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DESIGN AND ANALYSIS OF UNWANTED VOICE CALLS AND DISTRIBUTED RESOURCE ALLOCATION IN ATM NETWORKS

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ABSTRACT

The areas of resource allocation and congestion control in ATM Networks resources have been investigated. Counter to the traditional wisdom and it is found that the on/off source does not always produce the worst case traffic. User have been produced with a new parameters and it has been shown that these new classes of user can still be given guarantees without giving traffic descriptors . The economic model completed with the adaptive user classes and to allow for an increase in both network efficiency and economic values simultaneously for some sample cases.The retransmission scheme which is called slack automatic repeat request is based on appropriately extending the control time for the first packet in a burst to allow for the timely retransmission of last packets i.e. before the lost packet is due for playback. We present simulation results that demonstrate the feasibility and effectiveness of this retransmission scheme under a realistic scenario for an optical FDDI networks.

Keywords : Connection Admission, Preemption Routing, ATM Networks, Resource Allocation.

INTRODUCTION

The transmission loss mainly due to the bit error rates on the given link. Now the overflow loss mainly due to the statistical nature of the multiplexed usage. The network may ask for various traffic parameters prior to accepting the connection. A user should be able to specify any values for these parameters or simply specify nothing about the traffic their connection will be generated. A user should be able to demand any values of the various QOS parameters and the network has defined or simply tell the network to provide best possible service with there is no guarantee is required. A user should be able to adjust connection traffic parameters and dynamically during the life time is desired. Some data traffic applications are flexible regarding the delay incurred in completing the transfer and an vary the input traffic during the connection.Perhaps more importantly the user should have a simple interface to the network to conduct these negotiations.

Bandwidth enforces to increase the complexity of a system. Basically what bandwidth enforcement does is to hold early messages at the source node and release them when they become eligible for retransmission. This is difficult to implement in high speed network especially for nodes from which many traffic streams originate. A rich deadline scheduling theory has been established from which the admission control schemes for real time channels can be derived [1,4,5] . This theory can be used for directly for ATM networks from which the guaranteed QOS can be provided if the deadline scheduling of cell transmission is implemented in ATM networks.

Divide the end to end delay board is satisfied, check each link delay board under the current traffic load. If all the checks are positive the requested real time channel can be established. A message is generated at smaller than the given link. All the cells of the calculation the minimum link delay band over each link of the channel. If the end to end delay bound using this minimum link delay bound is not layer the requested channel can be established. Even if a source code does code violate its traffic specification the message inter arrival time at an intermediate link can still be smaller than the link due to uneven queuing delays at upstream link. A message is generated at source node with inter generation time smaller than the link. All the cells in the message should be assigned al logical arrival time which is the link of resource time after the resource time after the generation of the previous message.

Enough buffer space must be reserved for each channel such that the cells will be dropped due to buffer overflows when all real time channels abide by their pre specified message generation pattern. Channel protection must be provided such that if some channels violate their traffic generation specification. Only those cells belonging to these re negate channels will be discarded when a buffer overflow occurs. Given a real time message higher buffering priority

than non real time messages. A switch discards non real time cells first when there is not enough buffer space. This reduces the possibility or dropping real time cells. Since non real time messages do not have any tight delay requirements. Dropping non real time cells usually does not cause a serious problem if a retransmission scheme is used at the transport layer.

First this idea permits us and other educational institutions to reach material which would not otherwise be available to our projects. It allows experts in industry to participate in the process of educating students in relevant technologies and lab experiments. It allows this leading to take place in ways and with means over distances which would otherwise prohibit the intersection needed for leaving the cell transmission. Clocks at the different node need not be synchronized and to time stamp of cell transmission is necessary. The message transmission protocol of [1,2,4] assume either the existing of a global clock or the time stamping of a cell when it is transmitted. This increases the capacity of network hardware.

RELATED WORKS

Application hereafter refers to a user program that uses common service in the system. To protect the system from misbehaving applications we require all the applications to be registered. The API in HTM is responsible to receive the registration and transfer it to the NTM. The application register is responsible to process the registration and store it in the application database. The admissibility of the connections depends on the availability of resources such as links and switches. The resources monitor utilizes the built in mechanism in the network to periodically collect status information of resources and store it in the resource data base which will be utilized for connection admission.

The function provided by the connection manager including CAC and connection tear down. The connection data base maintains a list of records for the connections that are currently active. This is to check if the monitor the sender and the receiver have proper rights for establishing the requested connection. For the purpose of efficiently in the current version of next example a route with the shortest path is used. Our performance study has found that this method performs reasonably well in comparison with others while having a minimum runtime overhead [9]. This is the most critical step we first derive the delay bound of the new correction and then test if it is no more than the dead line requested. Since the introduction of the new connection may impact the delays of some existing connections their delays will also have to be derived and tested.

Position is the connection information a degree of servers. Calculate delays at individual servers. Sum up the delays at all the individual servers to obtain the individual servers and the end to end delay of the connection. Proper network decomposition, i.e. comprehensive but

concise traffic description. The efficient and effective server analysis. Application to application delay guarantee to necessitate a host based entity to perform traffic management. Host traffic control functions are built in to the RTTC. The RTTC is an execution engine in the HTM that schedule and regulates the packets belonging to different connection is a host. While the design on CAC are made by the NTM and HTM has to provide necessary local support for the NTM to function efficiency. The needed applications to support information exchange between the NTM. Estimation of host delays between sources to destination. Local parameter setting and local book keeping.

A user interface is a derived feature module serves as a graphical interface with point neck mechanism to management connections to monitor host and network status to collect traffic stations to send connection history to serve as a debug as a debug console. Signaling probability is defined for reliable communication among the next modules. An application programming interface provides a library of routines and application may call to use network services. Choice of mathematical models of traffic in different parts in levels of EPS network. Development of methods for determining the parameters of the aggregate traffic formed by combining traffic to arrive at a processing mode or transmitted together on a communication link. Determination of a calculated expressions that allow the relate the quality of service parameters with the parameter with the parameter passed and service flows.

SIMULATION RESULTS

Use of big picture initially to find the areas of interest. Finding the most important parts of the system. Start with a large small modes and decide what results and performance is required. Only includes the detail that effect the result of modeling. It includes details only to extent the data is available. Constantly recheck the model against the aims. It may be necessary to include more detail for creditability. Expertise or lack of sufficient bandwidth. The cell level resource allocation is the gold stone system 2, 1.544 mbps direct satellite. Madrid i.e. 56kbps terriestrial and satellite with GSFC. The distributions are called the inter arrival of burst errors. Distribution of the duration of the burst of errors called the length of burst errors. The retransmission done in 2 ways like there are only 8 biytes of overhead on a frame route of 568 user information bytes.

There are the degree numbers to transmit over long delay link which allows large though put and possible retransmission scheme to be implemented. The connection traffic descriptors are the set of traffic parameters in the source traffic descriptor and cell delay variance tolerance and also the confirmation definition. The first item to coinside is the potential type of sources that might produce and high cell loss. The source must be out of phase only in cell time units which means that and it is not possible to use interaction and was used in previous work [2,3].

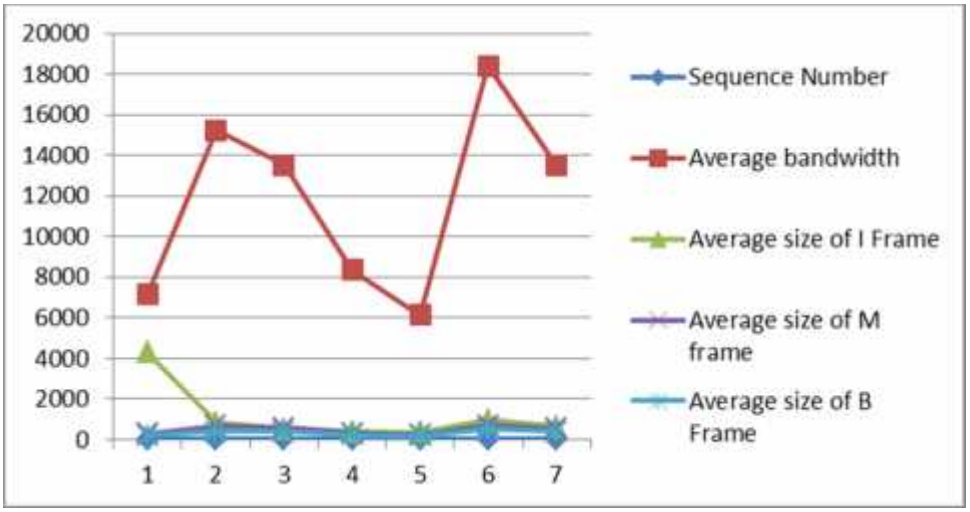
The discrete in nature of the cell and also implies that the buffer size must be an integer. The current state of the network can be determined by monitoring the utilization of network resources and or by characteristic the behavior of connection i.e. already admitted.

The guarantees are required on cell delay since the user knows their own processing delays and the application delay tolerance can be translated into a maximum acceptance delay within the network. The guarantees are required an cell loss in practice this means that the network guarantee to treat the user cell as high priority. The VP capacities could also be upload on a layer time scale than the feedback intervals to match over all dynamics of network traffic. The network efficiency refers to the utilities of network resources such as bandwidth and buffer spaces. The economic efficiencies refers to the relative valuations and the user attach to their network service. The ability to provide a traffic description i.e. useful to the network. The need for guarantees in terms of loss or delay.

The end system should consider setting QOS requirement to a higher class. The end system should decide it is essential to ignore the congestion to given the fine for doing sp might be quite high. Both end system should agree to ignore the congestion. Service meter usage where it is also aggregated under simple rules arbitrated by the meter controller. According to the table results from possibly a number of meters and deals with hard storage and customer identity. Rating is where prices are applied to the usage data to calculate changes. Payment of calculated changes will be required. Resource allocation purely by price could lead to bursty hogging. The laws of economics should protect us against the strategic effort of logging.[1,3] The logs will pay for the capacity they log leaving the remainder for the rest of us. However heavily bursty traffic relatively few prices intensive customers may cause a disproportionate need for over capacity.

Table 1: Video Sequence

Sequence Number	Average bandwidth	Average size of I Frame	Average size of M frame	Average size of B Frame
1	7138	4302	295	194
2	15231	839	680	401
3	13528	534	569	387
4	8356	393	340	241
5	6124	350	242	172
6	18406	974	721	529
7	13497	637	536	394



Graph 1: Video Sequence

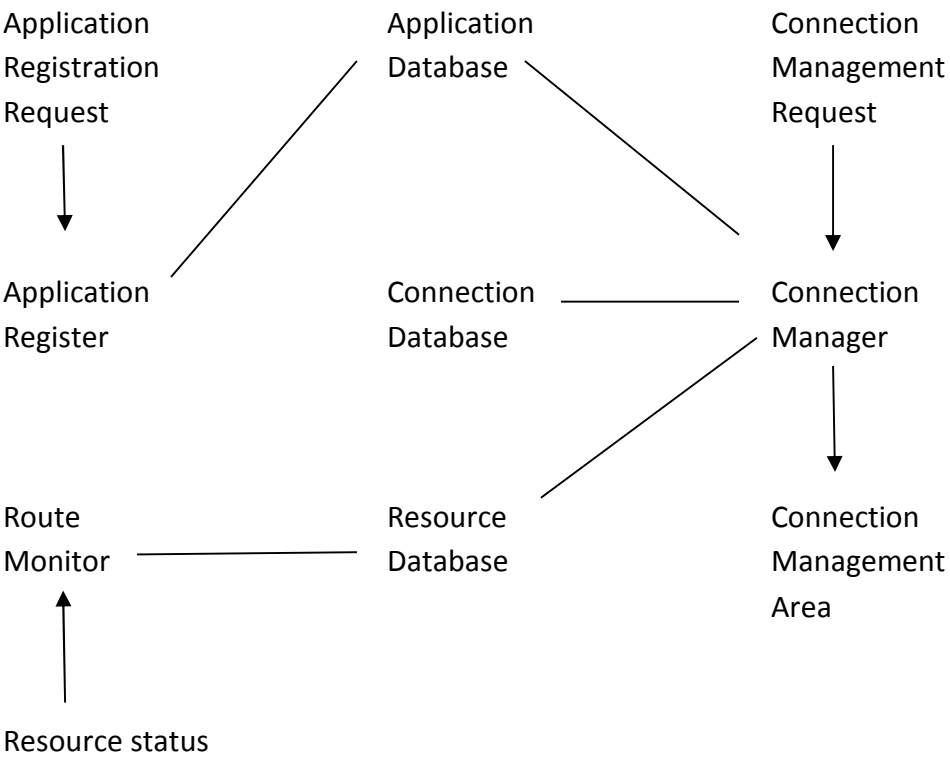


Figure: Network Traffic Manager

Flit Time = Message Inter Arrival Time / Message Size in Flit

Lack of experience of dynamic policy behavior of customer and provider and behavior of the customer [1,7]. Experiments are needed where risk adversity vi distinguished from the nuisance of dynamic pricing. Also future pricing of communications is a sparsely researched topic. Classifications associates the traffic coming from upper layer with an appropriate service flow and conversion ID. The classification may provide payload header suppression at the sending entity. Debugging of the resulting classification the PDU to the MAC common part sub layer in conformity with the negotiated QOS level.

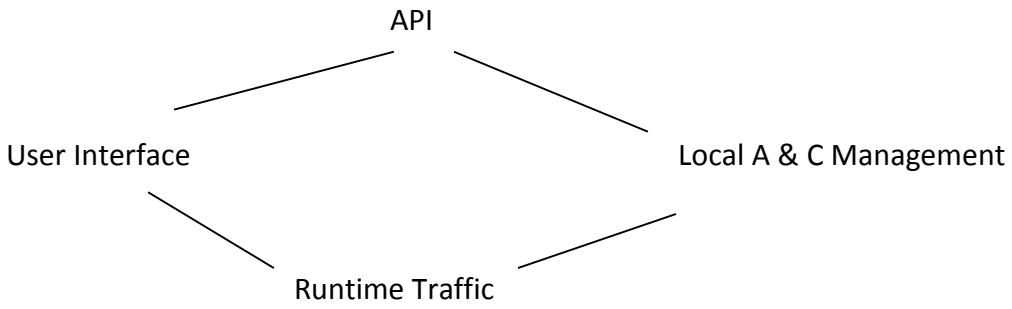


Figure 2 : Host Traffic Manager

Cell Loss Ratio = Lost Cells / Transmitted Cells

Wide geographic coverage including interconnection of ATM in Islands. Multi programming and Multi processor communications facilitated by the inherent broadband ability of satellites. Bandwidth on demand or demand assignment multiple access capacity. Network for disaster recovery options. Simulation and analysis of the buffering requirements of the satellite network for the TCP/IP traffic over the UBR service category. Mobile terminals and the end user equipment which are basically ATM terminals with a radio adapter card access points the base stations of the cellular environments. The ATM switch to support inters connection with the rest of the ATM networks.

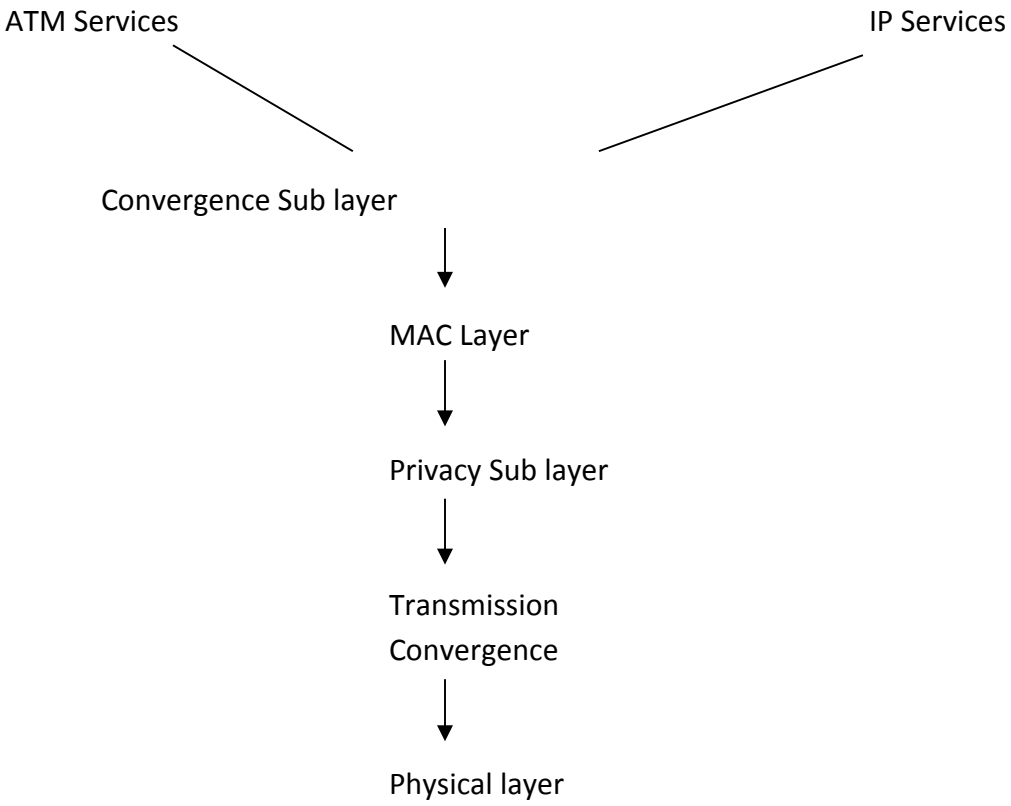


Figure 3 : ATM Switch Function

A control station attached to the ATM switch containing mobility related operations such as location update and handover which are not supported by the ATM switch. Implementation and demonstration of terminal and personal mobility spanning public and private operating environments in a supporting media applications. Identification, Implementation and Demonstration of in functionality meeting UTMS requirements. Identification, Implementation and Demonstration of ATM enhancements for the support of mobility management. Standard should be used anywhere hardware components network, operating system, and API.

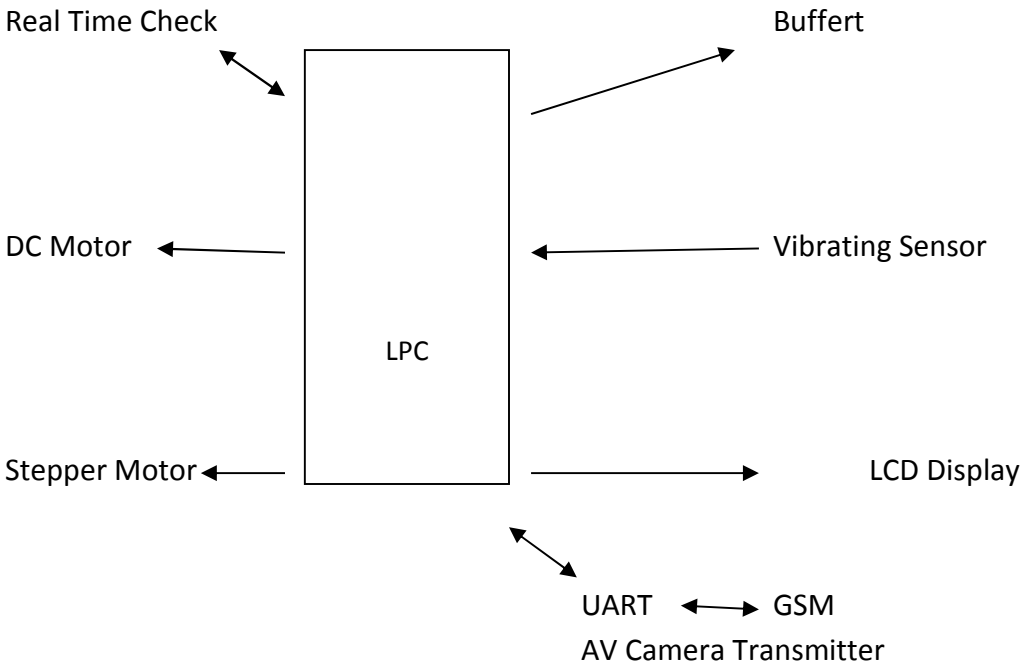


Figure 4 : Buffer transmission

Ethernet is the basic LAN technologies few field system are used level communication are specific. OSI and Internet protocols are preferred. There are few property network monthly dedicated to the field communications and the internet becomes the mandatory protocol family. Product must be supported by well known long life suppliers. They should use widely in industry. A power plant control application lines i.e. 30 years at least. New functions deals with multimedia for maintenance purpose and fault detection audio and video streams are needed. IMC multimedia data should share the same communication network. For all the effort invested in telemonitoring the candidate should not see significant advantage compared with email or level expertise.

Algorithm used:

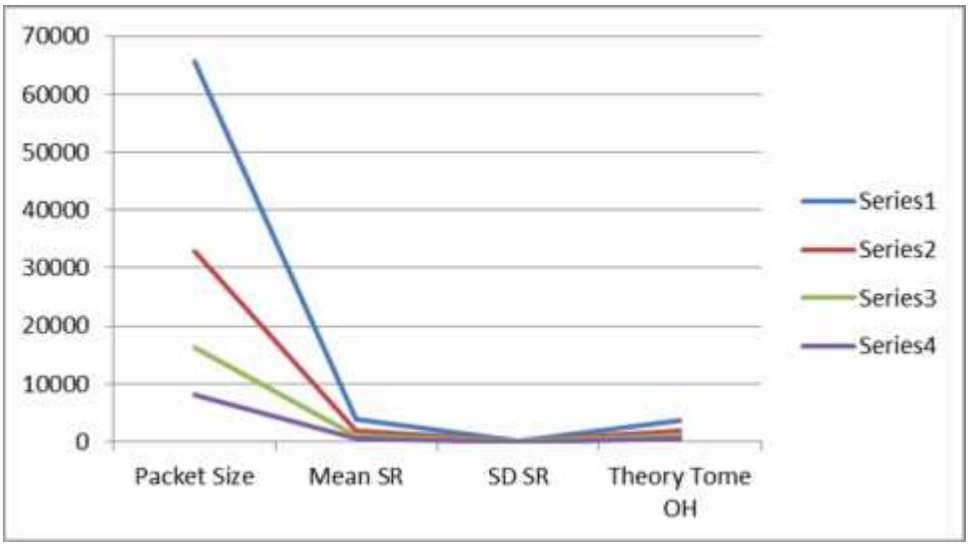
1. User accesses his account using debit card through ATM machine with help in pin.
2. ATM machine read this card and check with bank server.
3. Now ATM waits to enter the transaction request.
4. User may use ATM now and transaction.

   Each and every currency will be link to RBI server database and have duplicate currency note in the market and increases security. Customer will get 100% reliable note from the ATM machine. Currency checking makes ATM more efficient and reliable.

Single management maintenance as all IP packet forwarding routing and filtering functions are co centralized in a simple point. Various clustering options available for increased availability and reliability such as virtual router redundancy protocol[6] and redundant IP gateway[8]. The central router or cluster of router represents a single point of failure for all IP traffic to non local subnet destinations. In environments with large number of edge LAN switches this model does not scale well.

Table 2:Data size variations

Packet Size	Mean SR	SD SR	Theory Tome OH
65535	3835	82	3720
32768	1905	35	1860
16384	940	35	930
8192	460	15	460



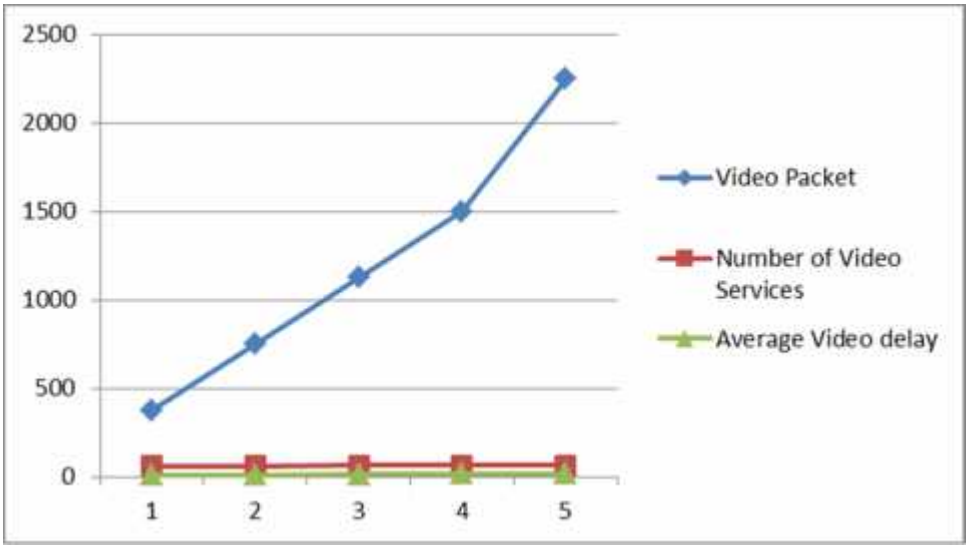
Graph 2: Data size variations

Router single link to the ATM backbone has a finite capacity and can therefore prevent a bandwidth bottleneck. Under high packet rate and/or complete IP processing task such as packet filtering the CPU on a single IP forwarding device can balance overloaded. Leading to overall network throughput degradation. IP processing load is distributed so aggregated packet forwarding throughput scales well with the number of edge switches. There is no bandwidth

related bottleneck in the backbone as opposed to the centralized one armed router model. In a properly configured network single points of failure on the IP layer can be avoided as in case of failure of a single edge LAN switch.

Table 3:Data buffer Transmission

Video Packet	Number of Video Services	Average Video delay
375	60	10.11
750	62	11.72
1125	63	14.72
1500	63	15.73
2250	63	18.46



Graph 3:Data buffer Transmission

The remainder of the network will continue to operate uninterrupted management and maintenance becomes more demanding and complex as the number of LAN switches grow requesting the introduction of specialized management and automation methods and tools. Frame type field in Ethernet header is set to 0806. ARP operation field in set to 0001. ARP hardware and protocol type and size medals and field set are set to appropriate values for IUPV4 Ethernet. ARP target and IP address is equal to virtual default gateway IP address for LAN.

PERFORMANCE RESULTS

Performance guarantes should be provided and fulfilled for those user who required exactly. These guarantees may be deterministic and statistical. All services demanded by the user should be supported , including future services with as yet with unknown characteristics. A wide range of services can be supported and guarantees demanded by the user can be offered and fulfilled and to provide the efficient network operation and i.e. not important . This is usually achieved by an over provisioning of resources such as receiving the peak bandwidth required by a connection. The network should be a provider of basic network results rather than complex user services.

The responsibility for packaging these resources into service should lie with the user. The network is primary function should be and to coordinate request for its resources. The goal of this coordination could be to optimize some measure of the network. Performance to optimize and a suitably defined global user satisfactorily or to ensure to some degree of fairness or some other objectives. Demands are continuing to increase exponentially so that it is not clear when if ever and the network resources will be free. In the past experiences suggest that the application developers will have no difficulty in designing new services that use up all the available resources perhaps after an initial adjustment period. The network should be a provider of all resources rather than services. The responsibility for packaging these resources into services should lie with the user or in real time and their interface equipment. The network and the third party provider must offer a predefined menu of services that the user can choose from if there are enough user that do not want to define their own services.

The network primary function should be to coordinate request for its resources. The goal of this coordination could be to optimize some measure of new performance or to maximize a suitably defined global user satisfaction or to ensure some degree of fairness or some other objectives. Resource can be requested and allocated in real time or essentially continuous. Therefore for all but the shortlist lived connection it should be possible to adjust a connection parameter during its life time. The ABR service could assign whether bandwidth application to more and those applications require link and there is no guarantee on delay or cell loss. Even for free agreed connection request the setup have could involve an intensive negotiation between the user and the network in which the user to modify their request to confirm the current level of resource utilizations.

CONCLUSION

We find that performance of a small fat mesh network is comparable to that of a single switch. Although it is difficult to complete performance to much layer cluster directly from our present results we expect that cluster designed with appropriate bandwidth balance among various link by using fat topologies and media like switches should be able to provide good performance for

both real time and best effort traffic. We have investigated the static proportions of traffic mixes with satisfy partitions resources. A more practical scenario would be that of dynamic mixes with dynamically partitioned resources. One way to provide this is to permit message preemption in routing [2].

There are multiple levels of resource allocation in ATM Networks but that have been discussed here the cell level [10] and connection less results are simplified and the appropriate models for performance analysis and that been implemented and verified and credible to the user. There may be a course an as yet unknown source i.e. worst case over all permutation of the sources. The result shows that the pricing cell loss is reduced and the buffer occupancy is also reduced. Without pricing there was an 5.5% cell loss and that with price with there is no cell loss. This have ben proved and the pricing can be lead to increase in the efficiency as well as different kind of the networks.

ACRONYMS

RTTC – RUNTIME TRAFFIC CONTROL MODULE
LACM – LOCAL APPLICATION CONNECTION MANAGEMENT
EDSP – EXTENDED DISJIKSTRAS SHORTEST PATH ALGORITHM
OSFP – OPEN SHORTEST PATH FISRST ALGORITHM
PCPO – PATH CONSTRAINT PATH OPTIMIZATION ROUTING
PNNI – PRIVATE NETWORK – NETWORK INTERFACE
CDVT – CELL DELAY VARIATION TOLERENCE
FGCRA – FRAME BASED GENERIC CELL RATE ALGORITHM
ATM – ASYNCHRONOUS TRANSFER MODE
QOS – QUALITY OF SERVICE
CAC – CALL ADMISSION CONTROL
MAC – MEDIUM ACCESS CONTROL
LAN – LOCAL AREA NETWORKS

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