An Integrated Translational Research IT Platform

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**Introduction**
Research projects in personalized medicine share a common design, and are therefore also facing very similar IT issues:

- An explosion of data
- Lack of integrated approaches for collection, management, and analysis of data
- Lack of tools and infrastructure to collaborate with external colleagues in a simple and secure manner

These issues have been addressed in the Translational Research IT (TraIT) project.

**Workflow analysis and tool selection**
When further detailing the translational research workflow we still see a common workflow across the disease areas supported by TraIT:

- Participant / patient enters
- Questionnaire
- Phenotype database
- Biomarker database & biospecimen data
- Biobank information
- Experimental data
- Data integration
- Downstream analysis
- Scientific output

Promising tools like NBIA, OpenClinica, tranSMART, and many others were mapped onto this workflow. All candidate tools were carefully evaluated in an assessment phase with real-life project data before adoption in TraIT, resulting in the selection of the current TraIT Suite of Tools.

**Uptake of TraIT solutions up to September 2016**

**High-level architecture**
The ultimate aim is to arrive at a TraIT suite of tools interconnected into integrated workflows, spanning all the way from the hospital care systems till an integrated translational research workspace where patient data is stored in a secure and privacy-sensitive manner. The centerpiece of this architecture is the open-source data integration and browsing solution tranSMART.

**The future of TraIT - Health-RI**

- National infrastructure enabling personalised medicine & health research
- Connects biobanks, research facilities and data collections in UMCS, universities, institutes & industry
- Data backbone connecting data resources across the Health-RI community
- Cross-technology: specialised technology networks involved
- Bundles local efforts in a collective governance structure

**Participants**
TraIT is a Dutch public/private partnership between >30 partners: University Medical Centers, several other public institutions, charities, and companies: