Application for QIBA Project Funding

Title of Proposal: Groundwork for QIBA image reference database – QIBA Image Reference		
QIBA Committee/Subgroup: Cross technical committees - MRI/DCE-MRI		
NIBIB Task Number(s) which this project addresses: Task 3		
Project Coordinator or Lead Investigator Information:		
Last Name: Zahlmann	First Name: Gudrun	Degree(s): PhD
e-mail:	Tel #:	
Institution/Company: F. Hoffman – La Roche Ltd.		
Amount Requested:		

Please check the primary category for this proposal from among the following:

☐ 1. Identification of Technical Characteristics and Standards

    ☐ a. Creation and refinement of protocols for image acquisition, analysis, quality control, etc., for specific clinical utility

    ☐ b. Phantom development and testing

    ☐ c. Identification and assessment of intra-reader bias (1) and variance across scanners and centers

    ☐ d. Identification and assessment of inter-reader bias and variance across scanners and centers

    ☐ e. Other

☐ 2. Clinical Performance Groundwork

    ☐ a. Assessment of intra-reader sensitivity and specificity

    ☐ b. Assessment of inter-reader sensitivity and specificity

    ☐ c. Other

☑ 3. Clinical Efficacy Groundwork

    ☐ a. Assessment of correlation between new biomarker and 'accepted-as-standard' method

    ☐ b. Characterization of value in clinical trials

    ☐ c. Characterization of value in clinical practice

    ☑ d. Development/merger of databases from trials in support of qualification

    ☐ e. Other

☐ 4. Resources (money and/or people) committed from other sources.

> NIBIA resources for assessment and providing instance of database for QIBA purposes

Please provide a one-page summary that includes the following information:

Project Description

QIBA profiles of all technical committees describe what the imaging process for a certain quantitative imaging biomarker should look like in order to fulfill the profile claims. The claims state how accurate and reliable the respective quantitative imaging biomarker can be expected if the profile is followed. The so-called bull's-eye principle is used for describing ideal, target and acceptable quality. All teams deal with phantom imaging to assess the scanner quality. In addition clinical images are captured and analyzed in order to define the claims. It would be beneficial to support the QIBA profiles with a repository of phantom and clinical images illustrating the QIBA understanding of ideal, target and acceptable quality in real life image examples.

Primary goals and objectives

The overall goal of this proposal is to analyze requirements of the different technical workgroups of QIBA regarding a QIBA image reference repository – QIBA Image Reference: Potential technical solutions meeting the requirements will be assessed. Implementation of an instance is planned in a follow up proposal for year 2.

Deliverables

This project will build on the activities of the Open Image Archive Ad Hoc committee of the Imaging Biomarker Roundtable and the current activities of the QIBA technical workgroups. The provided use case document, specifically UC4 – QIBA Image reference databases, is the basis for those activities. First deliverable is a formal User requirements specification for the QIBA Image reference database. Deliverable number 2 is the outline of potential technical instances for establishing QIBA Image Reference Databases. This task will be done based in collaboration with the OIA Ad Hoc committee and NBIA of NCI.

Timeline [must include intermediate measureable milestones.]

The project starts with a review of the existing Use case document of OIA. Then a series of interviews with the technical workgroup chairs will be scheduled. Based on those interviews a first draft requirements specification will be provided. This specification is open for QIBA discussion and feedback and will be concluded in the final requirements specification document (deliverable 1). This is followed by a review of the image archive survey results provided by NCI. Selected archives will be assessed based on the requirements specification. The results of the assessment will be documented (deliverable 2). The decision as to which solution is the most feasible for QIBA should be made by the steering committee. Realization of an instance of QIBA Image Reference is planned for year 2.