

# AI-Rad Companion @Zukunft Teleradiologie

September 2021

Markus Sebald, SHS DI DH IMG



# Reading Aid



SIEMENS Healthineers AI-RAD Companion Chest X-Ray VA22A

Findings - (AI Confidence above 5 are highlighted)

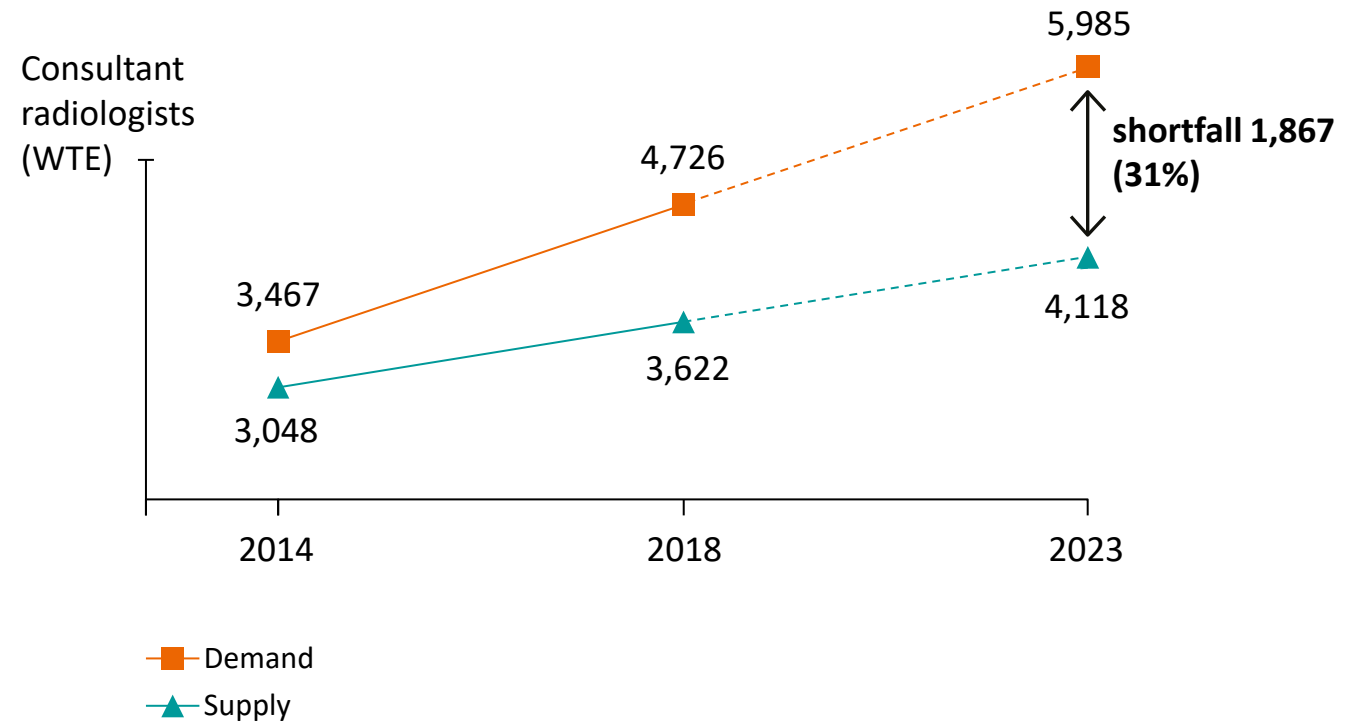
Abbr.	Name	AI Confidence*
PTX	Pneumothorax	-
PEF	Pleural Effusion	-
LES	Pulmonary Lesions	10
CO	Consolidation	-
AT	Atelectasis	-

Caution  
The findings shown on this summary were auto-generated.

# The radiologists' workload is steadily increasing

In many countries, the number of radiology examinations is skyrocketing, while the number of radiologists and imaging specialists is not keeping up with the trend.

**The result is a dramatically increased workload for radiologists.<sup>1</sup>**



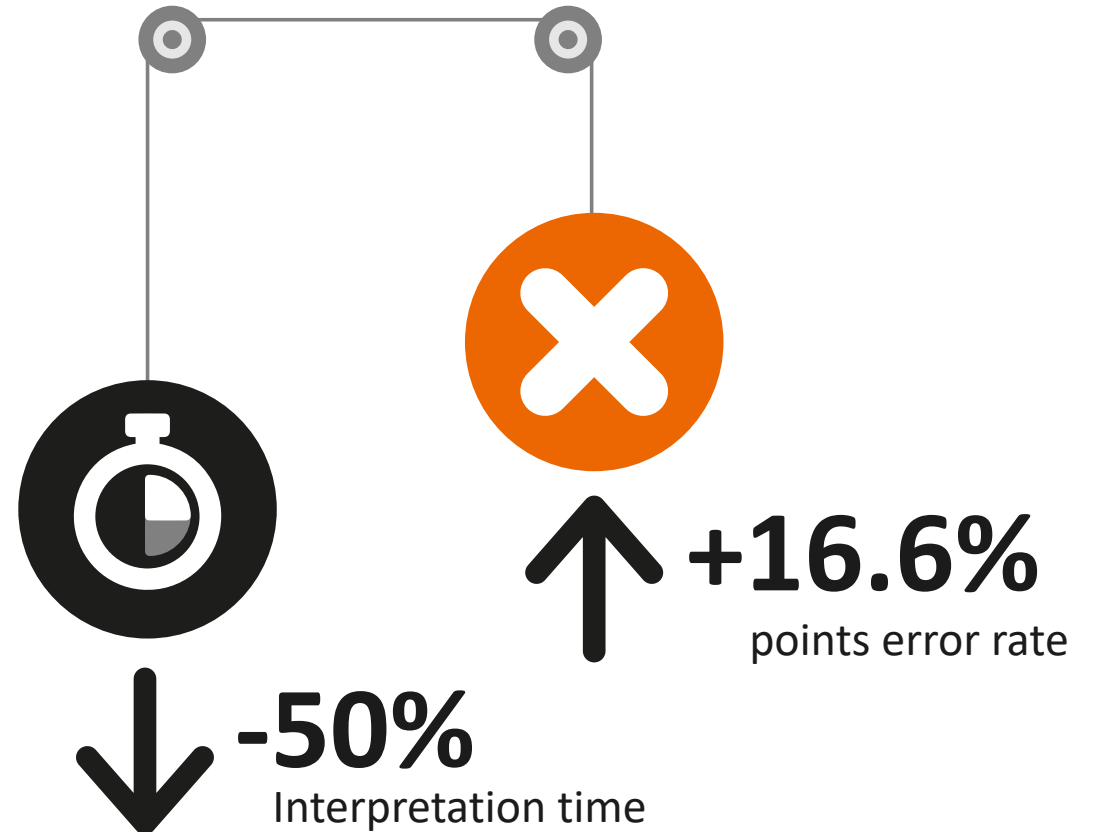
<sup>1</sup> The Royal College of Radiologists. Clinical radiology, UK workforce census 2018 report. London: The Royal College of Radiologists, 2019.

# Less interpretation time means higher error rates

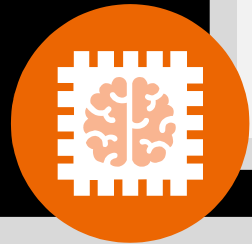
**With shorter turnaround time,  
the error rate rises.**

The retrospective error rate among radiological exams is 30%.<sup>1</sup> Studies show that cognitive factors significantly contribute to diagnostic errors.<sup>2</sup>

Cutting in half the interpretation time of radiologists increases the interpretation error rate percentage by 16.6%.<sup>3</sup>



# AI-Rad Companion automates post-processing and machine interpretation to support image based decision making



Our Vision is to drive image based clinical decision making by leveraging AI to prioritize cases, automate detection, measurements and characterization, and to ultimately provide a diagnostic report



Automated multi-organ diagnostic decision support system helping to **improve diagnostic accuracy**



**Drive productivity** with seamless integration in the reading and reporting workflow

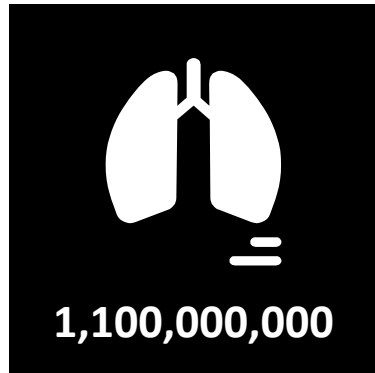


Automated imaging biomarkers and structured reports – whilst every workflow step remains under control to **enable evidence based decisions**

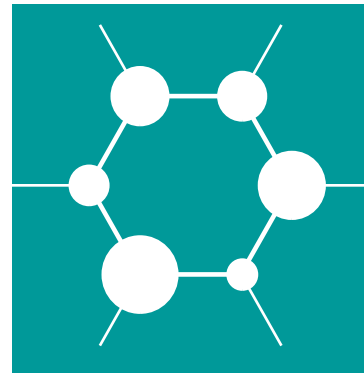


**State-of-the-art algorithm improvement paired with security by design** based on teamplay digital health platform

# Powerful platform combined with long-term experience for Artificial Intelligence



More than **1.1 billion** clinical images as well as reports, clinical and genomic data



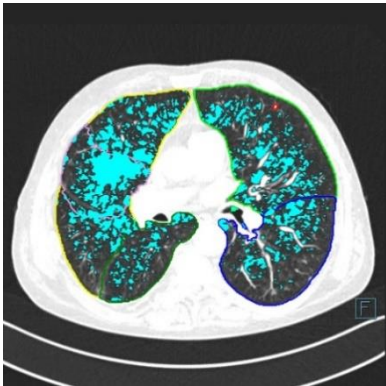
Worldwide super-computing infrastructure with **700 AI experiments per day**



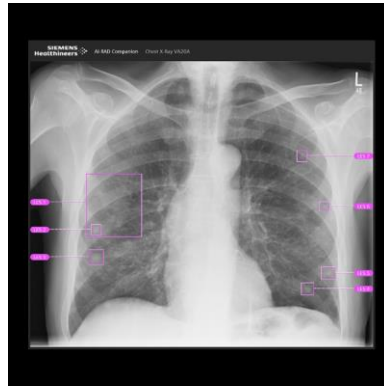
More than **700 patent families** related to machine learning and more than **275 patent families** related to deep learning

# AI-Rad Companion – Status 2021

### AI-Rad Companion Chest CT



### AI-Rad Companion Chest X-ray



### AI-Rad Companion Brain MR



### AI-Rad Companion Prostate MR



### AI-Rad Companion Organs RT



Application layer

## AI-Rad Companion Engine



**teampay digital health platform (cloud and on edge)**

Enabling healthcare providers a quick start into digitalization

Platform layer

Healthcare provider IT

DICOM | HL7 | FHIR

RIS

PACS

VNA

HIS/EMR

LIS

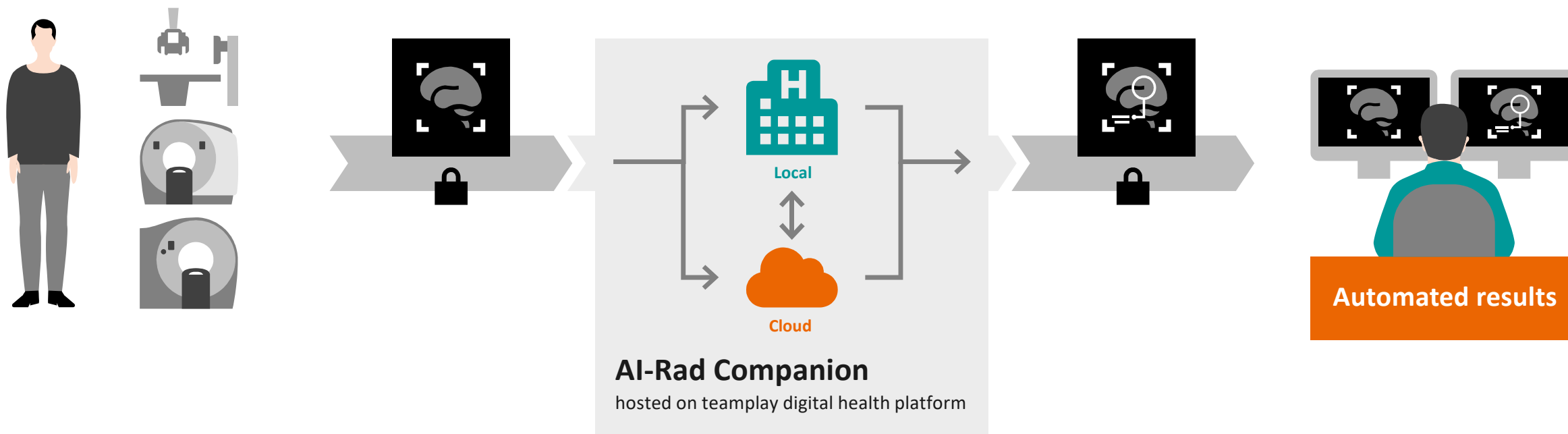
CVIS

OIS

...

Data layer

# AI-Rad Companion, seamlessly integrates into your hospital environment – and your workflows





# teampay digital health platform

as the enabler of your digital transformation with easy access and integration of digital solutions into clinical routine

## Application Layer

Solutions from Siemens Healthineers and curated partners in three areas



**Streamlining operations management**

Service line management solutions



**Supporting diagnostic and therapeutic decision-making**

Clinical decision support solutions



**Connecting care teams and patients**

Patient management solutions

## Platform Layer

More than **6,500** connected institutions in more than **75** countries



**teampay digital health platform**

The enabler of healthcare providers' digital transformation

Secured access and connectivity to different interoperability standards

## Data Layer



# Connected you will be able to make informed decisions along the patient journey

Patient History



Diagnosis



Therapy Decision



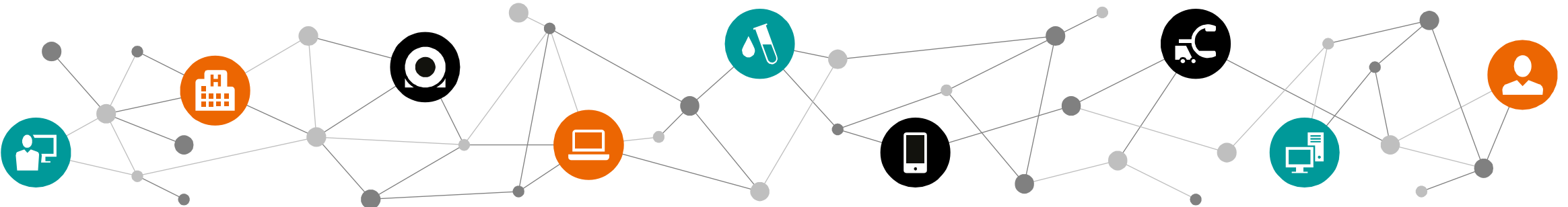
Treatment



Follow-up



Informed decision-making along the entire patient journey







# 3<sup>rd</sup> Party Management – three model approach

## whitelabeling – agent model – reseller model



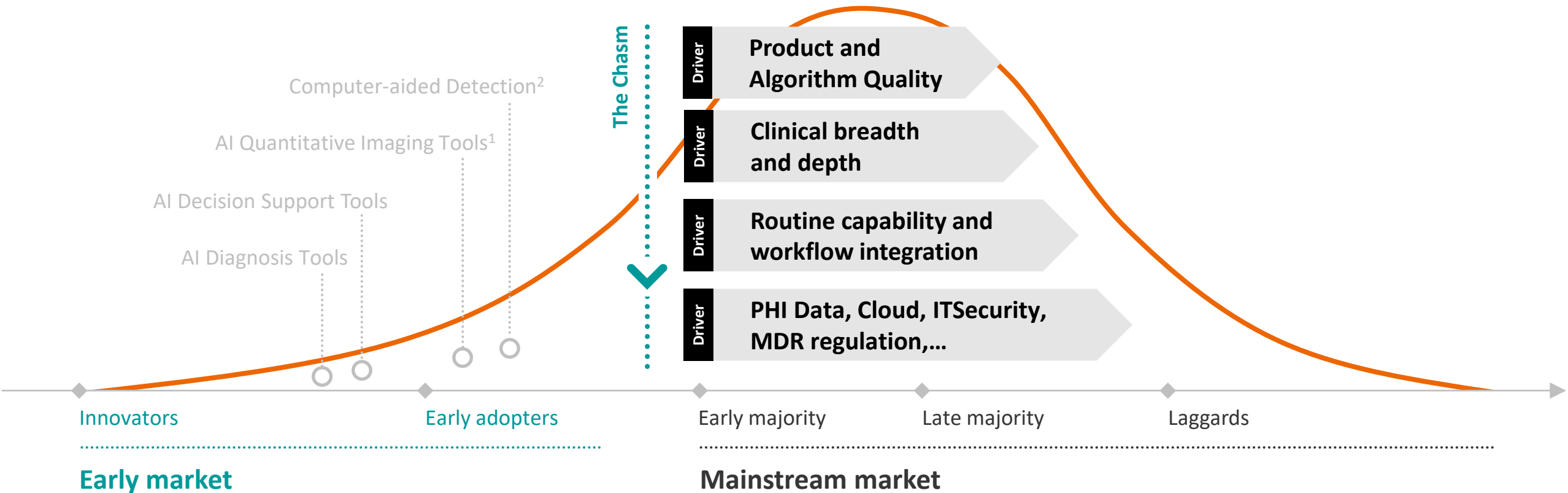
 AI-powered

 <p>Apps for clinical use or dedicated to performance management</p>	 <p>More than 30% AI-powered applications</p>	 <p>More than 75 applications from Siemens Healthineers and curated partners</p>	 <p>Within 6 different clinical specialties</p>
---	--	---	--

1 Applications not commercially available in the Digital Marketplace, yet.  
Not all applications are available in all countries. Please check applications availability in your country.

# Market Drivers, hurdles,...

## What do you think?

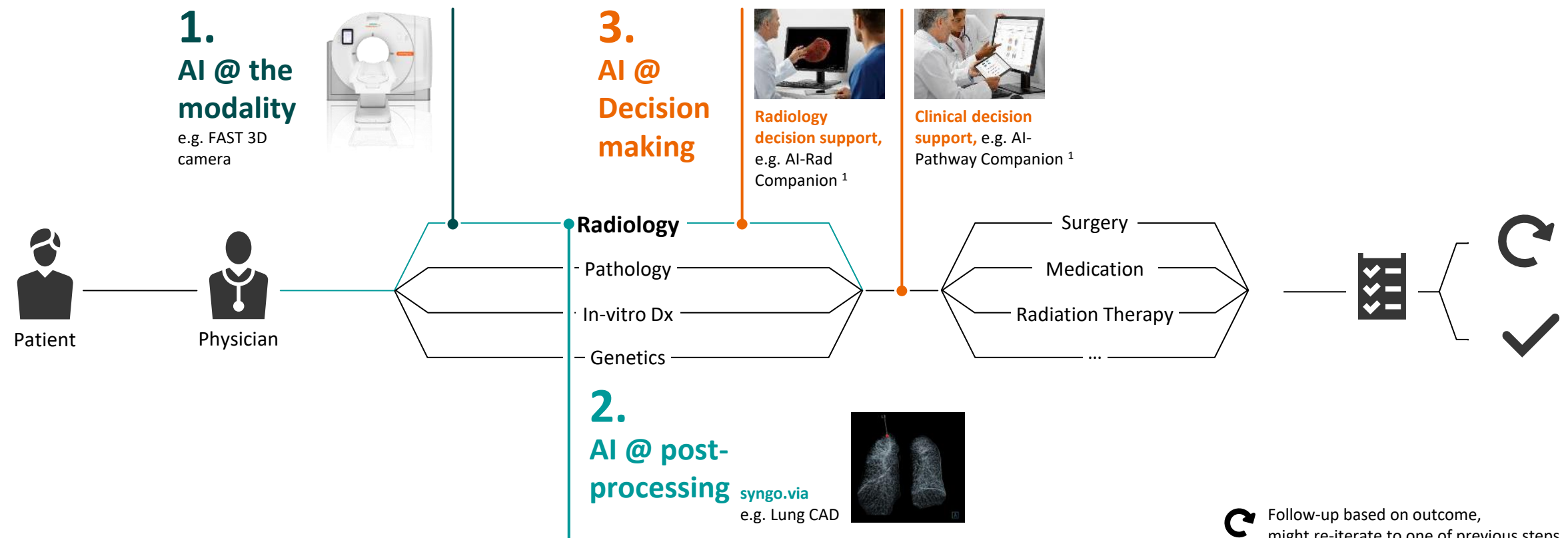


Source: Signify Research 2018

1 Some non-AI quantitative imaging tools, e.g. perfusion analysis, have transitioned to mainstream

2 Breast CAde has transitioned to mainstream in the US, but not in other regions

# AI touchpoints within a patient journey – Data based decision making and meaningful integration of information.



Follow-up based on outcome, might re-iterate to one of previous steps

AI-Rad Companion and AI-Pathway Companion are product families with devices currently under development and products that are not yet commercially available in all countries. Future availability cannot be guaranteed.

**Thank you  
for your enthusiasm!**

---

**Siemens Healthineers**

SHS DI DH IMG PRM

Siemens Healthcare GmbH

Schuhstr. 60

91052 Erlangen, Germany

siemens-healthineers.com

---

Markus Sebald

Phone: +49 172 8486989

markus.sebald@siemens-healthineers.com