C L A I M S

1. A method for wireless communication, performed by a first network element in a wireless communication system, the method comprising:

determining, based on downlink (DL) or uplink (UL) resource availability, that a DL or UL burst arrival time of a DL or UL burst for a wireless device needs to be adjusted; and

transmitting a first message to a core network in the wireless communication system, the first message comprising a DL or UL burst arrival time adjustment indication for the wireless device indicating that a DL or UL burst arrival time of a DL or UL burst for the wireless device needs to be adjusted.

2. The method of claim 1,

wherein the DL burst arrival time adjustment indication comprises at least one of:

a recommended DL burst arrival time;

a recommended periodicity of the DL burst;

a recommended DL burst arrival time offset relative to a current DL burst arrival time;

a recommended DL burst arrival starting time and a recommended DL burst duration;

a recommended DL burst arrival time pattern which matches with an available downlink radio resource for the wireless device;

a cell specific Time Division Duplex (TDD) downlink time domain pattern;

a cell specific TDD uplink and downlink time domain pattern; or

an indication that a current radio resource configuration does not match with a current traffic pattern of the DL burst; or

wherein the UL burst arrival time adjustment indication comprises at least one of:

a recommended UL burst arrival time;

a recommended periodicity of the UL burst;

a recommended UL burst arrival time offset relative to a current DL or UL burst arrival time;

a recommended UL burst arrival starting time and a recommended DL or UL burst duration;

a recommended UL burst arrival time pattern which matches with an available downlink or uplink radio resource for the wireless device;

a cell specific Time Division Duplex (TDD) uplink time domain pattern;

a cell specific TDD uplink and downlink time domain pattern; or

an indication that a current radio resource configuration does not match with a current traffic pattern of the DL burst.

3. The method of claim 1, wherein the first message comprises a User Equipment (UE) associated signaling message.

4. The method of claim 1, further comprising:

receiving a second message from the core network as a response to the first message, the second message comprising a DL or UL burst arrival time confirmation, and

the DL burst arrival time confirmation comprising at least one of:

a DL burst arrival time;

a periodicity of the DL burst;

a DL burst arrival time offset relative to a current DL burst arrival time;

a DL burst arrival starting time and a DL burst duration;

a DL burst arrival time pattern which matches with an available downlink radio resource for the wireless device; or

an indication to delete a DL burst arrival time related configuration; or

the UL burst arrival time confirmation comprising at least one of:

a UL burst arrival time;

a periodicity of the UL burst;

a UL burst arrival time offset relative to a current DL or UL burst arrival time;

a UL burst arrival starting time and a DL or UL burst duration;

a UL burst arrival time pattern which matches with an available downlink radio resource for the wireless device; or

an indication to delete a UL burst arrival time related configuration.

5. The method of claim 1, wherein:

before transmitting the first message to the core network, the method further comprises:

receiving, from the core network, an indicator indicating whether a DL or UL burst arrival time adjustment is supported by the core network; and

transmitting the first message to a core network comprises:

in response to the indicator indicating that the DL or UL burst arrival time adjustment is supported by the core network, transmitting the first message to the core network.

6. The method of claim 1, wherein a reception of the first message by the core network triggers the core network to perform at least one of:

transmitting the DL burst arrival time adjustment indication to an entity providing the DL burst for the wireless device, the entity comprising at least one of: a data network; or an application layer; or

transmitting the DL burst arrival time adjustment indication to the wireless device.

7. The method of claim 1, wherein transmitting the first message to the core network comprises:

transmitting the first message to an Access and Mobility Management Function (AMF) of the core network via a UE associated signaling.

8. The method of claim 1, wherein the first network element comprises a base station, the base station comprising one of:

a gNodeB (gNB);

an eNodeB (eNB);

an ng-eNodeB (ng-eNB); or

a NodeB.

9. A method for wireless communication, performed by a core network node in a wireless communication system, the method comprising:

receiving a first message from a base station in the wireless communication system, the first message comprising a DL or UL burst arrival time adjustment indication for a wireless device

indicating that a DL or UL burst arrival time of a DL or UL burst for the wireless device needs to be adjusted.

10. The method of claim 9,

wherein the DL burst arrival time adjustment indication comprises at least one of:

a recommended DL burst arrival time;

a recommended periodicity of the DL burst;

a recommended DL burst arrival time offset relative to a current DL burst arrival time;

a recommended DL burst arrival starting time and a recommended DL burst duration;

a recommended DL burst arrival time pattern which matches with an available downlink radio resource for the wireless device;

a cell specific Time Division Duplex (TDD) downlink time domain pattern;

a cell specific TDD uplink and downlink time domain pattern; or

an indication that a current radio resource configuration does not match with a current traffic pattern of the DL burst; or

wherein the UL burst arrival time adjustment indication comprises at least one of:

a recommended UL burst arrival time;

a recommended periodicity of the UL burst;

a recommended UL burst arrival time offset relative to a current DL or UL burst arrival time;

a recommended UL burst arrival starting time and a recommended DL or UL burst duration;

a recommended UL burst arrival time pattern which matches with an available downlink radio resource for the wireless device;

a cell specific Time Division Duplex (TDD) uplink time domain pattern;

a cell specific TDD uplink and downlink time domain pattern; or

an indication that a current radio resource configuration does not match with a current traffic pattern of the UL burst.

11. The method of claim 9, further comprising:

transmitting the DL burst arrival time adjustment indication to an entity providing the DL burst for the wireless device, the entity comprising at least one of: a data network; or an application layer.

12. The method of claim 9, further comprising:

transmitting the DL or UL burst arrival time adjustment indication to the wireless device.

13. The method of claim 9, wherein:

before receiving the first message from the base station, the method further comprises:

transmitting, to the base station, a first indicator indicating whether a DL or UL burst arrival time adjustment is supported by the core network node.

14. The method of claim 13, further comprising:

transmitting a second message to the base station as a response to the first message, the second message comprising a DL or UL burst arrival time confirmation, and

the DL burst arrival time confirmation comprising at least one of:

a DL burst arrival time;

a periodicity of the DL burst;

a DL burst arrival time offset relative to a current DL burst arrival time;

a DL burst arrival starting time and a DL burst duration;

a DL burst arrival time pattern which matches with an available downlink radio resource for the wireless device; or

an indication to delete a DL burst arrival time related configuration; or

the UL burst arrival time confirmation comprising at least one of:

a UL burst arrival time;

a periodicity of the UL burst;

a UL burst arrival time offset relative to a current DL or UL burst arrival time;

a UL burst arrival starting time and a DL or UL burst duration;

a UL burst arrival time pattern which matches with an available downlink or uplink radio resource for the wireless device; or

an indication to delete a UL burst arrival time related configuration.

15. The method of claim 9, wherein the core network node comprises an AMF.

16. The method of claim 1, wherein:

a reception of the first message by the core network triggers the core network to transmit the UL burst arrival time adjustment indication to the wireless device; and

a reception of the UL burst arrival time adjustment indication by the wireless device triggers the wireless device to transmit the UL burst arrival time adjustment indication to an entity providing the UL burst for the wireless device, the entity comprising at least one of: a data network; or an application layer.

17. The method of claim 13, wherein before transmitting the first indicator to the base station, the method further comprises:

receiving a second indicator from the wireless device indicating whether the UL burst arrival time adjustment is supported by the wireless device.

18. A device for wireless communication comprising a memory for storing computer instructions and a processor in communication with the memory, wherein, when the processor executes the computer instructions, the processor is configured to implement a method comprising:

determining, based on downlink (DL) or uplink (UL) resource availability, that a DL or UL burst arrival time of a DL or UL burst for a wireless device needs to be adjusted; and

transmitting a first message to a core network in a wireless communication system, the first message comprising a DL or UL burst arrival time adjustment indication for the wireless device indicating that a DL or UL burst arrival time of a DL or UL burst for the wireless device needs to be adjusted.

19. A computer program product comprising a non-transitory computer-readable program medium with computer code stored thereupon, the computer code, when executed by one or more processors, causing the one or more processors to implement a method comprising:

determining, based on downlink (DL) or uplink (UL) resource availability, that a DL or UL burst arrival time of a DL or UL burst for a wireless device needs to be adjusted; and

transmitting a first message to a core network in a wireless communication system, the first message comprising a DL or UL burst arrival time adjustment indication for the wireless device indicating that a DL or UL burst arrival time of a DL or UL burst for the wireless device needs to be adjusted.