PRESS RELEASE:

New partnership between EBIT and DeepTrace Technologies *to support professionals in the development of personalized predictive medicine.*

The integration of DeepTrace Technologies' "Trace4Research" AI platform into EBIT's RIS-PACS SUITESTENSA system gives birth to the first repository in Italy equipped with a system for the generation of predictive artificial intelligence models within clinical studies.

Genoa and Milan, Italy - May 3rd, 2022 - **DeepTrace Technologies**, the multi-awarded Italian start-up, spin-off of the University School IUSS-Pavia, active in the development of artificial intelligence solutions for medical imaging and **Ebit, the Esaote Group company** leader in the Medical Information Technology sector, **announce the new partnership to support in an innovative way**, with an artificial intelligence archive system, **physicians in the development of personalized predictive medicine models**.

Thanks to the integration of the Trace4Research AI platform with the SUITESTENSA RIS-PACS system, it will be possible to **process, under the professional guidance of the physician, medical data and images from clinical studies** - approved by ethics committees in compliance with Italian and European regulations - **without requiring the use of other software tools**.

The availability of Trace4Research integrated in Ebit's RIS-PACS, in fact, allows to overcome all the intermediate steps that are currently required to develop artificial intelligence models applied to images and related clinical data, which often require long working times and complex technical solutions.

"DeepTrace Technologies' mission is to make artificial intelligence more accessible and affordable to clinicians (primarily radiologists and nuclear physicians) who work with images, from simple X-rays, to ultrasound, CT, MRI, PET, etc., which are then stored in PACS," commented **Isabella Castiglioni**, professor of Applied Physics at the University of Milano-Bicocca and honorary president of DeepTrace Technologies. "Our partnership with Ebit will help us bridge the gap that today separates developers of artificial intelligence technologies from clinical users. Our AI platform will enable simple, effective, and efficient development of end-to-end research solutions by clinicians. As a spin-off company of the Italian University, we are excited to participate with a primary role in the transformation of Italian research in radiology together with the leading Italian company in RIS-PACS systems''.

"EBIT, an Esaote Group company, is focused on developing new software solutions for diagnostics with the goal of serving Italian healthcare systems with tools dedicated to clinical research," said **Gianluca Levrero**, CEO of Ebit. "We have always been committed to high quality radiological reporting and thanks to this project we can provide an additional advanced tool within the SUITESTENSA platform for archiving for scientific, clinical and educational purposes. In fact, the platform was born as an additional module of the production PACS and does not require the addition of a relational database; DeepTrace's AI integration in our RIS-PACS systems is the new added value we intend to bring in the near future to help accelerate clinical research in Italy."

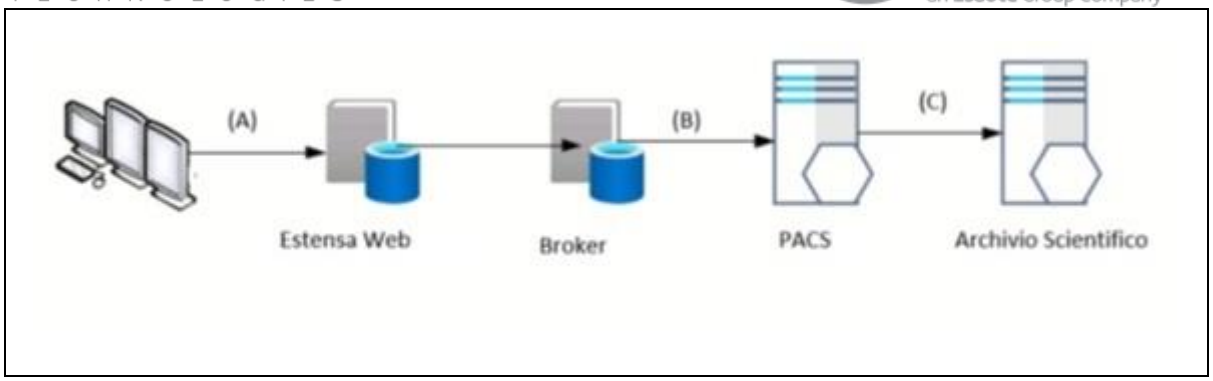
Information on the AI *Trace4Research* platform

The Trace4Research artificial intelligence software platform allows advanced analysis of radiological images acquired in clinical studies and the development of personalized predictive medicine models by processing characteristics extracted from radiological images that cannot be estimated with the naked eye of radiologists. These characteristics (referred to as radiomic characteristics) are used to train machine learning or deep learning algorithms capable of automatically classifying the radiological images from which they have been extracted into classes with different clinical significance. Properly identified, radiomics features can represent predictive biomarkers of onset, development, disease progression, or response to therapy.

Trace4Research enables radiology users to view and use the results of the analyses by means of structured reports, structured scientific manuscripts, diagrams and tables that are automatically generated by the platform that describe the data used, the methods applied, the algorithms trained and tested, for a understandable and transparent use of the models, predictors and results of clinical studies carried out with the support of the platform.

About SUITESTENSA Research Archive

The platform was born as an additional module of the production PACS. It is based on a "light" infrastructure that does not require the addition of a relational database. The scientific archive function (commonly called Teaching files) allows the creation of an archive of the most interesting cases for didactic / scientific purposes. It is accessible from all SUITESTENSA modules by means of an appropriate command in the image viewer. It' can be used through the entire workflow of radiological reporting by guiding the physician in prospective or retrospective studies through the use of tags or keywords. The safety and control of the study cataloging is entrusted to a quality control system of the PACS system which will identify the images (instances) that must be anonymized on the scientific archive and send the file containing the list of instances and data to the PACS collected.



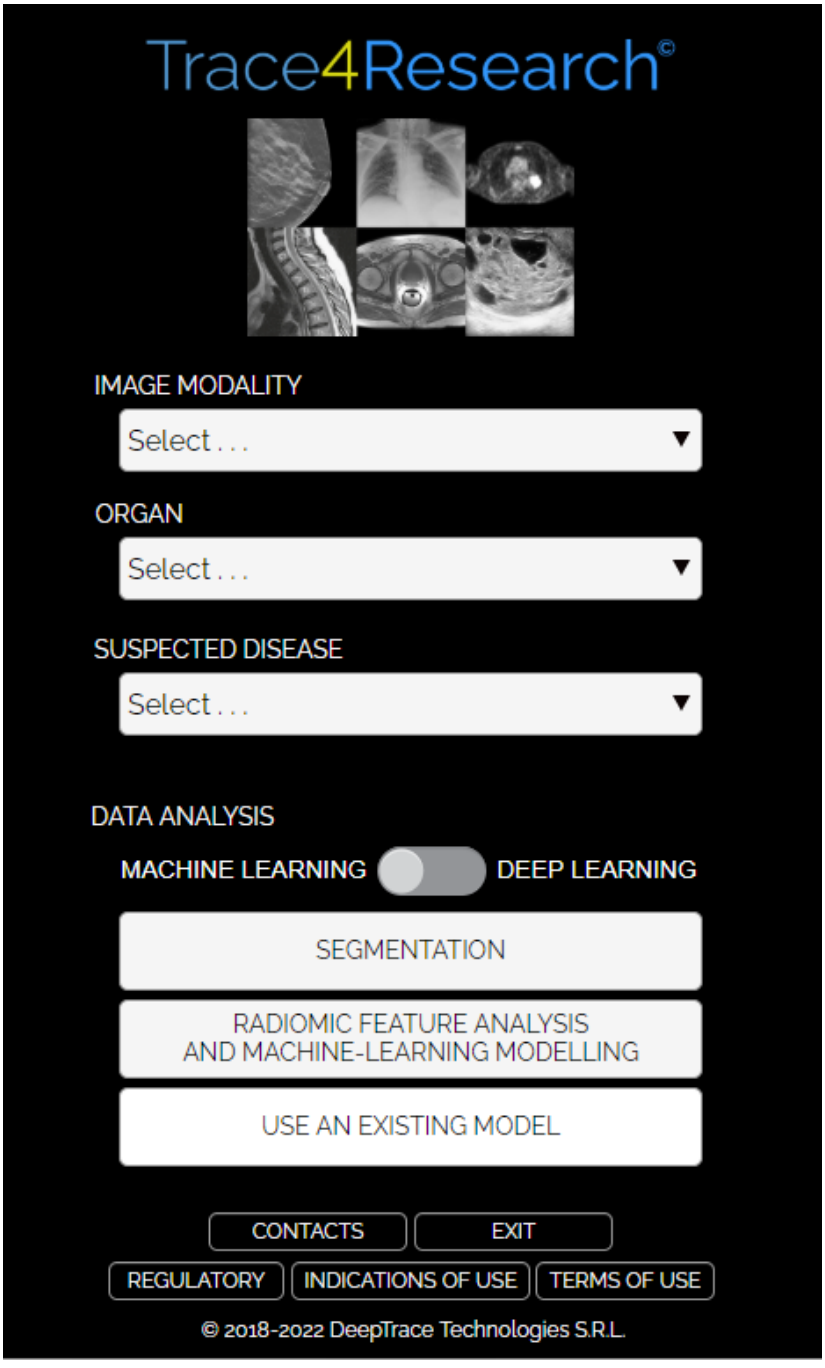
About DeepTrace Technologies S.r.l.
DeepTrace Technologies S.r.l. provides intelligent technologies that can enhance human sensing capabilities and timely predict major changes in global assets impacting society. Health is the main resource. Powered by artificial intelligence, DeepTrace Technologies offer low-cost, time-saving solutions. These are non-invasive, scalable, replicable, sustainable, and support user involvement in managing decisions that get understandable results. Medical device-certified AI software is delivered to healthcare professionals with a highly competitive time-to-market. DeepTrace Technologies received an investment of 1.7 million euros in 2021 from the Progress Tech Transfer investment fund, jointly subscribed by the European Investment Fund (Eif) and by Cassa Depositi e Prestiti (Cdp), ENPAIA and other private limited partners. More information on DeepTrace Technologies can be found at www.deeptracetech.com

About Ebit S.r.l.:
Ebit is an Esaote Group company focused on the development of enterprise diagnostic software solutions for Cardiology (Cath-lab, Echocardiography, ECG, Electrophysiology and Check-up), Cardiovascular Surgery, Radiology and Interventional Radiology. With a patient-focused approach, a vision on high quality services and a commitment to cost reduction, Ebit aims to support healthcare professionals with simplified digital workflows, advanced applications and effective integration of all software and the ways to improve multidisciplinary health services and the sharing of data on the territory by simplifying the mobility of information and the challenges of telemedicine. EBIT was ranked by Signify Research market analysts as one of the world's top ten cardiology IT providers. Further information on Ebit is available at www.esaote.com/healthcare_IT

Media Contacts:

DeepTrace Technologies S.r.l.:
press@deeptracetech.com

EBIT:
Mariangela Dellepiane, Head of Communications and External Relations Esaote
mariangela.dellepiane@esaote.com | tel.: + 39 010 6547249 – mob.: + 393351289783
Fede Gardella, Press Office +393358308666 – esaotepress@esaote.com


Trace4Research©
IMAGE MODALITY
Select . . .
ORGAN
Select . . .
SUSPECTED DISEASE
Select . . .
DATA ANALYSIS
MACHINE LEARNING
DEEP LEARNING
SEGMENTATION
RADIOMIC FEATURE ANALYSIS
AND MACHINE-LEARNING MODELLING
USE AN EXISTING MODEL
CONTACTS
EXIT
REGULATORY
INDICATIONS OF USE
TERMS OF USE
© 2018-2022 DeepTrace Technologies S.R.L.

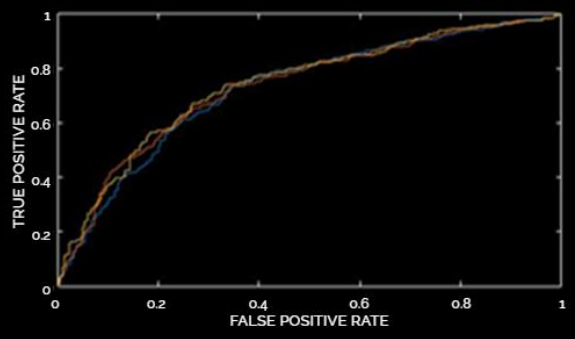
Trace4Research©

VIEW model report | VIEW manuscript | Radiomic quality score

Among the different radiomic machine-learning models trained, validated and tested with 598 images (299 from group 1 and 299 from group 2), the best model consists of 3 ensembles of 100 SVM systems, achieving the following mean performances:

	TRAINING	VALIDATION	INTERNAL TESTING
ROC-AUC (%) [95% CI]	79 [78-79]	74 [73-74]	73 [71-75]
ACC(%) [95% CI]	72 [72-73]	69 [68-69]	69 [67-71]
SEN (%) [95% CI]	73 [73-74]	70 [69-71]	70 [68-72]
SPE (%) [95% CI]	71 [71-72]	67 [66-68]	68 [63-73]
PPV (%) [95% CI]	72 [72-72]	68 [68-69]	68 [65-71]
NPV (%) [95% CI]	73 [72-73]	69 [69-70]	69 [68-70]

ROC Curve (from internal testing) for the best model (3 ensembles)



TEST model statistical significance | TRAIN this model with new settings | CLASSIFY image using this model