CELSUS®

We help doctors to help their patients

CELSUS - AI-SOFTWARE FOR ANALYSIS OF X-RAY AND CT STUDIES

CELSUS®

Clinical decision support system (CDSS) based on AI technologies for analysis of the digital medical images, detection of the regions of interests, and automatic interpretation of the results.
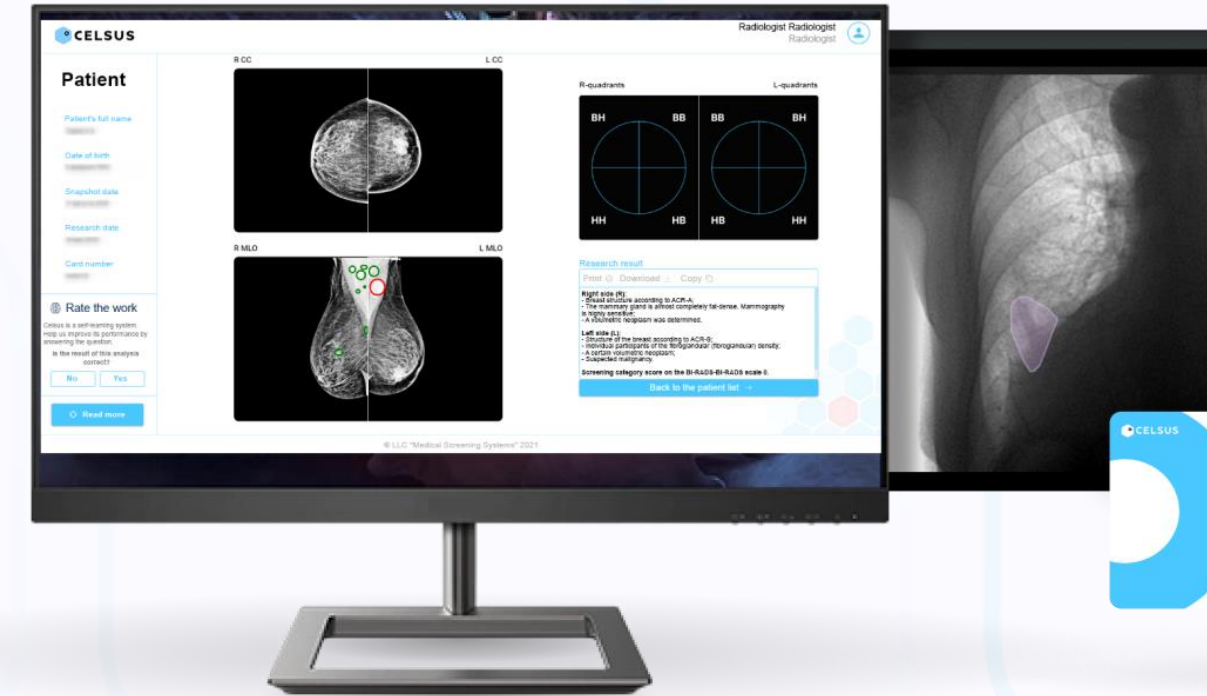
OUR SOFTWARE

CELSUS®
Mammography

CELSUS®
Brain CT

CELSUS®
CXR and fluorography

CELSUS®
Chest CT

Successfully analyzed > 6.5 million studies

Connected > 350 radiology departments

CELSUS - MEDICAL DEVICE

Confirmed and clinically proven:

✓ Efficiency   ✓ Safety   ✓ Quality

Celsus® Registration certificate No **RZN 2022/18855** submitted to the Unified Register of Russian Computer Software

Celsus® certified in EU. **CE Mark SK-CA-001/DVC-SK-21-06-000018**

Celsus® meets the requirements of the industry for the production of medical devices according to the **ISO 13485:2018**

ISO CERTIFIED 13485

CELSUS MAMMOGRAPHY

Celsus® analyzes mammograms, detects and highlights malignant and benign masses, suspicious calcifications, lymph nodes, determines the density of breast tissue according to ACR.
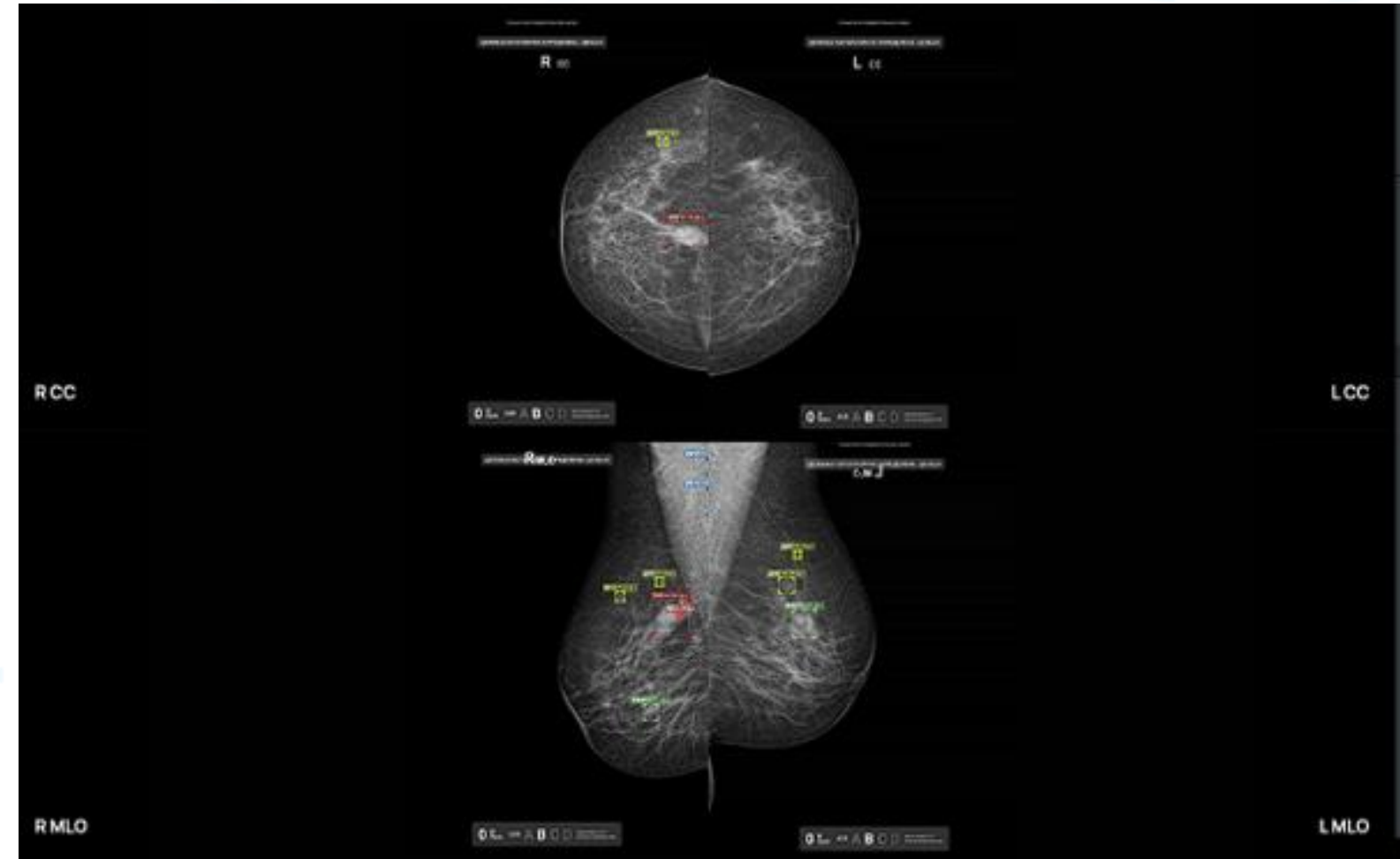
Celsus® forms a preliminary radiology report for the doctor.

AUC = 0.9+

The processing time of the study less than 1 minute

Sensitivity = 0.9+
Specificity = 0.8+

High-sensitivity scenario:
Sensitivity = 0.999+
Specificity = 0.4+

CELSUS CXR and FLUOROGRAPHY

**Celsus®** analyzes fluorograms and x-rays, detects and highlights pathological changes in the image

> Nodule/mass
> Dissemination
> Annular shadows
> Pleural effusion
> Pneumothorax
> Rib fractures

> Enlarged medinastium
> Hilar enlargement
> Infiltration/Consolidation
> Cardiomegaly
> Petrifications
> Atelectasis
> Fibrosis

AUC = 0.98

The processing time of the study less than 10 seconds

Sensitivity = 0.98
Specificity = 0.92

High-sensitivity scenario:
Sensitivity = 0.999+
Specificity = 0.65+
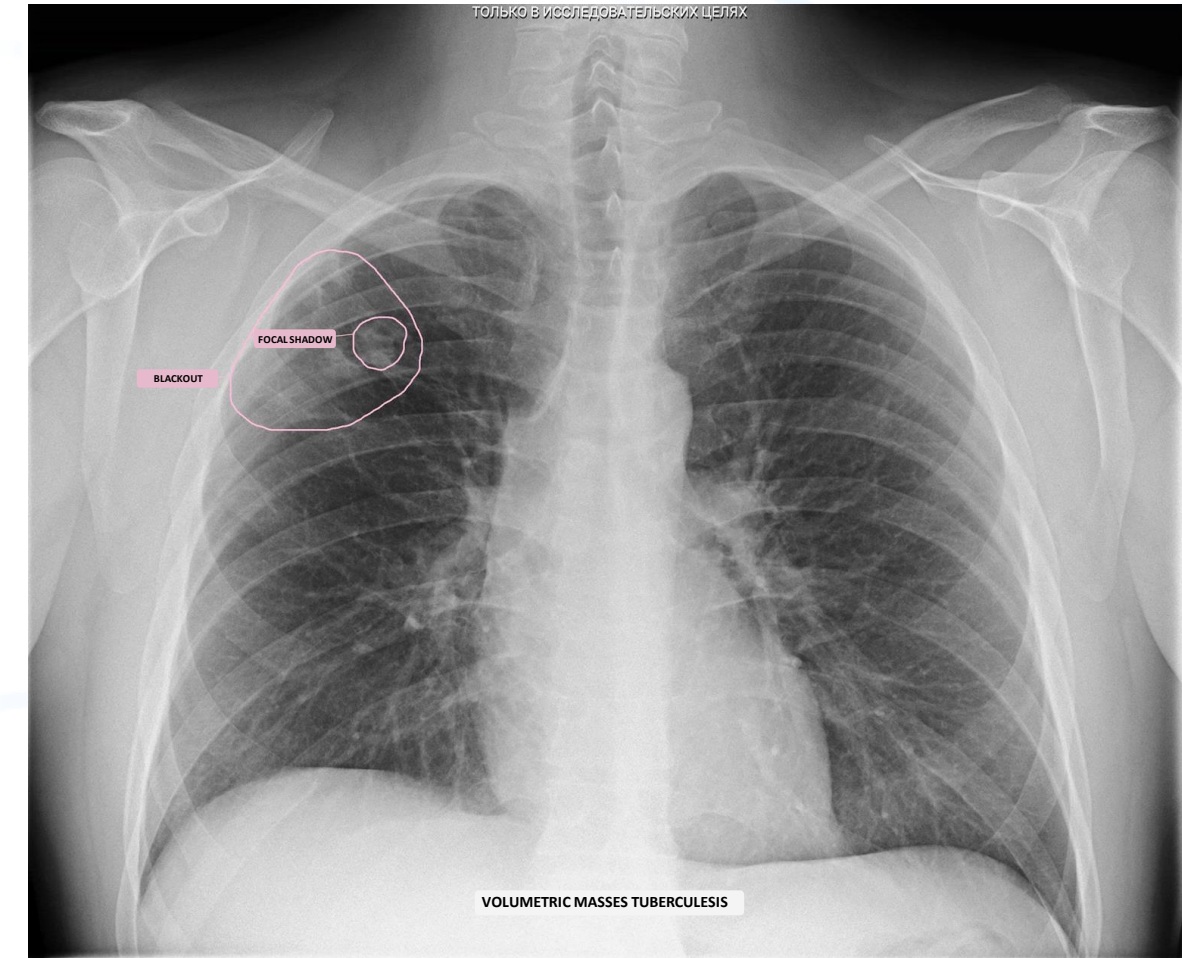
CELSUS CHEST CT

Celsus® analyzes chest CTs, detects and highlights pathological changes in the study, forms a preliminary conclusion for the doctor.

- Lung cancer
- Thoraic aortic aneurism
- Spinal compression fracture
- Pulmonary trunk dilatation
- Coronary calcium
- vertebrae with a degree of compression deformation of the body ≥ 25%

- COVID-19
- Pneumonia
- Pleural effusion
- Pulmonary emphysema
- Paracardial fat (epicardial + pericardial)
- Rib/rib fracture

AUC = 0.9+

Sensitivity = 0.9+
Specificity = 0.9+

**The processing time of the study less than 3 minutes**
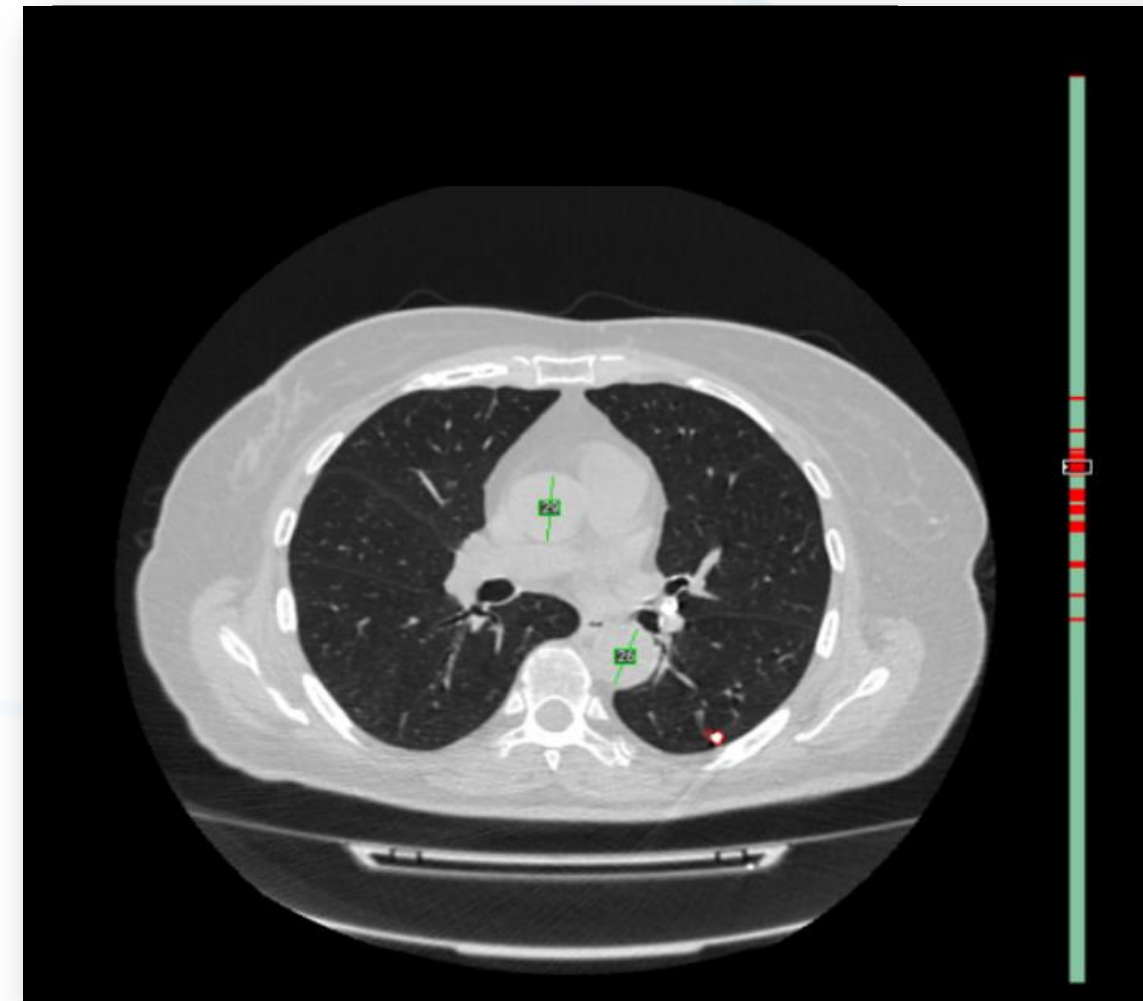
CELSUS BRAIN CT

The software analyzes brain CTs, highlights the contours of pathologies, calculates the hemorrhage volumes and generates preliminary radiology report. The main goal of the service is detection of hemorrhagic and ischemic strokes.

AUC = 0.94

Sensitivity = 0.93
Specificity = 0.90

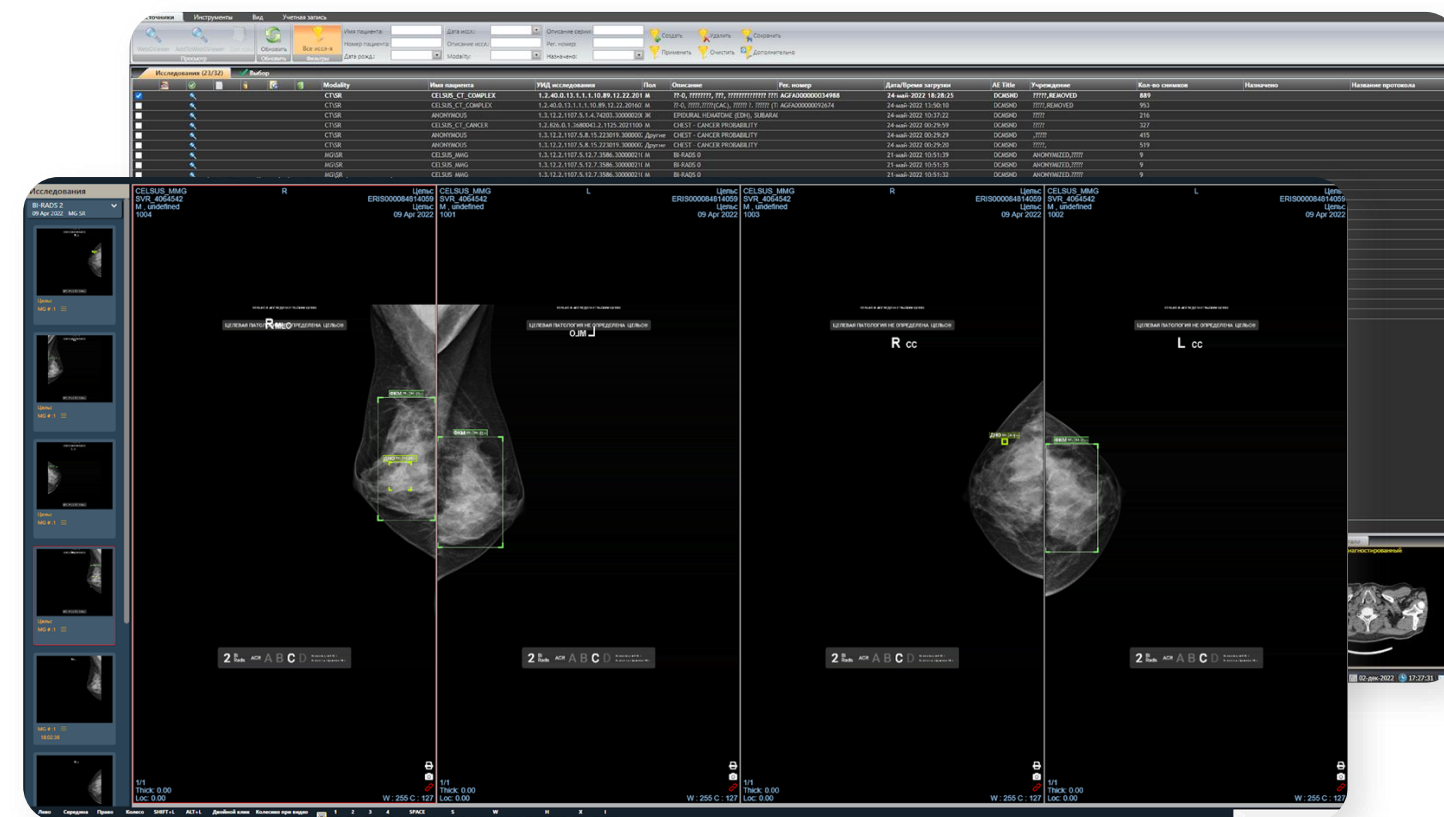**The processing time of the study less than 2 minutes**
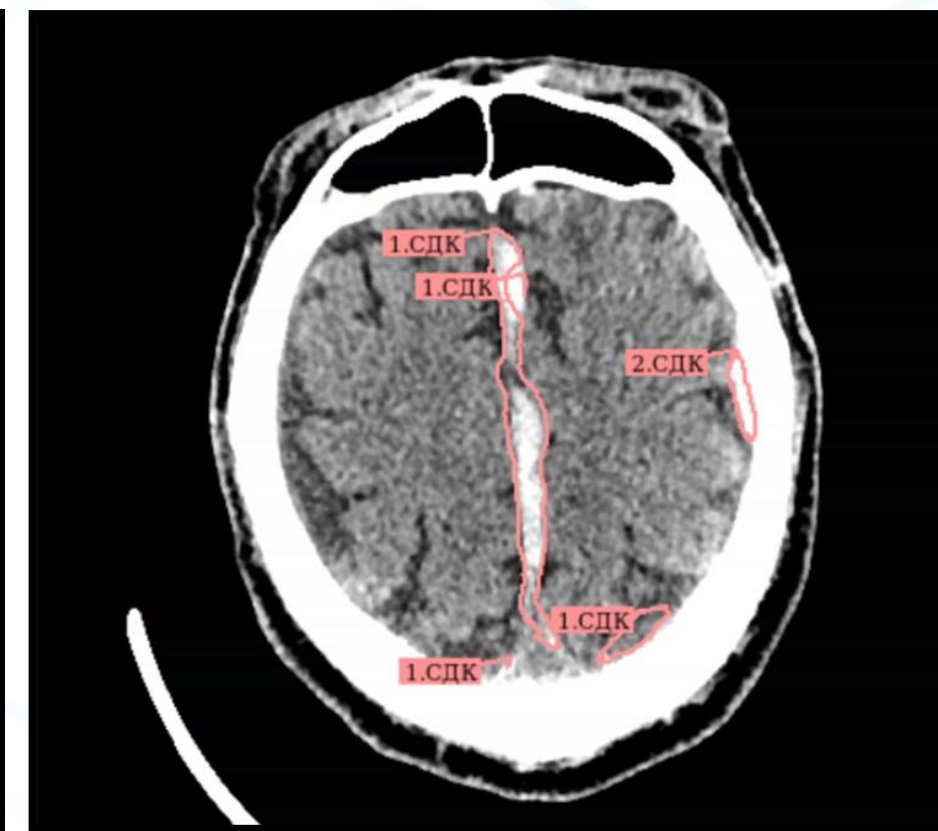
СДК - subdural hemorrhage
ВМК - intracerebral hemorrhage

Seamless integration

Celsus® is a professional solution for integrating with the hospital's existing IT infrastructure, ensuring a user-friendly experience.

✔ **Maximum convenience and flexibility**

✔ **The ability to tailor user scenarios**

✔ **No limitations on the quantity of equipment**

✔ **Transparent pricing**

Cloud integration scheme
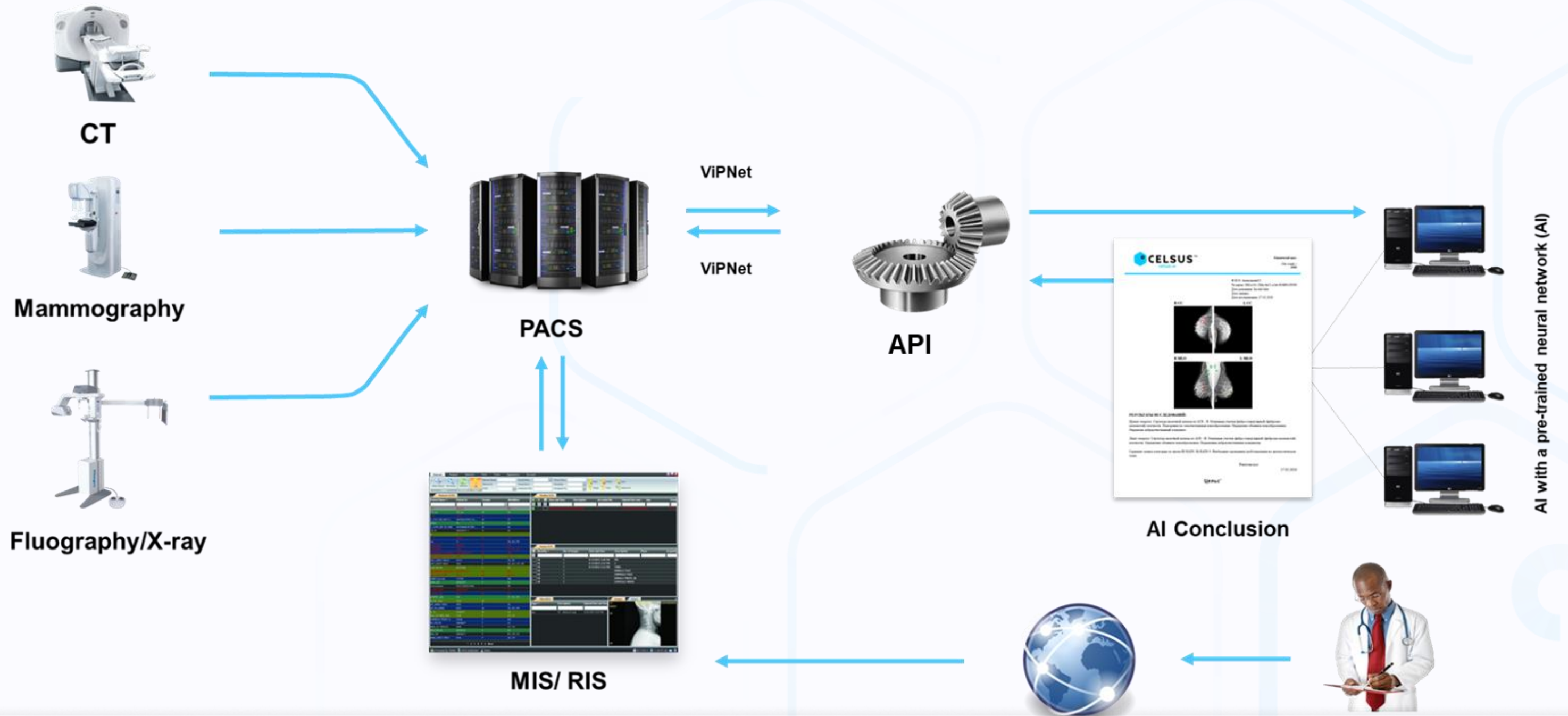
On-premise integration scheme

CT

Mammography

Fluography/
X-ray

AI software and hardware
for radiologists

AI report
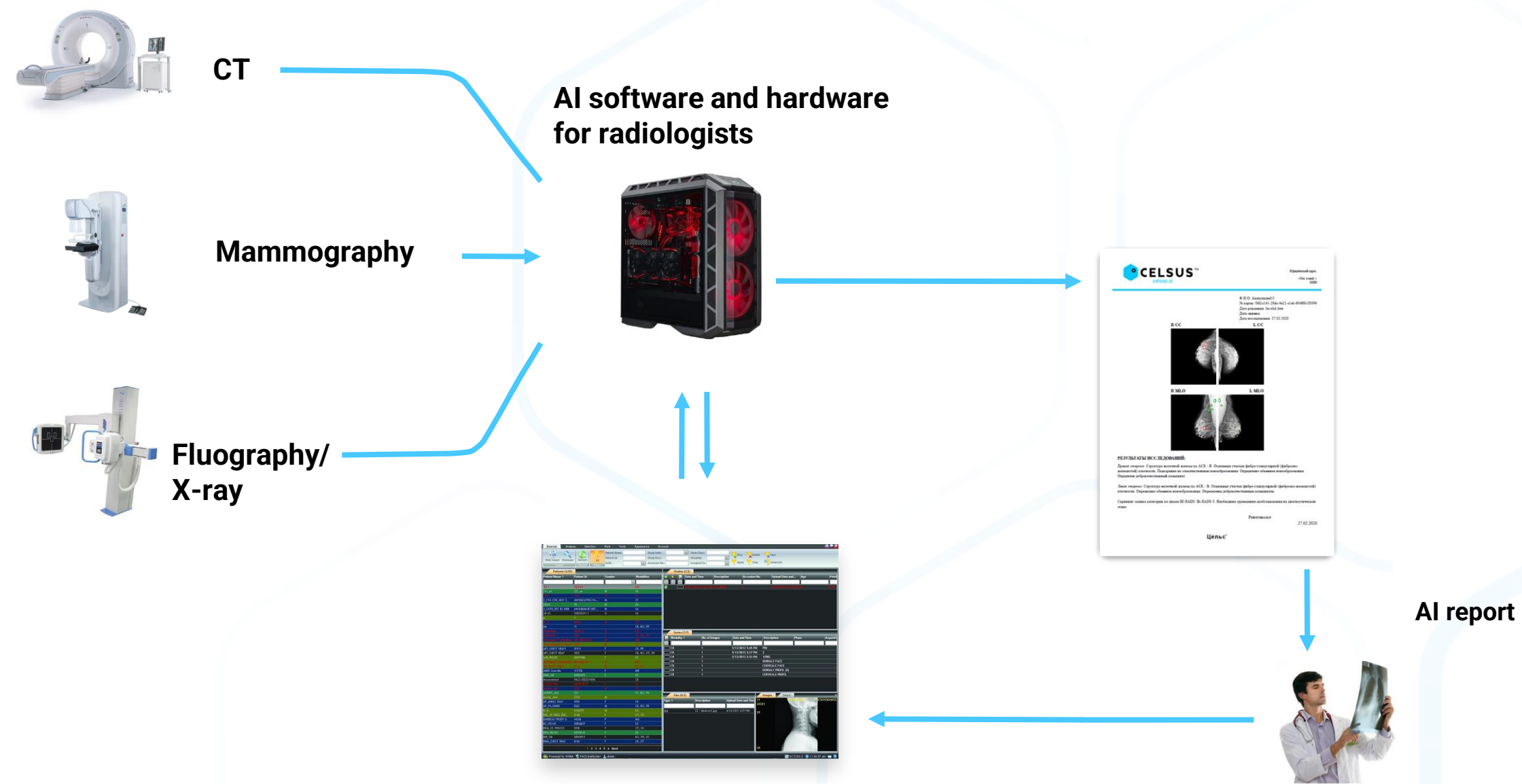
Geographical presence of Celsus

CELSUS®

6 countries

Celsus ® has gained widespread adoption in hospitals across the world

Separate legal entity in Dubai

More than 6.5 million studies have been analysed by Celsus.

More than 350 hospitals are connected to Celsus

Saudi Arabia

India

Russia

Pakistan

Belarus

Uzbekistan

Competition

Celsus® takes a leading position in the [Mosmed AI](#) (AI in radiology world largest experiment).
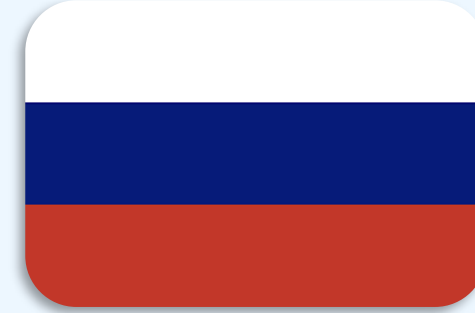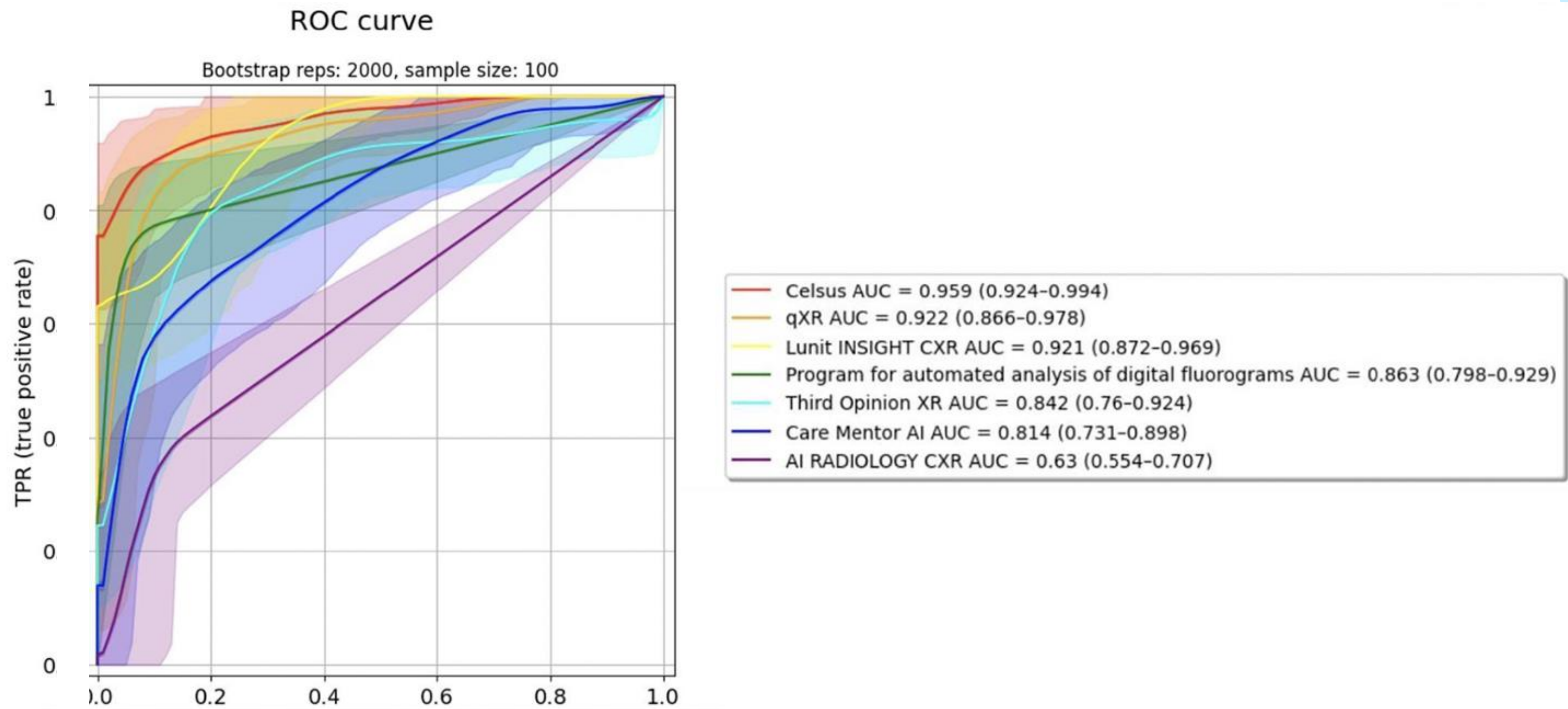
We demonstrated superior metrics in many external tests within Experiment and production use.

Current positions in rankings (prospective ROC-AUC + radiologists' feedback):
- Mammography - 1st place
- Chest X-ray and fluorography - 1st place
- Brain CT - 1st place
- Chest CT - 2nd place

Modality (MMG)	Celsus	Competitor1	Competitor2
AUC	**0.97**	0.84	0.90
Sensitivity	**0.96**	0.86	0.74
Specificity	**0.97**	0.78	0.94
Accuracy	**0.97**	0.81	0.84
Processing time	**0,95 min**	1,7 min	2,4 min

Modality (Brain CT)	Celsus	Competitor1	Competitor2
AUC	**0.96**	0.87	0.91
Sensitivity	**0.93**	0.85	0.82
Специфичность	0.90	0.82	**0.98**
Accuracy	**0.92**	0.83	0.90
Processing time	**0,99 min**	5 min	1,4 min

External comparison of lung nodule detection on chest X-rays (mosmed.ai)

ROC curve

Bootstrap reps: 2000, sample size: 100

TPR (true positive rate)

| Celsus AUC = 0.959 (0.924–0.994) |
| qXR AUC = 0.922 (0.866–0.978) |
| Lunit INSIGHT CXR AUC = 0.921 (0.872–0.969) |
| Program for automated analysis of digital fluorograms AUC = 0.863 (0.798–0.929) |
| Third Opinion XR AUC = 0.842 (0.76–0.924) |
| Care Mentor AI AUC = 0.814 (0.731–0.898) |
| AI RADIOLOGY CXR AUC = 0.63 (0.554–0.707) |

Automatic interpretation of chest X-rays with no significant findings

Current prospective metrics in Moscow:

- 74.86% of chest X-rays can be automatically reported as normal

- No more than 1 missed pathology for every 10k exams

74,86%   25,14%

Contact us

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Online demo