**Digital Platform for Processing Medical Data**

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Aim: To develop solutions for Computation with Federated Resources of distributed medical data in order to facilitate quick response medical care in the case of disasters or military aggressions.

The final outcome is to provide fast access to medical experts and other specialists a secured, distributed tool to carry on complex analyses, to provide diagnostic alternatives and high efficiency cure solutions in harsh conditions.

The input data consist on Big Data structures from mobile IoT based health care terminals, analysis tools and algorithms.

Scientific objectives:

* Proof of concept of the processing in federated infrastructures of medical data, physico-chemical investigation data, image recognition and other similar;
* Integrating input data into modeling and simulation software medical diagnostic support;
* Dynamic adjustments of the medical diagnostic and cure protocol selection processes based on real-time inputs.

Computing objectives:

* Testing and validation of the computational strategies for Big Data processing;
* Evaluation of the performance obtained in federated infrastructures in comparison with local processing facilities
* Extraction of accurate dynamic estimates of the computational resources at different phases of compiling, running and validating the code;
* Strategies for the evaluation of the availability of processing and storage resources and concurrent CPU approaches for accessing the required resources, in each phase of the project;
* Comparative analysis of the required processing and storage resources for the new model of federated processing,
* Exploring opportunities for an integrated interaction of the scientific coordination team and the system engineers operating the federated infrastructures for computation.
* Development of an Artificial Intelligence approach for real-time decision processes

At present, the research team has a computation infrastructure including a laboratory cloud at the Faculty of Automatics and Computer Sciences of the Politehnica University of Bucharest. The local infrastructure is connected to the national GRID for scientific computation and education ROeduNET.

Taking into account the very low scale of the computation infrastructure, there are no additional management and administration services.

The PUB team is interested on the following topics:

1. How to access substantial CPU time in a federated cluster?
2. How to obtain assistance in compiling and running the data processing?
3. How to maximize the access to large capacity storage
4. Post processing facilities for extended data representation applications (including graphics).