# Product Profile: Artelus

<table>
<thead>
<tr>
<th>Product Name</th>
<th>T-Xnet</th>
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<tbody>
<tr>
<td>Company</td>
<td>Artificial Learning Systems India Private Limited</td>
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<tr>
<td>Company HQ</td>
<td>Bangalore, India</td>
</tr>
<tr>
<td>Version</td>
<td>1</td>
</tr>
<tr>
<td>Website</td>
<td><a href="https://artelus.com/">https://artelus.com/</a></td>
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<tr>
<td>Demo</td>
<td><a href="http://xnet.artelus.com/">http://xnet.artelus.com/</a></td>
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<tr>
<td>Last updated</td>
<td>April 17th, 2020</td>
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## Description
T-Xnet is intended to mark regions of a chest x-ray with specific abnormalities associated with TB or pneumonia and alert radiologists and clinicians to these regions during image interpretation.

## Certification
Stage of development: Validation
Certification: pending

## Intended Age Group
18+ years

## Target Setting
Primary health centres, General hospital (above primary level), Teleradiology companies, Government/public sector, e.g. national TB program, Private sector

## Current Market
Currently not on the market.

## Input
Can be used to read images from any kind of chest X-ray machine.
- X-ray image format: JPEG, PNG, DICOM, TIFF
- Chest X-ray type: Posterior-anterior chest X-ray, Anterior-posterior chest X-ray, Lateral chest X-ray, Portable

## Output
Structured report including:
- Heat map,
- Probability score for TB,
- Probability score for the following pulmonary abnormalities: Atelectasis, Cavity, Mass, Nodule, Pleural effusion, Pneumothorax
### Deployment
- Offline only

### Hardware
- A computer with minimum 2 GM RAM and CPU with at least 2.3 GHz. (small stick computer will be sufficient)

### X Ray Machine Validation
- Optional: Fine tuning may be useful in certain scenarios. For this a dataset with a particular machine will need to be prepared.

### Software
- No external dependencies.

### Server
- Minimum 2GM RAM and CPU >= 2.3GHz

### Integration
- It is possible to integrate the product with the client’s legacy Picture Archiving and Communication System (PACS).

### Processing Time
- Maximum 10 seconds

### Data Sharing & Privacy
- Server location (for online product): Not applicable
- Data shared with manufacturer?: No
- De-identification (option to deidentify?): Yes

### Software Updates
- Frequency: Every 6 months
- Cost: Company will upgrade the software and either ship a replacement device since it is offline, or the device can be bought online where we can remotely upgrade it. Extra costs: None

### Price
- Flexible pricing models are available. Please contact company for quote: Rajarajeshwari K.: kraji@artelus.com

### Product Development
- Method: Supervised deep learning (CNN, RNN)
- Training: The product was trained on 120,000 chest X-rays from
<table>
<thead>
<tr>
<th>Reference Standard</th>
<th>Human Reader</th>
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<tr>
<td><strong>Publications</strong></td>
<td>Peer-reviewed publications are not yet available.</td>
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