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(54) **METHOD FOR CONSTRUCTING FRAME STRUCTURES**

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Related U.S. Application Data

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(51) **Int. Cl.**
H04J 3/24 (2006.01)

(52) **U.S. Cl.** **370/473**; 370/474; 370/476; 455/448

(58) **Field of Classification Search** 370/329, 370/478, 491, 349, 469, 473, 474, 476, 338; 375/148, 354
See application file for complete search history.

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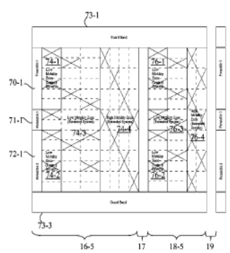
(57) **ABSTRACT**

A method of constructing a frame structure for data transmission, the method comprising generating a first section comprising data configured in a first format compatible with a first communication system, generating a second section following the first section, the second section comprising data configured in a second format compatible with a second communication system, wherein the second format is different from the first format, generating at least one non-data section containing information describing an aspect of data in at least one of the first section and the second section, and combining the first section, the second section and the at least one non-data section to form the frame structure.

43 Claims, 6 Drawing Sheets



Title: METHOD FOR CONSTRUCTING FRAME STRUCTURES

Priority Date of all Asserted Claims: Jul. 12, 2007

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Inventors: Yan-Xiu Zheng; Ren-Jr Chen; Chang-Lung Hsiao; Pang-An Ting

Asserted Claims: 1, 3, 4, 6, and 8

Asserted Claims

Claim 1
A method of constructing a frame structure for data transmission, the method comprising:
generating a first section comprising data configured in a first format compatible with a first communication system using symbols;
generating a second section following the first section,
the second section comprising data configured in a second format compatible with a second communication system using symbols,
wherein the first communication system's symbols and the second communication system's symbols co-exist in one transmission scheme and
wherein: the second format is compatible with the second communication system configured to support higher mobility than the first communication system,
wherein each symbol in the second communication system has a shorter symbol period than that in the first communication system;
generating at least one non-data section containing information describing an aspect of data in at least one of the first section and the second section; and
combining the first section, the second section and the at least one non-data section to form the frame structure.

Claim 3
The method of claim 1, wherein the non-data section comprises at least one of a preamble, a frame control header (FCH), a burst, and a map of at least one of the first section and the second section.

Claim 4
The method of claim 3, wherein the second section follows the first section in at least one of time sequence and frequency spectrum.

Claim 6
The method of claim 1, wherein each of the first section and the second section carries at least one of uplink and downlink data.

Claim 8

A method of constructing a frame structure for data transmission, the method comprising:
generating a first section comprising data configured in a first format compatible with a first communication system using symbols;
generating a second section following the first section,
the second section comprising data configured in a second format compatible with a second communication system using symbols,
wherein the first communication system's symbols and the second communication system's symbols co-exist in one transmission scheme and
wherein the second communication system has pilot symbols that are denser than those in the first communication system;
generating at least one non-data section containing information describing an aspect of data in at least one of the first section and the second section; and
combining the first section, the second section and the at least one non-data section to form the frame structure.

The Accused Instrumentalities include at least the following:

Products		
AC1200: RP-AC56	ROG Strix Scar III	ROG Strix 570-E
AC1300: PCE-AC56	ROG Zephyrus G14	ROG Strix 570-I
AC1300: USB-AC53 Nano	ROG Zephyrus G15	ROG Strix B460-I
AC1300: USB-AC55	ROG Zephyrus S	ROG Strix B500-I
AC1300: USB-AC56	ROG Zephyrus S17	Rog Strix B550-E
AC1300: USB-AC56R	TUF FX505GT	ROG Strix B550-F
AC1750: RP-AC66	TUF Gaming A15	ROG Strix H470-I
AC1800: EA-AC87	TUF Gaming FX505D	ROG Strix TRX40-E
AC1900: PCE-AC68	TUF Gaming Laptop	ROG Strix X299-E
AC1900: RP-AC68U	VivoBook 14	ROG Strix X490-I
AC1900: USB-AC68	VivoBook 14 S433	Rog Strix Z390-E
AC3100: PCE-AC88	VivoBook 17	ROG Strix Z390-I
AC600: USB-AC51	VivoBook F510QA	ROG Strix Z490-E
AC750: PCE-AC51	VivoBook F512	ROG Strix Z490-G
AC750: RP-AC52	VivoBook S13	ROG X570 Crosshair VIII Hero
Lyra AC2200	VivoBook S15	ROG Zenith II Extreme Alpha
Lyra Trio AC1750	VivoBook S15 S533	TUF Gaming B460M-Plus
Rapture GT-AX11000	VivoBook S17	TUF Gaming B550M-Plus
ROG GT-AC2900	VivoBook S512	TUF Gaming H470-Pro
Chromebook C101	X509	TUF Gaming X570-Plus
Chromebook C200	ZenBook 13	TUF Gaming Z490-Plus
Chromebook C202	ZenBook 14	TUF Z390-Plus
Chromebook C300	ZenBook 15	ROG Phone
Chromebook C302	ZenBook Duo UX481	ROG Phone II
Chromebook CT100PA	ZenBook Pro Duo UX581	ROG Phone 3
Chromebook Flip C434	ZenBook UX434FLC-XH77	ZenFone 2
Chromebook Flip C436	Prime B550M-A	ZenFone 3
Chromebook Tablet CT100	Prime X299	ZenFone 3 Deluxe
ZenPad 3S 10	Prime X299-Delux	ZenFone 3 Laser
ExpertBook B9450	ROG Crosshair VIII Impact	ZenFone 4
ExpertBook P5440	ROG Maximus XI Hero	ZenFone 5
ROG Strix G	ROG Maximus XII Apex	ZenFone 6
ROG Strix G17	ROG Maximus XII Extreme	ZenFone AR
ROG Strix Hero Edition	ROG Maximus XII Formula	ZenFone Zoom
ROG Strix Hero III	ROG Maxmus XII Hero	Travelair AC
ROG Strix Scar 15	ROG Rampage VI Extreme	

The Accused Instrumentalities include at least the following:

The Accused Instrumentalities are all configured to operate on or with the IEEE 802.11ac wireless local area networking standard. For example, the following exemplary product discloses IEEE 802.11ac on its technical specification page as disclosed by ASUS.

802.11ac Dual-Band Wireless-AC1750 Gigabit Router

- 5th generation 802.11ac chipset gives you concurrent dual-band 2.4GHz/5GHz for up to super-fast 1.75Gbps
- ASUS AiCloud service: Access, stream, share, sync – all on the go with unlimited storage expansion!
- Gigabit Ethernet ports for fast and reliable internet performance
- AiRadar optimizes wireless coverage with detachable high-powered antennas
- Enjoy the ASUSWRT dashboard UI for 3 steps easy setup, signal monitoring, and network application control
- Download Master for wireless data storage and access to your router-connected USB storage devices
- File sharing, printer sharing, and 3G sharing via two multi-functional built-in USB ports

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