by a ~~network side~~network, where the cell timing information includes a non-time reference parameter, and the non-time reference parameter ~~Non-time Reference~~ corresponds to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell;

calculating, by the base station of non-time reference cell, boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to the non-time reference parameter; and

acquiring, by the base station of non-time reference cell, boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

With reference to the first aspect, in a first implementation manner of the first aspect, the calculating boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to the non-time reference parameter includes:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behind τ_{DRX} chips in a start time of F-DPCH CFN n, τ_{DRX} meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τ_{DRX} is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor;$$

T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell; and

T_{TX_diff1} is equal to the Non-time Reference.

With reference to the first aspect, in a second implementation manner of the first aspect, the calculating boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to the non-time reference parameter includes:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH

subframe, where the HS-SCCH subframe is an HS-SCCH subframe behind τ_{DRX} chips in a start time of F-DPCH CFN n, τ_{DRX} meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τ_{DRX} is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor;$$

T_{TX_diff1} is equal to the Non-time Reference; and

if T_{TX_diff3} is less than ~~or equal to~~ 7680×1.5, less than ~~or equal to~~ 7680×2, or less than ~~or equal to~~ 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, where

T_{TX_diff3} is equal to a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

With reference to the first aspect, in a third implementation manner of the first aspect, the calculating boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to the non-time reference parameter includes:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behind τ_{DRX} chips in a start time of F-DPCH CFN n, τ_{DRX} meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τ_{DRX} is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor; \text{ and}$$

if T_{TX_diff3} is less than ~~or equal to~~ 7680×1.5, less than ~~or equal to~~ 7680×2, or less than ~~or equal to~~ 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the Non-time Reference; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and T_{TX_diff1} is equal to the Non-time Reference plus 7680, where

T_{TX_diff3} is a timing difference between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

With reference to any one of the first to third implementation manners of the first aspect, in a fourth implementation manner of the first aspect, the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH includes:

when a UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280-$\left|T_{TX_diff2} - T_{TX_diff1}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

With reference to the third aspect or the first implementation manner of the third aspect, in a ~~third~~ fourth implementation manner of the third aspect, the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH includes:

determining boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff,A}-T_{TX_diff,B}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

According to a fourth aspect, an embodiment of the present invention provides a channel boundary locating method, including:

calculating, by a user equipment (UE), boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell; and

acquiring, by the UE, boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

With reference to the fourth aspect, in a first implementation manner of the fourth aspect, the calculating boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell includes:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behind τ_{DRX} chips in a start time of F-DPCH CFN n, τ_{DRX} meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τ_{DRX} is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor;$$

T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell; and

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell.

With reference to the fourth aspect, in a second implementation manner of the fourth aspect, the calculating boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell includes:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behind τ_{DRX} chips in a start time of F-DPCH CFN n, τ_{DRX} meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τ_{DRX} is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor;$$

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or ~~less than or equal to~~less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, where

T_{TX_diff3} is a timing difference between a downlink F-DPCH frame of non-time

reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff1} are in a same HS-DPCCH subframe.

With reference to the fourth aspect, in a third implementation manner of the fourth aspect, the calculating boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell includes:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behind τ_{DRX} chips in a start time of F-DPCH CFN n, τ_{DRX} meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τ_{DRX} is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor; \text{ and}$$

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or ~~less than or equal to~~less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and T_{TX_diff1} is equal to 7680 plus the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell, where

T_{TX_diff3} is a timing difference between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell are in a same HS-DPCCH subframe.

With reference to any one of the first to third implementation manners of the fourth aspect, in a fourth implementation manner of the fourth aspect, the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH includes:

when the UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280-$|T_{TX_diff2} - T_{TX_diff1}|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

With reference to any one of the first to third implementation manners of the ~~third~~ fourth aspect, in a fifth implementation manner of the ~~third~~ fourth aspect, the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH includes:

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280+$|T_{TX_diff2} - T_{TX_diff1}|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

With reference to any implementation manner of the first to third implementation manners of the ~~third~~ fourth aspect, in a sixth implementation manner of the ~~third~~ fourth aspect, the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH includes:

determining boundary information of an HS-DPCCH subframe that is closest in time to

HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

With reference to the sixth aspect or the first possible implementation manner of the sixth aspect, in a third possible implementation manner of the sixth aspect, the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH includes:

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to $1280+\left|T_{TX_diff,B}-T_{TX_diff,A}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

With reference to the sixth aspect or the first possible implementation manner of the sixth aspect, in a fourth possible implementation manner of the sixth aspect, the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH includes:

determining boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff,A}-T_{TX_diff,B}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

According to a seventh aspect, an embodiment of the present invention provides a base station, including:

a receiving module, configured to receive cell timing information delivered by a ~~network side~~network, where the cell timing information includes a non-time reference parameter, and the non-time reference parameter ~~Non-time Reference~~ corresponds to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell; and

a processing module, configured to calculate boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to the non-time reference parameter, where:

the processing module is further configured to acquire boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

T_{TX_diff1} is equal to the Non-time Reference; and

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or ~~less than or equal to~~less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, where

T_{TX_diff3} is equal to a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

With reference to the seventh aspect, in a third implementation manner of the seventh aspect, the processing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behind τ_{DRX} chips in a start time of F-DPCH CFN n, τ_{DRX} meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τ_{DRX} is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$; and

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or ~~less than or equal to~~less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the Non-time Reference; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to a smallest timing difference between a

and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor;$$

T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell; and

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell.

With reference to the tenth aspect, in a second implementation manner of the tenth aspect, the preprocessing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behind τ_{DRX} chips in a start time of F-DPCH CFN n, τ_{DRX} meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τ_{DRX} is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor;$$

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or ~~less than or equal to~~less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, where

T_{TX_diff3} is a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic

retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff1} are in a same HS-DPCCH subframe.

With reference to the tenth aspect, in a third implementation manner of the tenth aspect, the preprocessing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behind τ_{DRX} chips in a start time of F-DPCH CFN n, τ_{DRX} meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τ_{DRX} is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor; \text{ and}$$

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or ~~less than or equal to~~less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and T_{TX_diff1} is equal to 7680 plus the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell, where

T_{TX_diff3} is a timing difference between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH

subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell are in a same HS-DPCCH subframe.

With reference to any one of the first to third implementation manners of the tenth aspect, in a fourth implementation manner of the ~~seventh~~ tenth aspect, the processing module is further configured to:

when the UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to 1280-$|T_{TX_diff2} - T_{TX_diff1}|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

With reference to any one of the first to third implementation manners of the tenth aspect, in a fifth implementation manner of the ~~seventh~~ tenth aspect, the processing module is further configured to:

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to 1280+$|T_{TX_diff2} - T_{TX_diff1}|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

With reference to any one of the first to third implementation manners of the tenth aspect, in a sixth implementation manner of the ~~seventh~~ tenth aspect, the processing module is further configured to:

determine boundary information of an HS-DPCCH subframe that is closest in time to 1280+$T_{TX_diff1} - T_{TX_diff2}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

According to an eleventh aspect, an embodiment of the present invention provides a user equipment (UE), including:

a preprocessing module, configured to calculate boundary information HS-SCCH

CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

With reference to the twelfth aspect or the first possible implementation manner of the twelfth aspect, in a fourth possible implementation manner of the twelfth aspect, the processing module is further configured to:

determine boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff,A}-T_{TX_diff,B}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

According to a thirteenth aspect, an embodiment of the present invention provides a base station, including a memory and a processor, where the memory is connected to the processor; and

the memory stores an execution instruction; and when the base station runs, the processor communicates with the memory, and the processor executes the execution instruction, so that the base station executes the method according to any one of the first to third aspects.

According to a fourteenth aspect, an embodiment of the present invention provides a user equipment (UE), including a memory and a processor, where the memory is connected to the processor; and

the memory stores an execution instruction; and when the ~~base station~~UE runs, the processor communicates with the memory, and the processor executes the execution instruction, so that the ~~base station~~UE executes the method according to any one of the ~~second~~ fourth to sixth aspects ~~and the third aspect~~.

According to the channel boundary locating method, the base station, and the user equipment provided in the embodiments of the present invention, a non-time reference cell receives cell timing information delivered by a ~~network side~~network, and adjusts an HS-DPCCH boundary of non-time reference cell, where the cell timing information includes a non-time reference parameter, and the non-time reference parameter corresponds to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell. This implements that the non-time reference cell accurately locates the HS-DPCCH boundary, so that the non-time reference cell can learn correct data transmission feedback information and CQI information, which improves reliability of downlink data transmission, and resolves a problem in the prior art that a non-time reference cell incorrectly locates an HS-DPCCH boundary, which eventually affects performance of downlink data transmission.

BRIEF DESCRIPTION OF DRAWINGS

To describe the technical solutions in the embodiments of the present invention or in the prior art more clearly, the following briefly introduces the accompanying drawings required for describing the embodiments ~~or the prior art~~. Apparently, the accompanying drawings in the following description show some embodiments of the present invention, and persons of ordinary skill in the art may still derive other drawings from these accompanying drawings without creative efforts.

FIG. 1 is a flowchart of Embodiment 1 of a channel boundary locating method according to the present invention;

FIG. 1A is a first schematic diagram of a timing difference in Embodiment 1 of a channel boundary locating method according to the present invention;

FIG. 1B is a second schematic diagram of a timing difference in Embodiment 1 of a channel boundary locating method according to the present invention;

FIG. 2 is a flowchart of Embodiment 2 of a channel boundary locating method according to the present invention;

FIG. 3 is a flowchart of Embodiment 3 of a channel boundary locating method according to the present invention;

FIG. 4 is a flowchart of Embodiment 4 of a channel boundary locating method according to the present invention;

FIG. 5 is a flowchart of Embodiment ~~4~~ 5 of a channel boundary locating method according to the present invention;

FIG. 6 is a flowchart of Embodiment ~~4~~ 6 of a channel boundary locating method according to the present invention;

FIG. 7 is a schematic structural diagram of Embodiment 1 of a base station according to the present invention;

FIG. 8 is a schematic structural diagram of Embodiment 2 of a base station according to the present invention;

FIG. 9 is a schematic structural diagram of Embodiment 1 of a user equipment (UE) according to the present invention;

FIG. 10 is a schematic structural diagram of Embodiment 3 of a base station according to the present invention; and

FIG. 11 is a schematic structural diagram of Embodiment 2 of a user equipment (UE) according to the present invention.

DESCRIPTION OF EMBODIMENTS

To make the objectives, technical solutions, and advantages of the embodiments of the present invention clearer, the following clearly ~~and completely~~ describes the technical solutions in the embodiments of the present invention with reference to the accompanying drawings in the embodiments of the present invention. Apparently, the described embodiments are some but not all of the embodiments of the present invention. All other embodiments obtained by persons of ordinary skill in the art based on the embodiments of the present invention without creative efforts shall fall within the protection scope of the present invention.

It should be noted that "$\lceil \cdot \rceil \lfloor \cdot \rfloor$" in the present invention are symbols denoting rounding up and rounding down, respectively, and a function of round() denotes a function of rounding off.

FIG. 1 is a flowchart of Embodiment 1 of a channel boundary locating method according to the present invention. This embodiment is executed by a base station, where the base station may be a base station of non-time reference cell, and the base station may be implemented by using software and/or hardware. As shown in FIG. 1, the method according to this embodiment may include:

Step 101: A base station of non-time reference cell receives cell timing information delivered by a ~~network side~~network, where the cell timing information includes a non-time reference parameter, and the non-time reference parameter ~~Non-time Reference~~ corresponds to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell.

Step 102: The base station of non-time reference cell calculates boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to the non-time reference parameter.

Step 103: The base station of non-time reference cell acquires boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

Specifically, the base station of non-time reference cell receives the cell timing information delivered by the ~~network side~~network, where the cell timing information includes the non-time reference parameter ~~Non-time Reference~~, and the Non-time Reference refers to the smallest timing difference, that is, smallest T_{TX_diff}, between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; calculates the boundary information of the HS-SCCH according to the non-time reference parameter; and eventually obtains the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH.

Optionally, the calculating boundary information HS-SCCH CFN_DRX n of a high speed

T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor;$$

T_{TX_diff1} is equal to the Non-time Reference; and

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or ~~less than or equal to~~less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, where

T_{TX_diff3} is equal to a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

Specifically, the HS-PDSCH subframe corresponding to T_{TX_diff3} is the HS-PDSCH subframe that is used for calculating the timing difference between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell, and the HARQ-ACK field corresponding to the HS-PDSCH subframe and the HARQ-ACK field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in the same HS-DPCCH subframe.

Optionally, the calculating boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to the non-time reference parameter includes:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behindτDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0

is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor; \text{ and}$$

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or less than ~~or equal to~~ 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the Non-time Reference; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and T_{TX_diff1} is equal to the Non-time Reference plus 7680, where

T_{TX_diff3} is a timing difference between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

Optionally, the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH includes:

when a UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280-$|T_{TX_diff2} - T_{TX_diff1}|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

$T_{TX_diff1} = T_{TX_diff2} \pm \tau_{DIFF} + (\tau_{F-DPCH2} - \tau_{F-DPCH1})$ (1), where

$\tau_{F-DPCH1}$ and $\tau_{F-DPCH2}$ represent timing of F-DPCHs of time reference cell and the non-time reference cell, respectively; and

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor .$$

According to formula (1), it may be obtained that $\tau_{DIFF} = | T_{TX_diff2} - T_{TX_diff1} + \tau_{F-DPCH2} - \tau_{F-DPCH1} |$ because

$$| T_{TX_diff2} - T_{TX_diff1} | - | \tau_{F-DPCH2} - \tau_{F-DPCH1} | \le | T_{TX_diff2} - T_{TX_diff1} + \tau_{F-DPCH2} - \tau_{F-DPCH1} | \le | T_{TX_diff2} - T_{TX_diff1} | + | \tau_{F-DPCH2} - \tau_{F-DPCH1} |$$

and a maximum value of $| \tau_{F-DPCH2} - \tau_{F-DPCH1} |$ is equal to 128 chips.

Therefore, $| T_{TX_diff2} - T_{TX_diff1} | - 128 \le | T_{TX_diff2} - T_{TX_diff1} + \tau_{F-DPCH2} - \tau_{F-DPCH1} | \le | T_{TX_diff2} - T_{TX_diff1} | + 128$, that is, $| T_{TX_diff2} - T_{TX_diff1} + \tau_{F-DPCH2} - \tau_{F-DPCH1} |$ and $| T_{TX_diff2} - T_{TX_diff1} |$ are different by 128 chips at most, where 128 chips are much shorter than a length of half a subframe.

In practice, an accurate value of τ_{DIFF} cannot be obtained easily, and HS-DPCCH CFN_DRX is defined as "a subframe closest in time" in the description; therefore, $|T_{TX_diff2} - T_{TX_diff1}|$ may be used to replace τ_{DIFF} calculated according to formula (1). That is, 1280-/+$|T_{TX_diff2} - T_{TX_diff1}|$ or 1280+$T_{TX_diff1} - T_{TX_diff2}$ is used in HS-DPCCH CFN_DRX, so that no boundary error occurs, and fairly accurate boundary information of the HS-DPCCH can be obtained.

In this embodiment, a non-time reference cell receives cell timing information delivered by a ~~network side~~network, and adjusts an HS-DPCCH boundary of non-time reference cell, where the cell timing information includes a non-time reference parameter, and the non-time reference parameter corresponds to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell. This implements that the non-time reference cell accurately locates the HS-DPCCH boundary, so that the non-time reference cell can learn correct data transmission feedback information and CQI information, which improves reliability of downlink data transmission, and resolves a problem in the prior art that a non-time reference cell incorrectly locates an HS-DPCCH boundary, which eventually affects performance of downlink data transmission.

FIG. 2 is a flowchart of Embodiment 2 of a channel boundary locating method according to the present invention. This embodiment is executed by a base station, where the base station may be a

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or ~~less than or equal to~~less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, where

T_{TX_diff3} is a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff1} are in a same HS-DPCCH subframe.

Optionally, the calculating boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell includes:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behindτDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$; and

if T_{TX_diff3} is less than ~~or equal to~~ 7680×1.5, ~~less than or equal to~~less than 7680×2, or less than ~~or equal to~~ 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560}-0.9}{3} \right\rfloor$;

T_{TX_diff1} is equal to the Non-time Reference; and

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or ~~less than or equal to~~less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, where

T_{TX_diff3} is equal to a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

Optionally, the processing module 702 is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behindτDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560}-0.9}{3} \right\rfloor$; and

if T_{TX_diff3} is less than ~~or equal to~~ 7680×1.5, less than ~~or equal to~~ 7680×2, or less than ~~or equal to~~ 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the Non-time Reference; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or

Optionally, the preprocessing module 901 is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behindτDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor;$$

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or ~~less than or equal to~~less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, where

T_{TX_diff3} is a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff1} are in a same HS-DPCCH subframe.

Optionally, the preprocessing module 901 is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, where the HS-SCCH subframe is an HS-SCCH subframe behindτDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, where

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, where

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$; and

if T_{TX_diff3} is ~~less than or equal to~~less than 7680×1.5, ~~less than or equal to~~less than 7680×2, or ~~less than or equal to~~less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and T_{TX_diff1} is equal to 7680 plus the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell, where

T_{TX_diff3} is a timing difference between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell are in a same HS-DPCCH subframe.

Optionally, the processing module 902 is further configured to:

when the UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to 1280-$\left|T_{TX_diff2} - T_{TX_diff1}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, where n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH

CLAIMS

1. A channel boundary locating method, comprising:

receiving, by a base station of non-time reference cell, cell timing information delivered by a network side, wherein the cell timing information comprises a non-time reference parameter, and the non-time reference parameter Non-time Reference corresponds to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell;

calculating, by the base station of non-time reference cell, boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to the non-time reference parameter; and

acquiring, by the base station of non-time reference cell, boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

2. The method according to claim 1, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the HS-SCCH according to the non-time reference parameter further comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$;

T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell; and

T_{TX_diff1} is equal to the Non-time Reference.

3. The method according to claim 1, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the HS-SCCH according to the non-time reference parameter further comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$;

T_{TX_diff1} is equal to the Non-time Reference; and

if T_{TX_diff3} is less than or equal to 7680×1.5, less than or equal to 7680×2, or less than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, wherein

T_{TX_diff3} is equal to a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

4. The method according to claim 1, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the HS-SCCH according to the non-time reference parameter further comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of

F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$; and

if T_{TX_diff3} is less than or equal to 7680×1.5, less than or equal to 7680×2, or less than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the Non-time Reference; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and T_{TX_diff1} is equal to the Non-time Reference plus 7680, wherein

T_{TX_diff3} is a timing difference between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

5. The method according to any one of claims 2 to 4, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH further comprises:

when a user equipment (UE) is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280-$\left|T_{TX_diff2} - T_{TX_diff1}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH

CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

6. The method according to any one of claims 2 to 4, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH further comprises:

when a user equipment (UE) is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to $1280+\left|T_{TX_diff2}-T_{TX_diff1}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

7. The method according to any one of claims 2 to 4, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH further comprises:

determining boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff1}-T_{TX_diff2}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

8. A channel boundary locating method, comprising:

calculating, by a base station of non-time reference cell, boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a timing difference T_{TX_diff} between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell and a timing difference τ_{DIFF} between an HS-PDSCH subframe of time reference cell and the HS-PDSCH subframe of non-time reference cell; and

acquiring, by the base station of non-time reference cell, boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

9. The method according to claim 8, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the HS-SCCH according to the timing difference T_{TX_diff} between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time

reference cell and the timing difference τ_{DIFF} between the HS-PDSCH subframe of time reference cell and the HS-PDSCH subframe of non-time reference cell further comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

when a user equipment (UE) is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, DRX_OFFSET is

$$\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} - \tau_{DIFF}}{2560} - 0.9 \right\rfloor,$$

$$\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} - \left\lfloor \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor,$$

$$\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} - \left\lceil \frac{\tau_{DIFF}}{256} \right\rceil \times 256}{2560} - 0.9 \right\rfloor,$$

$$\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} - \mathrm{round}\left(\frac{\tau_{DIFF}}{256} \right) \times 256}{2560} - 0.9 \right\rfloor,$$

$$\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lfloor T_{TX_diff} - \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor,$$

or

$$\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lceil T_{TX_diff} - \frac{\tau_{DIFF}}{256} \right\rceil \times 256}{2560} - 0.9 \right\rfloor;$$ or

when a user equipment (UE) is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, DRX_OFFSET is

$$\left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff}+\tau_{DIFF}}{2560}-0.9}{3} \right\rfloor ,\quad \left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff}+\left\lfloor \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560}-0.9}{3} \right\rfloor ,$$

$$\left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff}+\left\lceil \frac{\tau_{DIFF}}{256} \right\rceil \times 256}{2560}-0.9}{3} \right\rfloor ,\quad \left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff}+\mathrm{round}\left(\frac{\tau_{DIFF}}{256}\right) \times 256}{2560}-0.9}{3} \right\rfloor ,$$

$$\left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{\left\lfloor T_{TX_diff}+\frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560}-0.9}{3} \right\rfloor ,\quad \text{or}$$

$$\left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{\left\lceil T_{TX_diff}+\frac{\tau_{DIFF}}{256} \right\rceil \times 256}{2560}-0.9}{3} \right\rfloor .$$

10. The method according to claim 8 or 9, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH further comprises:

when the UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280-τ_{DIFF} chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

11. The method according to claim 8 or 9, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH further comprises:

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH

subframe that is closest in time to $1280+\tau_{DIFF}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

12. A channel boundary locating method, comprising:

calculating, by a base station of non-time reference cell, boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a timing difference $T_{TX_diff,B}$ between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell and a timing difference $T_{TX_diff,A}$ between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell; and

acquiring, by the base station of non-time reference cell, boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

13. The method according to claim 12, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the high speed shared control channel (HS-SCCH) according to the timing difference $T_{TX_diff,B}$ between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell and the timing difference $T_{TX_diff,A}$ between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff,B}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff,A}}{2560} - 0.9}{3} \right\rfloor$; a hybrid automatic retransmission request

acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to $T_{TX_diff,B}$ and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to $T_{TX_diff,A}$ are in a same HS-DPCCH subframe, and $|T_{TX_diff,B} - T_{TX_diff,A}| < 7680$ or $|T_{TX_diff,B} - T_{TX_diff,A}| \leq 3840$.

14. The method according to claim 12 or 13, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

when a user equipment (UE) is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280-$|T_{TX_diff,B} - T_{TX_diff,A}|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

15. The method according to claim 12 or 13, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

when a user equipment (UE) is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280+$|T_{TX_diff,B} - T_{TX_diff,A}|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

16. The method according to claim 12 or 13, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

determining boundary information of an HS-DPCCH subframe that is closest in time to 1280+$T_{TX_diff,A} - T_{TX_diff,B}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

17. A channel boundary locating method, comprising:

calculating, by a user equipment (UE), boundary information HS-SCCH CFN_DRX n of a

high speed shared control channel (HS-SCCH) according to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell; and

acquiring, by the UE, boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

18. The method according to claim 17, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the HS-SCCH according to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{T_{TX_diff2}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff1}}{2560} - 0.9 \right\rfloor$;

T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell; and

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell.

19. The method according to claim 17, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the HS-SCCH according to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and

T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor;$$

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and

if T_{TX_diff3} is less than or equal to 7680×1.5, less than or equal to 7680×2, or less than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, wherein

T_{TX_diff3} is a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and an HARQ-ACK field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and an HARQ-ACK field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff1} are in a same HS-DPCCH subframe.

20. The method according to claim 17, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the HS-SCCH) according to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH

CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$; and

if T_{TX_diff3} is less than or equal to 7680×1.5, less than or equal to 7680×2, or less than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and T_{TX_diff1} is equal to 7680 plus the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell, wherein

T_{TX_diff3} is a timing difference between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell, and an HARQ-ACK field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and an HARQ-ACK field corresponding to the HS-PDSCH subframe corresponding to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell are in a same HS-DPCCH subframe.

21. The method according to any one of claims 18 to 20, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

when the UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280-$\left|T_{TX_diff2} - T_{TX_diff1}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

22. The method according to any one of claims 18 to 20, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to $1280+\left|T_{TX_diff2}-T_{TX_diff1}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

23. The method according to any one of claims 18 to 20, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

determining boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff1}-T_{TX_diff2}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

24. A channel boundary locating method, comprising:

calculating, by a user equipment (UE), boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a timing difference T_{TX_diff} between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell and a timing difference τ_{DIFF} between an HS-PDSCH subframe of time reference cell and the HS-PDSCH subframe of non-time reference cell; and

acquiring, by the UE, boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

25. The method according to claim 24, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the HS-SCCH according to the timing difference T_{TX_diff} between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell and the timing difference τ_{DIFF} between the HS-PDSCH subframe of time reference cell and the HS-PDSCH subframe of non-time reference cell comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in

CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

when the UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, DRX_OFFSET is $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \left\lfloor \frac{T_{TX_diff} - \tau_{DIFF}}{2560} - 0.9 \right\rfloor \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} - \left\lfloor \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} - \left\lceil \frac{\tau_{DIFF}}{256} \right\rceil \times 256}{2560} - 0.9 \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} - \mathrm{round}\left(\frac{\tau_{DIFF}}{256}\right) \times 256}{2560} - 0.9 \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lfloor T_{TX_diff} - \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor$, or $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lceil T_{TX_diff} - \frac{\tau_{DIFF}}{256} \right\rceil \times 256}{2560} - 0.9 \right\rfloor$; or

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, DRX_OFFSET is $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \left\lfloor \frac{T_{TX_diff} + \tau_{DIFF}}{2560} - 0.9 \right\rfloor \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} + \left\lfloor \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor$,

$$\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} + \left\lceil \frac{\tau_{DIFF}}{256} \right\rceil \times 256}{2560} - 0.9 \right\rfloor$$,

$$\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} + \mathrm{round}\left(\frac{\tau_{DIFF}}{256} \right) \times 256}{2560} - 0.9 \right\rfloor$$,

$$\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lfloor T_{TX_diff} + \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor$$, or

$$\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lceil T_{TX_diff} + \frac{\tau_{DIFF}}{256} \right\rceil \times 256}{2560} - 0.9 \right\rfloor .$$

26. The method according to claim 24 or 25, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

when the UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280-τ_{DIFF} chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

27. The method according to claim 24 or 25, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280+τ_{DIFF} chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

28. A channel boundary locating method, comprising:

calculating, by a user equipment (UE), boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a timing difference $T_{TX_diff,B}$ between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell and a timing difference $T_{TX_diff,A}$ between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell; and

acquiring, by the UE, boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

29. The method according to claim 28, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the HS-SCCH according to the timing difference $T_{TX_diff,B}$ between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell and the timing difference $T_{TX_diff,A}$ between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{\mathrm{DRX}} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff,B}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff,A}}{2560} - 0.9}{3} \right\rfloor$; a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to $T_{TX_diff,B}$ and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to $T_{TX_diff,A}$ are in a same HS-DPCCH subframe; and $|T_{TX_diff,B} - T_{TX_diff,A}| < 7680$ or $|T_{TX_diff,B} - T_{TX_diff,A}| \le 3840$.

30. The method according to claim 28 or 29, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

when the UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer

HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280-$|T_{TX_diff,B} - T_{TX_diff,A}|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

31. The method according to claim 28 or 29, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determining boundary information of an HS-DPCCH subframe that is closest in time to 1280+$|T_{TX_diff,B} - T_{TX_diff,A}|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

32. The method according to claim 28 or 29, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

determining boundary information of an HS-DPCCH subframe that is closest in time to 1280+$T_{TX_diff,A} - T_{TX_diff,B}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

33. A base station, comprising:

a receiving module, configured to receive cell timing information delivered by a network side, wherein the cell timing information comprises a non-time reference parameter, and the non-time reference parameter Non-time Reference corresponds to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell; and

a processing module, configured to calculate boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to the non-time reference parameter, wherein:

the processing module is further configured to acquire boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the

HS-SCCH.

34. The base station according to claim 33, wherein the processing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$;

T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell; and

T_{TX_diff1} is equal to the Non-time Reference.

35. The base station according to claim 33, wherein the processing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$;

T_{TX_diff1} is equal to the Non-time Reference; and

if T_{TX_diff3} is less than or equal to 7680×1.5, less than or equal to 7680×2, or less than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, wherein

T_{TX_diff3} is equal to a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

36. The base station according to claim 33, wherein the processing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{\mathrm{DRX}} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$; and

if T_{TX_diff3} is less than or equal to 7680×1.5, less than or equal to 7680×2, or less than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the Non-time Reference; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell,

and T_{TX_diff1} is equal to the Non-time Reference plus 7680, wherein

T_{TX_diff3} is a timing difference between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

37. The base station according to any one of claims 34 to 36, wherein the processing module is further configured to:

when a user equipment (UE) is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to $1280-\left|T_{TX_diff2}-T_{TX_diff1}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

38. The base station according to any one of claims 34 to 36, wherein the processing module is further configured to:

when a user equipment (UE) is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to $1280+\left|T_{TX_diff2}-T_{TX_diff1}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

39. The base station according to any one of claims 34 to 36, wherein the processing module is further configured to:

determine boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff1}-T_{TX_diff2}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH

CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

40. A base station, comprising:

a preprocessing module, configured to calculate boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a timing difference T_{TX_diff} between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell and a timing difference τ_{DIFF} between an HS-PDSCH subframe of time reference cell and the HS-PDSCH subframe of non-time reference cell; and

a processing module, configured to acquire boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

41. The base station according to claim 40, wherein the preprocessing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

when a user equipment (UE) is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, DRX_OFFSET is

$$\left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff}-\tau_{DIFF}}{2560}-0.9}{3} \right\rfloor ,$$

$$\left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff}-\left\lfloor \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560}-0.9}{3} \right\rfloor ,$$

$$\left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff}-\left\lceil \frac{\tau_{DIFF}}{256} \right\rceil \times 256}{2560}-0.9}{3} \right\rfloor ,$$

$$\left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff}-\mathrm{round}\left(\frac{\tau_{DIFF}}{256}\right) \times 256}{2560}-0.9}{3} \right\rfloor ,$$

$$\left\lfloor \frac{T_{TX_diff}}{\frac{2560}{3}} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lfloor T_{TX_diff} - \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{\frac{2560}{3}} - 0.9 \right\rfloor$$, or

$$\left\lfloor \frac{T_{TX_diff}}{\frac{2560}{3}} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lceil T_{TX_diff} - \frac{\tau_{DIFF}}{256} \right\rceil \times 256}{\frac{2560}{3}} - 0.9 \right\rfloor$$; or

when a user equipment (UE) is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, DRX_OFFSET is

$$\left\lfloor \frac{T_{TX_diff}}{\frac{2560}{3}} - 0.9 \right\rfloor - \left\lfloor \left| \frac{T_{TX_diff} + \tau_{DIFF}}{\frac{2560}{3}} - 0.9 \right| \right\rfloor$$, $$\left\lfloor \frac{T_{TX_diff}}{\frac{2560}{3}} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} + \left\lfloor \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{\frac{2560}{3}} - 0.9 \right\rfloor$$,

$$\left\lfloor \frac{T_{TX_diff}}{\frac{2560}{3}} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} + \left\lceil \frac{\tau_{DIFF}}{256} \right\rceil \times 256}{\frac{2560}{3}} - 0.9 \right\rfloor$$, $$\left\lfloor \frac{T_{TX_diff}}{\frac{2560}{3}} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} + \mathrm{round}\left(\frac{\tau_{DIFF}}{256} \right) \times 256}{\frac{2560}{3}} - 0.9 \right\rfloor$$,

$$\left\lfloor \frac{T_{TX_diff}}{\frac{2560}{3}} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lfloor T_{TX_diff} + \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{\frac{2560}{3}} - 0.9 \right\rfloor$$, or

$$\left\lfloor \frac{T_{TX_diff}}{\frac{2560}{3}} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lceil T_{TX_diff} + \frac{\tau_{DIFF}}{256} \right\rceil \times 256}{\frac{2560}{3}} - 0.9 \right\rfloor$$.

42. The base station according to claim 40 or 41, wherein the processing module is further configured to:

when the UE is not configured in multiple-input multiple-output mode, or when the UE is

configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to 1280-τ_{DIFF} chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

43. The base station according to claim 40 or 41, wherein the processing module is further configured to:

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to 1280+τ_{DIFF} chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

44. A base station, comprising:

a preprocessing module, configured to calculate boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a timing difference $T_{TX_diff,B}$ between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell and a timing difference $T_{TX_diff,A}$ between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell; and

a processing module, configured to acquire boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

45. The base station according to claim 44, wherein the preprocessing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH

CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff,B}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff,A}}{2560}-0.9}{3} \right\rfloor$; a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to $T_{TX_diff,B}$ and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to $T_{TX_diff,A}$ are in a same HS-DPCCH subframe; and $|T_{TX_diff,B} - T_{TX_diff,A}| < 7680$ or $|T_{TX_diff,B} - T_{TX_diff,A}| \leq 3840$.

46. The base station according to claim 44 or 45, wherein the processing module is further configured to:

when a user equipment (UE) is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to $1280-\left|T_{TX_diff,B} - T_{TX_diff,A}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

47. The base station according to claim 44 or 45, wherein the processing module is further configured to:

when a user equipment (UE) is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to $1280+\left|T_{TX_diff,B} - T_{TX_diff,A}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

48. The base station according to claim 44 or 45, wherein the processing module is further configured to:

determine boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff,A} - T_{TX_diff,B}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is,

HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

49. A user equipment (UE), comprising:

a preprocessing module, configured to calculate boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell, and

a processing module, configured to acquire boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

50. The UE according to claim 49, wherein the preprocessing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$;

T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell; and

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell.

51. The UE according to claim 49, wherein the preprocessing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in

CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$;

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and

if T_{TX_diff3} is less than or equal to 7680×1.5, less than or equal to 7680×2, or less than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, wherein

T_{TX_diff3} is a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff1} are in a same HS-DPCCH subframe.

52. The UE according to claim 49, wherein the preprocessing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$; and

if T_{TX_diff3} is less than or equal to 7680×1.5, less than or equal to 7680×2, or less than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}, and T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to a smallest timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and T_{TX_diff1} is equal to 7680 plus the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell, wherein

T_{TX_diff3} is a timing difference between the downlink F-DPCH frame of non-time reference cell and the HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell are in a same HS-DPCCH subframe.

53. The UE according to any one of claims 50 to 52, wherein the processing module is further configured to:

when the UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to 1280-$\left|T_{TX_diff2} - T_{TX_diff1}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

54. The UE according to any one of claims 50 to 52, wherein the processing module is further configured to:

when the UE is configured in multiple-input multiple-output mode and the UE indicates

requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to $1280+\left|T_{TX_diff2}-T_{TX_diff1}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

55. The UE according to any one of claims 50 to 52, wherein the processing module is further configured to:

determine boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff1}-T_{TX_diff2}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

56. A user equipment (UE), comprising:

a preprocessing module, configured to calculate boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a timing difference T_{TX_diff} between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell and a timing difference τ_{DIFF} between an HS-PDSCH subframe of time reference cell and the HS-PDSCH subframe of non-time reference cell; and

a processing module, configured to acquire boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

57. The UE according to claim 56, wherein the preprocessing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

when the UE is not configured in multiple-input multiple-output mode, or when the UE is

configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, DRX_OFFSET is $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \left\lfloor \frac{T_{TX_diff} - \tau_{DIFF}}{2560} - 0.9 \right\rfloor \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} - \left\lfloor \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} - \left\lfloor \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} - \text{round}\left(\frac{\tau_{DIFF}}{256}\right) \times 256}{2560} - 0.9 \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lfloor T_{TX_diff} - \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor$, or $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{\left\lfloor T_{TX_diff} - \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor$; or

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, DRX_OFFSET is $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \left\lfloor \frac{T_{TX_diff} + \tau_{DIFF}}{2560} - 0.9 \right\rfloor \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} + \left\lfloor \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} + \left\lfloor \frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560} - 0.9 \right\rfloor$, $\left\lfloor \frac{T_{TX_diff}}{2560} - 0.9 \right\rfloor - \left\lfloor \frac{T_{TX_diff} + \text{round}\left(\frac{\tau_{DIFF}}{256}\right) \times 256}{2560} - 0.9 \right\rfloor$,

$$\left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\left\lfloor T_{TX_diff}+\frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560}-0.9}{3} \right\rfloor$$, or

$$\left\lfloor \frac{\frac{T_{TX_diff}}{2560}-0.9}{3} \right\rfloor - \left\lfloor \frac{\left\lfloor T_{TX_diff}+\frac{\tau_{DIFF}}{256} \right\rfloor \times 256}{2560}-0.9}{3} \right\rfloor .$$

58. The UE according to claim 56 or 57, wherein the processing module is further configured to:

when the UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to 1280-τ_{DIFF} chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

59. The UE according to claim 56 or 57, wherein the processing module is further configured to:

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to 1280+τ_{DIFF} chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

60. A user equipment (UE), comprising:

a preprocessing module, configured to calculate boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a timing difference $T_{TX_diff,B}$ between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell and a timing difference $T_{TX_diff,A}$ between a downlink F-DPCH frame of

time reference cell and an HS-PDSCH subframe of time reference cell; and

a processing module, configured to acquire boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

61. The UE according to claim 60, wherein the preprocessing module is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff,B}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff,A}}{2560} - 0.9}{3} \right\rfloor$; a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to $T_{TX_diff,B}$ and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to $T_{TX_diff,A}$ are in a same HS-DPCCH subframe; and $|T_{TX_diff,B} - T_{TX_diff,A}| < 7680$ or $|T_{TX_diff,B} - T_{TX_diff,A}| \le 3840$.

62. The UE according to claim 60 or 61, wherein the processing module is further configured to:

when the UE is not configured in multiple-input multiple-output mode, or when the UE is configured in multiple-input multiple-output mode and the UE indicates not requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to 1280-$\left|T_{TX_diff,B} - T_{TX_diff,A}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

63. The UE according to claim 60 or 61, wherein the processing module is further configured to:

when the UE is configured in multiple-input multiple-output mode and the UE indicates requiring a longer HARQ processing time, determine boundary information of an HS-DPCCH subframe that is closest in time to $1280+\left|T_{TX_diff,B}-T_{TX_diff,A}\right|$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

64. The UE according to claim 60 or 61, wherein the processing module is further configured to:

determine boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff,A}-T_{TX_diff,B}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

65. A base station, comprising a memory and a processor, wherein the memory is connected to the processor; and

the memory stores an execution instruction; and when the base station runs, the processor communicates with the memory, and the processor executes the execution instruction, so that the base station executes the method according to any one of claims 1 to 16.

66. A user equipment (UE), comprising a memory and a processor, wherein the memory is connected to the processor; and

the memory stores an execution instruction; and when the base station runs, the processor communicates with the memory, and the processor executes the execution instruction, so that the base station executes the method according to any one of claims 17 to 32.

CLAIMS

1. A channel boundary locating method, characterized in comprising:

receiving (101), by a base station of non-time reference cell, cell timing information delivered by a network, wherein the cell timing information comprises a non-time reference parameter, and the non-time reference parameter corresponds to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell;

calculating (102), by the base station of non-time reference cell, boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to the non-time reference parameter; and

acquiring (103), by the base station of non-time reference cell, boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

2. The method according to claim 1, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the HS-SCCH according to the non-time reference parameter further comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$;

T_{TX_diff1} is equal to the Non-time Reference; and

if T_{TX_diff3} is less than 7680×1.5, less than 7680×2, or less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2,

or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, wherein

T_{TX_diff3} is equal to a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

3. The method according to claim 2, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH further comprises:

determining boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff1}-T_{TX_diff2}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

4. A channel boundary locating method, characterized in comprising:

calculating (401), by a user equipment (UE), boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell; and

acquiring (402), by the UE, boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

5. The method according to claim 4, wherein the calculating the boundary information HS-SCCH CFN_DRX n of the HS-SCCH according to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell comprises:

aligning a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH

CFN n, wherein

$$\text{DRX_OFFSET is } \left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor;$$

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and

if T_{TX_diff3} is less than 7680×1.5, less than 7680×2, or less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, wherein

T_{TX_diff3} is a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and an HARQ-ACK field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and an HARQ-ACK field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff1} are in a same HS-DPCCH subframe.

6. The method according to claim 5, wherein the acquiring the boundary information of the HS-DPCCH according to the boundary information of the HS-SCCH comprises:

determining boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff1}-T_{TX_diff2}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

7. A base station, characterized in comprising:

a receiving module (701), configured to receive cell timing information delivered by a network, wherein the cell timing information comprises a non-time reference parameter, and the non-time reference parameter corresponds to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell; and

a processing module (702), configured to calculate boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to the non-time reference parameter, wherein:

the processing module (702) is further configured to acquire boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

8. The base station according to claim 7, wherein the processing module (702) is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing difference between HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$;

T_{TX_diff1} is equal to the Non-time Reference; and

if T_{TX_diff3} is less than 7680×1.5, less than 7680×2, or less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, wherein

T_{TX_diff3} is equal to a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to the Non-time Reference are in a same HS-DPCCH subframe.

9. The base station according to claim 8, wherein the processing module (702) is further configured to:

determine boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff1}-T_{TX_diff2}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

10. A user equipment (UE), characterized in comprising:

a preprocessing module (901), configured to calculate boundary information HS-SCCH CFN_DRX n of a high speed shared control channel (HS-SCCH) according to a smallest timing difference between a downlink F-DPCH frame of time reference cell and an HS-PDSCH subframe of time reference cell; and

a processing module (902), configured to acquire boundary information of a high speed dedicated physical control channel (HS-DPCCH) according to the boundary information of the HS-SCCH.

11. The UE according to claim 10, wherein the preprocessing module (901) is further configured to:

align a start time of HS-SCCH CFN_DRX n with a start time of an HS-SCCH subframe, wherein the HS-SCCH subframe is an HS-SCCH subframe behind τDRX chips in a start time of F-DPCH CFN n, τDRX meets $-3840chips \le \tau_{DRX} - T_0 - 7680 * DRX_OFFSET < 3840chips$, and T_0 is 1024 chips, wherein

CFN_DRX is a connection frame number in a discontinuous reception (DRX) state, and n in CFN_DRX n is a serial number of CFN_DRX; F-DPCH CFN is a connection frame number of an F-DPCH, and n in CFN n is a serial number of CFN; DRX_OFFSET is an offset of discontinuous reception (DRX); and τDRX is a timing differe 73 :tween HS-SCCH CFN_DRX n and F-DPCH CFN n, wherein

DRX_OFFSET is $\left\lfloor \frac{\frac{T_{TX_diff2}}{2560} - 0.9}{3} \right\rfloor - \left\lfloor \frac{\frac{T_{TX_diff1}}{2560} - 0.9}{3} \right\rfloor$;

T_{TX_diff1} is equal to the smallest timing difference between the downlink F-DPCH frame of time reference cell and the HS-PDSCH subframe of time reference cell; and

if T_{TX_diff3} is less than 7680×1.5, less than 7680×2, or less than 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}; and if T_{TX_diff3} is greater than or equal to 7680×1.5, greater than or equal to 7680×2, or greater than or equal to 7680×2.5, T_{TX_diff2} is equal to T_{TX_diff3}-38400, wherein

T_{TX_diff3} is a timing difference between a downlink F-DPCH frame of non-time reference cell and an HS-PDSCH subframe of non-time reference cell, and a hybrid automatic retransmission request acknowledgement (HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff3} and a hybrid automatic retransmission request acknowledgement

(HARQ-ACK) field corresponding to the HS-PDSCH subframe corresponding to T_{TX_diff1} are in a same HS-DPCCH subframe.

12. The UE according to claim 11, wherein the processing module (902) is further configured to:

determine boundary information of an HS-DPCCH subframe that is closest in time to $1280+T_{TX_diff1}-T_{TX_diff2}$ chips after the start time of the boundary information of the HS-SCCH, that is, HS-SCCH CFN_DRX n, as the boundary information of the HS-DPCCH, that is, HS-DPCCH CFN_DRX n, wherein n in HS-SCCH CFN_DRX n is a serial number of HS-SCCH CFN_DRX, and n in HS-DPCCH CFN_DRX n is a serial number of HS-DPCCH CFN_DRX.

13. A base station, comprising a memory and a processor, wherein the memory is connected to the processor; and

the memory stores an execution instruction; and when the base station runs, the processor communicates with the memory, and the processor executes the execution instruction, so that the base station executes the method according to any one of claims 1 to 3.

14. A user equipment (UE), comprising a memory and a processor, wherein the memory is connected to the processor; and

the memory stores an execution instruction; and when the UE runs, the processor communicates with the memory, and the processor executes the execution instruction, so that the UE executes the method according to any one of claims 4 to 6.