

## Table 8: Automation

### SESSION 1:

**FACILITATOR:** Mette Dahl Anderson, *Novo Nordisk A/S*

**SCRIBE:** Anders Lund, *Sanofi*

### SESSION 2:

**FACILITATOR:** Harold Taylor, *Merz Pharmaceuticals GmbH*

**SCRIBE:** Francisca Maria Alberti Aguilo, *Bayer*

### SCOPE:

Automation is a fact of life in modern analytical laboratories. While the benefits in increased throughput are known, others occur as well. These may be a reduction in variability or a less obvious / quantifiable reduction in repetitive strain of laboratory personnel.

This roundtable aims to discuss the various aspects of analytical automation assessing its promise and reality.

### QUESTIONS FOR DISCUSSION:

1. Benefits of automation apart from the obvious time and throughput, are there others? Standardization? Better data quality?
2. What are the pitfalls? Lack of human control? What is your experience? How have you mitigated them?
3. What are best practices concerning the various aspects of automation?
  - a. Automation of manual labour in the labs
  - b. Automation of data acquisition
  - c. Automation of data analysis

### DISCUSSION NOTES:

Session 1:

Why automated

- major benefit - remove routine work, to be able to focus on science -more reproducible results, when we compare automation vs manual, sometimes manual is lower back exchange in HDX, but the automated is much more consistent back exchange

Quality of manual data

Service can be inconsistent if the products are from different vendors - if pumps form one vendor robot from another MS from a third, can confound service -

What is the better equipment on the market for flexible programing

- Andrew Alliance - the robot is programmable for different applications it removes some of the complexity limited throughput
- Open trons is a pipetting robot and can facilitate scripting language - cartridge

Automating data across multiple analysis to trend data and include the process analytics, can we do PCA across CQAs of multiple projects?

Does the data get converted into information automatically?

How do we extract information from data by looking at correlations between CQAs?

What decision can be made by AI's how do we begin to implement AI, and when does it go too far?

Automation sometimes needs to take a step back, as the integration of the same data file across multiple vendors provides different files.

Session 2:

1. Benefits of automation apart from the obvious time and throughput, are there others? Standardization? Better data quality?

Benefits:

remove routine work (time to do other things), increased reproducibility, less sample waste, less training needed (although specific training for key users is needed for programming), less health problems do to long time pipetting

Standardization? Results can be different depending on Vendors (difficult to transfer between labs). To check on quality Service before purchasing any Automation device is important, also to have them on site to perform the whole set up.

We all agreed that a change towards “automation” needs to happen in different functions in parallel (e.g. increase of Automation in purification lab as well as in analytics lab) , in order not to generate other bottle necks

When sample preparation is automated, then the next bottle neck is data evaluation/integration

2. What are the pitfalls? Lack of human control? What is your experience? How have you mitigated them?

Lack of human control – not knowing what is going into the robot

The role of the lab technician changes and not everybody embraces the change (its stealing my job, I am not an IT person).

Customers get the wrong message: one can measure more samples in parallel – delivery of unnecessary samples –

Go back to manually work when necessary– how difficult is that? What do when the robot is out of service?

Service Maintenance: make sure manual is still possible, service, training, asses realistic expectation of the vendors- good service, delivery times for consumables – make sure there is a good communication