OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT, ISLAMABAD
FOREIGN SECTION C

(To be completed, filled in, signed and stamped by the principal)

ANNEXURE 'A'

Material DRILLING ENGINEERING SOFTWARE
Tender Enquiry No PROC/FC/CB/DRILLING-4014/2018
Due Date
Evaluation Criteria FULL

SCHEDULE OF REQUIREMENT

Sr No	Description	Unit	Quantity	Unit Price (FOB)	Total Price (FOB)	Unit Price C & F BY AIR	Total Price C & F BY AIR	Deviated From Tender Spec. If Any
1	DRILLING ENGINEERING SOFTWARE ALONGWITH ALL MODULES AS PER SOR/TOR (DETAIL DESCRIPTION ATTACHED)	Sets	1					
2	INSTALLATION,MAINTENANCE, ONSITE SUPPORT SERVICES AS PER TOR ATTACHED.	Number	1					
3	CLASS ROOM TRAININGS AS PER ATTACHED TOR	Number	1					

Note:

BIDDER IS ADVISED THAT PAYMENT WILL BE MADE AS PER THE FOREIGN PROCUREMENT PAYMENT TERMS AVAILABLE AT OGDCL WEBSITE (TENDERS TAB) EFFECTIVE FROM FEBRUARY 27, 2018.

1) PURSUANT TO TENDER CLAUSE # 2.2, 11.4, 13 & 35.3.2, BID BOND AMOUNTING TO USD 50,000/- OR EQUIVALENT TO PAK RUPEES MUST BE SUBMITTED WITH THE TECHNICAL BID AND VALID FOR 150 DAYS FROM THE DATE OF OPENING OF THE BID.
2) **TERMS AND CONDITIONS:** BIDDER IS ADVISED TO CAREFULLY READ ALL THE TERMS AND CONDITIONS OF THE TENDER DOCUMENT AVAILABLE AT OGDCL WEBSITE IN THE MASTER TENDER DOCUMENT.
3) **TERMS OF REFERENCE:** The attached TOR is integral part of SOR.

ACQUIRING OF DRILLING ENGINEERING SOFTWARE

TERMS OF REFRENCE

OGDCL intends to acquire Drilling Engineering Software licenses through competitive bidding for a period of 02 years extendable with mutual consent.

General instructions for the software:

- Software should be capable to handle collaboration among different departments and cross validation capabilities.
- Software should be capable to have a risk management tool/workflow that can cater offset well analysis.
- Risk mitigation process should be covered using the engineering processes.
- Software should also highlight at any time to the user the coherency impact of any change made in a specific workflow versus other related design tasks in the well.
- Application / functionality and number of licenses summary is placed at Annexure-II

1. SOFTWARE REQUIREMENT

i) Torque & Drag Analysis

- Software should be able to calculate critical buckling forces (Helical and sinusoidal) and able to analyze tri-axially the torque and drag while drilling, tripping in & out and rotating off-bottom.
- To assist in designing the correct drill string / casing & liner assembly to avoid buckling and fatigue & able to compare the planned and actual values, and model the effects of comparison, failures while following a specific path in achieving the desired target.
- Able to compare the measured and predicted values, and model the effects of the comparison.
- Provides analysis of load data in association with a wide range of friction factors each for the open hole and cased hole scenarios.
- Prediction of BHA tendency and vibration modes during different drilling / tripping scenarios.

ii) Stuck Pipe Calculations

- Provides information to free up stuck point.
- To be able to perform complex stuck pipe calculations and generate detailed output report using friction model.
- Assist in jar positioning / setting and able to calculate forces acting while tripping.
- Conducts fast and accurate failure analysis and calculates back-off force, force delivered to stuck points.
- Provides failure table for a range of hook loads and torque, which can be applied to attempt to free the string.
- Enable to model the stuck pipe scenarios and provide graphical report.

iii) Bottom Hole Assembly

- To analyze forces and determine tendency & behavior of BHA.

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- Helps in selection of optimized BHA for different borehole types
- Utilize Finite Element Analysis to solve the structural problem of a restrained BHA.
- Able to locate contact points & forces to assist in BHA stabilization.
- Able to determine behavior of BHA prior to running in hole by analyzing the contact forces on the BHA for the building, dropping and walking scenarios.
- Produce plots & graphs displaying momentary effect of a new BHA in wellbore for drill ahead prediction.

iv) Well Control Calculations

- To be able to perform complex well control calculations and generate kill sheet and graph using driller's method, Wait & Wait Method and etc.
- Provide an accurate decision while selecting the killing method
- Enable to model the well control scenarios and provide kick support via pumping and pressure schedules.
- Provides model to visualize well control scenario and perceive as the well is killed

v) Casing and Tubular Seat Selection, Design & Stress Analysis

- Provides with a graphical representation of the triaxial load capacity of the pipe body, the API load capacity and the anticipated loading for each condition on a 2D plot.
- Provides Von Mises criteria plot for analysis.
- Designs the strings for an entire well, using a true triaxial algorithm.
- Considers the effects of ballooning (Poisson effect), nonlinear buckling and buoyancy.
- Should be able to analyze thermally induced loads by drilling, production and injection cases with an option for user-defined service load temperatures.
- Have different bulk in external load profiles such as Partial and complete Mud evacuation behind casing, poor cement behind casing, hydrocarbon influx.
- Provide comparison of two cases for the same string side by side.
- Both string and load case-specific design factor specification, with independent design factors for pipe body and connection.
- Standard API connections and default proprietary connections catalogs with provision for user-specified proprietary connections.
- API well tubulars catalog, with provision for user-specified additions.
- Drag and Drop selection of casing and tubing sections within plots
- Burst, collapse, axial, and triaxial safety factors for each load case, as appropriate, with burst and axial safety factors, based on the lesser of pipe body or connections ratings.
- Both string and load case specific design factor specification, with independent design factors for pipe body and connection.
- Should be able to generate pore pressure and fracture pressure calculations and their various curves etc.
- Casing setting depth selection based on estimated pore pressures.
- Should have an option of operating constraints such as differential sticking, minimum over balance, and wellbore stability for casing seat selection.

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- Presents all permissible casing scheme solutions for user evaluation and selection.
- Bottom-up and top-down solution methods for casing schemes.

vi) Advanced Tubular Design (Pressure & Temperature Effects on Tubular)

- BOP and return line temperatures
- Accurate cementing temperature schedules
- An undisturbed temperature gradient from actual log temperatures
- Model fluid flow hydraulics during drilling and circulation operations
- Wellbore temperatures and fluid pressures that can be used in tubular stress and buckling analysis
- Initial setting conditions of casings that can be used in tubular stress analysis
- Initial annular fluid temperatures used in annular fluid expansion analysis
- Model a temperature history of the well that can be used while performing wellhead movement analysis
- Detail analysis of Fracture and acid stimulation jobs
- Water shut-off operations
- Effects of Production of oil, gas and water on well life.
- Analysis of Gas lift operations
- Coiled tubing operations
- Water injection
- Shut-in temperatures and pressures
- Forward and reverse circulation
- Kill operations
- Squeeze cementing
- Spotting Cement Plugs
- Use of predicted temperatures and pressures in tubular stress,
- Movement and buckling analysis
- Influence of the thermal expansion of annulus fluids, and/or the influence of loads imparted on the wellhead during the life of the well, on the integrity of a well's tubulars.
- Effects of loading conditions on all the load bearing strings in the well system. Either affect can be modeled independently, or the combined effects of both can be modeled.

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vii) Wellbore Schematics Generation

- Enables user to enter wellbore information including survey, hole sections, casing, cement, drill strings, completion strings, perforated, and stimulated intervals.
- Could generate schematics of down hole completion tools, completion schematics, wellhead / BOPS schematics.
- Drag and Drop feature to quickly construct drill strings or completion strings through selection of components from a symbol palette.

- Loaded with highly detailed multi-dimensional symbols with cutaways and a rich set of equipment section types. Allows users to modify provided symbols or create custom symbols.
- Enables user to create or customize down hole equipment or well operations symbols.
- Displays 1 D and 2D schematics.
- Should be able to generate hard copy wall plots of high resolution

viii) Hydraulic, Swab & Surge Calculations

- Software should be able to perform optimum bit hydraulics along with pressure-loss analysis considering each components of the circulating system individually.
- Takes into account rheological models such as Power Law, Bingham Plastic and Herschel-Buckley for calculations.
- Assist in the selection of jet sizes & flow rates for optimized results
- Software should be capable enough to calculate trip schedule for swab and surge analysis against respective trip margins
- Able to calculate circulating densities and pressures for specific trip speeds for both drilling & cementing operation.
- Assist in the selection of drilling fluids and string movement to avoid swab & surge pressures.
- Able to model the analysis and also provide detailed reports including comprehensive plots & graphs.
- Enable to model different scenarios in graphical format enabling to visualize all the factors affecting hydraulics.
- Also able to model the effect of BHA components included in the drill string.

ix) Well Operations Reporting, Data Management and Operational Data Analysis

- The model should include comprehensive data capture system, ensuring well site supervisor / engineer to quickly and painlessly capture all critical information.
- Should have the well operations reporting format for Drilling Operations, Test geologist, Mud engineering, Mud logging, Daily well cost, AFE, Formation testing, Cementing jobs, Casing tally, Drill string, Directional Equipment, Coring, Wellhead, Well completion, Drill stem testing, Directional survey, Pressure survey, Drilling related problems, Lessons learned, such as BOP, shale shakers; hydrocodones; mud pumps; desander; Rig equipment data desilter; centrifuges and Safety.
- Uses a simple interface, with customizable language and report formats.
- Track key performance indicators, compare actual results with the operational plan, and track and manage drilling costs by option of comprehensive AFE linkage.
- Ability to unit systems, Customize data-entry screens, or hard copy ready reports to support local workflow needs.
- Reports should be saved in PDF or Microsoft Word for easy internal and external distribution.
- Automatic and manual field to Office & Office to Field data transfer capability through dial up network, FTP mechanism and email.

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- Easily generate charts and production quality graphs for improved reporting.
- Wide selection of graph types and viewing options enable you to quickly visualize results and Pie Chart drilling progress relative to the operational plan, track time, manage QHSE incidents, and perform additional analyses to optimize drilling operations. Track productive and non-productive time and anomalies and trends.
- Chart drilling progress relative to the operational plan, track time, manage QHSE incidents, and perform additional analyses to optimize drilling operations. Track drilling performance can be qualified / quantified early and accurately productive and non-productive time.
- Drilling performance can be qualified / quantified early and accurately.
- Solution should be able to provide easy access through a web portal to provide a secure environment to view well operations information, output reports, wellbore schematic diagrams and analytical results
- The web Portal should be completely customizable according to company requirements
- The web Portal should be able to display operational rigs activities in tabular and graphical formats

x) Database

- Well operations reporting data module should be compatible with third party data management software available in market.
- Reporting data should be searchable and shareable with other drilling engineering modules to avoid retyping of previously entered data
- Easily maintainable database that allow multiple users to access data simultaneously and supports rapid, robust data synchronization.
- Database administrator should be able to configure system access based on user login and password.
- Should have powerful query tool for users, enabling them to realize maximum value from all of the well information captured.

2. HARDWARE

Supplier should provide recommendations for hardware specifications required to run the proposed software applications.

3. MAINTENANCE & SUPPORT REQUIREMENT

During 02 years term of this Agreement, Supplier will provide OGDCL with Software Maintenance and Support Services for all Software Products listed on a Quotation referencing this Agreement. Maintenance and support services are inclusive of software version update, patches and technical support services via telephone, email or the web. Supplier should have an established support portal that should be globally certified

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ACQUIRING OF DRILLING ENGINEERING SOFTWARE

4. ONSITE SUPPORT SERVICES REQUIREMENT

Supplier should have consultants to provide OGDCL onsite support. Consultants should be trained on proposed software and provide adequate support to OGDCL office and field staff for the required work mentioned above.

A. Supplier to provide quote for onsite support consultant for operational wells data loading and application support for the contract time period.

B. Supplier to provide quote for onsite support consultant for historical well data gathering and loading into proposed database

C. Supplier should have resources hired or contracted via 3rd party with experience of providing support to Oil & Gas companies in Pakistan or Globally.

5. TRAININGS REQUIREMENT

Supplier should have consultants ready to deliver class room training within 45 days after award of contract to OGDCL engineers on acquired software. Supplier to provide quote for trainings along with CVs of trainers, highlighting course content and number of days per proposed software module.

- Supplier will ensure capability & availability of at least 3 training sessions for acquired software solution in Pakistan within 45 days after award of contract.
- Supplier trainer(s) should have experience of minimum 05 years delivering trainings to Oil & Gas companies in Pakistan or Globally.

6. TECHNOLOGY FORUM VISIT REQUIREMENT

Supplier will arrange visit to the main office in North America/Europe for training expertise once (1) a year for 02 OGDCL Engineers for minimum 2 weeks for witnessing case studies, international well data gathering, evaluation and related training/forum/seminars.

7. SUPPLIER PROFILE

- Supplier should have support office in Pakistan (provide CV's of technical officers)
- Supplier proposed software technology should be tested and deployed globally for at least 10 (Ten) years in English language.
- Supplier should have the proposed software solution deployed in 03 (three) E&P companies in Pakistan under active Maintenance & Support.
- Supplier should have the proposed software solution deployed for at least 05 (five) E&P companies abroad.
- Performance certificate from minimum 03 (three) E&P companies operating in or abroad must be submitted.

8. IMPLEMENTATION

Supplier will provide detail implementation plan. The plan should include:

- Gantt chart
- Project team to be deployed
- Resources required from OGDCL
- Project dependencies and probable risks

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ANNEXURE-I

ACQUIRING OF DRILLING ENGINEERING SOFTWARE

TECHNICAL EVALUATION CRITERIA

S.#	Requirement	Compliant	Marks	Total
1. Torque & Drag Analysis				
I.	Software should be able to predict and monitor the torque and axial forces generated by a drill string being run into, pulled out of, and rotated in a 3-dimensional wellbore.		1	5
II.	Software must assist in designing the correct drill string / casing & liner assembly with respect to side forces and fatigue failures while following a specific path in achieving the desired target		1	
III.	Software must determine how drill string loads, surface loads, frictional and contact forces vary with mud properties, wellbore trajectory, and other operational drilling parameters		1	
IV.	Software must be able to calibrate friction factors based on field data with a wide range of friction factors each for the open hole and cased hole scenarios.		1	
V.	Software must be able to determine surface loads and torques for several bit depths to compare surface readings with string operating limits to prevent buckling and/or overpull. These results must be display graphically		1	
2. Stuck Pipe Calculations				
I.	Software must be able to determine the location of the stuck pipe in both vertical and deviated wellbore		1	5
II.	Software must include the frictional effects of the drill string displaying in a three-dimensional wellbore and must address the modification for stretches when the string is buckled		1	
III.	Software must perform yield load analysis to calculate the initial status at surface, stuck point and minimum over-pull or slack-off-to-load stuck point		1	
IV.	Software must perform back-off force analysis to calculate optimum conditions prior to back-off, initial surface action for back-off setup and final surface action for back-off		1	
V.	Software must determine the safe over-pull that can be applied to freeing the string with charts for stretch, pick up /slack off etc. with detailed reports		1	
3. Bottom Hole Assembly				
I.	Software must be able to predict the directional drilling performance of bottom hole assemblies		1	5
II.	Software must be able to study the displaced shape and contact forces the BHA experiences while in the wellbore		1	
III.	Software must be able to analyze contact forces and displaced shape of the BHA and predict the BHA build, drop and walk rates		1	
IV.	Software must be able to address following • Prediction of Build and Walk rates over a specified interval • Calculation of bit orientation within the wellbore • Calculation of the total resultant force acting on the bit • Calculation of axial forces and torques in each associated components of the BHA • Calculation of displacements of the BHA cross section within the wellbore cross section		1	
V.	Software must address a multiple bit types and geological formation data, locate contact points and helps determine proper BHA stabilization		1	

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TECHNICAL EVALUATION CRITERIA

S.#	Requirement	Compliant	Marks	Total
4. Well Control Calculations				
I	Software must be able to calculate the estimated influx volume and to design and monitor a well that can withstand the maximum pressures expected when an influx of known volume is circulated out of a wellbore.		1	5
II	Software must perform complex well control calculations and generate kill sheet and graph using driller's method, Wait & Weight Method and volumetric method etc.		1	
III	Software must determine pressures while simulating the circulation of a kick while drilling, a swab induced kick or after the pumps have shut down		1	
IV	Software must be able to provide kick scenarios while Drilling and After Pump Shutdown to calculate position and expanded volume of the influx and pressures along the wellbore		1	
V	Software must be able to provide a detailed kill sheet to generate a standpipe pressure schedule based on latest standard IADC forms		1	
5. Casing and Tubular Seat Selection, Design & Stress Analysis				
I	Software must provide a graphical representation of the triaxial load capacity of the pipe body, the API load capacity and the anticipated loading for each condition.		1	
II	Software must provide Von Mises criteria plot for analysis.		1	
III	Designs the strings for an entire well, using a true triaxial algorithm.		1	
IV	Software must provide to consider the effects of ballooning, nonlinear buckling and buoyancy.		1	
V	Software must be able to analyze thermally induced loads by drilling, production and injection cases with an option for user-defined service load temperatures.		1	
VI	Software must provide comparison of two cases for the same string side by side.		1	
VII	Software must provide both string and load case-specific design factor specification, with independent design factors for pipe body and connection.		1	
VIII	Software should have Standard API connections with provision for user-specified proprietary connections.		1	
IX	Software must provide API tubular catalog, with provision for user-specified additions.		1	
X	Software must provide Drag n Drop selection of casing and tubing sections within plots		1	

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S.#	Requirement	Compliant	Marks	Total
XI	Software must provide Burst, collapse, axial, and triaxial safety factors for each load case, as appropriate, with burst and axial safety factors, based on the lesser of pipe body or connections ratings.		1	16
XII	Software must be able to generate pore pressure and fracture pressure calculations and their various curves etc.		1	
XIII	Software must provide casing setting depth selection based on estimated pore pressures.		1	
XIV	Should have an option of operating constraints for casing seat selection.		1	
XV	Software must provide all permissible casing scheme solutions for user evaluation and selection.		1	
XVI	Software must have both casing shoe depth selection methods i.e. Bottom-up & Top-down.		1	
6. Advanced Tubular Design (Pressure & Temperature Effects on Tubular)				
I.	Software should be temperature sensitive which can results in detailed thermal and pressure simulations leading in selection of improved surface and bottom hole equipment.		1	10
II.	Software must consider an undisturbed temperature gradient from actual log temperatures		1	
III.	Software must be able to model fluid flow hydraulics during drilling and circulation operations		1	
IV.	Software must address wellbore temperatures and fluid pressures that can be used in tubular stress and buckling analysis		1	
V.	Software must be able to address initial setting conditions of casings that can be used in tubular stress analysis		1	
VI.	Software must be able to model a temperature history of the well that can be used while performing annular fluid expansion, annular pressure buildup as well as wellhead movement analysis		1	
VII.	Software should be able to give detailed temperature analysis in the wellbore as well as in wellbore surroundings during all drilling operations and stimulation jobs		1	
VIII.	Software need to be capable of analyzing production operations and its effects on casing strings which can help in cost effective casing design.		1	
IX.	Software must be able to use of predicted temperatures and pressures in tubular stress, movement and buckling analysis		1	
X.	Software must address the influence of the thermal expansion of annulus fluids, and/or the influence of loads imparted on the wellhead during the life of the well, on the integrity of a well's tubulars		1	

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TECHNICAL EVALUATION CRITERIA

S.#	Requirement	Compliant	Marks	Total
7. Wellbore Schematics Generation				
I.	Software must have ability to enable user to enter wellbore information including survey, hole sections, casing, cement, drillstring, completion strings, perforated, and stimulated intervals.		1	5
II.	Could generate schematics of down hole completion tools, completion schematics, and wellhead / BOPS schematics.		1	
III.	Software must have ability of drag and drop feature to quickly construct drillstring or work strings through selection of components from a symbol palette with detailed visualization options i.e. 2D/3D and having the freedom to use either a default set of symbols or allow user to modify/ create custom symbols		1	
IV.	Software must have ability to enables user to create or customize downhole equipment symbols		1	
V.	Software should be able to generate wall plots of high resolution		1	
8. Hydraulics with Swab & surge Calculations				
I.	Software should be able to perform optimum bit hydraulics along with pressure-loss analysis considering each components of the circulating system individually.		1	10
II.	Software should have the ability to take into account rheological models such as Power Law, Bingham Plastic and Herschel-Buckley for calculations.		1	
III.	Software should be able to assist in the selection of jet sizes & flow rates for optimized results		1	
IV.	Software should have the ability to calculate trip schedule for swab and surge analysis against respective trip margins		1	
V.	Software should be able to calculate circulating densities and pressures for specific trip speeds for both drilling & cementing operation.		1	
VI.	Software should have the ability to assist in the selection of drilling fluids and string movement to avoid swab & surge pressures.		1	
VII.	Software must have the ability to model the analysis and also provide detailed reports including comprehensive plots & graphs.		1	
VIII.	Enable to model different scenarios in graphical format enabling to visualize all the factors affecting hydraulics.		1	
IX.	Software should be able to model the effect of BHA components included in the drill string.		1	
X.	Model must have the ability for mud weight up analysis to calculate the amount of weight up or dilution material required to achieve desired mud weight.		1	
9. Well Operations Reporting, Data Management and Operational Data Analysis				
I	The model should include comprehensive data capture system, ensuring well site supervisor / engineer to quickly and painlessly capture all critical information.		1	
II	Should have the well operations reporting format for Drilling Operations, geologist, Mud engineering, Mud logging, Daily well cost, AFE, Formation testing, Cementing jobs, Casing tally, Drill string, Directional Equipment, Coring, Wellhead, Well completion, Drill stem testing, Directional survey, Pressure survey, Drilling related problems, Lessons learned, such as BOP, shale shakers; hydrocylones; mud pumps; desander; Rig equipment data desilter; centrifuges and Safety.		1	

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TECHNICAL EVALUATION CRITERIA

S.#	Requirement	Compliant	Marks	Total
III	Uses a simple interface, with customizable language and report formats.		1	14
IV	Software should be able to track key performance indicators, compare actual results with the operational plan, and track and manage drilling costs by option of comprehensive AFE linkage.		1	
V	Software should have the ability to create unit systems, customize data-entry screens, or hard copy ready reports to support local workflow needs.		1	
VI	Software should be able to generate reports in PDF or Microsoft Word for easy internal and external distribution.		1	
VII	Should have the ability of automatic and manual field to Office & Office to Field data transfer capability through dial up network, FTP mechanism and email.		1	
VIII	Should be able to easily generate charts and production quality graphs for improved reporting.		1	
IX	Software should have a wide selection of graph types and viewing options which enable the user to quickly visualize results and find anomalies and trends.		1	
X	Software should be able to chart drilling progress relative to the operational plan, track time, manage QHSE incidents, and perform additional analyses to optimize drilling operations. Track productive and non-productive time.		1	
XI	Drilling performance can be qualified / quantified early and accurately.		1	
XII	Solution should be able to provide easy access through a web portal to provide a secure environment to view well operations information, output reports, wellbore schematic diagrams and analytical results		1	
XIII	The web Portal should be completely customizable according to company requirements		1	
XIV	The web Portal should be able to display operational rigs activities in tabular and graphical formats		1	
10. Database				
I.	Well operations reporting data module should be compatible with third party data management software available in market.		1	5
II.	Reporting data should be searchable and shareable with other drilling engineering modules to avoid retyping of previously entered data.		1	
III.	Easily maintainable database that allow multiple users to access data simultaneously and supports rapid, robust data synchronization.		1	
IV.	Database administrator should be able to configure system access based on user login and password.		1	
V.	Should have powerful query tool for users, enabling them to realize maximum value from all of the well information captured.		1	

GRAND TOTAL = 80

Note: Qualifying marks will be 80% for each section.

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ANNEXURE-II

ACQUIRING OF DRILLING ENGINEERING SOFTWARE

NUMBER OF LICENSE SUMMAARY

Sr. No.	Application	Functionality	No. of License
1	Well Engineering Analysis	Torque & Drag Analysis	02
		Stuck pipe calculations	01
		Bottom hole Assembly	02
		Well control calculations	01
		Hydraulic with Swab & Surge calculations	02
2	Tubular Design	Casing shoe depth	02
		Casing design	02
3	Tubular Design (HP/HT)	Tubular Design (For HP/HT wells)	01
4	Wellbore Schematic	Wellbore Schematic	05
5	Operational Data Reporting	Operations data reporting (Field)	10
		Operations data reporting (Office)	05
		Data Query/ Analysis	10
6	Web Dashboard	Web Dashboard for management	20
7	Well Engineering Data Base	Well Engineering Data Base	10

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ANNEXURE-III

ACQUIRING OF DRILLING ENGINEERING SOFTWARE

RATE FORMAT/FINANCIAL EVALUATION/YEAR

S.#	Software	Price /User (US$)	Annual Maintenance & Support / User (US$)	Total (US$)
1. Torque & Drag Analysis				
i)	Software Name			
2. Stuck Pipe Calculations				
i)	Software Name			
3. Bottom Hole Assembly				
i)	Software Name			
4. Well Control Calculations				
i)	Software Name.			
5. Casing and Tubular Seat Selection, Design & Stress Analysis				
i)	Software Name			
6. Advanced Tubular Design (Pressure & Temperature Effects on Tubulars)				
i)	Software Name			
7. Wellbore Schematics Generation				
i)	Software Name			
8. Hydraulics Calculations				
i)	Software Name			
9. Well Operations Reporting, Data Management and Operational Data Analysis				
i)	Software Name			
10. Data base				
i)	Software Name			
11. Past Well Data gathering				
a	South well (Lump sum)			
b	Centre Well Cost (Lump Sum)			
c	North well cost (Lump sum)			
12. Service / Maintenance				
i)	Maintenance & Support Cost			
13. Installation & Onsite Support				
i)	Installation & onsite support cost			
14. Classroom Trainings				
i)	Classroom trainings cost			
Grand Total US$				

Note: Evaluation criteria will be filled in by each participant/Bidder.

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