Technical Bulletin

sciREADER – New generation of array imaging and analysis

Hardware

The sciREADER is an imaging system for miniaturized and multiplexed assays on plates, slides, membranes and other custom formats up to SBS plate dimensions. Settings like exposure time and focal plane can be adjusted individually. The reader can be implemented in robotic systems.

The sciREADER CL2 is designed for colorimetric images. It includes top and bottom lighting, making it suitable for transparent and opaque support materials. The sciREADER FL2 takes fluorescent images with up to three channels, allowing customizable filter sets (default is red, green, and blue).

Software

The readers are accompanied by the likewise flexible and versatile software sciREAD for image analysis and data evaluation. A powerful grid alignment and spot finding algorithm enables microarray analysis, in addition classic whole well assays can be interpreted. The analysis process can be done manually with many customizable options for data evaluation, which is especially interesting for R&D purposes. Technical replicates can be grouped and combined with test rules, which lead to a final result. The analysis pipeline can be fully automated with fool proof routines for end users in clinical diagnostics including final reports. The software can be integrated in LIS / HIS environment.

Workflow for assay developer

First step could be the transfer of the array layout from the printer to the reader via a GAL file. The sciREAD software allows grouping of replicates and definition of logic rules that integrate positive, negative controls and calibration routines. Individually defined signal thresholds allow tuning of the specificity and sensitivity of the test. The kit developer has easy access to all raw data, while the kit user takes advantage of the customer friendly report formats based on previously defined test rules.

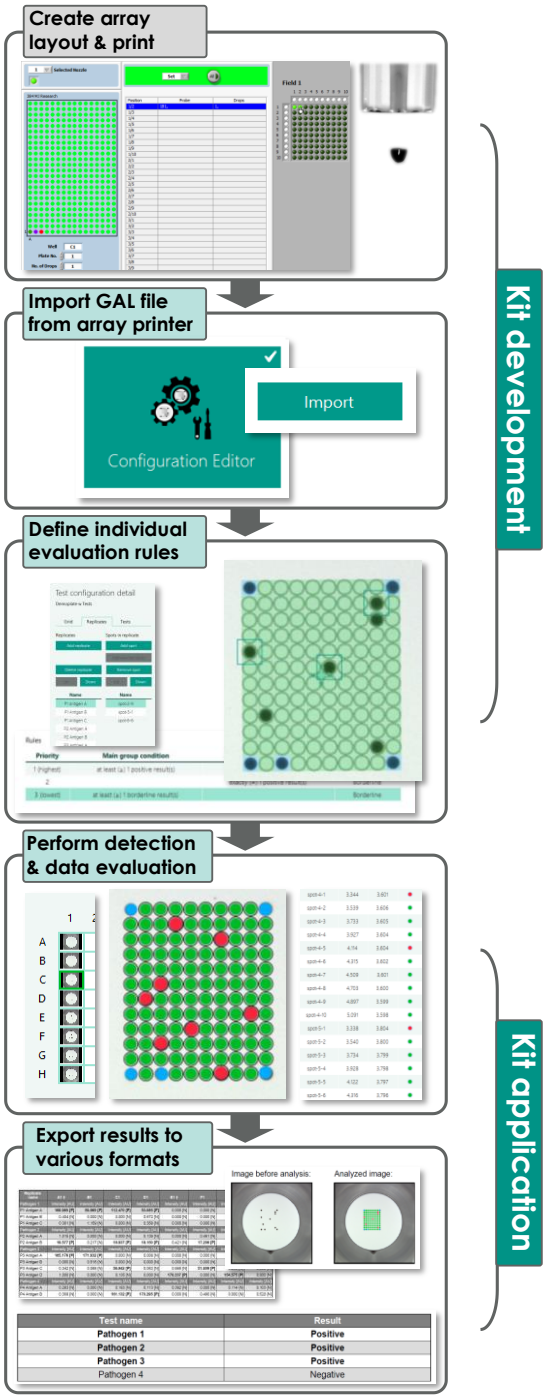
Workflow for assay user

In clinical laboratories, the user loads assay specific configurations and inserts for example a 96 well plate. Imaging of a full 96 well plate takes ~2 min, data analysis takes another 1-2 minutes, dependent on the complexity of the evaluation rules, which means ~4 min from plate insertion to the final diagnostic report. The results can be exported to various formats (e.g. pdf) or a database.

Conclusion

Our sciFLEXARRAYER and sciREADER together enable a seamless workflow from microarray printing and assay development to the final diagnostic result.

Seamless Workflow from Array printing to final diagnostic result



For Technical & Customer Support please call
SCIENION AG / Volmerstr. 7b / D-12489 Berlin
Fon + 49 (0)30-6392-1700 / Fax + 49 (0)30-6392-1701
support@scienion.com / www.scienion.com