

## Global ERP - Rubber





## Rubber Plantations Management, Harvesting and Logistics, Processing

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# Background

Ata Marie has been involved with the establishment and management of large rubber plantations in South East Asia.

Ata Marie has designed systems for rubber plantation operations management including plantation mapping, plantation silvicultural operations and rubber tapping logistics.

This document provides the general design of the plantation rubber IT systems.

# Overview of Systems Requirements

The rubber systems are an integrated plantation management IT solution:



# Requirements Breakdown

Resource Systems Requirements		
Category	Operations layer	Financial layer
Resources	Mapping	
	Plantation record system	
	Asset reporting	Balance sheet
	Census / Inventory	

# Requirements Breakdown

Plantation Operations (1)		
Category	Operations layer	Financial layer
Plantation Upkeep	Operations planning & budgeting	GL forecast
	Operations scheduling / standard regime	GL forecast
	Operations management	GL forecast
	* Work prescriptions	
	* Rate setting / detailed costing	
	* OHS documentation	
	* Work orders	Payroll
	* Purchase orders / contracts	Purchase orders
	* Stock requisition / stores	P/L, acc payable / receivable, stock
	* Quality control & acceptance	
Plantation Harvesting	* Processing of invoices and payments	P/L, acc payable / receivable
	Employment ageeements / Staff	HR
	Contracts / external harvesters and transport	
	Harvest operations scheduling	
	Production records systems	
	* Cut lump	Stock
	* Latex	Stock
	* Quality control	
	Payroll	Payroll
	Invoicing / payments	P/L, acc payable
	Staff / contractor management	Work orders / Purchase orders
	Sales contracts	
	Invoicing / receipts	Acc receivable
	Production reporting	
	* Worker level productivity	
* Block level productivity		
* Estate level productivity		

# Requirements Breakdown

Plantation Operations (2)		
Category	Operations layer	Financial layer
Nursery Management	Production planning	
	Operations management	GL forecast
	* Work prescriptions	
	* Rate setting / detailed costing	
	* OHS documentation	
	* Work orders	Payroll
	* Purchase orders / contracts	Purchase orders
	* Stock requisition / stores	P/L, acc payable / receivable, stock
	* Quality control & acceptance	
	* Processing of invoices and payments	P/L, acc payable / receivable
Vehicles and machinery	Vehicle register	Asset register
	Maintenance program	
	Log book	VRA
	Fuel and other costs	VRA
	Fuel and other costs	
Workshop	Job management	
	Job costing	P/L, Asset register
	Stores	Stock

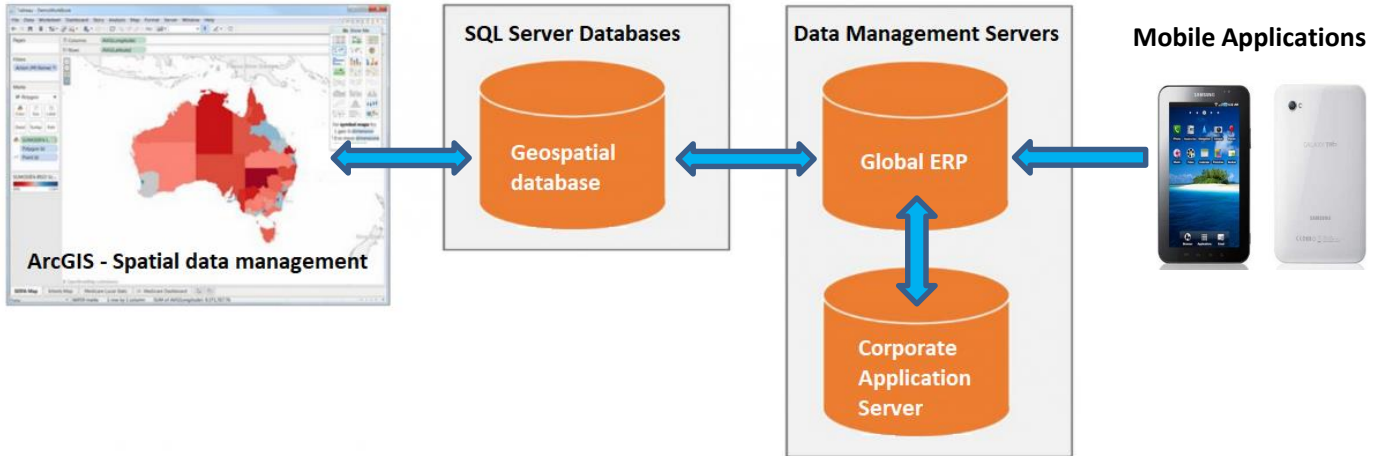
# Requirements Breakdown

Environment and Social Services		
Category	Operations layer	Financial layer
ESMS	Documentation of standards	Corporate ESMS Reporting
	Auditing and compliance management	
	Chain of custody management	
	Certification documentation	
	Controlled external sources	
	Community dashboard	

Corporate Services		
Category	Operations layer	Financial layer
HR	Staff register	Corporate HR
	Medical records	
	Other	
Payroll	Terms of employment	Corporate Payroll
	Attendance record	
	Salary payment	
Finance		General Ledger
		Cashbook
		Asset register
		Profit and Loss
		Balance Sheet



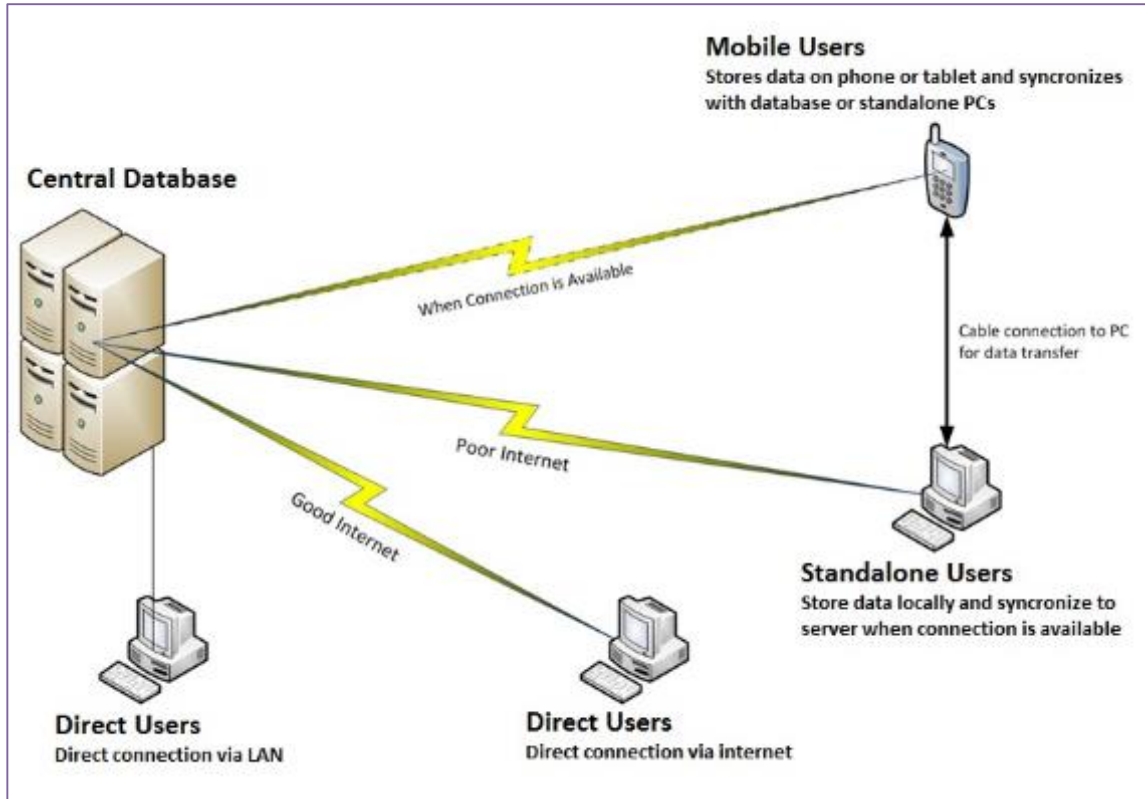
# Global ERP Configuration



## The systems configuration:

- Global ERP integrating the spatial data, operations data and mobile feeds
- Remote sensing and mapping will be implemented using ArcGIS. Geospatial data managed through a SQL Server backend database
- Mobile applications interface directly with Global ERP
- Global ERP interface directly with accounting, HR, and other corporate systems

# Global ERP Infrastructure Setup



# Live Systems Examples

## 1. Introduction to Global ERP Platform

**John Baird**

## 2. Operations systems

**George Kuru**

Plantation register / GIS

Census

Plantation Upkeep

Plantation Harvesting

ESMS

## 3. Other modules

**John Baird**

Vehicles and machinery

Workshop

HR

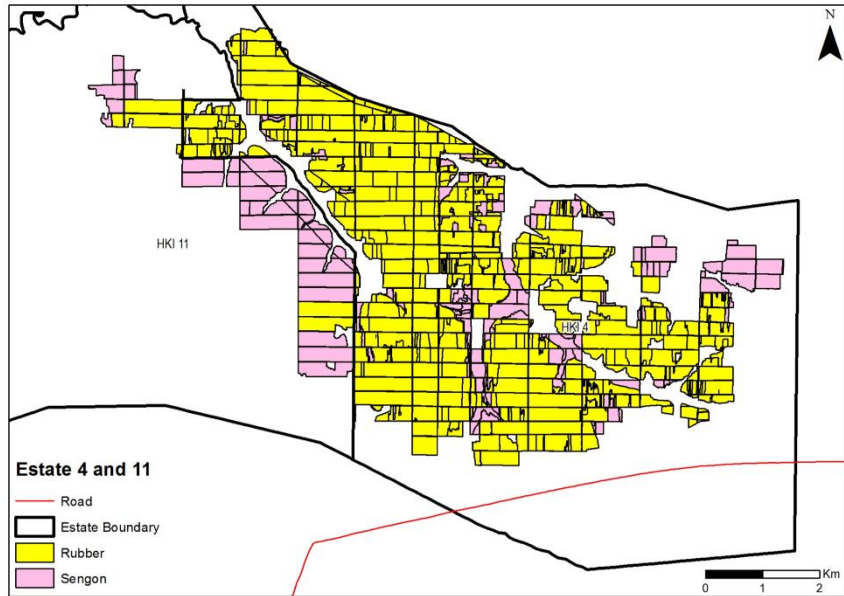
Payroll

Interfacing to corporate systems

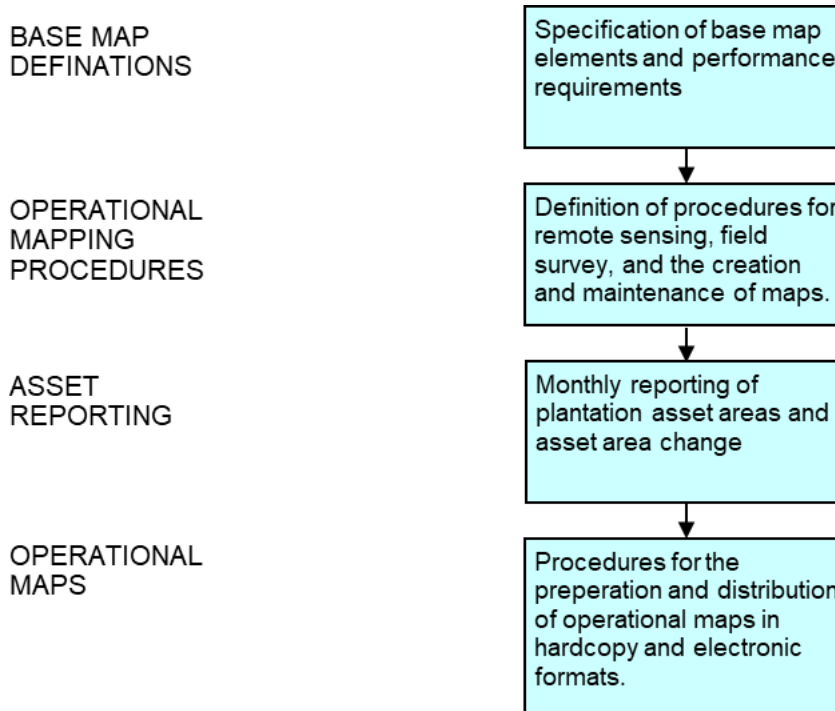
# Plantation Register and GIS Solution

Ata Marie solution provides:

- Documented Standard Operating Procedures (SOPs) for plantation estate description and resource mapping.
- Detailed mapping of site variables such as soils, hydrology, infrastructure.
- Control system reporting plantation assets and mapping updates.
- Integration of the GIS with the plantation register module.
- Integration of the GIS with the operations planning and management module.
- Integration of the GIS with the plantation growth and performance monitoring module.



# Plantation Register and GIS Requirements



# Resource Census / Inventory and Performance Measurement

- Measurement and assessment of plantation growth and yield.
- Measurement of plantation rubber yields.
- Monitoring of plantation health
- Reconciliation of plantation performance against site, management history and genetics characteristics.



# Plantation Upkeep and Nurseries Solution

A grayscale photograph of a plantation. In the foreground, a person is partially visible, wearing a light-colored shirt and dark pants, standing next to a large wooden barrel. The background shows rows of young trees in a nursery or plantation setting. The overall scene is slightly faded, emphasizing the text overlay.

Ata Marie solutions provide:

- Automated scheduling of operations and linkage to long term budget forecasting.
- Manual override and calibration of detailed work programs and integration with spatial mapping and financial budgeting.
- Integrated with materials procurement, contracting, and operational purchase / work orders.
- Quality control and acceptance functions integrated with accounts payable.
- Nurseries are managed through a separate module that follows similar operations processes as plantation upkeep.

Scheduled Notes	Stand Children	Stand Clearfell Archive	Stand Owner	
Costings Logging	Costings Silvicultural	Inventory Summary	Scheduled Costs	Scheduled Costs Uninvoiced
Silvicultural Code	Status	Due Date	Budgeted Cost Excl Tax	Cost Excl Tax
PM-PRUNE1	Pending	1/07/2007	6500.00	0.00
PM-PRUNE2	Pending	30/06/2008	6500.00	0.00
PM-PRUNE3	Pending	30/06/2010	6500.00	0.00

Buttons: Add, Display, Exit, Search, Report, Due Date: 1/07/2007

**Scheduled Costs : Enquire/Change**

Stand: AHIA/CONWAY/100  
 Operation: THINNING Status: Started

Detail | Invoices

Date Due: 1/08/2006

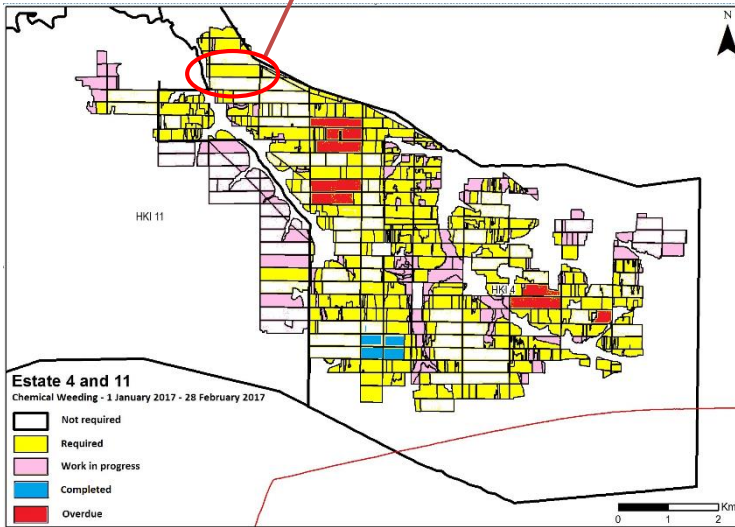
Budget: Labour 1000.00, Materials 1000.00, Budgeted Cost Excl VAT 2000.00

Amount this Invoice: 0.00

Date Completed: Actual Cost Excl VAT: 0.00

Area Tended: 0.0000 Remove from Order

Buttons: Save, Save & Exit, Save & Add, Details, Analysis, Delete, Exit



**Create Work Order**

Unscheduled Tasks: AHIA, ROADING WORK Due: 1/08/2006, CONWAY, STAND 100, PM-PRUNING 3RD LIFT Due: 1/08/2006, PM-PRUNING 3RD LIFT Due: 30/06/2010

Selected Tasks: Stand: AHIA/CONWAY/100 PM-PRUNING 3RD LIFT Due: 1/08/2006, Forest: AHIA ROADING WORK Due: 1/08/2006

Contractor: RADO (RADOGE RUKOMAGJA)

Buttons: Create Order, Exit

**Creditor Orders : Enquire/Change**

Branch: Entered By: [User]

Order Date: 1/08/2006

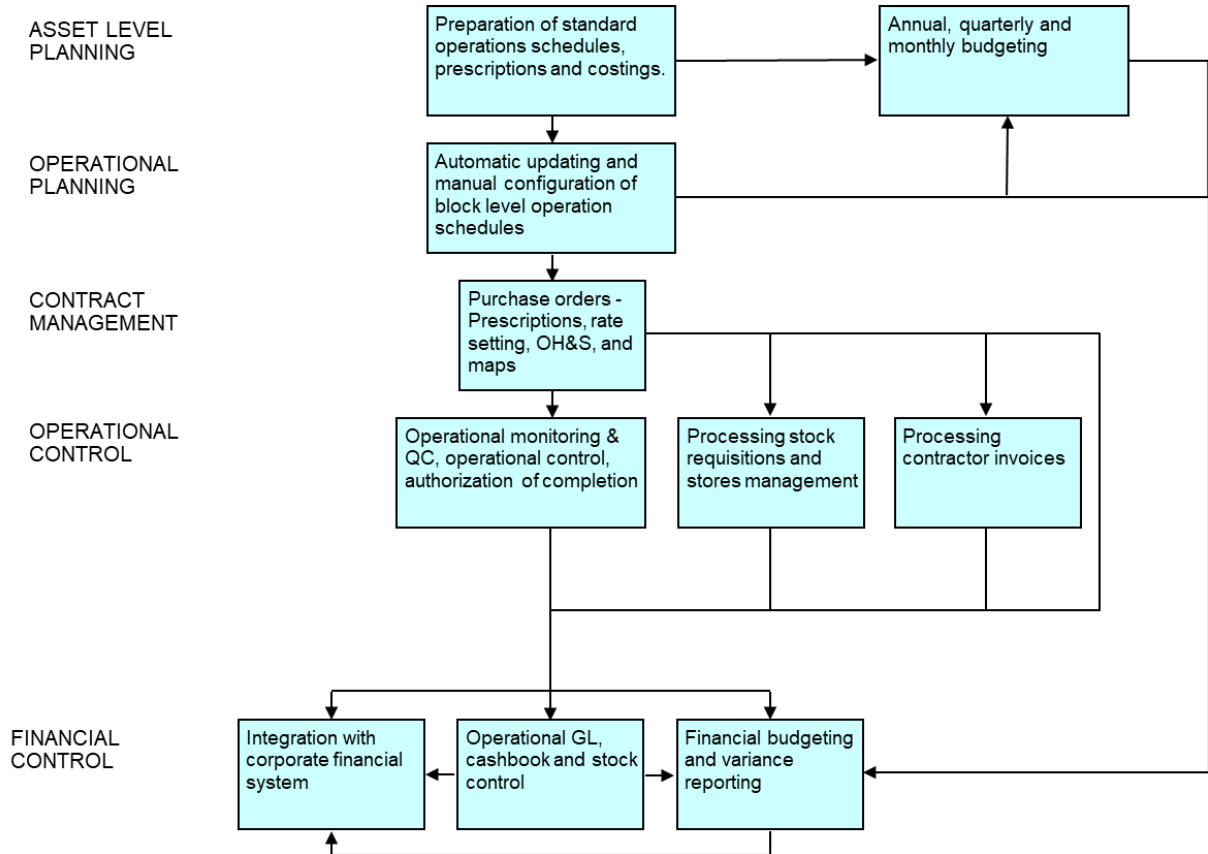
Order Details: 1000.0000 AHIA-ROADS 1/08/2006, 100.00, 0.00 N; 1000.0000 STAND 1-PM-PRUNI 1/08/2006, 1000.00, 0.00 N

Buttons: Save, Save & Exit, Save & Add, Details, Analysis, Delete, Exit, Print, Invoice

# Integrated plantation upkeep planning and management



# Plantations Upkeep Processes



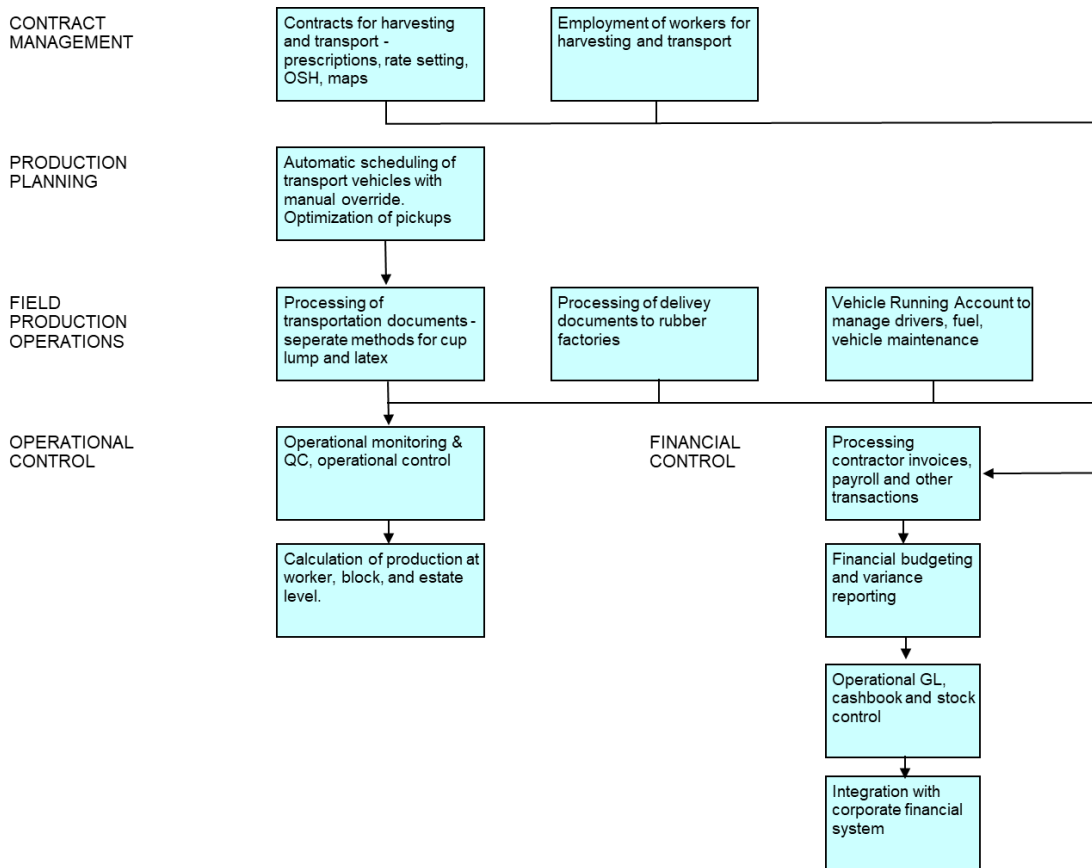
# Plantation Harvesting Planning and Management



Rubber tapping activities are scheduled to commence in the next 1-2 years. Ata Marie solutions provide:

- Payroll function for internal wage workers.
- Contract management for external supply of tapping and transport functions.
- Function for calculation of cup lump and latex production and payment of workers and contractors.
- Reporting of plantation production by estate and block.
- Integration with payroll and accounts payable / receivable.

# Plantation Harvesting Planning and Management Processes



# In-Field Mobile Applications

- Mobile applications developed for plantation maintenance and production operations.
- The mobile apps developed in HTML & CSS using a Bootstrap UI Framework.
- The mobile applications have a responsive interface to various screen sizes, ranging for desktop (Windows and iOS) and mobile (Android and iOS).
- The mobile data is security controlled and synchronized over a secure ports.





# Thank you!

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