OLYMPUS

OLYSENSE
CAD/AI

SMARTIBD™ Medical Device Software

Unlocking the Power of Intelligent Endoscopy

The Need for Early Diagnosis of Inflammatory Bowel Disease

Inflammatory Bowel Disease (IBD) is a global health concern, with approximately 405,000 new incidents identified each year and 41,000 preventable deaths.[1]

Ulcerative colitis is a type of IBD that causes significant inflammation and ulcers in the lower gastrointestinal tract. Ulcerative colitis affects the lining of the colon and rectum and weakens the body, leading to life-threatening complications.[2] Patients with IBD are often at significantly increased risk of colorectal cancer, primarily due to the pro-neoplastic effects of chronic intestinal inflammation.[3]

Challenges within IBD

- **Accuracy of assessments**
  There is a need to reduce the variance in the accuracy of inflammatory assessments in the bowel.
- **Inflammation monitoring**
  There is a need to standardize how inflammation progression is assessed in IBD patients during colonoscopies.
- **Improve early cancer detection**
  There is a need to improve the identification of suspicious lesions or tumor-like formations, enabling high-risk areas to be biopsied more precisely and aiding in the early detection of malignancies.

400k+
new incidents each year[1]

41k+
preventable deaths each year[1]

Olympus Has Been Partnering With Hospitals for Nearly 75 Years

Olympus Recognizes the Growing Demands Placed on Today's Endoscopy Services

Olympus solutions are specifically designed to empower GI endoscopy departments to deliver the highest standard of patient care, while supporting their operational, clinical, and financial goals.

With a deep understanding of healthcare system pressures, Olympus continues to evolve its solutions to meet the changing needs of hospitals and clinicians.

A Proven Partner in Endoscopy Innovation

Guided by its purpose—to make people's lives healthier, safer, and more fulfilling—since introducing the first widely adopted gastrocamera in 1950, Olympus has been a trusted partner, providing solutions that support clinicians in elevating the field of endoscopy.

1950

World's first practical gastrocamera

2020

Launch of EVIS X1™ system

Proven expertise. Enhancing your excellence in care.

~50M

colonoscopies performed world-wide each year using Olympus devices.[4]

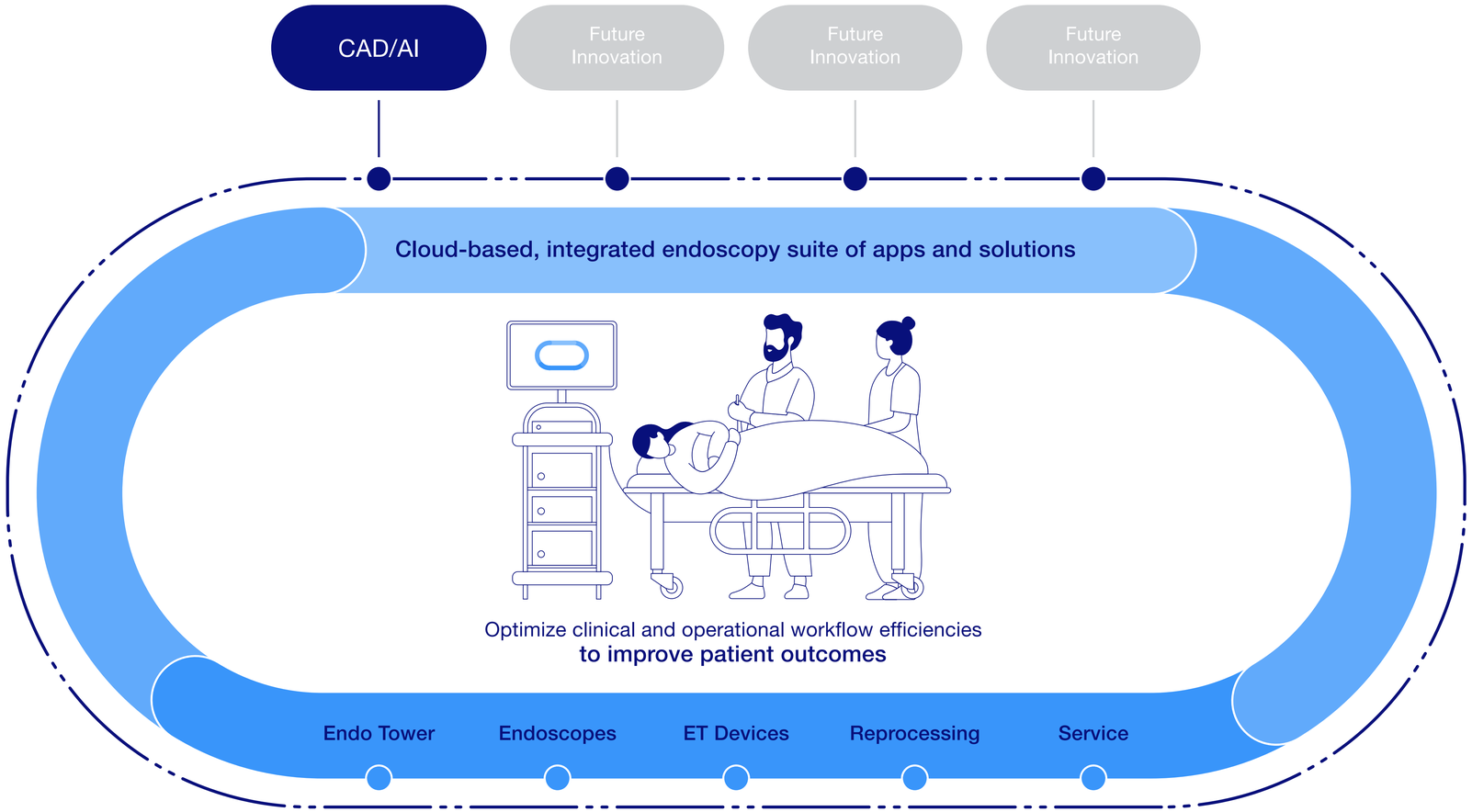
SMARTIBD™ Medical Device Software

Unlocking the Power of Intelligent Endoscopy

Connecting AI-driven Endoscopy Solutions with Established Olympus Equipment

Designed to address GI endoscopy unmet needs by supporting early diagnosis of colorectal cancer, Olympus introduces the OLYSENSE™ Platform, a cloud-based, integrated and scalable digital endoscopy suite of seamlessly connected apps and solutions, that create a sophisticated, simple and scalable intelligent endoscopy ecosystem.

A key component of the OLYSENSE Platform is its CAD/AI portfolio, which includes the SMARTIBD™ medical device software.

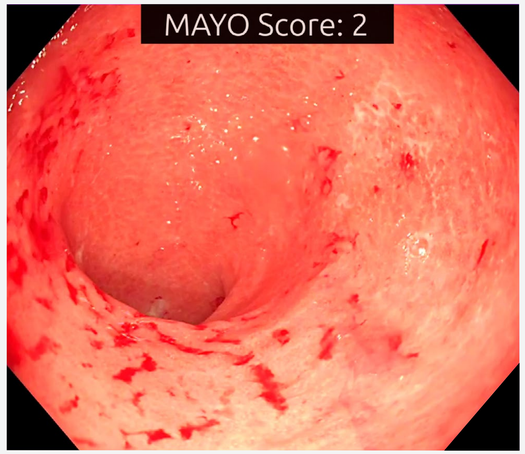


SMARTIBD™ Medical Device Software

Sophisticated Leveraging Artificial Intelligence to Improve Lower GI Endoscopy

The SMARTIBD™ software is a cloud-based, AI-driven solution, intended to be used for the purpose of assisting the assessment of disease activity for Ulcerative Colitis.[5]

It is powered by the OLYSENSE™ Hub, connected to Olympus imaging equipment on the endoscopy tower. The OLYSENSE Hub enables secure data sharing through a hybrid architecture that combines cloud-based and on-premise information systems.



AI for Characterization of Ulcerative Colitis[6]

SMARTIBD analyzes data from the endoscopic video processor in real time and characterizes disease activity, acting as a second pair of expert eyes, assisting endoscopists in scoring Ulcerative Colitis. When the foot pedal is pressed, the system generates a MAYO Endoscopic Score (MES) corresponding to the region under review.

This AI-generated MES is displayed in real time at the top of the endoscopy monitor, providing immediate, image-specific insight to support clinical decision-making.[7]

Simple and Scalable

The SMARTIBD™ Software Features a Straightforward, User-Friendly Interface That Seamlessly Integrates Into the Clinical Workflow

Easy to Use

Due to the intuitive nature of the SMARTIBD software, minimal training is required.

The software enables hands-free interaction during the procedure. The foot pedal when pressed, generates the MAYO Endoscopic Score (MES).[7]

Simple Setup

The SMARTIBD software is viewed on the main endoscopy monitor, without the need for additional monitors in the endoscopy room.[8]

The system can integrate with existing clinical workflows and endoscopy equipment such as Olympus EVIS X1 CV-1500, EVIS EXERA III CV-190 and EVIS LUCERA ELITE CV-290.[9]

The cloud-based device requires a network connection. The SMARTIBD software does not interact with hospital IT systems and only requires a standard internet port to be opened.[10]

Cloud-Based Software

The secure cloud-based solution uses the OLYSENSE™ Hub connected to the endoscopy tower to stream the video from the hospital to the cloud. The system analyzes the images in the cloud in real time and sends the results back to the endoscopy monitor for the endoscopist to view.[11]

Automatic Updates

The SMARTIBD software enables instant and automatic updates, ensuring the latest AI without requiring a service professional onsite to install software updates.

With the OLYSENSE™ Platform and its suite of CAD/AI applications—including SMARTIBD, CADDIE™ and CADU™ softwares—Olympus is unlocking the power of intelligent endoscopy, aiming to support endoscopists improve outcomes and significantly impact the fight against cancer.

SMARTIBD™ Medical Device Software

References

- The average clip accuracy of the model is 82.38%, which shows the SMARTIBD™ model reaches adequate performance for grading ulcerative colitis.[12]
- The SMARTIBD Artificial Intelligence has been trained and tested using high-definition white light images and videos.[13]

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2] Mayo Clinic. Ulcerative Colitis. Mayo Clinic. Published September 16, 2022. https://www.mayoclinic.org/diseases-conditions/ulcerative-colitis/symptoms-causes/syc-20353326.

3] Stidham RW, Higgins PDR. Colorectal Cancer in Inflammatory Bowel Disease. Clin Colon Rectal Surg. 2018;31(3):168-178. doi:10.1055/s-0037-1602237.

4] Numbers of US, Germany, France, UK, Italy, Spain, Japan, Canada, Poland, South Korea, Australia, India, Russia (as of 2022); China (as of 2019 including annual averages from 2019 to 2022 forecasts).

5] Data on file with Odin Medical Ltd, ODIN-IBD-TCU-001 Validation Report V1.0.1, ODIN-IBD-TCP-023 Verification Report V1.0.1, ODIN-IBD-TCP-006 Verification Report V1.0.1, ODIN-IBD-TCP-025 Verification Report V1.0.1.

6] Data on file with Odin Medical Ltd, ODIN-IBD-TCU-001 Validation Report V1.0.1, ODIN-IBD-TCP-008 Verification Report V1.0.1, ODIN-IBD-TCP-009 Verification Report.

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12] Data on file with Odin Medical Ltd, OD-005675-TC-7-ODIN-IBD-IFU Instructions for Use.

13] Data on file with Odin Medical Ltd, ODIN-IBD-TCU-001 Validation Report V1.0.1, ODIN-IBD-TCP-008 Verification Report V1.0.1, ODIN-IBD-TCP-009 Verification Report

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As medical knowledge is constantly growing, technical modifications or changes of the product design, product specifications, accessories and service offerings may be required.

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