XIII PMT meeting on the EADC-ADNI Harmonization of Protocols for Hippocampal Segmentation

Wednesday, October 24, 2012

Participants:

Giovanni B. Frisoni   (GBF)   – IRCCS S. Giovanni di Dio - Fatebenefratelli, BS, Italy
Marina Boccardi   (MB)   – IRCCS S. Giovanni di Dio - Fatebenefratelli, BS, Italy
Martina Bocchetta   (MBocch)   – IRCCS S. Giovanni di Dio - Fatebenefratelli, BS, Italy
Simon Duchesne   (SD)   – Laval University, Québec City, Canada
Gunnar Krueger   (GE)   – Siemens

TRACERS TRAINING PHASE
The flowchart for the qualification of Naïve Tracer will run as follow:
Naïve will first trace 1 image at 1.5T and 1 at 3T and will receive a feedback about their adherence to the Protocol, comparing their segmentations to Master Tracers benchmark segmentations (MTBS). Then Naïve will proceed with the other 6 images (3 at 1.5T and 3 at 3T) and they will receive another feedback. If feedback will be positive, they will move to the remaining set of benchmark images to get the final qualification, otherwise they will iterate the segmentations on the first half of benchmarks, until they will have properly learnt how to trace according to the Harmonized Protocol.

CERTIFIED PLATFORM
The platform for the certification was set up and 10 naive Tracers created their account; 9 completed "training round 1" (segmentations of 2 ADNI subjects, one on 1.5T and one on 3T), while 5 are planned to complete segmentations by early November. (6 tracers are lacking and a new recruitment phase will be started).

SD described the structure of the platform, the experienced problems and the fixing ongoing.

Once an account is created, a tracer must be authorized by an administrator (MB).

It's now possible to upload a single CSF .ucf label or select the option "NO CSF file", thus we can track any possible error of the tracers.
SD described the statistical feedback provided to naive:

The visual feedback (slice by slice) allows tracers to have a very clear idea of the qualitative errors but needs a legend explicitly describing in terms of standard deviations the meaning of the color code.
Naïve Tracers will receive both qualitative and quantitative check on the first 2 segmented images.
MB asked to let the administrator see the uploaded labels and statistics of all the naïve tracers, in order to qualitatively evaluate the tracer performance during the training phase.

MB and MBocch will visually check the segmentation, in order to evaluate individual differences from the benchmark and judge whether they are admissible or not. This will provide a feedback for the tracers, and will enable definition of computations and statistics.

PROJECT EXPANSION

The proposal was sent to 5 companies and 2 (Ixico and Bioclinica) so far showed interest in funding cooperatively. Adam Schwarts will promote the proposal to next PPSB meeting (it will take place next week). Maria Carrillo also said that the Alzheimer's Association may offer a neutral forum through which this could be funded/contracted.

CONGRESS PRESENTATIONS
Two oral presentations will be held during the CTAD (Montecarlo, October 29-31, 2012) and the DGPPN Symposium (Berlin, November 21-24, 2012).
Two abstract were submitted to the AAN (San Diego, March 16-23, 2013) and to the AD/PD (Florence, March 6-10, 2013). We will contact AA for the organization of the usual project meeting during the AAN congress.