OLYMPUS

OLYSENSE™
CAD/AI

CADU™ Medical Device Software

Unlocking the Power of Intelligent Endoscopy

The Need for Early Diagnosis of Esophageal Adenocarcinoma

In Patients Diagnosed with Barrett's Esophagus

Globally, esophageal cancer (EC) remains a significant health concern. Esophageal cancer is the ninth most common cancer and the sixth leading cause of cancer deaths worldwide.[1] In 2022, an estimated 511,054 new cases were diagnosed, with 445,391 deaths.[2]

The prognosis of esophageal cancer is poor, with a five-year survival rate of less than 20%[1], making it even more important to overcome the significant obstacles in the early detection of EC subtypes, esophageal squamous cell carcinoma and esophageal adenocarcinoma.

Challenges in Providing Surveillance for Barrett's Esophagus Patients

- 25% percent of early esophageal cancers are currently missed.[3]
- Random biopsies are taken from multiple locations to determine whether there is dysplasia in the esophagus. In addition to the difficulty of determining the accurate extent of dysplasia, random biopsies have limitations with an increased risk of adverse events, increased biopsy costs and increased examination time.[4]

500k+

new patients diagnosed each year with esophageal cancer[2]

400k+

patients' lives lost each year[2]

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.[5]

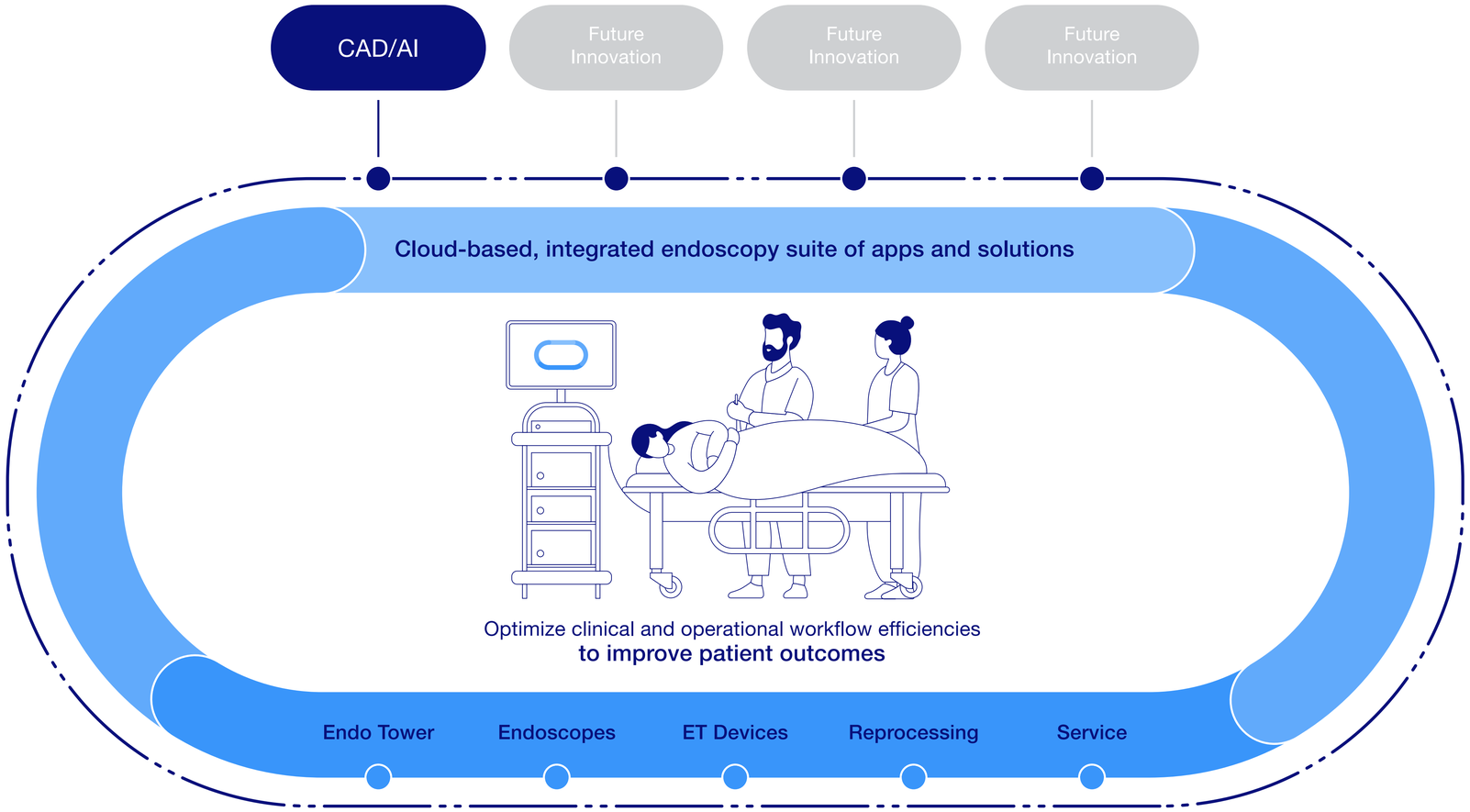
CADU™ Medical Device Software

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 Barrett's Esophagus, 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 CADU™ medical device software.

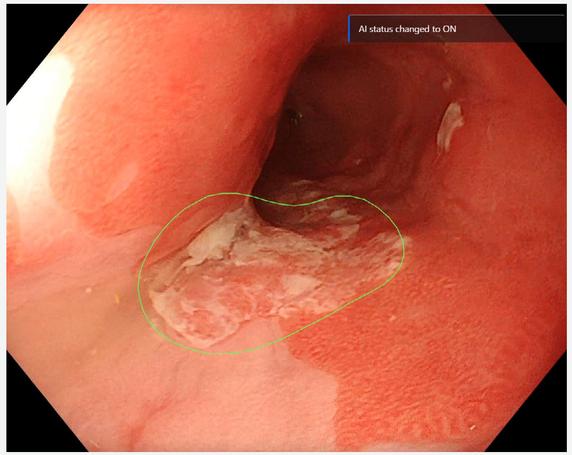


CADU™ Medical Device Software

Sophisticated Leveraging Artificial Intelligence to Improve Upper GI Endoscopy

The CADU™ software is a cloud-based, AI-driven solution, that is designed to highlight areas with visual characteristics of dysplasia within Barrett's Esophagus.[6]

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.



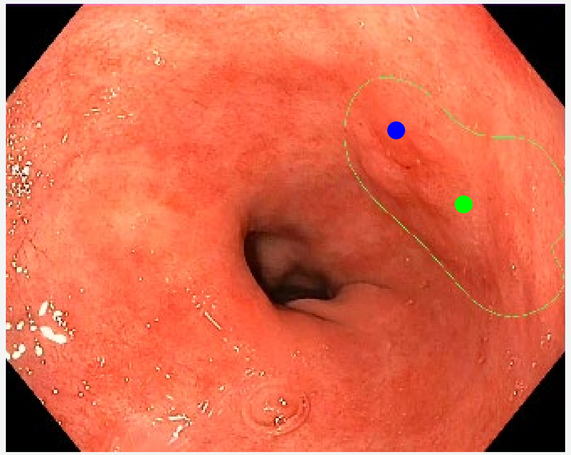
AI to Detect Dysplasia in Patients with Barrett's Esophagus

The CADU software is intended to be used as an accompaniment to video endoscopy for the analysis of potential dysplasia in Barrett's Esopghagus, acting as a second pair of expert eyes, reinforcing endoscopists' confidence in their findings and improving decision-making.[7]

CADU analyzes data from the endoscopic video processor in real-time and provides information that aids the endoscopist in distinguishing tissue as dysplastic or non-dysplastic.[8]

Regions of interest are highlighted in real-time with a green bounding area, with detection controlled by a foot pedal.[9]

Leveraging Artificial Intelligence to Improve Upper GI Endoscopy Continued



AI for Identifying Points of Interest

The CADU™ software identifies points of interest in the dysplastic region to help endoscopists identify the geometric center and highly dysplastic regions. This information can then be interpreted by the endoscopist to make decisions on clinical action.[10]

The CADU software is not a diagnostic tool.

CADU™ Medical Device Software

Simple and Scalable

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

Easy to Use

The CADU software has a simple and user-friendly interface that integrates into the current clinical workflow.

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

The software enables hands-free interaction during the procedure, controlled by the foot pedal.[11]

Simple Setup

The CADU software can be configured for single monitor use.[6]

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.[12]

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

Cloud-Based Software

The secure cloud-based software 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.[6]

Automatic Updates

The CADU software enables instant and remote-based 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 CADU, CADDIE™ and SMARTIBD™ softwares—Olympus is unlocking the power of intelligent endoscopy, aiming to support endoscopists improve outcomes and significantly impact the fight against cancer.

CADU™ Medical Device Software

References

- In clinical testing, the CADU™ software achieved a 98.68% detection rate per patient, helping clinicians identify high-risk tissue with confidence. Even at this high level of sensitivity, the CADU software maintains a manageable false alarm rate of just 4.22 alerts per minute, supporting efficient and focused procedures.
- On a frame-by-frame basis, the CADU software demonstrated 87% sensitivity and 78% specificity, combining precision and reliability to enhance endoscopic decision-making.[13]

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3] Visrodia K, Singh S, Krishnamoorthi R, et al. Magnitude of Missed Esophageal Adenocarcinoma After Barrett's Esophagus Diagnosis: A Systematic Review and Meta-analysis. Gastroenterology. 2016;150(3):599-e15. doi:10.1053/j.gastro.2015.11.040.

4] Sharma P, Savides TJ, Canto MI, et al. The American Society for Gastrointestinal Endoscopy PIVI (Preservation and Incorporation of Valuable Endoscopic Innovations) on imaging in Barrett's Esophagus. Gastrointest Endosc. 2012;76(2):252-254. doi:10.1016/j.gie.2012.05.007.

5] 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).

6] Data on file with Odin Medical Ltd, ODIN-CADU-TCP-027.

7] Data on file with Odin Medical Ltd, ODIN-CADU-TCP-016 Verification Report V1.1.4, ODIN-CADU-TCP-009 Verification Report V1.1.4.

8] Data on file with Odin Medical Ltd, ODIN-CADU-TCP-001 Verification Report V1.1.4, ODIN-CADU-TCP-027 Verification Report V1.1.4, ODIN-CADU-TCP-003 Verification Report V1.1.4, ODIN-CADU-BTR Bench Testing Report - Dysplasia Segmentation ODIN-CADU-TCP-020 Verification Report V1.1.4, ODIN-CADU-TCP-028 Verification Report V1.1.4.

9] Data on file with Odin Medical Ltd, ODIN-CADU-TCP-002 Verification Report V1.1.4.

10] Data on file with Odin Medical Ltd, OD-001136-TC-12-ODIN-CADU-IFU.

11] Data on file with Odin Medical Ltd, ODIN-CADU-TCP-006 Verification Report V1.1.4, ODIN-CADU-TCP-007 Verification Report V1.1.4.

12] Data on file with Odin Medical LTD., ODIN-CADU-TCP-016, ODIN-CADU-TCP-001, ODIN-CADU-TCP-016 Verification Report V1.1.4.

13] Data on file with Odin medical Ltd, ODIN-CADU-BTR BenchTesting Report - Dysplasia Segmentation, ODIN-CADUTCP-028 Verification Report V1.1.4.

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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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OLYMPUS

OLYMPUS EUROPA SE & CO. KG

Postbox 10 49 08, 20034 Hamburg, Germany | Wendenstrasse 20, 20097 Hamburg, Germany | Phone: +49 40 23773-0 | Fax: +49 40 233765

www.olympus-europa.com

Manufactured by:
Odin Vision, 43-45 Foley Street
London, W1W 7TS, UK

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