

Proposed EGI virtual team project *Fire and Smoke Simulation*

Minutes of EVO meeting, February 17, 2012

Time: 14:00 - 15:30

Participants:

egi.eu: Gergely Sipos

Portugal: Luís Mário Ribeiro, António Pina

Spain: Tomàs Margalef, Ana Cortés

Slovakia: Ladislav Hluchý, Ladislav Halada, Ján Glasa, Peter Weisenpacher,
Peter Kurdel, Jolana Sebestyénová

1. Basic description of each partner's situation

Slovakia:

- Fire simulations in buildings and tunnels with FDS application
- Requires HPC & Grid because of capacity needs
- Requirements
 - Stable MPI and OpenMP environments
 - Visualisation in real-time
- Execution on a local cluster at the moment
- Slovakia has new clusters that can be used to increase capacity for simulation

Portugal (Luis - Coimbra, Forest Fire Research Centre & Antonio from IT):

- Not specialist on IT
- Research only forest fire
- Developed a simulation framework called - FireStation
 - Developed a parallel version of the FireStation on grid in Cyclops project
 - Already worked with MPI
 - What is its current status?
- 2D simulator, not 3D like the Slovakian
- Their contribution to the VT is unclear. It could be:
 - Act as end users of grid-enabled simulator frameworks who provide feedback on these?
 - Why would they review a Slovakian system when they have their own?
 - Integrate their own simulator (FireStation) with EGI?
 - It does not need too much computer power
 - The wind simulation of FireStation is the new thing
 - Heavy model, unique model in the world
 - Extract models from FireStation and run with FDS?
- Further develop FireStation to a scalable application service?
 - FireStation seems to be the software that they research and continuously improve - hard/impossible to define a service from this
 - Would other users be interested in accessing FireStation?

Spain (Tomas - Barcelona):

- Worked on forest fire simulations with different simulators (not the ones above)

- Developed "tuning parameter methodology" to improve results (based on genetic algorithms)
 - Now they work on introducing meteorological predictions into the fire predictions
 - Genetic algorithms need lot of computing power - could be run on the grid
 - Can you describe the needs of this application for parallel computing?
 - Is the integration of this simulator with EGI their contribution to the VT? Can the Spanish and the Slovakian NGI support them?
 - Extend the VT from the current one model (FDS) to other simulations?

2. Next steps

Put together a document about the roles of the participants in the project:

1. By end of February each team (Slovakia, Portugal, Spain) writes a text about their potential contribution to the project - send this to Ladislav (Note: other partners may also join)
2. First week of March - Ladislav prepares presentation about the VT project for the Community Forum - please, send him some slides
3. Participation at user forum - Ladislav can represent the group there

3. Future goals

Specify requirements of Fire simulation applications towards EGI grid environment. Acquired experiences may lead to future creation of a consortium aiming to apply for funded EU project.

Minutes taker: Gergely Sipos; J. Sebestyénová (final corrections and additions)