CLAIMS

1.- A method for transmitting information in an ad hoc multi-hop network including the transmission of a message from a source transmitting node to a final receiving node through a series of hops from a transmitter node to an immediately following receiver node, using:

a) a reliability management mechanism including:

- upon the or each compliant receipt on each hop of at least one message by the receiving node, the sending of an acknowledgment message to the sole transmitting node,

- applying a retransmission law of the message on the hop, from the transmitting node to the receiving node, said law including message non-retransmission rules leading to the non-retransmission of the message,

b) a mechanism for managing congestion of the nodes providing for a limitation of the throughput (λ) for sending from a transmitting node to a receiving node following congestion information from the receiving node sent to the transmitting node.

characterized in that the congestion management mechanism is applied only hop-by-hop, the congestion information only being transmitted from a receiving node to a transmitting node over a same hop to limit the throughput of only the transmitting node toward only the receiving node.

2.- The method according to claim 1, characterized in that the retransmission law for a given transmitting node accounts, for the non-retransmission rules, for variables related to the nodes of the preceding hops between the source transmitting node and the transmitting node.

3.- The method according to claim 2, characterized in that the retransmission law for a given transmitting node accounts, for the non-retransmission rules, for the number of nodes already traveled by successive hops from the source transmitting node.

4.- The method according to any one of the preceding claims, characterized in that it includes a step for marking the type of information contained in the message and the retransmission law accounts, for the non-retransmission rules, for the type of information contained in the message.

5.- The method according to any one of the preceding claims, characterized in that an acknowledgment message is sent only upon compliant receipt of a set of several messages.

6.- The method according to any one of the preceding claims, characterized in that the congestion management mechanism uses an Additive Increase Multiple Decrease (AIMD) law to calculate the throughput (λ) of the transmitted node.

7.- The method according to any one of the preceding claims, characterized in that the congestion management module uses a definitive non-transmission of certain messages from the transmitting node to the receiving node in case of congestion of the receiving node.

8.- The method according to claim 7, characterized in that the non-transmission of messages is applied to messages having traveled through the fewest hops to the transmitting node and/or messages having the lowest probability of reaching the final receiving node.

9.- The method according to any one of the preceding claims, characterized in that the information contained in the transmitted messages is information formatted for transmission on a network according to the IP Protocol and the transmitted messages include, in addition to information in the IP formats, a header (HBH) capable of providing the reliability management and congestion management mechanisms.

10.- The method according to claim 9, characterized in that the header includes information representative of the transported protocol (OrigProto).

CLAIMS

1.- A method for transmitting information in an ad hoc multi-hop network including the transmission of a message from a source transmitting node to a final receiving node through a series of hops from a transmitting node to an immediately following receiving node, using:

a) a reliability management mechanism including:

- upon the or each compliant receipt on each hop of at least one message by the receiving node of the considered hop, called the receiving node, the sending of an acknowledgment message to the sole transmitting node of the considered hop, called the transmitting node,

- applying a retransmission law of the message on the hop, from the transmitting node to the receiving node, said law including message non-retransmission rules leading to the non-retransmission of the message,

b) a mechanism for managing congestion of the nodes providing for a limitation of the throughput (λ) for sending from the transmitting node to the receiving node following congestion information from the receiving node sent to the transmitting node,

characterized in that the congestion management mechanism is applied only hop-by-hop, the congestion information only being transmitted over a single hop, from the receiving node of said hop to the transmitting node of said hop, to limit the throughput of only the transmitting node toward only the receiving node.

2.- The method according to claim 1, characterized in that the retransmission law for a given transmitting node accounts, for the non-retransmission rules, for variables related to the nodes of the preceding hops between the source transmitting node and the transmitting node.

3.- The method according to claim 2, characterized in that the retransmission law for a given transmitting node accounts, for the non-retransmission rules, for the number of nodes already traveled by successive hops from the source transmitting node.

4.- The method according to any one of the preceding claims, characterized in that it includes a step for marking the type of information contained in the message and the retransmission law accounts, for the non-retransmission rules, for the type of information contained in the message.

5.- The method according to any one of the preceding claims, characterized in that the acknowledgment message is sent only upon compliant receipt of a set of several messages.

6.- The method according to any one of the preceding claims, characterized in that the congestion management mechanism uses an Additive Increase Multiple Decrease (AIMD) law to calculate the throughput (λ) of the transmitting node.

7.- The method according to any one of the preceding claims, characterized in that the congestion management mechanism uses a definitive non-transmission of certain messages from the transmitting node to the receiving node in case of congestion of the receiving node.

8.- The method according to claim 7, characterized in that the non-transmission of messages is applied to messages having traveled through the fewest hops to the transmitting node and/or messages having the lowest probability of reaching the final receiving node.

9.- The method according to any one of the preceding claims, characterized in that the information contained in the transmitted messages is information formatted for transmission on a network according to the IP Protocol and the transmitted messages include, in addition to information in the IP formats, a header (HBH) capable of providing the reliability management and congestion management mechanisms.

10.- The method according to claim 9, characterized in that the header includes information representative of the transported protocol (OrigProto).