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BiAA Upgrade Instruction

BiAA Introduction

BiAA – Built-in AEC Assistance

With BiAA, AEC exposures can also be performed for non-Bucky imaging, eliminating the need for manual exposure settings and thereby reducing the risk of retakes and extra patient dose.

For Bucky imaging the built-in AEC chamber is still used.

BiAA is available with the following detectors:

- CXDI-420C Wireless
- CXDI-720C Wireless
- CXDI-820C Wireless

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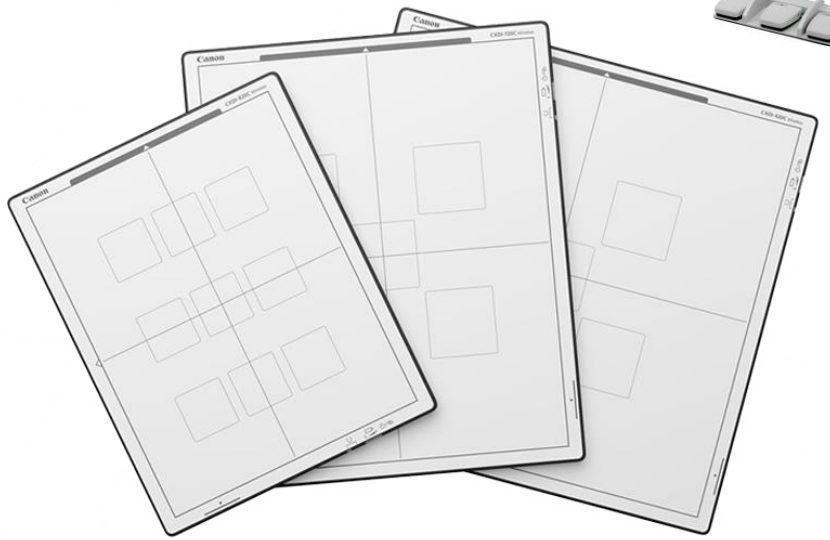
BiAA –
System Requirements

Basic Requirements for upgrade:

- Arcoma system with Canon Elite detector & Multibox MB-02.
- Canon NE 3.10 SW or later *> Shall be upgraded to version according to Arcoma Software Release note*
- Latest Arcoma SW (see Arcoma Partner portal) and correspodning / compatible Softwares Canon and CPI.



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BiAA Upgrade: Preparation

1) **Download from ARCOMA Partner portal**
   a) BiAA Upgrade Instruction (*this*)
   b) BiAA package (Software, xml-file, text-file)
   c) System Software for Latest Version Upgrade

2) **Collect information from hospital + Update SW** → Info
   > Hospital Visit or by Remote Access
   a) Upgrade system with Canon *BuiltInAECAssistance SW* and Generate a Canon License Request File with BiAA option selected.
   b) Create a copy of the CANONKIT.txt-file.
   c) Check CPI generator serial number and System ID.

3) Place an order to Arcoma
   Article number: 0073-815-011 Upgrade BiAA
   We need the following information from you:
   a) Serial number of the system
   b) Serial number and System ID of the generator
   c) CANONKIT.txt-file
   d) Canon License Request File (xx.lrf-file)

4) Arcoma will delivery to you:
   a) CPI License key
   b) CANONKIT.lic-file
   c) Canon License key

BiAA Upgrade: Perform

4) Upgrade the System SW to the latest released version.

5) Perform the BiAA Upgrade → Info

a) CANONKIT.lic-file update (CXDI_NE_Overwrap folder)
b) Settings in GenConfig (GenConfig)
c) Generator license key update (Genware)
d) Receptor Settings (Genware)
e) Register the Canon license key (Canon Service Tool)
f) Add and update files in CCS-S-folder:
   a) DRTSETTING.ini.file
   b) CanonWarnings and safety check xml files
   c) BiAA Error Message update

6) Adjust BiAA cut-off dose → Info

7) BiAA settings in Anatomical Protocols → Info

Collect Information for BiAA License Update

Required Information for BiAA License Update

The listed information is required for BiAA License Update. See following pages on how to collect the required information.

a) Serial number of the system
b) Serial number and System ID of the generator
c) CANONKIT.txt-file
d) Canon License Request File (xx.lrf-file)

Information can be collected via Hospital visit or by Remote Access to the system.

System serial number and Generator Serial Number

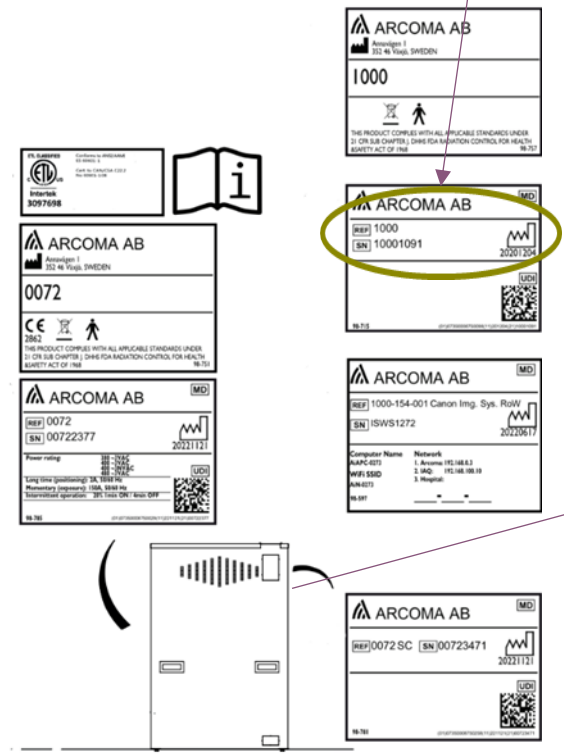
SYSTEM SERIAL NUMBER
> See labels on the System Cabinet.

GENERATOR SERIAL NUMBER

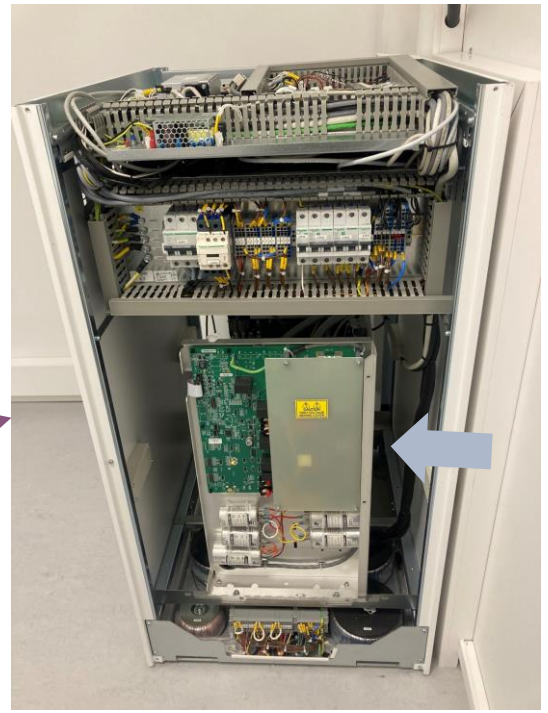
WARNING! *Read Warnings in System Manual before opening up the System Cabinet.*

- Open the System cabinet covers,
  > Read the Manual!
- Generator Serial Number is found on the right side of the generator.

System Serial Number



Generator Serial Number



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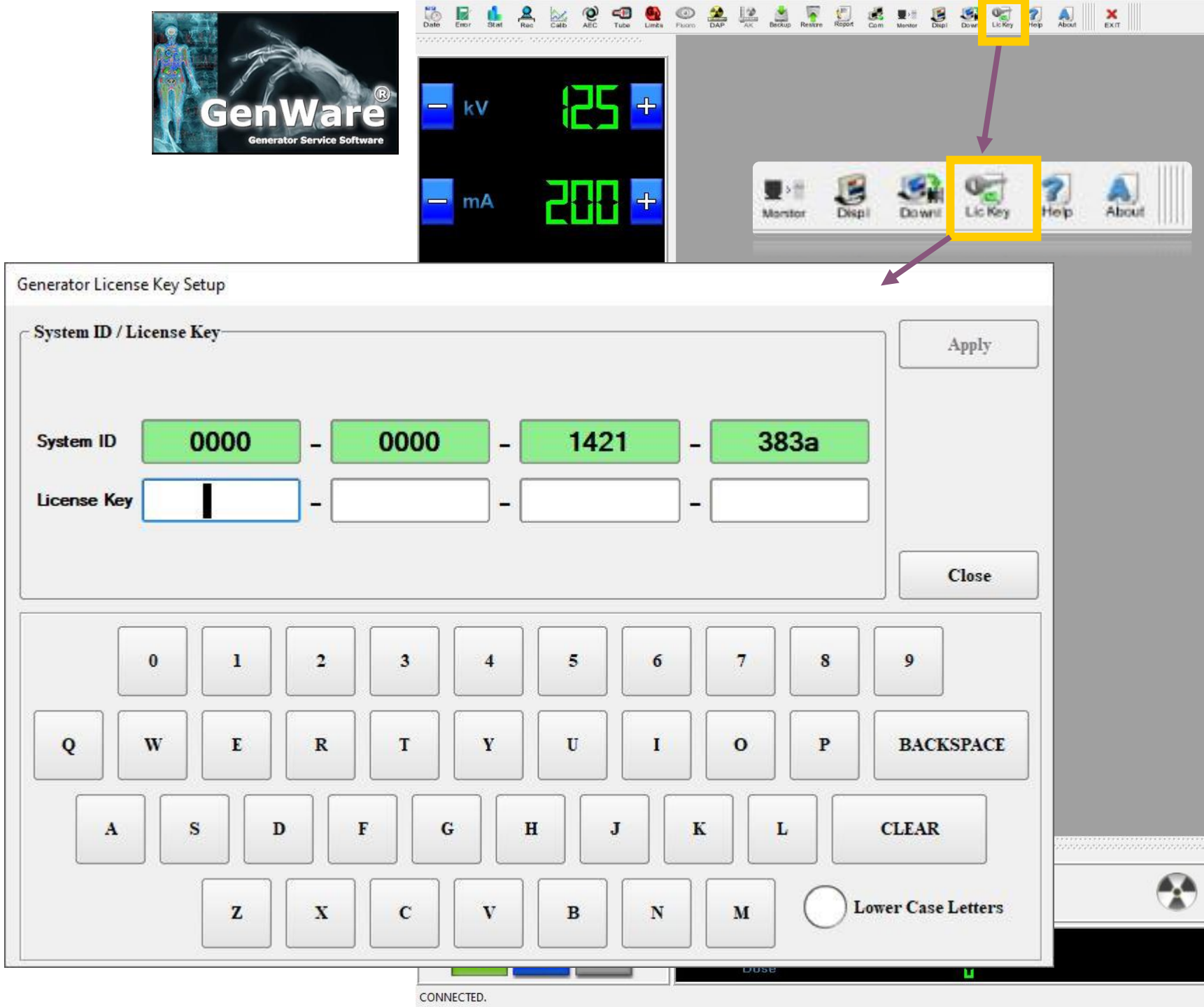
System ID

SYSTEM ID

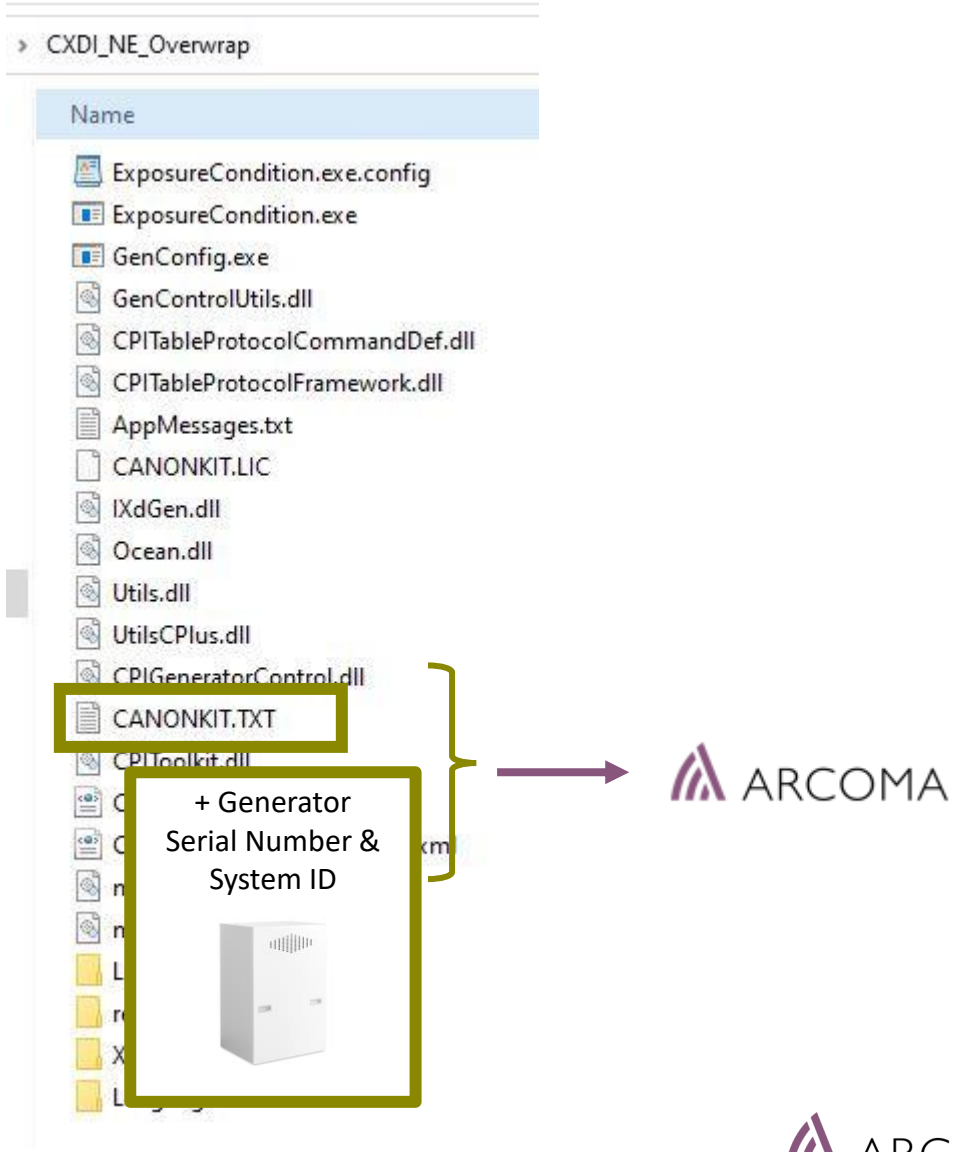
1. Open GenWare
2. Select LicKey button
3. System ID = numbers in the green fields



CANONKIT.TXT-file

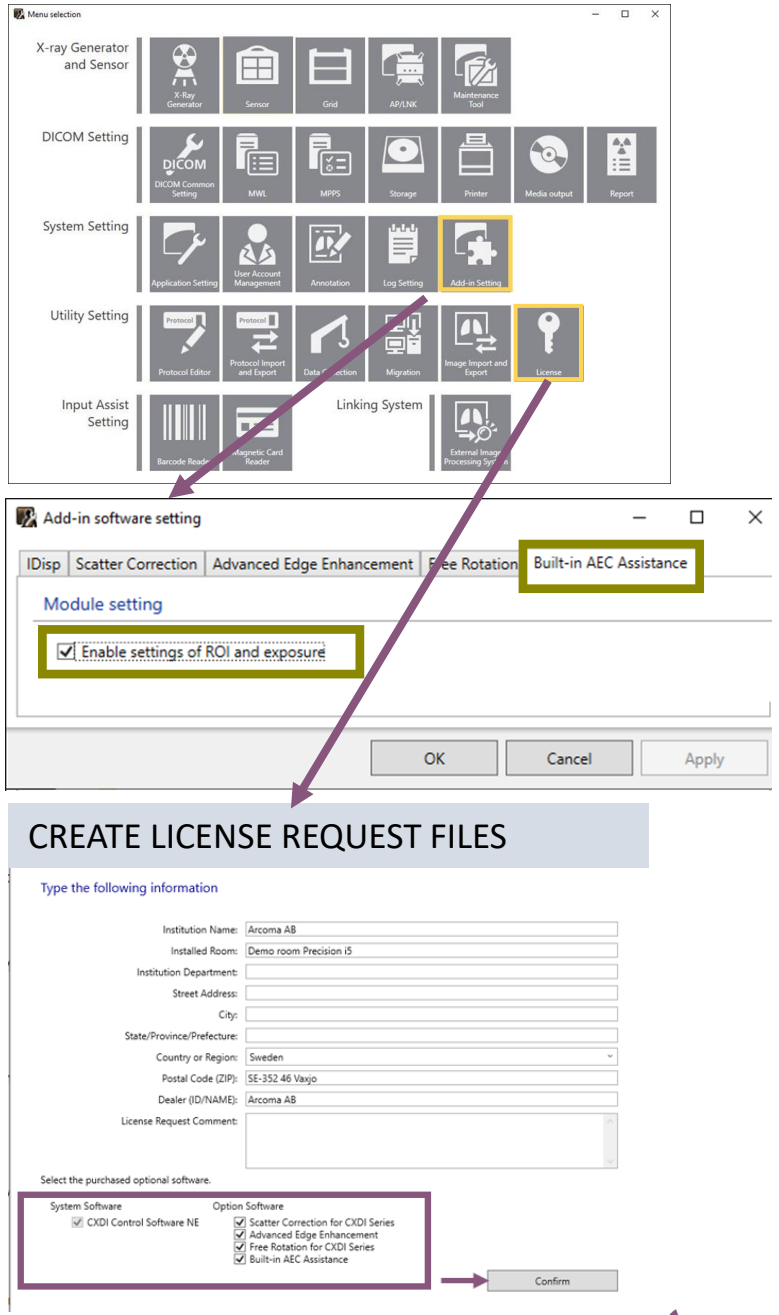
CANONKIT.TXT-file

1. Go to CXDI_NE_Overwrap folder
2. Copy: CANONKIT.TXT-file



Canon License Request File

1) Install the BuiltInAECAssistance SW
   a) Start the Setup.exe file
   b) Select Generator Console Mode as Built-in AEC Configuration
   c) Follow the steps in the installation tool until finished.
2) Open Canon Service Tool.
3) Canon Service Tool: **Add-in Settings** / Built-in AEC Assistance > Select *Enable settings of ROI and exposure*.
4) Canon Service Tool: **License**. Select *Create License Request Files* and select *Option Software Built-in AEC Assistance* > Confirm.
5) A lrf-file is created.



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Perform the BiAA Upgrade

BiAA Upgrade – Steps

Upgrade the System SW to the latest released version.

5) Perform the BiAA Upgrade

a) CANONKIT.lic-file update (CXDI_NE_Overwrap folder)

b) Settings in GenConfig (GenConfig)

c) Generator License key update (Genware)

d) Receptor Settings (Genware)

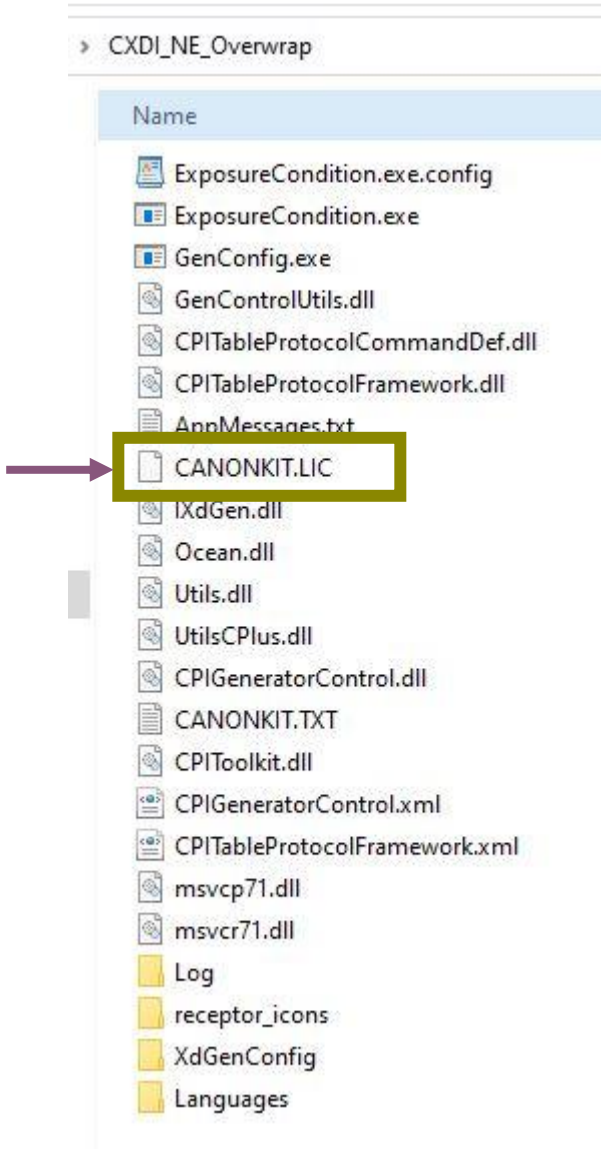
e) Register the Canon license key (Canon Service Tool)

f) Add and update files in CCS-S-folder:
   a) DRTSETTING.ini.file
   b) CanonWarnings and safety check xml files
   c) BiAA Error Message update

CANONKIT.LIC-file update

CANONKIT.lic-file UPDATE

1. Go to CXDI_NE_Overwrap
2. Exchange the current CANONKIT.LIC file with the new provided file.



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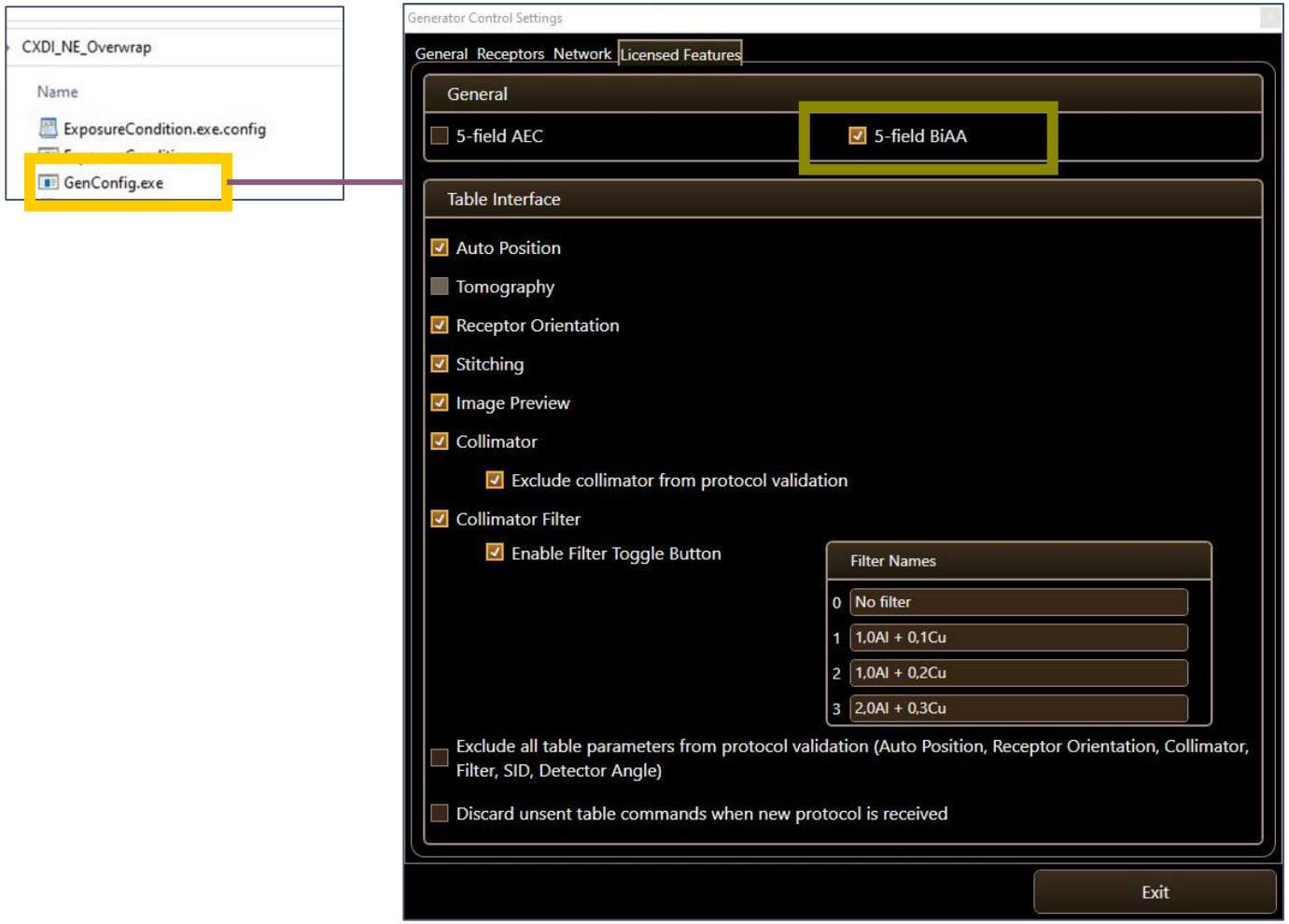
GenConfig Settings

GENCONFIG SETTINGS UPDATE

1. Open GenConfig (CXDI_NE_Overwrap folder)
2. Select tab: Licensed Features
3. Select 5-Field BiAA



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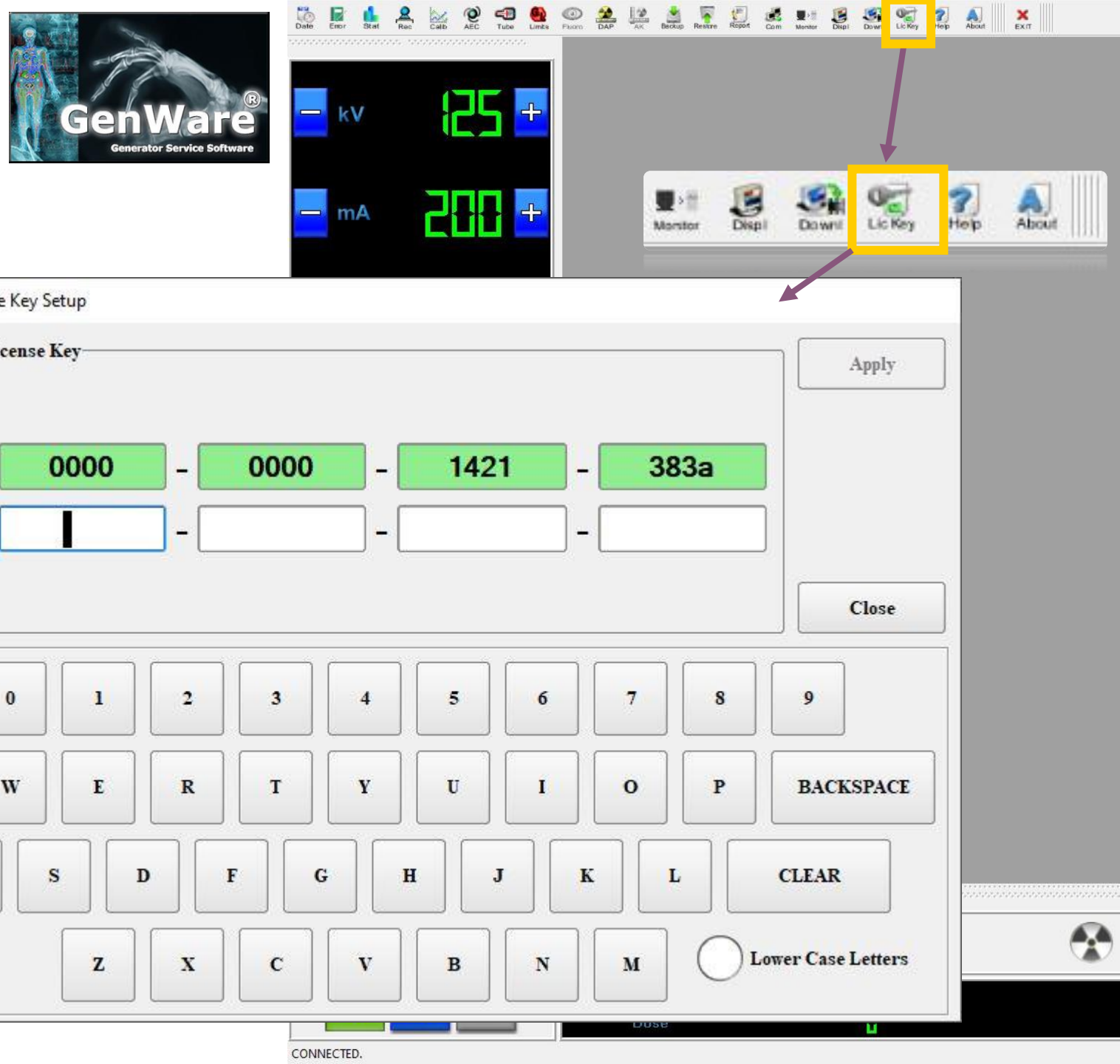
CPI License Key

License Key Update

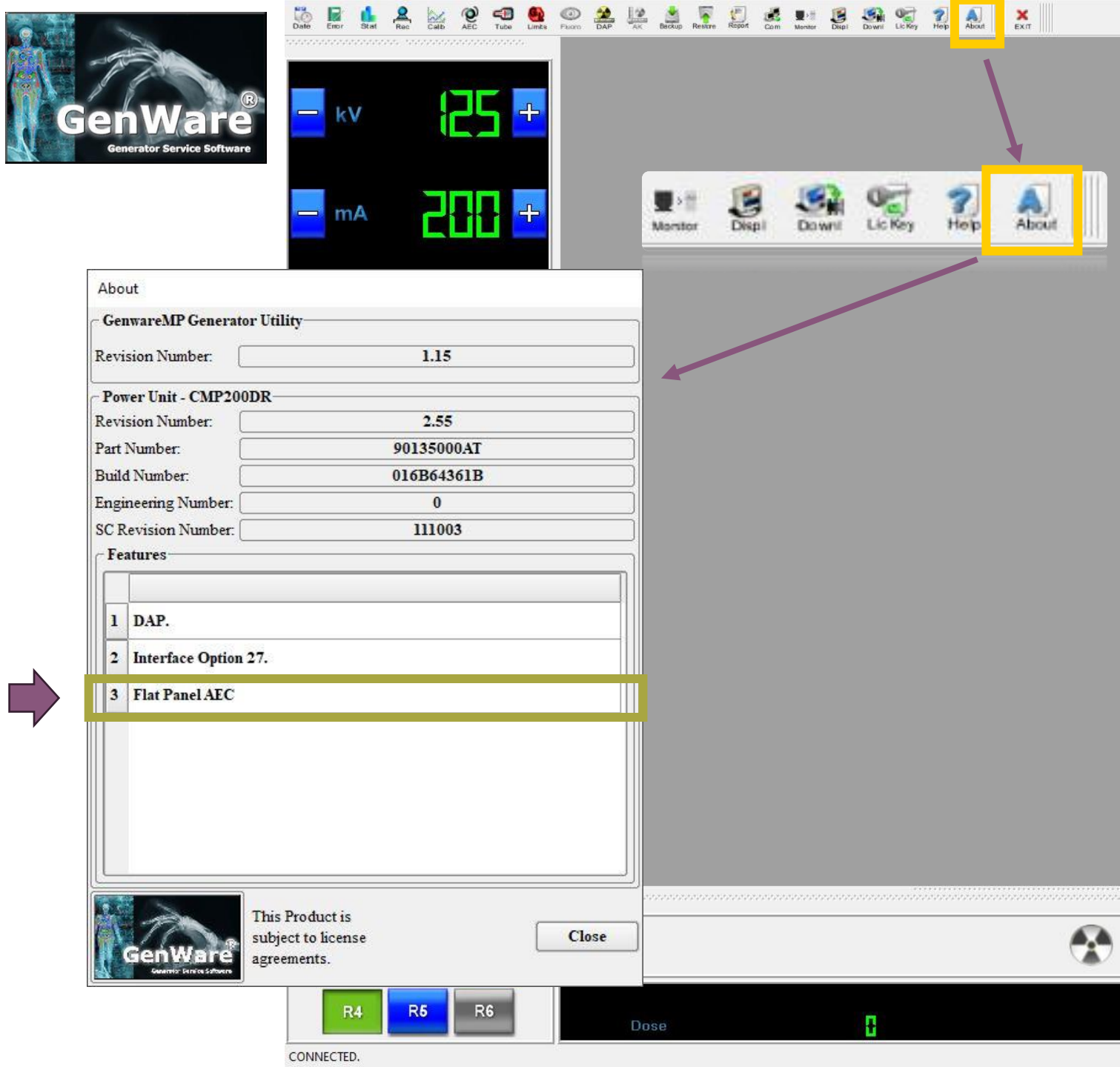
1. Open GenWare
2. Select LicKey button
3. Enter the provided License Key



CPI License Key

License Key Update

1. Open GenWare
2. Select LicKey button
3. Enter the provided License Key
4. Check that option 3 Flat Panel AEC is shown



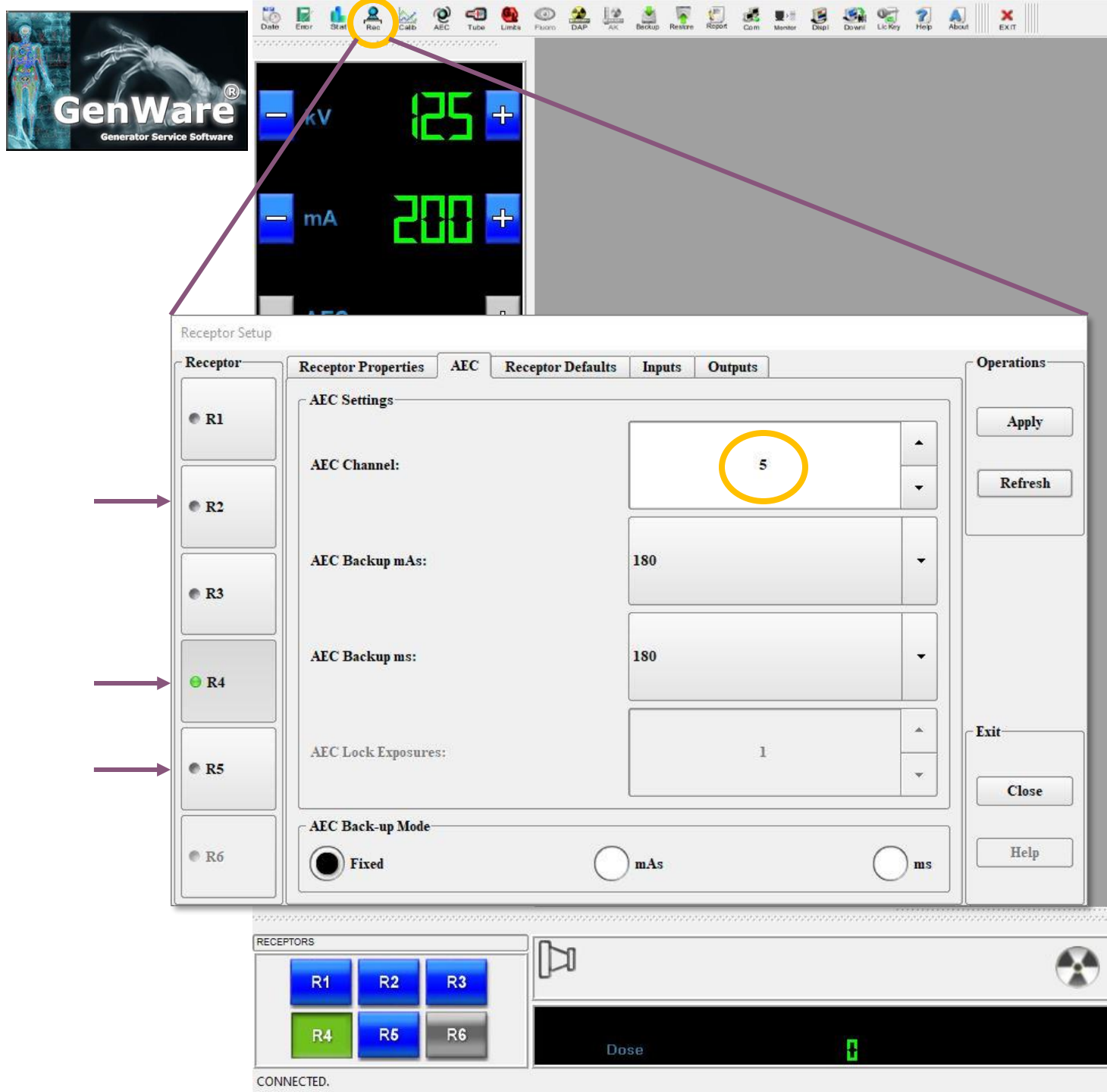
GENWARE, Receptor

AEC Channel = 5 shall be selected when BiAA used.

STANDARD SETUP

- R1: Table
- R2: Table top
- R3: Wall stand
- R4: Wall stand detector, out of Bucky
- R5: Free detector

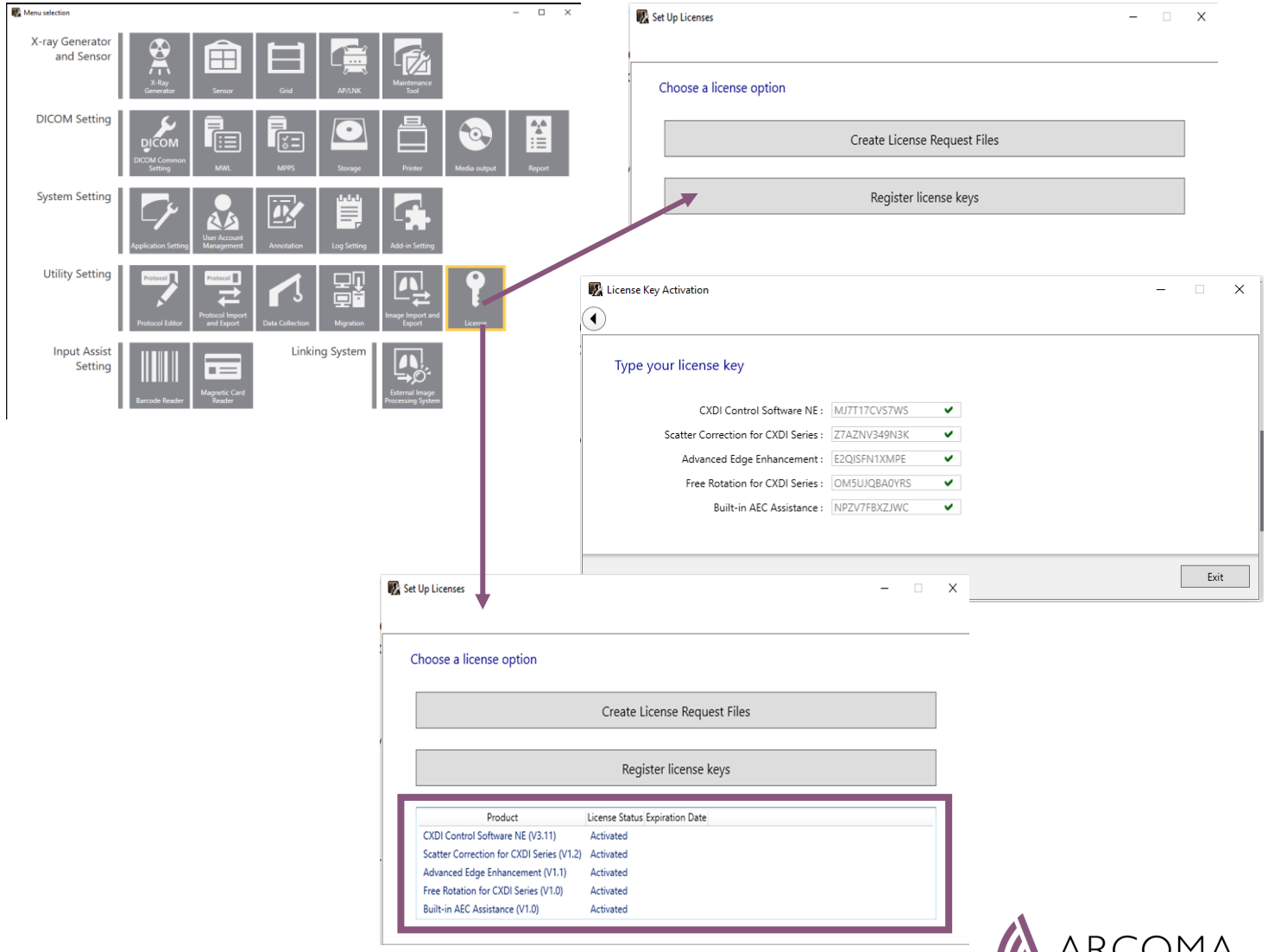
R2, R4 and R5 recommended for BiAA use.



CANON LICENSE UPDATE

Canon BiAA License Update

1. Open Canon Service Tool
2. Canon Service Tool: License.
   Select *Register license keys* and enter the provided license key.
3. Check that option Built-in AEC Assistance is shown as Activated.



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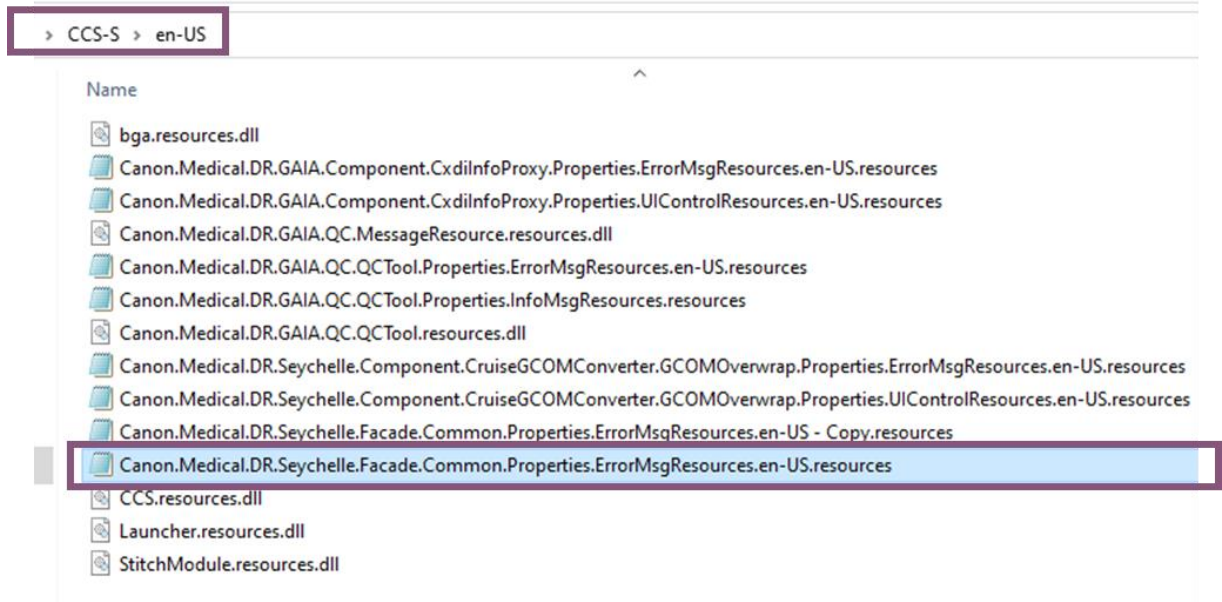
Add and update files in CCS-S folder

Add / Update the follwing files in the CCS-S folder:

- DRTSETTING.ini-file
- UsePixelValueAlertWithBiAA.xml
- UseWifiAlertWithBiAA.xml
- Exchange the following file in the CCS-S/en-US folder: *Canon.Medical.DR.Seychelle.Facade.Common.Properties.ErrorMasgResources.en-US.resources*



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BiAA Settings

Canon APR Editor: BiAA settings

Anatomical Protocols are defined in the Canon APR Editor.

Settings requied to use BiAA in a protocol:

- Technique: AEC
- ms = Used as Backup value
- Detector AEC Assist: YES

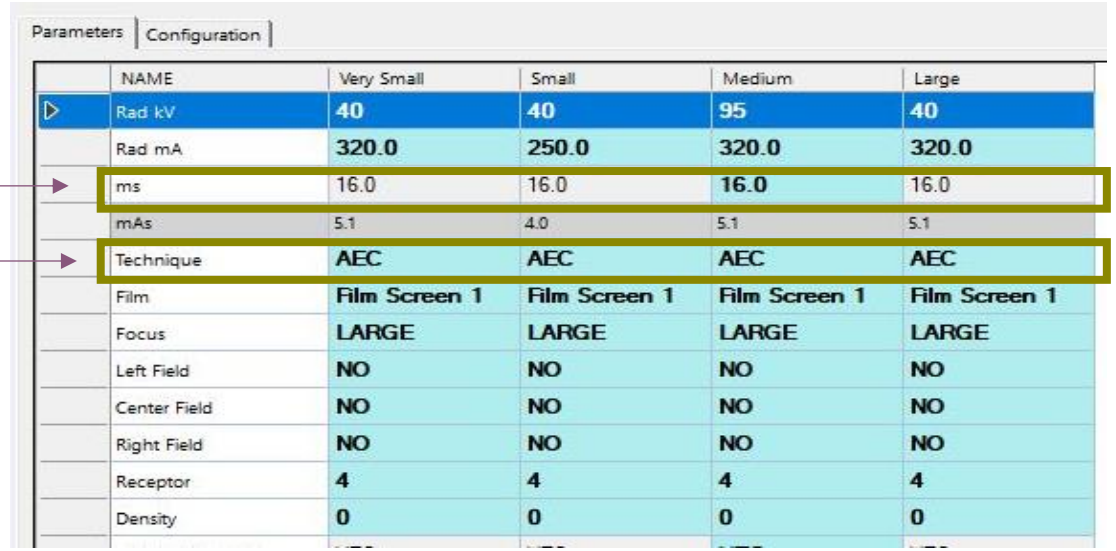
Adjustable protocol settings related to BiAA:

- Active Detector AEC
- DRT Denstity
- Detector Rotation

See next page for more information.

Used as Backup value

Technique: AEC



NAME	Very Small	Small	Medium	Large
Rad kV	40	40	95	40
Rad mA	320.0	250.0	320.0	320.0
ms	16.0	16.0	16.0	16.0
mAs	5.1	4.0	5.1	5.1
Technique	AEC	AEC	AEC	AEC
Film	Film Screen 1	Film Screen 1	Film Screen 1	Film Screen 1
Focus	LARGE	LARGE	LARGE	LARGE
Left Field	NO	NO	NO	NO
Center Field	NO	NO	NO	NO
Right Field	NO	NO	NO	NO
Receptor	4	4	4	4
Density	0	0	0	0

New parameters related to BiAA

Detector AEC Assist	YES	YES	YES	YES
Active Detector AEC	A	A	A	A
DRT Density	0	0	0	0
Detector Rotation	0 degree	0 degree	0 degree	0 degree

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BiAA – Protocol Setup

Parameters*) related to BiAA in Anatomical Protocol:

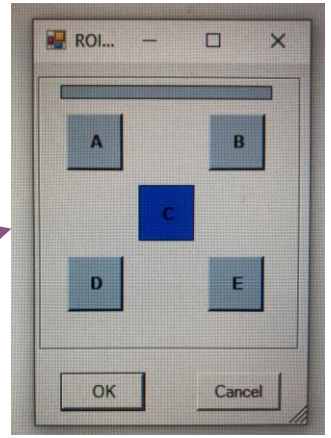
Detector AEC Assist	YES
Active Detector AEC	C
DRT Density	0
Detector Rotation	0 degree

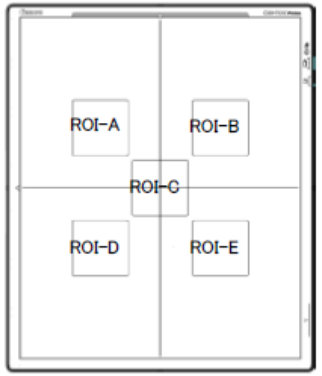
Shall be YES to activate BiAA
> Can be changed by the user

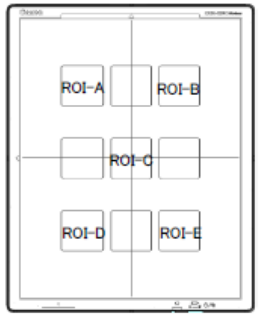
Select active chambers
> Can be changed by the user

Adjust the cut-off dose
> Impact on image noise level

BiAA mode:
Manual/0 degree or Auto Rotation link







**) Note that there are also other parameters related to BiAA in the standard configuration, recommendation to hide these parameters with the support of the Configuration tab settings.*

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Define AEC cut-off dose

Check the BiAA cut-off dose:

1) Select a BiAA protocol and activate the center chamber (C).
2) Position the X-ray tube above the detector (SID 115 cm) and adjust the collimator light to cover the detector area.
3) Make an exposure with the following parameters
   - RQA5: 70 kV, 21 mmAl added filtration
4) Note the EI value received (shown in Canon, exposed image).
   Example of EI-values:

   EI : 200 = 2 µGy cut-off dose
   EI : 180 = 1,8 µGy cut-off dose

   EI=100 x Base / Sfpd, Sfpd = 678 LSB/µGy at RQA5

Adjust the BiAA cut-off dose:

1) Open the drtsetting.ini-file in the Canon CCS folder.
2) Adjust the Base value until correct cut-off dose received.

   Base = 1350 > EI = 200 > cut-off dose ~2µGy
   Base = 2115 > EI ~ 312 > cut-off dose ~>3µGy

For Information – Details described in seperate BiAA presentation.

DRTSETTING.ini-file

The drtsetting.ini-file shall be saved to Canon CCS folder.

Parameters of interest in the drtsetting:

- **Base** > *Defines the AEC cut-off dose*
- **Early Termination Parameter**s > *Used to terminat the exposure if it is not reaching the selected AEC chamber.*
- **Density** > *Possibility to adjust the AEC cut-off dose in each Protocol.*
- **Sensitivity** > *Adjustment of the cut-off dose*

```
[COMMON]
SectionNum=2
BaseRange=0
SensRange=0
DensRange=4
EarlyTermination=1
ETThreshold=4
ETTime=20
[DRT0]
Base=1
BaseMax=100
SensMax=100
DensMax=100
[DRT1]
Base=1350
BaseMax=200
SensMax=200
DensMax=200
DirectionAuto=1
SystemDelay=1000
SystemDelay_Wireless=1200
ETStartTime=1100
ETStartTime_Wireless=1300
[LUT1]
C=01,02,03,04,05,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,
F=0004,0001,0010,0100,0040,0005,0140,0014,0011,0110,0050,0104,004
```

Range Settings

Max value Settings

Time settings

Not used
BiAA with the B1 detector (not implemented)

Do not change!
Used to define selection of AEC chambers in the Protocol editor.

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THANK YOU

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