

Description of the functions in SATOS

What is SATOS?

SATOS is an Online Databasedriven Procedure Handling Tool.

The Tool is designed to meet both Authority Requirments and specific Company Requirements, regarding Operations Procedures Handling.

A typical application of SATOS is in the Central Control Room (CCR) for use by the Operators during a Start-up or Shut-down sequence of the Platform.

The Objective of SATOS

The Objectives of SATOS are to ensure that :

- all required Operations Procedures are easily accessible for the Operators at all times
- the latest updated version of the Operations Procedure is always available
- the procedyre steps are consistantly followed every time
- Online Procedure Collaboration can be handled

Visualization of Procedures – Node Diagram

A Planned Start-up or Shut-down of a Platform involves a mulitude of different Prosess & Utility systems, requiring their own Start-up & Shut-down Procedures. In sum the number of Procedures and Procedural Steps required for Start-up or Shut-down of a Platform is vast.

However, the sum of the Procedures is not sufficient to Start-up or Shut-down a Platform. In addition is needed a system to ensure that the various Process & Utility systems are started and shut-down in the proper sequence. Various techniques are used to handle this rather complex task. SATOS is using a technique, based upon visualization of the procedures in Start-up & Shut-down diagrams, named Node Diagrams, used among others by StatoilHydro.

Up til now, Node Diagrams have been paperbased. With SATOS this has changed, in the way that any Procedure can easely be built and visualized as a databased Node Diagram within SATOS. This is a major development, which sets SATOS far ahead of similar solutions.

Without a system like SATOS, you end up with a vast number of eletronic files or paperbased Procedures, manually linked together through a eletronic/paperbased Node Diagram (or similar) as basis for the Start-up or Shut-down sequence of your Platform.

With SATOS, no matter how complex the Start-up or Shut-down sequence of your Platform is, the entire sequence is shown on the PC screen in one screen frame. And all associated Procedures and Procedural Steps are only a mouse click away.

In fact, all Procedures required to Start-up or Shut-down the Platform is at your fingertips.

How is the Procedure text handled in SATOS?

SATOS handles the Procedure text in 2 distinctive different ways.

As previously stated, the Node Diagram visualizes the various Procedures and the sequence of steps to be taken during a Platform Start-up or Shut-down. The Node Diagram consist of a number of Nodes. Each Node represents a major Operational Step, f.eks. the Start-up of a Process or Utility system. Beneath each Node you find a Procedure Handler. It is the state of this Handler which dictates how SATOS treats the Procedure text.

The Procedure text can either be:

- Stored in the SATOS database directly
- A link points to the Procedure file, stored elsewhere or locally in the SATOS File Archive
- Or as a combination of the two above

This flexibility gives several advantages. If the Company Policy is to store Operational Procedures in a dedicated filing system (such as DocMap etc.) SATOS still gives you the flexibility to take full advantage of the many features of SATOS, such as building a databasedriven Node Diagram within the Tool, while linking to the Operational Procedures stored and maintained elsewhere.

The linking capability also gives you the advantage of linking to any external files required during the Start-up or Shur-down of the Platform, such as specific Supplier Information.

By storing the Procedural text in the SATOS database all information related to a Start-up or Shut-down sequence is stored and maintained in one database.

A combination of the two methods of handling Procedure text in SATOS, can be the ideal way to obtain full benefit of the features in SATOS.

What is Operations Procedure Collaboration & how does SATOS handle this?

On the frontpage of this brochure we state that SATOS is the Online Solution for Operations Procedure Collaboration.

The trend within the Oil & Gas Offshore Industry is to move towards Integrated Operations and Onshore Operations Center. This approach requires a much tighter collaboration between the Offshore Central Control Room and the Onshore Operation Center than ever before. Particularly, is this tru when it comes to Operational matters, such as the ability for the Onshore Operations Center to monitor and follow the actual Start-up & Shut-down sequence on the Platform, as it happens.

SATOS is specifcly designed to meet this requirement through its online networking design, and enables several locations (could be Equipment Suppliers in addition to the Onshore Operation Center) to simultaneously monitor and assist, as needed, during a Platform Start-up or Shut-down.

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Updated Procedures at all times is an Authority Requirement . How does SATOS handle this?

Updated Procedures at all times, is an Authority Requirement. This applies to both the Procedure text, the sequence of Steps within the Procedure and the sequence of Steps between Procedures.

SATOS is designed to meet this mandatory requirement. Procedure text modifications for Procedure text stored in the SATOS database, will be reflected instantly in SATOS.

Procedures linked to from SATOS, will have to be updated by the responsible Company, but will be instantly available in SATOS as soon as the Procedure file is updated.

Likewise, any modifications done to a Node Diagram, such as moving, deletion or edition of a Main Node is instantly reflected in SATOS.

How is the Progress of a Platform Start-up or Shut-down sequence reflected in SATOS?

The Node Diagram visualize the sequence of steps during a Platform Start-up or Shut-down. A colour code system (Red, Yellow or Green) indicates the status of the Platform Start-up or Shut-down sequence..

Red indicates that the system is not started (Start-up sequence) or has been stopped (Shut-down sequence). Yellow indicates if the system is in the process of being started (Start-up sequence) or in the process of being shut-down (Shut-down sequence), while Green indicates if the system is up and running.

Consequently, a glance at the Node Diagram gives an instant feedback regarding the progress of the Platform Start-up or Shut-down sequence.

How is a Trip / Re-start handled in SATOS?

Should a Trip occur on the Platform, such as a Process Shut Down (PSD) or an Emergency Shut Down (ESD), specific procedures will have to be used for Platform.Re-start.

SATOS has a built-in system which allows you to define any Re-start situation, and link the associated Procedure to this situation. When this situation occurs, clicking on an internal control panel in SATOS, the correct Re-start Procedure will instantly be displayed.

Can SATOS handle any Procedure, not only Start-up and Shut-down Procedures?

SATOS can handle any Procedure. Start-up & Shut-down Procedures, Tripp & Re-start Procedures, Maintenance Procedures, Commissioning Procedure etc.

For any Procedure a Node Diagram can be created, and the Procedure text can either be stored directly in the SATOS database, filed in the internal SATOS File Archive or linked to Procedures is stored in external archives.

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Whatever method which is chosen all, functions in SATOS will be available.

The planning modul in SATOS

SATOS also includes a Planning Modul which allows you to visualize Planned & Actual start/finish times for any procedural step, using a drag and drop Gantt diagram. The Planning Modul also allows you to assign resources to the activity and to allocate a budget (manhours & cost) to complete the step.

Access Control & Permission Level in SATOS

SATOS includes an Access Control Modul which handles who has access to the system, and their Permission Level in SATOS.

3 Permission levels exists. Administrator level is the top level and gives the person full access to all the functions in the system, which includes access to the User & Edit functions. The next level is the User level, which gives the person permissioning to all User functions in the system. The final Permission level is Guest, which is used during Operations Procedure Collabaration for anyone monitoring the status of a Procedure Operation sequence, taking place in the Central Control Room.