



RUBEE® CT Lung AI ClearRead Package

Powered by Riverain Technologies ClearRead® CT

Embedded intelligence, supporting the clinical workflow

That's life in **flow.**

AGFA 
HealthCare

Embedded augmented intelligence, advancing the clinical workflow

RUBEE® and the significance of the Enterprise Imaging platform

Healthcare systems across the globe are exploring the potential application and benefits of Artificial Intelligence when it comes to improving quality care, focused on outcomes.

The path towards realizing the benefits opens another opportunity: addressing the interoperability and integration aspects. Already, there are hundreds of start-ups and developers working in the healthcare arena, each focusing on highly specific applications. Selecting which ones you need, and then integrating them into your system and workflows is far from simple.

RUBEE®, as part of your Enterprise Imaging platform, enables a seamless Augmented Intelligence (AI) experience for your clinicians. Carefully curated 'packages' embed best-of-breed AI apps that work seamlessly to support your clinical workflow from start to finish.

You get more out of your AI investments, while enriching the value of your Enterprise Imaging. It's a win-win-win for your hospital, your clinicians and your patients.



What are RUBEE® AI Packages?

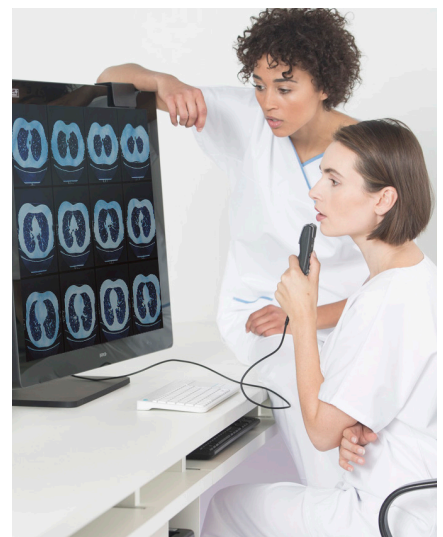
With RUBEE AI Packages, you can enable our AI specialty packages into your clinical workflows. RUBEE visualizes the metadata generated by algorithms such as deep learning, machine learning, image analysis and natural language processing. It also uses that information to automate and optimize your workflows, all within your Enterprise Imaging ecosystem.

Forward-thinking and clinically relevant

'Augmented Intelligence' (AI) does just that: offering a set of tools that let your clinicians maximize the value of their own expertise, increase their productivity and enhance the diagnostic process. But to get the real benefits to your clinicians, the tools need to be embedded right into the workflows and systems they use every day.

Your Enterprise Imaging system already offers a forward-thinking, multi-specialty platform that consolidates your hospital's wealth of data. With RUBEE AI Packages, it also becomes your AI-enabled ecosystem.

Standards-based workflows are embedded with niche and specialty-focused AI apps, delivering clinical relevance. No need for an additional, complex and costly dedicated AI platform or marketplace. And, instead of worrying about which apps to select and how to integrate them, you are leaping ahead with an ecosystem of seamlessly embedded AI.



“Your Enterprise Imaging already offers a forward-thinking, multi-specialty platform that consolidates your hospital’s wealth of data. With RUBEE® Packages, it also becomes your AI enabled ecosystem.”



Best-in-Class AI apps, Specialty Packages

We have taken the guesswork out of your AI journey. Our AI specialty packages have been carefully curated to enable interoperability and integration of best-of-class algorithms. You can be confident that all the algorithms come from reliable companies, and are trained on evidence-based data.

Most of all, they are powered by RUBEE AI Packages, to help meet your specific clinical needs from start to finish. So, there's no 'trial and error': just proven value.

Enrich your Enterprise Imaging workflows

With AI fully embedded in your Enterprise Imaging platform, your clinicians see benefits all along the line.

- Task assignments and case distribution are smoothly automated, based on the metadata generated from the AI apps.
- Hanging protocols get 'smart', with dedicated reading protocols.
- Report automation by auto-including AI results into the reporting workflow.

Offering advanced visualizations, workflow optimization and automation, RUBEE AI Packages help your clinicians to focus their efforts on cases that require immediate attention.

RUBEE® CT Lung AI ClearRead Package



A leap forward for reading efficiency

Lung cancer is a global threat, and advances in imaging have been crucial to diagnosis, treatment and follow-up. But the increased imaging demand also puts tremendous pressure on the radiologist: a high caseload is slowed by a time-consuming search for actionable nodules – which may be hidden by overlapping tissue and vessels. The radiologist has too many images to read, and spends too much time on repetitive and manual tasks.

The AGFA HealthCare RUBEE® CT Lung AI ClearRead Package, embedded in your Enterprise Imaging solution, meets the radiologist's workload challenges. It enables advanced visualization and workflow automation and optimization, dedicated to the CT Lung specialty. It increases the accuracy of reading lung CTs, while reducing overall reading time, for greater productivity.

Faster results and greater consistency

By combining the CT Lung algorithms with RUBEE for AI, radiologists not only benefit from advanced visualizations, but also workflow automation and optimization.

Automated sorting and prioritization of studies, smart display of findings and dedicated reading protocols speed up the radiologist's workflow and report turnaround time.

Reliable and consistent results support confident, faster diagnoses, to get the patient onto a treatment pathway more quickly. And automated comparison of prior and current images will help identify new lesions and measure changes, for secure follow-up.

Evidence-based, workflow-centric AI application



Powered by Riverain Technologies ClearRead® CT

For confident reading

RUBEE® brings carefully curated augmented intelligence packages for your Enterprise Imaging clinical workflows. The AGFA HealthCare RUBEE® CT Lung AI ClearRead Package is powered by Riverain Technologies ClearRead® CT: a transformative, concurrent-read AI product.

- Enterprise-wide capability powered by acquisition normalization technology that allows “plug in” capability across
- A vessel suppressed CT data series that aids both machine and humans in the detection and characterization of
- Explicit targeting of all primary nodule types: solid, sub-solid and ground-glass
- Precise characterization of detected nodules afforded by vessel suppression

ClearRead CT is the first FDA-cleared system for concurrent reading, for all nodule types, with a demonstrated capability to improve efficiency and accuracy.

ClearRead offers:

- The first FDA-cleared system for concurrent reading, for all nodule types
- Processing of scans from a wide range of manufacturers and acquisition protocols
- Unprecedented detection, segmentation and characterization accuracy of lung nodules
- Support for non-contrast and contrast chest CT and operates on slices with section thicknesses up to 3mm.
- Reduced burden of visual search and assessment by suppressing vascular structure.

Improved reader accuracy and reading time:



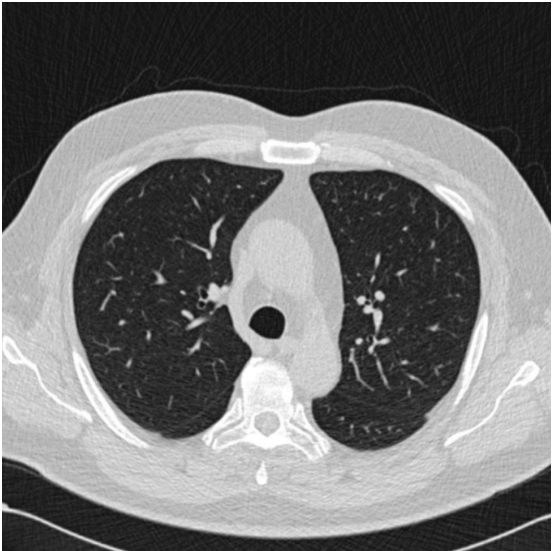
26%
reduction of
reading time ⁽¹⁾



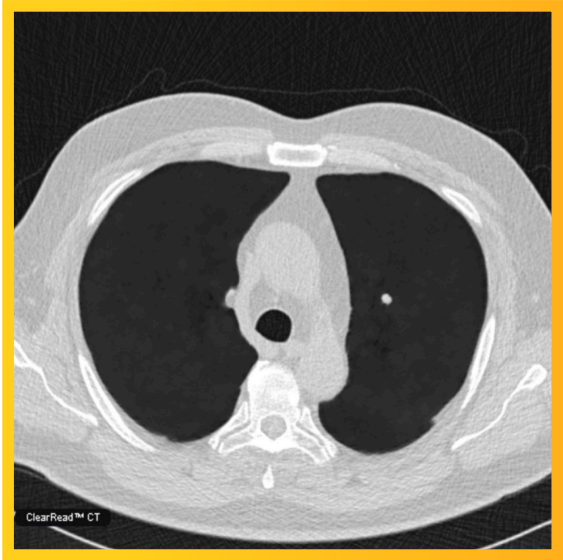
29%
reduction in missed
actionable nodules ^{(1), (2)}

ClearRead CT | Vessel Suppress

Powered by machine learning and advanced modeling, ClearRead CT | Vessel suppress provides a novel view for the radiologist. Through the suppression of vascular structures, the radiologist is able to focus on nodular structures rather than distracting vascular structures. The vessel suppression technology allows the radiologist to see how the application interprets the data at the finest level of detail, providing insight into the CAD’s decision process.



Original CT Slice



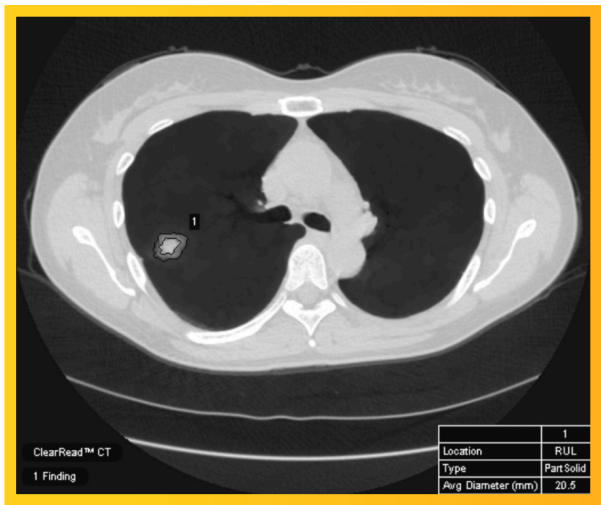
ClearRead CT | Vessel Suppress

ClearRead CT | Detect

Powered by ClearRead CT | Vessel Suppress, ClearRead CT | Detect achieves what was previously unattainable in detection performance and measurement precision. The figure below shows a slice of the native CT series with a computer generated segmentation on the vessel suppressed slice on the right.



Original CT Slice



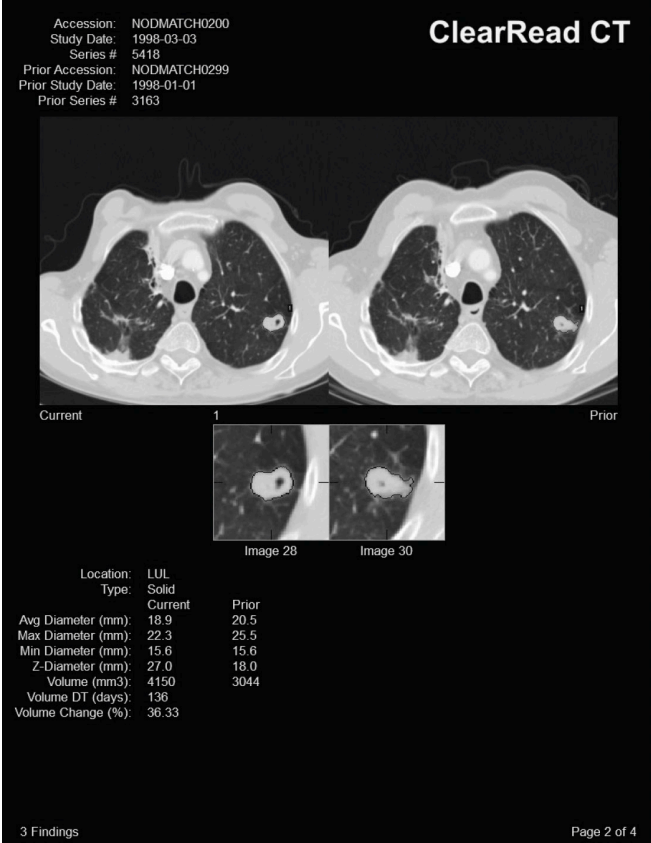
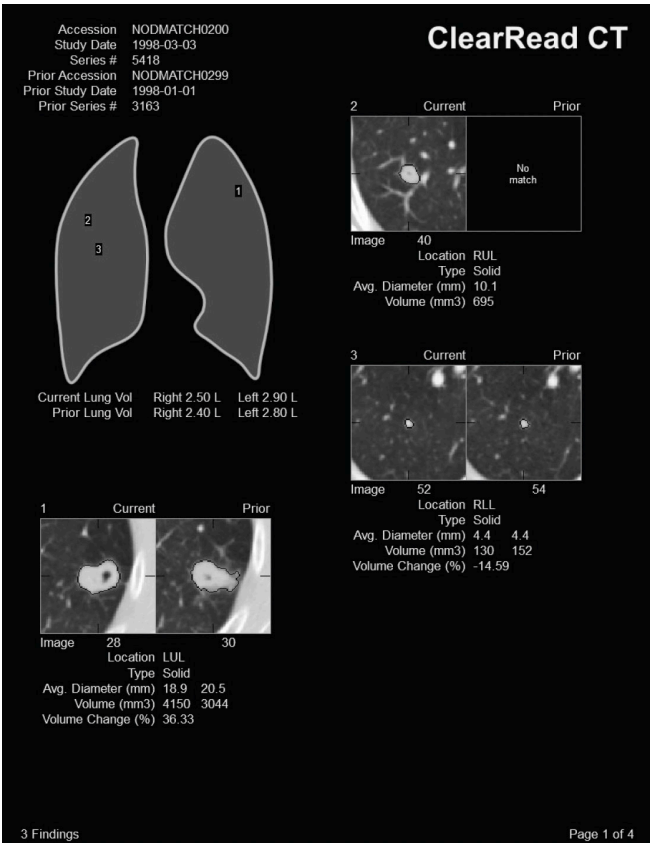
ClearRead CT | Detect

↑ Detected nodule, segmented and characterized on vessel suppressed view.

ClearRead CT | Compare

For precise nodule tracking for differential measurements.

ClearRead CT | Compare is a machine learning solution leveraging ClearRead CT | Detect to provide accurate, automated measurement and tracking of lung nodules between prior and current exams.



“Utilizing ClearRead CT Detect, ClearRead CT Compare tracks nodules and provides precise nodule volumetric changes over time for solid, part-solid, and ground-glass nodules.”

1. Riverain Technologies. ClearRead CT, FDA Reader Study Results, 2016.

2. Actionable nodules are image locations in the CT series with suspicious nodular features, i.e., characteristics, for which radiologist(s) recommends further examination, typically through analysis of a prior exam and/or additional imaging such as follow up CT, diagnostic CT, PET-CT, etc.

References:

- Vessel suppressed chest Computed Tomography for semi-automated volumetric measurements of solid pulmonary nodules. Milanese, Gianluca et al. European Journal of Radiology, 2018 Volume 101, 97 – 102.
- Computer-Aided Detection of Lung Nodules on CT With a Computerized Pulmonary Vessel Suppressed Function. ShihChung B. Lo, Matthew T. Freedman, Laura B. Gillis, Charles S. White, and Seong K. Mun American Journal of Roentgenology: 1-8. 10.2214/AJR.17.18718
- Reduced lung-cancer mortality with low-dose computed tomographic screening. National Lung Screening Trial Research Team, Aberle DR, Adams AM, Berg CD, Black WC, Clapp JD, Fagerstrom RM, Gareen IF, Gatsonis C, Marcus PM, Sicks JD. N Engl J Med. 2011 Aug 4;365(5):395-409. doi: 10.1056/NEJMoa1102873. Epub 2011 Jun 29

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**Enterprise
Imaging
Platform**

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