



### FEATURE STORY

## Injecting Value into your Workflows

By Dan Piette, OpenSpirit President & CEO



I was talking to a very important person in the oil and gas software business the other day. She told me that the next significant change that we will see is not going to be focused on a specific software

technology, nor a specific hardware technology. She said that it will be focused on enabling workflows.

I was wondering if this is just another case of exploding buzzwords, and decided to look into this a little more closely.

### What Do People Mean by "Workflow"?

We know about Mass and Energy Flows (think Transport Phenomenon, for all you old Chemical Engineers out there). That is the movement of "stuff" – mass, momentum, or heat. So what can I conclude about "workflow"?

I suppose Wikipedia is as good a source as any:

*A workflow is a depiction of a sequence of operations, declared as work of a person, work of a simple or complex mechanism, work of a group of persons, work of an organization of staff, or machines. Workflow may be seen as any abstraction of real work, segregated in workshare, work split or whatever types of ordering. For control purposes, a workflow may be a view on real work under a chosen aspect, thus serving as a virtual representation of actual work.*

*A workflow is a model to represent real work for further assessment, e.g., for*

*describing a reliably repeatable sequence of operations. More abstractly, a workflow is a pattern of activity enabled by a systematic organization of resources, defined roles and mass energy and information flows, into a work process that can be documented and learned. Workflows are designed to achieve processing intents of some sort, such as physical transformation, service provision, or information processing*

*Workflow concepts are closely related to other concepts used to describe organizational structure, such as silos, functions, teams, projects, policies and hierarchies. Workflows may be viewed as one primitive building block of organizations.*

*A workflow acts upon data to make it more economically attractive. Enabling that workflow brings exponential value to the entire process.*

*The term workflow is used in computer programming to capture and develop human-to-machine interaction. Workflow software aims to provide end users with an easier way to orchestrate or describe complex processing of data in a visual form, much like flow charts, but without the need to understand computers or programming.*

Wow. So let me try and boil this down to my own personal definition of a workflow. (You can't

really own a word, I suppose, but if you define it and then use it consistently, at least people will know what you are talking about).

***A workflow is a repeatable series of steps that are taken to add value to a set of data.***

I suppose we should also define "value". Again, to facilitate the discussion that I am trying to have:

***Value is the economic worth of an item.***

So, what I am saying is that a workflow acts upon data to make it more economically attractive. Think of it this way – if your work-

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## Injecting Value into your Workflows

v3.1.2 Released

OpenSpirit/OpenWorks R5000 Workflows

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### Infinite Integration

Digital Pathways Delivered

Achieve Exponential Efficiency

Break Free from  
Application Bias

Unravel the Mystery of  
Units & Coordinates

## OpenSpirit v3.1.2 Released July 3

The latest version of  
OpenSpirit is now  
available!

Key enhancements include:

- Performance enhancements for retrieving SeisWorks 2D datasets and horizons
- Additional functionality to control SeisWorks seismic format volume creations

OpenSpirit v3.1.2 is a Master and Satellite release, intended to update existing v3.1.1 installations or to be installed as a new installation.

See a full description at: <http://www.openspirit.com/documentation.html>.

OpenSpirit v3.1.2 Master and Satellite Update installation kits are available on all supported platforms.

You can download the v3.1.2 installation kits at: <http://www.openspirit.com/downloads.html>.

**User Name/Password:**  
openspirit/osplvwle

If you have questions about v3.1.2, contact us and we'll be happy to assist you. ◆



Visit the OpenSpirit Team  
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Partners at SEG!  
November 9-14  
Booth 818

## OpenSpirit - OpenWorks® R5000 Workflows

*System administrators, data managers, and geoscientists are eager to realize the benefits of the latest geotechnical applications and integrated workflows.*

OpenSpirit introduced the OpenWorks® R5000 data connector in Q2 2008 (v3.1.1), coincident with Landmark's R5000 synchronous software release. The E&P industry can now take advantage of the many benefits of R5000, and by using OpenSpirit, continue to reach out to best-of-breed applications and data stores that comprise their multi-vendor environments.

- All OpenSpirit-enabled applications gain immediate access to R5000
- Experience expanded workflow flexibility via simultaneous access to OpenWorks R5000 and OpenWorks 2003
- Using the Scan Utility, get a visual GIS perspective of data *before* and *after* upgrading to R5000
- Further leveraging the flexibility of simultaneous access, you can execute a phased approach in migrating to R5000, for example, upgrading individual regions
- Perform efficient, one-step data transfer between OpenWorks R5000 and OpenWorks 2003, as well as other OpenSpirit-enabled data stores, using the OpenSpirit CopySync utility

### Key Workflows that You Can Take Advantage of Today

#### Geotechnical: Petrel® 2008 – OpenSpirit 3.1.1 – OpenWorks 2003 – OpenWorks R5000

- With OpenSpirit v3.1.1 or later, Petrel users can read/write data from both OpenWorks 2003 and R5000, simultaneously
- Data managers can upgrade to OpenWorks R5000 and manage any existing OpenWorks 2003 installations, as required

#### GIS: OpenWorks 2003 – OpenWorks R5000 – OpenSpirit Scan Utility – OpenSpirit GIS Integration

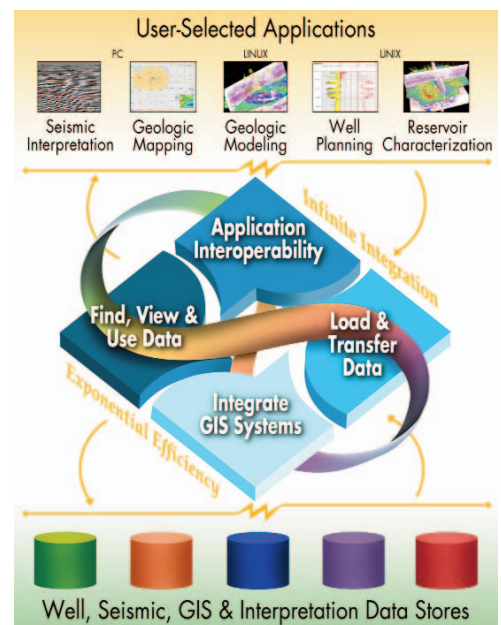
- Using the Scan Utility, you can build shape files or write to an SDE-enabled database to represent well, seismic and interpretation data from all projects in OpenWorks 2003
- After migrating to R5000, you can regenerate shape files or SDE layers for migrated data
- Browse GIS data in the GIS browser of choice
- Using the OpenSpirit ArcGIS Extension, you can verify the progress of migration projects and broadcast map selections to other OpenSpirit-enabled applications for data comparison

#### Data Management: OpenWorks 2003 – OpenWorks R5000 – OpenSpirit CopySync

- Using OpenSpirit CopySync, you can transfer selected OpenSpirit data types from OpenWorks 2003 to R5000 and vice-versa, in one step
- Copy jobs can then be scheduled to run at regular intervals

#### Make the Most of Your Geotechnical Environment

Keep your G&G teams working on interpretation and problem solving – not integration. For more information about using OpenSpirit to streamline your G&G workflows, contact OpenSpirit today! ◆



## Register Today for the OpenSpirit Technical Symposium in Calgary and Houston!

Calgary, September 3  
Telus Convention Centre

Houston, September 10  
Sugar Creek Country Club, Sugar Land, Texas

[www.openspirit.com](http://www.openspirit.com)

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flow is picking tops on a log, the log with picks is worth more money than the log without picks. That seems to make sense to me.

So, if a workflow adds value to data, then what does "enabling" that workflow offer? What if you could give that workflow the power to reach outside its original functional boundaries and incorporate data that might otherwise remain unknown?

Let's start by examining some simple workflows that a geologist or geophysicist may use on a daily basis.

#### Checklist for Picking Tops

To start picking well tops, an earth scientist needs several things, including:

- The context in which these tops are being picked – where are you in the world, what is the geology of the area you are examining
- What formations are you trying to pick
- Relationship between the formation tops you are trying to pick

Now, in most oil companies today, a new project is started by the geoscientist queuing up to get the data loaded by a geotech. A list is made of the data to be collected, the data is collected, and then loaded into the appropriate project database for the work to commence. If there is a problem with the data (such as incorrect location, projection system, or units) the geoscientist usually asks the geotech to reformat the data in question, or to research the information and reload the data.

As the new interpretation is completed, the geoscientist will then contact the data manager (usually via the geotech) and ask that the new information update all the other interpretations around the company. This is a non-trivial task. Various sources (such as IHS) contend that geoscientists *spend only 40 percent of their time analyzing data!* The other 60 percent is spent looking for, loading, and storing data – 60 percent!

#### The Complex Reality

The geologist is working an area in South Texas where the company has just finished logging a well. He is told to integrate this well into the existing interpretation. Let's say that he has to start from scratch, since the geologist who quit when he was hired deleted all his work material in a fit of pique.

So, the geologist goes to his overworked geotech and asks him to pull all the logs within a geographic area and load them onto his workstation. He wants to see the logs in a petrophysical package in TVD, and he also wants to see them in a 3D view so he can get some sense of where these things lie in space.

His "workflow" will be comprised of examining the log curves, looking at the existing picks performed by previous geologists, integrating that view into a subsurface model, considering depositional environments and all that other fancy science that geologists get paid the big bucks for, and finally determining where to place the new pick on the new well.

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## SHORT SHOTS OpenSpirit News

### Landmark and OpenSpirit to Develop GeoProbe Data Connector

Landmark is working with OpenSpirit to develop a data connector for the GeoProbe® 3D multi-volume interpretation and visualization solution.

The OpenSpirit GeoProbe Connector will enable integrated access to a wide range of data stores including KINGDOM™, Petra®, SDE™, GOCAD, ArcSDE, Finder®, PPDM™ and Recall™. The connector will also replace Landmark's current GeoFrame® Data Server product (GFDS).

"GeoProbe stands out as one of the leading volume interpretation solutions in the industry," said Dan Piette, President and CEO of OpenSpirit. "GeoProbe users will benefit from expanded interoperability among critical geoscience data stores that are already OpenSpirit-enabled. In the future, we hope to add our event services functionality to the data connector, enabling GeoProbe users to interact with OpenSpirit-enabled applications offered by our other digital integration partners.

"Today's oil companies operate in a multi-vendor world. Providing them with the ability to integrate disparate applications and data stores in a productive manner is invaluable in achieving greater returns throughout an asset's lifecycle." said Chris Usher, senior director of technology at Landmark. "Our latest collaboration with OpenSpirit on a new data connector for GeoProbe software is yet another proof point of Landmark's commitment to openness and interoperability through our DecisionSpace® environment."

Read press release.

### OpenSpirit Names International Distributor for China

As part of ongoing support of the Asia Pacific region, OpenSpirit has named Beijing Jurassic Software Co. Ltd (Jurassic) as its regional distributor in China. Jurassic is using OpenSpirit as part of their integrated data management services for major Chinese oilfields.

Jurassic is developing the application plugins to the OpenSpirit platform, as well as migrating their market-leading suite of GeoMap products to the OpenSpirit-enabled PPDM and Managed SEG Y data stores.

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place the OLD picks on the OLD log curves may need to change – so now he must undo what was done before, document WHY he is making such a change, and then save (or recommend to someone to save) his NEW picks back into the OLD data base that those old picks were drawn from.

Sounds complicated.

### **Simplifying the Process and Upping the Value**

Now think about how you could go about this if you had an integration framework that allowed easier access to that same data. A framework that :

- Knows where your data is, because you created SDE files describing the location
- Takes care of projection systems automatically, using the best technology in the world
- Converts units to your preferred unit system, and a framework that allows your best-of-breed application to talk to each other, *even though you bought them from different vendors*

So, I would guess that the workflow would go something like this:

The geologist would sit down at a computer. He would pull up a map of the area he was assigned, and be able to see ALL the data that is available to him – wells, seismic, production, land, pipelines, you name it. He would then be able to lasso the data he wanted to see, and click a mouse to select that data and send it to whatever software he wanted to use for interpretation.

During his interpretation, if he realized that a *new earth model* is more appropriate based on his new data, he sends a note with documentation, including his view of the data, as well as the historical interpretation, to his data manager, who vets his information and decides his change has merit.

That change is then promulgated back to the original databases, where a change notice cascades throughout the system, informing all the other earth scientists working in the area of the change, and offering to update *their* data with the new information whenever they want.

This workflow has added all sorts of value. It has added a pick in the new well, updated picks in existing wells, and provided that more valuable information to a number of *other* interpreters who now have better (more valuable) information with which to update *their own* interpretations. Talk about a virtuous circle.

And, of course, since you are reading this in the OpenSpirit newsletter, you know that the workflow enabler is OpenSpirit. We provide the ability to connect databases and applications. Maps can be used as selection tools, giving data managers the ability to update information as new data comes across, and as new interpretations are added to the geological knowledge of an area.

You can multiply the value created by a workflow, making it a more attractive process than before. This isn't just a value add, this is an exponential change in value. OpenSpirit allows that to happen. ♦

Now, keep in mind that with this new well, the geologist may have decided that the earth model that the former geologist was using to

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**SHORT SHOTS**

Jurassic is actively providing the OpenSpirit solutions to the main petroleum shareholding companies and petroleum groups in more than 20 oilfields in China.

**Miss Tang**

+86 15810518591

tanghh@jurassic.com.cn

www.jurassic.com.cn

### **Events and Technical Symposia**

- **OpenSpirit Technical Symposium, Calgary, Sept. 3...REGISTER**
- **OpenSpirit Technical Symposium, Houston, Sept. 10...REGISTER**
- SIS Global Forum, Paris, Oct. 6-9
- SEG, Las Vegas, Nov. 9-12, Booth 818
- Oil & Gas Exchange, London, Nov. 18-19
- SMI E&P Information and Data Management Conference, London, Feb. 10-11, 2009
- ESRI PUG, Houston, Feb. 23-25, 2009
- EAGE, Amsterdam, June 8-11, 2009
- OpenSpirit Technical Symposium, Amsterdam, June 12, 2009

### **OpenSpirit Training Dates**

Courses are held at our offices in Stafford, Texas (unless otherwise noted).

#### **OpenSpirit Basics**

- September 4, 2008 (Calgary)
- November 25, 2008
- February 24, 2009
- May 26, 2009

#### **OpenSpirit for Administrators**

- September 5, 2008 (Calgary)
- November 26, 2008
- February 25, 2009
- May 27, 2009

Information and registration instructions/form are available at:  
[www.openspirit.com/training.html](http://www.openspirit.com/training.html).



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OpenSpirit Corporation, 4800 Sugar Grove Blvd., Suite 500, Stafford, TX 77477, (281) 295-1400

Address all inquiries and subscriptions to: [info@openspirit.com](mailto:info@openspirit.com)