

Integration of hand bone age atlas

OsiriX Foundation

September 7, 2009

1 General Conditions

Please refer to <http://www.osirixfoundation.com/awards.html> for General Conditions.

2 Category

This document describes a **Category 1** Plugin Award Project.

3 Description

Estimation of children bone age and differences with their chronological age can be obtained from the visual analysis of bones maturity features on hands radiographs. A digital atlas of sample images at different ages for boys and girls was previously generated and published. These images are extremely valuable for radiologists that interpret those images and serve as a visual control for determining the bone maturity age of a child.

The plugin propose here should allow the user to rapidly brows through the set of standard atlas of images and select the one that match the best the image being interpreted. Once the closest image is selected a simple formula allows to calculate the deviation of the patient age from normal range, and predict a possible growth delay.

4 Requirements

The goal of this plugin that can display the stack of images from the digital atlas (automatically selecting the gender that matches the one of the patient and displaying the image that is the closest to the patient current age). The user should be able to

- browse through the images of the atlas
- zoom and pan through these images, and adjust the contrast and intensity of these images.

- after selecting the image that match best the one of the patient, the program should provide a summary result window showing the patient images and the matching atlas image, with the calculated deviation from normals and estimated growth parameters.

5 Deliverable

1. A fully functional plugin that displays the atlas images and allows interactive browsing and adjustments as described above.
2. Display the results in a synthetic result window that can be exported in PDF or in DICOM format
3. Provide online help to guide the user in the features that need to be taken in consideration for comparing reference images with the patient image

6 Contact

Contact the OsiriX Foundation using: osirix@osirixfoundation.com