

VEGA-Science

VEGA-Science - satellite service for collective use, oriented on information support of scientific studies on status and dynamics of biosphere and its interaction with other components of geosystem.

The service is based on long-term archives of satellite data and information products received on their basis, that characterizing vegetation cover conditions in the Northern Eurasia, including Russia and neighboring countries. There are data in the archives on any area of this territory since the beginning of the twenty-first century.

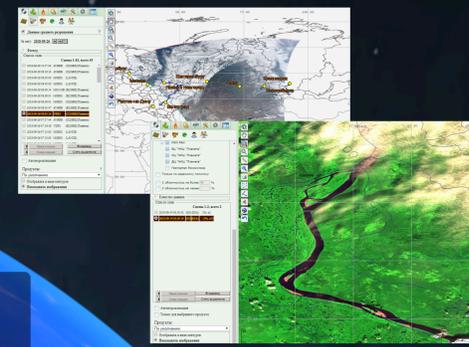


Goals

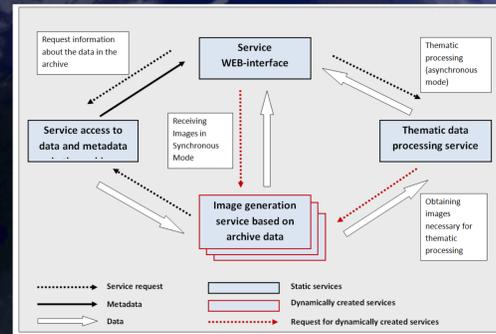
- The goal of the project is to create an environment for conducting space research on the basis of an automatically scalable virtual computing infrastructure, which should:
 - increase the efficiency of use in scientific equipment: both specialized (for example, telemetry storage centers for remote sensing satellites) and for general purposes;
 - facilitate the cooperation between research organizations, provide them with access to the missing resources, including for the organization of educational process;
 - improve the testability and reproducibility of scientific research results obtained by different teams of scientists

Expected Results

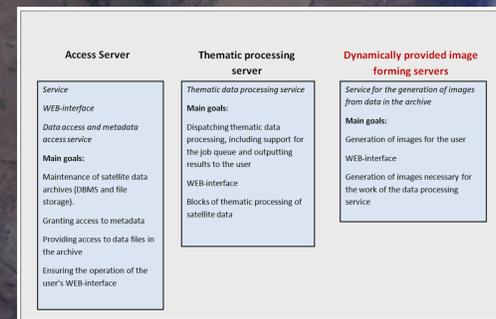
- Integrate VEGA service via student web-portal to provide access resources controled by C2 Platform
- Full automatic orchestration on all life-cycle stages (inc, policies) of VEGA service
- Build distributed cloud rack system on 4-5 natural science Lomonosov MSU faculties



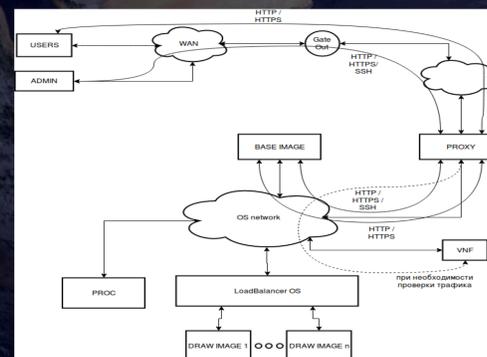
Simplified scheme of services interaction



Functional scheme of deployed servers



VEGA cloud service scheme



- Function specification
– TOSCA
– IaaS/SaaS/BigData or any other
- Resource scheduling for each function instance
- Deploying the certain function instance

Integration of the access service to satellite data in the C2 Platform

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- Configuring the certain function instance
- Service execution
- Function Instance undeploying: Release resources

The poster describes the current model of satellite data access system integrated into the C2 platform, developed jointly by the specialists of IKI RAS and CMC MSU faculty. The main goal of the joint work is the development of technologies that allow the easy deployment of remote sensing data access systems on sites of different universities.

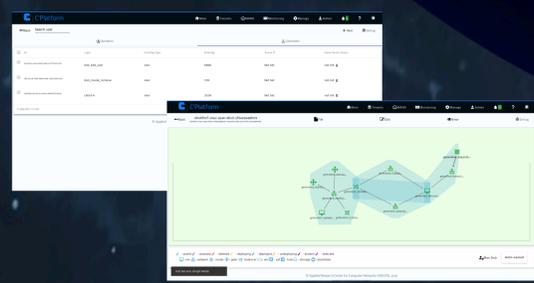
Such information system mainly can be used to teach students the basics of working with satellite data as well as for solving various research problems.

A key advantage of technologies being developed is the ability to rapidly deploy satellite data access complexes and dynamically scale them, depending on current needs.

C2 Platform

The C2 Platform provides virtual network services (VNS) to customers by CPE virtualization. Virtual customer premise equipment (vCPE) is a way to deliver network services such as routing, firewall and virtual private network to enterprises by using software rather than dedicated hardware devices.

By virtualizing the CPE, the C2 Platform can simplify and accelerate service delivery, remotely configuring and managing devices and allowing customers to order new services on demand.



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