International Telemedicine
in Vitreoretinal Disorders

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Progression of our Telemedicine System

We developed our telemedicine system to obtain high-quality images of vitreoretinal disorders.

1994
1st Stage  
64 kbps  
Digital video

1995
2nd Stage  
1.5 Mbps  
3D Images

2006
3rd Stage  
40 Mbps  
3D-HD Images

2010
4th Stage  
10 Mbps  
3D-HD Images

Progression of Technology
Progression of our Telemedicine System

We developed our telemedicine system to obtain high-quality images of vitreoretinal disorders.

Progression of Technology

1st Stage

Research of Telemedicine
1994 - 2005

2nd Stage

Establishment of Telemedicine with 3D-HD
2006 - 2009

3rd Stage

Expansion of Telemedicine with 3D-HD
2010 - Now

4th Stage
Telemedicine Network
Expansion from Domestic to International Networks
Asahikawa Telemedicine Center
Since 1999
Purpose

To present the status of our international telemedicine network that transmits three-dimensional high-definition (3D-HD) images of vitreoretinal disorders.
To improve resolution, the engine compresses the left (L) and the right (R) pictures independently.
THE 21st CONGRESS OF THE ASIA-PACIFIC ACADEMY OF OPHTHALMOLOGY

2006

10 - 14 June 2006, Singapore

our vision for the future

Congress Venue: Suntec Singapore International Convention and Exhibition Centre

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Latest Updates!
The organising committee will like to thank each and every delegate for your participation and making the meeting experience in APAO Congress 2006 a memorable one! We hope you have enjoyed your stay in Singapore!
The World’s 1st Tripartite 3D-HD Live Surgery Symposium in Ophthalmology

Friday, 16 March 2007

Asahikawa Medical College

Chulalongkorn University

Singapore National Eye Centre

Panasonic
ideas for life
**Evaluation**

**Q-1** Was **3D-HD** effective for telemedicine?

<table>
<thead>
<tr>
<th>Option</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very effective</td>
<td></td>
</tr>
<tr>
<td>Effective</td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Ineffective</td>
<td></td>
</tr>
<tr>
<td>Very ineffective</td>
<td></td>
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</tbody>
</table>

**Q-2** Did you feel the **3D-HD** image natural?

<table>
<thead>
<tr>
<th>Option</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very natural</td>
<td></td>
</tr>
<tr>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Unnatural</td>
<td></td>
</tr>
<tr>
<td>Very unnatural</td>
<td></td>
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</tbody>
</table>

**Q-3** Was the combination of **3D-HD** surgery images and video conference effective?

<table>
<thead>
<tr>
<th>Option</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very effective</td>
<td></td>
</tr>
<tr>
<td>Effective</td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Ineffective</td>
<td></td>
</tr>
<tr>
<td>Very ineffective</td>
<td></td>
</tr>
</tbody>
</table>

N = 30
We confirmed that the system using 3D-HD images was effective for transmitting vitreoretinal disorders.
Next Challenge

- A large band width (40 Mbps) was needed for the telemedicine system using 3D-HD.

- The next challenge was to reduce the band width (40 Mbps to 10 Mbps) to contribute to the practical performance of telemedicine.
10-Mbps 3D-HD System

Side-by-Side Method

To improve resolution, the engine compresses the L and R pictures to form a composite picture.
Fruits of Our Labor

Asahikawa Medical University proposed the latest Telemedicine System to China.
北海道の旭川医科大学
遠隔医療システム中国に無償提供へ
Conclusion

This 3D-HD transmission system facilitates a better understanding of vitreoretinal pathology internationally.
Thank You Very Much