## Introducing a breast cancer screening platform powered by Al

**Robert Hite** Director of Business Development vara

# Vara was established in 2018 by Merantix: Europe's leading Al venture studio



vara

### **1 out of 8 women** develop breast cancer<sup>1</sup>

# Survival rate below 20% if cancer detected late<sup>2</sup>

Mortality reduced by up to 25% when women participate in screening<sup>3</sup>

# Survival for breast cancer is strongly related to stage of the disease at diagnosis<sup>1</sup>

The earlier a cancer is detected, the better the survival rate. Better health outcomes for patient and lower cost to health systems, if cancer is found early as treatment cost for early stage cancer is significantly lower and less invasive.



#### 5-year survival by stage at diagnosis (UK)

A screening radiologist can report ~200 exams per day<sup>1</sup> - but only about 0.7% of exams are cancerous<sup>2</sup>



### Some of today's challenges in breast cancer screening









95%+ of radiologist's time spent on cancer-free cases, finding the needle in the haystack leads to missed cancers and quality differences. Quality differences between radiologists.

Workflow solutions today are siloed; do not allow for collaboration between radiologists and reporting is not structured. One size fits all experience for women, the process is impersonal and waiting times are long even in Germany.

# Vara is a fully augmented AI-powered platform to enable higher productivity and efficiency, safely



Flags normal exams with very high confidence so screening radiologists can focus more on suspicious exams Notification incl. markers in the image in case suspicious areas have been overlooked by the radiologist Web-based automated pre-filling of structured reports with interface to RIS systems Close support during use in screening (configuration, training, retrospective and prospective analyses) We believe in curating data and rigorously testing Vara on all visible cancers including interval cancers.



#### Large dataset

Vara has curated more than **7M images** provided by >15 German breast cancer screening partners



#### Full clinical records

Our data is secured by biopsies, longitudinal follow-up incl. barely available missed cancers.

> 60k biopsy-proven cancer cases



#### Hand crafted image curation

Our breast imaging specialists have manually annotated > **190,000** difficult images.

#### Vara

Vara runs anywhere on any screening workstation via a web browser<sup>1</sup> and is seamlessly integrated with RIS and PACS



<sup>1</sup> internet connection on Google Chrome browser and use of the Deutsche Telekom cloud required

### THE LANCET Digital Health

ARTICLES | VOLUME 4, ISSUE 7, E507-E519, JULY 01, 2022

# Combining the strengths of radiologists and AI for breast cancer screening: a retrospective analysis

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### Integration of Al into German MSP using Decision Referral approach

- Decision Referral statistically significantly improves radiologist performance (P<0.0001) in this retrospective study
- Vara could improve radiologist sensitivity by 4.0 and 2.6 percentage points on the internal and external sets, respectively.
- > 70% of the workload could be automatically triaged



RADIOLOGY

Submi

FULL LENGTH ARTICLE | VOLUME 152, 110321, JULY 01, 2022

# Al-based prevention of interval cancers in a national mammography screening program

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Open Access • Published: April 20, 2022 • DOI: https://doi.org/10.1016/j.ejrad.2022.110321 •

### Al-based detection of interval carcinomas



- Al can detect and localize a substantial proportion of interval carcinomas
- No additional false positives in Decision Referral approach

### Vara



A **PR**ospective multicenter, observational study of an integrated artificial intelligence (**AI**) workflow with live **M**onitoring for population-based breast cancer screening

### The Vara PRAIM Study

- Prospective, observational design, aiming to efficiently maximize time and accrual considerations
- Start: March 2022
- End: July 2023
- Primary Endpoints:
  Screen-detected cancer rate, recall rate
- Meets post-market surveillance requirements of EU Medical Device Regulation (MDR 2017/745)

*Ethics approval obtained from the University of Lübeck Research Ethics Committee (22-043). German Clinical Trials Register DRKS00027322* 

### vara



# Most women around the world do not have access to screening

In most countries, mammography screening is **not offered** and women lack awareness



Out-of-pocket **prices are prohibitively high**, often well above \$50



There is a global shortage of radiologists, and inexperienced screeners can **miss many** 

#### cancers

# Our screening platform outside Germany covers the entire screening journey - from awareness to treatment

AWARENESS AND EDUCATION Support of local demand generation in local communities and on nationwide scale

#### SCREENING AND DIAGNOSTICS

Easily accessible, affordable cancer screening services in Vara powered centers PATHOLOGY AND TREATMENT Health navigators support women throughout screening into treatment, navigate the patient journey



VARA'S AI AND DATA PLATFORM





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In Germany, Greece and LATAM, we are in 35+ centers powered by Vara