

WHAT IS CLAIMED IS:

1. A method for transmission source detection comprising:
receiving, by a ~~first network device~~base station, a first transmission comprising an explicit first source identification (ID) ~~from a user equipment~~;
adding the first source ID to a list of active source IDs;
receiving, by the ~~base station~~first network device, a second transmission, and wherein the second transmission does not comprise any explicit ~~second~~ source ID; and
determining, by the ~~base station~~first network device, the ~~a~~ second source ID of the second transmission using the list of active source IDs.
2. The method of claim 1, wherein adding the first source ID further comprises setting a first timer for the first source ID, and the method further comprises removing the first source ID from the list of active source IDs when the first timer expires.
3. The method of claim 2, further comprising sending an indication of a length of the first timer to an ~~second network device~~user equipment corresponding to the first source ID.
4. The method of claim 1, wherein ~~receiving the second transmission comprises~~ receiving the second transmission comprising ~~es~~ the ~~second~~ a source ID scrambled with at least a portion of the second transmission, and wherein determining the ~~second source ID of the second transmission~~ comprises descrambling the portion of the second transmission using the list of active source IDs.
5. The method of claim 4, wherein descrambling the portion of the second transmission comprises attempting to descramble the portion with each source ID in the list of active source IDs until the portion is decoded successfully.
6. The method of claim 1, further comprising resetting a second timer for the ~~a~~ second source ID of the second transmission.
7. The method of claim 1, further comprising removing the ~~second~~ a source ID from the list of active source IDs when the ~~network device~~base station determines the second transmission is a final transmission in a session.

8. The method of claim 1, further comprising transmitting an acknowledgement to a ~~third network device corresponding to the second source ID~~ the source of the second transmission when the ~~base station~~ first network device determines the ~~second source ID~~ of the second transmission.
9. A ~~network device~~ base station comprising:
a processor; and
a computer readable storage medium storing programming for execution by the processor, the programming including instructions to implement actions in a method in accordance with any one of claims 1 to 8.
10. A method for transmission source indication comprising:
transmitting, by a ~~first network device~~ user equipment, a first transmission comprising an explicit source identification (ID) of the ~~first network device~~ user equipment to a ~~second network device~~ base station; and
transmitting, by the ~~first network device~~ user equipment, a second transmission to the ~~second network device~~ base station, wherein the second transmission does not comprise the any explicit source ID, and wherein the source ID of the ~~first network device~~ user equipment is embedded in the second transmission.
11. The method of claim 10, further comprising setting an expiration timer when the ~~first network device~~ user equipment transmits the first transmission, the method further comprising transmitting, by the ~~user equipment~~ first network device, a third transmission comprising the source ID to the ~~second network device~~ base station when the expiration timer expires.
12. The method of claim 11, further comprising receiving, by the ~~user equipment~~ first network device, an indication of a length for the expiration timer from the ~~second network device~~ base station.
13. The method of claim 10 further comprising re-transmitting, by the ~~user equipment~~ first network device, a third transmission when the ~~user equipment~~ first network device does not receive an acknowledgement signal for the third transmission before an acknowledgement timer expires.

14. The method of claim 10, wherein the second transmission comprises scrambled CRC bits, and wherein the method further comprises:

calculating cyclic redundancy check (CRC) bits for data transmission bits of the second transmission;

scrambling the CRC bits with the source ID; and

adding the scrambled CRC bits to the second transmission.

15. A ~~network-user equipment device~~ comprising:

a processor; and

a computer readable storage medium storing programming for execution by the processor, the programming including instructions to implement actions in a method in accordance with any one of claims 10 to 14.