HARMONY

ENTERPRISE

TOPCON Healthcare

SEEING EYE HEALTH DIFFERENTLY

TOPCON
HARMONY

Ophthalmic Data Management + Communication.
Simplified.

Harmony Enterprise is a fully-customisable software solution which can be deployed as a cloud hosted or a locally hosted environment at customer premises. It offers countless customised integrations to support your business objectives and improve customer experience.

Vendor-Neutral Device Integrations

Connects with any eye care examination device, regardless of device type and brand, DICOM or not.

Data Migration

Legacy data from historical databases can be migrated to Harmony.

REST API

Harmony offers a secure HTTP interface for EMR data integrations.

Advanced EMR Integrations

An automated workflow between EMR and Harmony can be created, e.g. for patient demographic data distribution, documentation or billing.

Business Intelligence

Harmony's data analytics and reporting tools support your clinical and business operations analytics.

Archiving Text

Harmony can forward copies of data to an archive.

Harmony delivers automation and efficiency to workflows by helping to minimise transcription errors, reducing the time spent entering patient data at the instrument and reducing the need for instrument specific review software.

Topcon Healthcare Solutions is a trusted partner in digital eye care solutions. In addition to providing innovative software products that help eye care professionals digitise their clinical systems and processes, we also provide complementary services that enable them to use this technology to its full potential. The combined software and service offering delivers our customers a true turnkey solution that can easily be scaled and customised to support their unique clinical data management needs.

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DYNAMIC CUSTOMISABLE VIEW TO FIT ANY SUB-SPECIALITY

Vendor-neutral connectivity and intuitive tools allow you to display your clinical data in meaningful ways.

Topcon Harmony connects with all your diagnostic instruments regardless of their brand and type, giving you instant access to all examination data from any location at any time.
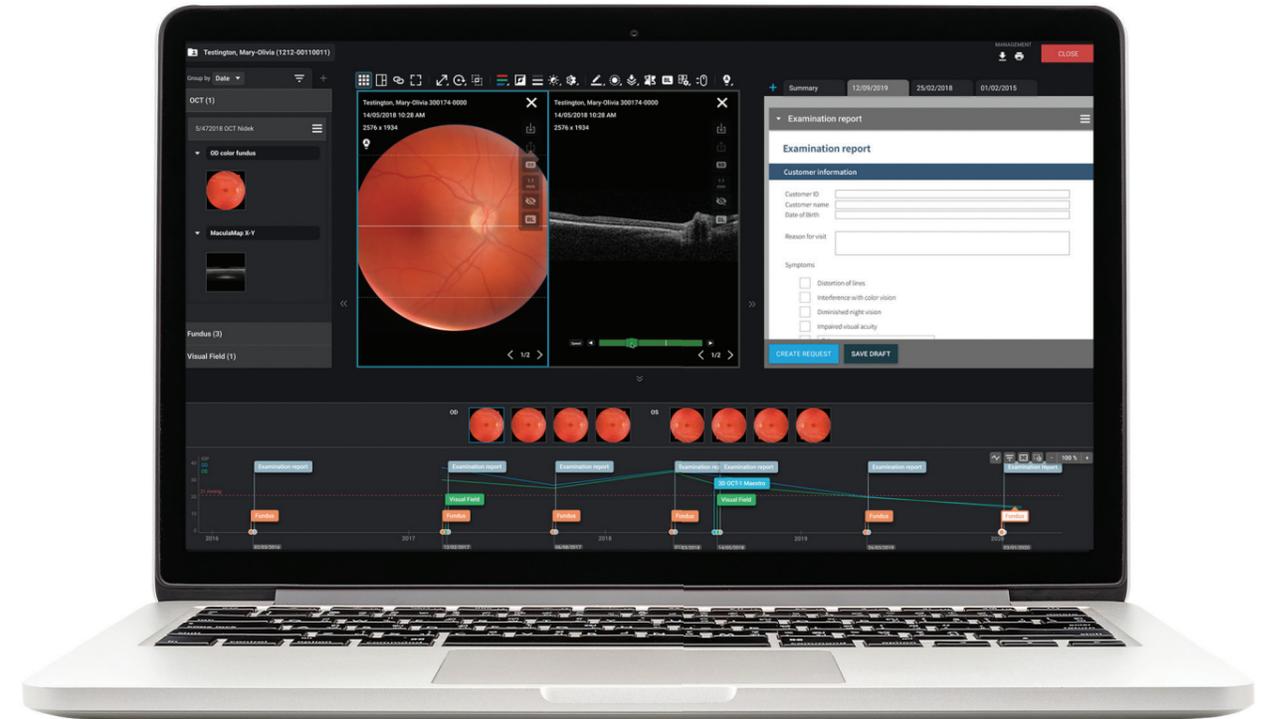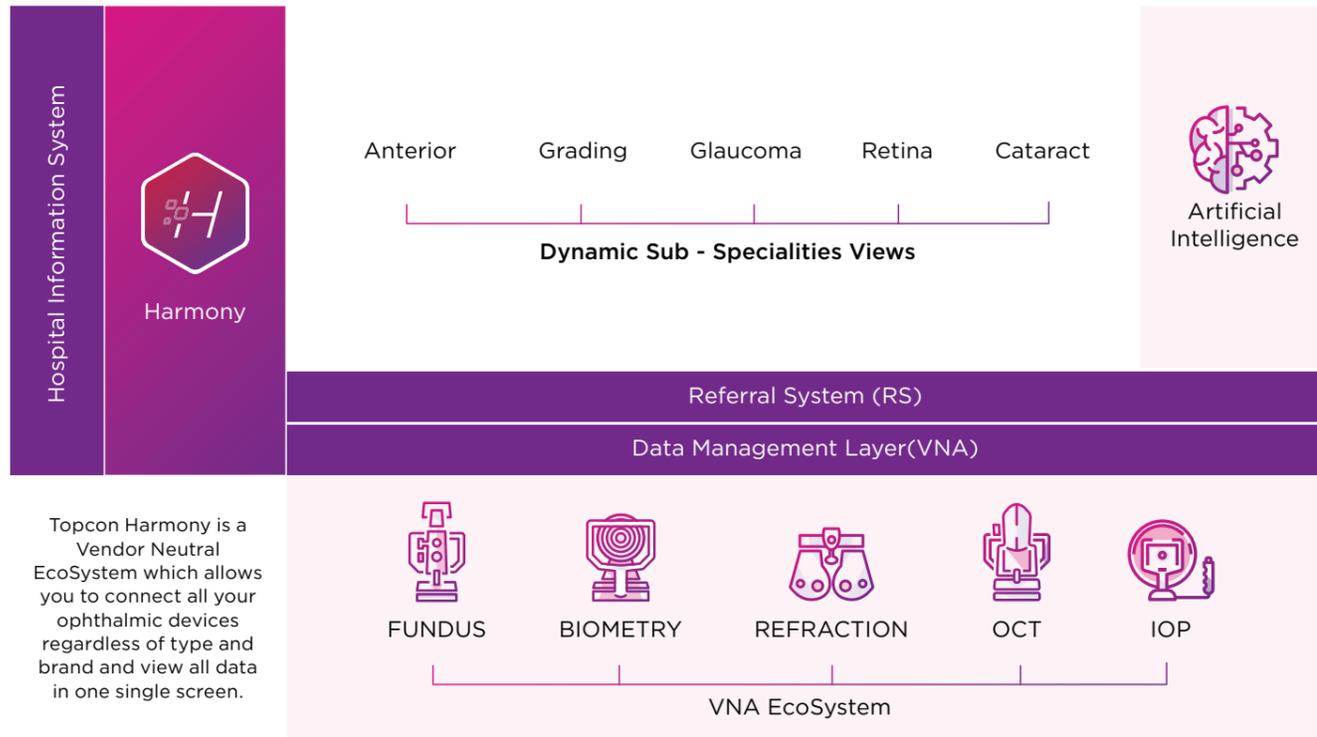
Harmony's multimodal viewer allows you to effortlessly analyse all your patient examination data side-by-side, in one screen, eliminating the need for instrument specific review software and saving you time. Easily access and review current and longitudinal data at a glance via the intuitive Timeline feature, supporting accuracy and efficiency in clinical decision making. Configure how to present multi-modal data to support your needs and the clinical use case for a more efficient decision making process and detection of abnormalities.
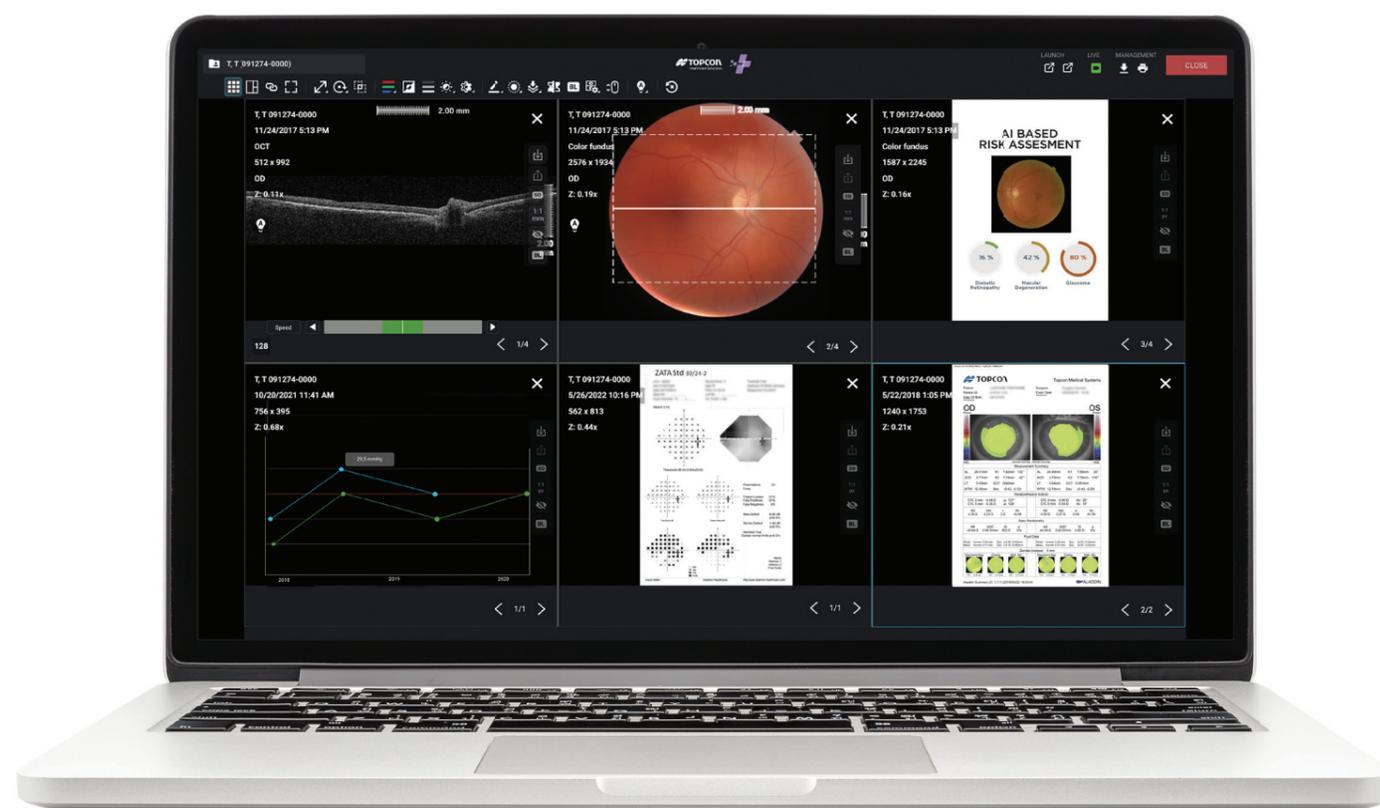
The image including patient information are fabricated for demonstration purposes only and do not represent actual patient information. The image also shows a mock-up artificial intelligence case report

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EMPOWER YOUR HOSPITAL INFORMATION SYSTEM WITH A COMPREHENSIVE VNA OPHTHALMIC PLATFORM

Hospital Information System

Harmony

Topcon Harmony is a Vendor Neutral EcoSystem which allows you to connect all your ophthalmic devices regardless of type and brand and view all data in one single screen.

Anterior Grading Glaucoma Retina Cataract

Dynamic Sub - Specialities Views

Artificial Intelligence

Referral System (RS)

Data Management Layer(VNA)

FUNDUS BIOMETRY REFRACTION OCT IOP

VNA EcoSystem

Improve Operational Efficiency

Harmony's EMR connectivity eliminates the need to enter patient information at each instrument, streamlining your workflow, helping to minimise transcription errors and reducing the need for instrument-specific software.

Harmony integrates into the existing Hospital Information System, providing a seamless workflow and user experience, complemented with its built-in referral capability.

Enhance Clinical Decision Making

Harmony organises your ophthalmic data in meaningful ways, supporting efficiency in clinical decision-making. Easily configure hanging protocols on how to show multi-modal data to support your needs as well as the clinical use for faster decision-making and detection of abnormalities.
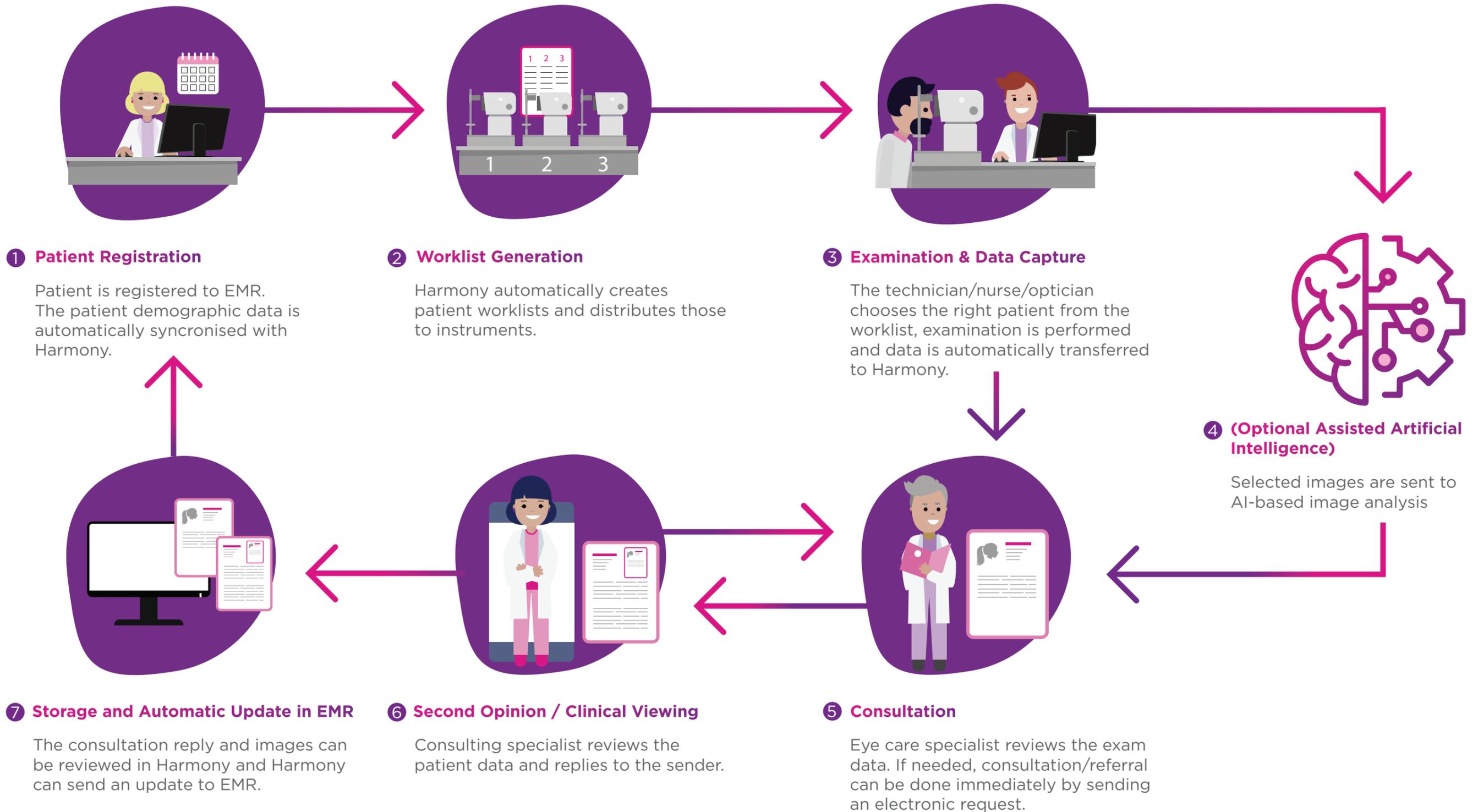
Examination List

The viewer contains a navigator for the examination of items such as images, reports and/or other medical device outputs collected from the patient. Intuitive filtering and sorting functionalities help you to find the data you are looking for.
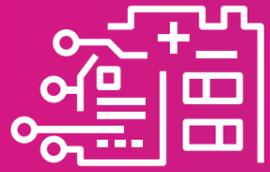
Timeline

The timeline visualises all examinations and clinical events in a graphical representation over time to allow for a quick overview of the patient's longitudinal data. Structured data, such as intraocular pressure values, can be displayed as charts in the timeline.
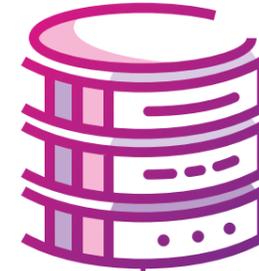
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WORKFLOW EXAMPLE

1 Patient Registration

Patient is registered to EMR.
The patient demographic data is
automatically syncronised with
Harmony.

2 Worklist Generation

Harmony automatically creates
patient worklists and distributes those
to instruments.

3 Examination & Data Capture

The technician/nurse/optician
chooses the right patient from the
worklist, examination is performed
and data is automatically transferred
to Harmony.

**4 (Optional Assisted Artificial
Intelligence)**

Selected images are sent to
AI-based image analysis

7 Storage and Automatic Update in EMR

The consultation reply and images can
be reviewed in Harmony and Harmony
can send an update to EMR.

6 Second Opinion / Clinical Viewing

Consulting specialist reviews the
patient data and replies to the sender.

5 Consultation

Eye care specialist reviews the exam
data. If needed, consultation/referral
can be done immediately by sending
an electronic request.

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DATA FLOW WITH EMR

Cloud

HARMONY APPLICATION

TLS DICOM UI

HTTPS UI

EMR UI

Local

3 Query Worklist

Integration Service

3

4 Select Patient & Aquire

5 Examination

6 DICOMise & encrypt the examination

7

8 Examination DONE

HL7

2 New worklist entry

9 Data Viewing (location independent)

1 Registration on the EMR

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ARCHITECTURE & DATA SECURITY

Cloud

HARMONY PACS

HARMONY APPLICATION

INTEGRATION SERVICE (KIS)

DICOM

REST API

UI

DICOM SSL

HTTPS

HTTPS

HTTPS

Local

DICOM MWL & Storage

Integration Service

MWL DICOM Web

EMR/PMS/HIS

Outside the Clinic

Inside the Clinic

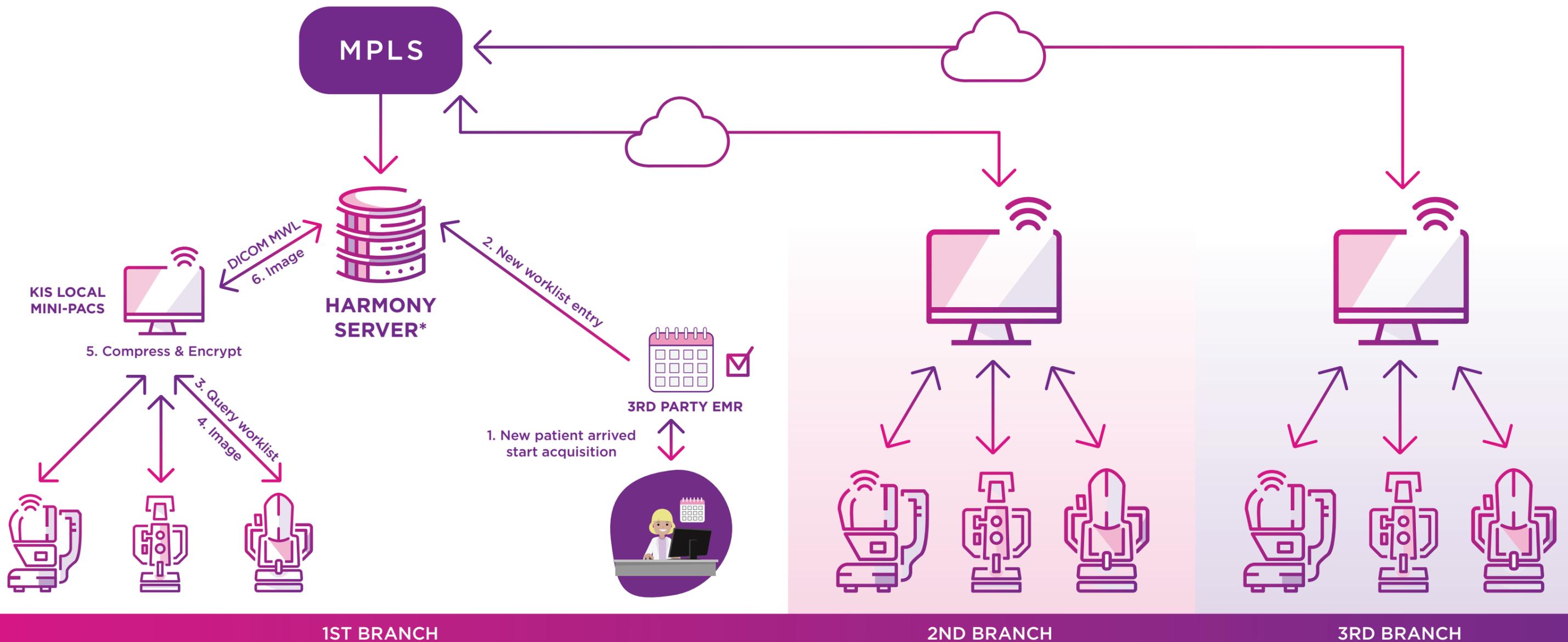TOPCON Healthcare

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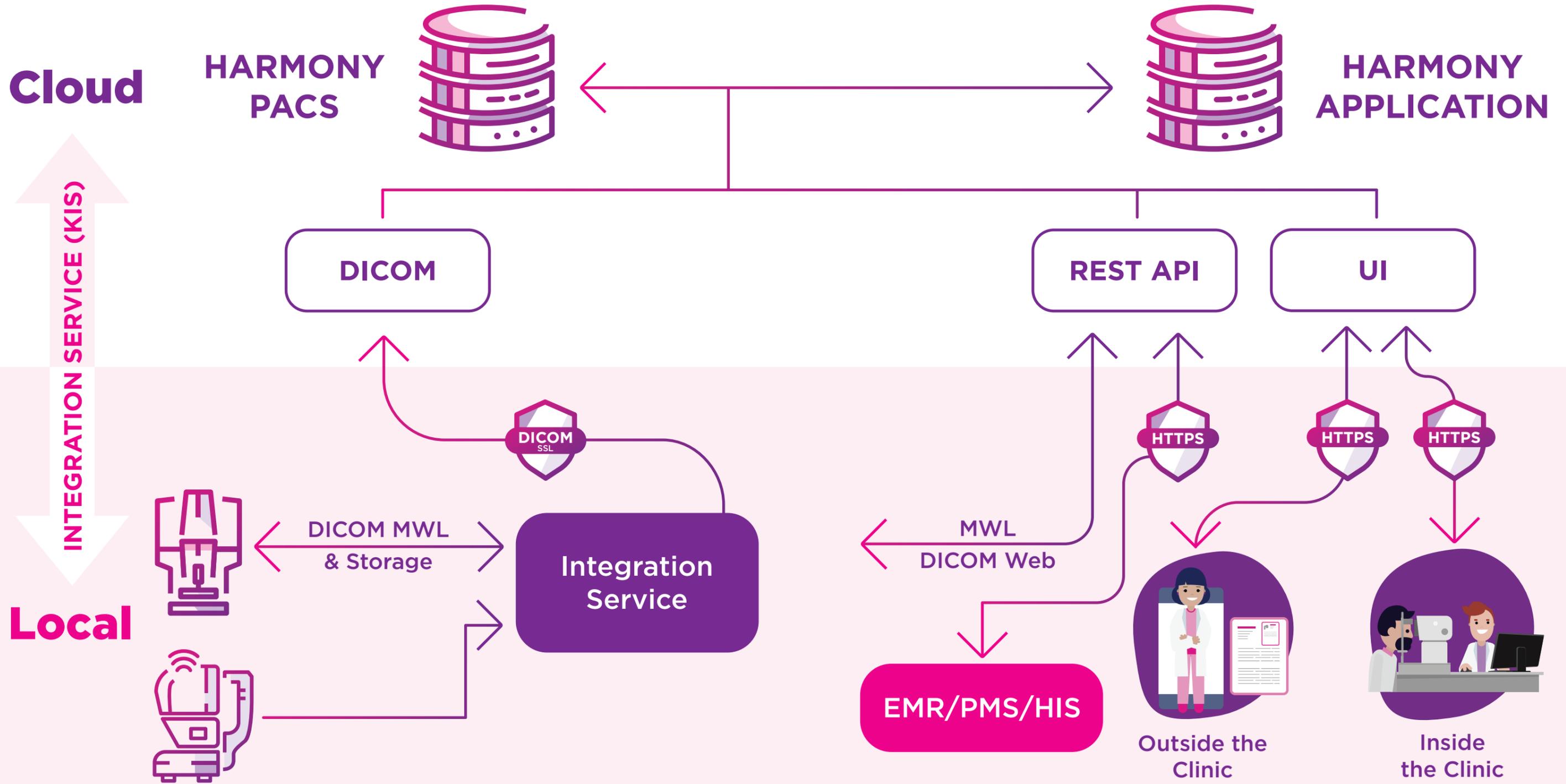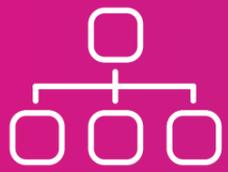
ENTERPRISE SOLUTION FOR ON-PREMISE INSTALLATION

USE CASE 1

The following use case is related to the local deployment of Harmony, connecting multiple branches of a hospital. It facilitates an automated process that minimises end user intervention and reduces the lost time of additional repetitive work.

Multiple clinics are connected via MPLS - a private connection linking data centres and branch offices. (MPLS is typically outsourced, managed by service providers who guarantee network performance, quality and availability. MPLS is essentially a private network, considered reliable and secure).

Harmony can be installed on the premises of one of these clinics and allow data from this clinic, as well as all the integrated instruments in the connected branches at other locations, to be retrieved and archived. Similarly, multiple clinics, optical chains and big hospitals can now organise all their clinical data into a single archiving system. As a web-based solution, Harmony offers eye care professionals the ability to access and review all their examination data from anywhere at any time. Harmony's integrated telehealth portal enables eye care specialists to securely and seamlessly share and access patient data, enabling better-informed decisions and facilitating faster care for patients.

MPLS

HARMONY SERVER*

KIS LOCAL MINI-PACS

DICOM MWL

6. Image

5. Compress & Encrypt

2. New worklist entry

3. Query worklist

4. Image

3RD PARTY EMR

1. New patient arrived start acquisition

1ST BRANCH

2ND BRANCH

3RD BRANCH

*Harmony Application & Harmony PACS.

The portrayed workflow is indicative only. The workflow in each use case depends on the individual site and on the 3rd parties involved. Please ask your local distributor for more information.
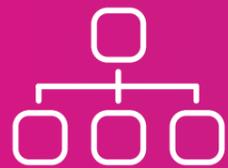
# SYNCHRONISING HARMONY PACS INTO LOCAL PACS

USE CASE 2

This use case details the requirement of a hospital to retrieve and archive all the clinical examinations performed in the subordinate clinics located in different regions. Their main concern is to get all the clinics' patients data archived and accessible from inside the hospital via their Hospital information System (HIS) without the need to continually switch between various software packages.

By connecting and integrating the clinics' instruments with Topcon Harmony Cloud solution, all the performed examinations will be automatically synchronised from Harmony PACS into the local Hospital PACS. This solution streamlines the hospital workflow by simplifying access to the data and allowing ophthalmologists to review all the examinations performed through the local PACS or Harmony.

Harmony

Local PACS

Hospital Information System (HIS)

Ophthalmologist 1

Ophthalmologist 2

Ophthalmologist 3
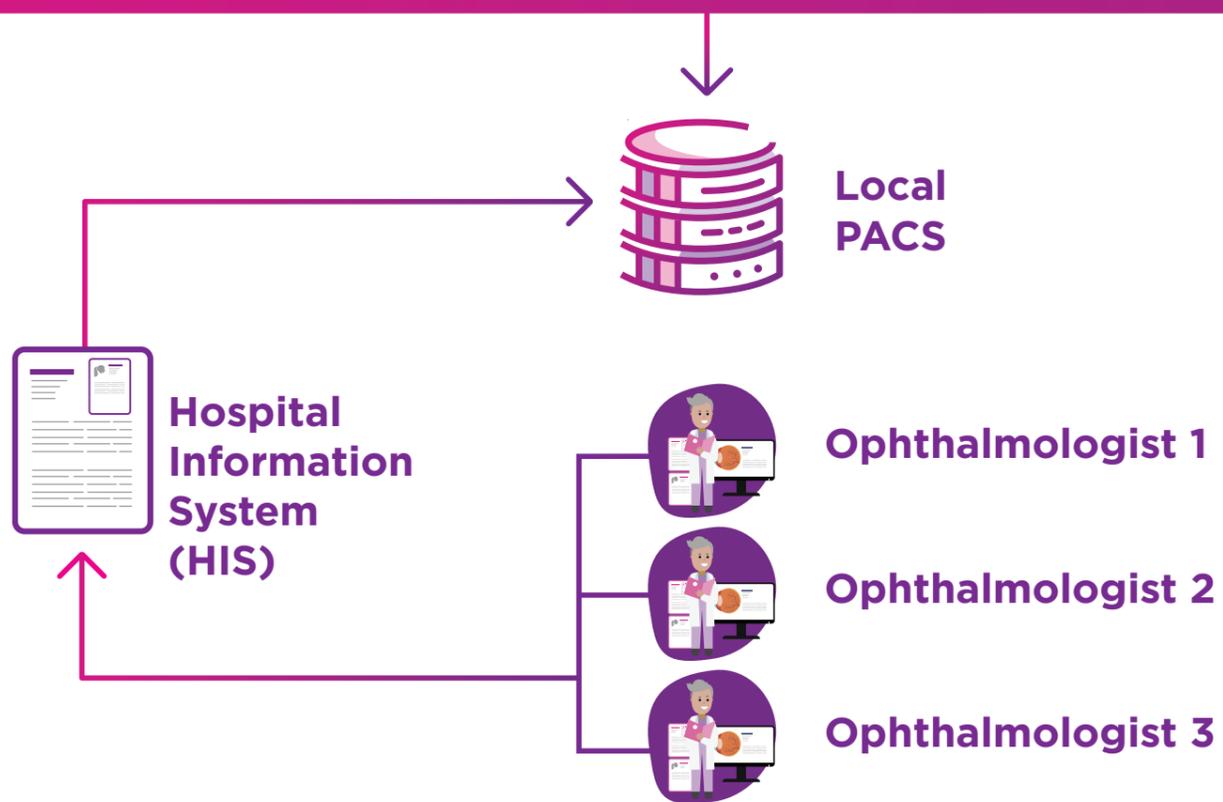
HOSPITAL
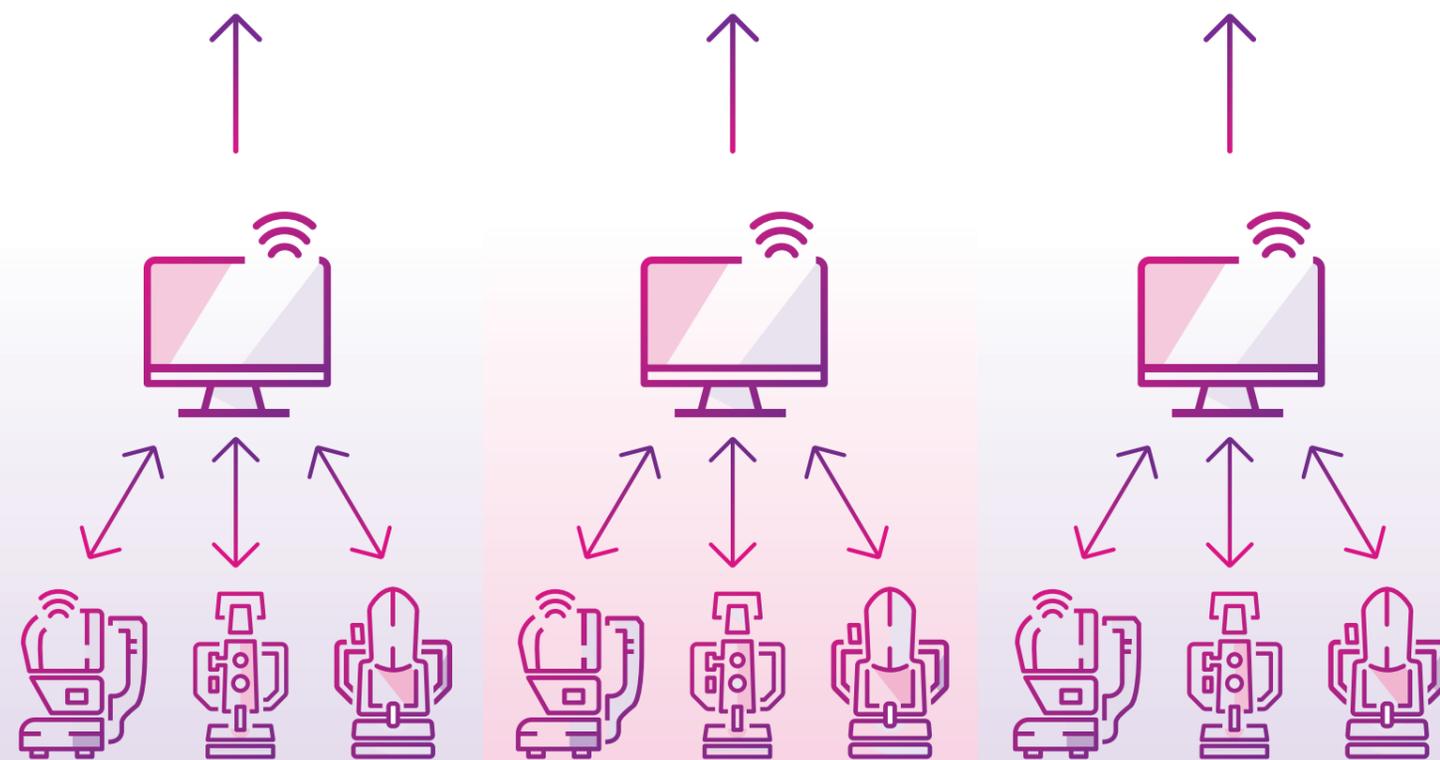
PRIVATE CLINIC 1

PRIVATE CLINIC 2

PRIVATE CLINIC 3

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SYSTEM REQUIREMENTS

USER WORKSTATION

	Minimum Specifications
Processor	Any modem processor
RAM	4 GB or more (depending on browser one system usage)
Display	Full HD (1920x1080) Resolution Monitor
Browser	Chrome, Mozilla Firefox, Microsoft Edge Chromium (Performance verified with the latest browser version upon each Harmony version release)
Network Connection	Volume OCTs and larger video files (>50MB) • 50 Mbps (recommended), 25 Mbps (minimum) Other file types (e.g. fundus images, PDFs, numeric data) • 5 Mbps (minimum)
Operating system	Any operating system capable of running supported browser
Other	Software for reading the User Manual in PDF format

NOTE!
Using Harmony in the browser's "privacy mode" is not supported. If the browser is set to privacy mode, some functions may be limited.

Recommended upgrades: 8Gb RAM, SSD, WQHD 2560x1440 resolution monitor

HARMONY SERVER

	Minimum Specifications
RAM	8GB (minimum) 16GB (recommended)
Hard Drive	50G system disk, 20G database disk, fast cache disk (SSD or similar, 10% of data(typical)). Data disk or fast external drive for DICOM files (NFS, iSCSI recommended with fast links).
Processor	4 core 64 bit
Operating System	Debian Linux 11
Supported JRE	Java 11
Database	MariaDB 10.3 or newer
Network Connection	100Mbps (Normal) 1000Mbps (Heavy site OCTs and larger video files)
Other	16 Gt Memory (recommended), Separate Web storage (recommended)

Must have expandable mount point for data. Depending on usage the recommended storage size is from 100 GB and up. For OCT and large files multi-gigabit datalinks are recommended.

INTEGRATION SERVER

	Minimum Specifications
Processor Performance Level	2 Cores 64bit
RAM	8GB
Hard Drive	100GB
Operating System	Windows Server or Workstation
Supported JRE	Java 8, Java 11 (recommended)

WEB WORKLIST

Supported browsers	Chrome, Microsoft Edge Chromium

DATA CENTER

	Minimum Specifications
Network Connection	100 mbps (recommended), 50 mbs (minimum)
Power redundancy	UPS and generator (ANSI/TIA 942-A 2014 TIER1)
Network connection redundancy	Two (2) different internet service providers
Other	Access to server Management, adequate support from customer (for example, knowledge of Linux)

SUPPORTED LANGUAGES

Arabic	English	French	Spanish
Chinese	GB/UK English	German	Swedish
Danish	Estonian	Japanese	
Dutch	Finnish	Norwegian	

The system requirements presented in this document are indicative. The final system requirements depend upon each individual site. Please ask your local dealer for more detailed information.
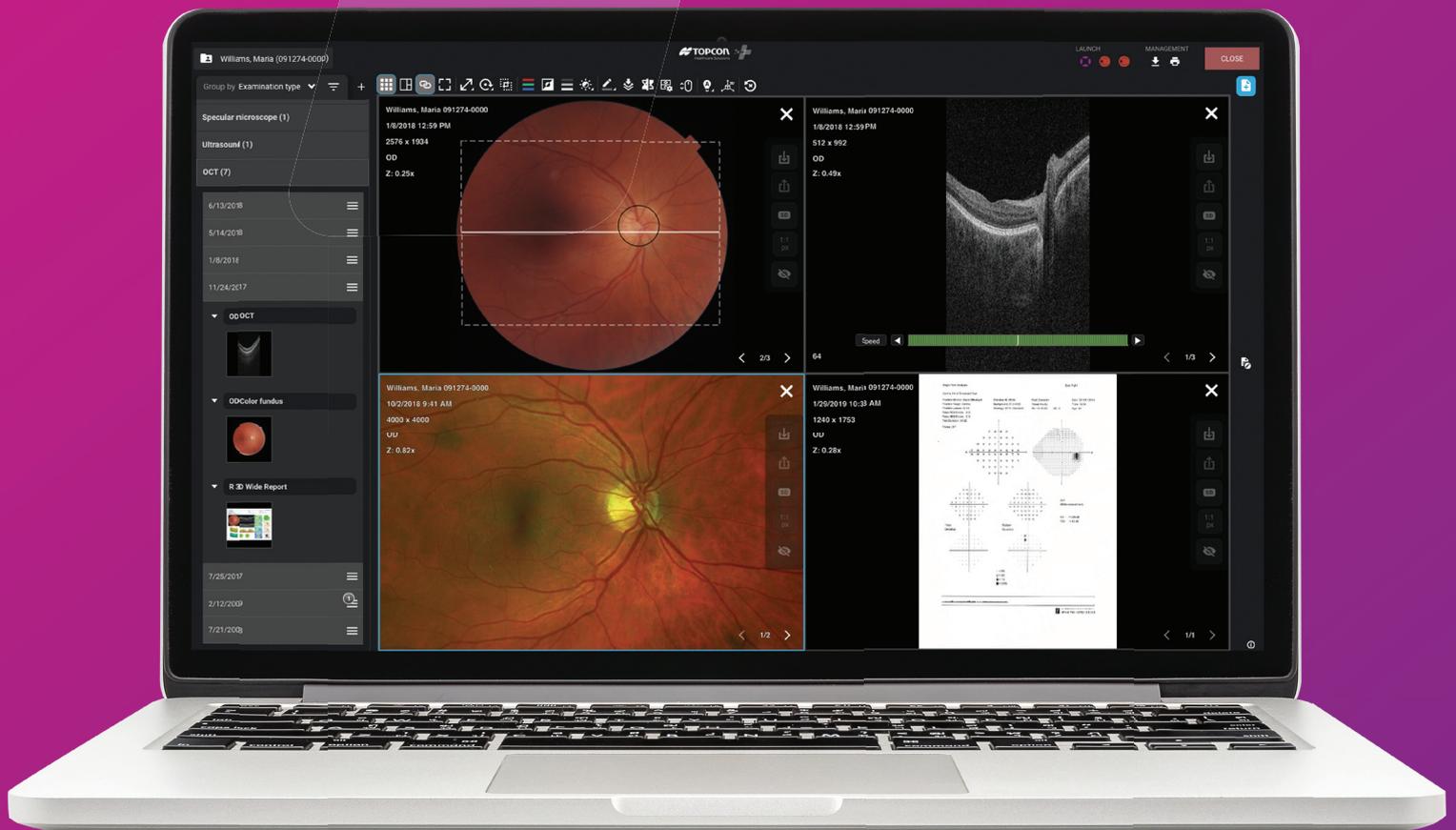
Learn more about harmony and schedule your demo.
topconhealthcare.my

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