Blog Post CHU Liège – March 2026
Incorporation of an AI-assisted annotation tool in the LUCIA virtual research environment from the perspective of a clinical partner

A component of the LUCIA virtual research environment (LUCIA VRE) is dedicated to imaging, enabling authorized researchers to browse, visualize, annotate and segment automatically medical imaging data.

The incorporated AI-assisted annotation tool, developed by VICOMTECH, enables clinicians at CHU of Liège and Osakidetza to provide annotations and ground-truth labels for their respective CT imaging data. These annotations mainly refer to bounding box regions delineating lung lesions and to their association with pathology information, when available.

These annotations form the basis for carrying out our work related to nodule segmentation and early-stage nodule characterization and risk estimation, both in screening and diagnosis contexts.

The foundational work in this phase involved the complete implementation and rigorous comparative analysis of deep learning architectures to segment nodules, assessing model generalization across different computed tomography (CT) protocols (HRCT and LDCT). This study, conducted in collaboration between VICOMTECH and clinical partners CHU Liège and Osakidetza, was presented at the KES-INMED conference (with results published in the associated proceedings), establishing a robust baseline for further work.

The next step is to integrate the segmentation model into the LUCIA virtual research environment that will empower clinical partners to rapidly segment and quantitatively analyze pulmonary nodules identified in the prospective study, directly facilitating the next stages of clinical research and data analysis. Furthermore, the models to enable early-stage lung nodule malignancy estimations are currently being developed, with initial evaluations showing promising results.

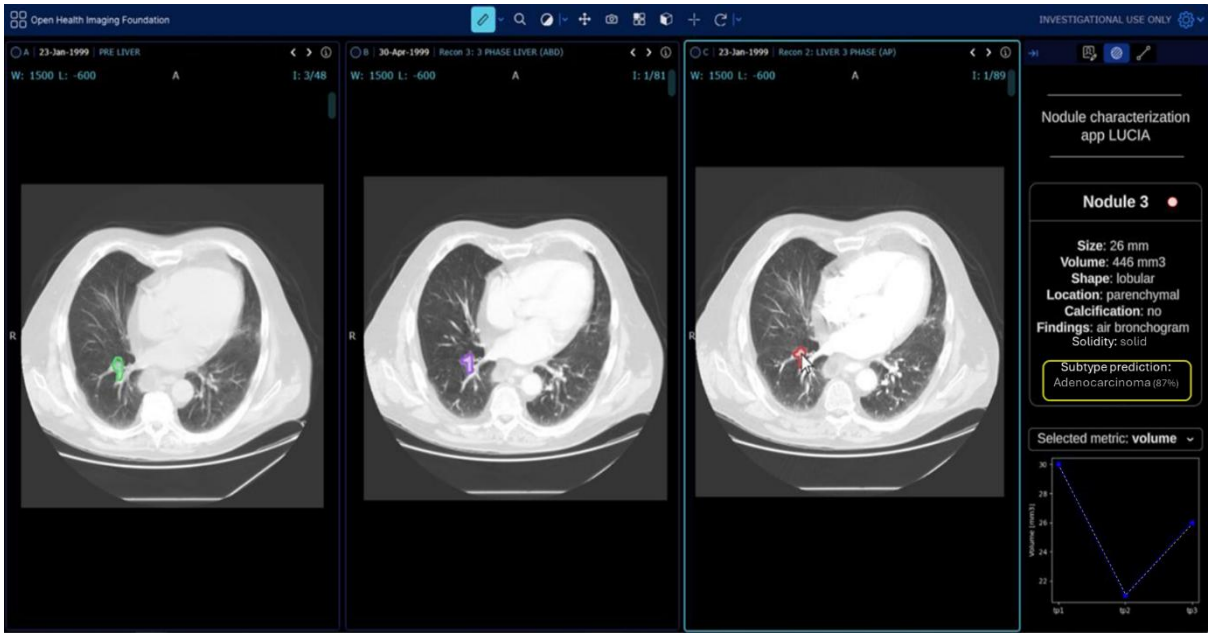

Figure 1. Incorporated AI-assisted annotation tool in the LUCIA virtual research environment

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