annalise

Annalise CXR Edge

Administration Guide

English

Annalise CXR Edge

Fujifilm

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Overview

Introduction

This document shows you how to install and configure the Annalise CXR Edge product on a Jetson TX2i device.

Who

This document is for IT administrators and technicians responsible for the installation, configuration, and maintenance of Annalise CXR Edge. It is not intended to be used by clinical users.

For the clinical use of this product, please refer to the *Annalise CXR Edge User Guide.*

Note: Settings in the Admin Portal should only be changed by a modality technician in consultation with a clinical representative at your organisation.

Annalise CXR Edge overview

Annalise CXR Edge

Annalise CXR Edge interfaces with supported X-ray machines to obtain the chest X-ray images to process.

The Artificial Intelligence (AI) algorithm within the device uses deep learning techniques to identify the presence of the radiological findings. Annalise CXR Edge also uses deep learning to localise the position of the clinical findings, where possible.

Additionally, Annalise CXR Edge analyses the chest radiographs using deep learning techniques to identify the laterality or highlight the relevant areas of interest for a subset of findings as defined in the user guide.

Clinicians may view the AI findings within the X-ray machine or within a PACS image viewer.

Admin Portal

The Admin Portal for Annalise CXR Edge enables you to integrate Annalise CXR Edge into your existing infrastructure and customise the product to meet the needs of your organisation.

Compatibility requirements

Annalise CXR Edge is compatible with Fujifilm's X-ray machines which support the **External Image Processing** option.

Annalise CXR Edge is designed to be installed on an NVIDIA Jetson TX2i connected to a Connect Tech Orbitty carrier board. An Ethernet port must be available in the X-ray machine to have a wired Local Area Network (LAN) connection to the Jetson TX2i Orbitty carrier board.

Annalise CXR Edge will only identify suspected findings in digitised (CR) and digital (DX) chest X-ray studies taken in the anterior-posterior (AP) or posterior-anterior (PA) position.

The following warning is present in the modality:

'This image is created using an external image processing unit. Cannot make a diagnosis on the basis of only this image'

Supported capabilities

The following table outlines Annalise CXR Edge capabilities.

Supported items	Details
Supported browser	The Admin Portal for Annalise CXR Edge was built for and tested on the Internet Explorer 11 browser (i.e. all features are supported). Some features of the Admin Portal may not be supported on the following browsers: • Chrome 92 (and higher) • Firefox 90 (and higher) • Edge 92 (and higher)
Supported body part imaging	Chest X-ray
Supported DICOM transfer syntaxes	• 1.2.840.10008.1.2.1 - DICOM Explicit VR Little Endian • 1.2.840.10008.1.2 - DICOM Implicit VR Little Endian
Supported view types	AP (anterior-posterior) and PA (posterior-anterior)

Security and confidentiality

Annalise CXR Edge includes security features which prevent unauthorised and unlicensed use/modification of the product and IP theft.

During the installation process, admin credentials are used to install an encrypted software image on the target Jetson TX2i hardware (with secure boot enabled), preventing unauthorised users from accessing, overwriting, or modifying the software product.

Once the Jetson TX2i hardware has been flashed with the Annalise.ai-provided image, the Jetson TX2i hardware will be permanently locked into booting system images that have been cryptographically signed by Annalise.ai.

AI results and product licensing

Once installed, Annalise CXR Edge will only provide AI results if the product is licenced.

Licenced users can use the product for a predefined number of instances before the license expires (after which they will need to contact Annalise.ai for a new licence key).

Unlicensed users will not be permitted to process studies.

Install and configure Annalise CXR Edge

Overview

This section outlines the requirements for the installation and configuration of the Annalise CXR Edge product.

You will need to complete the following:

- prepare the host PC
- prepare the Jetson TX2i hardware
- flash Annalise operating system image
- integrate your X-ray machine

System requirements

The following components are required to create and flash the Operating System (OS) image into the Jetson TX2i:

Component	Requirements	
Operating system	Host PC with a native installation of Ubuntu 20.04 LTS. The following may be supported on a Windows workstation: • VMware Professional 16 (Ubuntu 16.04 LTS virtual machine) • VMware Player 16 (Ubuntu 16.04 LTS virtual machine)	
Internet connection	• Internet connection required during initial deployment	
Hardware		**Recommended**
	Host PC	• x86, 64-bit system • USB 3.x port • Ethernet port (to verify installation)
	Cables	• Micro USB cable (which connects host PC to the Jetson TX2i) • Ethernet network cable

Prepare host PC

Python 2.7.x must be installed on the host PC to run the scripts required to install the image into the Jetson TX2i.

Follow these steps to install Python 2.7.x on the host PC.

Note: The version of Python installed depends on the version of the Ubuntu OS on the host PC.

1. Type the following commands:

```
sudo apt-get update
sudo apt-get install -y python
```

2. Type the following command to verify that Python version 2.7.x has been installed:

```
python --version
```

Note: If the correct version doesn't display, use a host PC with Ubuntu 18.04 LTS.

3. Go to *Prepare Jetson TX2i hardware*, below.

Prepare Jetson TX2i hardware

Follow these steps to prepare the Jetson TX2i Orbitty carrier board for installation.

1. Refer to your Fujifilm user guide to see whether the Jetson TX2i has been installed on the X-ray machine.

If installed	Remove the cover of the Jetson according to the X-ray manufacturer's instructions
If **not** installed	Assemble the Jetson TX2i and Orbitty carrier board as per the X-ray manufacturer's instructions

2. Go to *Flash Annalise CXR Edge operating system image* on page 10.

Flash Annalise CXR Edge operating system image

The provisioning process requires a Jetson TX2i on an Orbitty carrier board which has not been flashed with a secure image of a product (other than Annalise CXR Edge).

Follow these steps to:

- connect the Jetson TX2i Orbitty carrier board to the host PC
- place the Jetson TX2i into recovery mode
- start the provisioning process
- flash the system image

Connect Jetson TX2i Orbitty carrier board to host PC

1. Switch the Jetson TX2i Orbitty carrier board power OFF.

   Note: The board must be powered OFF (not in a suspend or sleep state).

2. Remove the power cable to the JetsonTX2i Orbitty carrier board.

3. Connect the Jetson TX2i Orbitty carrier board to the host PC using a USB Micro-B to USB Type-A cable:
   - plug the Micro-B end into the USB OTG port on the Orbitty carrier board
   - plug the Type-A end into the host PC

   Note: Always connect all external peripheral devices before connecting the power supply. Connecting a device while it is switched on may damage the Orbitty carrier board or the Jetson TX2i.

4. Switch the JetsonTX2i Orbitty carrier board power ON.

Place JetsonTX2i into recovery mode

1. On the Jetson TX2i Orbitty carrier board:
   - press and hold the **Recovery** button
   - while holding the **Recovery** button, press and release the **Reset** button
   - wait two seconds then release the **Recovery** button

2. To verify that the Jetson TX2i is in recovery mode, type the following command to list the USB devices recognised by the host PC:

```
lsusb | grep NV
```

continued

3. Check whether the Jetson TX2i has successfully entered recovery mode.

   The following details should display:

Detail	Value	Refers to
'Bus'	Variable	A three-digit number assigned by the operating system to identify the USB Bus number.
'Device'	Variable	A three-digit number assigned by the operating system to identify the connected device.
'ID'	0955	NVIDIA manufacturer ID. Remains the same before and during recovery mode.
'Key number'	7018	A four-digit number that represents the type of Jetson module. (Highlighted in example above).

   For example:

```
Bus 001 Device 007: ID 0955:7018 NVIDIA Corp. T186 [Tegra
Parker]
```

If '**0955:7018**' displays	The Jetson TX2i has been detected and is in recovery mode. Go to *Start provisioning process* on page 12.
If '**0955:7020**' displays	The Jetson TX2i has been detected but it is not in recovery mode. Follow these steps: • see *Jetson TX2i doesn't enter recovery mode* on page 28 • once the Jetson TX2i has successfully entered recovery mode, go to *Start provisioning process* on page 12
If neither '**0955:7018**' or '**0955:7020**' display	The Jetson TX2i has not been detected. Follow these steps: • see *Jetson TX2i doesn't enter recovery mode* on page 28 • once the Jetson TX2i has successfully entered recovery mode, go to *Start provisioning process* on page 12

Start provisioning process

Annalise.ai will provide the relevant files required to complete the provisioning process (including username and password).

Note: Contact Annalise.ai Technical Support if you have not received these details.

1. To ensure that you can reach the Annalise.ai internet-based provisioning and licensing endpoint, type the following command:

```
curl https://api.ratchet-prod.annaliseai.io
```

Response received	Outcome
{"message":"Not Found"}	• you have made a valid connection • go to step 2
curl: (6) Could not resolve host: api.ratchet-prod.annaliseai.io	• you have not made a connection • check whether you have an internet connection, then go to step 1 and try again

2. Copy the following files (provided by Annalise.ai) into a directory:
   - *annalise-provisioning-cli-[version number]-linux-amd64*
   - *config.ini*
   - *Annalise CXR Edge software image (*.img)*

   Note: Ensure that you are using the latest version of the Annalise CXR Edge software (version 1.0.1.002). The provisioning process will fail if older versions of the software image are used on Jetson TX2i boards which have updated DRAM modules.

3. Check that the *config.ini* file contains the following (ensure the API host is set to 'prod'):

```
[settings]
# API hostname (prod or dev)
api_host=api.ratchet-prod.annaliseai.io
# Flash config to use
flash_config=cti/tx2i/orbitty/base
```

continued

4. Type the following command in the folder:

```
chmod +x annalise-provisioning-cli-1.0.2-linux-amd64
sudo ./annalise-provisioning-cli-1.0.2-linux-amd64
```

5. When prompted, type the username and password (provided by Annalise.ai).
6. Copy and paste the filename of the software image, then wait for the decryption process to finish.
7. When the *'Burn fuses*?' message displays, go to *Flash Annalise CXR Edge software image*, below.

Flash Annalise CXR Edge software image

This section shows you how to run a script to install the Annalise CXR Edge software image into the Jetson TX2i.

The Jetson TX2i contains fuses that once 'burned' will prevent unauthorised users from modifying or overwriting the software image in the device.

Once the Annalise CXR Edge software image has been installed and the fuse burned, the Jetson TX2i will be permanently locked to allow Annalise.ai software only (and cannot be used for other software applications).

Note: Future revisions of the Annalise CXR Edge software image can be installed in a Jetson TX2i with burned fuses.

1. For the first flash, determine whether the Jetson TX2i fuses have been burned previously (the Jetson TX2i will inform you of this).

   Note: The following step will permanently lock the Jetson TX2i to allow Annalise CXR Edge software only.

If the fuses have not been burned previously	• type 'Yes' • wait for the following message to display: '*Jetson board fuse burnt successfully*' • you will be prompted to place the device back into recovery mode See *Place JetsonTX2i into recovery mode* on page 10. • once the device is in recovery mode, press any key to begin flashing Note: If the fuses have been burned previously, an error message will display. If so, restart the provisioning tool (see *Start provisioning process* on page 12).
If the fuses have been burned previously	• type 'No'

continued

2. Wait for the flashing of the Annalise CXR Edge software image to complete, then check whether it has flashed successfully.

If the following message displays on the host PC: '*Jetson Board Image Flashed Successfully*'	The Annalise CXR Edge software image has flashed successfully. The Jetson TX2i will then: • automatically restart (this will take about two minutes to complete) • exit recovery mode, and • enter normal mode. Annalise CXR Edge will be ready to accept requests from the Fujifilm console when the restart is complete.
If the message above does not display on the host PC	The Annalise CXR Edge software image has not flashed successfully. See *Annalise CXR Edge software image doesn't flash successfully into the Jetson TX2i* on page 28.

Integrate with your X-ray machine

The Annalise CXR Edge product supports anterior-posterior (AP) and posterior-anterior (PA) chest X-rays. Other projections or body parts are not supported by the product.

The X-ray machine manufacturer's software must therefore be configured to only allow AI analysis to be performed on supported body parts and projections.

To integrate Annalise CXR Edge with the X-ray machine, follow the X-ray manufacturer's instructions.

This section shows you how to:

- set up the X-ray machine's configuration file
- save the Annalise CXR Edge AI analysis output as a DICOM secondary capture

continued

Set up X-ray machine's configuration file

To set up the X-ray machine's configuration file, follow the manufacturer's user guide.

Annalise CXR Edge uses the following configuration:

```
IPAddress=192.168.0.15:8000

APP=annalise_cxr
UploadImageURL=http://{IPAddress}/{APP}/dcm/
PredictURL=http://{IPAddress}/{APP}/models/latest/predict/

ImageURL=http://{IPAddress}/{APP}/predictions/{PredictUID}/
heatmap /
ReportURL=http://{IPAddress}/{APP}/predictions/{PredictUID}
/report/
```

Setup item	Description
IPAddress	The IP address of the Jetson TX2i and the port number (to be used in the API routes). Note: The IP address of the Jetson TX2i is set during the flashing process.
APP	The product identifier (to be used in the API routes).
UploadImageURL	The API route to upload an image from the FDR console to Annalise CXR Edge for AI analysis.
PredictURL	The API route to execute AI processing.
ImageURL	The API route to get the image output from Annalise CXR Edge into the FDR console.
ReportURL	The API route to get text output from Annalise CXR Edge into the FDR console.

Save Annalise CXR Edge AI analysis as DICOM secondary capture

Annalise CXR Edge AI analysis can be sent as a secondary capture DICOM for insertion into a PACS, if the X-ray machine is configured to do so.

When Annalise CXR Edge output is sent as a secondary capture DICOM:

- the image output containing the AI findings will be an image within the DICOM, and
- the descriptive text (product name, version and licence details) will be embedded as a tag in the DICOM file.

Note: Refer to the manufacturer's instructions to see whether the X-ray machine can be configured to complete this process.

Log in to Admin Portal and access settings/options

Log in to Admin Portal

To log in to the Admin Portal, open a web browser and type 'http://192.168.0.15:8080' in the address bar.

Note: If you have access issues, see *Annalise CXR Admin Portal doesn't load on Fujifilm console web browser* on page 29.

If you have tried all troubleshooting options but still need help, contact support@annalise.ai.

Access settings/options

To access Annalise Enterprise CXR Edge settings/options, log in to the Admin Portal (see *Log in to Admin Portal*, above).

Setting option	Details
Product license	A valid product license must be entered and activated before you can use the Annalise CXR Edge product. Product licenses are linked to the product's serial number and display on the *License* page in the Admin Portal. To generate and activate the license key, see *Activate system license* on page 18.
Language	The language setting applies to both the Annalise CXR Edge product and the Admin Portal. Go to the **Language** dropdown and select the required language. Your selected language will be applied immediately. Note: Currently the available language is English. Other languages may be supported in a future release.
Product information	To display the Annalise CXR Edge software version and serial number, click **Annalise CXR Edge** on the menu bar.
AI findings configuration	You can configure the display of the Annalise CXR Edge findings to meet your user's requirements. The default setting includes three groups: • two clinical findings groups ('Priority' and 'Other'), and • a technical findings group ('Technical'). You can enable/disable technical or clinical findings and edit the clinical findings groups. See *Configure findings* on page 22.

continued

<table>
<tr><th>Setting option</th><th>Details</th></tr>
<tr><td>Log files</td><td>Three types of log files are available:

<table><tr><th>Log file</th><th>Includes</th></tr><tr><td>access.log</td><td>API responses when Annalise CXR Edge is used</td></tr><tr><td>error.log</td><td>Any errors from Annalise CXR Edge</td></tr><tr><td>app.log</td><td>Other details such as debugs and warnings</td></tr></table>
A maximum of four log files will be stored for each log file (the oldest file will be automatically replaced with the most recent file).

Files can be a maximum 5MB each.

To access the log files, click Logs on the menu bar, then click the relevant file. The file will be downloaded to your computer.</td></tr>
</table>

Activate system license

Overview

This process shows you how to activate a system licence for Annalise CXR Edge via the Admin Portal.

See *Product license* on page 16.

License key requirements

The following details are required to generate a license key:

- license generator command line tool *(supplied by Annalise.ai)*
- username and password *(supplied by Annalise.ai)*
- Jetson TX2i serial number
- license type

An internet connection is also required.

Activate system license

Follow these steps to activate a system license:

- determine the Jetson TX2i serial number
- determine the license type required
- generate a license key
- enter the license key into the Admin Portal

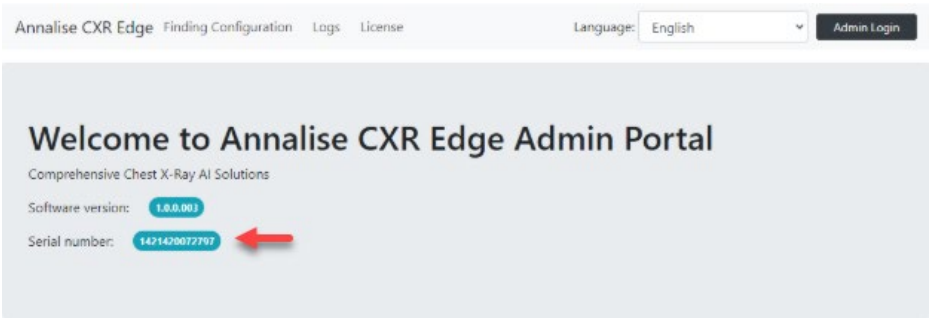
Determine Jetson TX2i serial number

1. Log in to the Admin Portal.

   See *Log in to Admin Portal* on page 16.

2. Click **Annalise CXR Edge** on the menu bar.

   The Jetson TX2i serial number displays:



Determine license type

There are three product licence types: Comprehensive, Critical Care and Demo-Comprehensive.

Refer to the table below to determine the license type that you require.

License type	Details
Comprehensive	Includes 40,000 studies that can be used to detect all AI findings listed in the *Annalise CXR Edge User Guide*. When this licence expires, a new licence can be generated and activated.
Critical Care	Includes 40,000 studies that can be used to detect a subset of AI findings, identified in the *Annalise CXR Edge User Guide*. When this licence expires, a new licence can be generated and activated. The Critical Care licence also comes with a Comprehensive Trial which gives access to 1000 studies that can detect all AI findings listed in the *Annalise CXR Edge User Guide*. The Comprehensive Trial can be activated and deactivated manually via the **Licence** option on the menu bar. The remaining studies in the Comprehensive Trial are maintained across activations and deactivations. Once the Comprehensive Trial expires or has been deactivated, only findings in the Critical Care package will be available.
Demo-Comprehensive	Provides access to 100 studies that can be used to detect all findings listed in the *Annalise CXR Edge User Guide*.

Generate license key

Use the host PC that you used for flashing to run the license generator tool.

1. Run the license generator command line tool supplied by Annalise.ai:

```
sudo ./get-license-linux-amd64
```

2. When prompted:
   - authenticate using the username and password supplied by Annalise.ai
   - type the serial number of the device to be licensed
   - type the license type required for this device (see *Determine license type*, above)

   The licence key will display on the terminal and a file will be generated in the folder from which the licence generator tool was run.
3. Repeat the previous step for all Jetson TX2i devices to be licensed.
4. Copy the file created by the licence generator tool – which contains the licence key – into the X-ray machine (e.g. via USB).

   Go to *Enter license key* on page 20.

Enter license key

1. Go to the Admin Portal.
2. Click **License** on the menu bar.
3. Type the license key in the **Please input your license number** field, then click **Submit**.

   Note: If you are unable to enter the license key, see *License activation has been locked* on page 30.
4. Check whether the license key has been activated.

If the licence key has been activated	The following details will display: • license state ('Licensed') • license type (**Package**) • maximum number of studies for the selected license type • used studies • remaining studies
If the licence key has not been activated	See *License key doesn't activate* on page 30.

5. Once you have successfully activated the system license, go to *Prepare product for clinical use* on page 21.

Prepare product for clinical use

Prepare for clinical use

Before using Annalise CXR Edge in a clinical environment, your IT/infrastructure team must complete the following steps.

1. Work with a clinical representative from your organisation to configure the product according to their needs.

   See *Configure findings* on page 22.

2. Ensure clinicians have access to:
   - the *Annalise CXR Edge User Guide* via the Annalise.ai website (*www.annalise.ai/guides*), and
   - workstations which can access and display the guide.

3. Perform all tests outlined in *Verify installation and configuration* on page 25.

Configure findings

Overview

You can configure the display of Annalise CXR Edge AI findings to meet the needs of clinical users.

See *AI findings configuration* on page 16.

Note: The following settings should only be modified at the direction of a clinical representative from your organisation.

Adjust sensitivity and specificity

As part of the deployment and on-boarding process, Annalise.ai will manage the model thresholds in consultation with your IT/infrastructure team.

Contact Annalise.ai Technical Support if you need these thresholds to be adjusted.

Configure the findings list

This topic shows you how to:

- enable/disable findings and edit findings groups
- download settings configuration
- restore settings

Changes made to the findings list configuration will be reflected on the image response in the Fujifilm console.

Enable/disable findings and edit findings groups

1. Log in to the Admin Portal.

   See *Log in to Admin Portal* on page 16.

2. Click **Finding Configuration** on the menu bar.

   The *Finding Configuration* page displays.

continued

3. Refer to the following table to configure the findings list as required.

Option	Details
Enable or disable findings	Click the toggle next to the finding name to either enable or disable the finding. Note: If a finding is disabled, it won't display (even if detected).
Rename title of finding group	Click the 'pencil' icon next to the finding group title, then type the new title.
Change order of findings within a group	Click the 'hamburger' (three horizontal line) icon beside the relevant finding, then drag and drop the finding into the relevant location.
Move findings within groups	Either: • click the **Move to** field beside the finding, then select the group to which you want to move the finding, or • click the 'hamburger' icon beside the relevant finding, then drag and drop the finding into the relevant group.
Reset settings	You can restore the findings to their original settings. See *Restore settings* on page 24.

4. Once you have finished, click **Submit**.

   The following will occur:
   - a message will display to confirm your changes, and
   - the image response on the Fujifilm console will reflect the updated findings configuration.

Download settings configuration

You can download the settings you have changed. This file can then be imported into later versions of Annalise CXR Edge.

The content of the downloaded file will be encrypted.

1. At the bottom of the *Finding Configuration* page, click **Download**.

   The file will be downloaded into the FDR console in the X-ray machine.

Restore settings

Follow these steps to restore the default findings configurations.

1. Click **Finding Configuration** on the menu bar.
2. At the bottom of the screen, click **Reset**.

   The following occurs:
   - a message will display to confirm your changes, and
   - the image response on the Fujifilm console will reflect the default findings configuration.

Verify installation and configuration

Overview

To ensure that the product is operating correctly, complete the following tests after each installation.

If the expected result does not occur, refer to the troubleshooting section for each test or contact Annalise.ai Technical Support.

CAUTION

The product is not safe for clinical use if the following tests do not demonstrate the expected results.

The product should remain disabled or disconnected from the Fujifilm console until these tests are successful.

Tests

The following tests are used to verify installation and configuration:

- *Test 1: Verify that the Annalise CXR Edge Admin Portal is accessible*
- *Test 2: Load and run AI processing on a study using the Fujifilm console*
- *Test 3: Access User Guide*

Test 1: Verify that the Annalise CXR Edge Admin Portal is accessible

Use this test to check that users can access the Admin Portal.

Action	Details
Test	Follow these steps: 1. Connect the Jetson TX2i Orbitty carrier board to the Fujifilm console using an Ethernet cable. 2. Open Internet Explorer 11 web browser on the Fujifilm console. 3. Type 'http://192.168.0.15:8080' in the address bar. Note: Port 8080 is used to accesses the Admin Portal.
Expected result	The following should occur: • the Annalise CXR Edge Admin Portal loads successfully • the software version and serial number of the Jetson TX2i display on the Fujifilm console.
Troubleshooting	Problem: The Admin Portal does not load on the Fujifilm console Refer to: *Annalise CXR Admin Portal doesn't load on Fujifilm console web browser* on page 29.

Test 2: Load and run AI processing on a study using the Fujifilm console

Use this test to check that an image response with identified findings (if available) displays for a study on the Fujifilm console.

<table>
<tr><th>Action</th><th>Details</th></tr>
<tr><td>Test steps</td><td>Follow these steps:
1. Go to the Admin Portal and click License on the menu bar.
2. Ensure that a license is activated.
If activated, the following details will display:
- License state (‘Licensed’)
- Package (license type)
- Maximum number of studies (number of studies for the license type)
- Used studies (number of studies used for the licence type)
- Remaining studies (number of studies for the license type)
3. Load either an AP or PA chest X-ray study in the Fujifilm console.
4. Click the Execute external image processing button on the console.</td></tr>
<tr><td>Expected result</td><td>The following should occur:
• on the Fujifilm console:
- an image response displays with the Annalise branding
- the Findings panel displays with any identified findings (if available)
• the following Fujifilm warning displays on the console:
‘This image is created using an external image processing unit. Cannot make a diagnosis on the basis of only this image’</td></tr>
<tr><td>Troubleshooting</td><td><table><tr><th>Problem</th><th>Refer to</th></tr><tr><td>The operation to execute the external image processing fails</td><td>Failed to execute external image processing on page 30.</td></tr><tr><td>The operation executes but there are no findings present</td><td>Follow the test steps above using a different study.</td></tr><tr><td>The Fujifilm warning does not display</td><td>Contact Annalise.ai Technical Support.</td></tr></table></td></tr>
</table>

Test 3: Access User Guide

Use this test to ensure that the *User Guide* can be accessed and opened in a PDF reader.

Action	Details
Test steps	Follow these steps: 1. Go to a clinical workstation and open the *Customer resources* page in a web browser *(www.annalise.ai/guides)*. 2. Under Annalise CXR Edge (Fujifilm), click **Annalise CXR Edge Guides**. 3. Click the **User Guide** option.
Expected result	The *Annalise CXR Edge User Guide* opens in a PDF reader on the workstation.
Troubleshooting	**Problem** / **Action** The *User Guide* cannot be opened/is inaccessible — Contact Annalise.ai Technical Support.

Troubleshooting

Problems and solutions

If you have issues with the Annalise CXR Edge product, refer to the details below. If you can't resolve the issue, contact Annalise.ai Technical Support.

Jetson TX2i doesn't enter recovery mode

Root cause	Steps to resolve
The USB connection between the host PC and the Jetson TX2i may not have been established	1. Switch the Jetson TX2i power OFF. 2. Reconnect the USB cable (ensure that both ends of the cable are securely inserted into the USB ports). 3. Place the carrier board into recovery mode. See *Place JetsonTX2i into recovery mode* on page 10. 4. If the symptom persists, retry the steps above using a new USB cable.
The button press sequence to trigger the Jetson TX2i may be incorrect	Place the carrier board into recovery mode. See *Place JetsonTX2i into recovery mode* on page 10.

Annalise CXR Edge software image doesn't flash successfully into the Jetson TX2i

Root cause	Steps to resolve
The Jetson TX2i may not have entered recovery mode before attempting to flash the Annalise CXR Edge software image	1. Connect the carrier board to the host PC. See *Connect Jetson TX2i Orbitty carrier board to host PC* on page 10. 2. Place the carrier board into recovery mode (then verify that this has occurred). See *Place JetsonTX2i into recovery mode* on page 10.
The Jetson TX2i environment may be in an unknown or undesirable state	1. Manually power cycle the board to clear the board status. 2. Flash the Annalise CXR Edge software image. See *Flash Annalise CXR Edge operating system image* on page 10.
An older version of the Annalise CXR Edge software image may have been used to flash the Jetson TX2i (which has updated DRAM modules)	1. Flash the Jetson TX2i with the latest version of the Annalise CXR Edge software image.

continued

Root cause	Steps to resolve
The Annalise CXR Edge software image may be corrupted	1. Run the following command on the host PC Ubuntu to generate a checksum from the Annalise CXR Edge image file (provided by Annalise.ai): *'md5sum [AnnaliseCXREdgeImage].img'* (Where '[AnnaliseCXREdgeImage]' is the Annalise CXR Edge image file name). 2. Ensure that the generated checksum matches the checksum provided by Annalise.ai.
You may have tried to burn fuses in a Jetson TX2i where the fuses have already been burned	1. Restart the provisioning tool. See *Start provisioning process* on page 12. 2. When the 'Burn fuses?' prompt displays, type 'No'.

Annalise CXR Admin Portal doesn't load on Fujifilm console web browser

Root cause	Steps to resolve
The network connection between the Fujifilm console and the Jetson TX2i may not have been successfully established	1. Reconnect the Ethernet network cable. 2. Ensure that both ends of the cable have been securely inserted into the Ethernet ports. 3. Reattempt to connect to the Jetson TX2i on *http://192.168.0.15:8080*.
The IP address and/or port may not have been entered correctly	Ensure that the Jetson TX2i IP address is entered in the URL (with port 8080): *http://192.168.0.15:8080*
The Jetson TX2i may still be rebooting (after flashing the Annalise CXR Edge software image)	1. Wait until the Jetson TX2i has rebooted (this process will take approximately two minutes). 2. Reattempt to connect to the Jetson TX2i on *http://192.168.0.15:8080*.
The Annalise CXR Edge software image may not have been flashed successfully	Flash the Annalise CXR Edge software image. See *Flash Annalise CXR Edge operating system image* on page 10.
The Orbitty Carrier board is not switched on	1. Check that the LED lights are visible on the Orbitty Carrier board. 2. If LED lights are not on, ensure the power supply is connected correctly.

Failed to execute external image processing

Root cause	Steps to resolve
Console configuration file may be incorrectly setup	1. Ensure that the IP address and port in the console configuration file is set to '192.168.0.15:8000'. 2. Check that the remaining content of the console configuration file conforms to the specifications in the Fujifilm's service manual.
The Fujifilm console may not be configured as required	Refer to the Fujifilm's service manual to check that the console is configured as required to interface with Annalise CXR Edge.
No power	Switch the Jetson TX2i power ON.
No connection	Connect the Fujifilm console to the Jetson TX2i using an Ethernet cable or retry using a new cable.
Unsupported image type	See *Supported capabilities* on page 7.

License key doesn't activate

Root cause	Steps to resolve
Invalid license key entered	Check that you have entered the license key correctly.
The license key is unique to a specific serial number (S/N)	Check that the license key is intended for the Jetson TX2i serial number (S/N) that requires a license.
The license key is already activated	If the license key has already been used to activate the Jetson TX2i, further attempts will be ignored. If you want to change the license type, contact Annalise.ai Technical Support.
Study count has been reached and the license key has expired	Contact Annalise.ai Technical Support to obtain a new license key.

License activation has been locked

Root cause	Steps to resolve
The Admin Portal accepts a maximum of 20 invalid license activation attempts only	Contact Annalise.ai Technical Support.

Support and feedback

Refer to the following table for support and feedback details:

Support type	Details
Professional services, technical support, product feedback and complaints	Email *support@annalise.ai* Any serious incidents related to Annalise CXR Edge should be reported to Annalise.ai and the competent authority or regulatory authority in which the user and/or patient is established.
Product user, performance and administration guides	Check our website: *annalise.ai/guides*

Symbol glossary

Definitions of symbols that may appear on the Annalise CXR Edge product or in the related documentation are listed below.

Symbol	Information
	CE labelling in accordance with EC directive
	Manufacturer
	European Authorised Representative
	Indicates a warning or caution
	Read the instructions for use
	Medical Device

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