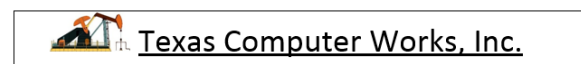


SPEE 2015 Petroleum Evaluation Software Symposium

Vendor Survey Summary

The information included herein is a summary of data provided by various economic evaluation software vendors for use at the SPEE 2015 Petroleum Evaluation Software Symposium. A vendor survey was provided to each participating software vendor related to the currently available software release. Survey results were collected throughout July 2015.

The information was summarized by a third party group, QED Energy Associates. A summary of the information collected has been provided as a reference for various economic evaluation software programs. The information presented herein does not represent an endorsement of any particular software program by SPEE or QED Energy Associates. Rather, the data is presented for informational purposes only.





SPEE 2015 Petroleum Evaluation Software Symposium

Summary of Vendor Participants

Company	Software Package	Website	Company Description
Halliburton	Aries	www.Halliburton.com	For 30 years, the E&P industry has turned to Landmark for some of the world's most advanced software and solutions for the exploration and production of oil and gas reserves. Landmark products and services help project teams make safe, fast and accurate decisions across every stage of a project's life cycle.
Enersight	Enersight	www.Enersight.com	Enersight Corporation provides planning software and expertise for the modern, complex oil and gas industry. Enersight petroleum planning software supports the most comprehensive integrated planning workflow in the industry and helps upstream petroleum producers make competitive and cost-effective decisions at every stage of their business.
Scientific Computer Applications, Inc.	FECS	www.SCAItul.com	Scientific Computer Applications, Inc. (SCAI) was established in 1969 as an Oil & Gas Consulting firm by Richard Banks, a graduate of the Colorado School of Mines and the University of Texas. Scientific Computer Applications, Inc. (SCAI) is an independent energy consulting firm that provides computer-assisted technical services for oil and gas consulting and exploration and production activities. SCAI's products include Contour Mapping Software, Decline Curve Analysis software, Oil & Gas Economics software, and Gas Balancing Software.
Mannon Associates	MIDA-QRC	www.MannonAssociates.com	Mannon Associates, Inc., was founded in 1983, by Robert W. Mannon, PhD, and specializes in reservoir engineering and the development of proprietary petroleum software.



SPEE 2015 Petroleum Evaluation Software Symposium

Summary of Vendor Participants

Company	Software Package	Website	Company Description
Entero Corporation	Mosaic	www.Entero.com	<p>Founded in 1994, Entero develops software products that create time and insight for the energy industry. Entero is proven to generate substantial cost and time savings, and resolve significant data confidence issues, by providing solutions that support core interdependent business processes with a single source of data. Mosaic is used by leading oil and gas producers and petroleum reserves evaluation firms. It is the industry's most complete reserves, economics, and decline analysis software application, and can evaluate anything from large corporate portfolios to individual reserve assets. Companies who have switched from competitor systems to Mosaic immediately see major improvements in speed, process efficiencies, and richer, more reliable information – things that make a difference at a time when every dollar counts!</p>
OGRE Systems	OGRE (R3)	www.OGRESystems.com	<p>OGRE Systems develops and markets Petroleum Reserve Management Solutions to a range of clients in the oil and gas industry, including small and medium-size independents, large independents, investors, bankers, tax assessors, consultants, national oil companies, international oil companies and universities. R3 provides our clients with accurate and cost-effective analysis while reducing the complexities related to obtaining reliable reserve evaluation, reserve analysis and reserve estimation. The strength of our solution is that it focuses on the entire process. It places features and functions in the hands of users, providing them the ability to solve problems associated with their specific responsibilities. The individual components deliver tremendous flexibility, providing a means to accomplish any task, function or process. Seamlessly integrated, these components provide organizations in all market segments with a total reserves and economic solution. OGRE Systems – Developing and delivering superior Petroleum Reserves Management Solutions.</p>



SPEE 2015 Petroleum Evaluation Software Symposium

Summary of Vendor Participants

Company	Software Package	Website	Company Description
Palantir Solutions	Palantir	www.PalantirSolutions.com	Palantir Solutions is the largest, independent provider of integrated economic and planning products and services. We are a global company with premium enterprise software that fundamentally changes the way energy companies run their businesses. Our solutions connect asset and corporate level data, systems, people and processes to create an intelligent, collaborative and live planning space. Connect well level field development plans with portfolio level strategies to better understand the risks and uncertainties within your company. Our experience working with the largest companies in oil and gas has allowed us to synchronize the divide between asset and corporate level data. Our planning space platform enables decision making and analysis to happen at all phases of a project to build portfolios that reduce risk and empower all phases of decision making.
Schlumberger	Merak PEEP	www.slb.com	Merak Peep petroleum economic evaluation and decline analysis software for economic modeling of upstream oil and gas projects. It is in daily use by over 4,000 economists and engineers in approximately 350 oil and gas companies across the world. Merak* Peep software enables users to enter figures and calculate the economics of projects close to home and around the world, report the results, and then use this information to make plans.
TRC Consultants, LC	PhDWin	www.PhDWin.com	TRC Consultants, LC is the company behind PHDWin software. PHDWin is a full-featured, completely integrated economics and decline curve software package written by petroleum engineers for the oil and gas industry. Trusted by more than 1000 O&G companies, PHDWin offers a complete solution to manage, organize, and evaluate reserves and economics.



SPEE 2015 Petroleum Evaluation Software Symposium

Summary of Vendor Participants

Company	Software Package	Website	Company Description
Texas Computer Works	ProdEval	www.TCWsoftware.com	Texas Computer is a developer of production and evaluation software designed to fit the sophisticated requirements of the small independent producer. Our clients include operating companies, their financial partners, property tax appraisers, and independent consultant engineers. ProdEval is a complete reserve system that is very easy to use for a very reasonable cost. Our client support team gets involved with client projects and it is this hands-on involvement and training that enriches both the user and the software developer. The production data management portion of ProdEval is often used with other reserve packages because of its ease of gathering production data and its ability to help manage those producing assets.
Energy Navigator	Value Navigator	www.EnergyNavigator.com	Energy Navigator's capital and reserve asset management software is used by over 400 E&P companies worldwide. Value Navigator® delivers unprecedented speed and accuracy for your forecasting, economic evaluations and reserves management. AFE Navigator® is a secure, electronic AFE system that works on any web-enabled device and lets you optimize your AFE workflow and control capital.

Section 1 – General

What computer hardware platform does your software run on?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
PC	X	X	X	X	X	X	X	X	X	X	X
Mac (Apple)		X									
Phone											
Tablet		X									
Other									Tablet PC		

What operating systems will your software run in?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
Windows 10		X	X	X	X	X	X		X		
Windows 8	X	X	X	X	X	X	X	X	X	X	X
Windows 7	X	X	X	X	X	X	X	X	X	X	X
Windows XP		X	X		X	X	X	X	X	X	
Windows CE						X					
Windows Other						X					
Mac OS		X									
Android											X
UNIX based System		X									
LINUX based System		X									

Which database structures can your software utilize?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
MS SQL	X	X				X	X	X		X	X
Oracle	X	X			X	X		X			X
MS Access	X	X				X			X	X	
Other		X	X						TopSpeed		SQL Light

What user management methods does the application natively support?

Database Users mapped to database security roles	Active Directory security groups mapped to application security roles	Active Directory users mapped to application security roles	Individual users locally managed within the application
Aries	Value Navigator	Mosaic Palantir Peep	Enersight FEGS MIDA-QRC OGRE (R3) PhDWin ProdEval

Is an out-of-box solution available for row/case level security at the database layer?

YES	
OGRE (R3)	
PEEP	
ProdEval	A masking feature can turn on/off selected cases for individual users.
Value Navigator	

NO	
Aries	Application supports DBMS-imposed security levels.
Enersight	SAML can be used to link security roles and user management to Active directory if desired. Also dual authentication (SMS or e-mail) can also be required.
FEGS	
MIDA-QRC	
Mosaic	Mosaic has functional and data security within the application, not at the database layer.
Palantir	All security is handled through the application layer.
PhDWin	Because of the integrated nature of PHDWin, TRC has found row/case level security to be impractical for modern sophisticated database schema. TRC recommends limiting individual databases, which can then be merged as necessary. PHDWin supports excellent merge capabilities that do not require specialized database knowledge.

How is case level security managed at the application layer?

Not Supported	Permissions / Ownership may be assigned to the case	Permissions / Ownership enforced dynamically based on case attribute
Aries MIDA-QRC OGRE (R3) PhDWin	Palantir Value Navigator	Enersight Mosaic PEEP
Other		
FEGS		
ProdEval - Read write privileges are set to individual users		

Can your database structure be utilized in a reserves and economic system other than your own?

Yes	No
Aries Enersight OGRE (R3) Palantir Value Navigator	FEGS Mosaic PEEP
Other	
MIDA-QRC	
PhDWin	
ProdEval - Data is stored in open MDB or SQL formats	

Section 2 – Data Integration

From what sources can your software import data?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
IHS	X	X	X	X	X	X	X	X	X	X	X
DrillingInfo/DI Desktop (HPDI)	X		X		X	X	X	X	X	X	X
Lasser	X			X		X	X	X	X	X	
TGS							X		X		
State Regulatory Format				X			X		X		
Flat Files	X	X	X		X	X	X		X	X	X
SCADA Systems		X			X		X		X		
TOW	X	X					X		X		
DSS	X	X					X		X		
Internal Accounting Systems	X	X			X		X		X	X	X
Other		X	X	X	X	X	X	X	X	X	X

Other sources to import data:

Enersight: Arn, SAP, OFM, RigView, WellView, ProCount, BOLO, Carte, Primavera, Actenum, ECies, PHDWin, Quorem

MIDA-QRC: IHS (Both 298 and DMP2); California and Colorado State data

Mosaic: Volume Forecasting Systems, AFE Systems, Field Data Capture Systems, Bulk Data Import from Spreadsheet

OGRE (R3): Relational DB, Excel

Palantir: MS Excel, Other custom Databases

PEEP: OFM, Eclipse, Petrel, IAM, Dwight's Energy Data, Lasser Inc, PI Petroleum Information Corp, Applied Terravision System, Dyad data, International Data Share Inc, Logis Data System, CD Pub Co, QC Data

PhDWin: With our data mapping, PhDWin can consume most commercial data sources.

ProdEval: TCW's Field Data software

Value Navigator: Harmony Fekete, GeoScout, GeoVista, Accumap, any ppdm

Can data imports be accomplished by direct connection (to a data hub) or is a multi-step process requiring creation of a well list required?

Direct Connection Available	Multi-step process with well list
OGRE (R3)	Aries
Both	
Enersight	MIDA-QRC
Mosaic	Palantir
PEEP	PhDWin
ProdEval	Value Navigator
Neither	
FECS	

Please describe the integration capabilities of your software with various data systems.

Aries:

Production Systems: ARIES can link directly to production tables in ODBC database systems. Similarly, these ODBC database systems can link directly to the production tables in ARIES.

Accounting Systems: ARIES can link directly to accounting tables in ODBC database systems. Similarly, these ODBC database systems can link directly to the tables in ARIES.

Mapping Systems: ODBC compliant mapping systems can link directly to data and results in ARIES tables.

Reserves Management Systems: ODBC compliant reserves systems can link directly to results in ARIES tables.

Enersight:

Production Systems: Enersight is able to import production forecasts (i.e. Arps equation inputs, Rate-Time or Rate-Cum) directly from data sources including Halliburton ARIES, TRC Consultants PHDWin and Schlumberger OFM. No manual manipulation of data is required, so data integrity is always maintained. Appropriate conversions are automatically made to account for decline calculation methodology. Export of data is also possible (i.e. ARIES, PEEP). Enersight is able to import production history/accounting data for various products (i.e. gas, oil, natural gas liquids, injection water, etc.) directly from data sources such as Merrick ProCount/Carte, Tieto's Energy Components (EC) and Schlumberger Avocet, P2 Energy Solutions Bolo and Halliburton TOW. Enersight supports integration with most other software (i.e. PEEP, Halliburton DSS) as well but some manual manipulation may be required.

Accounting Systems: Enersight is able to import accounting data such as capital spend, AFE forecasts, and production from most corporate data repositories. Generally ODBC/OLE DB is used to connect to SQL Server, Oracle, Cisco Composite or others.

Mapping Systems: Enersight is able to import GIS or subsurface data (from ArcGIS, IHS Petra and others) such as latitudes/longitudes of well-bore and top-holes for use with proximity restrictions.

Reserves Management Systems: Enersight is able to import and export data from Aclaro petroLook.

Please describe the integration capabilities of your software with various data systems. (cont.)

FEGS:

Production Systems: Export/Import using Index files

Accounting Systems: Index files

Mapping Systems: Index files and API Well Number

Reserves Management Systems: Index files

MIDA-QRC:

Production Systems: Production forecasts can be generated in Excel .CSV format for use in a variety of systems.

Mapping Systems: Data produced by Mida supports future creation of "iso-m-slope" contour maps, which identify regions of highest potential ("sweet spots").

Mosaic:

Production Systems: Direct connection to Production Systems for daily or monthly field data updates. Direct Connection to Systems to load forecast volume data

Accounting Systems: Direct connection to some Accounting Systems for historical production. Flat file load for economic inputs. Flat file load for actual capital spending

Mapping Systems: Mapping systems can access geospatial and economic data from Mosaic's open relational data structure.

Reserves Management Systems: Reserve Management System is integrated as a fundamental component of the software and is supported as a primary workflow.



Please describe the integration capabilities of your software with various data systems. (cont.)

OGRE (R3):

Production Systems: We can connect to any system utilizing a SQL database, using ODBC connection.

Accounting Systems: We can connect to any system utilizing a SQL database, using ODBC connection.

Mapping Systems: We can connect to any system utilizing a SQL database, using ODBC connection.

Reserves Management Systems: We can connect to any system utilizing a SQL database, using ODBC connection.

Palantir:

Production Systems: Qbyte

Accounting Systems: SAP, Qbyte, TM1, Essbase, Prophix

Mapping Systems: Accumap, ArcGIS

Reserves Management Systems: VOLTS, ValNav, Petrolook

PEEP:

Production Systems: OFM - import of production history Dynamic direct connection/import with IAM for calculations for asset optimization
Production simulation import thru direct link with Eclipse. Multi-step process with IHS, Drilling info and others...

Accounting Systems: Relational database systems

Mapping Systems: Tableau, Spotfire, OFM

Reserves Management Systems: Excel, VOLTS (any relational database system)



Please describe the integration capabilities of your software with various data systems. (cont.)

PhDWin:

Production Systems: Out-of-the-box PhDWin can execute direct production imports from production accounting databases through user definable data mappings for Access (jet) and MS SQL Server Databases. Over 370 unique data conversion tokens are available for data imports. Multiple data structures are directly supported.

Accounting Systems: Out-of-the-box PhDWin can execute direct economic parameter imports from production accounting databases through user definable data mappings for Access (jet) and MS SQL Server Databases. Over 370 unique data conversion tokens are available for data imports. Multiple data structures are directly supported.

Mapping Systems: Out-of-the-box PhDWin can execute direct cartographic parameter imports from production accounting databases through user definable data mappings for Access (jet) and MS SQL Server Databases. Over 370 unique data conversion tokens are available for data imports.

Reserves Management Systems: PhDWin has a corresponding RMS program that can not only warehouse PhDWin runs with case-level granularity but also 1) re-summarize on any parameter in the database and 2) automate reconciliation calculations utilizing a parameter substitution methodology. PhDWin output data can also be imported into other static reserve management systems. From an Access (.mdb) file, most input and calculated data is available.

ProdEval:

Production Systems: Data import/export using excel Data import/exports to IHS (DP2) Database is open and accessible to all users

Accounting Systems: Connection to OGSYS with client specified file

Mapping Systems: ProdEval database has an external tie-in to PetroVisual's Visualization software which includes extensive mapping capabilities.

Reserves Management Systems: Export economic parameters to excel Export production data to IHS (DP2) Export economic data to Aries.MDB format



Please describe the integration capabilities of your software with various data systems. (cont.)

Value Navigator:

Production Systems: Daily data from PVR.

Accounting Systems: Accounting Systems View data via AFE Navigator

Mapping Systems: Value Navigator has its own map display but utilizes IHS grid & culture data. Air photos and topographical data from MapBox



Section 3 – Technical Analysis

What is the primary application of your software?

	Aries	Energisight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
Production Analysis & Forecasting	X	X	X	X	X	X		X	X	X	X
Reserves Database	X	X		X	X	X		X	X	X	X
Production & Capital Budgeting	X	X		X	X		X	X	X	X	X
Project Economic Evaluation	X	X	X	X	X	X	X	X		X	X
A&D Evaluations	X	X	X	X	X	X	X	X	X	X	X
Other		X				X	X		X		

Other primary application:

Energisight: Scheduling future wells, Operational Activity Scheduling

OGRE (R3): Drill plan creation

Palantir: Corporate planning

PhDWin: Ad Valorem tax appraisal, bank loan determination



What reserves forecasting methods / tools are available in your software?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
Decline curve analysis	X	X	X	X	X	X	X		X	X	X
Duong	X					X					X
Duong (plus modified)											X
Power Law											X
Extended Power Law											X
Fetkovich				X							
Material Balance	X				X	X		X	X		X
Volumetric w/recovery factor	X			X	X	X		X	X		X
Arps	X	X	X	X	X	X	X	X	X	X	X
Arps w/terminal exponential decline	X	X	X	X	X	X	X		X	X	X
Stretched Exponential	X					X	X	X			X
Linear Flow				X		X					X
Changing b-factor with producing time				X							
Other		X							X		X

Other reserves forecasting methods / tools:

Enersight: Unlimited custom functions

PhDWin: WOR vs CumOil

Value Navigator: Five Year Decline, Oil Cut vs Cum Oil, Analog Forecasting

What additional analysis techniques are available in your software?

	Aries	Energisight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
Normalized Curves	X			X	X	X		X	X		X
P/z Plots	X		X	X	X	X		X	X	X	X
Cumulative Plots	X	X		X	X	X		X	X	X	X
Type Curve Evaluation	X			X	X	X	X	X	X	X	X
Other									X		X

Other additional analysis techniques:

PhDWin: WOR vs Cum Oil

Value Navigator: Reserves Forecast comparisons to; archives, type curves, other named forecasts, differential planned scenarios. Group well analysis. Best fit algorithms; multiple forecasts for comparison. Grid analysis of input & results data. Visualization of locations of volumes/value on map. Analysis includes extending prod time for down time. Oil Cut vs Cum Oil, Analog Forecasting

Are users able to customize the plots associated with the additional analysis techniques?

Yes, fully customizable	No
Aries MIDA-QRC Mosaic OGRE (R3) PhDWin Value Navigator	FEGS Palantir
Yes, but there are some limitations	
Energisight – Limited to the product types in the system	
PEEP	
ProdEval – Customize to a list of specified parameters, it is not free form	

Section 4 – Economic Parameters

What tax structures are available for use in your software?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
BFIT US	X	X	X		X	X	X	X	X	X	X
AFIT US	X	X	X		X	X	X	X	X	X	X
Canadian Freehold and crown Royalties	X	X			X	X	X	X	X		X
BFIT Canadian	X	X			X	X	X	X	X		X
AFIT Canadian	X	X			X	X	X	X	X		X
International	X	X			X	X	X	X	X		X
Other						X	X		X		

Other tax structures:

OGRE (R3): All structures can be modeled

Palantir: Joint Ventures, Farm In/Out, Complex commercial agreements

PhDWin: PhDWin cash formulas allow complete customization of economic calculations including tax calculations

What forms of economic evaluation can your software perform?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
Standard US WI/RI	X	X	X		X	X	X	X	X	X	X
Standard US ORRI	X	X	X		X	X	X	X	X	X	X
Canadian WI	X	X			X	X	X	X	X		X
Canadian ORRI	X	X			X	X	X	X	X		X
Canadian NPI	X	X			X	X	X	X	X		X
International PSC	X	X			X	X	X	X	X		X
International Joint Venture	X	X			X	X	X	X	X		X
International Concession	X	X			X	X	X	X	X		X
Other		X				X	X		X		

Other economic evaluations:

Enersight: Custom models

OGRE (R3): All forms can be modeled

Palantir: Service Contracts, Midstream and Downstream assets

PhDWin: PhDWin cash formulas allow complete customization of economic calculations

Can users customize fiscal models in your software?

Yes	
Aries	Fully customizable using any of the 400 supplied library functions plus user-created script instructions. This is normally done by modifying one of the supplied library models.
Enersight	Modules can be added/removed and reordered to customize fiscal models. These modules controls the behavior of each calculation.
MIDA-QRC	Production forecasts can show monthly, annual, or trailing-twelve-month values. Input data can be daily/monthly/yearly.
Mosaic	Users can customize many economic case parameters and controls, such as economic cut-off rules, evaluation time scales, cost and price sensitivities and offsets, etc.
OGRE (R3)	Functions and components are pre-existing, users can use to create new model, or modify existing models.
Palantir	Fiscal models are created using VB.net 'modules' that represent fiscal calculations. This is all exposed to the user through the application.
PEEP	Models can be customized directly in Peep as well as Fiscal Model Library models.
PhDWin	PHDWin utilizes the cash formulas feature to allow for completely flexible modeling. Fiscal models can be built to users' exact specifications.
Value Navigator	Built in fiscal regimes modeler. Ships with incentives for all US and Canada. In addition, we have an international fiscal regime library that is continually being enhance and currently includes regimes for 40+ other countries
No	
FEGS ProdEval	

How does your software run Incremental Economics?

Forecast cumulative totals and calculate incremental	Forecast and calculate incremental
--	OGRE (R3)
Both	
Aries FEGS Palantir PhDWin	Enersight Mosaic PEEP Value Navigator
Neither, software is not capable of incremental economics	
MIDA-QRC ProdEval	

What discounting methodology can be modeled in your software?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
Continuous	X					X		X	X		X
Monthly	X	X	X		X	X	X	X	X	X	X
Mid-month	X				X	X			X		X
Annual	X	X			X	X	X	X	X		X
Semi-annual						X	X	X	X		
Other		X					X		X		

Other discounting methodologies:

Enersight: Annual mid period, annual beginning period

Palantir: Annual Start, Annual End, Annual Mid

PhDWin: PhDWin accrues at "End of month" or "mid-month". Investments are accrued on the day they occur.

Does your software report NGL in the ultimate reserves and cumulative production?

Yes	No
Aries	MIDA-QRC
Enersight	
FEGS	
Mosaic	
OGRE (R3)	
Palantir	
PEEP	
PhDWin	
ProdEval	
Value Navigator	

Section 5 – Reports & Queries

Of the following, which does your software utilize for reports?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
MS Word	X								X		
MS Excel	X	X		X	X	X	X	X	X		X
MS Access	X					X			X		
Crystal Reports	X							X	X		X
Proprietary	X	X		X	X	X		X		X	X
Other		X	X		X	X	X		X	X	X

Other reporting software:

Enersight: OData

Mosaic: PDF, CSV, internal report system

OGRE (R3): HTML, PDF

Palantir: MS PowerPoint

PhDWin: Adobe PDF, RTF, HTML 3.2, HTML 4, ODBC, CSV, TTX, TXT, Columnar with spaces, Columnar without spaces

ProdEval: Reports are written as part of the system

Value Navigator: Adobe

How easy can users access data from the back-side of the database?

Full Access, all data is available through direct connection to the database	Limited Access, some data is only available through software interface	No Access, all data is only available through software interface
Aries Mosaic Palantir PhDWin ProdEval Value Navigator	Enersight OGRE (R3) PEEP	FEGS MIDA-QRC

Is your software capable of ad hoc queries?

Yes	No
Aries Enersight FEGS MIDA-QRC Mosaic OGRE (R3) Palantir PEEP PhDWin Value Navigator	ProdEval

Does your software have a discrepancy in reporting totals greater than 1 billion (i.e. 7 digits)?

Yes	No
Aries PEEP ProdEval	Enersight FEGS MIDA-QRC Mosaic OGRE (R3) Palantir PhDWin Value Navigator

How does your software log and track error statements?

Aries	During run all progress and error messages are displayed in a searchable run log window and written to a log file.
Enersight	Calculation logs describe any errors encountered and the exact location where they occur, as well as the time that the calculator noticed the error.
FEGS	Error reports
MIDA-QRC	MIDA can find gaps in production data records.
Mosaic	System messages are displayed in the interface and logged in files in the install directory - Error messages from Mosaic are in plain English - Different logging levels can be selected for each user
OGRE (R3)	Yes
Palantir	Calculation information, warnings and errors are captured and made available to the user in a searchable format.
PEEP	N/A
PhDWin	Because PHDWin's economics are real-time, users are unable to input inappropriate data into the intuitive GUI. All input parameters are well-defined and validated on entry - there is no need to force an economics run to test the validity of input parameters. Additionally, PHDWin also includes a case error check that helps identify suspicious inputs, for example, unreasonable prices or ownership interests.
ProdEval	Does not track error statements
Value Navigator	Error messages, some can be sent to vendor. Log file created. Errors are trapped preventing crashes, warnings are displayed on screen.

Can reports, data pulls and customization be performed without software consultants?

Yes	No
Aries	ProdEval
Enersight	
FEGS	
MIDA-QRC	
Mosaic	
OGRE (R3)	
Palantir	
PEEP	
PhDWin	
Value Navigator	



Section 6 – Miscellaneous

Do you support database conversions from another company's software to your software?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
Our technical support answers questions readily	X	X		X	X	X	X	X	X	X	X
We have consultants available for projects or questions	X	X		X	X	X	X	X	X	X	X
We have written material to assist users	X	X		X	X	X	X	X	X		X
We have training classes available for users to learn how to convert to our software	X	X		X			X	X	X		
We do not support database conversions				X							
Other			X	X	X	X				X	X

Other database conversions:

FEGS: Standard Data File

MIDA-QRC: We will provide training as the need develops

Mosaic: We have conversion tools built into the software that can be accessed by users

OGRE (R3): We use a wizard for some conversions

ProdEval: Have only converted Aries MDB files

Value Navigator: We have a data conversion software that works with user assistance



Do you support database conversions from your software to another company's software?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
Our technical support answers questions readily	X	X		X	X	X	X		X	X	
We have consultants available for projects or questions	X	X		X	X	X		X	X	X	
We have written material to assist users		X		X	X	X			X		
We have training classes available for users to learn how to convert to our software		X		X							
We do not support database conversions											X
Other			X	X		X				X	

Other database conversions:

FEGS: Standard Data File

MIDA-QRC: Forecasts are in easily-converted Excel .CSV files

OGRE (R3): The same wizard as converting to our data type is used to convert back to other types

ProdEval: We convert our MDB format to Aries MDB format

How frequently do you release new versions with fixes of known problems?

As Required	Yearly
Aries Enersight MIDA-QRC Mosaic Palantir PEEP PhDWin ProdEval Value Navigator	FEGS OGRE (R3)

In general, how long do your users wait on hold with customer support before their call is answered?

	Aries	Enersight	FEGS	MIDA-QRC	Mosaic	OGRE (R3)	Palantir	PEEP	PhDWin	ProdEval	Value Navigator
No time at all		X	X	X	X	X	X	X		X	X
0 – 5 minutes								X	X		
5 – 10 minutes	X										
Users leave a message to be called back			X		X				X		X
Users can email questions to customer support			X		X			X	X		X

Does your company moderate a user group for your software?

Yes	
Aries	Annual meetings to (1)present and train users on newly released enhancements, (2)provide industry and Landmark talks on items of interest, (3) promote networking, and (4)solicit, discuss, and prioritize enhancement requests.
Enersight	To describe upcoming features or improvements, share workflow best practices, interesting use cases and receive feedback from users.
Mosaic	We have regular user group meetings for Budget, Planning, and Reserves users. The purpose is to create a community for clients to learn about different processes, techniques, and approaches within different organizations, and enhance the use of Mosaic in each functional group.
Palantir	LinkedIn group, managed client portal
PEEP	UGM allow clients to see the latest development of software and share experiences and workflows with other users
ProdEval	Bi annual Best Practices user group meeting for specific types of users i.e. Property Tax users
No	
FECS MIDA-QRC OGRE (R3) PhDWin Value Navigator	

Are you aware of user groups for your software that are not moderated by your company?

Yes	No
Aries	Enersight FECS MIDA-QRC Mosaic OGRE (R3) Palantir PEEP PhDWin ProdEval Value Navigator



Section 7 – Advantages & Future Improvements

Describe what sets your software ahead of other software programs.

Aries:

ARIES software provides a flexible, enterprise-strength global economic and reserves solution that lets companies efficiently evaluate and manage any number of assets, projects, and rollups in a collaborative database environment. Integration with Palantir Solutions extends these capabilities to global planning, reserves tracking, and portfolio management.

Enersight:

Enersight is a unified planning system that manages and integrates, operational scheduling, economic forecasting, long range planning and corporate rollups. In a single software solution. With these capabilities teams can continuously evaluate the impact that activity schedule changes have on production and capital forecasts, while strategic planning teams can simultaneously generate asset development scenarios to meet asset targets. A cohesive corporate plan and budget can be easily managed as asset teams effortlessly roll-up their forecasts into different plan versions. All multidisciplinary teams including operations, reservoir, marketing, production, facilities and finance have shared access to development plans, latest forecasts, budgets, and rollup reports based on actual multi-source data. Drill inventories can be scheduled in Enersight to generate short and long term plans, while blending with existing well production and surface infrastructure (i.e. pipelines, facilities, areas). Each process flow node can impose pipeline/facility capacities, shrink and yield for all product streams. Economics can be calculated based on updated production forecasts, price differentials, land interests, tax and royalty data in order to rapidly evaluate multiple scenarios.

FEGS:

Great interactive graphics plus unique entity files

MIDA-QRC:

Elegant application of combined linear flow and Arps models for unconventional oil and gas wells.



Describe what sets your software ahead of other software programs. (cont.)

Mosaic:

Mosaic provides state of the art tools for engineers to forecast volumes and future cash flows for oil and gas assets. It is a single integrated system that utilizes this validated data to give insight into Planning, Budgeting, Capital Management, and Reserves Management business functions. Mosaic eliminates non-productive time and reduces total cost of ownership by providing analytical tools and managed data to power these functions. Companies who have switched from competitor systems to Mosaic have seen major improvements in speed, efficiency, and data confidence for corporate-wide processes. Our success with large E&P clients has been based on providing the industry's most complete petroleum economic, decline analysis, and resource management solution, coupled with the most responsive client services team to support it. Mosaic is trusted by E&P's to deliver the best value for individual, business unit, and corporate growth.

OGRE (R3):

Integration. The Volumetric mapping, forecasting, economic analysis Monte Carlo engine and Reserves Management modules all utilize the same database and are all integrated into the same system.

Palantir:

The speed and comprehension of PalantirCASH™ is unmatched in the industry. With over 150 Fiscal Regimes, Incremental Economics, Ring Fencing, Sensitivities and the ability to consolidate at any level our customers find it the only tool they need for the entire corporate despite geopolitical boundaries or special needs. Additionally, customers have commented on PalantirCASH™'s ability for reproducibility, transparency and end user configuration ability.

PEEP:

The Merak suite is a strong, reliable economics, planning and reserves suite that integrates the above stated workflows in every stage of the E&P cycle for any type of asset, anywhere in the world.



Describe what sets your software ahead of other software programs. (cont.)

PhDWin:

PHDWin is an industry-standard economics analysis and reserves software package written by petroleum engineers for the oil and gas industry. PHDWin's intuitive interface allows users to quickly familiarize themselves with the program's workflow in order to produce quality economics and reserves reports. Most users are proficient in a matter of days - saving valuable time and money. Sophisticated economic calculations coupled with PHDWin's powerful cash formulas tool provides an enormously flexible way for companies to model international assets with case-level granularity. To date, PHDWin has supported custom models, PSAs, and PSCs in over 35 countries. Finally, PHDWin's built-in transfer file tool makes sharing projects fast, easy, and with repeatable results. Over 1,000 companies, including operators, A&D firms, consultants, and banks use PHDWin as a unifying "language" to conduct business.

ProdEval:

Clients describe the system as very easy to learn and use while still maintaining the ability to handle complex evaluations. The graphic presentations are very good with both view and print graphs that are easily customized. We have made specific enhancements for special client needs ranging from special banking analysis to property tax reporting. The linking of the system to commercial production databases and to in-house accounting systems are other examples of how the system evolves over time. Support and training is on an individual basis where we provide hands on assistance and get involved in client projects. The system is the central collection point of production information assessable with easy imports and exports to many different data formats.

Value Navigator:

Energy Navigator prides itself on the level of Subject Matter Expertise it holds within its organization, but our key differentiator is how local and available our Subject Matter Experts are to anyone working in the oil & gas industry. We pride ourselves on our accessibility and availability. It is one thing to have Subject Matter Experts, but often those resources are not available to everyone, and they are often cloaked in "inaccessibility". Value Navigator's key software differentiation is:

- Integrated tool with Production Forecasting, Economic Evaluation & Reserves Management in a single tool.
- Single product for global use.
- Unique auto forecasting algorithms.
- Probabilistic analysis for type curve creation and analysis.
- On-time adjusted type curves.
- Map feature to visualize locations of wells.
- Multi-jurisdictional reserves reconciliation.

What are the top 3 strategic advantages that your software offers users?

Aries:

1. ARIES' speed and rich feature set, including automated forecasting and mass data editing, make company technical resources more productive and responsive. This allows examining more opportunities or contingencies, in more detail, in less time.
2. Input and results are stored in sharable ODBC databases instead of mixtures of spreadsheets. This provides both data transparency and management confidence, as well as allows direct access by other corporate systems.
3. Regardless of a company's size, ARIES software is the foundation for a single, consistent evaluation solution across the enterprise. It easily adapts to a company's business processes and provides the flexibility to tailor and analyze data from multiple data sources, using various approaches to conform to unique challenges and goals.

Enersight:

1. Integrated planning solution from activity scheduling, tactical and strategic planning to corporate rollups.
2. Holistic asset development view including wells, facilities infrastructure and sales points.
3. Ability to model well and facility interdependencies and business rules to produce realistic forecasts

FECS:

1. Dependable, it never crashes
2. Powerful and fast
3. Thorough validity checking of all data at input time

MIDA-QRC:

1. Quick, reliable analysis of the linear and depletion flow regimes of unconventional oil and gas wells, for the purpose of production forecasting
2. Calculation of m-slope values of wells to construct iso-m-slope contour maps for identification of regions of highest potential for future well placement ("sweet spots").
3. Unique use of equations to provide for flow regime identification and drainage area calculations



What are the top 3 strategic advantages that your software offers users? (cont.)

Mosaic:

1. Strong toolset for Engineers to generate economic and volume forecasts for conventional and unconventional oil and gas plays
2. Workflows for corporate analysts to work with the same data in the same database (one source of truth) to support senior management and executives decision making
3. Client service organization that develops new functionality based on user feedback and recognized as providing superior training and support for users to get the most from the software

OGRE (R3):

1. Live 24/7 support
2. Small nimble development team reacts quickly to market changes
3. International Capability

Palantir:

1. Flexible and Transparent fiscal models
2. Powerful, flexible reporting using MS Excel
3. Extensibility

PEEP:

1. Integration
2. Out of the box International evaluations
3. Performance

PhDWin:

1. Ease of use - new users can run quality economics in a matter of hours
2. Sophisticated, consistent, and comprehensive modeling - Model the most complicated projects anywhere in the world
3. Industry standard "share-ability" - PHDWin databases are easily transported and produce repeatable results



What are the top 3 strategic advantages that your software offers users? (cont.)

ProdEval:

1. Reasonable cost structure for the small producer and independent engineer.
2. Hands on Support from the developers
3. Fast modifications to handle special client needs.

Value Navigator:

1. Unique auto forecasting algorithms which saves our clients time and money.
2. Ease of use
3. Integrated tool with Production Forecasting, Economic Evaluation & Reserves Management in a single tool.

Describe your current upgrades that are in progress and anticipated time of rollout.

Aries:

Mid 2016: Re-architect the economics engine to increase precision and improve flexibility of deployment. Extend the integrated global portfolio planning and reserves management capabilities. Deliver customer-prioritized enhancements, including reporting and usability.

Enersight:

Expanded automated integration points (Aclaro, Spotfire, Fekete Harmony, ValNav, Mosaic, WellView, RigView, OpenWells) Multi-user access and record/data element level locking for management of well data. Enhanced risk analysis and Monte Carlo analysis. Updates across Fall 2015

MIDA-QRC:

Developing iso-m-slope maps

Mosaic:

Annual releases are timed to coincide with the client business cycle. Major versions are released each year in June with interim point releases, as required. Current development is focused on enhancing existing functionality for unconventional resource development and capital management.



Describe your current upgrades that are in progress and anticipated time of rollout. (cont.)

OGRE (R3):

Full database dump to spreadsheet - Q4 2015 Graphic module re-write - Q2 2015 Other updates will be less visible but impact performance and add new minor features - Ongoing

Palantir:

Platform integration improvements to improve horizontal scalability and distributed computing capacity. Anticipated Q4 2015 Further integration with other technical disciplines and tools.

PhDWin:

TRC Consultants are diligently working to complete our PHDWin Version 3.0. This will be the 3rd generation of PHDWin and will represent over 20 years of continuous development. PHDWin 3.0 will lever the power of MS SQL Server to offer a true multi-user company solution with unparalleled calculation speeds, flexible data access/reporting, and highly customizable user interface. Beta access for PHDWin 3.0 will begin in late 2015.

ProdEval:

- Rolling out the connection of the ProdEval database to PetroVisual's visualization software.
- We are working to improve the importing of outside decline curve parameters from spreadsheets.
- Adding new evaluation parameters needed for Mineral Tax evaluations for 2015.
- Improving the data acquired from commercial data sources to help delineate multiple well oil leases in Texas.

Value Navigator:

We are planning to implement the following features over future major releases: • Customizable Products • Performance improvements to Ring Fence and Common Termination Entities (CTE) calculations • Improvements to custom reporting • EOR workflow • Technical analysis and type curve imports • Facility limitations and drilling schedules • Additional product inputs/output • Additional cost inputs/outputs • New indicators for project reporting and comparisons • Better handling of condensate • Diagnostic plots for analysis of declines • Decision trees • Binning • Templates • Goal seeking/portfolio tools • More data visualization tools