

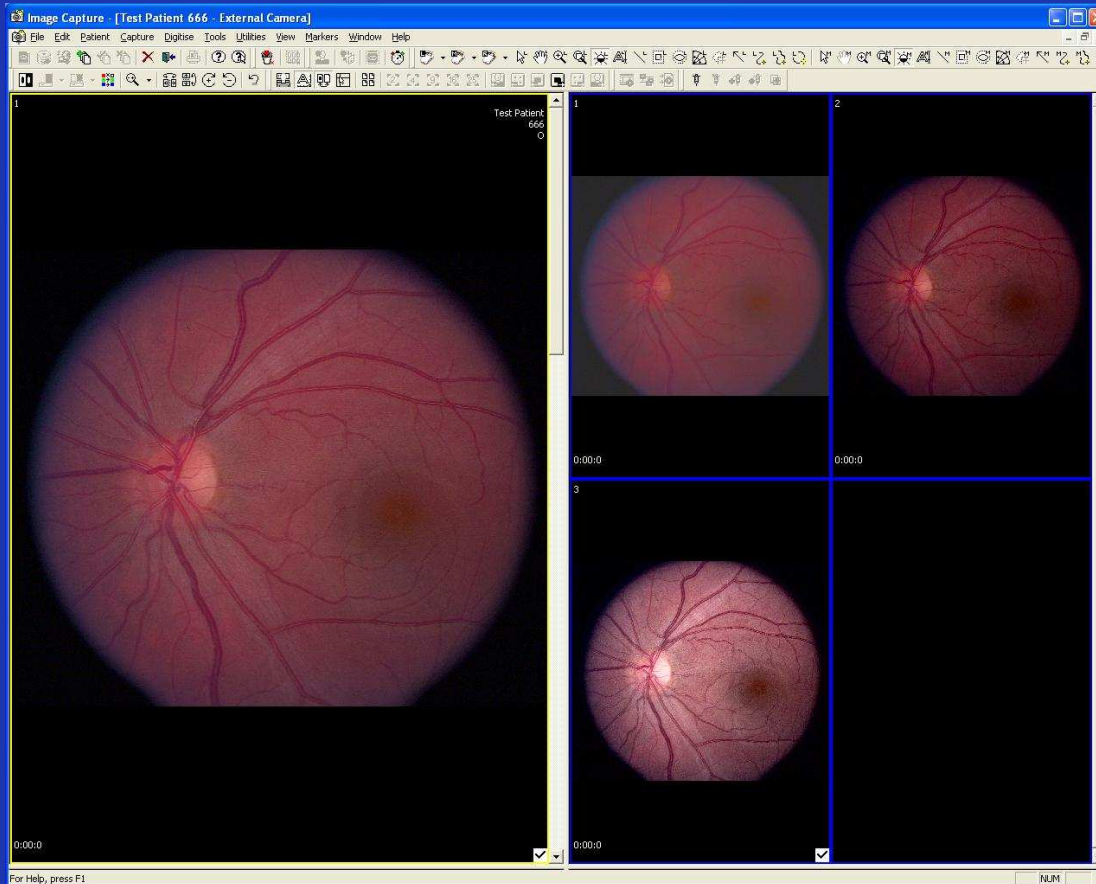
**COMMEDICA**

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# Experience of the new Ophthalmic Image IODs

Stefan Claesen



**Integrates with  
standard digital  
camera backs**

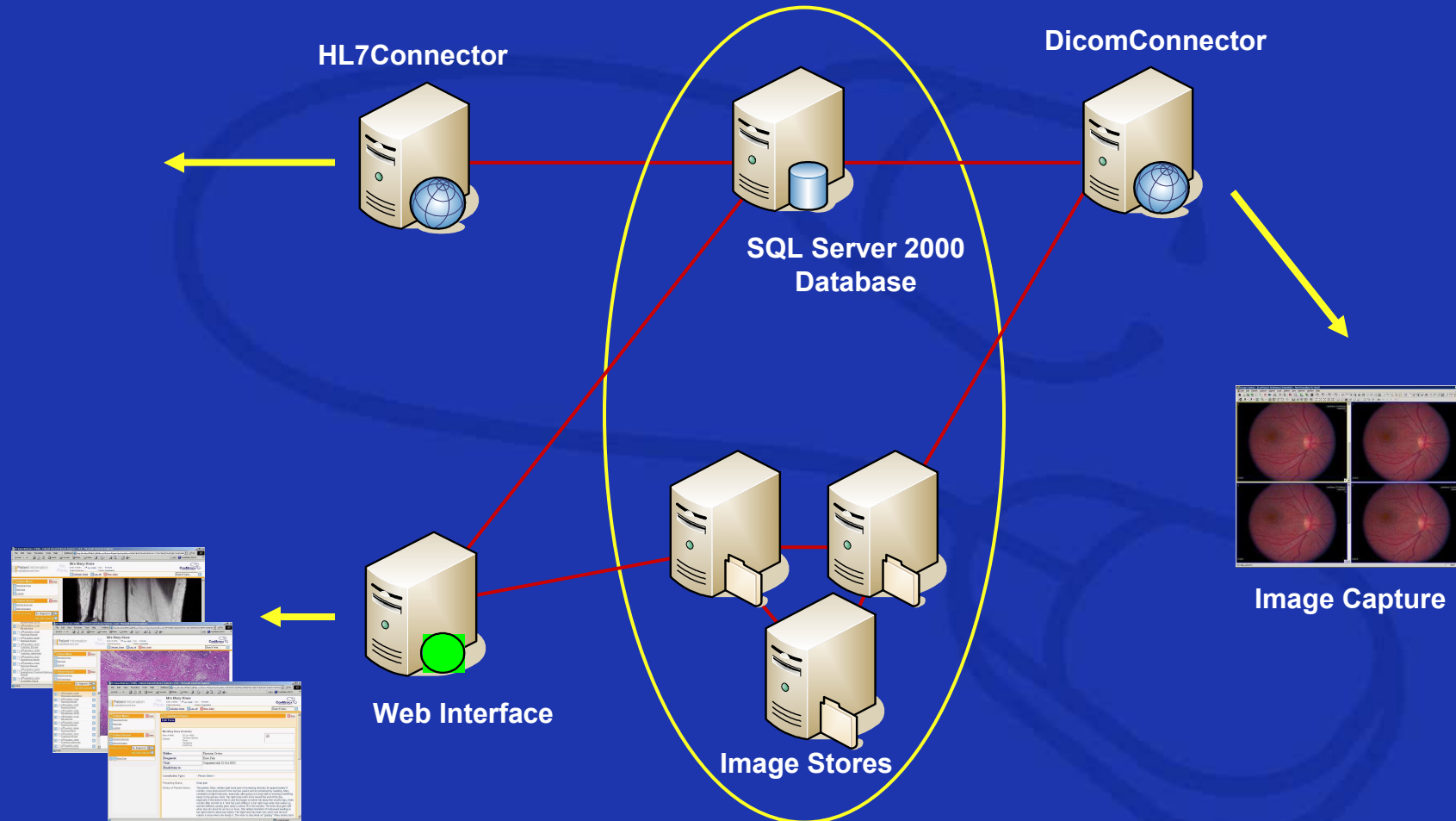
**File sizes are a major  
concern 12MP = 36MB**

**Previously VL based,  
now uses OP IODs**

- Shares PACS back-end architecture
- Fully Dicom based client application

# OPACS Technical Architecture

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- **Additional parameters**
- **Multi-frame objects**
- **Stereo Metric Relationship**

# Starting a new procedure

Register New Patient / Procedure Details

Patient

Patient Number  Accession Number

Surname  First name

Date of Birth  Sex

Height (m)  Weight (kg)

Procedure

Use preset Description:

Ophthalmic acquisition device:

Capture device:

Record pixel scale: Status:

x:  microns per pixel y:  microns per pixel

Capture mode:  Colour  Mono Laterality:  OS (Left)  OD (Right)  OU (Both)

Structure:

Burned in annotations  Capture time on images (Multiframe)

Additional Patient / Acquisition Information

The Preset Procedure you are using specifies the above marked data fields as compulsory. You must enter valid data for these fields before the OK button becomes available.

Patient demographics need to be entered by the photographer

Additional parameters need to be entered to satisfy the IOD requirements

## Enhanced data quality forced by the IOD

### Imaging Agents

Extra Equipment Values - Presets

Illumination Type: Indirect iris transillumination

Light Path Filter:

- Blue filter
- Blue-green filter
- Green filter
- Infrared filter
- No filter
- Polarizing filter
- Red filter
- Yellow-green filter

Image Path Filter:

- Blue filter
- Blue-green filter
- Green filter
- Infrared filter
- No filter
- Polarizing filter
- Red filter
- Yellow-green filter

Lenses:

- Concave contact fundus lens
- Concave noncontact fundus lens
- Contact fundus lens
- Convex contact fundus lens
- Convex noncontact fundus lens
- Goniolens
- Indirect ophthalmoscopy lens
- Noncontact fundus lens

OK Cancel

### Extra Equipment Values

Extra Patient Values

Refractive State

Record Refractive State

Spherical Lens Power: -4.00 dioptrcs

Cylinder Lens Power: 1.25 dioptrcs

Cylinder Axis: 105.25 degrees

Other Parameters

Intra Ocular Pressure: 15 mmHg

OK Cancel

### Extra Patient Values

Mydriatic Agent

Mydriatic Agent:

- Atropine [ ] drops
- Cyclopentolate [ ] drops
- Homatropine [ ] drops
- Phenylephrine [ ] drops
- Tropicamide [ ] drops

Degree of Dilation (mm):

2  3  4  5

6  7  8  9

OK Cancel

### Mydriatic Agent

Imaging Agent

Agent Type:

Intravenous  Topical

Oral  None

Imaging Agent: Fluorescein

Intravenous Agent:

Volume: 0 ml

Add Phase

Synchronise start time with capture

Synchronise end time with capture

Topical Agent:

Drops: 0 drops

Oral Agent:

Weight: 0 mg

Volume: 0 ml

Computation:

Concentration: 10.00 mg / ml

Total Volume: 0.00 ml

OK Cancel

A mixture of type 1 and type 2 Attributes



# Preset Procedures are the answer

A number of preset procedures can be defined and stored as part of the system settings

**Configure Preset Procedure**

Procedure Type

Description: Colour

Ophthalmic acquisition device: Fundus Camera

Record pixel scale

Additional Patient / Acquisition Information

The following additional sets of procedure information are made compulsory if selected below

Mydriatic agent       Extra equipment values      Presets

Imaging agent       Extra patient values

Phases of intravenous administration

Synchronise phase start with capture

Synchronise phase end with capture

Extra patient values presets

Record Refractive State

Record Intra Ocular Pressure

Capture Settings

Capture device: [Dropdown]      White Balance

Capture mode:  Colour       Laterality       OS (Left)

Mono       OD (Right)

OU (Both)

Structure: Retina

Always set plain development options

Burned in annotations       Capture time on images (Multiframe)

OK      Cancel



# Starting a new procedure (2)

Register New Patient / Procedure Details

Patient

Patient Number  Accession Number

Surname  First name

Date of Birth  Sex

Height (m)  Weight (kg)

Procedure

Use preset Description:

Ophthalmic acquisition device:

Capture device:

Record pixel scale: Status:

x:  microns per pixel y:  microns per pixel

Capture mode:  Colour  Mono Laterality:  OS (Left)  OD (Right)  OU (Both)

Structure:

Burned in annotations  Capture time on images (Multiframe)

Additional Patient / Acquisition Information

The Preset Procedure you are using specifies the above marked data fields as compulsory.  
You must enter valid data for these fields before the OK button becomes available.

Patient demographics can be retrieved using Modality WorkList

Selecting a Preset Procedure completes most of the additional parameters

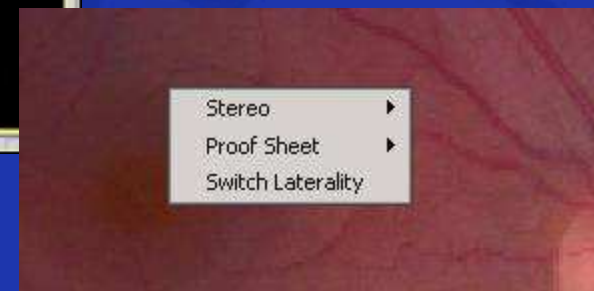
# Separating left and right eyes



**Left and right eye images are stored as two separate multi-frame objects**

**This can lead to**

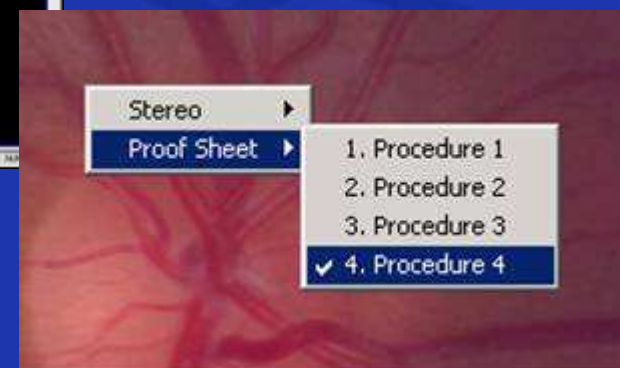
- **Timer issues**
- **Large object sizes**



# Viewing prior procedures

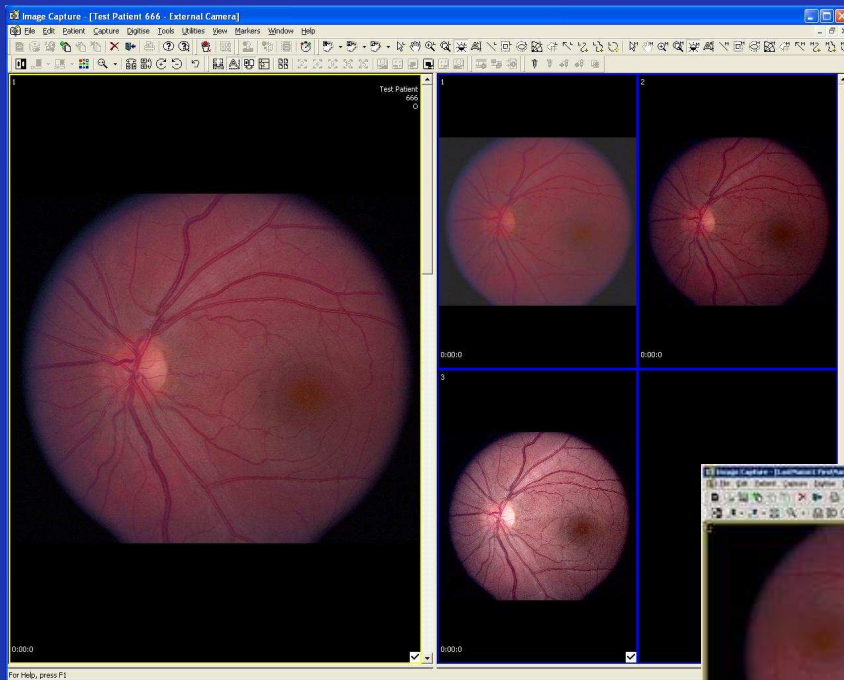


**Prior procedures can be loaded into any of the viewable panes**



# Multiple view panes

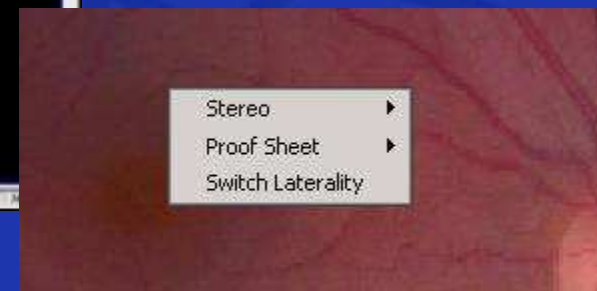
Splitter bars used to extend viewing areas



# Stereo Metric Relationship object



Like a presentation  
state for  
ophthalmology





- A lot of conventional radiology wisdom can bring benefits to ophthalmology
  - Modality Work List
  - Prior exams \ “Hanging protocols”
- The new OP IOD brings some challenges to the ophthalmology workflow
  - Preset procedures
  - Large multi-frame objects
- Integrating the OP IOD is not superficial, even for the PACS server
  - Stereo metric relationships

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**Thank you**

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