

PARIS Frequently Asked Questions

1.0 *Functionality*

- Q. Does the system capture offshore generated daily production data and manage periodic data items associated with allocation? (e.g. shrinkage factors, standard densities etc)
PARIS complies with this requirement. Data is captured via a pre-configured data acquisition tool and it is then stored securely in an SQL server database.
- Q. Are equations used in the system available to business users for verification and auditing purposes?
The audit and calculation validation tools allow users to view and verify the audit trail of data changes. A system audit can also be performed to verify the calculations.
- Q. Does the system manage metering mismasurements and adjustments?
A built in mismasurement module and dedicated audit tool meet these requirements.
- Q. Does the system generate statutory reports? e.g. PPRS, pipeline operator's report
A built in reporting module contains these generic reports and other user specific reports can be configured easily.
- Q. You say that PARIS has a mismasurement module and a dedicated audit tool. Does PARIS allow us to apply a mismasurement to the day the mismasurement occurred?
Mismasurements can be added every day both in current form and historically.
The allocation engine can re-run the allocation from day 1 if required.
The lifetime of data mechanism ensures that the correct tags, selectors, well data and mismasurement data is used historically. The mismasurement module can accept either user calculated mismasurements or the formula module will calculate the correct flow rates using raw data.
- Q. Is the PARIS process flow diagram facility included in the proposed costs?
The Process Flow diagram is supplied with PARIS and the configuration costs include building the screens required by the client.
- Q. I note that PARIS allocates by volume. What happens if we want to allocate products or perform balancing in mass - does that require a modification to PARIS and is that included in the proposed costs?
The design of PARIS is such that the selector and factor mechanism can be configured to convert the reported data to mass using a client supplied density factor at any point in the allocation process. If the reconciliation is required in mass then it might be necessary to make some modifications to PARIS. If the client requirements are clear at the outset then this would be at no extra cost.
- Q. Can the system carry out reservoir allocation?
Reservoir splits and the subsequent allocation is a feature of PARIS.
- Q. Does PARIS include loss reporting?
A fully configurable module meets the requirements for managing and reporting on operational production losses from wells. PARIS also provides production analysis based on the user configuration for the individual well or station.

- Q. How does the loss reporting system calculate production losses?
PARIS reports losses for allocated production based on the maximum theoretical well/station rates. These rates are calculated and entered by the production personnel.
- Q. Does the system capture comments and ad hoc information?
Comments input boxes are available within the system.
- Q. Does the system securely restrict viewing and the editing of data and can this be managed by 'super users' rather than reverting to information management specialists?
After the system is handed over, PARIS access is controlled by the customer via a series of access levels each configurable to meet the clients needs.
- Q. Is it possible to have a choice of display units, including company and asset specific conversion factors?
Yes, at present the data acquisition tool has the facility to accept data in any units. PARIS has conversion factors to output the data in imperial or metric format.
- Q. We require the ability to capture mass and volume for all our flow measurement points?
PARIS complies with this requirement.
- Q. Does the system last for the life of the field, subject to upgrades and version releases?
The software is fully supported by Petrofac under the terms of the maintenance agreement.
- Q. The system should be easily expandable. You say that configuration can be performed without specialist resources but suggest that we need to use Petrofac consultants to do so. How do we get to the point where we configure the system without Petrofac assistance, for instance to add future assets?
PARIS complies with this requirement. The PARIS software can be configured for new fields and wells by anyone with the correct security log in. It will be possible for the client to carry out this work if they so wish using the configuration module once they have been trained on the mechanisms. Please note however that PARIS is licensed on an asset-by-asset basis.
- Q. Does the system require information management specialist resources to support it (e.g. client or external programmers)
Any software support requirements will be the responsibility of Petrofac under the maintenance support fee.
- Q. How easy is it to find and display data?
The majority of data viewed from the Diagram Tool can be accessed in 3 clicks, but the PARIS data screens use data filters to go from platform at the top to wells at the bottom and this takes more than 3 clicks.
- Q. How flexible is the licence model to allow access across the organisation?
After the system is handed over, access to PARIS is controlled using functionality which allows the customer to configure access levels with secure password protection.
- Q. Is the system available remotely and to external third parties?
PARIS is a web enabled application which is accessed via a secure internet connection.
- Q. Do the mismeasurements have unique numbers?

No, but each mismeasurement is time stamped (that is the start of the audit trail). It is assumed that the client would use their own numbering system entered in the comments and reason boxes for every mismeasurement entry or period.

Q. Do the custom reports get stored for future use?

Yes, and because access is securely controlled, the operator can restrict who has access to creating reports (to prevent cluttering of the reporting section).

Q. If PARIS were to “fail” whilst carrying out the allocation, how would we identify where it had failed?

During the development phase extensive tests were carried out to try and make PARIS fail to ensure the error messages throughout the system were working. There are 3 main error trapping points in PARIS

- 1) The data acquisition tool screens tell the user if there have been any problems with data, e.g. wrongly formatted or negatives. At this stage the user can correct the data file and reload the data.
- 2) The Raw Data entry screens provide red warning banners if any data has not been transferred. The operator can then validate the raw data for typos or negatives.
- 3) Once the data is accepted and the allocation is run, if there are any problems with the allocation engine then a series of error messages appear telling the user what the problem is and where it is.

This list is not exhaustive but is designed to be helpful to the user for fault finding of data if there are errors in the allocation.

Q. How easy / how do you enter well curve data? And how do you link this to the choke positioning?

The main curve mechanism is the lookup table and for example this may be useful where the client wishes to correct test separator flows to a production separator.

Q. If our engineer wants to look at the data from the data entry screens to carry out a ‘first pass’ validation how would you recommend large amounts of data being validated to allow the use of such tools as conditional formatting?

If large volumes of data needed to be validated in a timely manner, then we would recommend using MS query in Excel and the ODBC connection to the SQL PARIS view tables, to export the data to spreadsheets.

2.0 Data Handling

- Q. It is important that all available historical data should be loaded in the system to avoid the need for long term maintenance of legacy systems and to improve analysis capabilities. Is this possible?
 If loading of historic data to PARIS is required the systems analyst will be required to either create blank days for data loading or the use of scripts to populate PARIS with PARIS Data.
- Q. Is there a configurable data auditing capability to capture who changed key data and when? and the ability for authorised users to readily view and manage this audit data
 The audit validation tool is designed for this reason.
- Q. Will PARIS allow us to capture and reconcile against terminal accounts without modification?
 As PARIS is generic in concept and build, it is possible to configure PARIS to use the existing tools and screens as a terminal receipt to reconcile the oil export allocated information to terminal information. Alternatively the reconciliation module can be used to accept a manual reconciliation factor calculated offline.
 The reconciliation module also calculates the oil composition per field from the blend analysis which is entered on the data entry page. This is calculated using either the allocated or reconciled mass from the oil export systems, this then provides the pipeline operator with the appropriate hydrocarbon analysis data for use in the hydrocarbon accounts.
 If more complex terminal and reconciliation accounting is required then this would be built to the client's requirements on a re-imbursable day rate basis.
- Q. We have the requirement that equations used in the system should be available for verification and auditing. This is more than an audit trail of changes to data. We'd like to be able to actually review the calculations used to convert inputs to outputs. Is that possible?
 The equations of state can be verified using the validation tool. This permits auditors to check calculations without the results being written to the database table. The tag configuration screen displays how each tag has been configured for and what calculations are being used for that particular tag.
- Q. We require a data management flag. Can you give some details on what status flags are available? i.e. what stages cause flags to be set? Data loading, allocation, reconciliation or final accounts?
 The allocation screen displays to the user the condition of the system i.e. data transferred, days to be allocated, data frozen.
 If for any reason there are faults during the process, the data acquisition module, data input screens and the allocation module provide the user with a comprehensive range of error and status messages to assist with fault finding of both missing or incorrect data and allocation engine problems (normally caused by incorrect data).
- Q. Can you estimate the cost of loading historical data?
 Historical data loading would be carried out by Pisys. They require information on the structure and volume of data to be loaded and can provide costings once a detailed specification has been provided by the client.

- Q. You say that PARIS allows us to trace the source of data. Can you elaborate on how that is managed, i.e. can we determine which inputs are involved in any particular output without examining source code?

By a combination of:

- Tag configuration screen
- Drop down boxes (in the data entry screens)
- Tag structure modules (in the configuration module)

These will provide the user with clarification on how inputs are transformed into outputs without the need to refer to the source code.

- Q. How would you configure our data historian using the selectors?

PARIS uses the Data Acquisition Tool to configure tag lists to the unique selectors. PARIS also requires daily data for the data acquisition tool. As PARIS runs on the server clock we need to be mindful that we are getting the correct reporting day of data from the client system for the correct period.

3.0 Interfaces

- Q. Can the system automatically download from SCADA?

The systems analyst will use the data acquisition tool to create an interface file to import to PARIS in addition to named formats (csv, tab delimited, Excel), OPC and Modbus formats which can be processed by the separately available IO-Spy tool which will also produce a file to import into the system.

- Q. Is there a visual interface equivalent to Visual PARIS from the original software version?

The PARIS Process flow diagram facility complies with this requirement.

- Q. Can you give some details of the security model? Is it at application or database level; is there a generic database login we can use for read-only access via Excel, are there pre-defined roles such as data entry, allocation engineer, etc

The security model permits configuration of the access levels and pre-defined roles using user name and password. Each screen or function can be checked or unchecked dependent on access required using a “Configurator” screen. This information is then stored in the Database.

PARIS has been built with a view layer for access via Excel. This is a layer built on top of the tables which provides read only access to the data. The methodology is similar in concept to a ‘Business Objects Universe’.

- Q. Is there a limit on the number of assets per PARIS system?

PARIS has no technical limit to how many assets can be configured. Please note however that PARIS is normally licensed on an asset by asset basis.