

METHOD AND APPARATUS IN NODE USED FOR WIRELESS COMMUNICATION

Technical Field

[0001] The present application relates to a transmission method and apparatus in a wireless communication system, in particular to a transmission method and apparatus for wireless signals in a wireless communication system supporting a cellular network.

Background Art

[0002] Future wireless communication networks need to take a people-centered development vision to meet communication requirements of high reliability, low latency, high transmission rate services, high system coverage, and interconnection of all things; resource sharing among different radio access technologies is an important aspect for enhancing the future wireless communication networks.

[0003] As important participants in future wireless communication, AI (Artificial Intelligence) and ML (Machine Learning) technologies will be efficiently fused with wireless communication networks to achieve better network performance.

Summary of the Invention

[0004] How to perform resource sharing among multiple radio access technologies is an important problem that needs to be considered in researches on future wireless communication; the present application discloses a solution for the above problem. It should be noted that the present application may be applied to multiple wireless communication scenarios, such as mobile communication networks, wireless local area networks, Internet of Vehicles, and Internet of Things, and achieve similar technical effects. In addition, using a unified solution for different scenarios (including but not limited to the mobile communication networks, the wireless local area networks, the Internet of Vehicles, and the Internet of Things) also helps to reduce hardware complexity and costs or improve performance. In the absence of conflicts, embodiments and features in the embodiments in any node of the present application may be applied to any other nodes. In the absence of conflicts, the embodiments and features in the embodiments of the present application may be arbitrarily combined with each other.

[0005] When necessary, the interpretation of terminologies in the present application may refer to the descriptions of specification protocols TS37 series, TS38 series and higher version series of 3GPP (3rd Generation Partner Project).

[0006] The present application discloses a method in a first node used for wireless communication, characterized by comprising:

[0007] using a first radio access technology to send first information, or using a first radio access technology to receive first information,

[0008] wherein the first information depends on a first generator, and a first data set is used for training of the first generator; and the first generator is applied to multiple radio access technologies.

[0009] As one embodiment, the problem to be solved by the present application comprises: how to implement resource sharing in heterogeneous networks.

[0010] As one embodiment, the problem to be solved by the present application comprises: how to apply the first generator.

[0011] As one embodiment, the problem to be solved by the present application comprises: how to enhance wireless communication networks.

[0012] As one embodiment, the problem to be solved by the present application comprises: how to enhance application of an AI or ML technology in wireless communication.

[0013] As one embodiment, benefits of the above method comprise: enhancing resource sharing among multiple radio access technologies.

[0014] As one embodiment, benefits of the above method comprise: improving utilization efficiency of resources.

[0015] As one embodiment, benefits of the above method comprise: helping to share the first generator by multiple radio access technologies, and improving utilization efficiency of the first generator.

[0016] As one embodiment, benefits of the above method comprise: helping to perform collaboration among multiple radio access technologies to improve performance of wireless networks.

[0017] According to one aspect of the present application, the above method is characterized in that,

[0018] candidates of the first radio access technology comprise the multiple radio access technologies.

[0019] According to one aspect of the present application, the above method is characterized in that,

[0020] the first information is applied to the multiple radio access technologies.

[0021] As one embodiment, benefits of the above method comprise: simplifying system design of the heterogeneous networks.

[0022] According to one aspect of the present application, the above method is characterized

in that,

[0023] the first information comprises at least part of an identifier of the first generator.

[0024] According to one aspect of the present application, the above method is characterized in that,

[0025] the first generator comprises an AI (Artificial Intelligence) or ML (Machine Learning) model.

[0026] According to one aspect of the present application, the above method is characterized in that,

[0027] the first radio access technology comprises a radio access technology of 6G or beyond 6G.

[0028] According to one aspect of the present application, the above method is characterized in that,

[0029] the multiple radio access technologies comprise at least two of the radio access technology of 6G or beyond 6G, a radio access technology of Wifi, and a radio access technology of Bluetooth.

[0030] The present application discloses a first node used for wireless communication, characterized by comprising:

[0031] a first processor using a first radio access technology to send first information, or using a first radio access technology to receive first information,

[0032] wherein the first information depends on a first generator, and a first data set is used for training of the first generator; and the first generator is applied to multiple radio access technologies.

Brief Description of the Drawings

[0033] Other features, purposes and advantages of the present application will become more apparent by reading the detailed description of the non-limiting embodiments in the following drawings with reference to them:

FIG. 1 shows a processing flow chart of a first node according to one embodiment of the present application;

FIG. 2 shows a schematic diagram of a first communication device and a second communication device according to one embodiment of the present application;

FIG. 3 shows a flow chart of a signal transmission according to one embodiment of the present application;

FIG. 4 shows a flow chart of a signal transmission according to one embodiment of the present application;

FIG. 5 shows a schematic diagram explaining first information according to one embodiment of the present application;

FIG. 6 shows a schematic diagram explaining a first data set according to one embodiment of the present application;

FIG. 7 shows a structural block diagram of a processing apparatus in a first node device according to one embodiment of the present application; and

FIG. 8 shows a structural block diagram of a processing apparatus in a second node device according to one embodiment of the present application.

Detailed Description of Embodiments

[0034] The technical solution of the present application will be further described in detail below in conjunction with the drawings. It should be noted that, in the absence of conflicts, embodiments and features in the embodiments of the present application may be arbitrarily combined with each other.

Embodiment 1

[0035] Embodiment 1 illustrates a processing flow chart of a first node according to one embodiment of the present application, as shown in FIG. 1.

[0036] In the Embodiment 1, the first node in the present application, in step 101, uses a first radio access technology to send first information, or uses a first radio access technology to receive first information.

[0037] In the Embodiment 1, the first information depends on a first generator, and a first data set is used for training of the first generator; and the first generator is applied to multiple radio access technologies.

[0038] As one embodiment, the first node uses the first radio access technology to send the first information.

[0039] As one embodiment, the first node uses the first radio access technology to receive the first information.

[0040] As one embodiment, the first information is transmitted in a radio access network employing the first radio access technology.

[0041] As one embodiment, the first information is sent/received through a radio channel defined in the first radio access technology.

[0042] As one embodiment, the first information is transmitted through a wireless interface defined in the first radio access technology.

[0043] As one embodiment, the first radio access technology comprises a radio access technology of 6G (sixth generation mobile communication).

- [0044] As one embodiment, the first radio access technology is a radio access technology of 6G.
- [0045] As one embodiment, benefits of the above method comprise: helping to implement resource sharing between a radio access technology of 6G and other radio access technologies.
- [0046] As one embodiment, the first radio access technology comprises a radio access technology beyond 6G (such as 7G (seventh generation mobile communication), and 8G (eighth generation mobile communication)).
- [0047] As one embodiment, the first radio access technology is a radio access technology beyond 6G.
- [0048] As one embodiment, benefits of the above method comprise: helping to implement resource sharing between a radio access technology beyond 6G and other radio access technologies.
- [0049] As one embodiment, generation of the first information depends on the first generator.
- [0050] As one embodiment, the first information comprises an output after passing through at least the first generator.
- [0051] As one embodiment, the first information indicates the first generator.
- [0052] As one embodiment, the first information identifies the first generator.
- [0053] As one embodiment, the first information comprises an identifier of the first generator.
- [0054] As one embodiment, the first information comprises at least part of an identifier of the first generator.
- [0055] As one embodiment, the first information comprises a model parameter of the first generator.
- [0056] As one embodiment, the first information comprises indication information of a parameter of the first generator.
- [0057] As one embodiment, the first information is NAS (Non-Access Stratum) information.
- [0058] As one embodiment, benefits of the above method comprise: reducing system design complexity of an AS.
- [0059] As one embodiment, the first information is AS (Access Stratum) information.
- [0060] As one embodiment, benefits of the above method comprise: reducing system design complexity of an NAS.
- [0061] As one embodiment, the first information comprises physical layer information.
- [0062] As one embodiment, the first information comprises MAC (Medium Access Control) layer information.
- [0063] As one embodiment, the first information comprises control information.
- [0064] As one embodiment, the first generator comprises a model obtained after training.

- [0065] As one embodiment, the first generator comprises an AI (Artificial Intelligence) model.
- [0066] As one embodiment, the first generator comprises an ML (Machine Learning) model.
- [0067] As one embodiment, benefits of the above method comprise: helping to use AI or ML to improve performance of wireless communication.
- [0068] As one embodiment, the first generator is used for generating user data or control information to be sent.
- [0069] As one embodiment, the first generator is used for compressing data to be transmitted.
- [0070] As one embodiment, the first generator is used for decompressing received data.
- [0071] As one embodiment, the first generator is used for estimating a radio channel.
- [0072] As one embodiment, the output of the first generator comprises physical layer information.
- [0073] As one embodiment, the input of the first generator comprises user data to be processed.
- [0074] As one embodiment, the input of the first generator comprises control information to be processed.
- [0075] As one embodiment, the input of the first generator comprises at least one bit stream.
- [0076] As one embodiment, the first generator comprises one estimator.
- [0077] As one embodiment, the first generator comprises a Bayesian optimal estimator.
- [0078] As one embodiment, the first generator comprises one classifier.
- [0079] As one embodiment, the first generator comprises one coder.
- [0080] As one embodiment, the first generator comprises one decoder.
- [0081] As one embodiment, for each radio access technology of the multiple radio access technologies, there exists at least one transmission performed using such radio access technology that carries content generated by the first generator.
- [0082] As one embodiment, if the first generator is used for generating user data or control information to be transmitted using a radio access technology, the first generator is applied to such radio access technology.
- [0083] As one embodiment, if the first generator is used for estimating a channel defined in a radio access technology, the first generator is applied to such radio access technology.
- [0084] As one embodiment, if the first generator is used for compressing data transmitted using a radio access technology, the first generator is applied to such radio access technology.
- [0085] As one embodiment, if the first generator is used for decompressing data transmitted using a radio access technology, the first generator is applied to such radio access technology.
- [0086] As one embodiment, if the first generator is used for generating data having a data format defined in a radio access technology, the first generator is applied to such radio access technology.

[0087] As one embodiment, if the first generator is configured with an identifier defined in a radio access technology, the first generator is applied to such radio access technology.

[0088] As one embodiment, if the first generator is invoked in a process of a communication node using a radio access technology, the first generator is applied to such radio access technology.

[0089] As one embodiment, an expression of "the first generator is applied to multiple radio access technologies" comprises: the first information is applied to the multiple radio access technologies.

[0090] As one embodiment, the multiple radio access technologies are respectively used for multiple different types of wireless communication networks.

[0091] As one embodiment, the multiple radio access technologies comprise more than one cellular network radio access technology.

[0092] As one embodiment, the multiple radio access technologies comprise at least one cellular network radio access technology and one non-cellular network radio access technology.

[0093] As one embodiment, the multiple radio access technologies comprise a 6G (sixth generation mobile communication) technology and a radio access technology for WLANs (Wireless Local Area Networks).

[0094] As one embodiment, the multiple radio access technologies comprise a radio access technology beyond 6G and a radio access technology for WLANs.

[0095] As one embodiment, benefits of the above method comprise: helping to share the first generator by a radio access technology of 6G or beyond 6G and a radio access technology for WLANs, and improving utilization efficiency of the first generator.

[0096] As one embodiment, the multiple radio access technologies comprise a radio access technology of 6G and a radio access technology of Wifi.

[0097] As one embodiment, the multiple radio access technologies comprise a radio access technology beyond 6G and a radio access technology of Wifi.

[0098] As one embodiment, benefits of the above method comprise: helping to share the first generator by a radio access technology of 6G or beyond 6G and a radio access technology of Wifi, and improving utilization efficiency of the first generator.

[0099] As one embodiment, the multiple radio access technologies comprise a radio access technology of 6G and a radio access technology of Bluetooth.

[0100] As one embodiment, the multiple radio access technologies comprise a radio access technology beyond 6G and a radio access technology of Bluetooth.

[0101] As one embodiment, benefits of the above method comprise: helping to share the first generator by a radio access technology of 6G or beyond 6G and a radio access technology of Bluetooth, and improving utilization efficiency of the first generator.

[0102] As one embodiment, the multiple radio access technologies comprise a radio access technology of 6G and a radio access technology of Bluetooth, and the first radio access technology is a radio access technology for WLANs.

[0103] As one embodiment, the multiple radio access technologies comprise a radio access technology beyond 6G and a radio access technology of Bluetooth, and the first radio access technology is a radio access technology for WLANs.

[0104] As one embodiment, the multiple radio access technologies comprise a radio access technology of 6G and a radio access technology of Bluetooth, and the first radio access technology is a radio access technology of Wifi.

[0105] As one embodiment, the multiple radio access technologies comprise a radio access technology beyond 6G and a radio access technology of Bluetooth, and the first radio access technology is a radio access technology of Wifi.

[0106] As one embodiment, the multiple radio access technologies comprise a radio access technology of 6G and a radio access technology of Bluetooth, and the first radio access technology is a radio access technology of Bluetooth.

[0107] As one embodiment, the multiple radio access technologies comprise a radio access technology beyond 6G and a radio access technology of Bluetooth, and the first radio access technology is a radio access technology of Bluetooth.

[0108] As one embodiment, the multiple radio access technologies comprise 5G (fifth generation mobile communication) technology and a radio access technology of 6G.

[0109] As one embodiment, the multiple radio access technologies comprise a radio access technology of 6G and a radio access technology beyond 6G.

[0110] As one embodiment, the multiple radio access technologies are respectively used for multiple wireless communication systems.

[0111] As one embodiment, the first radio access technology is one of the multiple radio access technologies.

[0112] As one embodiment, the first radio access technology is any one of the multiple radio access technologies.

[0113] As one embodiment, the first node is connected to different types of wireless communication systems.

[0114] As one embodiment, the first generator is stored and is invoked in the use of the multiple radio access technologies.

[0115] As one embodiment, the first node has a capability of using each radio access technology of the multiple radio access technologies to perform communication.

[0116] As one embodiment, the first node performs at least one communication using each

radio access technology of the multiple radio access technologies.

[0117] As one embodiment, the first generator being applied to the multiple radio access technologies is for the first node.

[0118] As one embodiment, a second node used for wireless communication, characterized by comprising:

[0119] a second processor using a first radio access technology to receive first information, or using a first radio access technology to send first information,

[0120] wherein the first information depends on a first generator, and a first data set is used for training of the first generator.

[0121] As one embodiment, a method in a second node used for wireless communication, characterized by comprising:

[0122] using a first radio access technology to receive first information, or using a first radio access technology to send first information,

[0123] wherein the first information depends on a first generator, and a first data set is used for training of the first generator.

[0124] As one embodiment, for the second node, the first generator is applied to multiple radio access technologies.

[0125] As one embodiment, candidates of the first radio access technology comprise the multiple radio access technologies.

[0126] As one embodiment, the first information is applied to the multiple radio access technologies.

[0127] As one embodiment, the first information comprises at least part of an identifier of the first generator.

[0128] As one embodiment, the first generator comprises an AI (Artificial Intelligence) or ML (Machine Learning) model.

[0129] As one embodiment, the first radio access technology comprises a radio access technology of 6G or beyond 6G.

[0130] As one embodiment, the multiple radio access technologies comprise at least two of the radio access technology of 6G or beyond 6G, a radio access technology of Wifi, and a radio access technology of Bluetooth.

Embodiment 2

[0131] Embodiment 2 shows a schematic diagram of a first communication device and a second communication device according to the present application, as shown in FIG. 2. FIG. 2 is a block diagram of a first communication device 410 and a second communication device 450 communicating with each other in an access network.

[0132] The first communication device 410 comprises a controller/processor 475, a memory 476, a receiving processor 470, a transmitting processor 416, a multi-antenna receiving processor 472, a multi-antenna transmitting processor 471, a transmitting device/receiving device 418, and an antenna 420.

[0133] The second communication device 450 comprises a controller/processor 459, a memory 460, a data source 467, a transmitting processor 468, a receiving processor 456, a multi-antenna transmitting processor 457, a multi-antenna receiving processor 458, a transmitting device/receiving device 454, and an antenna 452.

[0134] As one embodiment, in a transmission from the first communication device 410 to the second communication device 450, at the first communication device 410, upper layer data packets from a core network are provided to the controller/processor 475. The controller/processor 475 implements the functionality of an L2 layer (Layer 2). In the transmission from the first communication device 410 to the first communication device 450, the controller/processor 475 provides header compression, encryption, packet segmentation and reordering, multiplexing between logical and transport channels, and radio resource assignment to the second communication device 450 based on various priority metrics. The controller/processor 475 is also responsible for retransmission of lost packets and signaling to the second communication device 450. The transmitting processor 416 and the multi-antenna transmitting processor 471 implement various signal processing functions for an L1 layer (i.e., a physical layer). The transmitting processor 416 implements coding and interleaving to facilitate forward error correction (FEC) at the second communication device 450, as well as mapping of signal clusters based on various modulation schemes (e.g., binary phase shift keying (BPSK), quadrature phase shift keying (QPSK), M-phase shift keying (M-PSK), and M-quadrature amplitude modulation (M-QAM)). The multi-antenna transmitting processor 471 performs digital spatial precoding, comprising codebook-based precoding and non-codebook-based precoding, and beamforming processing on the coded and modulated symbols to generate one or more spatial streams. The transmitting processor 416 then maps each spatial stream to a subcarrier, multiplexes with a reference signal (e.g., pilot frequency) in a time domain and/or frequency domain, and then uses an inverse fast Fourier transform (IFFT) to generate a physical channel carrying a time-domain multi-carrier symbol stream. The multi-antenna transmitting processor 471 then performs sending analog precoding/beamforming operations on the time-domain multi-carrier symbol stream. Each transmitting device 418 converts a baseband multi-carrier symbol stream provided by the multi-antenna transmitting processor 471 into a radio frequency stream, which is then provided to different antennas 420.

[0135] As one embodiment, in the transmission from the first communication device 410 to the

second communication device 450, at the second communication device 450, each receiving device 454 receives a signal through its corresponding antenna 452. Each receiving device 454 recovers information modulated onto a radio frequency carrier, converts a radio frequency stream into a baseband multi-carrier symbol stream, and provides it to the receiving processor 456. The receiving processor 456 and the multi-antenna receiving processor 458 implement various signal processing functions of the L1 layer. The multi-antenna receiving processor 458 performs receiving analog precoding/beamforming operations on the baseband multi-carrier symbol stream from the receiving device 454. The receiving processor 456 uses a fast Fourier transform (FFT) to convert the baseband multi-carrier symbol stream from a time domain to a frequency domain after the receiving analog precoding/beamforming operations. In the frequency domain, a physical layer data signal and the reference signal are demultiplexed by the receiving processor 456, wherein the reference signal will be used for channel estimation, and the data signal is recovered after multi-antenna detection in the multi-antenna receiving processor 458 to recover any spatial stream destined for the second communication device 450. Symbols on each spatial stream are demodulated and recovered in the receiving processor 456, and a soft decision is generated. The receiving processor 456 then decodes and deinterleaves the soft decision to recover upper layer data and control signals transmitted by the first communication device 410 on the physical channel. The upper layer data and control signals are then provided to the controller/processor 459. The controller/processor 459 implements functions of the L2 layer. The controller/processor 459 may be associated with the memory 460 that stores program code and data. The memory 460 may be referred to as a computer-readable medium. In the transmission from the first communication device 410 to the second communication device 450, the controller/processor 459 provides demultiplexing between transport and logical channels, packet reassembly, decryption, header decompression, and control signal processing to recover upper layer data packets from the core network. The upper layer data packets are then provided to all protocol layers above the L2 layer. Various control signals may also be provided to the L3 layer (Layer 3) for L3 layer processing.

[0136] As one embodiment, in a transmission from the second communication device 450 to the first communication device 410, at the second communication device 450, the data source 467 is used for providing the upper layer data packets to the controller/processor 459. The data source 467 represents all protocol layers above the L2 layer. Similar to the sending function at the first communication device 410 described in the transmission from the first communication device 410 to the second communication device 450, the controller/processor 459 implements header compression, encryption, packet segmentation and reordering, and multiplexing between logical and transport channels based on radio resource assignment, and implements the functions of the L2 layer for a user plane and a control plane. The controller/processor 459 is also responsible for

the retransmission of lost packets and signaling to the first communication device 410. The transmitting processor 468 executes modulation mapping and channel coding processing, and the multi-antenna transmitting processor 457 performs digital multi-antenna spatial precoding, comprising codebook-based precoding and non-codebook-based precoding, and beamforming processing. Then, the transmitting processor 468 modulates the generated spatial stream into a multi-carrier/single-carrier symbol stream, which is provided to different antennas 452 via the transmitting device 454 after analog precoding/beamforming operations in the multi-antenna transmitting processor 457. Each transmitting device 454 first converts the baseband symbol stream provided by the multi-antenna transmitting processor 457 into the radio frequency symbol stream, which is then provided to the antenna 452.

[0137] As one embodiment, in the transmission from the second communication device 450 to the first communication device 410, a function at the first communication device 410 is similar to a receiving function at the second communication device 450 described in the transmission from the first communication device 410 to the second communication device 450. Each receiving device 418 receives a radio frequency signal through its corresponding antenna 420, converts the received radio frequency signal into a baseband signal, and provides the baseband signal to the multi-antenna receiving processor 472 and the receiving processor 470. The receiving processor 470 and the multi-antenna receiving processor 472 jointly implement functions of the L1 layer. The controller/processor 475 implements functions of the L2 layer. The controller/processor 475 may be associated with the memory 476 that stores program code and data. The memory 476 may be referred to as a computer-readable medium. In the transmission from the second communication device 450 to the first communication device 410, the controller/processor 475 provides demultiplexing between transport and logical channels, packet reassembly, decryption, header decompression, and control signal processing to recover upper layer data packets from the UE450. The upper layer data packets from the controller/processor 475 may be provided to the core network.

[0138] As one embodiment, the L2 layer comprises a MAC (Medium Access Control) sublayer.

[0139] As one embodiment, the L2 layer comprises an RLC (Radio Link Control) sublayer.

[0140] As one embodiment, the L2 layer comprises a PDCP (Packet Data Convergence Protocol) sublayer.

[0141] As one embodiment, the L2 layer comprises an SDAP (Service Data Adaptation Protocol) sublayer.

[0142] As one embodiment, the L3 layer comprises an RRC (Radio Resource Control) sublayer.

[0143] As one embodiment, a first node in the present application comprises the second

communication device 450, and a second node in the present application comprises the first communication device 410.

[0144] As one sub-embodiment of the above embodiment, the first node is user equipment, and the second node is a relay node.

[0145] As one sub-embodiment of the above embodiment, the first node is user equipment, and the second node is a base station device.

[0146] As one sub-embodiment of the above embodiment, the first node is a relay node, and the second node is a base station device.

[0147] As one embodiment, the second communication device 450 comprises: at least one processor and at least one memory, the at least one memory comprising computer program code; and the at least one memory and the computer program code being configured to be used together with the at least one processor. The second communication device 450 apparatus at least: uses a first radio access technology to send first information, or uses a first radio access technology to receive first information, wherein the first information depends on a first generator, and a first data set is used for training of the first generator; and the first generator is applied to multiple radio access technologies.

[0148] As one sub-embodiment of the above embodiment, the second communication device 450 corresponds to the first node in the present application.

[0149] As one embodiment, the second communication device 450 comprises: a memory storing a computer-readable instruction program, wherein the computer-readable instruction program generates actions when executed by at least one processor, and the actions comprise: using a first radio access technology to send first information, or using a first radio access technology to receive first information, wherein the first information depends on a first generator, and a first data set is used for training of the first generator; and the first generator is applied to multiple radio access technologies.

[0150] As one sub-embodiment of the above embodiment, the second communication device 450 corresponds to the first node in the present application.

[0151] As one embodiment, the first communication device 410 comprises: at least one processor and at least one memory, the at least one memory comprising computer program code; and the at least one memory and the computer program code being configured to be used together with the at least one processor. The first communication device 410 apparatus at least: uses a first radio access technology to receive first information, or uses a first radio access technology to send first information, wherein the first information depends on a first generator, and a first data set is used for training of the first generator.

[0152] As one sub-embodiment of the above embodiment, the first communication device 410

corresponds to the second node in the present application.

[0153] As one embodiment, the first communication device 410 comprises: a memory storing a computer-readable instruction program, wherein the computer-readable instruction program generates actions when executed by at least one processor, and the actions comprise: using a first radio access technology to receive first information, or using a first radio access technology to send first information, wherein the first information depends on a first generator, and a first data set is used for training of the first generator.

[0154] As one sub-embodiment of the above embodiment, the first communication device 410 corresponds to the second node in the present application.

[0155] As one embodiment, at least one of {the antenna 452, the receiving device 454, the multi-antenna receiving processor 458, the receiving processor 456, the controller/processor 459, the memory 460, and the data source 467} is used for receiving the first information in the present application.

[0156] As one embodiment, at least one of {the antenna 420, the transmitting device 418, the multi-antenna transmitting processor 471, the transmitting processor 416, the controller/processor 475, and the memory 476} is used for sending the first information in the present application.

[0157] As one embodiment, at least one of {the antenna 452, the transmitting device 454, the multi-antenna transmitting processor 457, the transmitting processor 468, the controller/processor 459, the memory 460, and the data source 467} is used for sending the first information in the present application.

[0158] As one embodiment, at least one of {the antenna 420, the receiving device 418, the multi-antenna receiving processor 472, the receiving processor 470, the controller/processor 475, and the memory 476} is used for receiving the first information in the present application.

[0159] As one embodiment, at least one of {the antenna 452, the receiving device 454, the multi-antenna receiving processor 458, the receiving processor 456, the controller/processor 459, the memory 460, and the data source 467} is used for receiving data generated using the first generator in the present application.

[0160] As one embodiment, at least one of {the antenna 420, the transmitting device 418, the multi-antenna transmitting processor 471, the transmitting processor 416, the controller/processor 475, and the memory 476} is used for sending data generated using the first generator in the present application.

[0161] As one embodiment, at least one of {the antenna 452, the transmitting device 454, the multi-antenna transmitting processor 457, the transmitting processor 468, the controller/processor 459, the memory 460, and the data source 467} is used for sending data generated using the first generator in the present application.

[0162] As one embodiment, at least one of {the antenna 420, the receiving device 418, the multi-antenna receiving processor 472, the receiving processor 470, the controller/processor 475, and the memory 476} is used for receiving data generated using the first generator in the present application.

Embodiment 3

[0163] Embodiment 3 illustrates a flow chart of a signal transmission according to one embodiment of the present application, as shown in FIG. 3. In FIG. 3, a first node U1 and a second node U2 perform communication through an air interface. In FIG. 3, steps in dotted blocks F1 and F2 are both optional, and at most one of the steps in the dotted block F1 and the steps in the dotted block F2 exists.

[0164] The first node U1 uses a first radio access technology to receive first information in step S311, and uses the first radio access technology to send data generated using a first generator in step S312A, or uses the first radio access technology to receive data generated using a first generator in step S312B.

[0165] The second node U2 uses a first radio access technology to send first information in step S321, and uses the first radio access technology to receive data generated using a first generator in step S322A, or uses the first radio access technology to send data generated using a first generator in step S322B.

[0166] In Embodiment 3, the first information depends on a first generator, and a first data set is used for training of the first generator; the first generator is applied to multiple radio access technologies; the first radio access technology comprises a radio access technology of 6G or beyond 6G; and the multiple radio access technologies comprise at least two of the radio access technology of 6G or beyond 6G, a radio access technology of Wifi, and a radio access technology of Bluetooth.

[0167] As one sub-embodiment of Embodiment 3, the first information is applied to the multiple radio access technologies.

[0168] As one sub-embodiment of Embodiment 3, the first generator comprises an AI or ML model.

[0169] As one sub-embodiment of Embodiment 3, candidates of the first radio access technology comprise the multiple radio access technologies.

[0170] As one embodiment, the first node U1 is a first node in the present application.

[0171] As one embodiment, the second node U2 is a second node in the present application.

[0172] As one embodiment, the first node U1 is one piece of UE.

[0173] As one embodiment, the first node U1 is one base station.

[0174] As one embodiment, the first node U1 is one radio access point (AP).

[0175] As one embodiment, the second node U2 is one base station.

[0176] As one embodiment, the second node U2 is one piece of UE.

[0177] As one embodiment, the second node U2 is one radio access point (AP).

[0178] As one embodiment, the air interface between the second node U2 and the first node U1 comprises a Uu interface.

[0179] As one embodiment, the air interface between the second node U2 and the first node U1 comprises a cellular link.

[0180] As one embodiment, the air interface between the second node U2 and the first node U1 comprises a non-cellular link.

[0181] As one embodiment, the air interface between the second node U2 and the first node U1 comprises a wireless local area network link.

[0182] As one embodiment, the air interface between the second node U2 and the first node U1 comprises a Wifi link.

[0183] As one embodiment, the air interface between the second node U2 and the first node U1 comprises a Bluetooth link.

[0184] As one embodiment, the air interface between the second node U2 and the first node U1 comprises a wireless interface between a base station device and user equipment.

[0185] As one embodiment, the air interface between the second node U2 and the first node U1 comprises a wireless interface between a satellite device and user equipment.

[0186] As one embodiment, the air interface between the second node U2 and the first node U1 comprises a wireless interface between a relay device and user equipment.

[0187] As one embodiment, the air interface between the second node U2 and the first node U1 comprises a wireless interface between user equipment and user equipment.

[0188] As one embodiment, the air interface between the second node U2 and the first node U1 comprises a wireless interface between a radio access point (AP) and user equipment.

[0189] As one embodiment, the first node U1 uses the first generator to generate data, and the first node U1 uses the first radio access technology to send the data generated using the first generator.

[0190] As one embodiment, the second node U2 uses the first generator to generate data, and the second node U2 uses the first radio access technology to send the data generated using the first generator.

[0191] As one embodiment, the first node U1 uses each radio access technology of the multiple radio access technologies to perform at least one piece of communication, and the second node U2 uses each radio access technology of the multiple radio access technologies to perform at least one piece of communication.

[0192] As one embodiment, the first node U1 has a capability of using each radio access technology of the multiple radio access technologies to perform communication, and the second node U2 has a capability of using each radio access technology of the multiple radio access technologies to perform communication.

[0193] As one embodiment, the second node U2 does not have a capability of using a second radio access technology to perform communication, the second radio access technology is one of the multiple radio access technologies, and the second radio access technology is not the first radio access technology.

[0194] As one embodiment, the steps in the dotted block F1 do not exist, and the steps in the dotted block F2 do not exist.

[0195] As one embodiment, the steps in the dotted block F1 exist, and the steps in the dotted block F2 do not exist.

[0196] As one embodiment, the steps in the dotted block F1 do not exist, and the steps in the dotted block F2 exist.

Embodiment 4

[0197] Embodiment 4 illustrates a flow chart of a signal transmission according to one embodiment of the present application, as shown in FIG. 4. In FIG. 4, a first node U3 and a second node U4 perform communication through an air interface. In FIG. 4, steps in dotted blocks F3 and F4 are both optional, and at most one of the steps in the dotted block F3 and the steps in the dotted block F4 exists.

[0198] The first node U3 uses a first radio access technology to send first information in step S411, and uses the first radio access technology to send data generated using a first generator in step S412A, or uses the first radio access technology to receive the data generated using a first generator in step S412B.

[0199] The second node U4 uses a first radio access technology to receive first information in step S421, and uses the first radio access technology to receive data generated using a first generator in step S422A, or uses the first radio access technology to send the data generated using a first generator in step S422B.

[0200] In Embodiment 4, the first information depends on a first generator, and a first data set is used for training of the first generator; the first generator is applied to multiple radio access technologies; the first radio access technology comprises a radio access technology of 6G or beyond 6G; and the multiple radio access technologies comprise at least two of the radio access technology of 6G or beyond 6G, a radio access technology of Wifi, and a radio access technology of Bluetooth.

[0201] As one sub-embodiment of Embodiment 4, the first information is applied to the

multiple radio access technologies.

[0202] As one sub-embodiment of Embodiment 4, the first generator comprises an AI or ML model.

[0203] As one sub-embodiment of Embodiment 4, candidates of the first radio access technology comprise the multiple radio access technologies.

[0204] As one embodiment, the first node U3 is the first node in the present application.

[0205] As one embodiment, the second node U4 is the second node in the present application.

[0206] As one embodiment, the first node U3 is one piece of UE.

[0207] As one embodiment, the first node U3 is one base station.

[0208] As one embodiment, the first node U3 is one radio access point (AP).

[0209] As one embodiment, the second node U4 is one base station.

[0210] As one embodiment, the second node U4 is one piece of UE.

[0211] As one embodiment, the second node U4 is one radio access point (AP).

[0212] As one embodiment, the air interface between the second node U4 and the first node U3 comprises a Uu interface.

[0213] As one embodiment, the air interface between the second node U4 and the first node U3 comprises a cellular link.

[0214] As one embodiment, the air interface between the second node U4 and the first node U3 comprises a non-cellular link.

[0215] As one embodiment, the air interface between the second node U4 and the first node U3 comprises a wireless local area network link.

[0216] As one embodiment, the air interface between the second node U4 and the first node U3 comprises a Wifi link.

[0217] As one embodiment, the air interface between the second node U4 and the first node U3 comprises a Bluetooth link.

[0218] As one embodiment, the air interface between the second node U4 and the first node U3 comprises a wireless interface between a base station device and user equipment.

[0219] As one embodiment, the air interface between the second node U4 and the first node U3 comprises a wireless interface between a satellite device and user equipment.

[0220] As one embodiment, the air interface between the second node U4 and the first node U3 comprises a wireless interface between a relay device and user equipment.

[0221] As one embodiment, the air interface between the second node U4 and the first node U3 comprises a wireless interface between user equipment and user equipment.

[0222] As one embodiment, the air interface between the second node U4 and the first node U3 comprises a wireless interface between a radio access point (AP) and user equipment.

[0223] As one embodiment, the first node U3 uses the first generator to generate data, and the first node U3 uses the first radio access technology to send the data generated using the first generator.

[0224] As one embodiment, the second node U4 uses the first generator to generate data, and the second node U4 uses the first radio access technology to send the data generated using the first generator.

[0225] As one embodiment, the first node U3 uses each radio access technology of the multiple radio access technologies to perform at least one piece of communication, and the second node U4 uses each radio access technology of the multiple radio access technologies to perform at least one piece of communication.

[0226] As one embodiment, the first node U3 has a capability of using each radio access technology of the multiple radio access technologies to perform communication, and the second node U4 has a capability of using each radio access technology of the multiple radio access technologies to perform communication.

[0227] As one embodiment, the second node U4 does not have a capability of using a second radio access technology to perform communication, the second radio access technology is one of the multiple radio access technologies, and the second radio access technology is not the first radio access technology.

[0228] As one embodiment, the steps in the dotted block F3 do not exist, and the steps in the dotted block F4 do not exist.

[0229] As one embodiment, the steps in the dotted block F3 exist, and the steps in the dotted block F4 do not exist.

[0230] As one embodiment, the steps in the dotted block F3 do not exist, and the steps in the dotted block F4 exist.

Embodiment 5

[0231] Embodiment 5 illustrates a schematic diagram explaining first information according to one embodiment of the present application, as shown in FIG. 5.

[0232] In Embodiment 5, the first information is applied to the multiple radio access technologies.

[0233] As one embodiment, if the first information is used as control information in one radio access technology, the first information is applied to such radio access technology.

[0234] As one embodiment, if a signaling defined in one radio access technology indicates the first information, the first information is applied to such radio access technology.

[0235] As one embodiment, if content exchanged between communication parties adopting one radio access technology comprises the first information, the first information is applied to such

radio access technology.

[0236] As one embodiment, the first generator when applied to one radio access technology of the multiple radio access technologies and the first generator when applied to another radio access technology of the multiple radio access technologies have a same identifier.

Embodiment 6

[0237] Embodiment 6 illustrates a schematic diagram explaining a first data set according to one embodiment of the present application, as shown in FIG. 6.

[0238] In Embodiment 6, the first data set is used for training of the first generator.

[0239] As one embodiment, the training for obtaining the first generator is performed with data in the first data set as training data.

[0240] As one embodiment, the training for obtaining the first generator comprises training of parameters in a model.

[0241] As one embodiment, the training for obtaining the first generator is performed according to an AI algorithm or ML algorithm determined by a manufacturer itself.

[0242] As one embodiment, the first data set is configurable.

[0243] As one embodiment, the first data set comprises a plurality of pieces of data, and the plurality of pieces of data are all used as training data.

[0244] As one embodiment, one piece of data in the first data set comprises user data or control information.

[0245] As one embodiment, the first data set comprises data obtained by performing a measurement on a signal defined in the first radio access technology.

[0246] As one embodiment, the first data set comprises data obtained by performing a measurement on a signal defined in at least one radio access technology other than the first radio access technology.

[0247] As one embodiment, the first data set comprises data obtained by performing a measurement on a signal defined in each radio access technology of the multiple radio access technologies.

[0248] As one embodiment, the first data set comprises historical data transmitted using the first radio access technology.

[0249] As one embodiment, the first data set comprises historical data transmitted using one radio access technology other than the first radio access technology.

[0250] As one embodiment, the first data set comprises historical data transmitted using more than one radio access technology.

[0251] As one embodiment, benefits of the above method comprise: improving a training effect of the first generator.

Embodiment 7

[0252] Embodiment 7 illustrates one structural block diagram of a processing apparatus in a first node device, as shown in FIG. 7. In FIG. 7, a processing apparatus A00 of the first node device comprises a first processing machine A03, and the first processing machine A03 comprises a first receiver A01 and a first transmitter A02.

[0253] As one embodiment, a first node device A00 is user equipment.

[0254] As one embodiment, the first node device A00 is a relay node.

[0255] As one embodiment, the first node device A00 is a vehicle-mounted communication device.

[0256] As one embodiment, the first node device A00 is a radio access point.

[0257] As one embodiment, the first node device A00 is a base station.

[0258] As one embodiment, the first node device A00 is a satellite device.

[0259] As one embodiment, the first node device A00 is one of a test apparatus, a test equipment, and a test instrument.

[0260] As one embodiment, the first receiver A01 comprises at least one of an antenna 452, a receiving device 454, a multi-antenna receiving processor 458, a receiving processor 456, a controller/processor 459, a memory 460, and a data source 467 in FIG. 2 of the present application.

[0261] As one embodiment, the first receiver A01 comprises at least the first five of the antenna 452, the receiving device 454, the multi-antenna receiving processor 458, the receiving processor 456, the controller/processor 459, the memory 460, and the data source 467 in FIG. 2 of the present application.

[0262] As one embodiment, the first receiver A01 comprises at least the first four of the antenna 452, the receiving device 454, the multi-antenna receiving processor 458, the receiving processor 456, the controller/processor 459, the memory 460, and the data source 467 in FIG. 2 of the present application.

[0263] As one embodiment, the first receiver A01 comprises at least the first three of the antenna 452, the receiving device 454, the multi-antenna receiving processor 458, the receiving processor 456, the controller/processor 459, the memory 460, and the data source 467 in FIG. 2 of the present application.

[0264] As one embodiment, the first receiver A01 comprises at least the first two of the antenna 452, the receiving device 454, the multi-antenna receiving processor 458, the receiving processor 456, the controller/processor 459, the memory 460, and the data source 467 in FIG. 2 of the present application.

[0265] As one embodiment, the first transmitter A02 comprises at least one of the antenna 452, a transmitting device 454, a multi-antenna transmitting processor 457, a transmitting processor

468, the controller/processor 459, the memory 460, and the data source 467 in FIG. 2 of the present application.

[0266] As one embodiment, the first transmitter A02 comprises at least the first five of the antenna 452, the transmitting device 454, the multi-antenna transmitting processor 457, the transmitting processor 468, the controller/processor 459, the memory 460, and the data source 467 in FIG. 2 of the present application.

[0267] As one embodiment, the first transmitter A02 comprises at least the first four of the antenna 452, the transmitting device 454, the multi-antenna transmitting processor 457, the transmitting processor 468, the controller/processor 459, the memory 460, and the data source 467 in FIG. 2 of the present application.

[0268] As one embodiment, the first transmitter A02 comprises at least the first three of the antenna 452, the transmitting device 454, the multi-antenna transmitting processor 457, the transmitting processor 468, the controller/processor 459, the memory 460, and the data source 467 in FIG. 2 of the present application.

[0269] As one embodiment, the first transmitter A02 comprises at least the first two of the antenna 452, the transmitting device 454, the multi-antenna transmitting processor 457, the transmitting processor 468, the controller/processor 459, the memory 460, and the data source 467 in FIG. 2 of the present application.

[0270] As one embodiment, the first transmitter A02 uses a first radio access technology to send first information, wherein the first information depends on a first generator, and a first data set is used for training of the first generator; and the first generator is applied to multiple radio access technologies.

[0271] As one embodiment, the first receiver A01 uses a first radio access technology to receive first information, wherein the first information depends on a first generator, and a first data set is used for training of the first generator; and the first generator is applied to multiple radio access technologies.

[0272] As one embodiment, candidates of the first radio access technology comprise the multiple radio access technologies.

[0273] As one embodiment, the first information is applied to the multiple radio access technologies.

[0274] As one embodiment, the first information comprises at least part of an identifier of the first generator.

[0275] As one embodiment, the first generator comprises an AI (Artificial Intelligence) or ML (Machine Learning) model.

[0276] As one embodiment, the first radio access technology comprises a radio access

technology of 6G or beyond 6G.

[0277] As one embodiment, the multiple radio access technologies comprise at least two of the radio access technology of 6G or beyond 6G, a radio access technology of Wifi, and a radio access technology of Bluetooth.

[0278] As one embodiment, the first transmitter A02 uses a first radio access technology to send data generated using a first generator.

[0279] As one embodiment, the first receiver A01 uses a first radio access technology to receive data generated using a first generator.

Embodiment 8

[0280] Embodiment 8 illustrates one structural block diagram of a processing apparatus in a second node device, as shown in FIG. 8. In FIG. 8, a processing apparatus B00 of the second node device comprises a second processing machine B03, and the second processing machine B03 comprises a second transmitter B01 and a second receiver B02.

[0281] As one embodiment, the second node device B00 is user equipment.

[0282] As one embodiment, the second node device B00 is a vehicle-mounted communication device.

[0283] As one embodiment, the second node device B00 is a radio access point.

[0284] As one embodiment, a second node device B00 is a base station.

[0285] As one embodiment, the second node device B00 is a satellite device.

[0286] As one embodiment, the second node device B00 is a relay node.

[0287] As one embodiment, the second node device B00 is one of a test apparatus, test equipment, and a test instrument.

[0288] As one embodiment, the second transmitter B01 comprises at least one of an antenna 420, a transmitting device 418, a multi-antenna transmitting processor 471, a transmitting processor 416, a controller/processor 475, and a memory 476 in FIG. 2 of the present application.

[0289] As one embodiment, the second transmitter B01 comprises at least the first five of the antenna 420, the transmitting device 418, the multi-antenna transmitting processor 471, the transmitting processor 416, the controller/processor 475, and the memory 476 in FIG. 2 of the present application.

[0290] As one embodiment, the second transmitter B01 comprises at least the first four of the antenna 420, the transmitting device 418, the multi-antenna transmitting processor 471, the transmitting processor 416, the controller/processor 475, and the memory 476 in FIG. 2 of the present application.

[0291] As one embodiment, the second transmitter B01 comprises at least the first three of the antenna 420, the transmitting device 418, the multi-antenna transmitting processor 471, the

transmitting processor 416, the controller/processor 475, and the memory 476 in FIG. 2 of the present application.

[0292] As one embodiment, the second transmitter B01 comprises at least the first two of the antenna 420, the transmitting device 418, the multi-antenna transmitting processor 471, the transmitting processor 416, the controller/processor 475, and the memory 476 in FIG. 2 of the present application.

[0293] As one embodiment, the second receiver B02 comprises at least one of the antenna 420, a receiving device 418, a multi-antenna receiving processor 472, a receiving processor 470, the controller/processor 475, and the memory 476 in FIG. 2 of the present application.

[0294] As one embodiment, the second receiver B02 comprises at least the first five of the antenna 420, the receiving device 418, the multi-antenna receiving processor 472, the receiving processor 470, the controller/processor 475, and the memory 476 in FIG. 2 of the present application.

[0295] As one embodiment, the second receiver B02 comprises at least the first four of the antenna 420, the receiving device 418, the multi-antenna receiving processor 472, the receiving processor 470, the controller/processor 475, and the memory 476 in FIG. 2 of the present application.

[0296] As one embodiment, the second receiver B02 comprises at least the first three of the antenna 420, the receiving device 418, the multi-antenna receiving processor 472, the receiving processor 470, the controller/processor 475, and the memory 476 in FIG. 2 of the present application.

[0297] As one embodiment, the second receiver B02 comprises at least the first two of the antenna 420, the receiving device 418, the multi-antenna receiving processor 472, the receiving processor 470, the controller/processor 475, and the memory 476 in FIG. 2 of the present application.

[0298] As one embodiment, the second receiver B02 uses a first radio access technology to receive first information, wherein the first information depends on a first generator, and a first data set is used for training of the first generator.

[0299] As one embodiment, the second transmitter B01 uses a first radio access technology to send first information, wherein the first information depends on a first generator, and a first data set is used for training of the first generator.

[0300] As one embodiment, the first generator is applied to multiple radio access technologies.

[0301] As one embodiment, candidates of the first radio access technology comprise the multiple radio access technologies.

[0302] As one embodiment, the first information is applied to the multiple radio access

technologies.

[0303] As one embodiment, the first information comprises at least part of an identifier of the first generator.

[0304] As one embodiment, the first generator comprises an AI (Artificial Intelligence) or ML (Machine Learning) model.

[0305] As one embodiment, the first radio access technology comprises a radio access technology of 6G or beyond 6G.

[0306] As one embodiment, the multiple radio access technologies comprise at least two of the radio access technology of 6G or beyond 6G, a radio access technology of Wifi, and a radio access technology of Bluetooth.

[0307] As one embodiment, the second receiver B02 uses a first radio access technology to receive data generated using a first generator.

[0308] As one embodiment, the second transmitter B01 uses a first radio access technology to send data generated using a first generator.

[0309] Those of ordinary skill in the art can understand that all or part of the steps in the above method can be completed by instructing relevant hardware through a program, and the program can be stored in a computer-readable storage medium, such as a read-only memory, a hard disk or an optical disk. Optionally, all or part of the steps in the above embodiments can also be implemented using one or more integrated circuits. Accordingly, each module unit in the above embodiments can be implemented in the form of hardware or in the form of a software function module. The present application is not limited to any specific form of software and hardware combination. The first node device in the present application includes but is not limited to mobile phones, tablet computers, notebook computers, network access cards, low-power-consumption devices, eMTC devices, NB-IoT devices, vehicle-mounted communication devices, aircraft, airplanes, drones, remote-controlled airplanes and other wireless communication devices. The second node device in the present application includes but is not limited to mobile phones, tablet computers, notebook computers, network access cards, low-power-consumption devices, eMTC devices, NB-IoT devices, vehicle-mounted communication devices, aircraft, airplanes, drones, remote-controlled airplanes and other wireless communication devices. The user equipment or UE or terminal in the present application includes but is not limited to mobile phones, tablet computers, notebook computers, network access cards, low-power-consumption devices, eMTC devices, NB-IoT devices, vehicle-mounted communication devices, aircraft, airplanes, drones, remote-controlled airplanes and other wireless communication devices. The base station device or base station or network-side device in the present application includes but is not limited to macrocellular base stations, microcellular base stations, femtocells, relay base stations, eNBs, gNBs, transmitter

receiver points (TRPs), GNSS, relay satellites, satellite base stations, air base stations, test apparatuses, test equipment, test instruments and other devices.

[0310] Those skilled in the art should understand that the present invention can be implemented in other specified forms without departing from its core or basic features. Therefore, the embodiments disclosed at present should be regarded as descriptive rather than restrictive in any way. The scope of the invention is determined by the appended claims rather than the foregoing description, and all modifications within their equivalent meanings and areas are considered to be comprised therein.

1. A first node used for wireless communication, comprising:
a first processor using a first radio access technology to send first information, or using a first radio access technology to receive first information,
wherein the first information depends on a first generator, and a first data set is used for training of the first generator; and the first generator is applied to multiple radio access technologies.
2. The first node according to claim 1, wherein candidates of the first radio access technology comprise the multiple radio access technologies.
3. The first node according to claim 1 or 2, wherein the first information is applied to the multiple radio access technologies.
4. The first node according to any one of claims 1 to 3, wherein the first information comprises at least part of an identifier of the first generator.
5. The first node according to any one of claims 1 to 4, wherein the first generator comprises an AI (Artificial Intelligence) or ML (Machine Learning) model.
6. The first node according to any one of claims 1 to 5, wherein the first radio access technology comprises a radio access technology of 6G.
7. The first node according to any one of claims 1 to 5, wherein the first radio access technology comprises a radio access technology beyond 6G.
8. The first node according to any one of claims 1 to 7, wherein the multiple radio access technologies comprise at least one cellular network radio access technology and one non-cellular network radio access technology.
9. The first node according to any one of claims 1 to 8, wherein the multiple radio access technologies comprise at least two of the radio access technology of 6G, a radio access technology of Wifi, and a radio access technology of Bluetooth.
10. The first node according to any one of claims 1 to 8, wherein the multiple radio access technologies comprise at least two of the radio access technology beyond 6G, a radio access technology of Wifi, and a radio access technology of Bluetooth.
11. A method used in a first node for wireless communication, comprising:
using a first radio access technology to send first information, or using a first radio access technology to receive first information,
wherein the first information depends on a first generator, and a first data set is used for training of the first generator; and the first generator is applied to multiple radio access technologies.

12. The method used in a first node according to claim 11, wherein candidates of the first radio access technology comprise the multiple radio access technologies.

13. The method used in a first node according to claim 11 or 12, wherein the first information is applied to the multiple radio access technologies.

14. The method used in a first node according to any one of claims 11 to 13, wherein the first information comprises at least part of an identifier of the first generator.

15. The method used in a first node according to any one of claims 11 to 14, wherein the first generator comprises an AI (Artificial Intelligence) or ML (Machine Learning) model.

16. The method used in a first node according to any one of claims 11 to 15, wherein the first radio access technology comprises a radio access technology of 6G.

17. The method used in a first node according to any one of claims 11 to 15, wherein the first radio access technology comprises a radio access technology beyond 6G.

18. The method used in a first node according to any one of claims 11 to 17, wherein the multiple radio access technologies comprise at least one cellular network radio access technology and one non-cellular network radio access technology.

19. The method used in a first node according to any one of claims 11 to 18, wherein the multiple radio access technologies comprise at least two of the radio access technology of 6G, a radio access technology of Wifi, and a radio access technology of Bluetooth.

20. The method used in a first node according to any one of claims 11 to 18, wherein the multiple radio access technologies comprise at least two of the radio access technology beyond 6G, a radio access technology of Wifi, and a radio access technology of Bluetooth.