

Notes from ITR Meeting on 2/28/2005

- Discussed possible research directions:
 - Process quality assurance (QA) using statistical measures (section 1.2 in GDTA)
 - Highlighting of information pertinent to decision making in six-monitor workstation
 - Experiment planning (section 1.1 in GDTA)
 - Data analysis (section 1.4 in GDTA)
 - Error management

Decided to go forward with process QA, since this effort will involve all three teams.

- Task description – process QA
 - Four SAMI lines will be utilized by CELISCA in the future. Each line has a Biomek FX or Biomek 2000 pipetting system, Orca robot, incubator, plate reader, and barcode device. SILAS is a communication router between the devices. The lines are connected via a LAN to LIMS.
 - While running the screening process, the biopharmacologist analyzes sample assay data using three statistical measures (coefficient of variation (CV), IC50, and Z') to determine whether the assay may be “out of control”. If it is, changes are made to the assay after investigating the process and determining the cause of the problem.
 - Types of errors in the lines:
 - Low-level errors – problems with devices, e.g. mishandling of a plate by the robot. Rare.
 - High-level errors – as described above, assay doesn't meet QA criteria.
- Objectives
 - Dr. Chow's team
Theoretical approach: Build process (engineering) model of four SAMI lines and associated devices using distributions of critical and non-critical errors. Use sensors to send error messages, e.g. which line / device has a problem. Develop middleware and use WAN for remote control of SAMI lines from NCSU.
 - Dr. Kaber's and Dr. St. Amant's teams
Develop interface to help biopharmacologist in process QA. Possible steps include calculating and displaying the three statistical measures, showing deviations from predefined criteria, and identifying reason(s) for the deviations.
- For next meeting
 - Dr. Chow's team
Initial development of engineering model of process
 - Dr. Kaber's team
Complete and refine CTA

Find aspects of existing automation that can help in development of QA interface

- Dr. St. Amant's team
 - Begin working on GOMS model using GDTA and AH models
 - Identify what functionality the QA interface should include
 - Develop three content websites, one for each team, that will be accessed via Dr. Kaber's password-protected website
-
- Contact
 - Dr. Norbert Stoll and Steffen to see if copies of the SAMI and SILAS software and/or source code are available.
 - Dr. Thurow and Dr. Göde to learn what information is sent to the LIMS database from the different devices.
-
- Next meeting – 3/28/05 at 3:00pm.