

CLAIMS

1. A terminal apparatus comprising:

MAC (Medium Access Control) layer processing circuitry configured to and/or programmed to initiate a random access procedure on a first serving cell, and initiate a random access procedure on a second serving cell, and

in a case in which at least one scheduling request is pending, no UL-SCH (uplink shared channel) resources are available for a transmission, the terminal apparatus has a valid PUCCH (Physical Uplink Control Channel) resource for the scheduling request, and a value of a counter is smaller than a predetermined value, increment the value of the counter by 1 and instruct transmission circuitry to transmit the scheduling request on the valid PUCCH resource; and

transmission circuitry configured to and/or programmed to, in a case in which the valid PUCCH resource for the scheduling request is configured only on the second serving cell, transmit the scheduling request on the valid PUCCH resource on the secondary cell, wherein

the MAC layer processing circuitry is further configured to and/or programmed to initiate the random access procedure on the first serving cell out of the first serving cell and the second serving cell, the first serving cell in which the terminal apparatus performed an initial connection establishment procedure and the PUCCH resource for the scheduling request being configured on the second serving cell, in a case in which at least one scheduling request is pending, no UL-SCH resources are available for the

transmission, the terminal apparatus has the valid PUCCH resource for the scheduling request, and the value of the counter is equal to or larger than the predetermined value, and

the transmission circuitry is further configured to and/or programmed to

in a case that a HARQ-ACK transmission with PUCCH format 3 in the first serving cell coincides with a scheduling request transmission instance for signaling the scheduling request transmission in the first serving cell in a subframe, transmit the HARQ-ACK and the scheduling request in the subframe on PUCCH resource for the HARQ-ACK in the first serving cell, and

in a case that a HARQ-ACK transmission with PUCCH format 3 in the second serving cell coincides with a scheduling request transmission instance for signaling the scheduling request in the first serving cell in a subframe, transmit the HARQ-ACK in the subframe on PUCCH resource for the HARQ-ACK in the second serving cell and transmit the scheduling request in the subframe in the first serving cell, the scheduling request being a positive scheduling request.

2. The terminal apparatus according to claim 1, wherein

the MAC layer processing circuitry is configured to and/or programmed to, in a case in which at least one scheduling request is pending, no UL-SCH resources are available for the transmission, the terminal apparatus has the valid PUCCH resource for the scheduling request, and the value of the counter is equal to or larger than the predetermined value, notify RRC (Radio Resource Control) layer to release the PUCCH for the second serving cell and cancel all pending scheduling requests.

3. The terminal apparatus according to claim 1, wherein
 - the scheduling request is used for requesting UL-SCH resources for a new transmission.

4. A communication method of a terminal apparatus, the communication method comprising:
 - initiating a random access procedure on a first serving cell, and initiating a random access procedure on a second serving cell;
 - incrementing the value of the counter by 1 and instructing transmission circuitry included in the terminal apparatus to transmit the scheduling request on the valid PUCCH resource, in a case in which at least one scheduling request is pending, no UL-SCH (uplink shared channel) resources are available for a transmission, the terminal apparatus has a valid PUCCH (Physical Uplink Control Channel) resource for the scheduling request, and a value of a counter is smaller than a predetermined value;
 - transmitting the scheduling request on the valid PUCCH resource on the secondary cell, in a case in which the valid PUCCH resource for the scheduling request is configured only on the second serving cell; and
 - initiating the random access procedure on the first serving cell out of the first serving cell and the second serving cell, the first serving cell in which the terminal apparatus performed an initial connection establishment procedure and the PUCCH resource for the scheduling request being configured on the second serving cell, in a case in which at least one scheduling request is

pending, no UL-SCH resources are available for the transmission, the terminal apparatus has the valid PUCCH resource for the scheduling request, and the value of the counter is equal to or larger than the predetermined value,

in a case that a HARQ-ACK transmission with PUCCH format 3 in the first serving cell coincides with a scheduling request transmission instance for signaling the scheduling request transmission in the first serving cell in a subframe, transmitting the HARQ-ACK and the scheduling request in the subframe on PUCCH resource for the HARQ-ACK in the first serving cell, and

in a case that a HARQ-ACK transmission with PUCCH format 3 in the second serving cell coincides with a scheduling request transmission instance for signaling the scheduling request in the first serving cell in a subframe, transmitting the HARQ-ACK in the subframe on PUCCH resource for the HARQ-ACK in the second serving cell and transmitting the scheduling request in the subframe in the first serving cell, the scheduling request being a positive scheduling request.