H04W  WIRELESS COMMUNICATION NETWORKS (broadcast communication H04H; communication systems using wireless links for non-selective communication, e.g. wireless extensions H04M 1/72)

NOTES
1. This subclass covers:
   • communication networks for selectively establishing one or a plurality of wireless communication links between a desired number of users or between users and network equipment, for the purpose of transferring information via these wireless communication links;
   • networks deploying an infrastructure for mobility management of wireless users connected thereto, e.g. cellular networks, WLAN [Wireless Local Area Network], wireless access networks, e.g. WLL [Wireless Local Loop] or self-organising wireless communication networks, e.g. ad hoc networks;
   • planning or deployment specially adapted for the above-mentioned wireless networks;
   • services or facilities specially adapted for the above-mentioned wireless networks;
   • arrangements or techniques specially adapted for the operation of the above-mentioned wireless networks.

2. This subclass does not cover:
   • communication systems using wireless extensions, i.e. wireless links without selective communication, e.g. cordless telephones, which are covered by group H04M 1/72;
   • broadcast communication, which is covered by subclass H04H.

WARNING
In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.
8/00 Network data management
8/005 . [Discovery of network devices, e.g. terminals]
8/02 . Processing of mobility data, e.g. registration information at HLR [Home Location Register] or VLR [Visitor Location Register]; Transfer of mobility data, e.g. between HLR, VLR or external networks
8/04 . . Registration at HLR or HSS [Home Subscriber Server]
8/06 . . Registration at serving network Location Register, VLR or user mobility server
8/08 . . Mobility data transfer
8/082 . . . [for traffic bypassing of mobility servers, e.g. location registers, home PLMNs or home agents]
8/085 . . . [involving hierarchical organized mobility servers, e.g. hierarchical mobile IP [HMIP]]
8/087 . . . {preserving data network PoA address despite hand-offs]}
8/10 . . . between location register and external networks
8/12 . . . between location registers or mobility servers
8/14 . . . between corresponding nodes
8/16 . . . selectively restricting mobility [data] tracking
8/18 . Processing of user or subscriber data, e.g. subscribed services, user preferences or user profiles; Transfer of user or subscriber data
8/183 . . . {Processing at user equipment or user record carrier]
8/186 . . . {Processing of subscriber group data]
8/20 . . . Transfer of user or subscriber data
8/205 . . . {Transfer to or from user equipment or user record carrier]
8/22 . Processing or transfer of terminal data, e.g. status or physical capabilities
8/24 . . . Transfer of terminal data
8/245 . . . [from a network towards a terminal]
8/26 . . Network addressing or numbering for mobility support
8/265 . . . [for initial activation of new user]
8/28 . . Number portability [: Network address portability]
Network planning, e.g. coverage or traffic planning tools; Network deployment, e.g. resource partitioning or cells structures

- Resource partitioning among network components, e.g. reuse partitioning
- Traffic adaptive resource partitioning
- Hybrid resource partitioning, e.g. channel borrowing
- Load shedding arrangements
- Dynamic resource partitioning
- Fixed resource partitioning
- Spectrum sharing arrangements [between different networks]
- for PBS [Private Base Station] arrangements
- Network planning tools
- for indoor coverage or short range network deployment
- Traffic simulation tools or models
- (for indoor or short range network)
- Cell structures
- Cell enhancers [or enhancement], e.g. for tunnels, building shadow
- using beam steering
- Special cell shapes, e.g. doughnuts or ring cells
- Hierarchical cell structures

Scheduling measurement reports [: Arrangements for measurement reports]

Network traffic management; Network resource management

- Traffic management, e.g. flow control or congestion control
- [at the air interface (dynamic wireless traffic scheduling H04W 72/12)]
- [in wireless networks with changing topologies, e.g. ad-hoc networks (self-organizing networks H04W 84/18)]
- [based on user or device properties, e.g. MTC-capable devices (services for machine-to-machine communication [M2M] or machine type communication [MTC] H04W 4/70; wireless resource selection or allocation plan definition based on terminal or device properties H04W 72/51)]
- [power availability or consumption]
- [based on location or mobility (handoff or reselection H04W 36/00; mobile application services making use of the location of users or terminals H04W 4/02)]
- [based on communication conditions (dynamic wireless traffic scheduling definition based on channel quality criteria H04W 72/54)]
- [radio quality, e.g. interference, losses or delay]
- [Determining whether packet losses are due to overload or to deterioration of radio communication conditions]
- [based on conditions of the access network or the infrastructure network (central resource management H04W 28/16)]
- [per individual bearer or channel (dynamic wireless traffic scheduling H04W 72/12)]
- [the individual bearer or channel having a maximum bit rate or a bit rate guarantee]
- [involving mapping traffic to individual bearers or channels, e.g. traffic flow template [TFT]]
- [using specific QoS parameters for wireless networks, e.g. QoS class identifier [QCI] or guaranteed bit rate [GBR] (negotiating SLA or negotiating QoS H04W 28/24)]
- [adapting protocols for flow control or congestion control to wireless environment, e.g. adapting transmission control protocol [TCP] (wireless network protocols or protocol adaptations to wireless operation, e.g. wireless application protocol H04W 80/00)]
- [using buffer status reports (dynamic wireless traffic scheduling definition H04W 72/12)]
- [detecting congestion or overload during communication (monitoring arrangements H04L 43/00)]
is impacted by wireless traffic scheduling H04W 72/12.

WARNING

Group H04W 28/0289 is impacted by reclassification into group H04W 28/084.
Groups H04W 28/0289 and H04W 28/084 should be considered in order to perform a complete search.

NOTE

When classifying in this group, classification is also made in the appropriate groups under H04L 1/00.

28/06 . . . Optimizing [the usage of the radio link], e.g. header compression, information sizing [, discarding information (system modifying transmission characteristic according to link quality by modifying frame length H04L 1/0007; dynamic adaptation of the packet size for flow control or congestion control H04L 47/365)]

28/065 . . . {using assembly or disassembly of packets}

28/08 . . . Load balancing or load distribution (transferring a connection for handling the traffic H04W 36/22; wireless traffic scheduling H04W 72/12)

WARNING

Group H04W 28/08 is impacted by reclassification into groups H04W 28/084, H04W 36/22, and H04W 72/12.
All groups listed in this Warning should be considered in order to perform a complete search.

28/082 . . . among bearers or channels

28/0827 . . . {Triggering entity}

28/0831 . . . {Core entity}

28/0835 . . . {Access entity, e.g. eNB}

28/0838 . . . {User device}

28/084 . . . among network function virtualisation [NFV] entities; among edge computing entities, e.g. multi-access edge computing

NOTE

Hand-off or reselection arrangements

In this group, local priority rules supersede the first-place priority rule (FPPR) applying throughout H04W.
36/0011 . . . {for data sessions of end-to-end connection}

**WARNING**

Group **H04W 36/0011** is impacted by reclassification into group **H04W 36/0019**.

Groups **H04W 36/0011** and **H04W 36/0019** should be considered in order to perform a complete search.

36/0016 . . . {Hand-off preparation specially adapted for end-to-end data sessions}

36/0019 . . . {adapted for mobile IP [MIP]}

**WARNING**

Group **H04W 36/0019** is impacted by reclassification into group **H04W 36/0019**.

Groups **H04W 36/0011** and **H04W 36/0019** should be considered in order to perform a complete search.

36/0022 . . . {for transferring data sessions between adjacent core network technologies}

**WARNING**

Group **H04W 36/0022** is impacted by reclassification into groups **H04W 36/00222**, **H04W 36/00224** and **H04W 36/00226**.

All groups listed in this Warning should be considered in order to perform a complete search.

36/00222 . . . . {between different packet switched [PS] network technologies, e.g. transferring data sessions between LTE and WLAN or LTE and 5G}

**WARNING**

Group **H04W 36/00222** is incomplete pending reclassification of documents from group **H04W 36/0011**.

Groups **H04W 36/0011** and **H04W 36/0019** should be considered in order to perform a complete search.

36/00224 . . . . {between packet switched [PS] and circuit switched [CS] network technologies, e.g. circuit switched fallback [CSFB]}

**WARNING**

Group **H04W 36/00224** is impacted by reclassification into groups **H04W 36/0011**, **H04W 36/0019** and **H04W 36/00226**.

Groups **H04W 36/0011** and **H04W 36/0019** should be considered in order to perform a complete search.

36/00226 . . . . {wherein the core network technologies comprise IP multimedia system [IMS], e.g. single radio voice call continuity [SRVCC]}

36/0027 . . . {for a plurality of data sessions of end-to-end connections, e.g. multi-call or multi-bearer end-to-end data connections}

36/0033 . . . {with transfer of context information}

36/0038 . . . . {of security context information}

36/0044 . . . . {of quality context information}

36/005 . . . {involving radio access media independent information, e.g. MIH [Media independent Handoff]}

36/0055 . . . {Transmission or use of information for re-establishing the radio link}

**WARNING**

Group **H04W 36/0055** is impacted by reclassification into groups **H04W 36/0064** and **H04W 36/13**.

Groups **H04W 36/0055**, **H04W 36/0064** and **H04W 36/13** should be considered in order to perform a complete search.

36/0058 . . . {Transmission of hand-off measurement information, e.g. measurement reports}

36/0061 . . . . {of neighbour cell information}

36/0064 . . . . {of control information between different access points}

**WARNING**

Group **H04W 36/0064** is incomplete pending reclassification of documents from group **H04W 36/0055**.

Groups **H04W 36/0055** and **H04W 36/0064** should be considered in order to perform a complete search.

36/0066 . . . . {of control information between different types of networks in order to establish a new radio link in the target network}

36/0069 . . . . {in case of dual connectivity, e.g. decoupled uplink/downlink}

**WARNING**

Group **H04W 36/0069** is incomplete pending reclassification of documents from groups **H04W 36/18** and **H04W 36/28**.

Group **H04W 36/0069** is also impacted by reclassification into groups **H04W 36/00692**, **H04W 36/00695** and **H04W 36/00698**.

All groups listed in this Warning should be considered in order to perform a complete search.

36/00692 . . . . {using simultaneous multiple data streams, e.g. cooperative multipoint [CoMP], carrier aggregation [CA] or multiple input multiple output [MIMO] (allocation of physical resources in CoMP or in CA [H04L 5/0035])}

**WARNING**

Group **H04W 36/00692** is incomplete pending reclassification of documents from groups **H04W 36/0069**, **H04W 36/18** and **H04W 36/28**.

All groups listed in this Warning should be considered in order to perform a complete search.
36/00695 . . . [using split of the control plane or user plane]

**WARNING**

Group H04W 36/00695 is incomplete pending reclassification of documents from groups H04W 36/0069, H04W 36/18 and H04W 36/28.

All groups listed in this Warning should be considered in order to perform a complete search.

36/00698 . . . [using different RATs]

**WARNING**

Group H04W 36/00698 is incomplete pending reclassification of documents from groups H04W 36/0069, H04W 36/18 and H04W 36/28.

All groups listed in this Warning should be considered in order to perform a complete search.

36/0072 . . . [of resource information of target access point]

**WARNING**

Group H04W 36/0072 is impacted by reclassification into groups H04W 36/00725 and H04W 36/249.

Groups H04W 36/0072, H04W 36/00725 and H04W 36/249 should be considered in order to perform a complete search.

36/00725 . . . [Random access channel [RACH]-less handover]

**WARNING**

Group H04W 36/00725 is incomplete pending reclassification of documents from group H04W 36/0072.

Groups H04W 36/0072 and H04W 36/00725 should be considered in order to perform a complete search.

36/0077 . . . [of access information of target access point]

36/0079 . . . [in case of hand-off failure or rejection]

36/0083 . . . [Determination of parameters used for hand-off, e.g. generation or modification of neighbour cell lists]

**WARNING**

Group H04W 36/0083 is impacted by reclassification into groups H04W 36/00833 and H04W 36/00838.

Groups H04W 36/0083, H04W 36/00833 and H04W 36/00838 should be considered in order to perform a complete search.

36/00833 . . . [Handover statistics]

**WARNING**

Group H04W 36/00833 is incomplete pending reclassification of documents from group H04W 36/0083.

Groups H04W 36/0083 and H04W 36/00833 should be considered in order to perform a complete search.

36/00835 . . . [Determination of neighbour cell lists]

**WARNING**

Group H04W 36/00835 is impacted by reclassification into groups H04W 36/00835, H04W 36/00835 and H04W 36/00838.

All groups listed in this Warning should be considered in order to perform a complete search.

36/008355 . . . [Determination of target cell based on user equipment [UE] properties, e.g. UE service capabilities]

**WARNING**

Group H04W 36/008355 is incomplete pending reclassification of documents from group H04W 36/00835.

Groups H04W 36/00835 and H04W 36/008355 should be considered in order to perform a complete search.

36/008357 . . . [Determination of target cell based on access point [AP] properties, e.g. AP service capabilities]

**WARNING**

Group H04W 36/008357 is impacted by reclassification into groups H04W 36/00835 and H04W 36/008357.

Groups H04W 36/00835 and H04W 36/008357 should be considered in order to perform a complete search.

36/00837 . . . [Determination of triggering parameters for hand-off]

**WARNING**

Group H04W 36/00837 is impacted by reclassification into groups H04W 36/008375 and H04W 36/00838.

Groups H04W 36/00837, H04W 36/008375 and H04W 36/00838 should be considered in order to perform a complete search.

36/008375 . . . [based on historical data]

**WARNING**

Group H04W 36/008375 is incomplete pending reclassification of documents from group H04W 36/00837.

Groups H04W 36/00837 and H04W 36/008375 should be considered in order to perform a complete search.
WARNING

Group H04W 36/00838 is incomplete pending reclassification of documents from groups H04W 36/0083, H04W 36/00835 and H04W 36/00837. All groups listed in this Warning should be considered in order to perform a complete search.

WARNING

Group H04W 36/023 is impacted by reclassification into group H04W 36/0235. Groups H04W 36/023 and H04W 36/0235 should be considered in order to perform a complete search.

WARNING

Group H04W 36/03 is impacted by reclassification into groups H04W 36/033, H04W 36/035 and H04W 36/037. All groups listed in this Warning should be considered in order to perform a complete search.

WARNING

Group H04W 36/03 is incomplete pending reclassification of documents from group H04W 36/03. Groups H04W 36/03 and H04W 36/035 should be considered in order to perform a complete search.

WARNING

Group H04W 36/08 is impacted by reclassification into groups H04W 36/083, H04W 36/085, H04W 36/087 and H04W 36/13. All groups listed in this Warning should be considered in order to perform a complete search.

WARNING

Group H04W 36/08 is incomplete pending reclassification of documents from group H04W 36/08. Groups H04W 36/08 and H04W 36/083 should be considered in order to perform a complete search.

WARNING

Group H04W 36/08 is incomplete pending reclassification of documents from group H04W 36/08. Groups H04W 36/08 and H04W 36/085 should be considered in order to perform a complete search.

WARNING

Group H04W 36/08 is incomplete pending reclassification of documents from group H04W 36/08. Groups H04W 36/08 and H04W 36/087 should be considered in order to perform a complete search.

WARNING

Group H04W 36/08 is incomplete pending reclassification of documents from group H04W 36/08. Groups H04W 36/08 and H04W 36/087 should be considered in order to perform a complete search.

WARNING

Group H04W 36/08 is incomplete pending reclassification of documents from group H04W 36/08. Groups H04W 36/08 and H04W 36/087 should be considered in order to perform a complete search.
36/125 . . [involving different types of service backbones]

**WARNING**

Group **H04W 36/125** is impacted by reclassification into group **H04W 36/13**.

Groups **H04W 36/125** and **H04W 36/13** should be considered in order to perform a complete search.

36/13 . . [Cell handover without a predetermined boundary, e.g. virtual cells]

**WARNING**

Group **H04W 36/13** is incomplete pending reclassification of documents from groups **H04W 36/0055, H04W 36/08, H04W 36/125** and **H04W 36/14**.

All groups listed in this Warning should be considered in order to perform a complete search.

36/14 . . Reselecting a network or an air interface

**WARNING**

Group **H04W 36/14** is impacted by reclassification into groups **H04W 36/142, H04W 36/144, H04W 36/1443, H04W 36/1446** and **H04W 36/13**.

All groups listed in this Warning should be considered in order to perform a complete search.

36/142 . . [over the same radio air interface technology]

**WARNING**

Group **H04W 36/142** is incomplete pending reclassification of documents from group **H04W 36/14**.

Groups **H04W 36/14** and **H04W 36/142** should be considered in order to perform a complete search.

36/144 . . [over a different radio air interface technology]

**WARNING**

Groups **H04W 36/144, H04W 36/1443 and H04W 36/1446** are incomplete pending reclassification of documents from group **H04W 36/14**.

All groups listed in this Warning should be considered in order to perform a complete search.

36/143 . . [between licensed networks]

36/146 . . [wherein at least one of the networks is unlicensed]

36/16 . . Performing reselection for specific purposes

36/165 . . [for reducing network power consumption (**H04W 36/18** - **H04W 36/22** take precedence)]

**WARNING**

Group **H04W 36/165** is impacted by reclassification into group **H04W 36/247**.

Groups **H04W 36/165** and **H04W 36/247** should be considered in order to perform a complete search.

36/18 . . for allowing seamless reselection, e.g. soft reselection

**WARNING**

Group **H04W 36/18** is impacted by reclassification into groups **H04W 36/185, H04W 36/0069, H04W 36/00692, H04W 36/00695** and **H04W 36/00698**.

All groups listed in this Warning should be considered in order to perform a complete search.

36/185 . . . . [using make before break]

**WARNING**

Group **H04W 36/185** is incomplete pending reclassification of documents from group **H04W 36/18**.

Groups **H04W 36/18** and **H04W 36/185** should be considered in order to perform a complete search.

36/20 . . . . for optimising the interference level

36/22 . . . . for handling the traffic

**WARNING**

Group **H04W 36/22** is incomplete pending reclassification of documents from group **H04W 28/08**.

Groups **H04W 28/08** and **H04W 36/22** should be considered in order to perform a complete search.

36/24 . . Reselection being triggered by specific parameters

**WARNING**

Group **H04W 36/24** is impacted by reclassification into groups **H04W 36/247** and **H04W 36/249**.

Groups **H04W 36/24, H04W 36/247** and **H04W 36/249** should be considered in order to perform a complete search.

36/247 . . . . [by using coverage extension]

**WARNING**

Group **H04W 36/247** is incomplete pending reclassification of documents from groups **H04W 36/165** and **H04W 36/24**.

Groups **H04W 36/165, H04W 36/24** and **H04W 36/247** should be considered in order to perform a complete search.

36/249 . . . . [according to timing information]

**WARNING**

Group **H04W 36/249** is incomplete pending reclassification of documents from groups **H04W 36/0072 and H04W 36/24**.

Groups **H04W 36/0072, H04W 36/24** and **H04W 36/249** should be considered in order to perform a complete search.

36/26 . . . . by agreed or negotiated communication parameters
involving a plurality of connections, e.g. multi-call or multi-bearer connections

**WARNING**

Group H04W 36/28 is impacted by reclassification into groups H04W 36/0069, H04W 36/00692, H04W 36/00695 and H04W 36/00698.

All groups listed in this Warning should be considered in order to perform a complete search.

by measured or perceived connection quality data

**WARNING**

Group H04W 36/30 is impacted by reclassification into groups H04W 36/302 and H04W 36/304.

Groups H04W 36/30, H04W 36/302 and H04W 36/304 should be considered in order to perform a complete search.

{due to low signal strength}

**WARNING**

Group H04W 36/302 is incomplete pending reclassification of documents from group H04W 36/30.

Groups H04W 36/30 and H04W 36/302 should be considered in order to perform a complete search.

{due to measured or perceived resources with higher communication quality}

**WARNING**

Group H04W 36/304 is incomplete pending reclassification of documents from group H04W 36/30.

Groups H04W 36/30 and H04W 36/304 should be considered in order to perform a complete search.

Handover due to radio link failure (control signalling for hand-off failure [H04W 36/0079])

**WARNING**

Group H04W 36/36 is impacted by reclassification into group H04W 36/362.

Groups H04W 36/36 and H04W 36/362 should be considered in order to perform a complete search.

Conditional handover

**WARNING**

Group H04W 36/362 is incomplete pending reclassification of documents from group H04W 36/36.

Groups H04W 36/362 and H04W 36/36 should be considered in order to perform a complete search.

by user or terminal equipment

**WARNING**

Group H04W 36/36 is impacted by reclassification into group H04W 36/362.

Groups H04W 36/36 and H04W 36/362 should be considered in order to perform a complete search.

by fixed network equipment

**WARNING**

Group H04W 36/36 is impacted by reclassification into group H04W 36/362.

Groups H04W 36/36 and H04W 36/362 should be considered in order to perform a complete search.

Communication route or path selection, e.g. power-based or shortest path routing

**WARNING**

Group H04W 36/32 is impacted by reclassification into groups H04W 36/322, H04W 36/324, H04W 36/326 and H04W 36/328.

All groups listed in this Warning should be considered in order to perform a complete search.

by manual user interaction

**WARNING**

Group H04W 36/32 is impacted by reclassification into groups H04W 36/322, H04W 36/324, H04W 36/326 and H04W 36/328.

All groups listed in this Warning should be considered in order to perform a complete search.

by fixed network equipment

**WARNING**

Group H04W 36/32 is impacted by reclassification into groups H04W 36/322, H04W 36/324, H04W 36/326 and H04W 36/328.

All groups listed in this Warning should be considered in order to perform a complete search.

by characteristics of available antennas

**WARNING**

Group H04W 36/32 is impacted by reclassification into groups H04W 36/322, H04W 36/324, H04W 36/326 and H04W 36/328.

All groups listed in this Warning should be considered in order to perform a complete search.

by transmission power

**WARNING**

Group H04W 36/32 is impacted by reclassification into groups H04W 36/322, H04W 36/324, H04W 36/326 and H04W 36/328.

All groups listed in this Warning should be considered in order to perform a complete search.
40/10 . . . based on available power or energy
40/12 . . . based on transmission quality or channel quality
40/125 . . . [using a measured number of retransmissions as a link metric]
40/14 . . . based on stability
40/16 . . . based on interference
40/18 . . . based on predicted events
40/20 . . . based on geographic position or location
40/205 . . . [using topographical information, e.g., hills, high rise buildings]
40/22 . . . using selective retrying for reaching a BTS [Base Transceiver Station] or an access point
40/24 . . . Connectivity information management, e.g., connectivity discovery or connectivity update
40/242 . . . [aging of topology database entries]
40/244 . . . [using a network of reference devices, e.g., beaconing]
40/246 . . . [Connectivity information discovery]
40/248 . . . [Connectivity information update]
40/26 . . . for hybrid routing by combining proactive and reactive routing
40/28 . . . for reactive routing
40/30 . . . for proactive routing
40/32 . . . for defining a routing cluster membership
40/34 . . . Modification of an existing route
40/36 . . . due to handover
40/38 . . . adapting due to varying relative distances between nodes

48/00 Access restriction (access security to prevent unauthorised access H04W 12/08); Network selection: Access point selection
48/02 . . . Access restriction performed under specific conditions
48/04 . . . based on user or terminal location or mobility data, e.g., moving direction, speed
48/06 . . . based on traffic conditions
48/08 . . . Access restriction or access information delivery, e.g., discovery data delivery (signalling during connection H04W 76/00)
48/10 . . . using broadcasted information
48/12 . . . using downlink control channel
48/14 . . . using user query [or user detection]
48/16 . . . Discovering, processing access restriction or access information
48/17 . . . [Selecting a data network PoA [Point of Attachment]]
48/18 . . . Selecting a network or a communication service
48/20 . . . Selecting an access point

52/00 Power management, e.g., TPC [Transmission Power Control], power saving or power classes ([gain control in transmitters or power amplifiers H03G 3/3042])
52/02 . . . Power saving arrangements [in wired systems H04L 12/12; signaling of mobile application services, e.g., low battery notifications H04W 4/20]
52/0203 . . . [in the radio access network or backbone network of wireless communication networks]
52/0206 . . . [in access points, e.g., base stations (access point devices per se H04W 88/08)]
52/0209 . . . [in terminal devices (terminal devices per se H04W 88/02)]
Deriving transmission power values from another channel

TPC being performed according to specific parameters

using error rate

taking into account previous information or commands

[using past power control commands]

[predicting future states of the transmission]

[Calculation of statistics, e.g. average, variance]

[using past references to control power, e.g. look-up-table]

[using past power values or information]

using SIR [Signal to Interference Ratio] or other wireless path parameters

taking into account channel quality metrics, e.g. SIR, SNR, CIR, Eb/lo]

taking into account path loss]

taking into account interferences]

[Interferences in heterogeneous networks, e.g. among macro and femto or pico cells or other sector / system interference [OSI]]

taking into account received signal strength]

[where the output power of a terminal is based on a path parameter calculated in said terminal]

[where the output power of a terminal is based on a path parameter sent by another terminal]

[where transmission power control commands are generated based on a path parameter]

using transmission rate or quality of service QoS [Quality of Service]

[taking into account adaptive modulation and coding [AMC] scheme (AMC per se H04L 1/0001)]

[taking into account the quality of service QoS]

[taking into account the information rate]

using user profile, e.g. mobile speed, priority or network state, e.g. standby, idle or non transmission

[taking into account user or data type priority]

[taking into account the speed of the mobile]

[Power depending on the position of the mobile]

[taking into account the mobility of the user]

[During data packet transmission, e.g. high speed packet access [HSPA]]

[when the channel is in stand-by]

[taking into account the usage mode, e.g. hands-free, data transmission, telephone]

using constraints in the total amount of available transmission power

TPC of broadcast or control channels

[Power control of broadcast channels]

[Power control of control or pilot channels]

[Power control of multicast channels]
56/0085 . . . . . {detecting a given structure in the signal}
56/009 . . . . {Closed loop measurements}
56/0095 . . . {estimated based on signal strength}

60/00 Affiliation to network, e.g. registration;
Terminating affiliation with the network, e.g. de-
registration
60/005 . . . {Multiple registrations, e.g. multihoming}
60/02 . . . . by periodical registration
60/04 . . . . using triggered events
60/06 . . . De-registration or detaching

64/00 Locating users or terminals (or network
equipment) for network management purposes,
e.g. mobility management
64/003 . . . . {locating network equipment}
64/006 . . . . {with additional information processing, e.g. for
direction or speed determination}

68/00 User notification, e.g. alerting and paging, for
incoming communication, change of service or the
like
68/005 . . . . {Transmission of information for alerting of
incoming communication}
68/02 . . . . . Arrangements for increasing efficiency of
notification or paging channel
68/025 . . . . . {Indirect paging}
68/04 . . . . . . multi-step notification using statistical or historical
mobility data
68/06 . . . . . . using multi-step notification by changing the
notification area
68/08 . . . . . . using multi-step notification by increasing the
notification area
68/10 . . . . . . using simulcast notification
68/12 . . . . . . Inter-network notification

72/00 Local resource management
72/02 . . . . Selection of wireless resources by user or terminal

WARNING
Group H04W 72/02 is impacted by
reclassification into group H04W 72/40.
Groups H04W 72/02 and H04W 72/40 should be
considered in order to perform a complete search.

72/04 . . . . Wireless resource allocation

WARNING
Group H04W 72/04 is impacted by
reclassification into groups H04W 72/11, H04W 72/115
and H04W 72/40.
All groups listed in this Warning should be
considered in order to perform a complete search.

72/044 . . . . based on the type of the allocated resource

WARNING
Group H04W 72/044 is impacted by
reclassification into group H04W 72/0457.
Groups H04W 72/044 and H04W 72/0457
should be considered in order to perform a complete search.

72/0453 . . . . Resources in frequency domain, e.g. a carrier in
FDMA
72/0457 . . . . Variable allocation of band or rate

WARNING
Group H04W 72/0457 is incomplete pending
reclassification of documents from group
H04W 72/044.
Groups H04W 72/044 and H04W 72/0457
should be considered in order to perform a complete search.

72/046 . . . . {the resource being in the space domain, e.g.
beams}
72/0466 . . . . {the resource being a scrambling code}
72/0473 . . . . {the resource being transmission power}
72/11 . . . . Semi-persistent scheduling

WARNING
Group H04W 72/11 is incomplete pending
reclassification of documents from group
H04W 72/04.
Groups H04W 72/04 and H04W 72/11 should be
considered in order to perform a complete search.

72/115 . . . . Grant-free or autonomous transmission

WARNING
Group H04W 72/115 is incomplete pending
reclassification of documents from group
H04W 72/04.
Groups H04W 72/04 and H04W 72/115 should be
considered in order to perform a complete search.

72/12 . . . . Wireless traffic scheduling

WARNING
Group H04W 72/12 is incomplete pending
reclassification of documents from group
H04W 72/08, H04W 72/12.
Group H04W 72/12 is also impacted by
reclassification into groups H04W 72/40, H04W 72/50, H04W 72/51,
and H04W 72/512.
All groups listed in this Warning should be
considered in order to perform a complete search.

72/121 . . . . for groups of terminals or users
72/1215 . . . . {for collaboration of different radio technologies}
72/1221 . . . . [based on age of data to be sent]
72/1263 . . . . Mapping of traffic onto schedule, e.g. scheduled
allocation or multiplexing of flows
72/1268 . . . . of uplink data flows
72/1273 . . . . of downlink data flows

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72/20 . Control channels or signalling for resource management

**WARNING**

Group H04W 72/20 is impacted by reclassification into groups H04W 72/25, H04W 72/27 and H04W 72/29.

All groups listed in this Warning should be considered in order to perform a complete search.

72/21 . . in the uplink direction of a wireless link, i.e. towards the network

72/23 . . in the downlink direction of a wireless link, i.e. towards a terminal

**WARNING**

Group H04W 72/23 is impacted by reclassification into groups H04W 72/231 and H04W 72/232.

Groups H04W 72/23, H04W 72/231 and H04W 72/232 should be considered in order to perform a complete search.

72/231 . . the control data signalling from the layers above the physical layer, e.g. RRC or MAC-CE signalling

**WARNING**

Group H04W 72/231 is incomplete pending reclassification of documents from group H04W 72/23.

Groups H04W 72/23 and H04W 72/231 should be considered in order to perform a complete search.

72/232 . . the control data signalling from the physical layer, e.g. DCI signalling

**WARNING**

Group H04W 72/232 is incomplete pending reclassification of documents from group H04W 72/23.

Groups H04W 72/23 and H04W 72/232 should be considered in order to perform a complete search.

72/25 . . between terminals via a wireless link, e.g. sidelink

**WARNING**

Group H04W 72/25 is incomplete pending reclassification of documents from group H04W 72/20.

Groups H04W 72/20 and H04W 72/25 should be considered in order to perform a complete search.

72/27 . . between access points

**WARNING**

Group H04W 72/27 is incomplete pending reclassification of documents from group H04W 72/20.

Groups H04W 72/20 and H04W 72/27 should be considered in order to perform a complete search.

72/29 . . between an access point and the access point controlling device

**WARNING**

Group H04W 72/29 is incomplete pending reclassification of documents from group H04W 72/20.

Groups H04W 72/20 and H04W 72/29 should be considered in order to perform a complete search.

72/30 . Resource management for broadcast services

72/40 . Resource management for direct mode communication, e.g. D2D or sidelink

**WARNING**

Group H04W 72/40 is incomplete pending reclassification of documents from groups H04W 72/02, H04W 72/04 and H04W 72/12.

All groups listed in this Warning should be considered in order to perform a complete search.

72/50 . Allocation or scheduling criteria for wireless resources

**WARNING**

Group H04W 72/50 is incomplete pending reclassification of documents from group H04W 72/12.

Groups H04W 72/12 and H04W 72/50 should be considered in order to perform a complete search.

72/51 . . based on terminal or device properties

**WARNING**

Group H04W 72/51 is incomplete pending reclassification of documents from group H04W 72/12.

Group H04W 72/51 is also impacted by reclassification into group H04W 72/512.

Groups H04W 72/12, H04W 72/51 and H04W 72/512 should be considered in order to perform a complete search.

72/512 . . . for low-latency requirements, e.g. URLLC

**WARNING**

Group H04W 72/512 is incomplete pending reclassification of documents from groups H04W 72/12 and H04W 72/51.

Groups H04W 72/12, H04W 72/51 and H04W 72/512 should be considered in order to perform a complete search.

72/52 . . based on load
Wireless channel access, e.g. scheduled or random access

74/00

Wireless channel access, e.g. scheduled or random access

74/002 [Transmission of channel access control information]
74/004 [in the uplink, i.e. towards network]
74/006 [in the downlink, i.e. towards the terminal]
74/008 [with additional processing of random access related information at receiving side]
74/02 Hybrid access techniques
74/04 Scheduled (or contention-free) access (H04W 74/02 takes precedence)
74/06 using polling
74/08 Non-scheduled (or contention based) access, e.g. random access, ALOHA, CSMA [Carrier Sense Multiple Access] (H04W 74/02 takes precedence)
74/0808 [using carrier sensing, e.g. as in CSMA]
74/0816 [carrier sensing with collision avoidance]
74/0825 [carrier sensing with collision detection]
74/0833 [using a random access procedure]
74/0841 [with collision treatment]

74/085 [collision avoidance]
74/0858 [collision detection]
74/0866 [using a dedicated channel for access]
74/0875 [with assigned priorities based access]
74/0883 [for un-synchronized access]
74/0891 [for synchronized access]

76/00 Connection management

76/10 Connection setup
76/11 Allocation or use of connection identifiers
76/12 Setup of transport tunnels
76/14 Direct-mode setup
76/15 Setup of multiple wireless link connections
76/16 [Involving different core network technologies, e.g. a packet-switched [PS] bearer in combination with a circuit-switched [CS] bearer]

76/18 Management of setup rejection or failure
76/19 Connection re-establishment
76/20 Manipulation of established connections
76/22 [Manipulation of transport tunnels]
76/23 [Manipulation of direct-mode connections]
76/25 Maintenance of established connections
76/27 Transitions between radio resource control [RRC] states

76/28 Discontinuous transmission [DTX]; Discontinuous reception [DRX]
76/30 Connection release
76/32 Release of transport tunnels
76/34 Selective release of ongoing connections
76/36 for reassigning the resources associated with the released connections
76/38 triggered by timers
76/40 for selective distribution or broadcast
76/45 for Push-to-Talk [PTT] or Push-to-Talk over cellular [PoC] services
76/50 for emergency connections

80/00 Wireless network protocols or protocol adaptations to wireless operation

80/02 Data link layer protocols
80/04 Network layer protocols, e.g. mobile IP [Internet Protocol]
80/045 [involving different protocol versions, e.g. MIPv4 and MIPv6]
80/06 Transport layer protocols, e.g. TCP [Transport Control Protocol] over wireless [transmission control protocol/Internet protocol [TCP/IP] or user datagram protocol [UDP] H04L 69/16]
80/08 Upper layer protocols [network arrangements or communication protocols for networked applications H04L 67/00]
80/085 [involving different upper layer protocol versions, e.g. LCS - SUPL or WSN-SOA-WSDP]
80/10 adapted for [application] session management, e.g. SIP [Session Initiation Protocol] [(connection management H04W 76/00; arrangements for session management H04L 67/14)]
80/12 Application layer protocols, e.g. WAP [Wireless Application Protocol]
Network topologies

NOTE
In this group, local priority rules supersede the first-place priority rule (FPPR) applying throughout H04W.

Moving wireless networks
Hierarchically pre-organised networks, e.g. paging networks, cellular networks, WLAN [Wireless Local Area Network] or WLL [Wireless Local Loop]

One-way selective calling networks, e.g. wide area paging

Hierarchically pre-organised networks; Deep hierarchical networks

Public Land Mobile systems, e.g. cellular systems

Airborne or Satellite Networks (space-based or airborne stations H04B 7/185)

Small scale networks; Flat hierarchical networks

WLAN [Wireless Local Area Networks]

WPBX [Wireless Private Branch Exchange]

Self-organising networks, e.g. ad-hoc networks or sensor networks

Master-slave {selection or change} arrangements

with access to wired networks

Devices specially adapted for wireless communication networks, e.g. terminals, base stations or access point devices

Data network PoA devices

Terminal devices

adapted for Wireless Local Loop operation

Selective call receivers

{with message or information receiving capability}

Selective call decoders

{using digital address codes}

{using frequency address codes}

{using pulse address codes}

adapted for relaying to or from another terminal or user

adapted for operation in multiple networks [or having at least two operational modes], e.g. multi-mode terminals

Access point devices

Access point devices with remote components

adapted for operation in multiple networks, e.g. multi-mode access points

Access point controller devices

Backbone network devices

Gateway arrangements

Service support devices; Network management devices

Interfaces specially adapted for wireless communication networks

Inter-networking arrangements

Interfaces between hierarchically different network devices

between access point and backbone network device

between gateways and public network devices

between user and terminal device

between terminal device and access point, i.e. wireless air interface

between access points and access point controllers

between access point controllers and backbone network device

Interfaces between hierarchically similar devices

between terminal devices

between access points

between access point controllers

between backbone network devices

Subject matter not provided for in other groups of this subclass