

# Introduction to Thule Completion System

**THULE ENGINEERING AS**

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# Contents

<b>TCS Lite</b>	<b>2</b>
About TCS Lite.....	2
The Modules .....	2
ENS Library Module .....	2
Forms Allocation Module.....	2
Forms Generation Module.....	3
Completion Preparation Module.....	3
Hydro Test Package Module .....	4
Import Module.....	4
Status Registration Module.....	4
Status Monitoring Module.....	5
Handover Module.....	5
Commissioning Package Punchlist Module.....	5
How the Modules Work Together .....	6
The Help System.....	6
How to Log on to TCS Lite .....	7
Logon procedure.....	7
User access .....	7
Some Basic Definitions.....	7
Combo Box.....	7
Command Button.....	8
The right-hand button on the mouse .....	8

# TCS Lite

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## About TCS Lite

TCS Lite is the Thule Engineering Completion Management System. It is used to plan, record the status and monitor Completion Activities for a single project. The requisite project information is set up prior to delivery of TCS Lite.

TCS Lite consists of a number of modules, each of which supports specific tasks.

All application modules, however, read one central database, making TCS Lite a fully integrated computer application.

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## The Modules

The TCS Lite computer application consists of the following Modules:

### ENS Library

TCS Lite relies heavily on the use of the Client's coding practices as defined in documents like The Engineering Numbering System. These codes are used to ensure valid input and to automate many of the tasks associated with completion activities. This module provides the requisite functionality to maintain ENS coding structures in TCS Lite.

Information about the following is maintained in the ENS Library Module:

- ◆ Facilities (E.g., Platforms or land-based installations)
- ◆ The System coding used on a Facility
- ◆ The Area coding used on a Facility
- ◆ Equipment Category coding
- ◆ Contractor Codes
- ◆ Work Location labels
- ◆ Preservation Checklists and periods

### Forms Allocation

Preparatory CheckRecords (PCRs) and Mechanical Completion Records (MCRs) are automatically allocated to the individual tagged items based on the Equipment Category Code as defined in ENS. The Forms Allocation Module supports the task of establishing and maintaining the forms allocation matrices (E.g. establishing the link between a specific Equipment Category Code and a specific Form Type).

## Forms Generation

This module supports the task of designing new forms (MCRs and PCRs) and changing the contents of existing forms.

## Completion Preparation

The Completion Preparation Module supports the tasks involved in preparing and planning for all phases of completion at all locations. In this module Commissioning, Preparatory Check(PC) and Mechanical Completion (MC) Packages are defined and the Scope of Work for each location is established.

The Completion Preparation Module supports the following tasks:

- ◆ Define Commissioning Packages
- ◆ Identify the Boundary Documents describing the Commissioning Package and identify the tagged items and cables within the Package
- ◆ Identify the Commissioning Procedure for the Commissioning Package
- ◆ Link the Commissioning Package to Milestones defined within TCS Lite
- ◆ Identify the pre-requisite Commissioning Packages for a Commissioning Package
- ◆ Define Preparatory Check and Mechanical Completion Packages and assign tagged items and cables.
- ◆ Scope the Preparatory Check and Mechanical Completion work by assigning the PC and MC Packages to Work locations (E.g. Vendor Site, Module Site, At-Shore Site, In-Shore Site and/or Off-Shore Site)
- ◆ Evaluate and adjust the automatic allocation of Forms (PCRs and MCRs) to tagged items (see Forms Allocation Module).
- ◆ Support all aspects of Loop Testing

## Hydro Test

The purpose of this module is to maintain the minimum amount of information about Hydro Test Packages necessary for Commissioning purposes. The module supports the following tasks:

- ◆ Registration of Hydro Test Packages
- ◆ Allocation of Hydro Test Packages to Commissioning Packages
- ◆ Status registration
- ◆ Detailed Status Monitoring for Hydro Test Packages
- ◆ Spool registration and spool statusing

## Import

The Import Module exists to facilitate the electronic import of Tag, Cable and Document data. The module supports the following tasks:

- Import of Tags, Cables, Documents and the cross reference between Tags and Documents using ASCII files formatted in accordance with requirements
- Electronic validation of all imported data
- Deviation reports
- The ability to spool invalid records to files
- Import reports

## Status Registration

This module supports the task of entering the status of the individual forms (PCRs and MCRs). Each form is barcoded. By using a light pen or by punching the barcode number, the correct form is identified and the status can be registered as OK, PB, PA or N/A (Not applicable).

## Status Monitoring

The Status Monitoring Module reports the progress of Completion Activities. The Status Monitoring reports are organized hierarchically according to 2 separate structures:

- ◆ by ENS Hierarchy - or reporting Completion Status by:
  - ◆ Facility
  - ◆ System
  - ◆ Area
- ◆ by Completion Hierarchy - or reporting Completion Status by:
  - ◆ Commissioning Procedure
  - ◆ Preparatory Check Package
  - ◆ Mechanical Completion Package

## Handover

The Handover Module supports the tasks involved in handing over a project to operations:

- Setting up the Final Handover Certificate
- Printing out the Final Handover Certificate and appendices
- Transferring the Punchlists for a Commissioning Package to the Commissioning Package Punchlist Module

## Commissioning Package Punchlist

The Commissioning Package Punchlist Module allows Punchlists to be aggregated from the individual tag/form level to the Commissioning Package level. Transferring punchlists is initiated in the Handover Module. This transfers all punch items with a negative status to the Commissioning Package level.

New Punch items for the package can be identified and cleared as required.

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## How the Modules Work Together

Each of the modules has a particular role to play within TCS Lite and each supply important information to the others. This means that work in some modules must be done before other modules can be used. Before forms can be automatically allocated to the correct types of tags, for example, the rules for that allocation must be setup. In general, the following sequence should apply:

1. Use the **ENS Library** Module to set up the coding structure for the project.
2. Make the Checksheets for the project in the **Forms Generation** Module.
3. Set up the rules for automatic allocation of checksheets in the **Forms Allocation** Module
4. Set up the Completion structure in **Completion Preparation** Module and **Hydrotest** Module
5. Use the **Import** Module to import tags, cables and documents
6. Register the status of the checksheets in **Status Registration**.
7. Use **Status Monitoring** Module to track progress
8. Hand over Commissioning Packages and aggregate punchlists using the **Handover** Module
9. Clear any outstanding punch items using the **Commissioning Package Punchlist** Module

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## The Help System

The Help System consists of 2 main components:

### The User Manuals

For each module, a comprehensive User Manual has been produced which will guide the user through the application.

The User Manuals can be printed at time using the User Manual Module provided with TCS.

### On-line Help System

On-line help is available from all modules. To activate the help system click on the word "help" or press F1.

The command button **Contents** will always take you to the Help System Table of Contents and the command button **Back** will always take you to the screen last displayed.

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## How to Log on to TCS Lite

TCS Lite is Windows based and Mouse driven. This means that TCS Lite requires a minimum of keyboard input. Rather, it relies on using a mouse to navigate through the application modules.

TCS Lite uses standard Windows features and functions. The successful use of TCS Lite assumes a minimum familiarity with PC technology and Windows user interface.

### Logon procedure

To log on to TCS Lite from the Windows menu, select the TCS Lite Program Group. The TCS Lite Program Group window will display a number of icons. Select the appropriate icon by double clicking on it. This will open the selected application.

### User access

All users will not have access to all modules. Further, all users will not have the same user rights within a module.

It is the appointed Systems Administrator who allocates access and user rights.

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## Some Basic Definitions

There are some terms used in TCS Lite which may be unfamiliar, even to experienced Windows users. The most important of these are defined below

### Combo Box

A Combo Box is a field on the screen which allows you to select one value from a list of values:



The example above allows for the selection of a Completion Phase. The choices in this case are restricted to

- ◆ Mechanical Completion
- ◆ Preparatory Check

To choose Preparatory Check within the application, click on the small arrow and the list of possible selections will pop down. (Nothing will happen if you click on this button in this example within the Help System).

## Command Button

A command button is an area of the screen which, when you click on it will perform a function. A short description of the function is printed on the button.

A longer description will appear in yellow text below the button itself when the cursor (the pointing arrow) is located directly on the box. Command buttons will always appear as 3-D raised boxes:



## The right-hand button on the mouse

The right mouse button can be used nearly everywhere to display more information about what you see in lists on the screens. For example, in the Completion Preparation Module, many screens list tags. By placing the mouse cursor on the tag number and clicking the right mouse button, the tag number and its description will be displayed. To remove the information which pops up, simply run the mouse over it.