CLAIMS

1. A method of wireless communication comprising:
generating a first extended synchronization signal (ESS) sequence for a first synchronization subframe to be communicated to a user equipment (UE);
generating a second ESS sequence for a second synchronization subframe to be communicated to a UE;
scrambling the first ESS sequence and the second ESS sequence based at least in part on cell-specific information associated with a base station;
transmitting, to the UE, the scrambled first ESS sequence in the first synchronization subframe; and
transmitting, to the UE, the scrambled second ESS sequence in the second synchronization subframe, wherein the scrambled first ESS sequence is different from the scrambled second ESS sequence.

2. The method of claim 1, wherein the cell-specific information comprises a cell identifier (ID) or virtual cell ID of the base station.

3. The method of claim 1, wherein the scrambling of the first ESS sequence does not vary from symbol to symbol within the first synchronization subframe.

4. The method of claim 1, wherein the first ESS sequence is scrambled with a cell-specific scrambling sequence that is identical for all symbols of the first synchronization subframe.

5. The method of claim 1, wherein the first ESS sequence comprises a Zadoff-Chu sequence.

6. The method of claim 1, wherein the first ESS sequence has a length N and is based at least in part on a Zadoff-Chu sequence of prime length Nzc.

7. The method of claim 6, further comprising:
cyclically extending the Zadoff-Chu sequence of prime length Nzc to obtain the ESS sequence of length N.

8. The method of claim 6, further comprising:
truncating the Zadoff-Chu sequence of prime length Nzc to obtain the ESS sequence of length N.

9. The method of claim 6, further comprising:
selecting a root of the Zadoff-Chu sequence based at least in part on the cell-specific information associated with the base station.

10. The method of claim 1, wherein
the first ESS sequence is scrambled based at least in part on a sequence

$$r(n) = \frac{1}{\sqrt{2}}\big(1 - 2 \cdot c(2n)\big) + j\frac{1}{\sqrt{2}}\big(1 - 2 \cdot c(2n+1)\big), \;\; n = 0, 1, \ldots, N-1$$

wherein N represents a length associated with the first ESS sequence and (c(i), i=0, . . . , 2N+1) represents a pseudo-random sequence generated based at least in part on a cell ID of the base station.

11. The method of claim 10, wherein
the pseudo-random sequence is obtained by initializing a pseudo-random sequence generator with

*c*_init=2^10·(7·(*n_S*+1)+1)·(2*N*_ID^cell+1)+2·*N*_ID^cell+1

or

*c*_init=2^10·(*n_S*+1)·(2·*N*_ID^cell+1)+2·*N*_ID^cell+1
wherein N_ID^cell represents the cell ID of the base station and n_S is a value that is based at least in part on the first synchronization subframe.

12. The method of claim 11, wherein n_S has a first value for the first synchronization subframe, and n_S has a second value for a second synchronization subframe.

13. A method of wireless communication comprising:
receiving, from a base station, a first scrambled extended synchronization signal (ESS) sequence in a first synchronization subframe;

receiving, from a base station, a second ESS sequence in a second synchronization subframe;
receiving cell-specific information associated with the base station; and
descrambling the first scrambled ESS sequence and the second ESS sequence based at least in part on the cell-specific information.

14. The method of claim 13, further comprising:
verifying cell-specific information associated with the base station based at least in part on the descrambling.

15. The method of claim 13, further comprising:
identifying a subframe index value for the first synchronization subframe based at least in part on the descrambling.

16. The method of claim 15, wherein the first synchronization subframe has a subframe index of value zero and the second synchronization subframe has a subframe index of value twenty-five.

17. The method of claim 13, further comprising:
descrambling the second scrambled ESS sequence based at least in part on the cell-specific information; and
verifying a frame boundary based at least in part on the difference between the first synchronization subframe and the second synchronization subframe.

18. The method of claim 13, wherein the cell-specific information comprises a cell identifier (ID) or virtual cell ID of the base station.

19. The method of claim 13, further comprising:
receiving, from a second base station, a third scrambled ESS sequence; and
determining that an attempt to descramble the third scrambled ESS sequence has failed based at least in part on the cell-specific information.

20. A method of wireless communication comprising:

determining a first extended synchronization signal (ESS) sequence for a first synchronization subframe of a frame to be communicated to a user equipment (UE), the first ESS sequence including a first ESS conveying information regarding a symbol index in the first synchronization subframe; and
generating a second ESS sequence for a second synchronization subframe of the frame, the second ESS sequence including, in the second synchronization subframe, a second ESS conveying information regarding the symbol index, wherein the first ESS is different from the second ESS.

21. The method of claim 20, further comprising:
alternately transmitting, to the UE, the first synchronization subframe of the frame and the second synchronization subframe of the frame.

22. The method of claim 21, further comprising:
transmitting one or more subframes between the first synchronization subframe and the second synchronization subframe.

23. The method of claim 20, wherein the first synchronization subframe has a subframe index of value zero.

24. The method of claim 20, wherein the second synchronization subframe has a subframe index of value twenty-five.

25. An apparatus for wireless communication, in a system comprising:
a processor;
memory in electronic communication with the processor; and
instructions stored in the memory and operable, when executed by the processor, to cause the apparatus to:
determine a first extended synchronization signal (ESS) sequence for a first synchronization subframe of a frame to be communicated to a user equipment (UE), the first ESS sequence including a first ESS conveying information regarding a symbol index in the first synchronization subframe; and
generate a second ESS sequence for a second synchronization subframe of the frame, the second ESS sequence including, in the second synchronization subframe, a second

ESS conveying information regarding the symbol index, wherein the first ESS is different from the second ESS.

26. The apparatus of claim 25, wherein the instructions are further executable by the processor to:
alternately transmit, to the UE, the first synchronization subframe of the frame and the second synchronization subframe of the frame.

27. The apparatus of claim 26, wherein the instructions are further executable by the processor to:
transmit one or more subframes between the first synchronization subframe and the second synchronization subframe.

28. The apparatus of claim 25, wherein the first synchronization subframe has a subframe index of value zero.

29. The apparatus of claim 25, wherein the second synchronization subframe has a subframe index of value twenty-five.