Cloud-based bioinformatics platform for genomics-based precision medicine

- SCHEDA
- APPROFONDIMENTI

Identificativo proposta:TOSG20200519001 **RICHIEDI MAGGIORI INFORMAZIONI**

A Singapore software consultancy and bioinformatics service provider has developed a cloud-based platform for healthcare and agriculture applications to manage, analyse and visualise the voluminous ‘omics' data through the use of sequencing technologies, cutting edge bioinformatics solutions, data management and analysis. The company seeks to partner SMEs from France/EUREKA Network in research/technical cooperation with an interest to jointly participate in bi-lateral funding programs.

The evolution of Next-Generation Sequencing (NGS) technologies has reshaped genomics research and substantially reduced the cost of sequencing ‘omics' data. However, the challenge faced by many researchers is to manage, analyse and visualise the vast and rapidly growing volume and depth of the data, as most clinical genomics service providers prioritise sequencing data generation over data analysis. The Singapore SME has developed a cloud-based, interactive digital platform that can be used by researchers of genomics-based precision medicine to analyse big data with greater accuracy and speed through effective utilisation of supercomputing power. Highly scalable, the platform can scale from tens of cores to thousands of cores, and can take just 48 hours to visualise genomic variants from human exome sequencing. Designed to allow the integration of any number of algorithms in a well structured and distributed environment, the key component in this platform is the workflows that are automated, dynamic and fully transparent to the end user. This is in contrast to black box vertical modules provided by some service providers. The company has two distinct platforms for healthcare and agriculture applications. These automated NGS workflows are able to accelerate personalised healthcare with options for: • Genome sequence assembly and annotation • Novel variant detection • Exome analysis • Any custom workflow The automated data-flow and simultaneous analysis, once the critical parameters are set, alleviates error-prone manual analysis and increases accuracy and efficiency in terms of man-power utilisation. The analysed datasets can be automatically exported to a cloud-based knowledge base that have customised user interfaces, which allow end users to better interact with the data. The Singapore SME is keen to partner SMEs from France or participating EUREKA countries to jointly collaborate in a project under the following types of agreement: 1) Research cooperation - Both companies will cooperate to co-develop new products or services to be introduced to the market. 2) Technical cooperation - Resources are pooled and skills are shared between both parties in the development of the technical aspects of a product or technology.

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