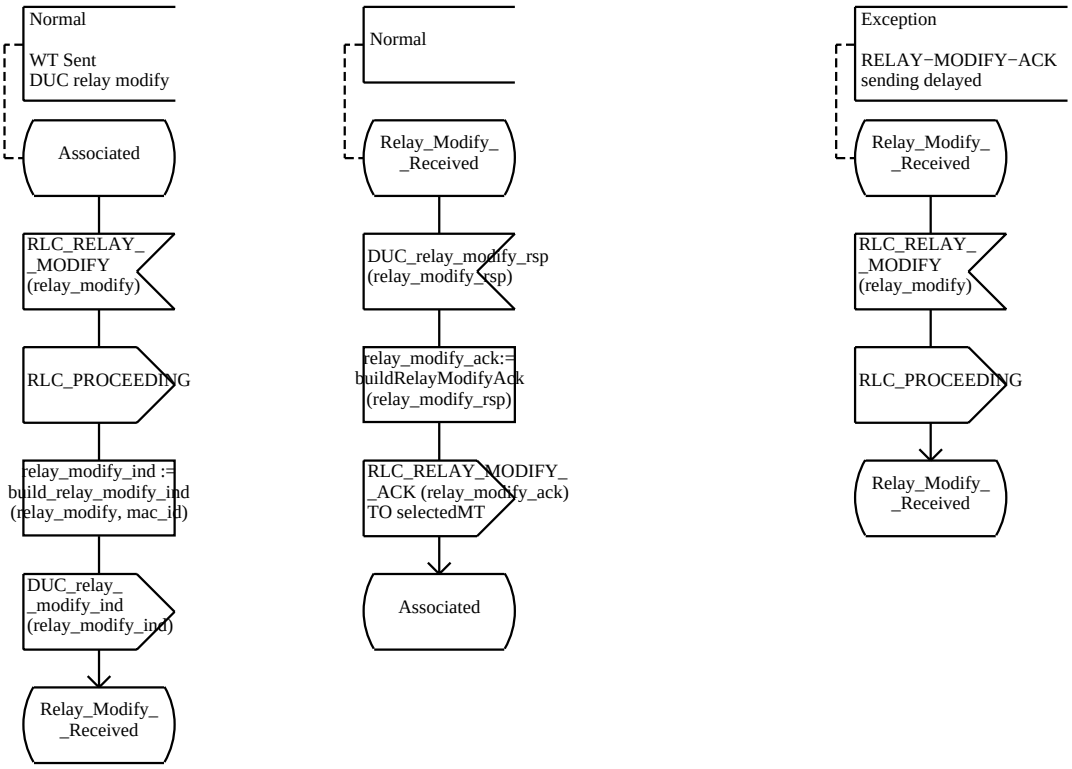
Process Type RLC_HE_CC 15(16)

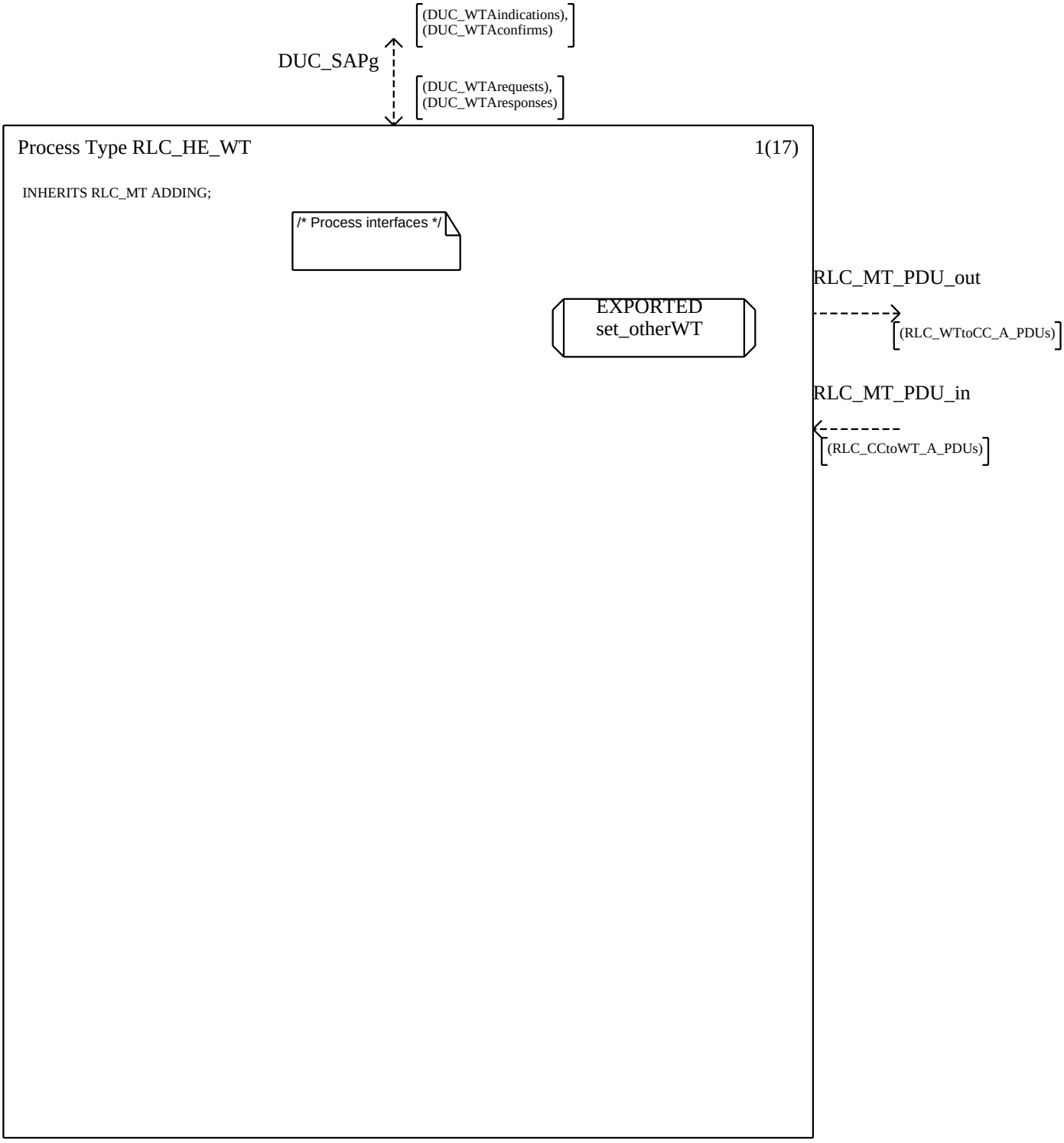
INHERITS RLC_AP ADDING;



Process Type RLC_HE_CC 16(16)

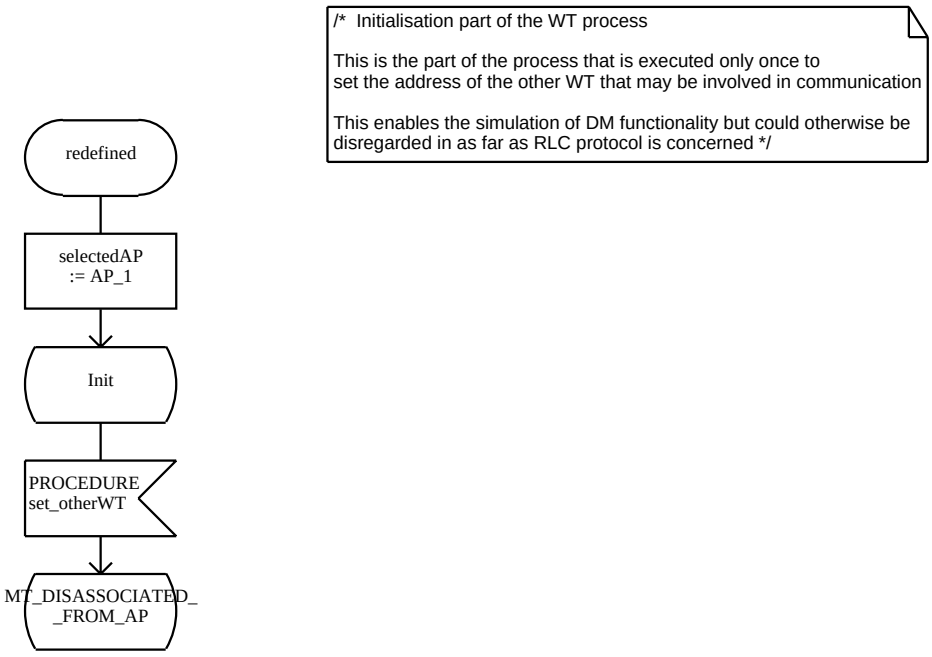
INHERITS RLC_AP ADDING;




(DUC_WTAindications),
(DUC_WTAconfirms)
DUC_SAPg
(DUC_WTArequests),
(DUC_WTAresponses)
Process Type RLC_HE_WT
1(17)
INHERITS RLC_MT ADDING;
/* Process interfaces */
EXPORTED
set_otherWT
RLC_MT_PDU_out
(RLC_WTtoCC_A_PDUs)
RLC_MT_PDU_in
(RLC_CCtoWT_A_PDUs)

Process Type RLC_HE_WT 2(17)

INHERITS RLC_MT ADDING;



Process Type RLC_HE_WT 3(17)

INHERITS RLC_MT ADDING;

/* Process local variables */

```
DCL
   otherWT    PID;
```

```
DCL dm_setup_req     DUC_DM_SETUP_ARG;
DCL dm_setup_ind     DUC_DM_SETUP_ARG;
DCL dm_connect_ind   DUC_DM_CONNECT_ARG;
DCL dm_connect_req   DUC_DM_CONNECT_ARG;
DCL dm_connect_rsp   DUC_DM_CONNECT_ACK_ARG;
DCL dm_connect_cnf   DUC_DM_CONNECT_ACK_ARG;
DCL dm_connect_cmpl_req DUC_DM_CONNECT_COMPLETE_ARG;
DCL dm_connect_cmpl_ind DUC_DM_CONNECT_COMPLETE_ARG;
DCL dm_connect_cmpl_rsp DUC_DM_CONNECT_COMPLETE_ACK_ARG;
DCL dm_connect_cmpl_cnf DUC_DM_CONNECT_COMPLETE_ACK_ARG;
DCL relay_setup_req  DUC_RELAY_SETUP_ARG;
DCL relay_setup_cnf  DUC_RELAY_SETUP_ACK_ARG;

DCL dm_modreq_req   DUC_DM_MODIFY_REQ_ARG;
DCL dm_modreq_ind   DUC_DM_MODIFY_REQ_ARG;
DCL dm_modify_req   DUC_DM_MODIFY_ARG;
DCL dm_modify_ind    DUC_DM_MODIFY_ARG;
DCL dm_modify_rsp    DUC_DM_MODIFY_ACK_ARG;
DCL dm_modify_cnf   DUC_DM_MODIFY_ACK_ARG;
DCL dm_mod_cmpl_ind    DUC_DM_MODIFY_COMPLETE_ARG;
DCL dm_mod_cmpl_rsp    DUC_DM_MODIFY_COMPLETE_ACK_ARG;
DCL relay_modify_req   DUC_RELAY_MODIFY_ARG;
DCL relay_modify_cnf   DUC_RELAY_MODIFY_ACK_ARG;

DCL dm_release_req    DUC_DM_RELEASE_ARG;
DCL dm_release_ind    DUC_DM_RELEASE_ARG;
DCL dm_release_cnf    DUC_DM_RELEASE_ACK_ARG;
DCL dm_release_rsp    DUC_DM_RELEASE_ACK_ARG;
DCL relay_release_req DUC_RELAY_RELEASE_ARG;
DCL relay_release_cnf DUC_RELAY_RELEASE_ACK_ARG;

DCL dm_reset_req DUC_DM_RESET_ARG;
DCL dm_reset_ind DUC_DM_RESET_ARG;
DCL dm_reset_cnf DUC_DM_RESET_ACK_ARG;
DCL dm_reset_rsp DUC_DM_RESET_ACK_ARG;
```

```
DCL dm_setup        RLC_DM_SETUP_ARG;
DCL dm_connect      RLC_DM_CONNECT_ARG;
DCL dm_connect_ack   RLC_DM_CONNECT_ACK_ARG;
DCL dm_connect_cmpl     RLC_DM_CONNECT_COMPLETE_ARG;
DCL dm_connect_cmpl_ack RLC_DM_CONNECT_COMPLETE_ACK_ARG;
DCL relay_setup      RLC_RELAY_SETUP_ARG;
DCL relay_setup_ack  RLC_RELAY_SETUP_ACK_ARG;

DCL dm_modreq       RLC_DM_MODIFY_REQ_ARG;
DCL dm_modify         RLC_DM_MODIFY_ARG;
DCL dm_modify_ack      RLC_DM_MODIFY_ACK_ARG;
DCL dm_modcmpl       RLC_DM_MODIFY_COMPLETE_ARG;
DCL dm_modcmpl_ack     RLC_DM_MODIFY_COMPLETE_ACK_ARG;
DCL relay_modify       RLC_RELAY_MODIFY_ARG;
DCL relay_modify_ack   RLC_RELAY_MODIFY_ACK_ARG;

DCL dm_release       RLC_DM_RELEASE_ARG;
DCL dm_release_ack    RLC_DM_RELEASE_ACK_ARG;
DCL relay_release     RLC_RELAY_RELEASE_ARG;
DCL relay_release_ack RLC_RELAY_RELEASE_ACK_ARG;

DCL dm_reset     RLC_DM_RESET_ARG;
DCL dm_reset_ack RLC_DM_RESET_ACK_ARG;
```

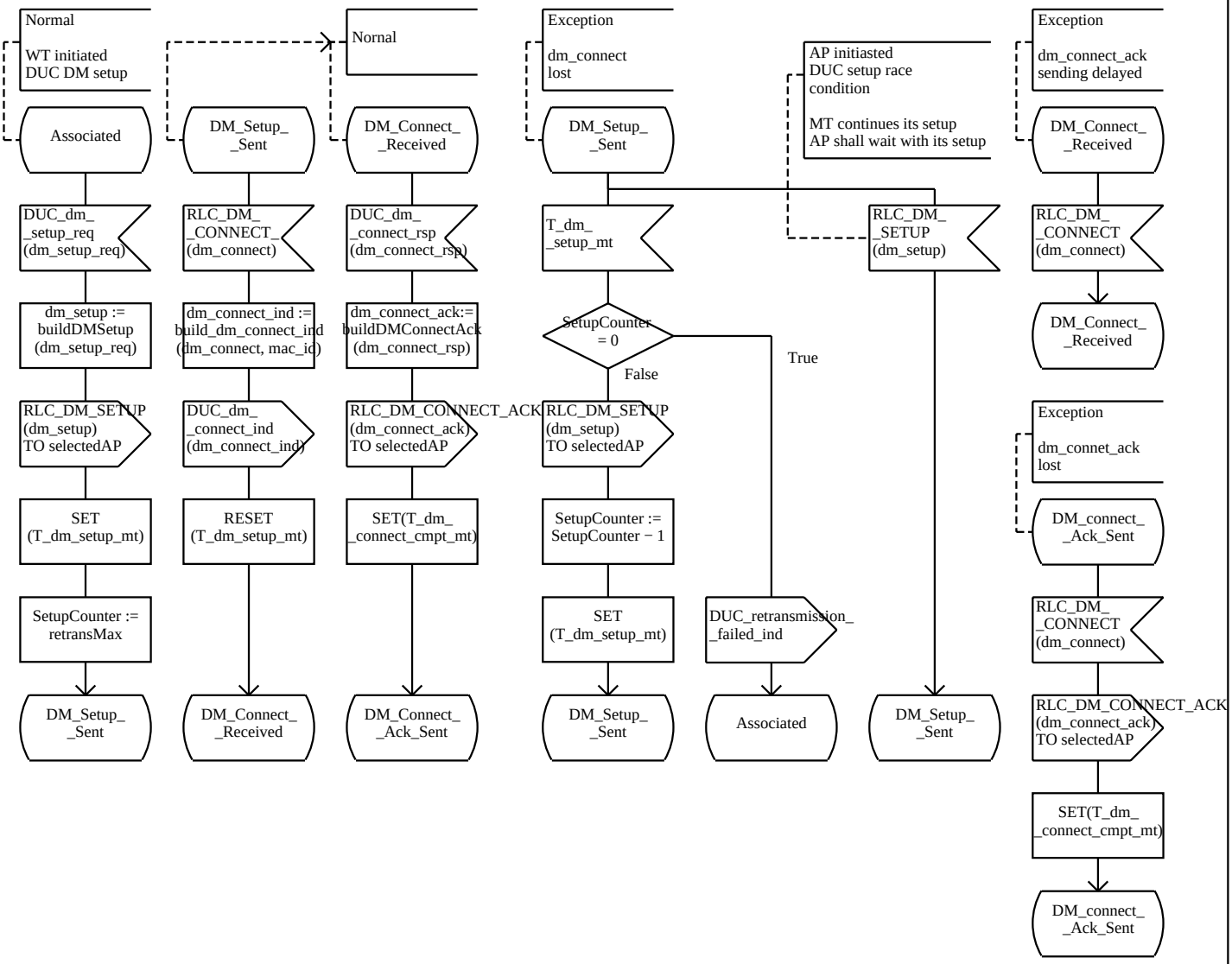
Process Type RLC_HE_WT 4(17)

INHERITS RLC_MT ADDING;

```
TIMER T_dm_setup_mt  := T_dm_setup_mt_duration ;
TIMER T_dm_connect_mt := T_dm_connect_mt_duration ;
TIMER T_dm_connect_cmpt_mt := T_dm_connect_cmpt_mt_duration ;
TIMER T_relay_setup_mt  := T_relay_setup_mt_duration ;
TIMER T_dm_release_mt  := T_dm_release_mt_duration ;
TIMER T_relay_release_mt  := T_relay_release_mt_duration ;
TIMER T_dm_modify_req_mt  := T_dm_modify_req_mt_duration ;
TIMER T_dm_modify_mt  := T_dm_modify_mt_duration ;
TIMER T_dm_modify_cmpt_mt := T_dm_modify_cmpt_mt_duration ;
TIMER T_relay_modify_mt  := T_relay_modify_mt_duration ;
TIMER T_dm_reset_mt := T_dm_reset_mt_duration;
```

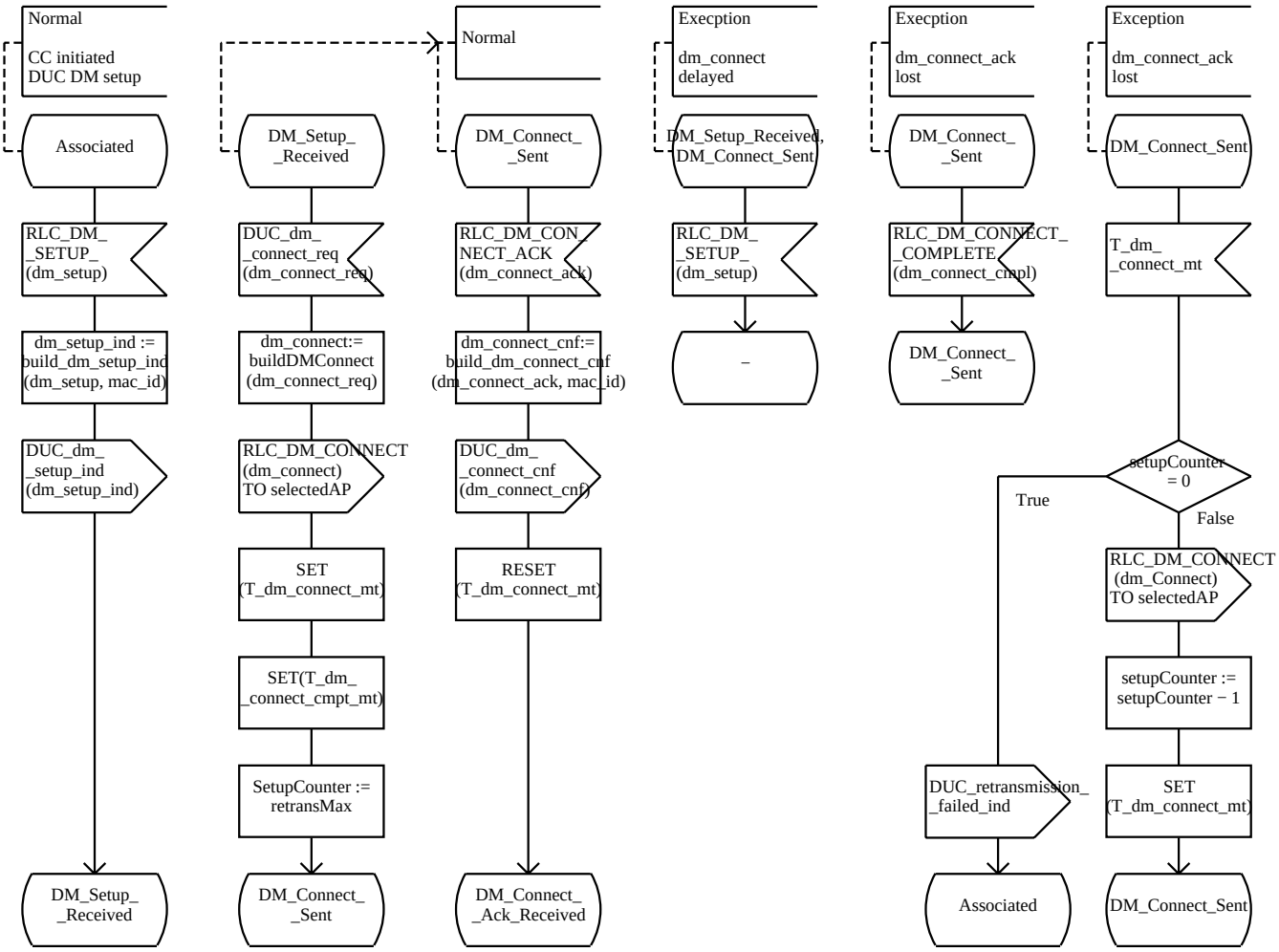
Process Type RLC_HE_WT 5(17)

INHERITS RLC_MT ADDING;



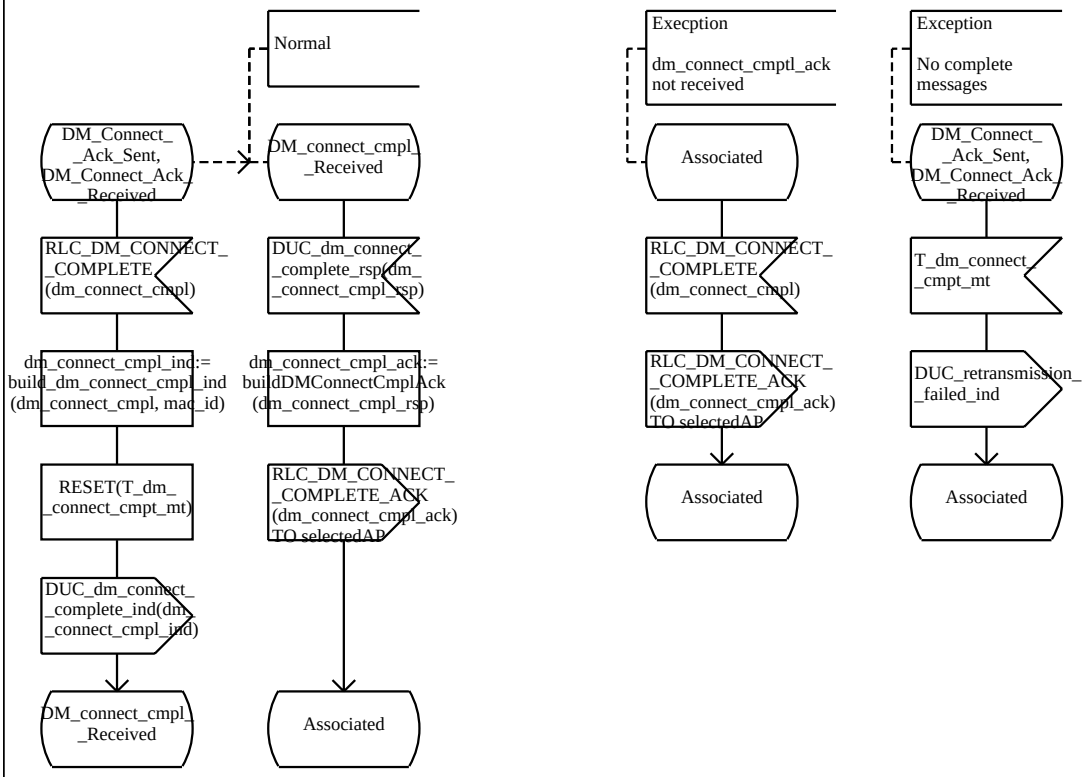
Process Type RLC_HE_WT 6(17)

INHERITS RLC_MT ADDING;



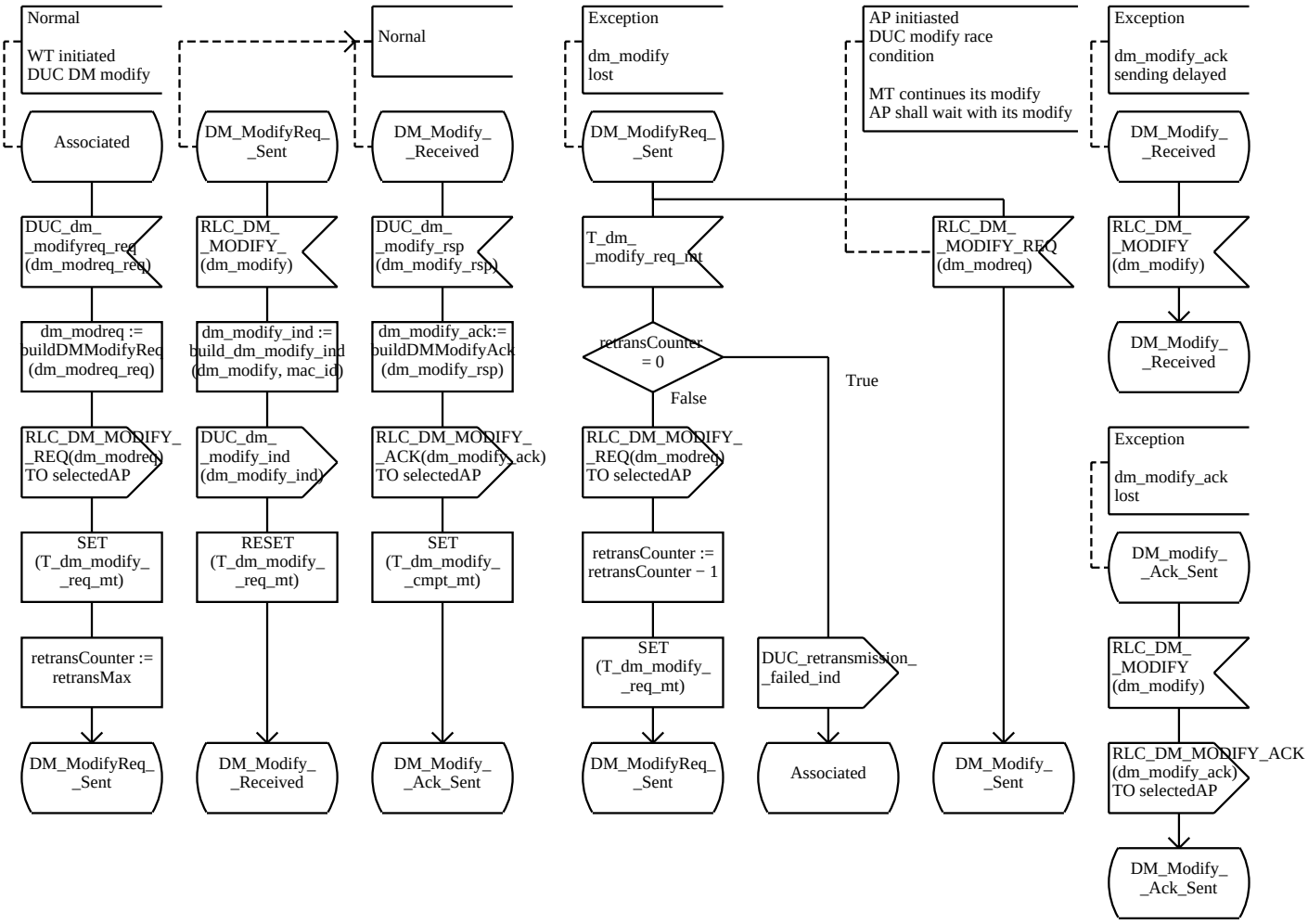
Process Type RLC_HE_WT 7(17)

INHERITS RLC_MT ADDING;



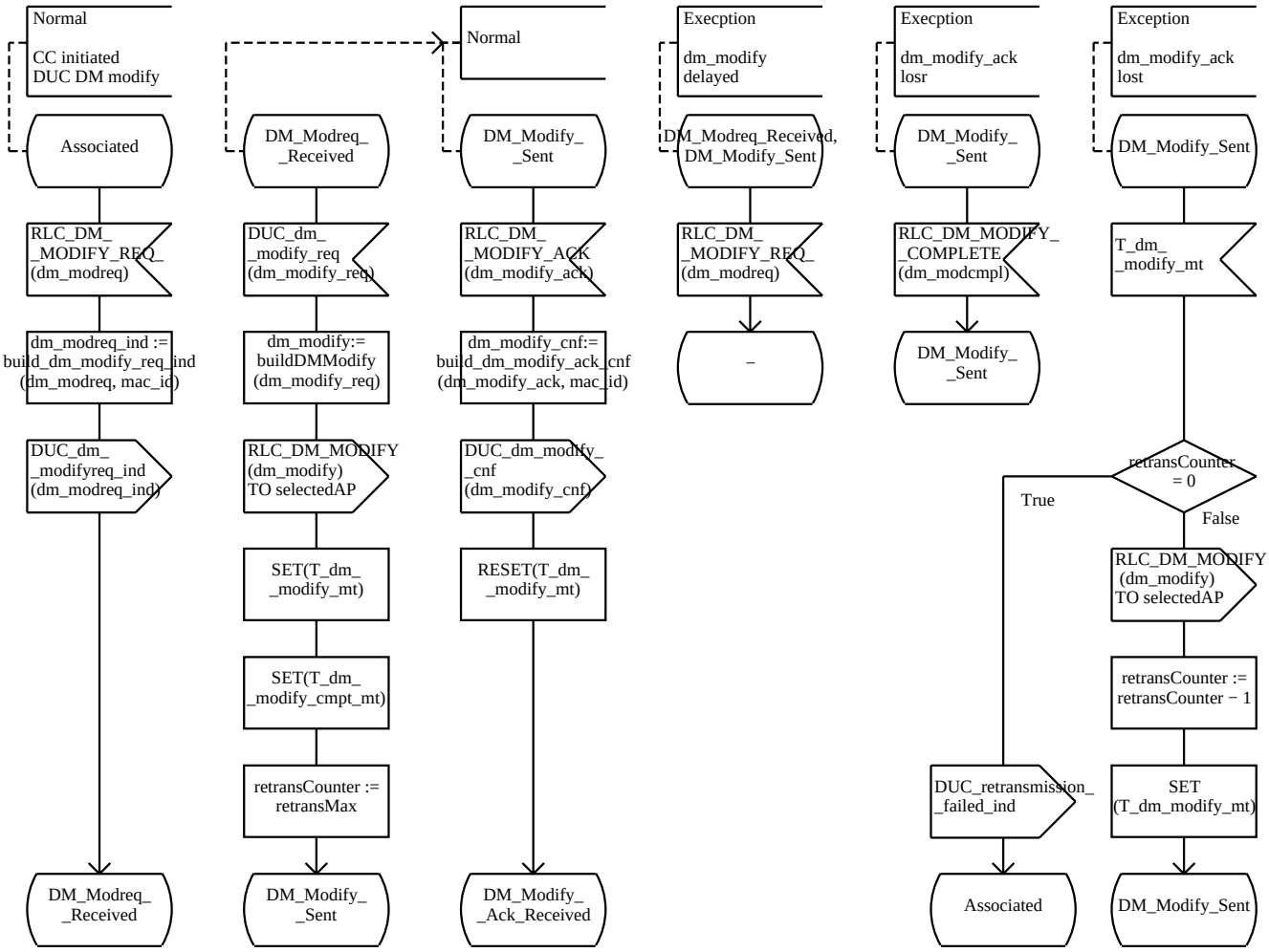
Process Type RLC_HE_WT 8(17)

INHERITS RLC_MT ADDING;



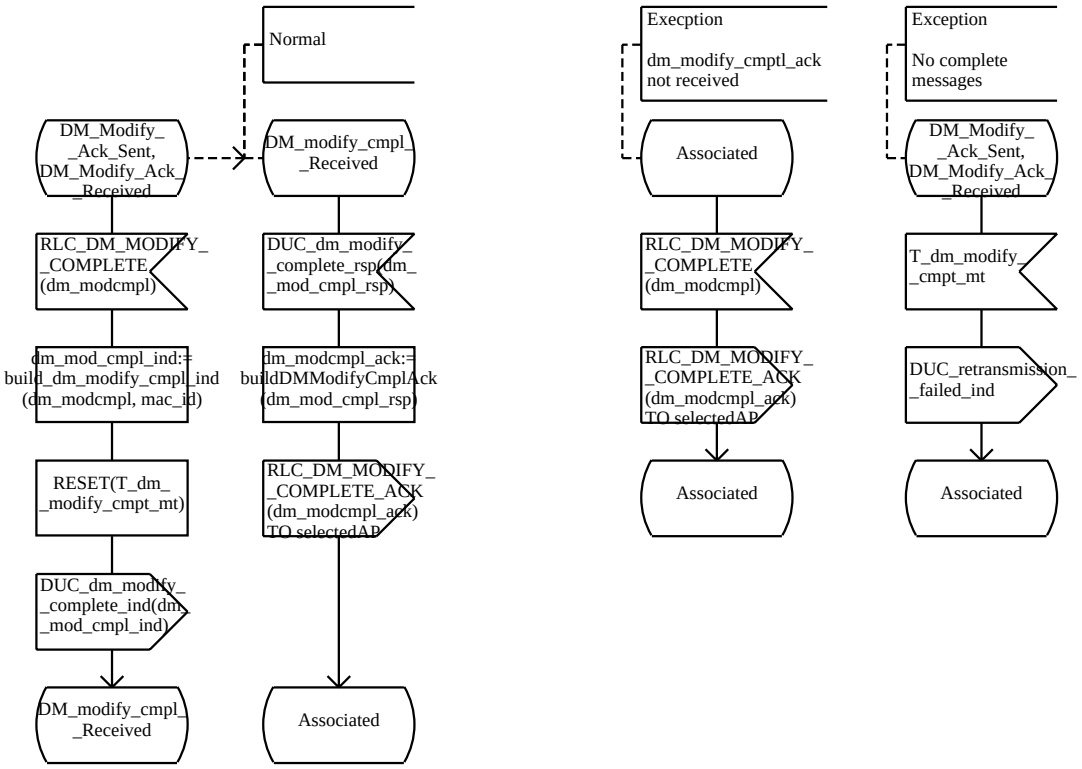
Process Type RLC_HE_WT 9(17)

INHERITS RLC_MT ADDING;



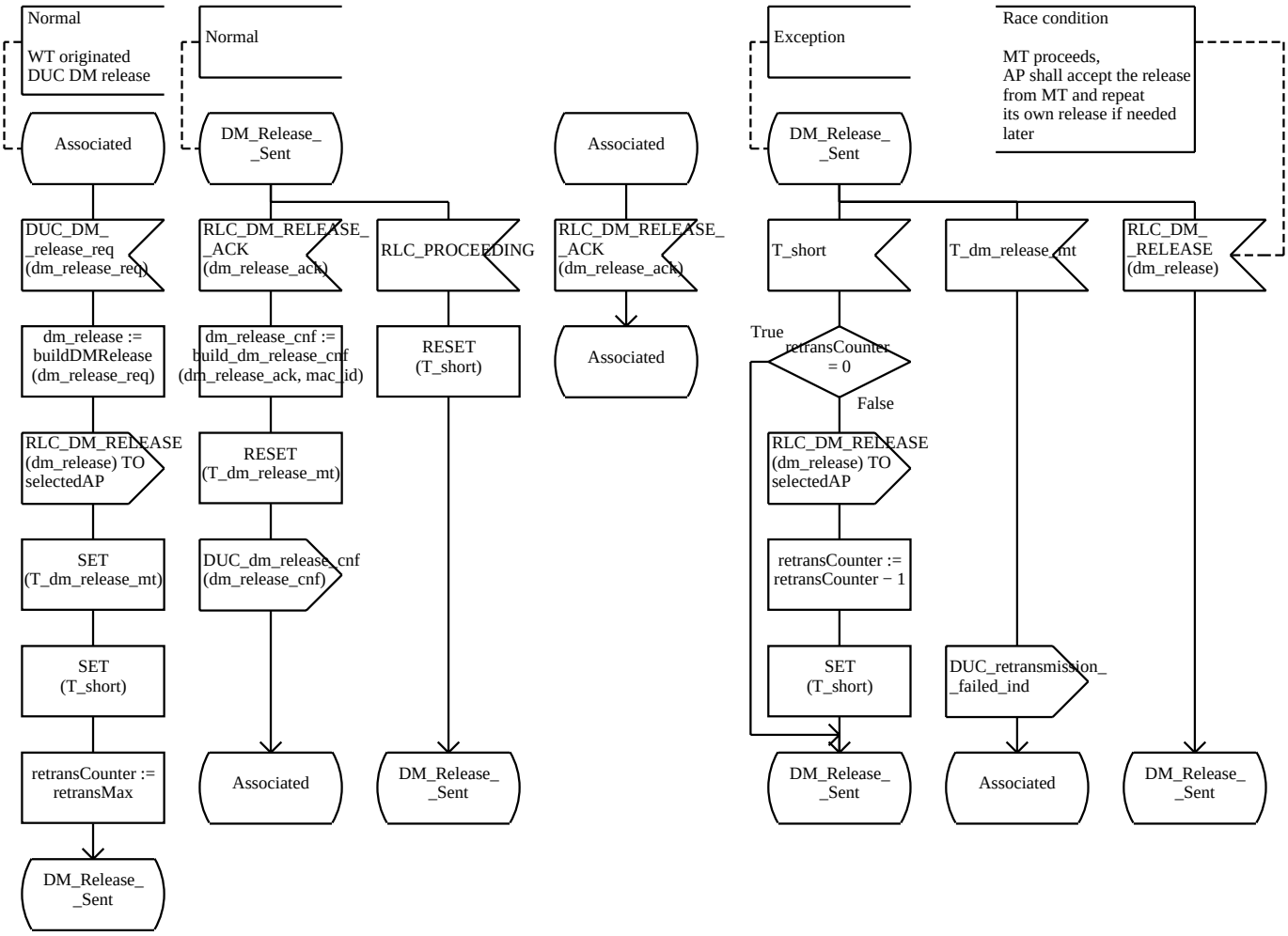
Process Type RLC_HE_WT 10(17)

INHERITS RLC_MT ADDING;



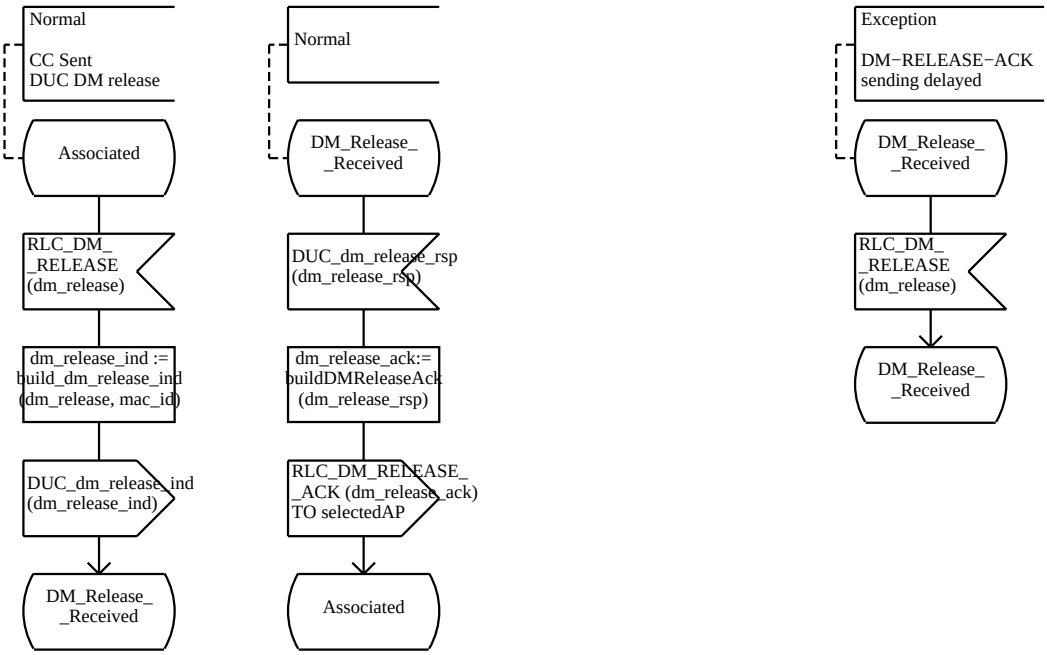
Process Type RLC_HE_WT 11(17)

INHERITS RLC_MT ADDING;



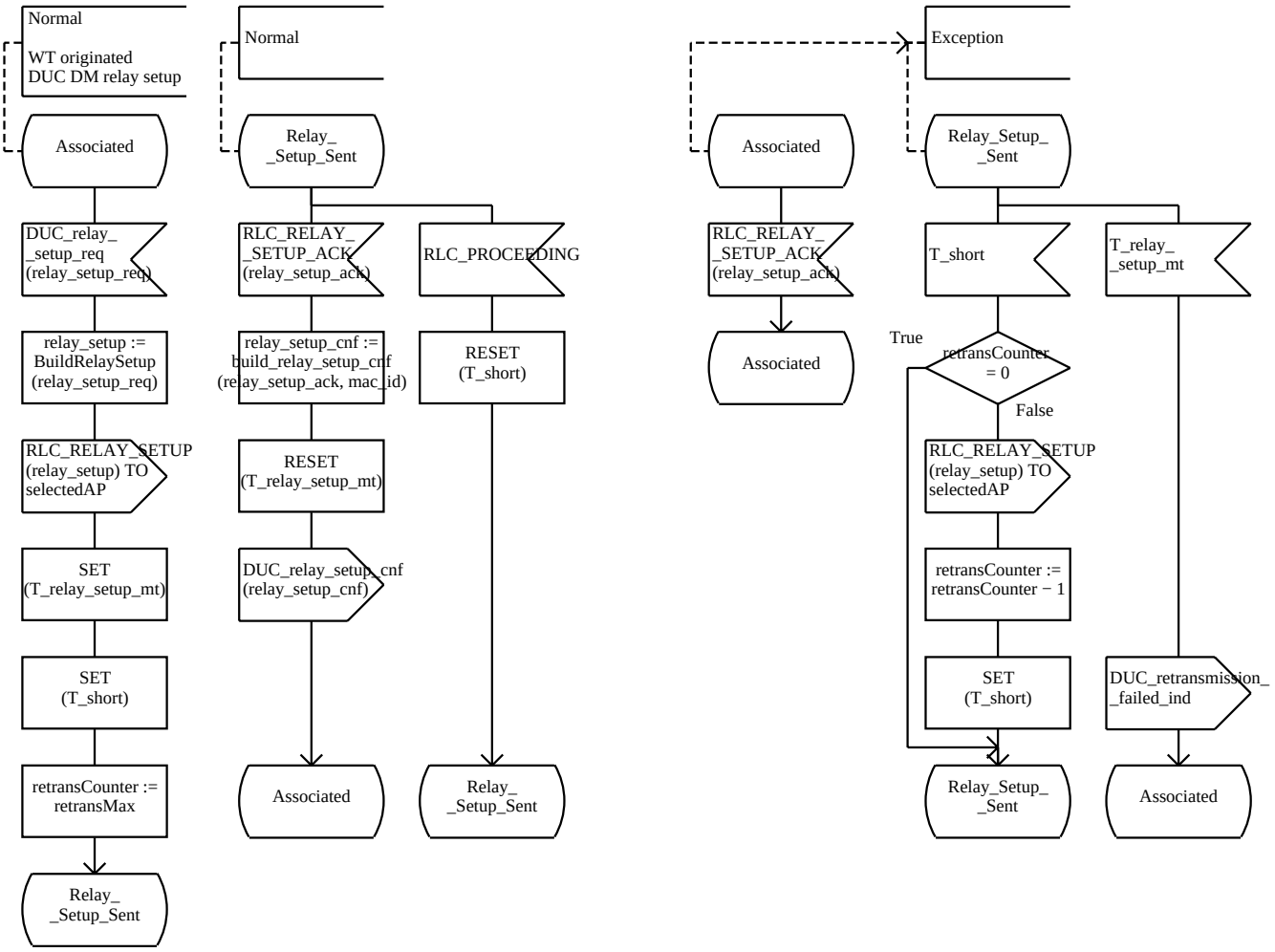
Process Type RLC_HE_WT 12(17)

INHERITS RLC_MT ADDING;



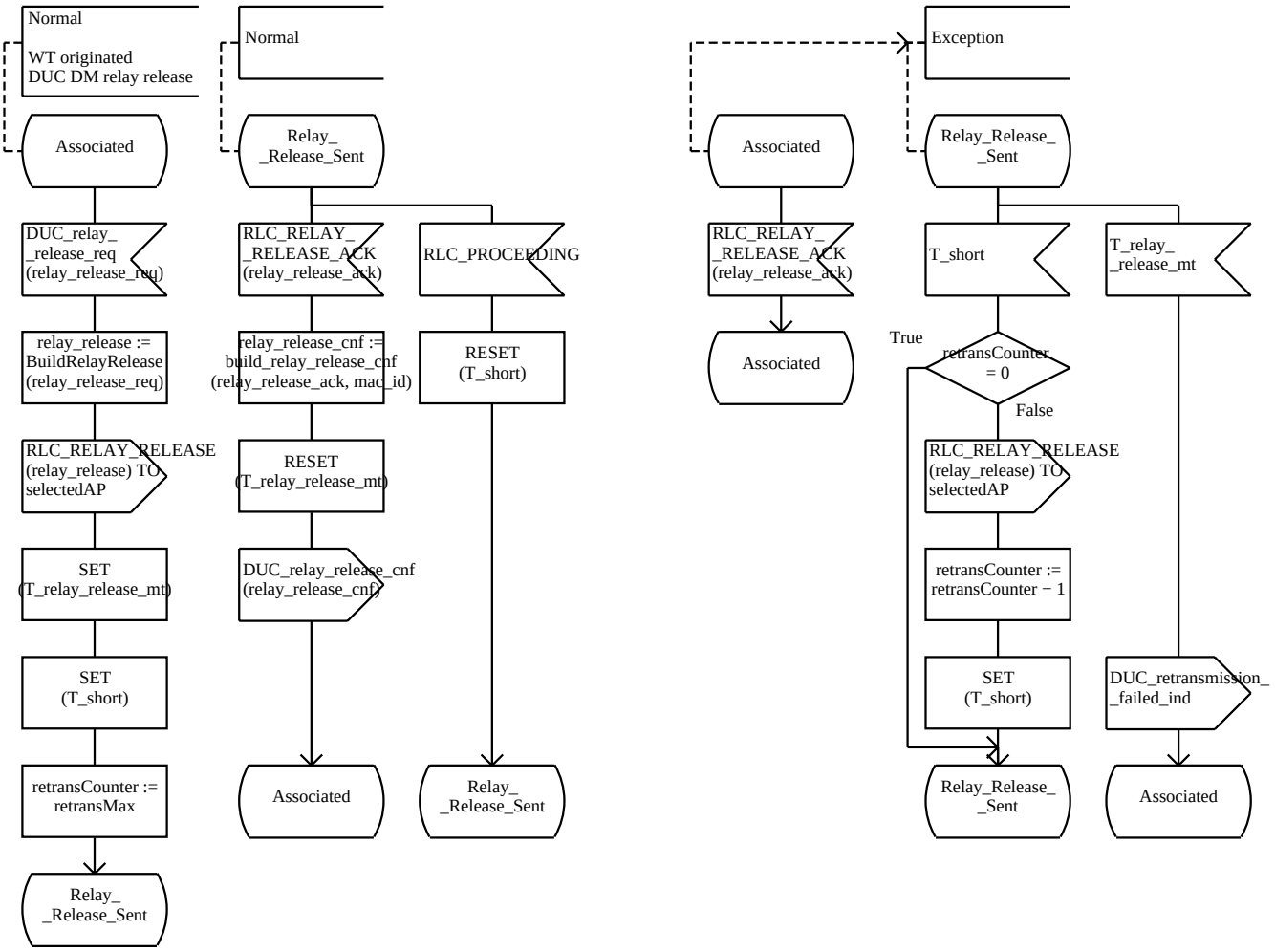
Process Type RLC_HE_WT 13(17)

INHERITS RLC_MT ADDING;



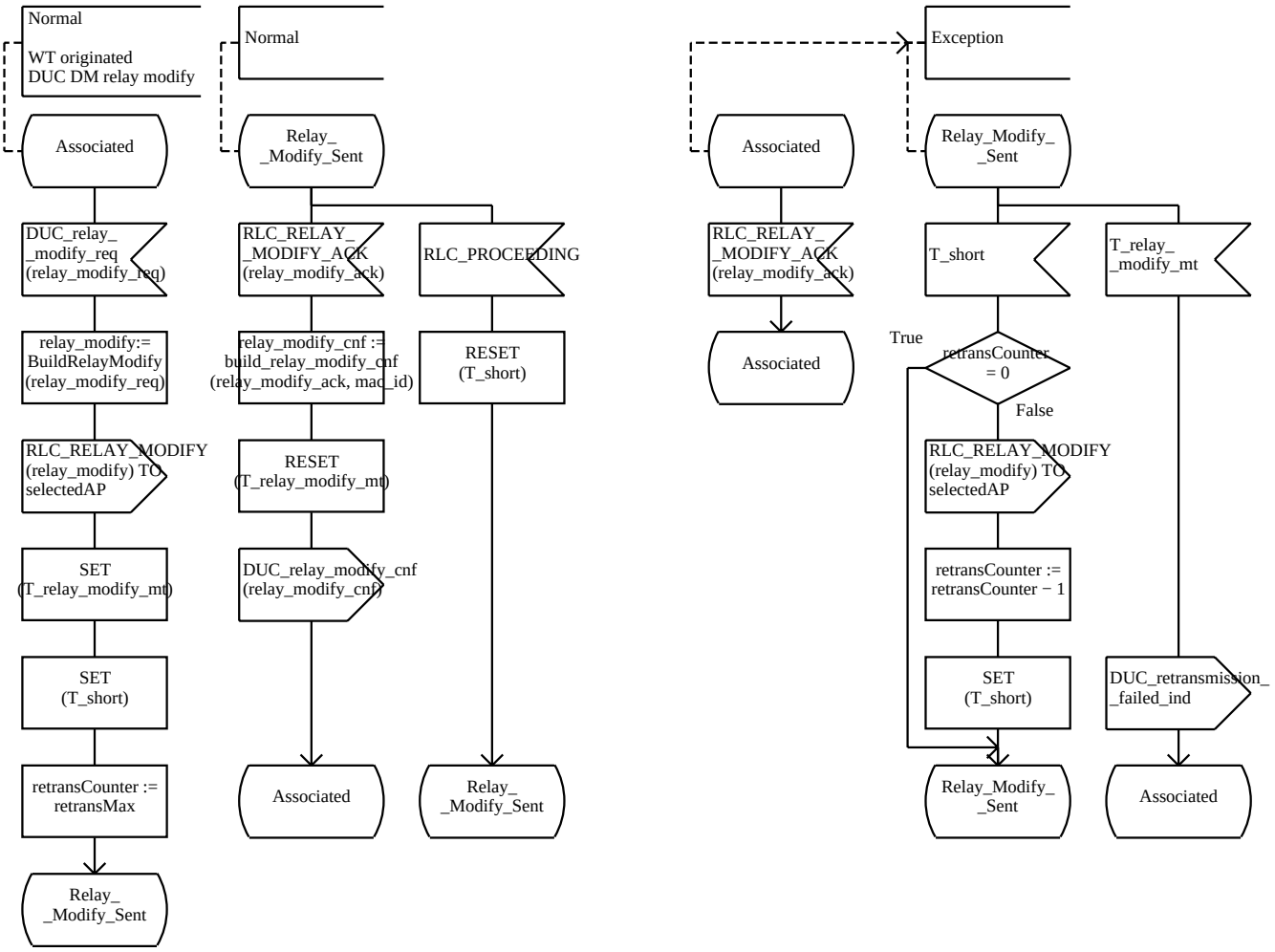
Process Type RLC_HE_WT 14(17)

INHERITS RLC_MT ADDING;



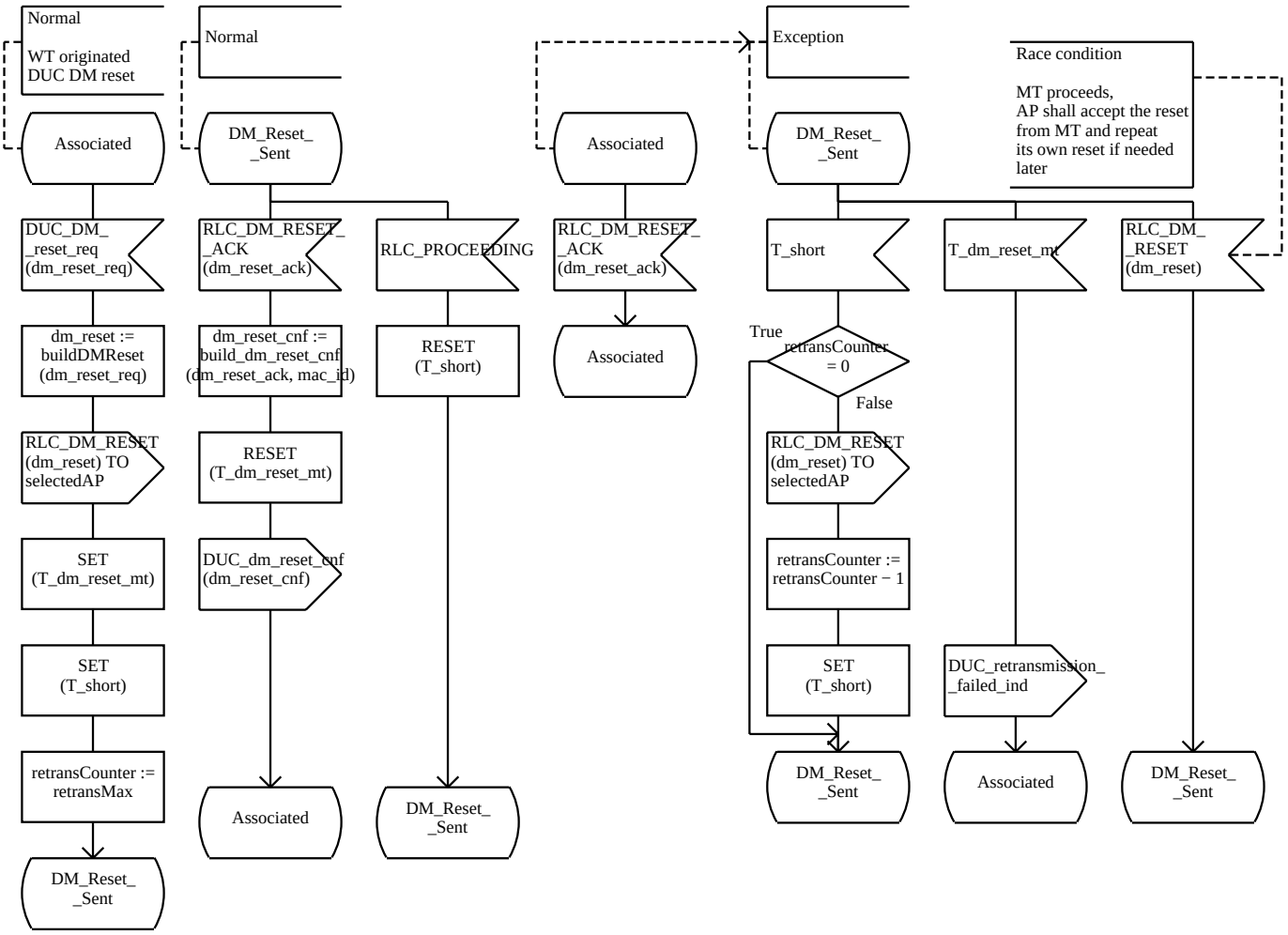
Process Type RLC_HE_WT 15(17)

INHERITS RLC_MT ADDING;



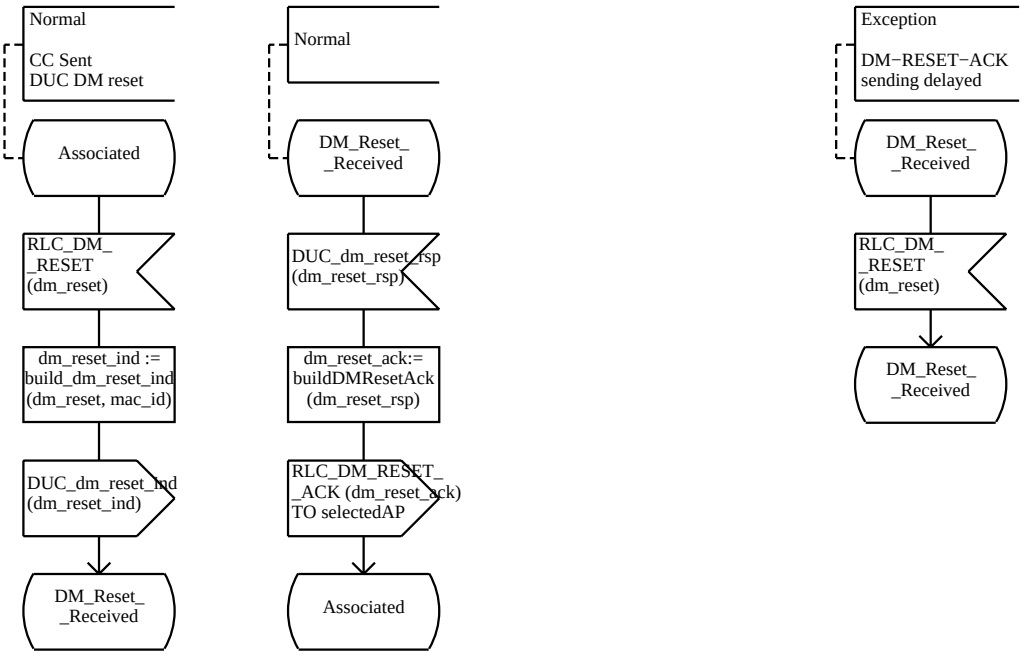
Process Type RLC_HE_WT 16(17)

INHERITS RLC_MT ADDING;



Process Type RLC_HE_WT 17(17)

INHERITS RLC_MT ADDING;



EXPORTED Procedure set_otherWt 1(1)

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;FPAR
    wt     PId;
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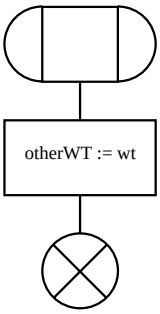
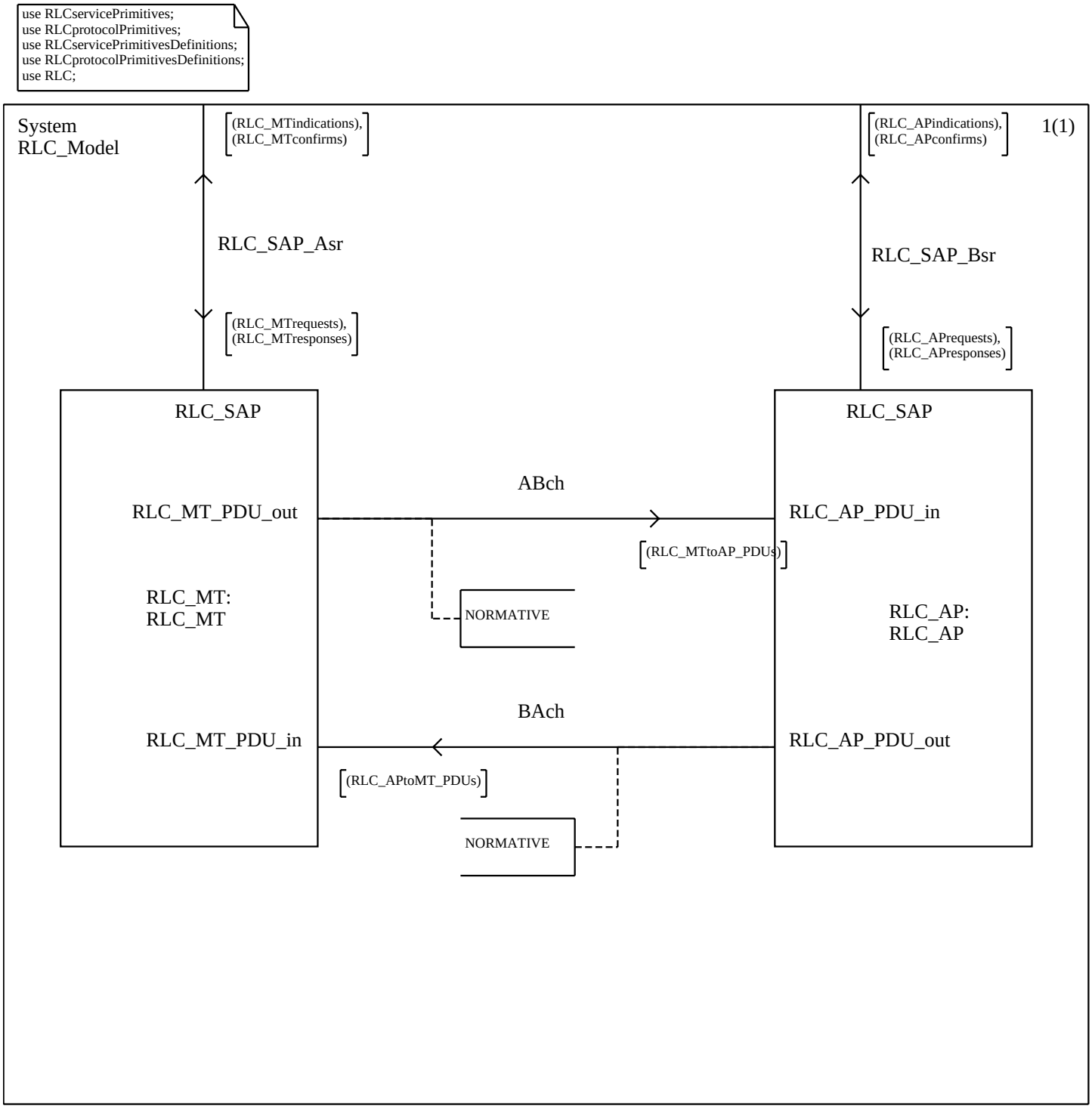
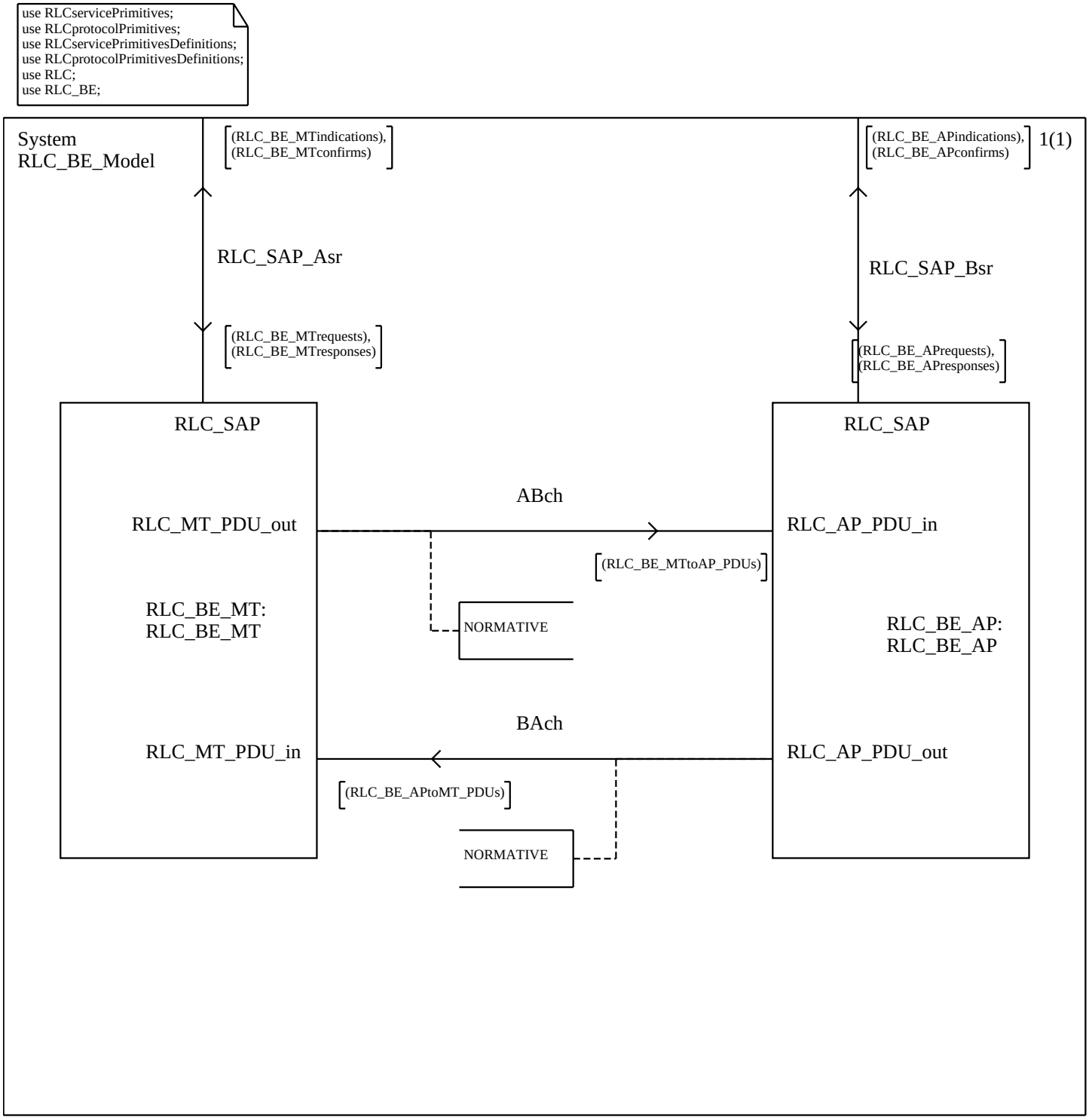
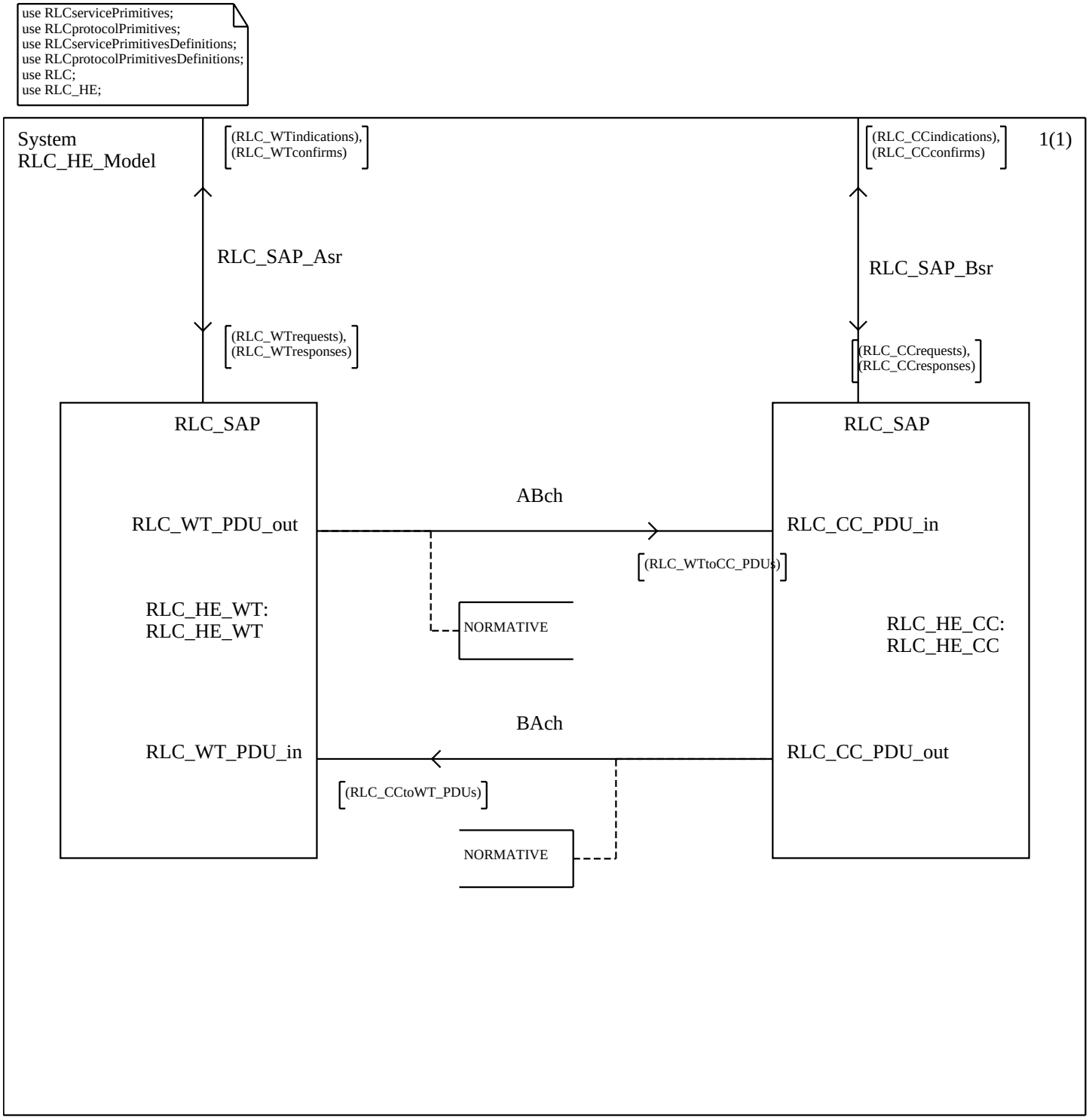



use RLCservicePrimitives;
use RLCprotocolPrimitives;
use RLCservicePrimitivesDefinitions;
use RLCprotocolPrimitivesDefinitions;
use RLC;
System
RLC_Model
(RLC_MTindications),
(RLC_MTconfirms)
(RLC_APindications),
(RLC_APconfirms)
1(1)
RLC_SAP_Asr
RLC_SAP_Bsr
(RLC_MTrequests),
(RLC_MTresponses)
(RLC_APrequests),
(RLC_APresponses)
RLC_SAP
RLC_SAP
ABch
RLC_MT_PDU_out
RLC_AP_PDU_in
(RLC_MTtoAP_PDUs)
RLC_MT:
RLC_MT
NORMATIVE
RLC_AP:
RLC_AP
BAch
RLC_MT_PDU_in
RLC_AP_PDU_out
(RLC_APtoMT_PDUs)
NORMATIVE


use RLCservicePrimitives;
use RLCprotocolPrimitives;
use RLCservicePrimitivesDefinitions;
use RLCprotocolPrimitivesDefinitions;
use RLC;
use RLC_BE;
System
RLC_BE_Model
(RLC_BE_MTindications),
(RLC_BE_MTconfirms)
(RLC_BE_APindications),
(RLC_BE_APconfirms)
1(1)
RLC_SAP_Asr
RLC_SAP_Bsr
(RLC_BE_MTrequests),
(RLC_BE_MTresponses)
(RLC_BE_APrequests),
(RLC_BE_APresponses)
RLC_SAP
RLC_SAP
ABch
RLC_MT_PDU_out
RLC_AP_PDU_in
(RLC_BE_MTtoAP_PDUs)
RLC_BE_MT:
RLC_BE_MT
NORMATIVE
RLC_BE_AP:
RLC_BE_AP
BAch
RLC_MT_PDU_in
RLC_AP_PDU_out
(RLC_BE_APtoMT_PDUs)
NORMATIVE


use RLCservicePrimitives;
use RLCprotocolPrimitives;
use RLCservicePrimitivesDefinitions;
use RLCprotocolPrimitivesDefinitions;
use RLC;
use RLC_HE;
System
RLC_HE_Model
(RLC_WTindications),
(RLC_WTconfirms)
(RLC_CCindications),
(RLC_CCconfirms)
1(1)
RLC_SAP_Asr
RLC_SAP_Bsr
(RLC_WTrequests),
(RLC_WTresponses)
(RLC_CCrequests),
(RLC_CCresponses)
RLC_SAP
RLC_SAP
ABch
RLC_WT_PDU_out
RLC_CC_PDU_in
(RLC_WTtoCC_PDUs)
RLC_HE_WT:
RLC_HE_WT
NORMATIVE
RLC_HE_CC:
RLC_HE_CC
BAch
RLC_WT_PDU_in
RLC_CC_PDU_out
(RLC_CCtoWT_PDUs)
NORMATIVE