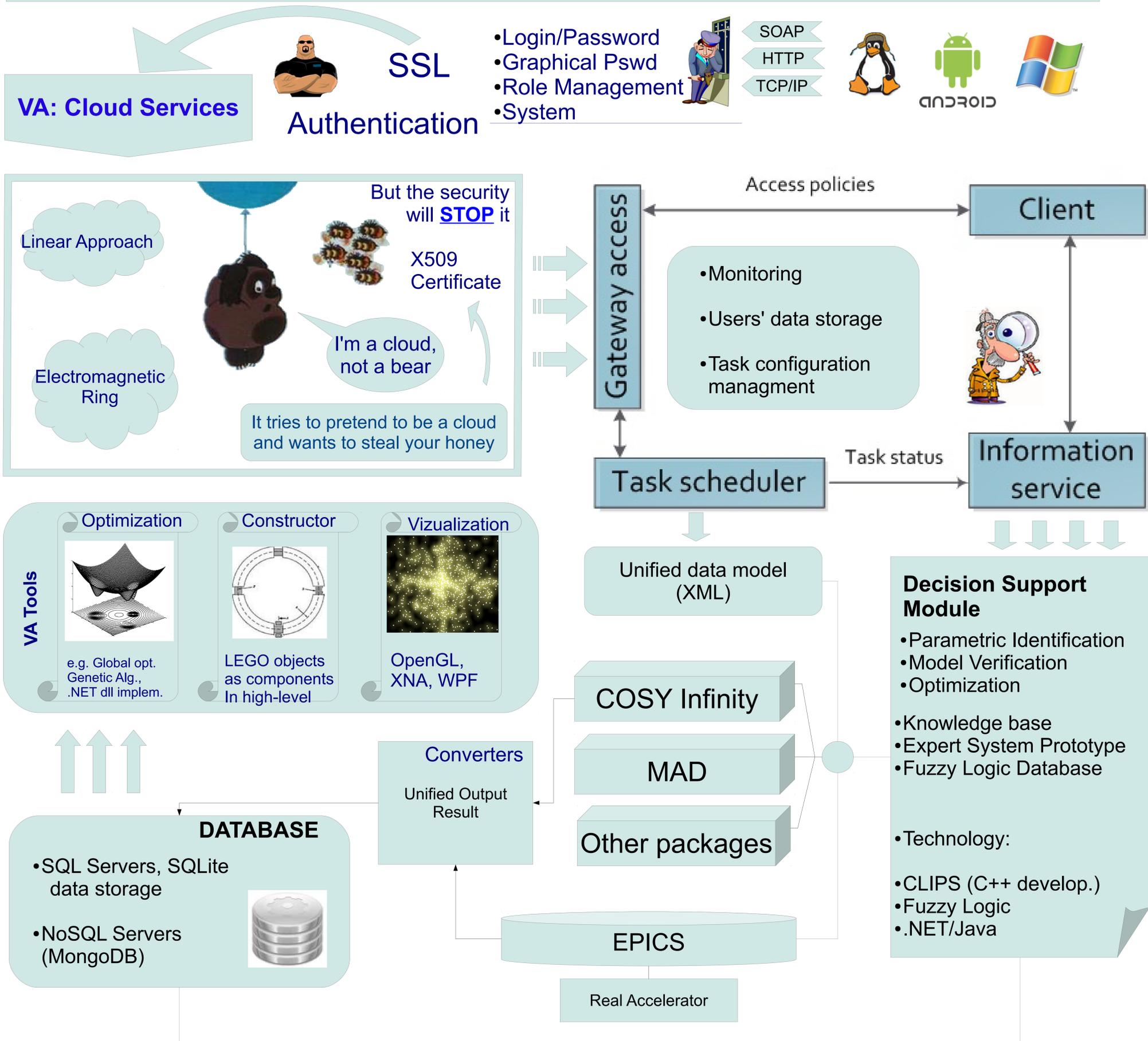


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The article discusses appropriate technologies for software implementation of the Virtual Accelerator. The Virtual Accelerator is considered as a set of services and tools enabling transparent execution of computational software for modeling beam dynamics in accelerators on distributed computing resources. Distributed storage and information processing facilities utilized by the Virtual Accelerator make use of the Service-Oriented Architecture (SOA) according to a cloud computing paradigm. The presented research consists of software analysis for realization of interaction between all levels of the Virtual Accelerator and some samples of middleware implementation. Usage of component-oriented technology for realization of Virtual Accelerator levels interaction is proposed. The article concludes with an overview and substantiation of a choice of technologies that will be used for design and implementation of the Virtual Accelerator.



### Conclusion

In the article a scheme of VA organization is described. Data access protocols that will be used are mentioned. Some modules such as global optimization tools, simulation and numerical algorithm are completely developed, other are in a progress. Future plans for this project include extend of the VA tools, implementation of Cloud-service architecture and support developed systems via knowledge base growing, development of methods and approaches in beam dynamics and simulation and validation proposed approach on real machines.