Energy Efficient (Green) Cloud !
The CompatibleOne Experience

Laurent Lefevre, Jean-Patrick Gelas, Olivier Mornard, Maxime Morel

laurent.lefevre@inria.fr, jean-patrick.gelas@inria.fr, olivier.mornard@inria.fr, maxime.morel@inria.fr

http://www.ens-lyon.fr/LIP/RESO/eecloud/

- CompatibleOne : French Project on Cloud software stack design (Fonds Unique Interministériel (FUI) support : BULL Leader + Mix of SMEs and Academics)

- Integration project (OpenStack, OpenNebula)
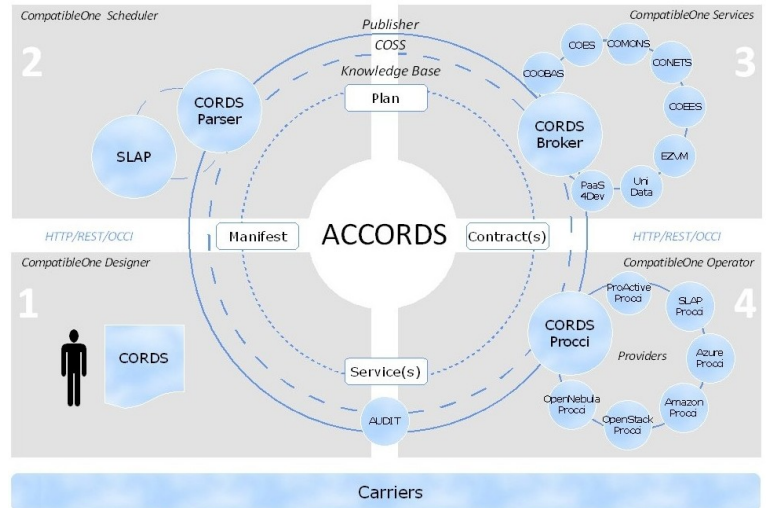
- Development project : new software components

Fig 1 - CompatibleOne architecture

- Energy Monitoring of physical and virtual resources

- Energy usage exposing for users and clouds managers

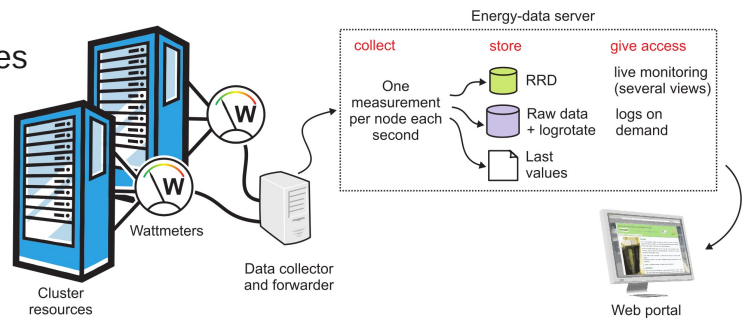- Energy monitoring streams for upper layers software

Fig 2 - Cloud energy collect infrastructure

- Design Energy aware software components

- Measures exploitation (Utility)

- Jobs/Tasks distribution / Virtual Machine placement
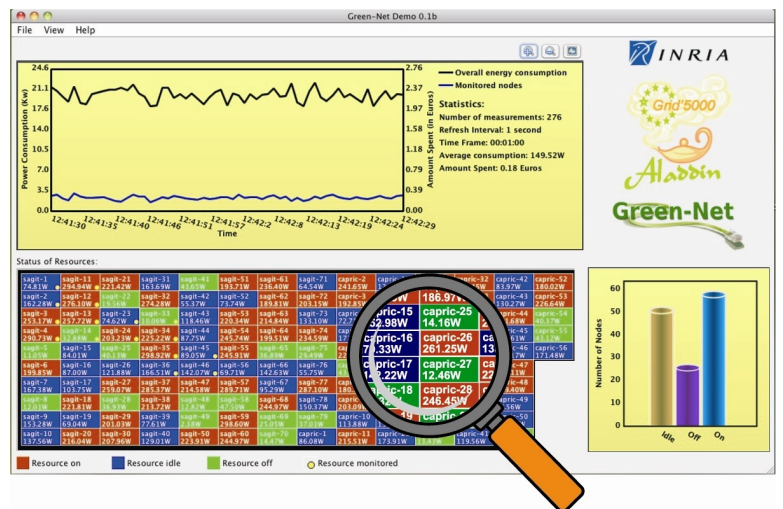
- Billing

- Infrastructure management

- Carbon footprint evaluation

Fig 3 - Showatts software framework