



EYESI DIRECT OPHTHALMOSCOPE

Training Simulator for Retinal Examinations

Tradition and innovation – Since 1858, visionary thinking and a fascination with technology have guided us to develop innovative products of outstanding reliability: anticipating trends to improve the quality of life.



Eyesi Direct Virtual Reality Simulator for Training of Direct Ophthalmoscopy

Eyesi Direct Ophthalmoscope is a virtual reality simulator for training of direct ophthalmoscopy. Eyesi Direct is handled the same way as its real counterpart. Looking through the direct ophthalmoscope, students can examine virtual patients of varying age and ethnicity. The Eyesi Direct curriculum is suitable for students of ophthalmology as well as primary care, neurology, internal medicine, family medicine, and emergency medicine.

PATIENTS OF VARYING AGE AND ETHNICITY

Expertise Comes from Experience

Eyesi Direct offers students the opportunity to practice eye examinations independently of patient flow and hospital routine. In addition to examination training, Eyesi Direct provides trainees with the medical knowledge needed to reliably identify pathological findings. Systematic exposure to clinically relevant pathologies allows students to become experienced before they examine their first real patient.

EASY ADMINISTRATION

Teaching Large Classes

By providing a didactically structured curriculum for self-guided training and objective assessment, Eyesi Direct offers educators a solution for ensuring a standardized training experience for all of their students. In addition, online tools available on the VRmNet web portal make administration and monitoring of students' training status easy – even when teaching large classes.



Lifelike Training Environment

The Eyesi Direct simulator features a patient model head and an ophthalmoscope handpiece that looks and feels just like a real ophthalmoscope.

Standardized Curriculum for Self-Guided Learning

The case database of Eyesi Direct contains a broad range of clinically relevant variations of the retina. With a didactically structured curriculum, the simulator offers a standardized method for self-guided training.

Evidence-Based Assessment

Eyesi Direct provides both trainees and educators with an objective performance assessment. Guidance elements and immediate feedback after each case help trainees to systematically improve their skills.

Lifelike Environment Realistic Training of Retinal Examinations

Eyesi Direct provides lifelike training of device handling by mimicking all features of a real direct ophthalmoscope. The Eyesi Direct simulator features a patient model head and an ophthalmoscope handpiece that looks and feels just like a real ophthalmoscope. The touch screen displays the user interface with patient information, examination settings menu and a live view of the examination.

HIGH-END VIRTUAL REALITY

Immersive Training Experience

High-end virtual reality technology provides an immersive training experience while examining virtual patients with Eyesi Direct. When looking through the simulator's direct ophthalmoscope, students see virtual patients of different ages and ethnicities who blink, move their eyes, and react to light.



LIFELIKE DIRECT OPHTHALMOSCOPE

Device Handling

In order to examine a virtual patient on the Eyesi Direct simulator, trainees need to look through the direct ophthalmoscope directed towards the patient model head. They will then see the virtual patient and the ophthalmoscope light cone. When moving the ophthalmoscope towards one of the virtual patient's eyes, the view of the retina is simulated in real-time.

DIOPTER SETTINGS AND LIGHT INTENSITY

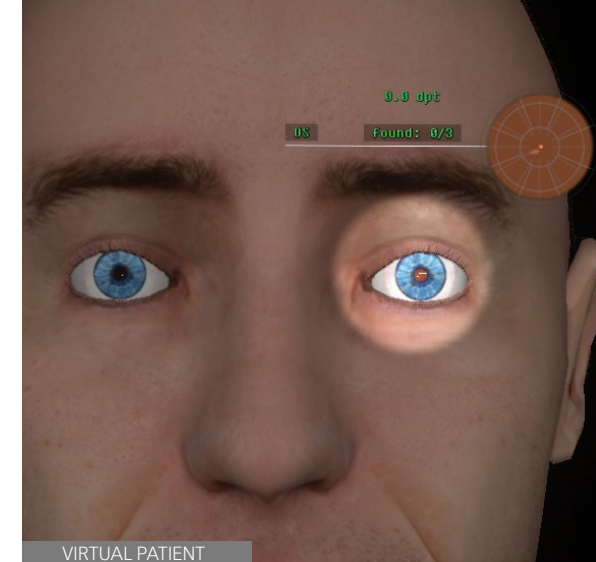
Ophthalmoscope Controls

The Eyesi Direct ophthalmoscope handpiece features a built-in display and provides the same controls as a real ophthalmoscope. Trainees can adjust the ophthalmoscope's diopter settings using the lens control. To change the light intensity, they have to rotate the light control on the ophthalmoscope handle.

LIGHT AND PATIENT'S EYES

Examination Setting

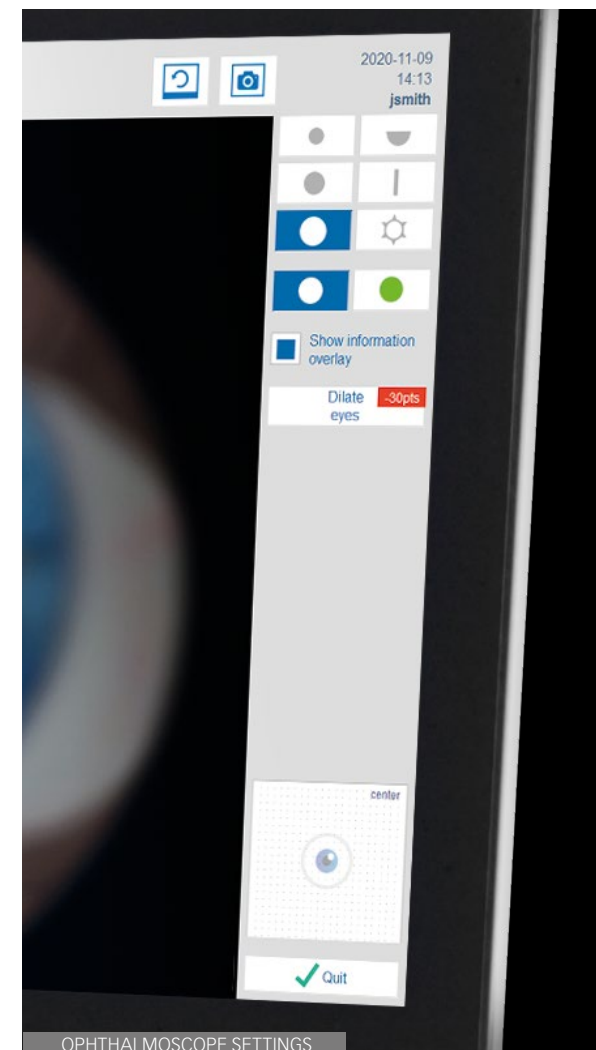
Other settings of the virtual direct ophthalmoscope, such as the diameter of the light cone or color filters, can be controlled on the touch screen. Further, the virtual patient's eyes can be dilated. For changing the patients viewing direction, a touchpad is available, which can be used intuitively during the examination.



VIRTUAL PATIENT



HANDPIECE CONTROLS



OPHTHALMOSCOPE SETTINGS

Eyesi Direct Courseware Curriculum for Self-Guided Learning

Simulator-based training allows for a standardized learning experience and ensures that all students reach the same level of clinical proficiency. With a ready-to-go courseware, the Eyesi Direct simulator can easily be integrated into educational programs.

STANDARDIZED CURRICULUM

Ready-to-Go Courseware

Eyesi Direct comes with a didactically structured curriculum, which has been designed to teach recognition of the most common pathologies within only a few hours. Students advance through the curriculum independently and self-guided. Educators can lock or unlock courses as required.

CASE-BASED APPROACH

Database of Virtual Patients

The Eyesi Direct curriculum uses a case-based approach to teach diagnostic skills. The curriculum consists of four courses, each containing several cases. Introductory, abstract cases are followed by cases with pathologies in different stages. Patients of varying gender, age, and ethnicity present with common pathologies, such as AMD, diabetic retinopathy, glaucoma, hypertensive retinopathy, optic disc edema, or vascular occlusion.

OVERVIEW

Eyesi Direct Courseware

Course A: Device Handling

Course A contains introductory abstract cases to practice the basic handling of a direct ophthalmoscope. Trainees need to find colored objects on the retina.

Course B: Retina Documentation

This course practices findings documentation by means of abstract objects on the retina. After finding the objects, location, orientation, and size have to be marked in the fundus editor.

Course C: Anatomy and Pathology (Learning Mode)

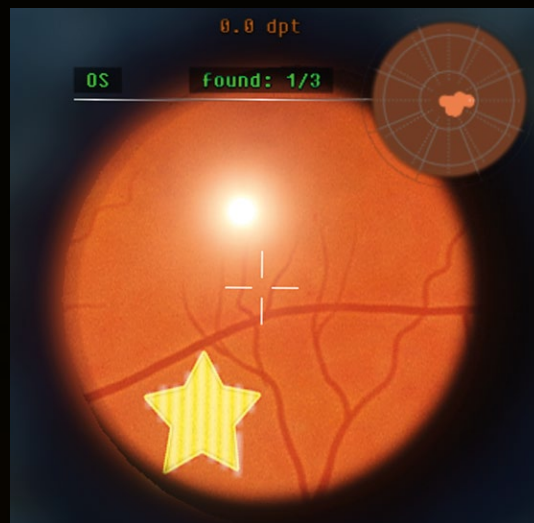
By examining healthy and pathological eyes, students will get to know the characteristics of healthy retinas and typical findings of common disorders.

Course D: Anatomy and Pathology (Exam Mode)

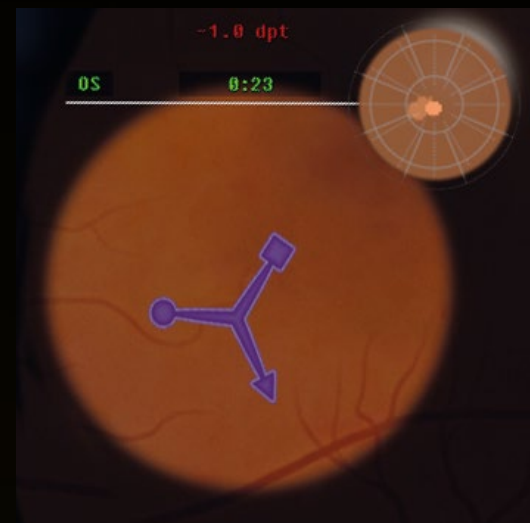
Course D tests the knowledge acquired in tier C. Trainees need to specify their observations in multiple-choice forms.

Advanced Cases

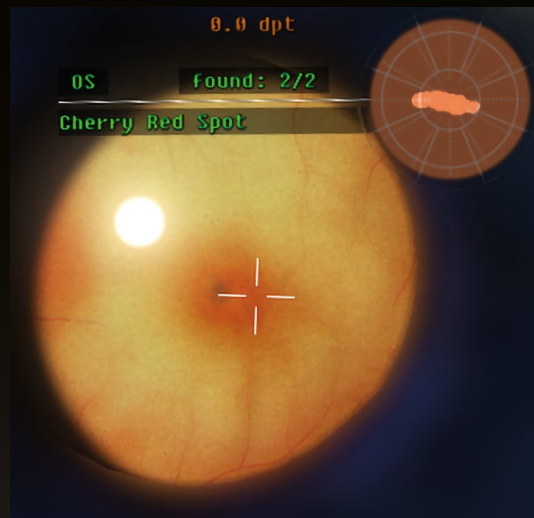
This course offers advanced cases, such as pathologies prevalent in tropical and subtropical regions, with a complete, detailed clinical history, including physical examination and laboratory findings.



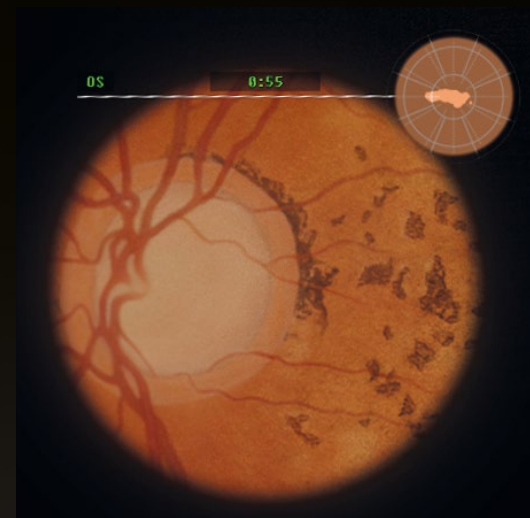
COURSE A: ABSTRACT TASK DEVICE HANDLING



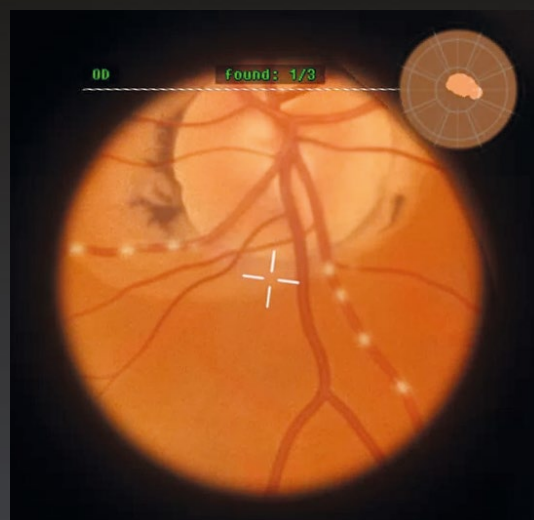
COURSE B: ABSTRACT TASK DOCUMENTATION



COURSE C: ANATOMY AND PATHOLOGY (LEARNING MODE)



COURSE D: ANATOMY AND PATHOLOGY (EXAM MODE)



ADVANCED CASES

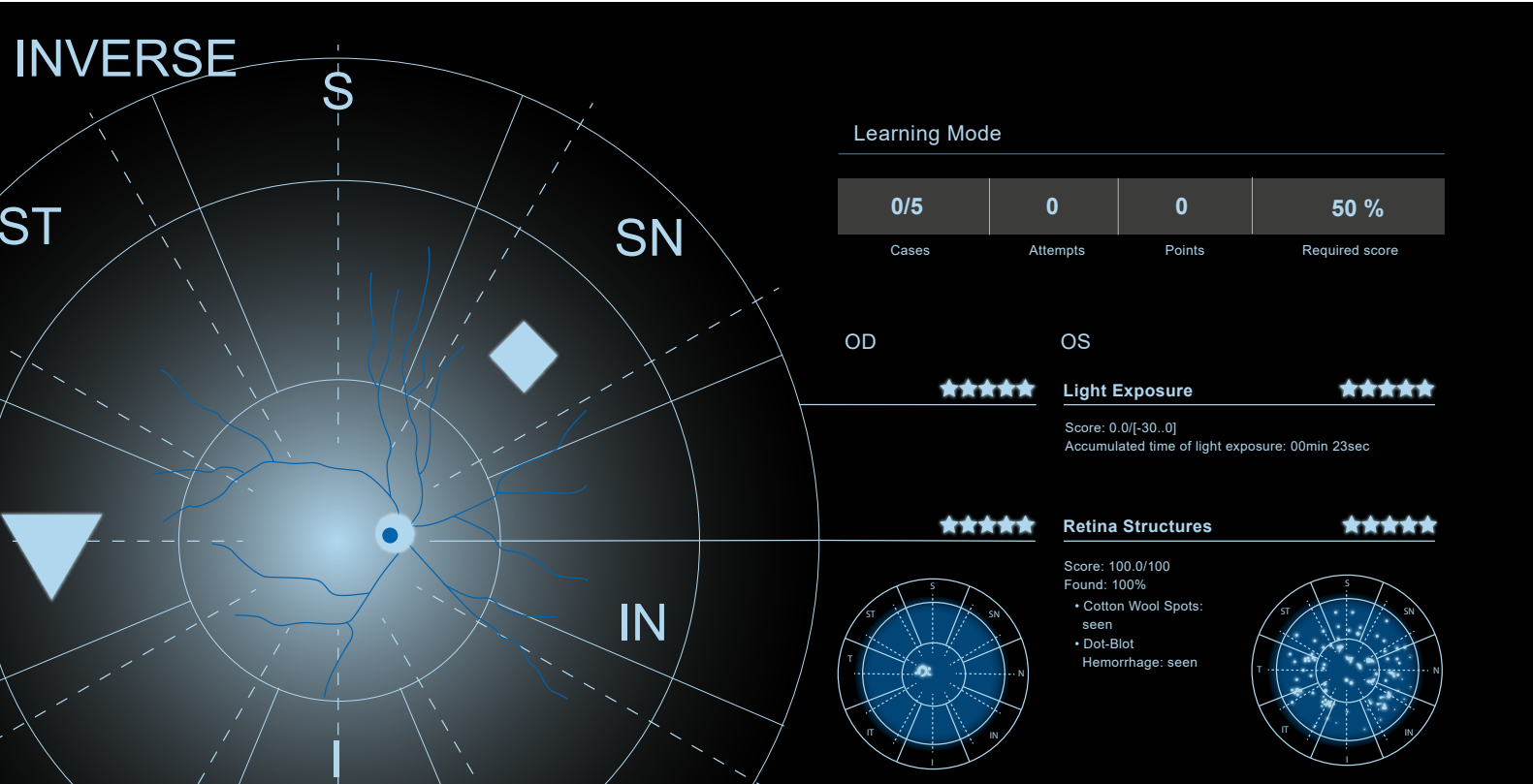
Step-by-Step to
Expert Performance

Eyesi Direct Feedback & Assessment

Eyesi Direct offers an interactive training environment that provides immediate feedback on trainees’ performance. Educational guidance elements support beginners in their learning process. Additional medical background information deepens the understanding of anatomical and pathological characteristics. A personal findings library, which is also accessible on the VRmNet web portal, allows students to recap their learning matter.

PERFORMANCE MONITORING Training Reports

After each case, Eyesi Direct presents trainees with a detailed performance summary. The training system records various parameters relating to procedural and diagnostic abilities. The detailed evaluation allows trainees to improve their skills systematically. Required minimum scores ensure that trainees meet a certain skill level. By providing comprehensive training reports, Eyesi Direct also allows educators to assess their students’ skill acquisition.



EDUCATIONAL SUPPORT Guidance Elements

Eyesi Direct features visual and auditive guidance to support beginners in their learning process, for example, by highlighting anatomical findings on the retina. During the examination, a head-up display is visible in the ophthalmoscope and shows information such as the name of detected anatomical features or the duration of the examination. For better orientation, the head-up display also provides a retina chart, which highlights the area already examined.

MEDICAL BACKGROUND Findings Tiles

When a trainee detects a pathological finding in the more advanced cases, it is highlighted on the retina, and a findings tile appears on the touch screen, providing medical background information. All detected findings are stored in the trainee’s personal findings library and are also accessible on the VRmNet web portal for recap. The findings menu on the simulator can be used to start cases associated with the specific finding.

DOCUMENTATION Fundus Editor

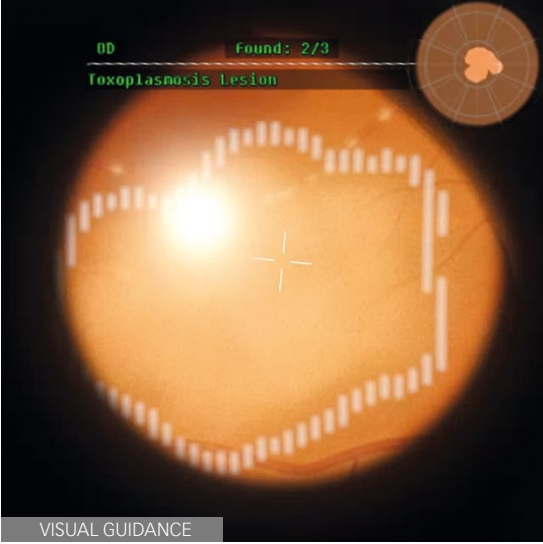
To foster correct interpretation of the retina image and accurate documentation of findings, trainees need to find abstract objects and mark their location, orientation, and size in the fundus editor of the introductory cases.

DIAGNOSTIC TRAINING Multiple-Choice Forms

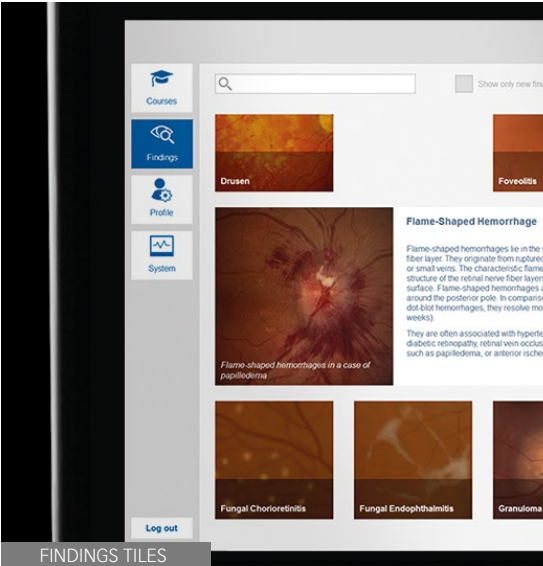
In the exam course, trainees have to find pathological signs without guidance and specify their findings and diagnoses in multiple-choice forms, which are then evaluated by the training system.

PERFORMANCE ASSESSMENT Detailed Evaluation

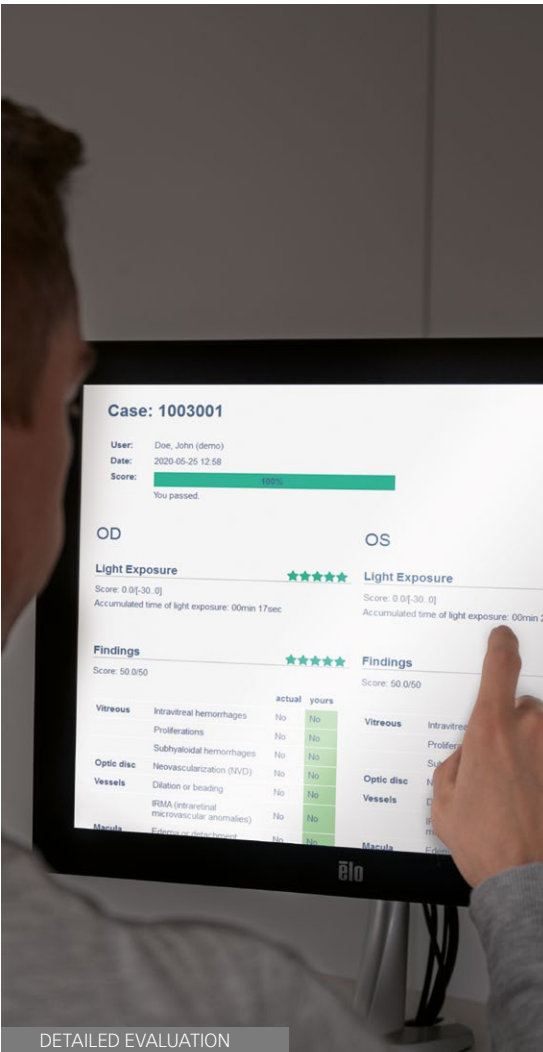
At the end of each examination, trainees are presented with a detailed evaluation of their performance. Scored parameters include the percentage of retina examined, light exposure, completeness of pathological signs found, and the accuracy of the diagnosis. Both trainees and educators also have access to the accumulated training data on the VRmNet web portal.



VISUAL GUIDANCE



FINDINGS TILES



DETAILED EVALUATION

VRmNet Web Portal for Networked Simulators

VRmNet is a web-based service available for networked medical training simulators from Haag-Streit Simulation. The web portal offers online features for both trainees and educators. Users can access their personalized VRmNet dashboard from any computer or mobile device 24/7.

EASY ADMINISTRATION

Teaching Large Classes Efficiently

Educators can use VRmNet to comfortably set up users and manage courses. Configurable notifications and reports keep teachers informed on their classes' training status. Trainees log in to VRmNet to access their training data and their findings library for recap of learning content. To prepare trainees for their first training session, VRmNet provides an online orientation with short videos on simulator usage.

Administration Tools

Educators can use VRmNet to comfortably set up users, manage courses, and monitor their classes' training progress.

Online Learning for Trainees

For trainees, VRmNet features an online orientation on training with the Eyesi Direct simulator and medical background information for recap of learning content.

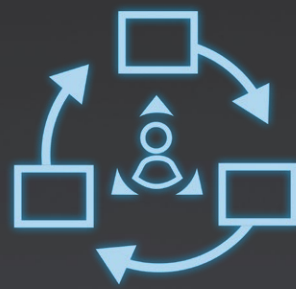
Automatic Software Updates

All simulators connected to VRmNet receive the latest software updates automatically. Customers profit from data back-ups and synchronization as well as easily operated service through the VRmNet networking.

Benefits for Operation and Service



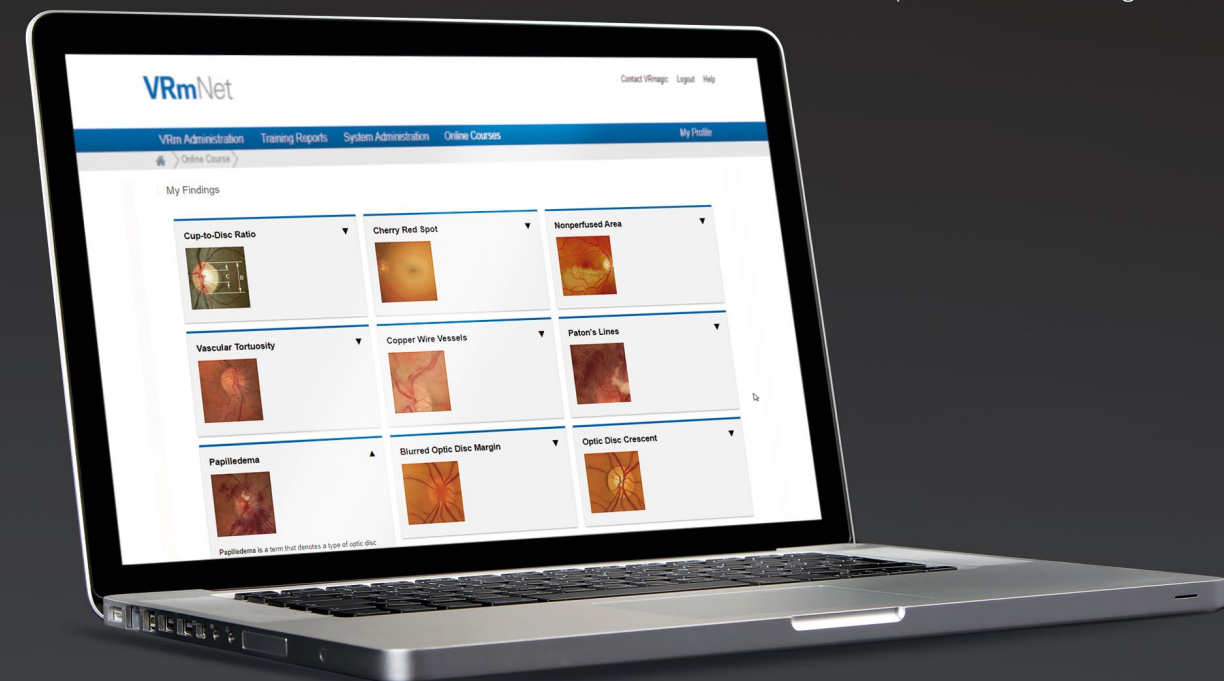
Automatic Updates



Optimized Allocation



Online Service



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