AG Media Shared Application

– High-quality Video Support for Access Grid –

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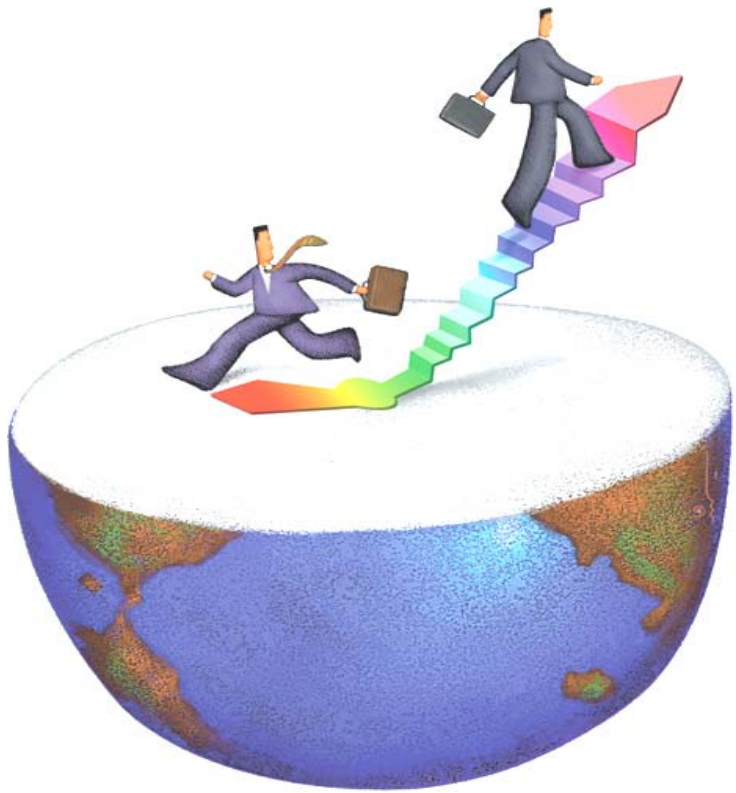
AG Media Shared Application

High-quality Video Support for Access Grid

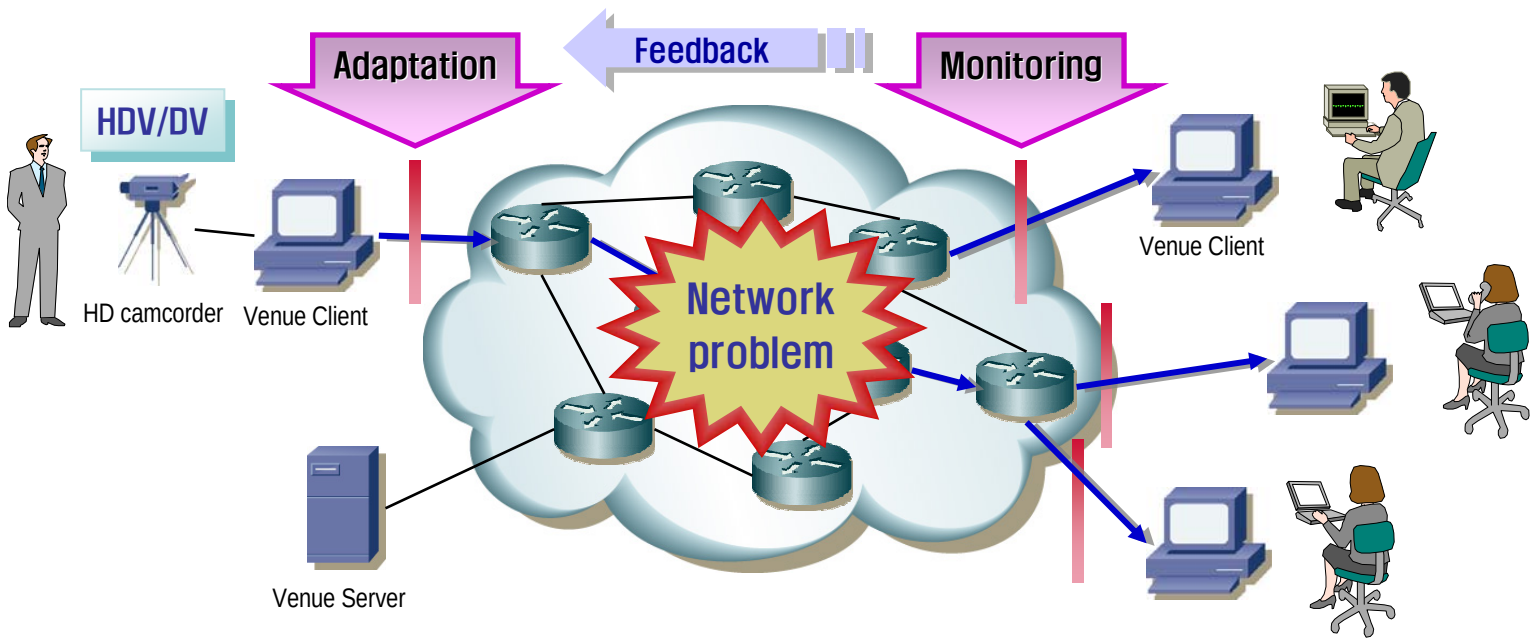


AG MEDIA – SHARED APPLICATION

GOAL

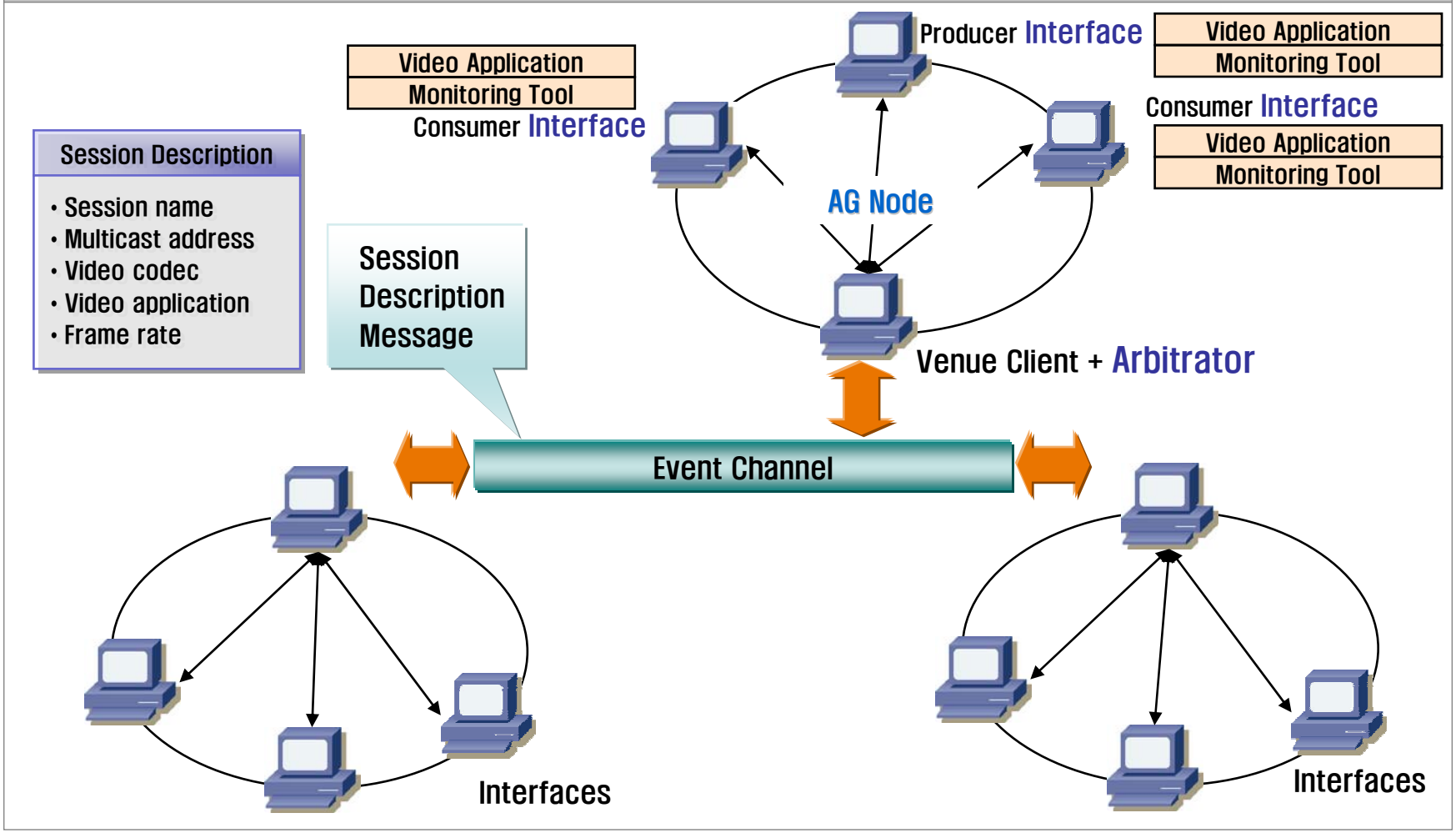
- Offering high-quality video contents to foster realistic presence among AG nodes
- Network-adaptive video transmission over multicast-based one-to-many distribution environments
- Designed and Implemented as a shared application tailored to AG toolkit

Conceptual picture



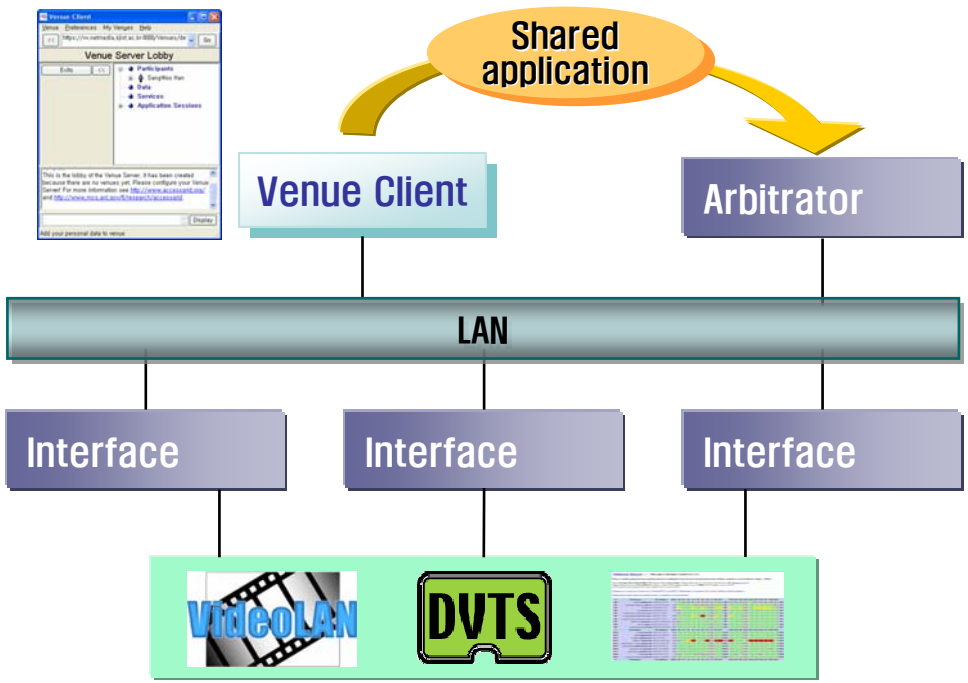
SYSTEM ARCHITECTURE

Focusing on the relation among AG nodes



COMPONENT DESCRIPTION

Focusing on the relation among components



- ▶ VideoLAN: 720p, 1080i HDV Support
- ▶ Modified DVTS: 720x480 DV Support
- ▶ Modified Multicast Beacon Client (WIN32)

AG Media Arbitrator

- Interface control
- Session announcement
- Decides adaptation scheme

AG Media Interface

- Interface registration
- Video application control
- Network monitoring

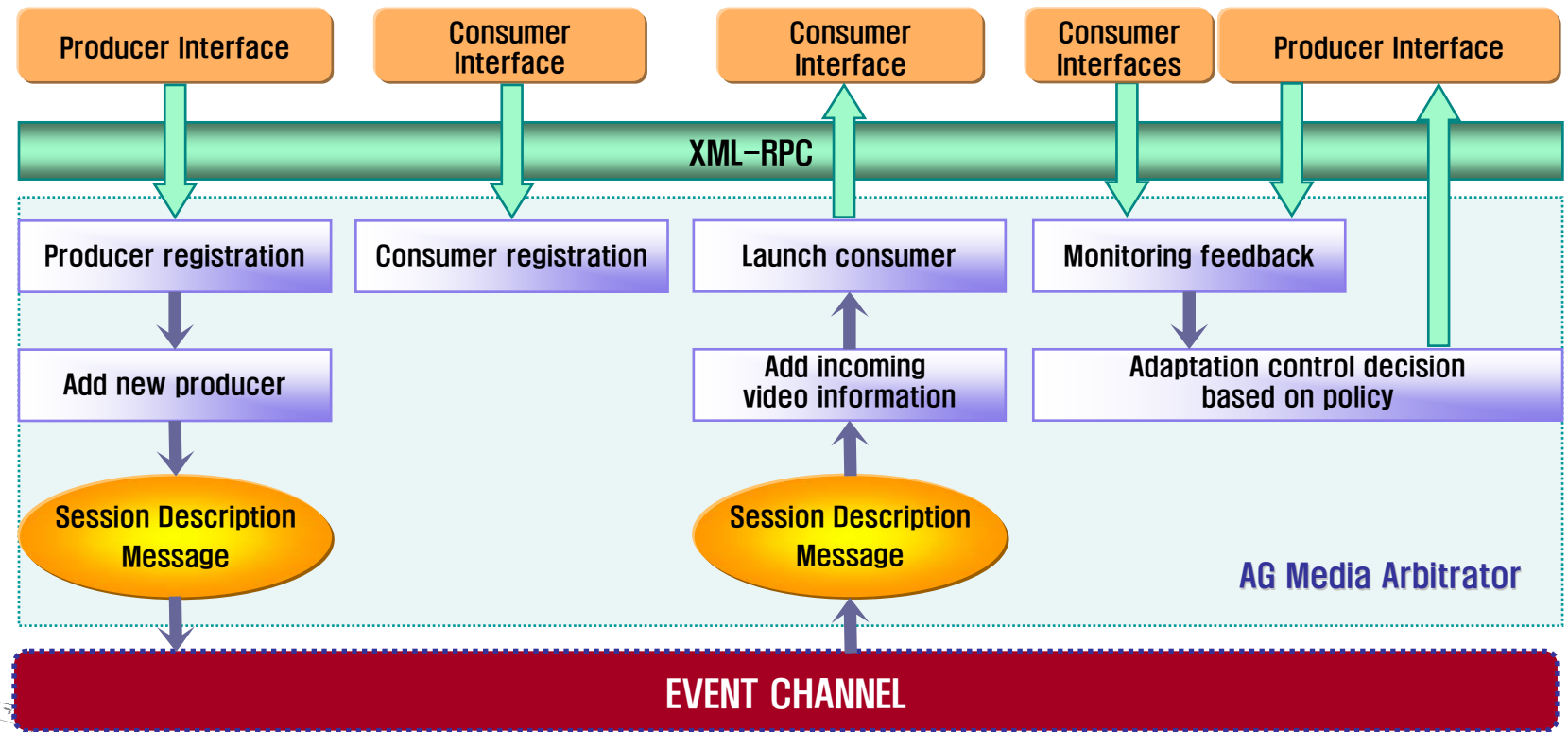
Video/Monitor Applications

- Encoding and decoding
- RTP-based transport
- Frame rate control

1. AG MEDIA ARBITRATOR

ROLE

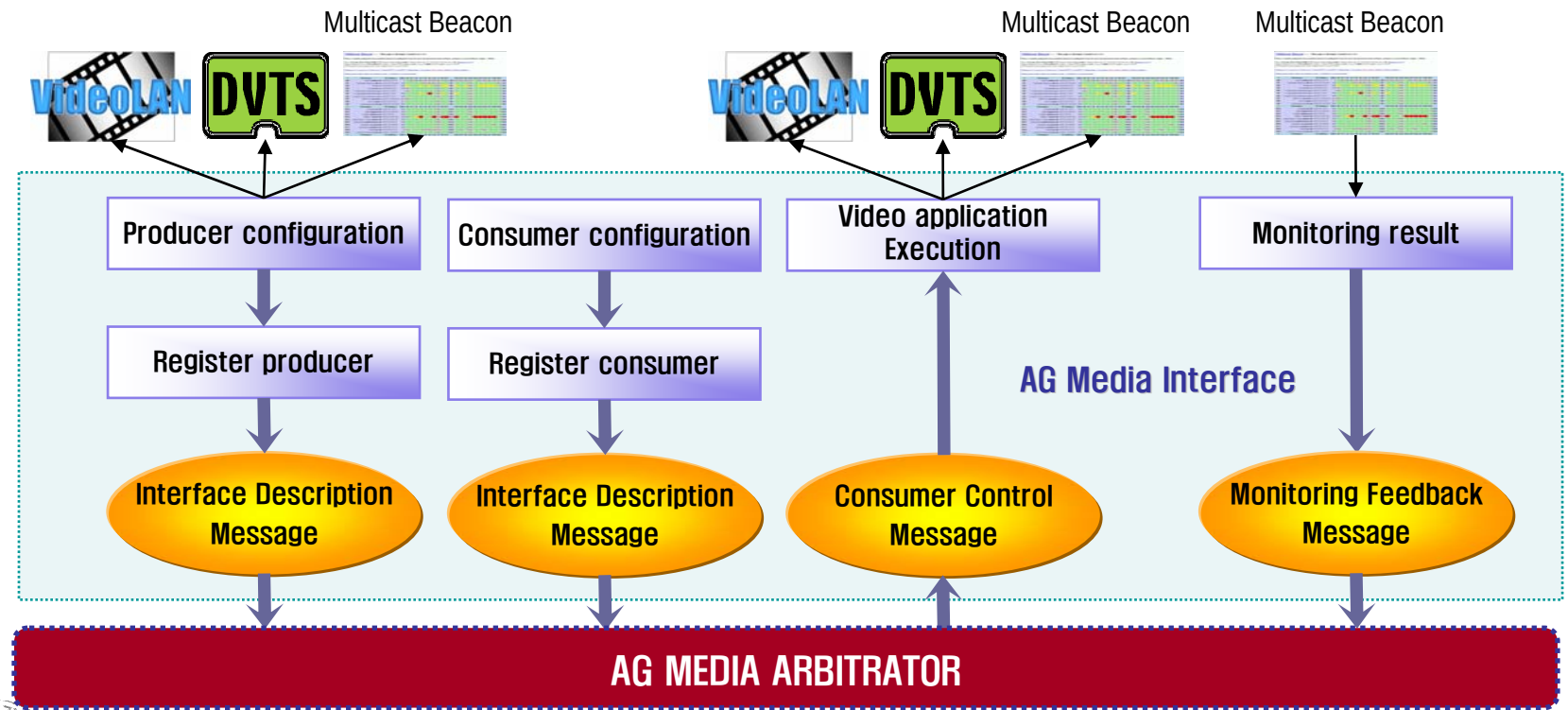
- Assigns a multicast address for newly attached video producer interface and announces this session description
- Controls interfaces for video producers and video consumers by using graphical user interface
- Decides the network-adaptive control by consulting adaptation policy based on the monitored feedback



2. AG MEDIA INTERFACE

ROLE

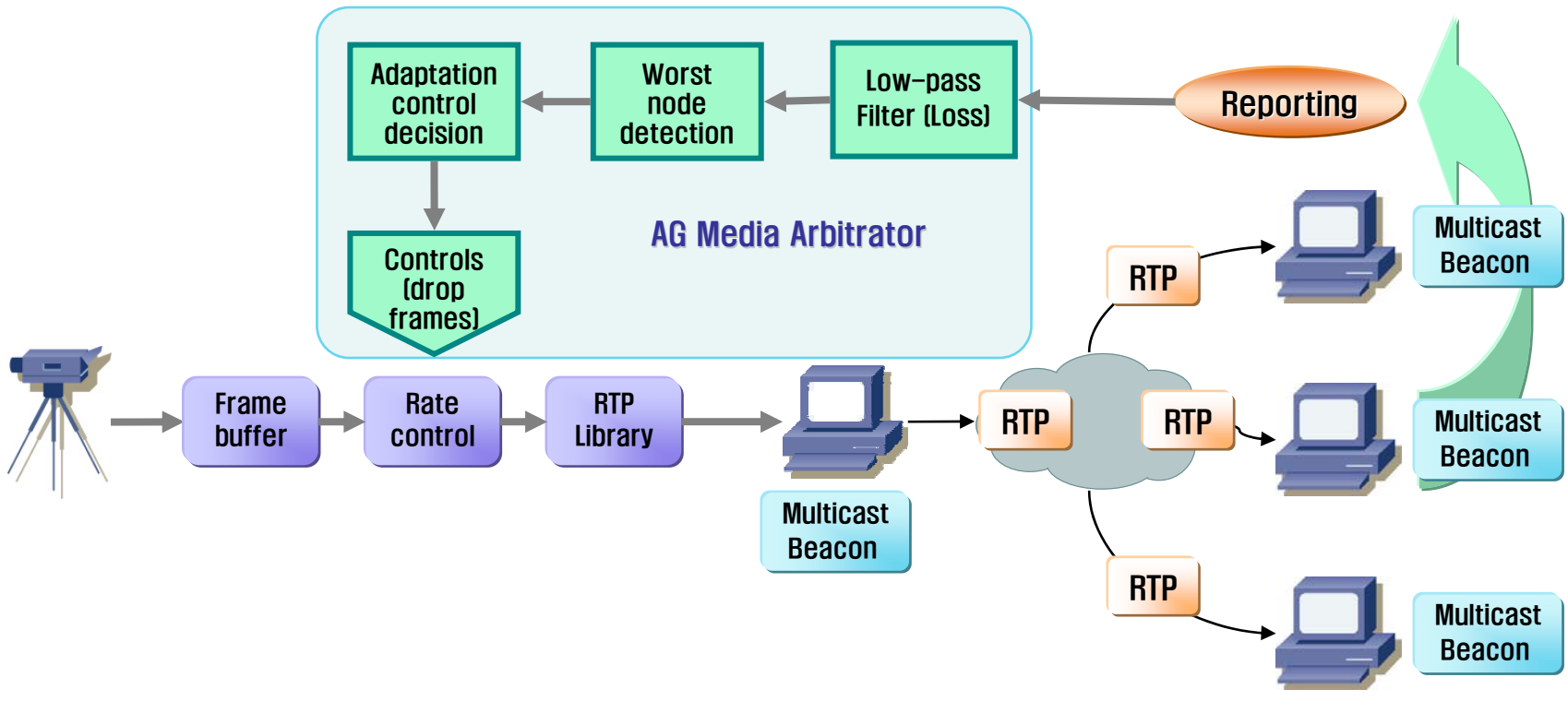
- Provides Interface to register as the role of video producer or video consumer
- Controls video transport applications (VideoLAN and DVTS) based on given commands from the Media Arbitrator
- Performs network monitoring using the modified Multicast Beacon and reports it to the Media Arbitrator



▣ Network-adaptive media transport for QoS

Loss-based Network Adaptation

Focused on one-to-many aspect of AG video distribution



Demonstration

DEMONSTRATION

DEMONSTRATION

5 minutes

CONCLUSION AND FUTURE WORKS

CONCLUSION

- Design and implement AG shared application to enable HD video support with QoS adaptation
- Easy to distribute and install by supporting Access Grid Package Manager (AGPM)
- Easy to link and employ versatile video applications

FUTURE WORKS

- Refine adaptation controls and policy setups by further considering system capability and performance
- Implement MPEG2-based network-adaptive transport for HDV video using frame dropping
- Generalize and unify the proposed architecture so that it can support other video/monitoring applications

QUESTION AND ANSWER

The proposed implementation includes software modules developed by the WIDE consortium, the VideoLAN project, and the National Laboratory for Applied Network Research.