CHK0051 - Innova 3D and 3D CT Functional Checks

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1 Personnel Requirements

Required Persons	Preliminary Reqs	Procedure	Finalization
1	5 mins	1.5 hours	Not Applicable

2 Overview

This procedure must be applied before and after maintenance or service FMI to be sure that the system is running correctly. The goal is to check the system is working correctly after the upgrade and the 3D and 3D CT functionalities are working fine.

NOTE: 3D and 3D CT are optional. Perform tests for selected option(s) only.

3 Preliminary Requirements

3.1 Tools and Test Equipment

Item	Qty	Effectivity	Part#	Manufacturer
Suitcase equipped for detector 30 cm	1	-	5150277	-
IQST toolcase	1	-	-	-

3.2 Required Conditions

| Condition	Reference	Effectivity
System is up and running and fully calibrated	-	-
On DL browser, click on Suif → Configuration → Dicom config and verify that 3D host should be set to the AW connected to the system.	-	-

4 Procedure

4.1 Verify default settings on AW

1. Access the settings: Access *Applications* and select *Innova 3DXR*. The Innova 3DXR window appears.

Illustration 1:

2. Click on [Settings] (the Default settings window appears).

Illustration 2:
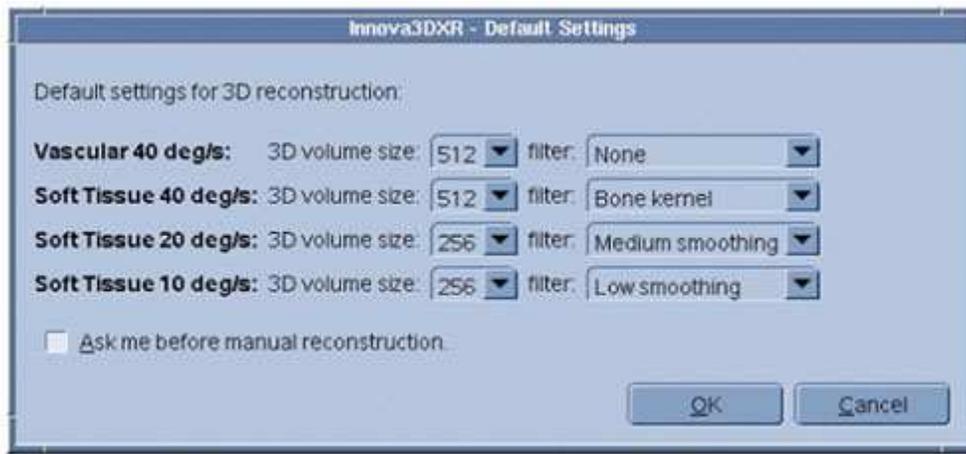
> **NOTE:** Check the option `Ask me before manual reconstruction.`

3. Verify that the default volume reconstruction for vascular are set to: 512 for 3D 40°/s and 256 for 3D CT (soft tissue) 10°/s

4. On AW, verify that Volume Viewer is not active (otherwise, exit VV).

4.2 Innova 3D functional check

NOTE: On AW, close the Volume Viewer if active.

1. Set the system ready for acquisition (i.e. start exam performed on DL console) with the gantry base in the Head position.

2. If not default, **deselect** auto archive on DL keypad.

3. Select protocol *Carotids* in *Head* category. DSA acquisition mode is selected by default.

4. Select 3D acquisition mode. At this time, the **Test** button on TSSC must blink.

5. Select 20 cm FOV.

6. Put the IQ phantom on the table then using fluoro, center it in PA and Lat positions.

7. Press on the **Test** button on TSSC to perform the 3D spin test. Wait until message `Ready. Clear rotation area` is displayed in the status message area (live monitor) meaning that the 3D test is completed.

8. Note that all gantry/table motion is not allowed (i.e. locked) when in test phase (ie pivot motion from end position (96° LAO <> +96°) to start position (108° RAO <> -108°)).

9. Select Auto inject off.

10. Start the 3D acquisition using the console handswitch. Check that the pivot starts moving at high speed (40°/s) from 108° RAO to 96° LAO (<> -108° to +96°) (i.e. acquisition duration must be around 5 sec).

11. At the end of the acquisition, the auto review is not automatically started. This is the normal behavior.

12. Verify that the 3D sequence has been put in the network queue then has been sent AW. No *Failed* status must be displayed in the network queue for the item sent.

13. Once sequence push is terminated, verify that a 3DXR window automatically opens and reconstruction automatically starts. No *Failed* status must be displayed in the 3DXR window for the item under reconstruction.

Illustration 3:

14. Verify that when the reconstruction is completed, Volume Viewer is automatically started.

   On VS2 and below : a wizard menu is displayed to select the vessels threshold.

15. **On VS2 and below** : Modify if needed the vessels threshold, select a view for display (for example Color rendering) then exit the menu.

   Verify that the 3D model is displayed on AW monitor in VR mode along with other displays (slices).

16. Refer to Operator Manual (provided in the kit) for details on Volume Viewer default lay out display and processing for Innova 3D.

17. Review the 3D acquisition sequence on DL (start the review of the sequence using the DL keypad). Verify that 3D sequence can be reviewed. Total number of images should be approximately 150.

18. On the AW, select the 3D acquisition sequence that has been pushed. Verify that this sequence can be reviewed using the viewer.

   NOTE: If an injector can be used, repeat the acquisition phase with auto inject set to ON, X-Ray delay set to 0 s, injector parameters set to get an injection time equal to 5 sec. In this case, verify that injector starts with first X-Ray shot taken and is injecting during the complete pivot motion.

4.3 Innova 3D CT (soft tissue) functional check

1. Re-do all actions of Innova 3D functional check, selecting the following parameters:

   ○ Select "Soft Tissues" in "Head" category

   ○ 3D CT record mode

   ○ 10°/s rotation speed

   ○ 256 as default setting for 10°/s in 3DXR menu

- auto-inject off

2. Modifications of the test result:

- Innova 3D functional check, Step 14: wizard menu is not displayed for 3D CT

- Innova 3D functional check, Step 15: this item (vessel threshold) is not to be performed

- Innova 3D functional check, Step 17: number of images should be approximately 600

- Do not repeat test with auto-inject ON

4.4 Image Quality 3D Test

The IQ check must be done with the following parameters:

- Field Of View (FOV) = 20 cm

- Rotation speed = 40°/sec.

- default volume reconstruction for vascular is set to: 512 for 3D 40°/sec.

1. The previous IQ Phantom acquisition shall be used for image quality test.

2. Select the IQ Phantom 3D model corresponding.

3. To assess the 3D image quality, the volume of the Phantom should be from the inferior or superior view.

4. To reach one of these incidence, click on the **S** or **I** button of the volume viewer panel, you should get an image looking like the Illustration.

Illustration 4:
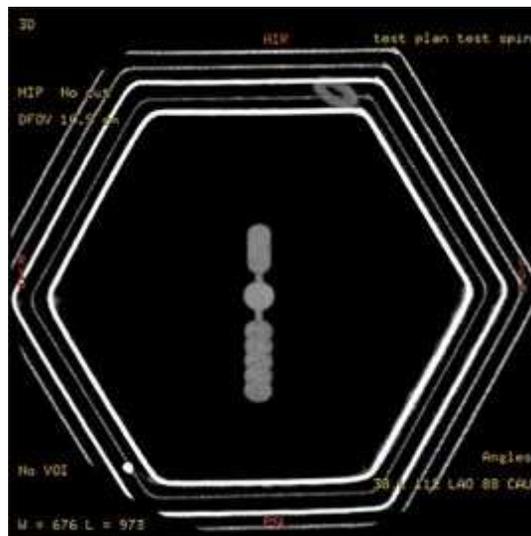
5. Check that all the five copper wires of the Phantom (0.18, 0.25, 0.30, 0.40 and 0.5 mm) are perfectly visible.

4.5 Image Quality 3D CT Test

1. Repeat test in Image Quality 3D Test with the following:

- 3D CT mode selected

- Field of View (FOV) = 20 cm

- rotation speed = 10°/sec

- default volume reconstruction of soft issue is set to:

  256 for 3D CT 10°/sec

The results to be checked are the same as those described in [Image Quality 3D Test](#)

5 Finalization

No finalization steps.