

CLAIMS

What is Claimed:

1. A method performed by a wireless transmit/receive unit (WTRU), the method comprising:
determining suitability of a cell wherein:
if the cell is configured with a supplementary uplink (SUL) and the WTRU supports SUL communication for the frequency of the cell, then suitability of the cell is determined using first cell suitability criteria, and
if the cell is not configured with a SUL or the WTRU does not support SUL communication for the frequency of the cell, then suitability of the cell is determined using second cell suitability criteria;
selecting the cell based on the determined suitability of the cell; and
camping on the selected cell.
2. The method of claim 1, wherein the first cell suitability criteria utilizes a SUL offset specific to the cell, and the second cell suitability criteria utilizes a non-SUL offset specific to the cell that is different from the SUL offset.
3. The method of claim 1, further comprising:
receiving a SUL offset for the cell and a non-SUL offset for the cell, wherein the first cell suitability criteria utilizes the SUL offset, and the second cell suitability criteria utilizes the non-SUL offset.
4. The method of claim 1, further comprising:
receiving system information from the cell;
determining that the system information includes SUL configuration information; and
determining that the cell is configured with the SUL based on the reception of the SUL configuration information.
5. The method of claim 1, wherein the SUL of the cell operates at the frequency, and a regular uplink (RUL) of the cell operates at a second frequency, and the WTRU determines whether the WTRU can support SUL operation at the frequency together with RUL operation at the second frequency in order to determine whether the WTRU support SUL operation on the cell.
6. The method of claim 1, further comprising:

receiving, from the cell, a system information block (SIB) comprising information relating to a second cell; and

determining suitability of the second cell based on the SIB, wherein:

if the second cell is configured with a supplementary uplink (SUL) and the WTRU supports SUL communication, then suitability of the second cell is determined using third cell suitability criteria, and

if the second cell is not configured with a SUL or the WTRU does not support SUL communication, then suitability of the second cell is determined using fourth cell suitability criteria.

7. The method of claim 6, wherein the SIB indicates whether the second cell supports SUL communication.

8. The method of claim 6, wherein the SIB comprises a neighboring cell list with cell identifications (IDs) of cells supporting SUL, and an indication of the SUL frequency of the cell supporting SUL.

9. The method of claim 6, wherein the third cell suitability criteria utilizes a second SUL offset specific to the second cell, and the fourth cell suitability criteria utilizes a second non-SUL offset specific to the second cell.

10. The method of claim 6, further comprising:

selecting the second cell based on the determined suitability of the second cell; and

camping on the second cell.

11. A wireless transmit/receive unit (WTRU) comprising:

a processor configured to:

determine suitability of a cell using first cell suitability criteria if the cell is configured with a supplementary uplink (SUL) and the WTRU supports SUL communication for the frequency of the cell;

determine suitability of the cell using second cell suitability criteria if the cell is not configured with a SUL or the WTRU does not support SUL communication for the frequency of the cell;

select the cell based on the determined suitability of the cell; and

camp on the selected cell.

12. The WTRU of claim 11, wherein the first cell suitability criteria utilizes a SUL offset specific to the cell, and the second cell suitability criteria utilizes a non-SUL offset that is different from the SUL offset specific to the cell.

13. The WTRU of claim 11, wherein the processor is further configured to:
receive a SUL offset for the cell and a non-SUL offset for the cell, wherein the first cell suitability criteria utilizes the SUL offset, and the second cell suitability criteria utilizes the non-SUL offset.

14. The WTRU of claim 11, wherein the processor is further configured to:
receive system information from the cell;
determine that the system information includes SUL configuration information; and
determine that the cell is configured with the SUL based on the reception of the SUL configuration information.

15. The WTRU of claim 11, wherein the processor is further configured to:
receive system information from the cell;
determine that the system information does not include SUL configuration information; and
determine that the cell is not configured with the SUL based on the system information not including SUL configuration information.

16. The WTRU of claim 11, wherein the processor is further configured to:
receive, from the cell, a system information block (SIB) comprising information relating to a second cell; and
determine suitability of the second cell based on the SIB, wherein:
if the second cell is configured with a supplementary uplink (SUL) and the WTRU supports SUL communication, then the processor is configured to determine the suitability of the second cell using third cell suitability criteria; and
if the second cell is not configured with a SUL or the WTRU does not support SUL communication, then the processor is configured to determine the suitability of the second cell using fourth cell suitability criteria;

17. The WTRU of claim 16, wherein the SIB indicates whether the second cell supports SUL communication.

18. The WTRU of claim 16, wherein the SIB comprises a neighboring cell list with cell identifications (IDs) of cells supporting SUL, and an indication of the SUL frequency of the cell supporting SUL.

19. The WTRU of claim 16, wherein the third cell suitability criteria utilizes a second SUL offset specific to the second cell, and the fourth cell suitability criteria utilizes a second non-SUL offset specific to the second cell.

20. The WTRU of claim 16, wherein the processor is further configured to:
select the second cell based on the determined suitability of the second cell; and
camp on the second cell.

21. A wireless transmit/receive unit (WTRU) comprising:
a processor configured to:
receive a first handover (HO) command to a first cell associated with a first supplementary uplink (SUL) and a regular uplink (RUL), wherein the first HO command comprises an explicit indication of whether the first SUL or the first RUL should be used for random-access to complete the first HO;
perform HO to the first cell in accordance with the first HO command;
receive a second HO command to a second cell associated with a second SUL and a second RUL, wherein whether to use the second SUL or the second RUL for random access to complete the HO is determined based on a downlink reference signal received power (DL-RSRP) of the SUL, and wherein, if the DL-RSRP is below a threshold, then the processor is configured to select the SUL as the UL carrier for HO, and if the DL-RSRP is equal to or above the threshold, then the processor is configured to select the RUL as the UL carrier for HO; and
perform HO to the second cell in accordance with the second HO command.

22. A method performed by a wireless transmit/receive unit (WTRU), the method comprising:
receiving a first handover (HO) command;
determining that the first HO command comprises an explicit indication of one uplink (UL) carrier for HO;
selecting an UL carrier for the first HO command based on whether random-access channel (RACH) resources are provided for a supplementary uplink (SUL) or a regular uplink (RUL) the first HO command;
performing HO to the selected UL carrier indicated by the first HO command;

receiving a second HO command;

determining that the second HO command comprises a configuration for both a SUL and a RUL in the second HO command;

selecting an UL carrier for the second HO command based on whether a downlink reference signal received power (DL-RSRP) of the SUL is below a threshold, wherein, if the DL-RSRP of the SUL is below the threshold, then the SUL is selected as the UL carrier for the HO second, and if the DL-RSRP of the SUL is equal to or above the threshold, then the RUL is selected as the UL carrier for the second HO; and

performing HO to the selected UL carrier indicated by the second HO command.