



## Draft Trinity 3D Consortium Development Plan, 2004~2006, Jan 22, 2004

We are at the end of the three years of our successful Trinity consortium. I would like to thank the founding members of the consortium for helping to bring Trinity to a beautiful reality. Trinity is intuitive and easy to use and has made it possible for fast geological model building of the petroleum system. It also has, quite naturally, opened up the possibilities to develop more advanced add-on tools to for the integration, analysis and visualization of petroleum systems. While many new tools/modules will be developed as part of the on going Trinity development process for existing customers, we propose that some selected advanced tools be developed in the form of a industrial consortium.

**Objective:** The ability to track and predict hydrocarbon volume and composition (oil and gas) as a function of PVT through the three dimensional geological space. The main software objective is to develop an alternative approach to traditional 3D basin simulators that are too difficult to use. The 3D P-T development will be focusing on practical, fast and useful algorithms for solving 3D problems without necessarily using traditional matrix based solvers. The details on 3D approaches will be discussed at meetings with potential members.

- 1) 3D flow path tracking with PVT to predict volume, composition and distribution of hydrocarbons and migration losses.
- 2) Develop a 3D transient temperature model that is based on a temperature boundary condition at the base of lithosphere.
- 3) Develop a 3D pressure model for more accurate prediction of column heights in over pressured regions such as GOM.

**Member benefits:** Seat on the technical steering committee; priority support; frequent updates; 1 to 3 year lead time before commercial release of consortium features; 1 free copy (license) of the software (consortium components of Trinity, existing non-consortium Trinity license required); additional future licenses at 50% discounts.

**Cost:** The basic cost is the annual consortium fee: \$26K, which includes one single user license of the consortium software. Additional users may pay \$10K/user/year. This cost structure is designed to help balance the need between the large and small companies.

**Non-consortium version:** The current version of Trinity is used as the foundation for Trinity 3D (T3). Instead of developing a separate piece of software, T3 will be adding some advanced tools (modules) to Trinity that are naturally “the next step” in petroleum system work flow. Non-consortium version will continue to evolve as a simple petroleum system workflow tool. It will simply have the consortium features “turned off”. Planned improvements in Trinity that is not limited to the consortium include:

- 1) Continue to develop Trinity as the workbench for petroleum system integration, analysis and visualization. Adding more map based data importing, manipulation, editing and correlation features. Focusing on handling more scattered data.
- 2) Monte Carlo Risking of trap volumes based on the current PVT trap volume and property calculator.
- 3) Interactive 3D flow path tracking and fetch volume, migration losses, non-PVT based.
- 4) Automate handling of salt movement through time.
- 5) ... ..

We do not want to make an extensive list here. Our Trinity experience was that as we continue to apply the tool, more than enough ideas will come naturally!

We will continue the tradition of Trinity to develop fast, interactive, and intuitive PC based work flow toolkit for integration, analysis and visualization of the petroleum system. We will NOT develop an integrated/coupled basin simulator. We believe that these basin models (simulators) are vastly under constrained and the key for petroleum system analysis is to build the simplest petroleum system geological model consistent with observations (all surface and sub-surface observations, not just well data) in order to predict the volume, composition (oil and gas, not n-component) and the distribution of hydrocarbons.

Your support is very much appreciated,

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