Microfluidic standardization: a status

N. Verplanck[a] and H. van Heeren[b]
[a]*Univ. Grenoble Alpes, CEA, Leti, DTBS, F-38000 Grenoble, France*
[b]*enablingMNT, The Netherlands*

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1. Introduction

Standardization is key to reach maturity of a domain (reliable products, design guidelines, interoperability…) and helps R&D teams to reduce the time of development drastically.
During the last years, a general awareness of this has driven microfluidic stakeholders to work together (MFManufacturing project, ENIAC-JU, 2014-2017) on the standardization of microfluidics by formalizing standardization protocols, processes and guidelines in order to serve a wide range of users. [1] [2]
The consortium has initiated a new ISO working group [3] and initiated an International Microfluidic Association with over 75 interested parties form 19 countries to lead the future work.

2. Current agreement and future work

First, to enable interoperability of microfluidic devices and promote "plug and play" multiport interconnections, the group decided to define the size of the chip and the port pitch (grid of 1.5 mm). To simplify discussions between designers and users the group also defined a system for coding the ports. The next figure gives an example, where the microfluidic port positions in a 15*15 mm microfluidic building block are shown.

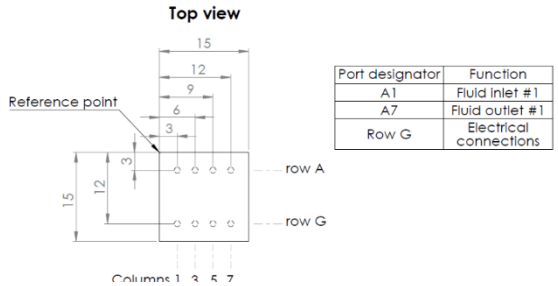

Figure 1: example of standard agreement 15 & 15 mm building block, with positions and coding of ports [1]

Figure 2: application of the standards to a pneumatic valve, developed by CEA-LETI

This initial step in standardization paves the way for the coming work on the standardization of flow control, test protocols (for product datasheets), modularity and interfacing.

References

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