

APPARATUS, METHODS, AND COMPUTER PROGRAMS

Field of the disclosure

The present disclosure relates to an apparatus, methods, and computer programs and in particular but not exclusively for apparatus, methods and computer programs to be used in a communications system.

Background

A communication system can be seen as a facility that enables communication sessions between two or more entities such as user terminals, base stations/access points and/or other nodes by providing carriers between the various entities involved in the communications path. A communication system can be provided for example by means of a communication network and one or more compatible communications devices.

Access to the communication system may be by means of an appropriate communications device or terminal. A communications device is provided with an appropriate signal receiving and transmitting apparatus for enabling communications, for example enabling access to a communication network or communications directly with other communications device. The communications device may access a carrier provided by a station or access point, and transmit and/or receive communications on the carrier.

The communication system and associated devices typically operate in accordance with a given standard or specification which sets out what the various entities associated with the system are permitted to do and how that should be achieved.

Summary

According to an aspect, there is provided a method comprising: receiving information at a first network entity indicating a first data network identity associated with a request from a communications device; and selecting at the first network entity a second data network identity which is usable with respect to the communications device when said first data network identity is not usable with respect to said communications device, optionally said selecting being in dependence on information associated with said communications device.

The method may comprise determining at the first network entity that said first data network identity is not usable.

According to an aspect, there is a method comprising:

receiving a request at a second network entity from a first network entity comprising a first data network identity associated with a request from a communications device and which

is not usable with respect to said communications device and a second data network identity which is usable with respect to the communications device; and

providing by said second network entity a response to said request, said response to be directed to said communications device and comprising at least one of said second data network identity and said first data network identity.

According to an aspect, there is a method comprising:

causing by a third network entity, a request to be sent to a first network entity that said first entity notify said third network entity when said first network entity selects a second data network identity which is usable with respect to a communications device when a first data network identity is not usable with respect to said communications device, said first data network identity being associated with a request from the communications device; and

receiving at the third network entity a notification from said first network entity when said first network entity selects the second data network identity, said notification comprising said second data network identity and optionally said first data network identity. According to an aspect, there is a method comprising:

causing by a communications device a request to be sent with a first data network identity; and

receiving information at the communications device indicating that said first data network identity is updated to a second data network identity.

According to an aspect, there is provided a method comprising:

causing by a third network entity, a request to be sent to a first network entity that said first network entity notify said third network entity when said first network entity determines a misconfiguration of a communications device. According to an aspect, there is provided a method comprising:

determining at a first network entity information about a misconfiguration of communications device; and

causing information to be provided to a third network entity about said determined misconfiguration of said communications device. According to an aspect, there is an apparatus comprising at least one processor and at least one memory including computer code for one or more programs, the at least one memory and the computer code configured, with the at least one processor, to cause the apparatus at least to:

receive information indicating a first data network identity associated with a request from a communications device; and

select a second data network identity which is usable with respect to the communications device when said first data network identity is not usable with respect to said communications device, said selecting being in dependence on information associated with said communications device.

According to an aspect, there is an apparatus comprising at least one processor and at least one memory including computer code for one or more programs, the at least one memory and the computer code configured, with the at least one processor, to cause the apparatus at least to:

- receive a request from a first network entity comprising a first data network identity associated with a request from a communications device and which is not usable with respect to said communications device and a second data network identity which is usable with respect to the communications device; and

- provide a response to said request, said response to be directed to said communications device and comprising at least one of said second data network identity and said first data network identity.

According to an aspect, there is an apparatus comprising at least one processor and at least one memory including computer code for one or more programs, the at least one memory and the computer code configured, with the at least one processor, to cause the apparatus at least to:

- cause a request to be sent to a first network entity that said first entity notify a third network entity when said first network entity selects a second data network identity which is usable with respect to a communications device when a first data network identity is not usable with respect to said communications device, said first data network identity being associated with a request from the communications device; and

- receive a notification from said first network entity when said first network entity selects the second data network identity, said notification comprising said second data network identity and optionally said first data network identity.

According to an aspect, apparatus comprising at least one processor and at least one memory including computer code for one or more programs, the at least one memory and the computer code configured, with the at least one processor, to cause the apparatus at least to:

- cause a request to be sent with a first data network identity; and

- receive information indicating that said first data network identity is updated to a second data network identity.

According to an aspect, there is provided an apparatus comprising at least one processor and at least one memory including computer code for one or more programs, the at least one memory

and the computer code configured, with the at least one processor, to cause the apparatus at least to:

- determine information about a misconfiguration of a communications device; and
- cause information to be provided to a third network entity about said determined misconfiguration of said communications device.

The method may comprise determining that said first data network identity is not usable by determining that said first data network identity is one or more of: not supported by a network; not permitted in relation to said communications device; not permitted by a policy