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## Engineering Change Control Manager Procedure

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### OBJECTIVE

The purpose of this document is to describe the procedures required to use Engineering Change Control Manager (ECCM) to ensure projects are managed with ease, high quality and in a timely manner.

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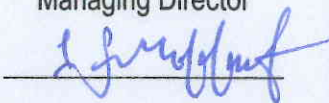
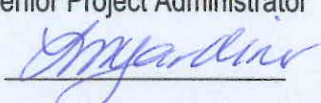
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Date:	15 January 2010	Date:	15 January 2010

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A	Initial draft	30 August 2008	GFM
0	Approved for Use	30 April 2009	JS
1	Revised IPS Codes	15 January 2010	GFM

*Recipients are responsible for eliminating all superseded documents in their possession.*



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### 1.0 SETUP

#### 1.1 Overview

Engineering Change Control Manager (ECCM) has been designed to register and report Variations and related data such as Drawing Revisions, Technical Queries, Site Instructions, Non-Conformance Reports and Notifications of Delay. Centralising all of this data into a single database provides numerous management and efficiency benefits. ECCM is based on a Microsoft Access platform and may be installed on a single computer, or on a local area network to facilitate multiple concurrent users.

Carefully designed reports, along with the ability to interactively filter those reports provide the user with a detailed and focused presentation of data. Required actions can be quickly identified, and status reports for client and internal are produced at the click of a button.

Data integrity is enforced in the design. Therefore, required data cannot be deleted by the user (e.g. a TQ that is referenced in a Variation), and when data is deleted, all related data is deleted with it (e.g. when a Variation is deleted, all associated charges are also deleted so that no 'orphan data' remains in ECCM).

Users must log-on using their personal account name and password, and can only perform those functions assigned to them by an administrator.

#### 1.2 Architecture

ECCM is designed using a frontend/backend configuration. The backend database file contains only the data tables, while the frontend file contains the screen forms, report formats, queries and code. The backend file would typically be located on the LAN server, and the frontend on each user's PC. Interaction with the data in the backend file is entirely via the (linked) frontend file. The frontend file controls which users can access and manipulate the data, presents the data in the required manner (on screen and in reports), and ensures data is handled appropriately.

The frontend database design (screen forms, report formats, code, etc.) is compiled and made inaccessible to the user and licensee. ECCM design is subject to terms of the licence granted, which (in part) does not permit de-compilation, copying, or modification of the design. Refer to the *ECCM Database Software Licence Terms* for full details.

*Note: While the tables and data in the backend file can be manipulated directly by authorised users, it is not recommended. Inappropriate changes could result in data errors and/or corruption of ECCM, and could even make ECCM inoperable. Direct access (on the network) to the backend data file should be restricted as much as possible so that users cannot access the data directly.*



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### 1.3 Logging In

#### 1.3.1 Log-on Dialog

A screenshot of a 'Logon' dialog box. It has a title bar with a question mark and a close button. Inside, there are two input fields: 'Name:' with the text 'auser' and 'Password:' with a masked password '20-20-20-20-20-20-20'. To the right of the 'Name' field is an 'OK' button, and below it is a 'Cancel' button.

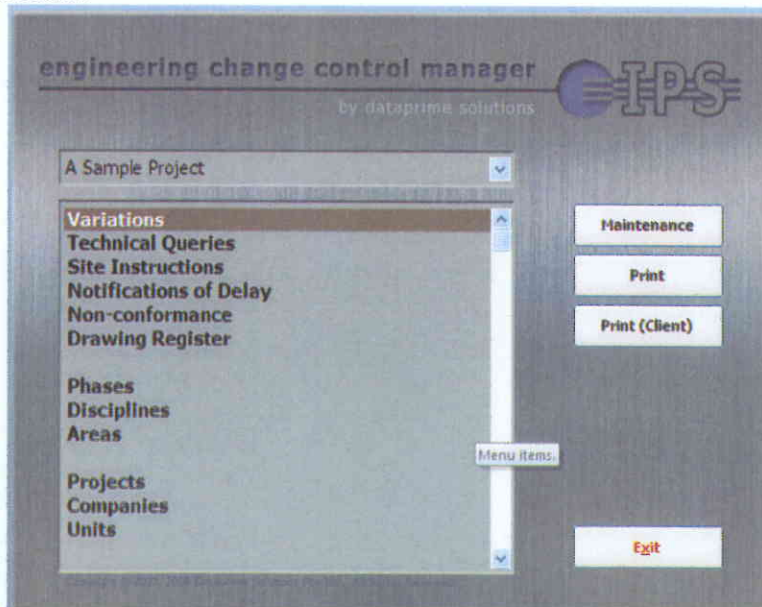
This dialog appears during start-up of ECCM. The user must enter a valid name and password to proceed past this point. ECCM uses this information to determine which features and functions the user is permitted to access.

### Splash Screen

The Splash Screen appears after successfully logging-on. Users can confirm that their installed frontend/backend versions and the current backend connection are correct by reviewing the information presented on this screen. Various important licence and copyright statements are also displayed.

ECCM requires periodic authentication and will issue a warning for up to 7 days after expiry, after which it will not open without provision of the authentication code. The designated company key-holder can provide the code required to authenticate ECCM.

### Main Menu

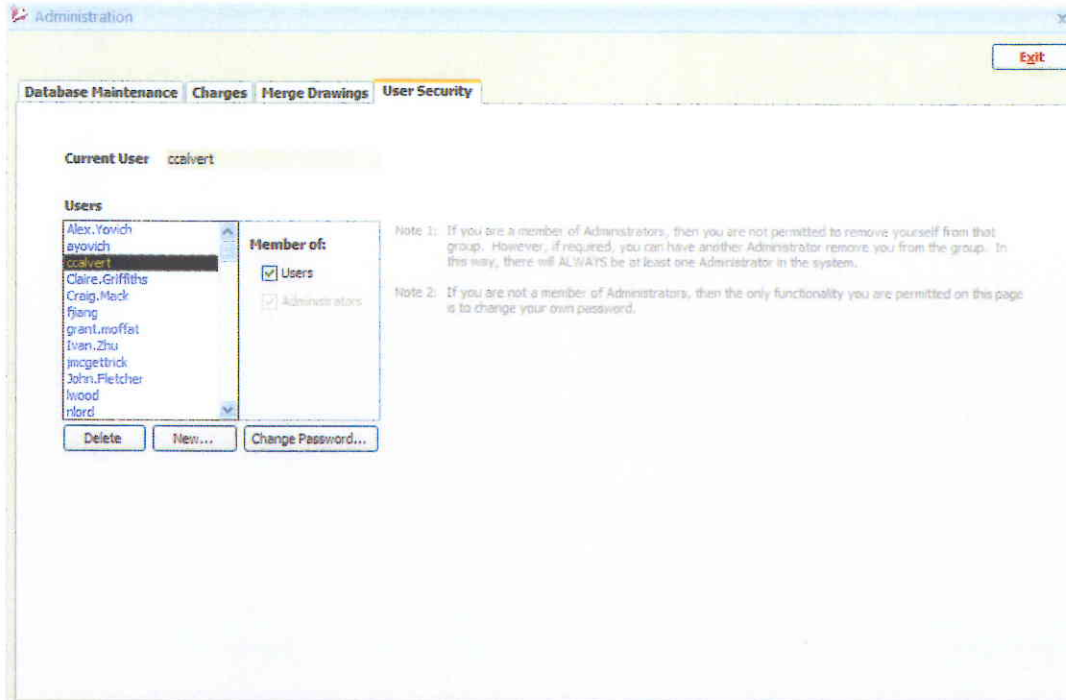


The user is presented with this screen after start-up.

All functionality can be accessed via this screen. After selecting an item in the list, the user can then click on the appropriate button to the right of the screen. Double-clicking a list item has the same effect as clicking the first button (usually 'Data Entry'). The Preferences and Administration screens are also available via the associated top menu bar.



## 1.4 How to Set Up a New User

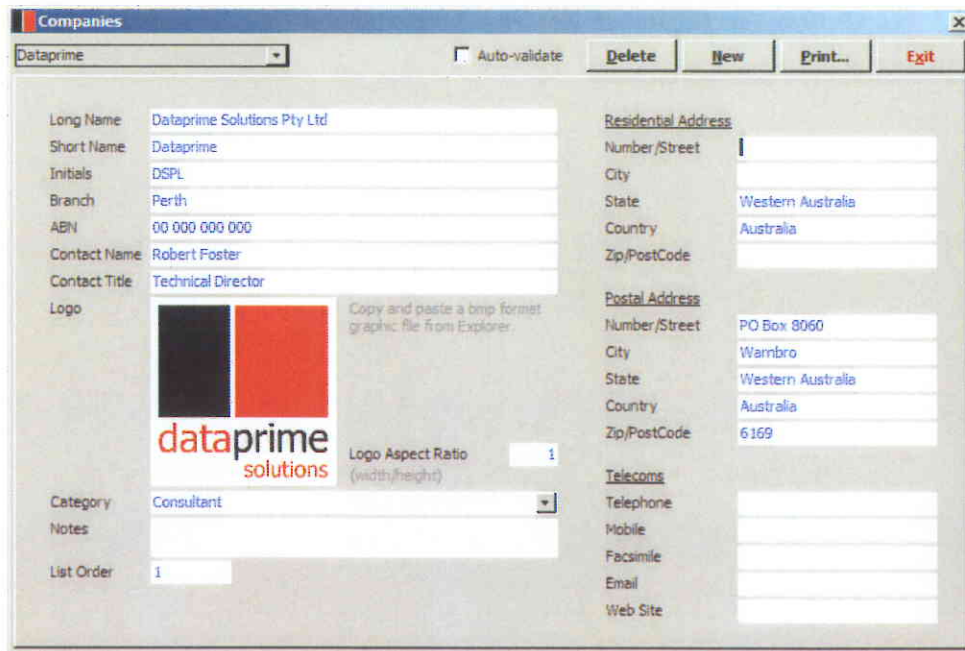


The screenshot shows the 'Administration' window with the 'User Security' tab selected. The 'Current User' is 'ccalvert'. The 'Users' list includes: Alex.Yovich, ayovich, ccalvert, Claire.Griffiths, Craig.Mack, fhang, grant.Limoffet, Ivan.Zhu, jmcgettrick, John.Fletcher, lwood, and rlord. The 'Member of:' section has checkboxes for 'Users' and 'Administrators', both of which are checked. There are buttons for 'Delete', 'New...', and 'Change Password...'. Two notes are present: Note 1 states that administrators cannot remove themselves from the group, and Note 2 states that non-administrators can only change their own password.

Only administrators can add new users to access ECCM. All user names must follow the same procedure of firstname.lastname. This ensures that IPS standards are maintained.

## 1.5 How to Set Up Projects

### 1.5.1 Setting up Relevant Companies (Client & Contractor)



The screenshot shows the 'Companies' window in the ECCM software. The window has a title bar 'Companies' and a dropdown menu showing 'Dataprime'. Below the title bar are buttons for 'Delete', 'New', 'Print...', and 'Exit'. There is also an 'Auto-validate' checkbox. The main area is divided into several sections:

- Long Name:** Dataprime Solutions Pty Ltd
- Short Name:** Dataprime
- Initials:** DSPL
- Branch:** Perth
- ABN:** 00 000 000 000
- Contact Name:** Robert Foster
- Contact Title:** Technical Director
- Logo:** A logo for 'dataprime solutions' is shown. Below it is a text box with the instruction 'Copy and paste a bmp format graphic file from Explorer.' and a 'Logo Aspect Ratio (width/height)' field set to 1.
- Category:** Consultant
- Notes:** (Empty text box)
- List Order:** 1
- Residential Address:**
  - Number/Street: (Empty)
  - City: (Empty)
  - State: Western Australia
  - Country: Australia
  - Zip/PostCode: (Empty)
- Postal Address:**
  - Number/Street: PO Box 8060
  - City: Wambo
  - State: Western Australia
  - Country: Australia
  - Zip/PostCode: 6169
- Telecoms:**
  - Telephone: (Empty)
  - Mobile: (Empty)
  - Facsimile: (Empty)
  - Email: (Empty)
  - Web Site: (Empty)

This screen is used to register Companies that may then be referenced in Variations or Projects.

ECCM can register Suppliers, Subcontractors, Clients etc, as well as your own company. Different company types can be identified by selecting the appropriate Category. Your Company logo and other details entered in this screen are used in the headers of various reports generated by ECCM.

If a particular Company is referenced elsewhere, then ECCM will not permit it to be deleted.



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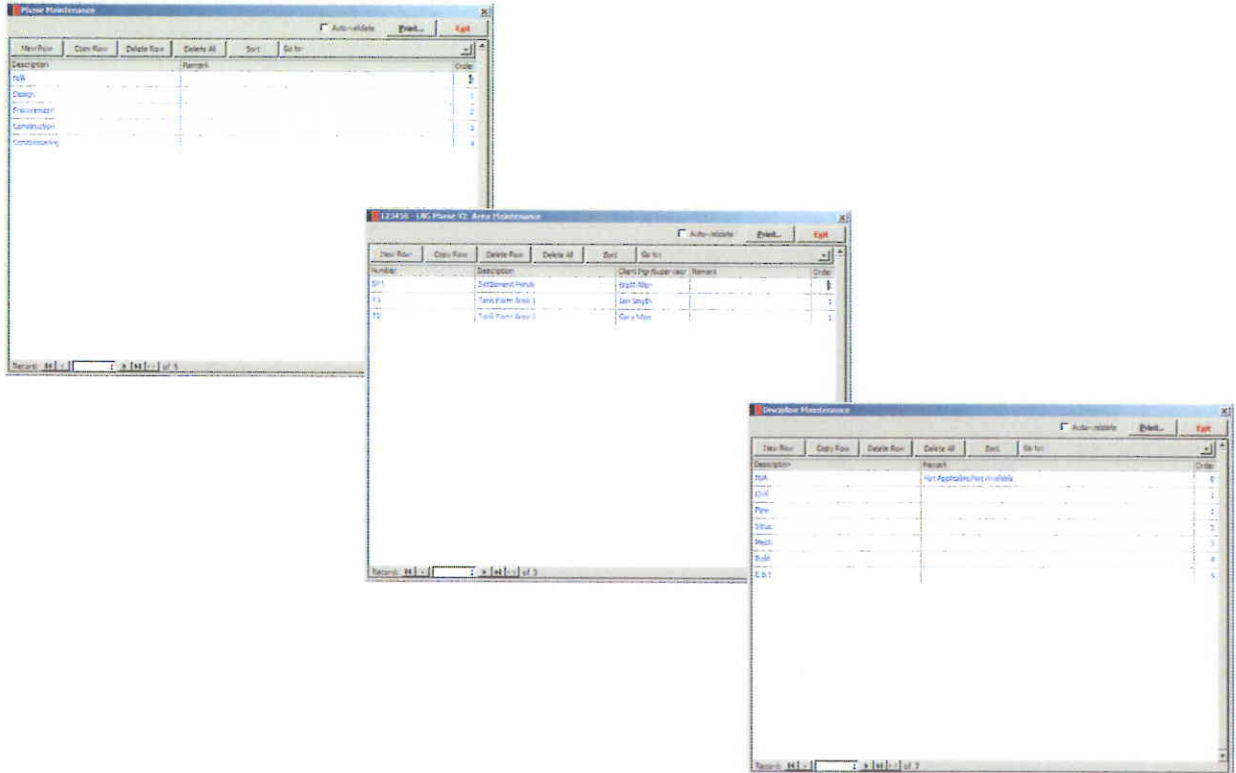
### 1.5.2 Setting up a Project

This screen is used to register Projects in ECCM. All of the project identification, description and reference data is registered through this screen and then used throughout ECCM (e.g. in reports). You should make sure that your company is selected in the 'You' field so that your logo and other details appear in reports.

If you choose to delete a project, then all data associated with that project (including Variations, Drawings, Technical Queries, Site Instructions and Notifications of Delay) will be permanently deleted. Only administrators are permitted to delete projects.



## 1.5.3 Setting up Phases, Disciplines and Areas



The screenshots show the following data:

**Phase Maintenance**

Description	Remark	Order
ISA		1
Design		2
Procurement		3
Construction		4

**Discipline Maintenance**

Number	Description	Client/Project/Version	Remark	Order
001	Settlement Permit	draft 001		1
002	Tank Plant Area 1	Sett 001		2
003	Tank Plant Area 2	Sett 001		3

**Area Maintenance**

Description	Remark	Order
ISA	Not Applicable/Not available	1
Design		2
Proc		3
Const		4
ISA		5

These screens are used to register Phases, Disciplines and Areas that may then be referenced in Variations or used to filter reports.

If a particular Phase, Discipline or Area is referenced elsewhere, then ECCM will not permit it to be deleted.

Phase, Discipline and Area should be setup preferably before a project starts this enables easy inputting of new information from drawings, technical queries, non-conformance reports and Site instructions. All of these are project specific and can be tailored to suit any project requirements and numbering systems.



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### 2.0 Operations

#### 2.1 Variation Maintenance

444 - Sample: Variation Maintenance

123B ☐ Continuously Update Submitted Value **Delete** **New** **Print...** **Exit**

Number	123B	Descr.	Variation description ...	Originator	A Person	Forecast (%)	Status	Approved: Settled	
Phase	N/A			Raised	19/07/2005	Pessimistic	0	Current	Action
Discipline	N/A			Notified	31/01/2006	Optimistic	100		
Area	024	Clause		Submitted		Probable	100	Action By	N/A
TQ	444-TQ-N/A	Remark		Sub. Ref.				Settled	31/01/2006 Amt. 34,891.00
SI	SI-016			Sub. Amt.	6,047.91	Rise & Fall	<input checked="" type="checkbox"/>	Amendment	V008.11

Record: 14 of 7 Pending Issues: 677 days Pending Approvals: Locked

**Budget Estimate** **Charges** **Claims** **Correspondence** **File Attachments**

New Row	Copy Row	Delete Row	Delete All	Sort	Go to:						
Description	Category	Cost (\$)	Markup (%)	Charge (\$)	DS No.	DS Date	DS Appr. By	Remark	Ord		
NDT Technician (Min. 4 hrs) x 2	Subcontract	680.00	10	748.00	12345	18/07/2007			1		
Crane Hire Cancellation Costs	Subcontract	4,818.10	10	5,299.91	12345	19/07/2007			1		
<b>Total (\$)</b>		5,498.10		6,047.91							

This is where Variations are registered and managed. Variations can be added, deleted and edited in this screen.

The top 1/3 of the screen is devoted to the Variation list which includes references to Phases, Disciplines, Areas, Site Instructions and Technical Queries, as well as various descriptive information, milestone dates and status. Outstanding submissions and settlements, and the date on which the Variation was locked (i.e. the date on which the Submission Date was entered) are displayed in the bottom row. Note that when the user enters the Submission Date, ECCM takes this to mean that Charge information should not be changed from that time onwards (otherwise the submission to the client would be invalidated) and so locks the Charge information to prevent modifications. Only users with administrative permissions can unlock or change the Charge data in locked Variations (via the Administration screen).

The bottom 2/3 of the screen contains data relating to the Variation currently selected in the list above. Multiple records can be entered on each tab, and in the case of the Charges tab, costs are automatically summed to give a total at the bottom of the column.