Guaranteed quality of service (GQoS)

The increased popularity of IP (H.323) based services due mainly to the lower cost of connection has spawned a great deal of development to produce effective methods of delivering high quality videoconference (and telephone traffic) over the IP infrastructure. The Internet Engineering Task Force (IETF) has been particularly active in defining standards in this area while the major network equipment manufacturers have produced workable network solutions.

1 IETF RFC 2205 Resource Reservation Set up Protocol

This IETF recommendation modifies the normal routing control protocols and allows a host to request specific Qualities of Service (QoS) for the audio/video content of a conference. It is also used by routers to deliver QoS requests to all nodes on the network and to manage the QoS state.

2 IP Precedence (IPP)

IP Precedence enables an endpoint to prioritise the video/audio data into five Types of Service (ToS) with respect to that of other traffic on the network.

These choices are available:

- Maximum throughput;
- Maximum reliability;
- Minimum delay;
- Minimum cost;

in addition to the default ‘Normal’ that has no priority. The ToS tag commands routers to prioritise data and so low priority traffic may have to be dropped at busy times to enable a reliable conference.

3 Differentiated Services (DiffServ)

DiffServ is a more sophisticated method than IP precedence of specifying Type of Service (ToS). With DiffServ there are 63 separate ToS available.

4 Intelligent Packet Loss Recovery (IPLR)

In cases where despite the best efforts of QoS procedures data packets are still lost then some more advanced CODECs attempt to minimise the visual effect of the loss sometimes downspeeding the conference to regain stability. Polycom®'s PVEC and Tandberg's IPLR are two examples. The Polycom® solution is proprietary and so needs a similar CODEC at each end whereas the Tandberg is H.323 and H.320 compliant and so works with any compliant endpoint or MCU.
