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Delivering ICT infrastructure for biomedical research - supporting human genomics data analysis at the ELIXIR Finland node hosted at CSC –IT Center for Science

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As Biomedical science data volumes grow, local computational resources to satisfy need for their processing quickly become insufficient. In addition to computing services and technical support, users need significant storage capacities, and access to large reference data to reflect their findings in the context of the current knowledge. The size of the datasets in biomedical science like the human genetic variation 1000 Genomes, The Cancer Genome Atlas (TCGA) and the Finnish sequencing initiative data are hundreds of terabytes to petabytes in size and grow rapidly. Data capacity challenges form a major research bottleneck.

This talk introduces CSC - IT Center for Science (CSC) Infrastructure as a Service (IaaS) cloud concept made in 2011-13 in collaboration with biomedical research organisations. The services are part of the construction of the ELIXIR Finland research infrastructure and included in the national research infrastructure 2014-2020 roadmap. The user organisations can integrate the resources to the local capacity via private network connections. Key use cases for the IaaS at present take place at the Finnish Institute for Molecular Medicine in the Meilahti campus connected with a 10 Gbps network connection to CSC cloud services, for example, in processing of the Finnish sequence data for various biomedical healthcare applications.

More information: http://www.elixir-europe.org

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Session Classification: Going beyond grid to enable life science data analysis