

Thrombotherm

Real-Time Analysis of Thrombocytes

The Goal

is to create a video stream of thrombocyte surfaces in real-time. The challenge is to develop as well as optimize a process and an algorithm to visualize structures at protein level. This has to be accomplished with the complex structure of thrombocytes.

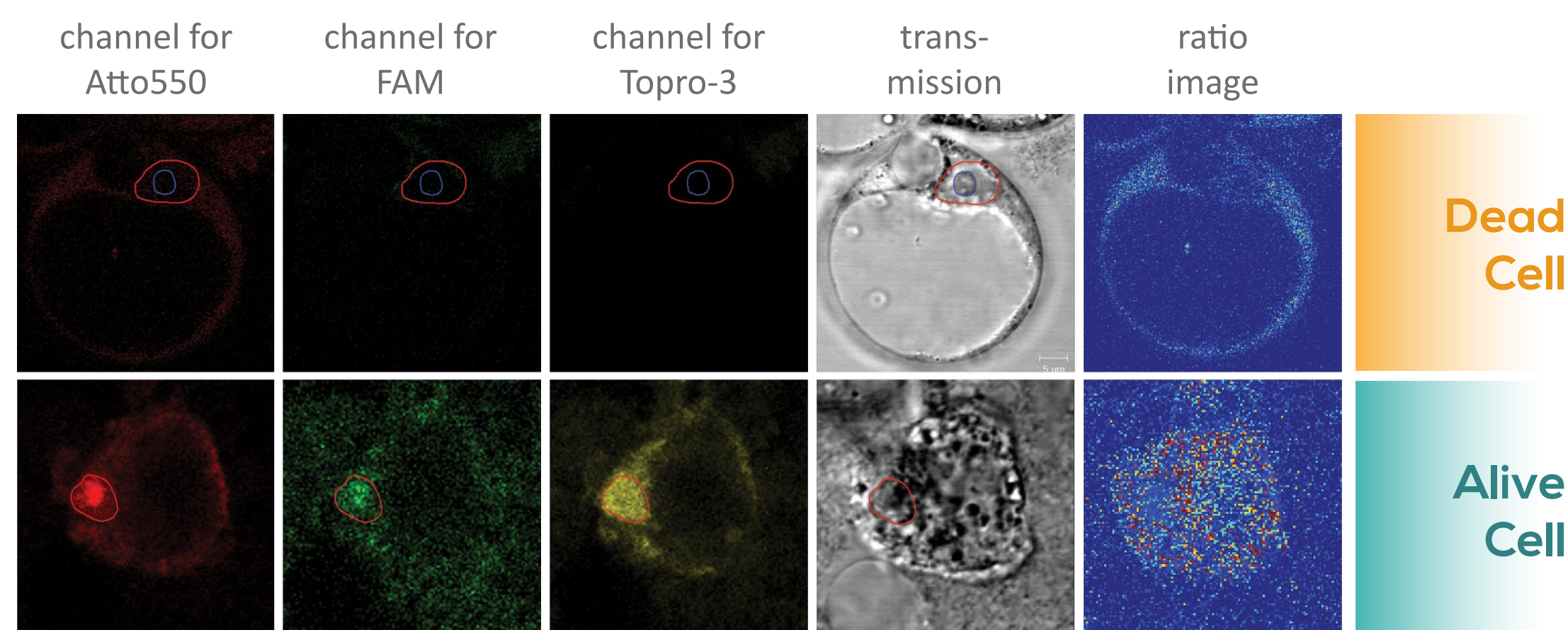
Field of application

The storage of thrombocyte concentrate for medical treatment is time-limited – 5 days at room temperature. This causes enormous logistic challenges for today's high performance medicine at hospitals. We want to increase the lifespan of the thrombocytes by characterizing their temperature-dependent activation. A real-time data analysis of the current activation levels and therefore the state of the thrombocyte should provide information about the applicability of the stored concentrate.

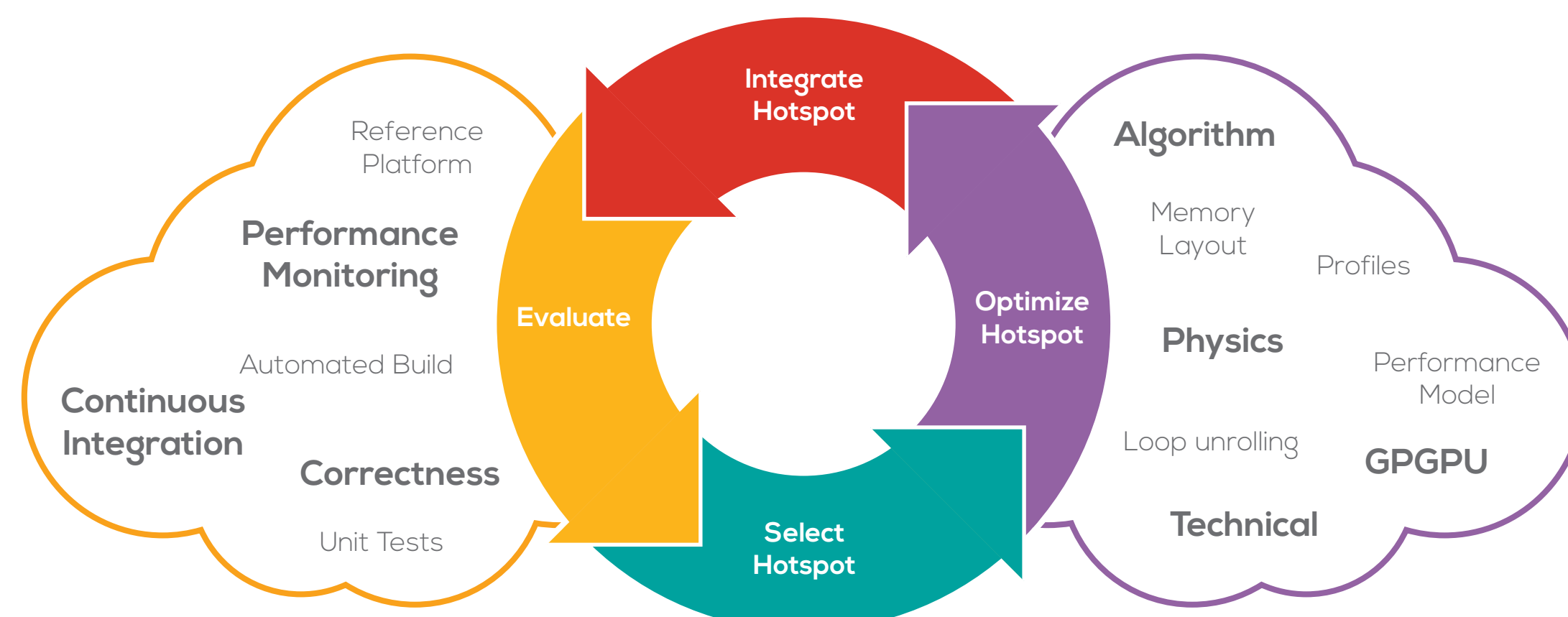
Production-Ready

The reduction of the analysis time from hours to real-time is a significant step forward and saves costs in clinics.

Our solution is to use accelerator technology like GPU or Xeon Phi. By 2015 you get the processing performance of a top notch supercomputer of the year 2003 at 20 to 50 K€. But still you need very specific Know-How to program and to get the most out of such a performance beast.



Production-Ready



Problematic spots are identified. After selecting one of these spots it is going to be optimized on several levels. The results are integrated into the system and tested upon correctness and efficiency.