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Cell Multiplexing and Adaptive Scheduling for Wide Area ATM Networks

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Abstract
The ATM UBR, GFR over ABR service categories have been designed for data. However several studies have responded poor TCP performance over satellite ATM resources. We first discuss the various design options available for TCP end systems, IP-ATM switches for long latency connections. We discuss the buffer management policies generated and rate services and the virtual stores destination options in ATM. We present comparison of ATM service categories for TCP transport over satellite links.
Keywords: Video Teleconferencing, Adaptive Scheduling

Introduction

Internal ATM Networks and service parameters are announced during the connection setup phase together with a unique VPI/VCI value. The only way to identify a connection QOS parameters afterwards it's through VPI/VCI value. Therefore the MAC layer has to embed any kind of look up to generate QOS constraints for the different connections. Figure 1 and 2 depict the protocol stack in which the layer management entity converts UNI and MAC and bypass access service parameters during connection establishment.

The uplink scheduler is located on broadband and the satellite networks. It assigns fixed resource allocations to all CBR connections with highest priority. Remaining resources are assigned to UBR with a minimum cell rate connections based on a weighted round robin algorithm left over resources are equally divided between all remaining UBR and VBR with MCR connections.

QOS provisioning in an important consideration in WATM networks. An explicit resource allocation using a combination of admission. Traffic shaping and policing mechanism is used to achieve it. The connection admission mechanism must be taking into account for possible congestion. Also ensure all a low rate of dropped connection as user pram among different wireless coverage areas. The admission is based on several criteria such as traffic and handover character call holding time statistics. It is designed for QOS of each class of traffic and amount of radio resources available.

Simulation Results

The address of the micro block is coded relative to the position of the slice to which it belongs. Any motion vector associated with the micro block is coded as is not difficulty. The metric coded in the table approach . Whereas the metric used in the temporal spatial approach is based on the buffer cost function. Furthermore is the only difference best directly adjustment service is neighboring pixels that are at a 450 angle is absorbed. If the micro block is intra coded then the effectiveness of its first block and its chrominance are coded relative to a value of 1024 bytes.

The need for the allocation and standardization of appropriate radio frequency bands for broadband communications. Requirement of new radio wave technology and access methods for high speed operation. Location must for tracking mobile terminals as they are around the network Handoff management for dynamic of virtual circuits to new access points while ensuring sequenced and loss free delivery and ATM networks. End to end QOS provisioning which is challenging in the in the case of limited bandwidth time varying channel characteristics and terminal mobility.

Algorithm used:

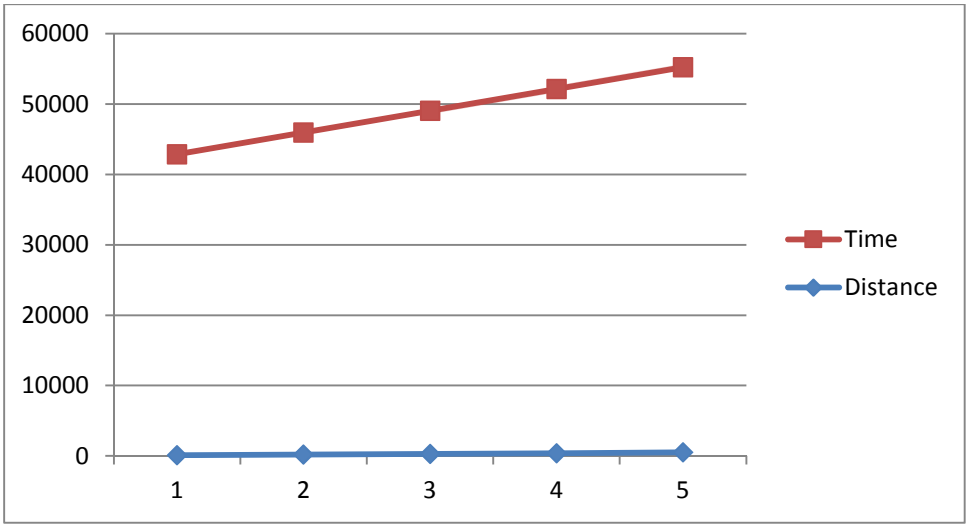
1. All the slots are belongings and synchronized at time 0 again at the end of the K out cell slot.
2. During the first K out of slots exactly Ki complete cells from each connection i(1<=i<=N) arrive at the server. Also no further bits arrive during the period.
3. The last arriving cells from each connection components its arrival at the end of our arrival cell slot K. Thus at atht moment, the server buffer contain the last arriving cell from each connection.
4. Since all cells are of a fixed size and Pi is work conserving the total number of several cell is variant.

In this section of the modules developed above are used to access the impact of periodic sources emitting burst of cells in the content of ATM network congestion control. Three different scenario are storied here is single queue system then two storage multi queue system and tandem queuing system. They must be able to accurately describe the traffic character of the connection such that the QOS estimate is reliable. They must easy to supervise to make

the implementation of the flow enforcement algorithm i.e. feasible and cost effective.

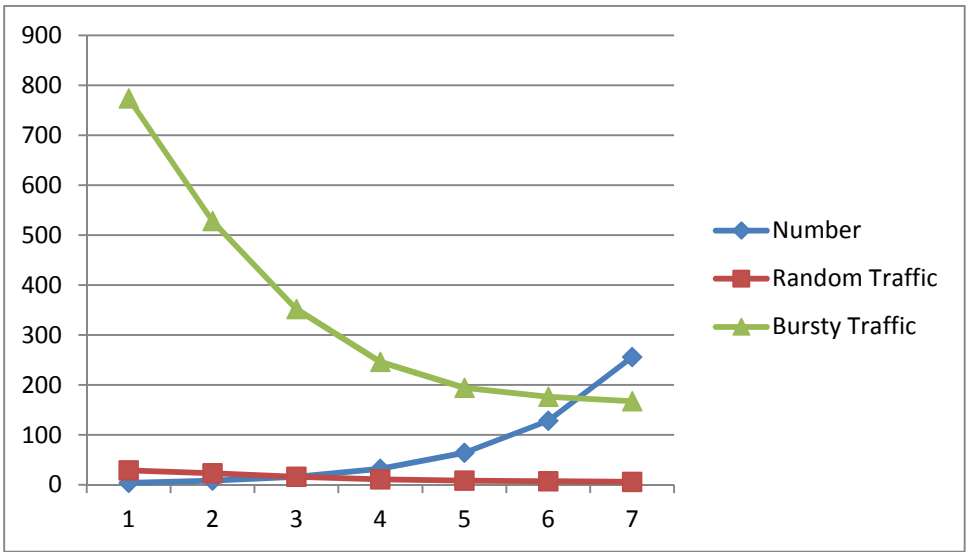
Distance and time table:

Distance	Time
100	42744
200	45743
300	48743
400	51743
500	54742



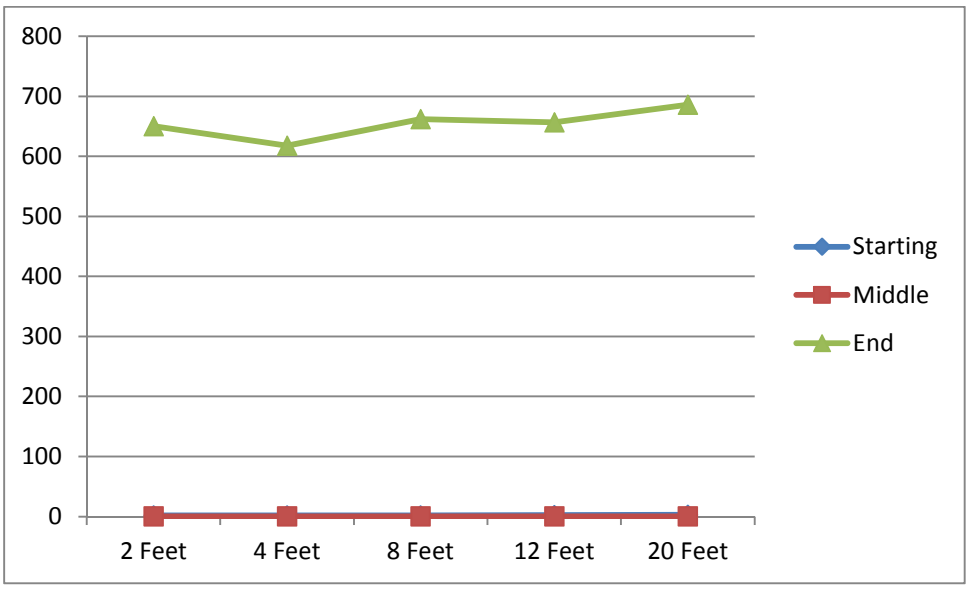
Cell Buffer Requirements Table:

Number	Random Traffic	Bursty Traffic
4	29	774
8	23	528
16	16	352
32	11	246
64	8	194
128	7	176
256	6	167



Performance of Standby Routing Table:

Mobility	Starting	Middle	End
2 Feet	1.9	0.2	650.3
4 Feet	2.1	0.3	617.7
8 Feet	2.1	0.3	661.8
12 Feet	2.6	0.3	656.7
20 Feet	2.8	0.5	686.1



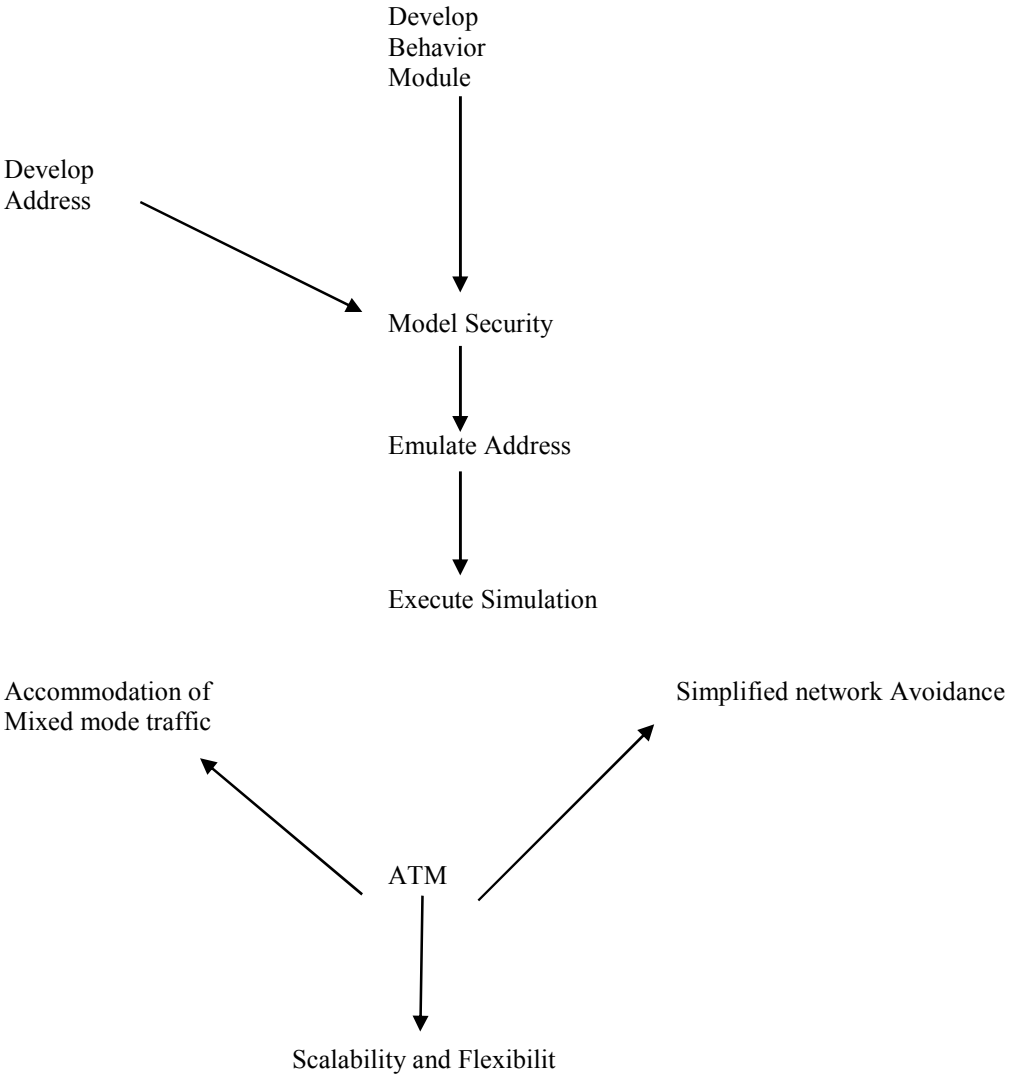
Z = ABR Input Rate / Target ABR Capacity

ATM Switching + Mobility Protocol -> WATM Radio Access

Algorithm 2:

```
For all I do
{
If ( i== sender)
{
Route [sender].bandwidth=link-bw;
}
Else if ( route[i].next=sender)
{
Common-bw-size = size(common-bw)
}
If(remain-bw-size > 0 && common-bw-size > 0)
{
Route[i].bw-size = route [i].bandwidth.size + remain-bw-size;
}
```


Conceptual Approach



Conclusion

The least buffer requirement for 0 cells lost. Fairly allocate available network broadband to individual TCP connections. Adjust source ACR rate fast and accurately in response to the changes of the network traffic. Under limited switch buffer size situations our method achieves the better throughput.

Acronyms

ATM – ASYNCHRONOUS TRANSFER MODE

VBR – VARIABLE BIT RATE

UBR – UN SPECIFIED BIT RATE

GFR – GLOMERULAR FILTERATION RATE

TCP – TRANSMISION CONTROL PROTOCOL

VPI – VIRTUAL PATH IDENTIFIER

VCI – VIRTUAL CHANNEL IDENTIFIER

UNI – USER NETWORK INTERFACE

MAC – MEDIUM ACCESS CONTROL

WATM – WIRELESS ASYNCHRONOUS MODE

QOS – QUALITY OF SERVICE

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