



PRESS RELEASE

VENUS-C Launches New Cloud Pilots

9th June 2011

Organisations of all types are adopting Cloud computing technologies to gain operational effectiveness and strategic advantage in their environments. The overwhelming response to the Open Call launched at the beginning of the year by VENUS-C (Virtual Multidisciplinary EnviroNments USING Cloud Infrastructures), a pioneering project for the European Commission's 7th Framework Programme, perfectly illustrates the sea change that is occurring in IT as part of a large effort in Europe and worldwide to use Cloud to the benefit of research, businesses and society. The fifteen new pilots, which have received fund seeds to support the testing and deployment of a the VENUS-C Cloud infrastructure, bring new applications spanning bioinformatics, civil engineering, earth sciences, healthcare, marine surveillance, mathematics, physics and social media. They join an equally compelling portfolio of partner user scenarios for bioinformatics, systems biology, drug discovery, civil engineering, civil protection and emergencies, and marine biodiversity data.

"It was most pleasing to see such a good response to the consortium's request for proposals. It is clearly a continued sign that Europe has an appetite and talent for scientific innovation that we're happy to support by providing easy access to computing power for manipulating large volumes of data and running very complex computations. Microsoft Research is proud to be a catalyst in the process that enables scientists to focus on discovery, rather than computing infrastructure. We hope that the projects and organisations selected will go on to produce results that will be of benefit to the scientific community, and ultimately the public at large" said Andrew Herbert, Chairman Microsoft Research EMEA.

One Infrastructure, compelling range of applications

From biology to maths, VENUS-C will benefit research communities working in very different fields.

Phil Trinder from the Heriot-Watt University in Scotland sees VENUS-C as a power tool for Mathematicians, who will be able to perform symbolic computations on the cloud far faster than on their own servers, making possible problems that have not previously been computationally viable. A big advantage will be the ability to focus on **Mathematical problems** without the need to maintain sophisticated parallel symbolic software. Observational and theoretical cosmologists need fast simulations of multiple cosmological models and for data analysis pipelines. Eusebio Sánchez from CIEMAT in Spain explained that the goal is to adapt cosmological calculations to VENUS-C to speed up this process and provide the community with a repository of cosmological models.

Benefits on **environmental conditions** will come from two very different applications, cutting-edge **architecture design and earth sciences**. "One of the challenges facing architects today is improving the



VENUS-C (RI-261565) is co-funded by the European Commission under Framework Programme 7 (2007- 2013) Research Infrastructures projects

environmental impact of buildings. We will use the VENUS-C resources to optimise computation time and create an on-line service where architects can upload their design for performance testing” said Emanuele Naboni, Danish Royal Academy. Cost savings and the easy deployment of services are two of the major benefits for Costas Papadachos from the Geophysics Lab at Aristotle University in Greece. “VENUS-C will ease some of the difficulty of earthquake impact assessment by offering a prime opportunity to access unprecedented resources only when and where necessary without worrying about maintaining the infrastructure and operational tools”, he said.

A number of the new pilots come from **biology and bioinformatics**. “We will use the large computational resources provided by VENUS-C to examine how cells behave dynamically. The ultimate goal is to play a part in enabling biologists to get a substantially improved picture of how cells change at the molecular level”, explained Hugh Shanahan, Royal Holloway, UK. Other pilots will focus on providing access to more efficient heuristics for phylogeny inference, improving computational solutions and delivering more complex data analysis services, as well as offering real-time target prediction services for users of the DIANA-microT web application and enabling bio-scientists to run molecular docking experiments on a much larger scale than is currently possible.

Data management is one of the challenges also addressed by the new pilots. “Researchers involved in social Web mining face the challenge of handling and analysing massive amounts of evolving data with algorithms that frequently have high computational complexity”, explained Athena Vikali from the Computer Science Department at Aristotle University. To solve this issue, the pilot will demonstrate the advantages of a Cloud computing infrastructure for real-time web social data analysis by easing and speeding up the process. The aim is to provide both policy makers and businesses with information on the needs and concerns of local citizens to ensure services are community-driven.

Healthcare and Citizen Wellbeing

A clear indication of how the Cloud-enable pilots will benefit the **public at large** comes from CESGA, a Spanish organisation. Carlos Mouriño said, “The effectiveness of the radiotherapy treatment is of primary importance in cancer treatment. Our involvement in VENUS-C will place us at the forefront of services for hospitals, enhancing our current prototype with 65 users from 47 hospitals, speeding up the adoption of new radiotherapy techniques, reducing costs and improving the quality and effectiveness of the cancer treatment plans”. An application from the University of Cyprus will also drive innovation in **medical facilities** by designing a truly real-time diagnosis, early prognosis, decision-aided computerised procedures to improve treatment. A third pilot for healthcare is centred on a brain imaging analysis platform. The aim is not only to accelerate the imaging process but also improve the quality of the complex analysis of functional brain image data. In the long term the Stockholm Brain Institute expects the Cloud to facilitate data sharing and publishing in and outside the lab.

Spotlight on SMEs

The new pilots include two European **start-ups** from two different fields. The advantages of VENUS-C are very clear for Molplex, a small business in the UK with a focus on enabling scientists worldwide to deliver new medicines faster and at lower cost. “VENUS-C will enable us to do in a few weeks molecular computations that would have taken a year to complete on our own servers. Computer resources can be scaled as required without committing to large capital purchases, which is critical to the success of our small business”, said Vladimir Sykora.



DFRC in Switzerland, is part of an EU flagship project to improve security and safety in European marine borders, combat illegal migration, related crime and goods smuggling. Erel Rosenberg, explained “scaling our platform with the VENUS-C infrastructure will enable us to support future growth in terms of vessels monitored in real-time and usability by operators.”

Fabrizio Gagliardi, Director of External Research for Microsoft in Europe, Middle East and Africa and Chair of the VENUS-C Project Management Board, described the new opportunities as “VENUS-C is building a highly-scalable and flexible Cloud infrastructure to provide easy access to computing power for complex computations and the analysis of large amounts of data. By empowering a broad set of users in science and enterprise, VENUS-C will play a key part in bringing about fundamental changes in scientific discovery, results and innovation in Europe and beyond”.

Project Director, Andrea Manieri, Engineering, said “The Open Call perfectly illustrates the potential for the broader uptake of Cloud computing across the European Union over the next few years in line with the Commission’s 2020 Cloud computing objectives. VENUS-C is committed to exploring all possible avenues that can open up new opportunities in this direction. We’re also strengthening our ties with international standards bodies in the drive towards interoperable Cloud infrastructures for the benefit of all citizens”.

Source: VENUS-C (www.venus-c.eu)

About VENUS-C

VENUS-C is co-funded by the GÉANT and e-Infrastructure Unit, DG Information Society and Media of the European Commission, as one of six European Distributed Computing Infrastructures (DCIs). Microsoft invests in Azure resources and manpower through Redmond and its European research centres. The 14 partners in VENUS-C are: Engineering (Italy), project co-ordinator, Barcelona Supercomputing Center (BSC, Spain), Centre for Computational and Systems Biology (CoSBI, Italy), Collaboratorio (Italy), European Chapter of the Open Grid Forum (OGF.eeig, UK), European Microsoft Innovation Center (EMIC, Germany), Microsoft Innovation Center – Greece, Microsoft Research Ltd (UK), National Research Council of Italy (CNR, Italy), Newcastle University (UK), Royal Institute of Technology (KTH, Sweden), Technion (Israel), the Technical University of Valencia (Spain) and the University of the Aegean (Greece).

The 15 new pilots are represented by Aristotle University (Department of Computer Science and Geophysics Lab, Greece), Athena Research (Greece), CESGA (Spain), CIEMAT (Spain), DFRC (Switzerland), Heriot-Watt University, Molplex (UK), Royal Danish Academy (Denmark), Royal Holloway (UK), Stockholm Brain Institute (Sweden), University of Applied Sciences (Switzerland), University of Cyprus (Cyprus), University of Malaga (Spain), University of Westminster (UK).

