CLAIMS

1.- A method for transmitting at least one data stream of a multimedia session through a distributed telecommunications network (3) comprising at least one network core (4) comprising a plurality of nodes (10, 12) interconnected by a plurality of links (7), each node (10, 12, 14) of said network (3) having a routing module (18), said session being established between a first terminal (1) and at least one second terminal (2) outside the network core (4), and said network core (4) also comprising at least two border modules (20, 20', 20"), making up points of access to said network core (4) for the first and second terminals (1, 2), characterized in that it includes the following steps:

- determination (30), by said border modules (20, 20', 20"), of information relative to the routing topology and the status of the links (7, 16) of said network, necessary for the transmission of data streams of the session,

- determination (38), by a border module (20) addressed by the first terminal (1), of parameters of said session comprising a length of the session and flow constraints for the streams of said session in the network core (4),

- selection (40), by said addressed border module (20), when said data streams must pass through the network core (4), of an input border module (20') and an output border module (20") of said network core (4) for said streams, as a function of said stream flow constraints and said predetermined session parameters, and said information relative to the routing topology and the status of the links (7, 16),

- predetermination (42) of a path, from said input border module (20') to said output border module (20"), for all of said streams of the session, through said network core (4), as a function of said flow constraints of the streams and said information relative to the routing topology and the status of the links (7, 16), and as a function of optimization objectives for the network core (4),

- establishment (44) of the resources necessary to satisfy said flow constraints along said path and the optimization objectives, and definition of routing rules with routing modules (18) situated along said path, and

- transmission (48) of said streams of the session only using said predetermined path.

2.- The method for transmitting data streams of a multimedia session according to claim 1, characterized in the step (30) for determination by the border modules (20, 20', 20") of information relative to the routing topology and the status of the links (7, 16) of the

network (3) comprises the determination by the routing modules (18) of said information and the transmission of the information from the routing modules (18) to the border modules (20, 20', 20").

3.- The method for transmitting data streams of a multimedia session according to one of the preceding claims, characterized in that it also comprises a step for marking the streams so that they follow the predetermined path.

4.- The method for transmitting data streams of a multimedia session according to one of the preceding claims, characterized in that the step (38) for determining the flow constraints of the streams comprises determining the priority of the session relative to other sessions, and in that the step (44) for establishing the necessary resources comprises preempting resources along the path, as a function of the priority of the session.

5.- The method for transmitting data streams of a multimedia session according to one of the preceding claims, characterized in that the step (44) for establishing the resources and defining the routing rules comprises reserving resources along the path, in the network core (4), prohibiting them from being used by other sessions throughout the entire length of the session.

6.- The method for transmitting data streams of a multimedia session according to one of the preceding claims, characterized in that it also comprises a step for compressing headers of the packets of the streams of the session, before they are transmitted in the network core (4), and a step for decompressing those headers, after they are transmitted in the network core (4).

7.- A system for transmitting at least one data stream of a multimedia session through a distributed telecommunications network (3) comprising at least one network core (4) comprising a plurality of nodes (10, 12) interconnected by a plurality of links (7), said session being established between a first terminal (1) and at least one second terminal (2) outside said network core (4), said system comprising at least two border modules (20, 20', 20") on the border of the network core (4), making up points of access to said network core for the first and second terminals (1, 2), and a routing module (18) in each node (10, 12, 14) of said network, characterized in that:

- said border modules (20, 20', 20") comprise means for determining information relative to the routing topology and the status of the links (7, 16) of said network (3), necessary for the transmission of data streams of the session,

- said border modules (20, 20', 20") comprise means for determining parameters of said session comprising a length of the session, and flow constraints of the streams of said session in the network core (4), when they are addressed by the first terminal (1),

- the border modules (20, 20', 20") comprise means for selecting, when the data streams must pass through the network core (4), an input border module (20') and an output border module (20") of said network core (4) for said streams, as a function of the stream flow constraints and the predetermined session parameters, and the information relative to the routing topology and the statuses of the links (7, 16),

- said system comprises means (20, 20', 20") for predetermining a path, from the input border module (20') to the output border module (20"), for all the streams of the session, through said network core (4), as a function of the flow constraints of the streams and the information relative to the routing topology and the status of the links (7, 16), and as a function of optimization objectives of the network core (4),

- the system comprises means (18) for establishing the resources necessary to satisfy the flow constraints and the optimization objectives along said path and to define routing rules with the routing modules (18) situated along the path, and

- the system comprises means for transmitting the streams of the session only using the predetermined path.

8.- The system for transmitting at least one data stream of a multimedia session according to claim 7, characterized in that the routing modules (18) also include means for determining the information relative to the routing topology and the status of the links (7, 16) of said network (3), and for transmitting that information to the border modules (20, 20', 20").

9.- The system for transmitting at least one data stream of a multimedia session according to one of claims 7 or 8, characterized in that it comprises means for marking the streams so that they follow the predetermined path.

10.- The system for transmitting at least one data stream of a multimedia session according to one of claims 7 to 9, characterized in that the means for determining the flow constraints of the streams of the session comprise means for determining the priority of the session relative to other sessions, and the means for establishing the resources

necessary to satisfy the flow constraints along the path comprise means for preempting the resources along the path, as a function of the priority of the session.

11.- The system for transmitting at least one data stream of a multimedia session according to one of claims 7 to 10, characterized in that the means (18) for establishing the necessary resources comprise means for reserving said resources along the path, in the network core (4), and for prohibiting them from being used by other sessions throughout the entire duration of the session.

12.- The system for transmitting at least one data stream of a multimedia session according to one of claims 7 to 11, characterized in that the transmission system comprises means for compressing headers of the packets of the streams of the session, before they are transmitted in the network core (4), and means for decompressing said headers after they are transmitted in the network core (4).

CLAIMS

1.- A system for transmitting at least one data stream of a multimedia session through a distributed telecommunications network (3) comprising at least one network core (4) comprising a plurality of nodes (10, 12) interconnected by a plurality of links (7), said session being established between a first terminal (1) and at least one second terminal (2) outside said network core (4), said system comprising at least two border modules (20, 20', 20") on the border of the network core (4), making up points of access to said network core for the first and second terminals (1, 2), and a routing module (18) in each node (10, 12, 14) of said network, characterized in that:

- said border modules (20, 20', 20") comprise means for determining information relative to the routing topology and the status of the links (7, 16) of said network (3), necessary for the transmission of data streams of the session,

- said border modules (20, 20', 20") comprise means for determining parameters of said session comprising a length of the session, and flow constraints of the streams of said session in the network core (4), when they are addressed by the first terminal (1),

- the border modules (20, 20', 20") comprise means for selecting, when the data streams must pass through the network core (4), an input border module (20') and an output border module (20") of said network core (4) for said streams, as a function of the stream flow constraints and the predetermined session parameters, and the information relative to the routing topology and the statuses of the links (7, 16),

- said system comprises means (20, 20', 20") for predetermining a path, from the input border module (20') to the output border module (20"), for all the streams of the session, through said network core (4), as a function of the flow constraints of the streams and the information relative to the routing topology and the status of the links (7, 16), and as a function of optimization objectives of the network core (4),

- the system comprises means (18) for establishing the resources necessary to satisfy the flow constraints and the optimization objectives along said path and to define routing rules with the routing modules (18) situated along the path,

- the system comprises means for transmitting the streams of the session only using the predetermined path, and

- the transmission system comprises means for compressing headers of the packets of the streams of the session, before they are transmitted in the network core (4), and means for decompressing said headers after they are transmitted in the network core (4).