

## **Archived Material**

### **Historical Purposes Only**

#### **Archive - Potential NGI Applications**

Medical Image Reference Libraries:  
sponsored by The National Institutes of Health

#### **Categories**

Medicine, Digital Libraries

#### **Vision**

Create medical reference libraries where images, movies and sounds are digitized and accessible remotely.

#### **Why NGI?**

The medical image library would contain high resolution still images as well as motion sequences. When video sequences or large numbers of these images are accessed, speeds of up to 75 Mbits/sec would be required to make total access times acceptable.

#### **Description**

To provide net accessible reference libraries of digital images, movies and sounds representing normal and pathological medical conditions.

#### **Rationale**

The mission of the National Institutes of Health is to provide for advances in medical care. Many of these advances will be dependent on the presence of a high speed, low latency, secure digital information infrastructure as represented in the NGI program. Medical advances discovered by the NIH have traditionally been transitioned to the private sector for further development.

#### **Requirements**

##### *Bandwidth:*

Some of the objects in the digital library will be images whose quality rivals that of

large format photographic film. Although each individual picture could be transmitted in reasonable time with current technology, any of these images will be part of comprehensive sets of images may contain up to a hundred images or about 500 Mbits per set. It would be preferred if an entire data set could be sent in under 1 minute (about 10 Mbits/second). Some of the objects in the digital library may be motion sequences at VHS tape quality. It would be preferred if these sequences could be downloaded at least as fast as their real-time playback, about 75 Mbits/second.

*Latency:*

Latency is not a factor in these applications as the images will be examined after the entire data set is received. The limiting factor for these applications is a total end-to-end transmission time of less than 1 minute for ensembles of still images and viewing time end-to-end transmission time for motion sequences.

*Security:*

The data transmitted for this application are typically for open research studies that are not sensitive in the same way that patient data might be, so security is not a primary concern. However, appropriate security precautions must be taken if any proprietary research data are being transmitted, or if the technique is extended to human clinical applications.

*Reliability:*

High reliability is not a major issue in this application because the network is used as a bulk data carrier, not a real-time control system.

*Scalability:*

The bandwidth available on the network should be scalable so that the capacity can be increased in the future in response to potential increases in demand.

## **Partners and Potential Partners**

Academic and private sector medicine.

## **URLs**

<http://www.nlm.nih.gov/research/telfront.html>