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(71) Applicant (for all designated States except US): **MOTOROLA, INC.** [US/US]; 1303 East Algonquin Road, Schaumburg, Illinois 60196 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **EMEOTT, Stephen, P.** [US/US]; 5608 Silentbrook Lane, Rolling Meadows, Illinois 60008 (US). **BARKER, JR., Charles, R.** [US/US]; 7543 St. Stephens Court, Orlando, Florida 32835 (US). **BRASKICH, Anthony, J.** [US/US]; 227 E. Palatine Road, Palatine, Illinois 60067 (US).

(74) Agents: **KARPINIA, Randi, L.** et al.; 8000 West Sunrise Boulevard, Room 1610, Plantation, Florida 33322 (US).

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(54) Title: TRANSPORTING MANAGEMENT TRAFFIC THROUGH A MULTI-HOP MESH NETWORK

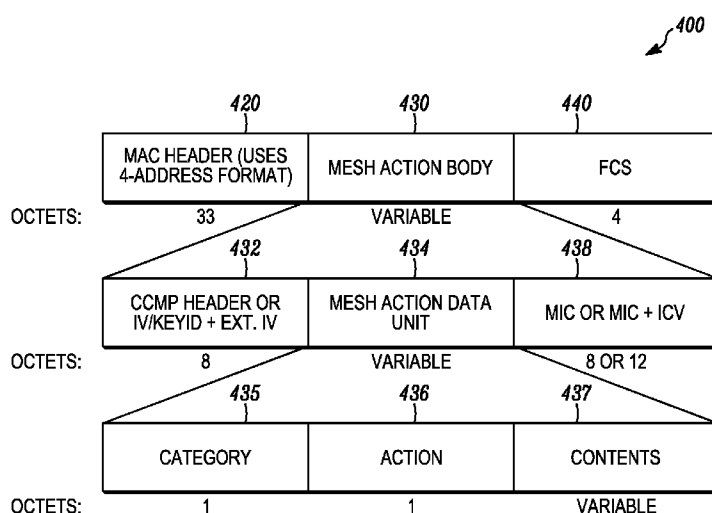


FIG. 4

(57) Abstract: A method of communication between a transmitter node and a receiver node in a multi-hop communication network (100), comprising: formatting information into a data structure to generate a mesh action frame (400), wherein the mesh action frame (400) comprises a header (420) comprising a source address (SA) that identifies such a node, a destination address (DA) that identifies a recipient node, a transmitter address (TA) that identifies a sender node, and a receiver address (RA) that identifies a receiver node; and a body field (430) comprising a mesh action data unit (434); and sending the mesh action frame from the transmitter node.

WO 2008/030678 A3

**AMENDED CLAIMS**

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1. A method of communication between a transmitter node and a receiver node in a multi-hop communication network, comprising:

formatting information into a data structure to generate a mesh action frame, wherein the mesh action frame comprises:

a header comprising a source address (SA) that identifies a source node, a destination address (DA) that identifies a recipient node, a transmitter address (TA) that identifies a sender node, and a receiver address (RA) that identifies a receiver node; and

a body field comprising a mesh action data unit, wherein the mesh action data unit comprises:

a category field configured to specify at least one of a plurality of category values, wherein each category value corresponds to a particular management category;

an action field configured to specify at least one of a plurality of management action values for each category field; and

a contents field comprising information corresponding to the action value specified in the action field, wherein the category value and the action value uniquely identify the contents field; and

sending the mesh action frame from the transmitter node.

3. The method of claim 1, wherein the category field is used to identify management categories which categorizes management traffic into different classes.

4. The method of claim 1, wherein the body field further comprises:
  - a security field that allows the contents field to be encrypted to provide hop-by-hop security; and
  - a Message Integrity Check (MIC) field calculated over the security field and the mesh action data unit to allow the mesh action data unit to be integrity-protected against modification during transmission.
5. The method of claim 1, wherein the mesh action frame further comprises:
  - a frame check sequence (FCS) field calculated over the header and the body field for detecting errors in the mesh action frame which occur during transmission.
6. A method for communicating management traffic across one or more mesh links, the method comprising:
  - formatting a modulated data signal having a data structure encoded thereon, the data structure comprising:
    - a header comprising a source address (SA) that identifies a source node, a destination address (DA) that identifies a recipient node, a transmitter address (TA) that identifies a sender node, and a receiver address (RA) that identifies a receiver node; and
    - a body field comprising a mesh action data unit, wherein the mesh action data unit comprises:
      - a category field configured to specify at least one of a plurality of category values, wherein each category value corresponds to a particular management category;
      - an action field configured to specify at least one of a plurality of management action values for each category field; and
      - a contents field comprising information corresponding to the action value specified in the action field, wherein the category value and the action value uniquely identify the contents field; and
  - communicating the modulated data signal across the one or more mesh links.

8. The method of claim 6, wherein the body field further comprises:  
a security field that allows contents field to be encrypted to provide hop-by-hop security.
9. The method of claim 6, wherein the body field further comprises:  
a Message Integrity Check (MIC) field calculated over the security field and the mesh action data unit to allow the mesh action data unit to be integrity-protected against modification during transmission.
10. The method of claim 6, wherein the data structure further comprises:  
a frame check sequence (FCS) field calculated over the header and the body field for detecting errors in the data structure which occur during transmission.