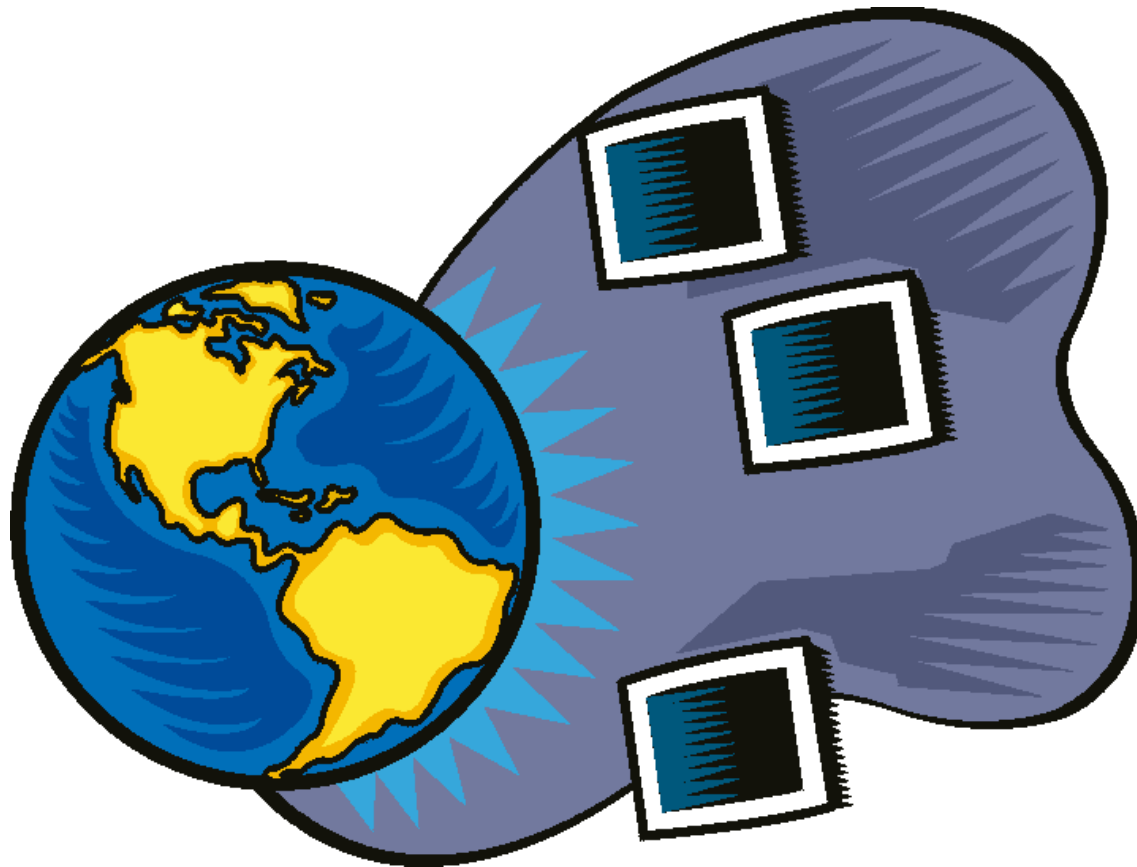# End User Technology Overview

H.323 Video Over IP

OBJECTIVES

•State some reasons the state has decided to pursue H.323 video

•Identify the standards body responsible for H.323 development

•List 3 advantages to using H.323 video

•List two drawbacks associated with dialing an IP address

•Identify the protocol responsible for delivering Quality of Service

•Identify the devices capable of bridging H.320 and H.323 sites

What is H.323?

- An ITU Standard Recommendation

- A recommendation describing terminals and other entities that provide multimedia communications services over Packet Based Networks (PBN) which may not provide a guaranteed Quality of Service

- A basis for multi-vendor environments

- Without a standard, Video Conferencing would be limited to single-vendor solutions

- HDTV – No standard has yet been adopted
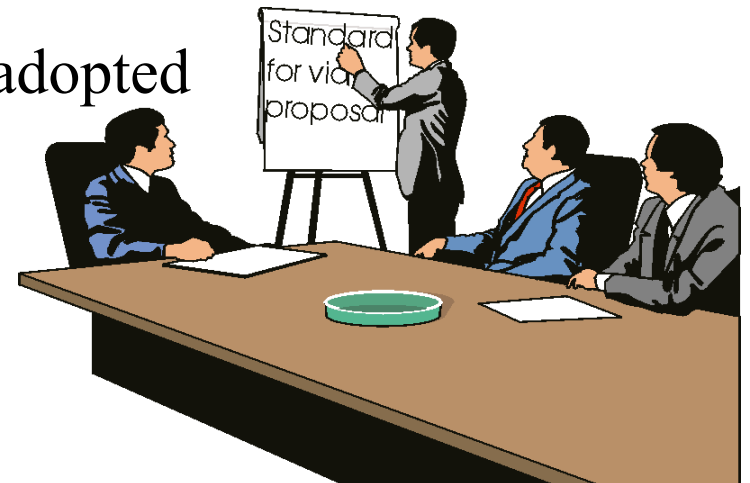
Why Convert to H.323?
What are the Advantages?

- More efficient use of bandwidth

- In H.320, video bandwidth sat idle if there was no conference

- Under H.323 bandwidth can be used for data (PC) transmission when there is no video conference running

- Equipment manufacturers are concentrating development on H.323 offerings - H.320 will slowly be phased out

- H.323 video codecs are getting cheaper and better all the time

- In the future almost all video conferencing will be H.323

- Equipment portability is more easily implemented

- Software upgrades are easier, quicker and more manageable

What are the Drawbacks?

• Still a young technology. H.320 is over 20 years old. H.323 was developed in 1996

• Still implementing available H.320 features into new framework

• Quality of Service not universally available

• Technical support staff will need to be retrained in some areas

• Equipment is smaller and more self-contained making it easier to grow legs

• Web connectivity presents an inviting challenge to hackers
            Although it has yet to be a problem at the state

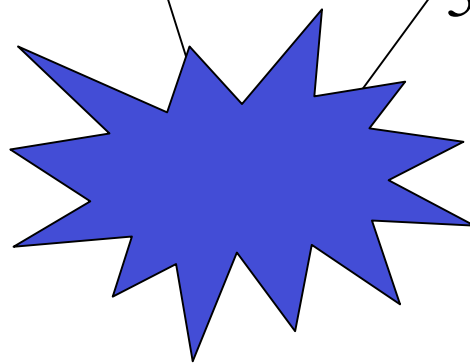• Like your stereo at home, No User Serviceable Parts Inside!

Westlander's Network
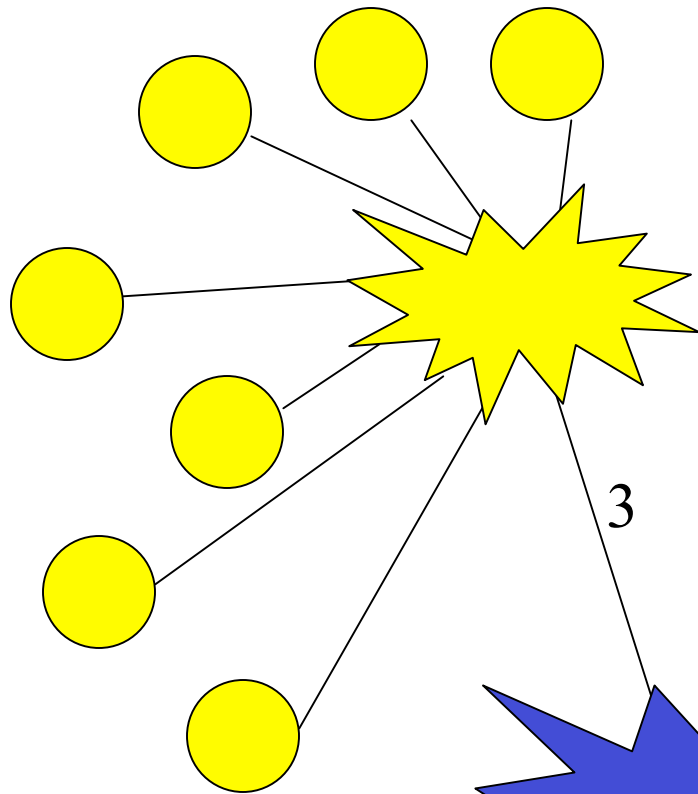
Eastlander's Network

3

5
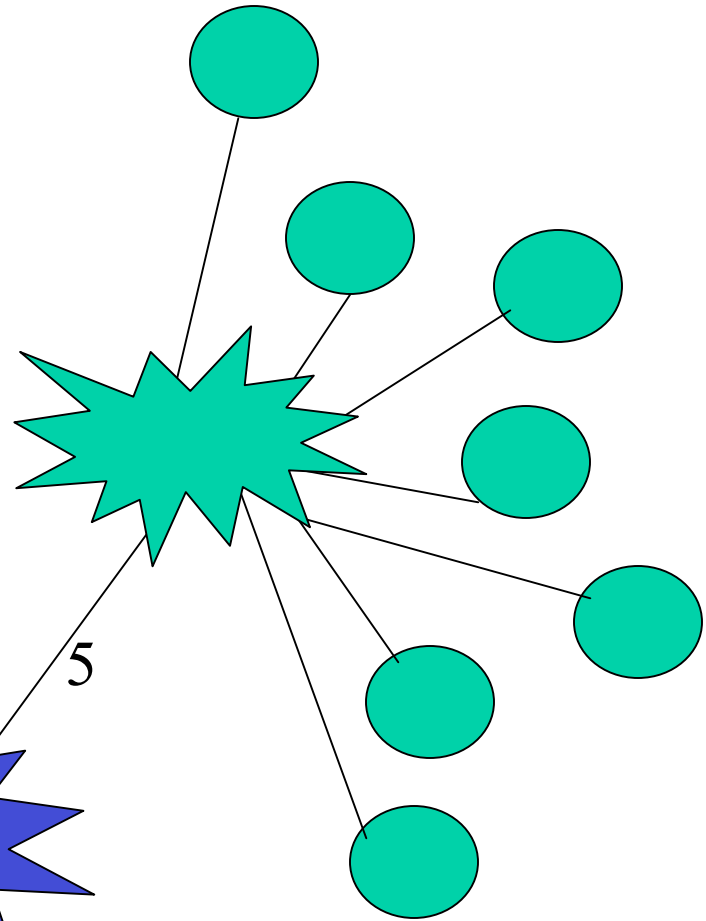
State Core Network

How Does the A/V Information get from Unit A to Unit Z?

•The State of Minnesota has adopted RSVP to insure Quality of Service across the WAN and 802.1p on the LAN

•By using Cisco's MCM, Gatekeeper and Proxy features, we are able to provide an error free, buffer free path for the A/V data

•RSVP will be available state wide

•Real Time Data traverses the network unimpeded if everything is properly groomed and RSVP is functioning

•Codec manufacturers have built in some fault tolerance and error recovery, lessening the chance that A/V will be degraded

How Does RSVP Work?

•By setting up a virtual high-priority, **non buffered** path between site routers

•All routers in the path must be properly groomed (link settings)

•When video is running, data is confined to a proportionately smaller space.

•LAN configurations can greatly affect quality

•Cisco software sees an E.164 dial sequence and special software called a Proxy, negotiates the RSVP between the originating and destination router.
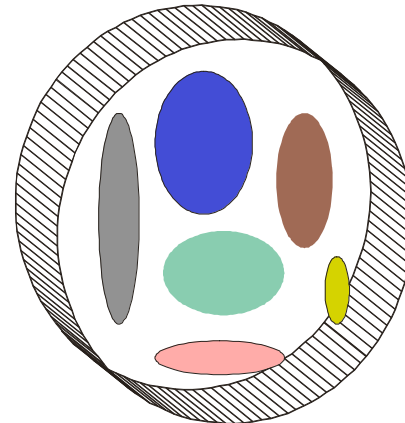
In video, retransmission could get weird!!

What About Sites Using Older Technology?

Devices which can bridge old H.320 users and H.323 users together are in place and functioning today.

ISDN is a flavor of H.320 which will be around for quite some time to come.

SUMMARY

•Equipment costs are dropping

•Feature development is rapid

•Transmission costs are substantially lower and are now a fixed cost when dialing other H.323 systems – No L.D. charges.

•Better, more seamless integration with other data technologies like T.120

•Nothing is perfect – there will be problems from time to time.

•Problems will become less frequent and/or severe in the future.

•H.320 users used to seeing X when Y is broken will now see or hear something different when Y is broken. It will take time to discover this technologies quirks.