rather than meaningfulness of ADC signaling information, computes the parameter value indicating the transmission characteristic at constant fixed time unit intervals for ADC signaling information, includes the same in the ADC signaling information, and sends a newly updated version of ADC message. Further, the sending entity, in case of desiring more accurate ADC signaling information transfer despite a difficulty in extracting ADC signaling information, computes the parameter value indicating the transmission characteristic at variable MPU unit intervals highly representative for ADC signaling information, includes the same in ADC signaling information, and sends a newly updated version of ADC message. Further, the sending entity, in case easy extraction of ADC signaling information is more required rather than meaningfulness of ADC signaling information, computes a value indicating the transmission characteristic at constant fixed MPU unit intervals for ADC signaling information, includes the same in the ADC signaling information, and sends a newly updated version of ADC message.

[0101] Further, in case sub-ADC is allowed, the sending entity generates sub-ADC signaling information specifying component asset transmission characteristic per variable time unit interval, tags the time period information specified by the sub-ADC signaling information on each sub-ADC signaling information, configures the list in a full ADC message, and sends the same simultaneously. Or, the sending entity, rather than generating sub-ADC signaling information specifying component asset transmission characteristic per fixed time unit interval and tagging the time period information (period value) specified by the sub-ADC signaling information on each sub-ADC signaling, includes the same only one time, configures the sub-ADC list in one full ADC message, and sends the same simultaneously. Or, the sending entity generates sub-ADC signaling information specifying component asset transmission characteristic per variable MPU unit interval, tags the time period information specified by the sub-ADC signaling information on each sub-ADC signaling information, configures the list in a full ADC message, and sends the same simultaneously. Or, the sending entity, rather than generating sub-ADC signaling information specifying component asset transmission characteristic per per fixed MPU unit interval and tagging the MPU period information (period value) specified by the sub-ADC signaling information on each sub-ADC signaling information, includes the same only one time, configures the sub-ADC list in one full ADC message, and sends the same simultaneously.

[0102] According to an embodiment of the present invention, the intermediate node (e.g., a router or MANE), upon managing its possessing network resources, monitors MMT packets passing through the intermediate node, extracts an ADC message containing ADC signaling information therefrom, and in case only one ADC message is allowed per asset, determines whether the corresponding ADC signaling information is ADC signaling information newly updated to reflect the current traffic context through version information in the received ADC message. If the ADC message has been updated, the intermediate node updates the new ADC signaling information with a new value indicating the transmission characteristic of the asset, computes the total amount T' of resources actually required at a network level necessary per asset based on ADC signaling information which is media information, computes the amount |T−T'| of extra resources that have been allocated to the MMT flow but are not actually used using ADC signaling information, which is media information, and in case the amount of extra resources exceeds a predetermined level (threshold), determines that allocation of them to other traffic does not overburden and includes them as a target resource allocation candidate for other flow. Further, the intermediate node determines how further the ADC signaling information remains valid using time information on the valid period having a periodic or aperiodic value in the ADC message and reflects this value in making a final decision as to whether to allocate the extra resources to other traffic by a particular time point. Further, the intermediate node determines how further the ADC signaling information remains valid using information on a particular MPU sequence range or information on the number of MPUs having a periodic or aperiodic value in the ADC, reflects the value in making a final decision as to whether to allocate the extra resources to other traffic until a particular MPU arrives, and if the use of resources is finally determined, grasps the use status of extra network resources by the intermediate node, and allocates available network resources to other flow.

[0103] In case sub-ADC is allowed per asset, the intermediate node determines what ADC signaling information is included in the ADC signaling information per time period for valid period having a periodic or aperiodic value using the time information on the valid period having the periodic or aperiodic value in the ADC message. The intermediate node reflects the ADC signaling information in finally determining whether to allocate the extra resources to other traffic by a particular time point to thereby derive the amount of resources actually required. Or, the intermediate node determines what ADC signaling information is included in the ADC signaling information per particular MPU sequence range period or information on the number of MPUs having a periodic or aperiodic value using information on the particular sequence range or information on the number of MPUs having the periodic or aperiodic value in the ADC message. The intermediate node reflects the signaling information in finally determining whether to allocate the extra resources to other traffic by a particular time point to thereby derive the amount of resources actually required. The intermediate node computes the total sum amount T' of resources actually required as per MPU or per time period by summating the amount of resources actually required per asset mapped from the ADC messages, derives idle resources (T−T') from among as many resources as T allocated to the current MMT flow per time period or per MPU period, then grasps the use status of network resources in the intermediate node, analyzes the characteristic of media traffic passing through the intermediate node, and allocates available network resources to other traffic.

[0104] Further, according to an embodiment of the present invention, the receiving entity, during the course of receiving media (e.g., audio or video), determines the amount of buffer to be secured by the MMT receiving unit per asset unit in the MMT flow, but not the overall MMT flow, using ADC signaling information including a value indicating the media transmission characteristic and updates and adjusts the amount of buffer required to be secured per asset according to time /MPU.

[0105] FIG. **16** is a view illustrating a resource saving effect when a sub-ADC is used according to an embodiment of the present invention.