NBIA Feature Deletion Description

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Document Approvals

The list contains the name and contact information for the core project team and any key stakeholders who have an interest in the success of the project. An “S” identifies persons responsible for approval from the stakeholder groups. Sign off of the document would be required when a decision is made not to take action for defined gaps.

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# Introduction

The purpose of this implementation is to provide a deletion tool or a deletion function to the NBIA application. This function allows users to remove one or more series in a study for a patient. The function will categorize as two processes, mark one or more series as a to-be-deleted and removes marked deleted records from database; all related DICOM image files will be removed as well in hard delete.

A CRON job will be created for off-line deletion. However, there is an exception. If the second layer deletion needs to be executed immediately, QC tool deletion also will provide a function to do on-line deletion.

In order to implement deletion functions in current QC tool, it is necessary to change existing QC tool structure.

The existing QC tool has three choices for image status,

* Not Yet Review
* Not Visible
* Visible

The new status for QC tool deletion will be added,

* To Be Deleted
* Deleted

Main focus in this design document is how to physically remove records and files from a CRON job or from on-line deletion.

From QC tool, users can mark one or more series status as “deleted”. When deletion is invoked by the CRON job, it will search all records that are marked as “deleted” in series table, and delete all related CT images, images, or studies, or patients from database. In addition, the all images related DICOM file and JPEG files are also will be removed from the file system. During deletion, physical deletion will also record audit trail in the NBIA database for each record.

How the application decides when removing a study or a patient during series records deletion? The rule is simple, after removing records from series table, check the study if more series exist. If there is no, it means this study doesn’t have any series attached to it. Then this study can be removed. If there are more series still attached to this study, application will keep this study. The same rule applies to patients.

# Summary of Feature

NBIA deletion module has the following features,

* Online deletion
  + Remove one or more series records from NBIA database
  + Remove one or more studies records from NBIA database
  + Remove one or more patients records from NBIA database
  + Remove DICOM files associated with removed images from NBIA file system.
  + Add deletion information of patient, study, and series into deletion\_history\_audit table.
* CRON job deletion
  + has all functions as online deletion
  + Configuration for a CRON job deletion (default setting is 12:05 am)

# Architectural Diagram

## Workflow

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**Figure 3.1.1: QC Tool deletion through CRON job**

Figure 1 indicates how users invoke a CRON job to perform QC tool deletion. QC tool deletion searches all records that are marked as “deleted” from series table. Based on these series IDs, it will remove all records from CT image table, General Image table. Then also from series table, it will obtain study PK ids which these series belong to. Check if deleted series ids are only series for this study. If they are, remove this study also. If these studies have been removed, application also checks the patient which these studies belong to. If there is no study left after removing, this patient will be deleted too.

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**Figure 3.1.2: Performing Online Deletion**

Figure 2 indicates online deletion. The process is exact like CRON job deletion. Only difference is Online deletion happens as the users click on “online delete” button.GUI will not also show this button to the user, unless this user has the “online delete” permission/authorization.

## Class Diagram



**Figure 3.2.1 : QC Tool Deletion Class Diagram**

In above diagrams, they indicate all class objects will be used in QC Tool Deletion process.

All XXXServiceImpl classes will be used in middle tier to process deletion. The XXXDAO classes will be backend been to perform actual deletion.

# Change Example 1

## Set Eclipse Environment

* Check out NBIA source from trunk by using Tortoise tool
* Change directory to SOURCE\_CODE\_DIR/build
* Modify install.properties for database connection (user id, password, etc)
* Type “ant build:all” to build project (This must be happened before importing source code into Eclipse)
* Open Eclipse to import all modules as existing project
* Fix build path issue in the Eclipse, such as NBIA\_BASE set up
* After this, you can utilize the Eclipse to change your code.

## Compile NBIA / Run Test Case

After modifying Deletion code / implementing unit test code, you need to perform the following steps to regenerate NBIA application,

* From DOS prompt, run ant build:nbia-dao (or build:all)
* If passing compilation, run ant -Dunit.testing=true build:nbia-dao for unit test and style check
* If passing, run ant deploy:local:install
* Above process will generate a directory C:\apps by default
* Change directory to C:\apps\ncia\jboss-4.0.5.GA\bin, start JBoss with run.bat command.
* Open a browser, type <http://localhost:45210/ncia> to start application
* Test your fixes.

# Change Example 2

No further example.