

# Country Regional Network

# Maximo Implementation

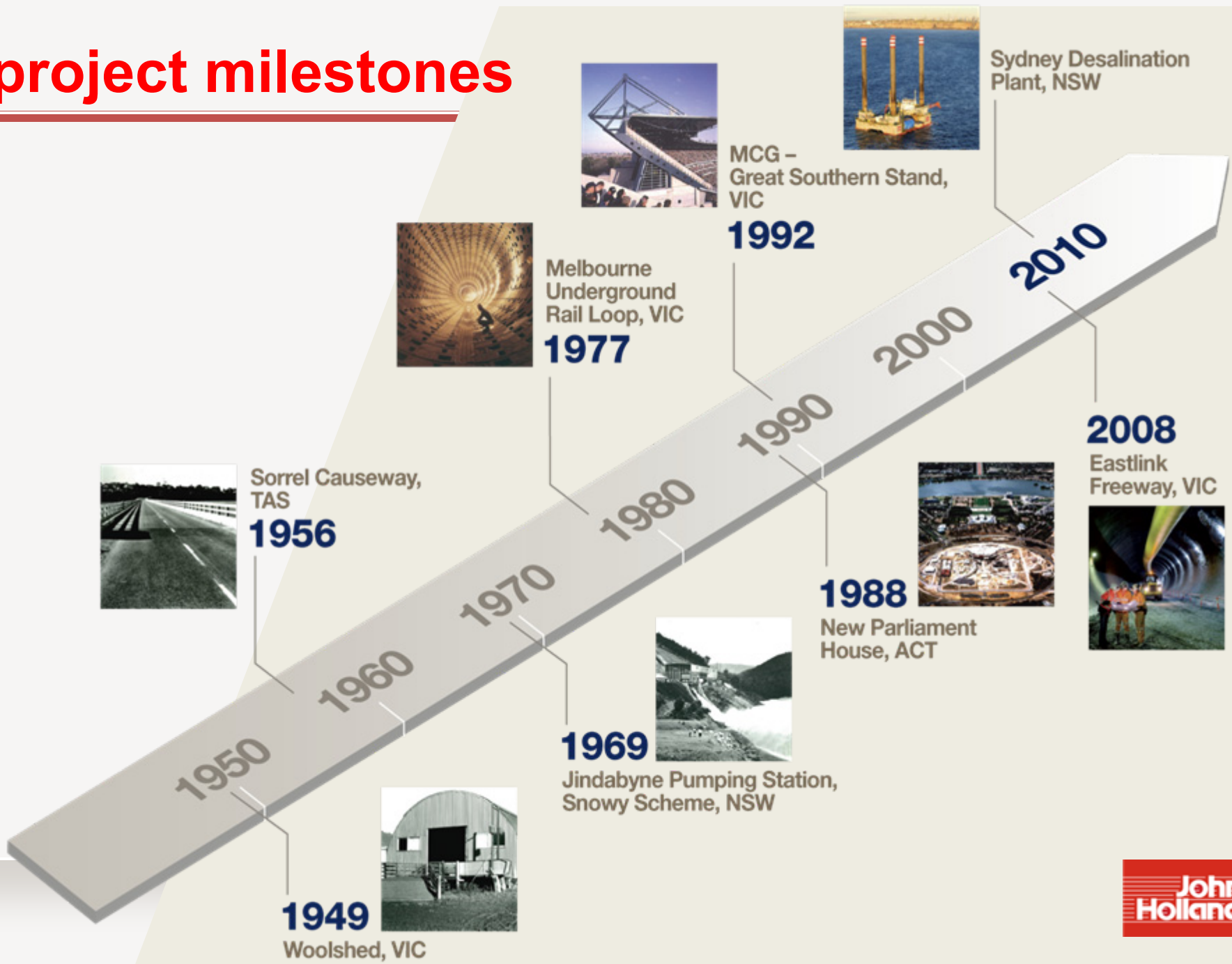
Jason Rogers  
Asset System Manager

IBM Pulse Presentation  
1<sup>st</sup> June 2012

## About Us

- Founded in 1949, by Sir John Holland
- Now a key part of Leighton Holdings Group with offices throughout Australia
- Australia's largest construction contractor – 120+ projects and 8500+ employees
- Australia's most diversified contracting, engineering and services provider to the infrastructure, energy & resources and transport services sectors
- Largest Rail Contractor in Australia with over 35 years experience
- 2012-13: Work in hand of A\$7billion, Revenue A\$4.5billion

# project milestones



- Pre-eminent Rail Contractor in Australia with over 35 years in the rail industry
- Specialists in
  - Rail Project Development
  - Integrated Planning & Operations
  - Station & Depot Facilities
  - Signaling, Traction, and Control Systems
  - Brownfield Railway works
  - Track Construction
  - Maintenance & Asset Management

# Country Regional Network Background

- In 2010 John Holland awarded 10 year \$1.5B contract from NSW govt. to operate and maintain 6,000 km's of NSW country rail corridor (2,800 operational and 3,200 non-operational)
- New business line for John Holland and required a robust asset management system. Chose Maximo via a competitive RFQ process.
- Required to build the business from the ground up; acquiring staff, systems, processes, training, etc. all within 12 months.
- The success of the project has lead to Maximo being rolled out across other lines of business to gain benefits of Total Asset Lifecycle Management and visibility to all corporate assets.

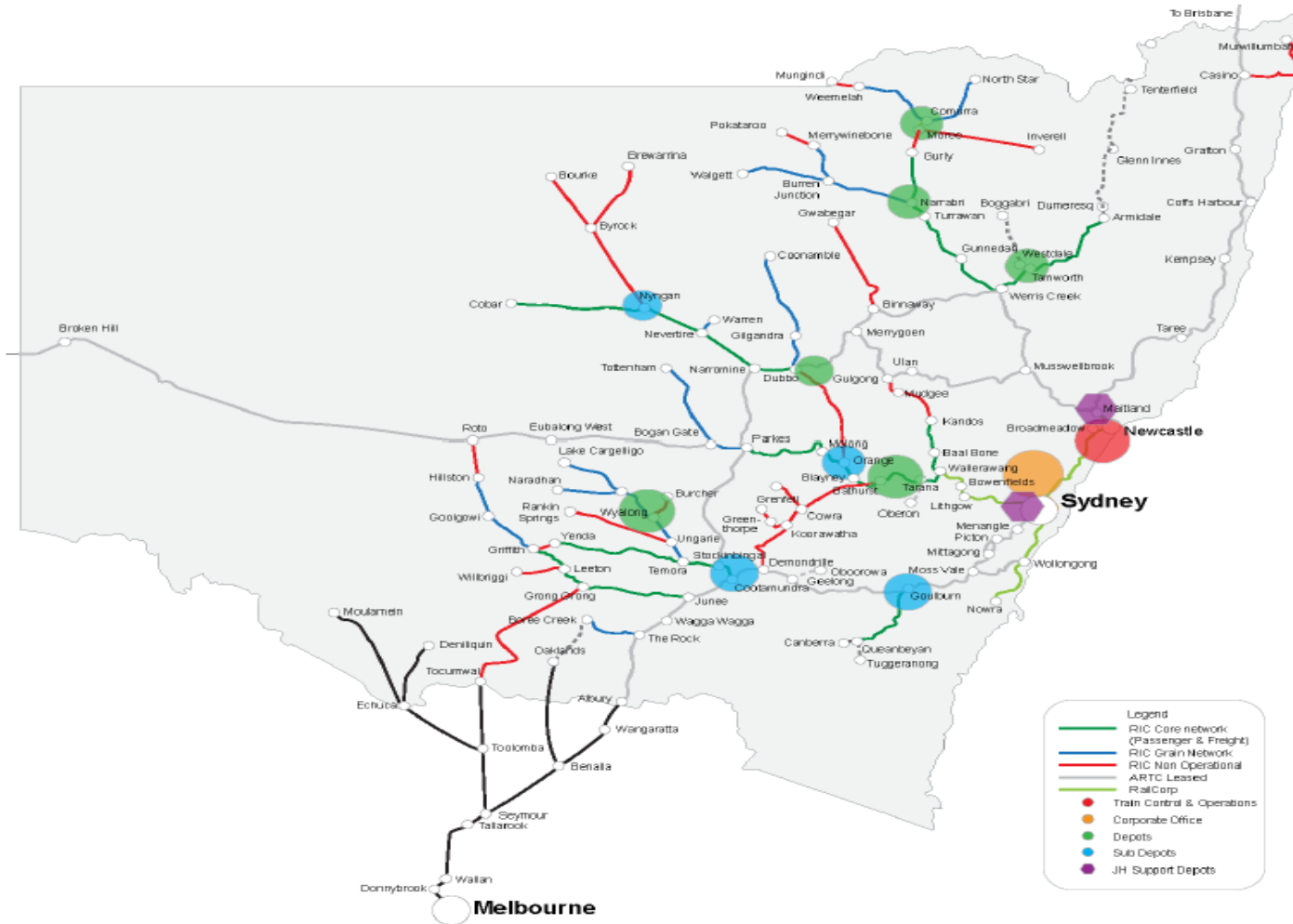
# Country Regional Network (CRN)

## Overview

- Client – Country Regional Infrastructure Authority (CRIA)
- Operations & Maintenance of Rail Infrastructure across NSW
- 5800 Kilometers of track corridor
- \$1.5 Billion contract over 10 years
- Asset Details include:
  - 2700 KM's freight & passenger lines
  - 3100 KM's non operational lines
  - 27,000 hectares of land,
  - 600 rail underbridges and 384 road bridges



# Country Regional Network (CRN)



## Infrastructure Assets

- 5800 Km's of rail corridor
- 2700 Km's operational
- 3100 Km's non operational
- 600 Rail Underbridge's
- 384 Road Overbridges

## Property Assets

- 13,000 ha under operational lines
- 14,000 ha under non operational lines
- 1000 outside rail corridor

- Management of safety
- Contract & relationship (stewardship\ open book)
- Rail network & signal operations
- Infrastructure asset management & maintenance
- Tracking & billing of asset usage
- Property management
- Warehousing & logistics



- Contract go-live date was fixed
  - project scope had to be very tightly managed.
- John Holland did not possess any existing processes and only had skeleton staff to begin the project.
  - Thus requirements had to be continually refined throughout the project.
  - Impact on testing and training.
- Incumbent service provider was not contracted to provide conversion data files.
  - John Holland was required to acquire/create the base data.
  - Not just assets, also had no item master set for inventory.
- 80% of staff did not start work until after the go-live date.
  - Created large logistical challenges for user training.
  - Challenge in change management impact of Staff coming from incumbent

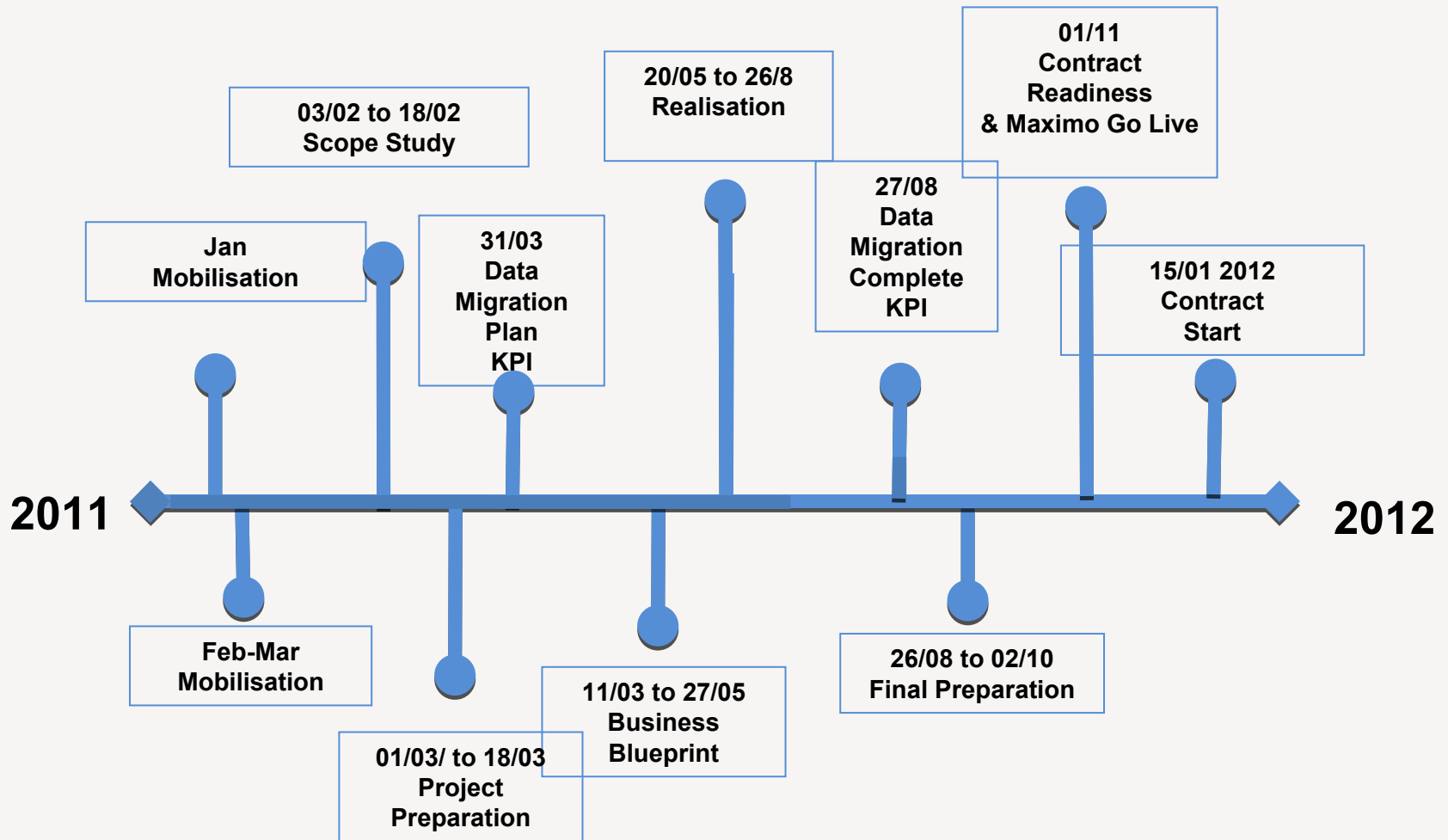
- Aging infrastructure
- Supporting growing demands with the same inventory
- Regulatory compliance
- Geographically dispersed assets
- Not just which asset – but where along the asset
- Satisfy regulatory, safety and environmental requirements while still providing reliable, cost-effective service to the customer.

# Challenges - Systems

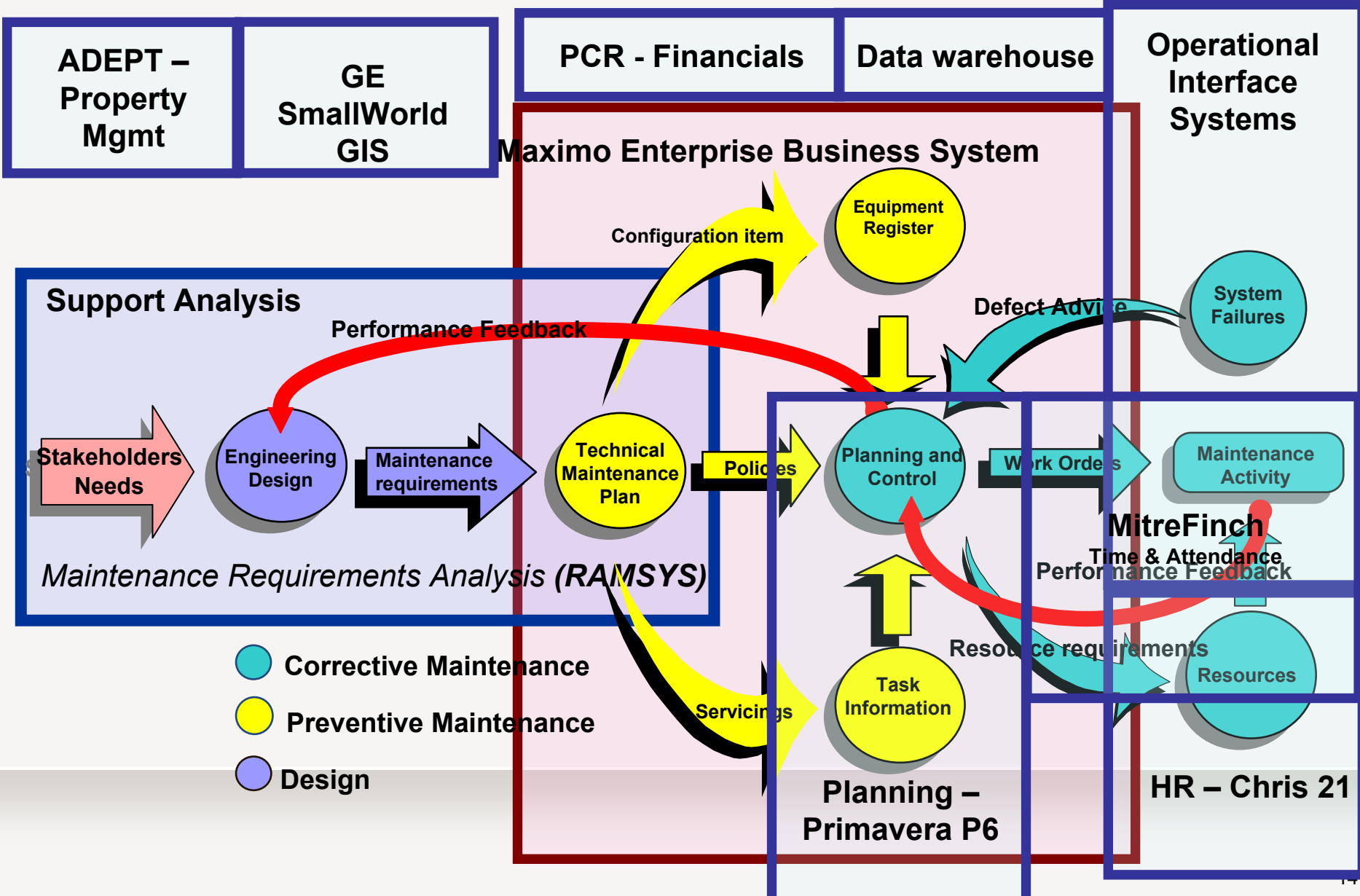
- Limited existing systems to support contract.
- Limited staff to provide or confirm business requirements.
- No access to existing systems, personnel or data.
- From day “0” data conversion and migration was the critical path.
- First with Maximo 7.5 in this space.

- Greenfield business – No legacy process or systems to deal with
- Opportunity to use “vanilla” Maximo for most processes
- Utilise full Maximo footprint

# Project Milestones



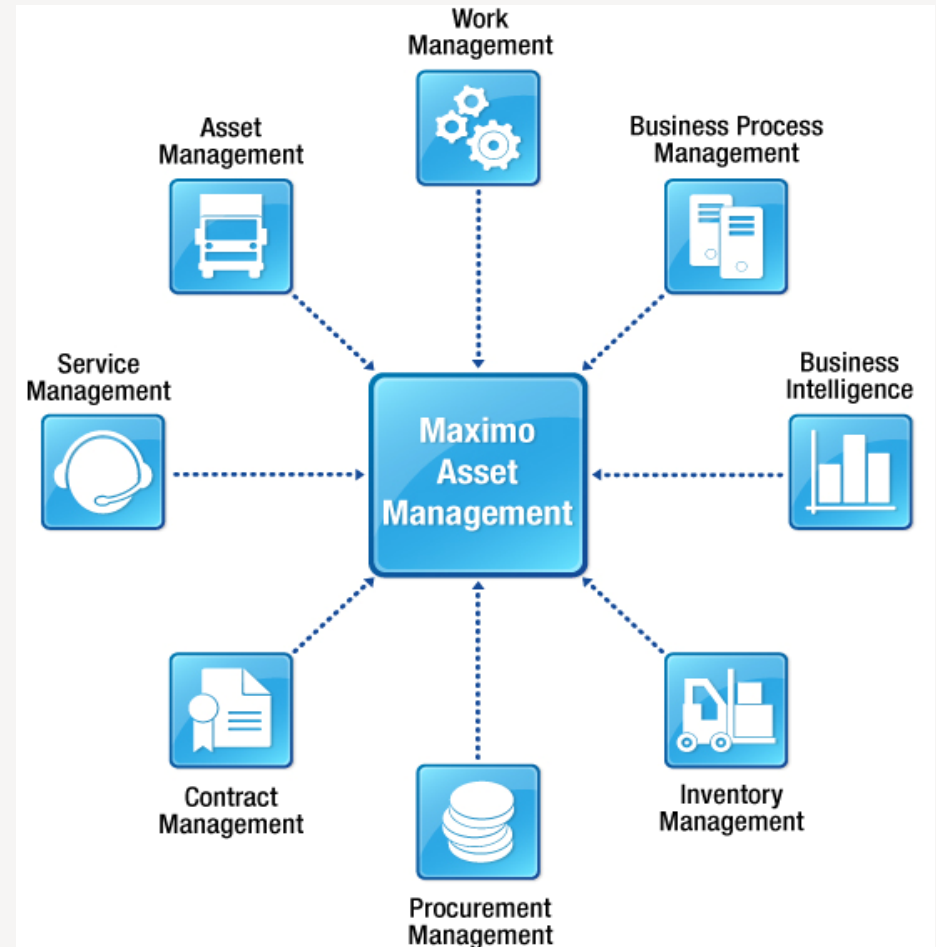
# Systems Environment



# Maximo Systems Scope

## Core Processes:

- Asset Management
- Work Management
- Preventative Maintenance
- Defect Management
- Service Management
- Resource Management
- Materials Management
- Contract Management
- Procurement Management
- Service Provider (Billing)



- Maximo V7.5
- Maximo Asset Management Full User
- Maximo Linear Asset Manager
- Maximo Asset Management Managed Service Providers
- Maximo Asset Management Scheduler
- Maximo SLA Manager
- Services Extensions
  - Asset ledger
  - Budgeting



## Refresher

**The world of assets can be divided into two broad classifications:**

### Non linear Assets

Mobile (fleet, vehicles)

Fixed Physical Assets (facilities)

Component-based Assets (aircraft, ship)

*Installed, maintained, replaced as a whole*

occupies a finite and bound space and can be tracked by its location or modeled as part of a parent child hierarchy

### Linear Assets

Roads

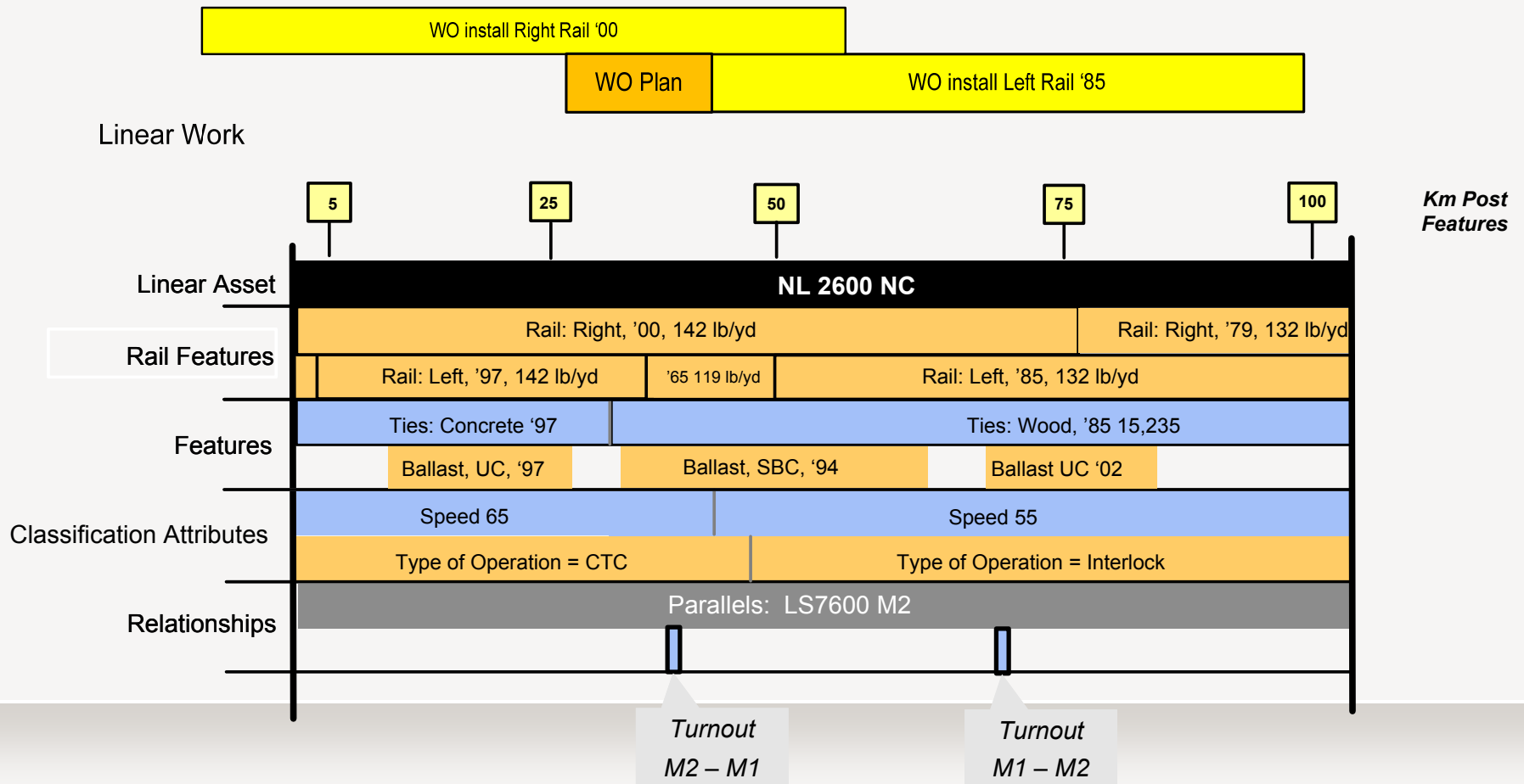
Pipelines

Railway tracks

*Preserved and restored in place, and in segments*

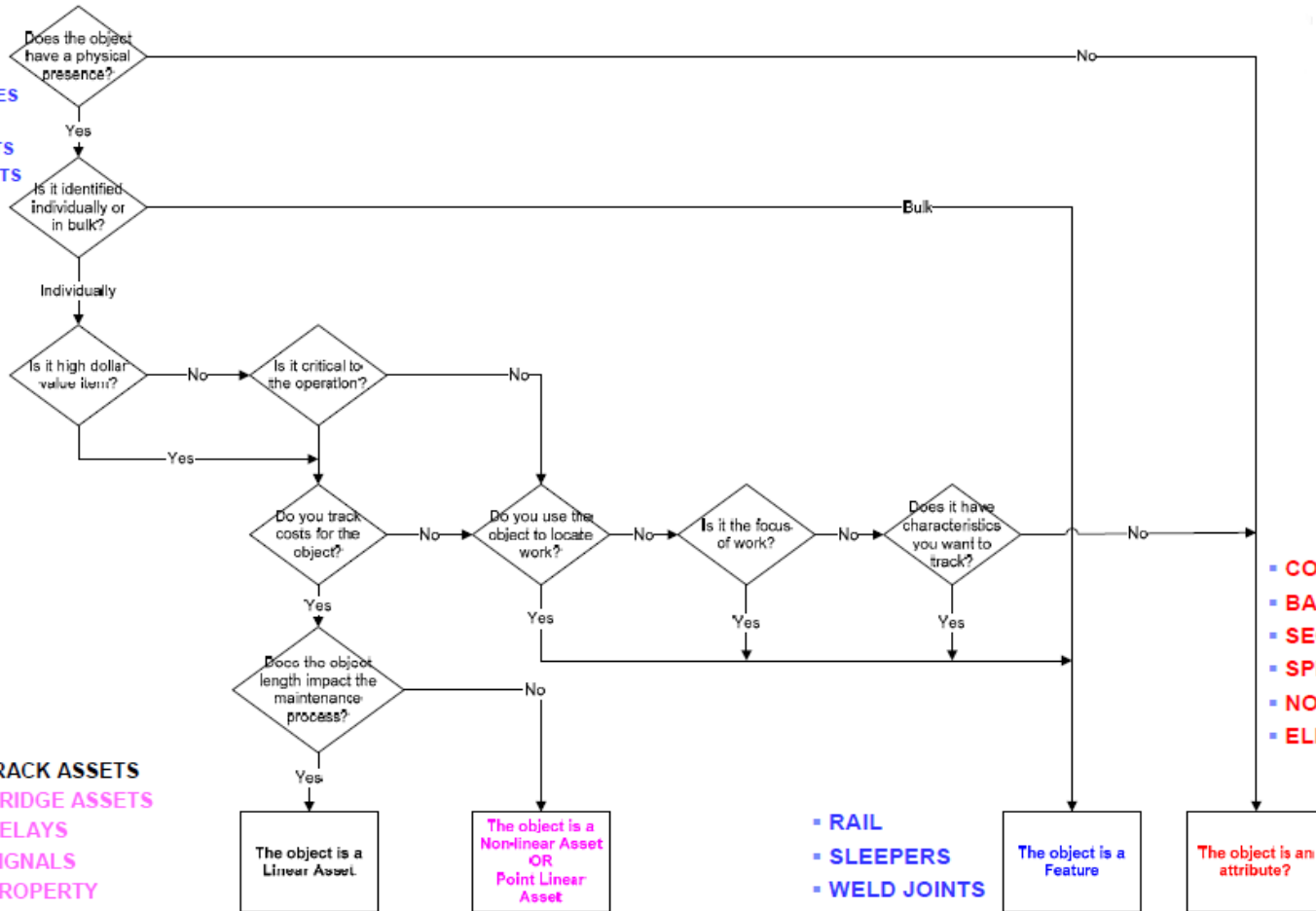
have linear properties and often connect with each other by their relationship with the linear infrastructure itself

## Structure – Linear Asset & Work performed



# Linear Assets

- CORRIDORS
- BASE CODES
- SECTOR CODES
- SPEED
- TRACK ASSETS
- BRIDGE ASSETS
- OPERATIONS
- RAIL
- RELAYS
- SIGNALS
- PROPERTY



- TRACK ASSETS
- BRIDGE ASSETS
- RELAYS
- SIGNALS
- PROPERTY

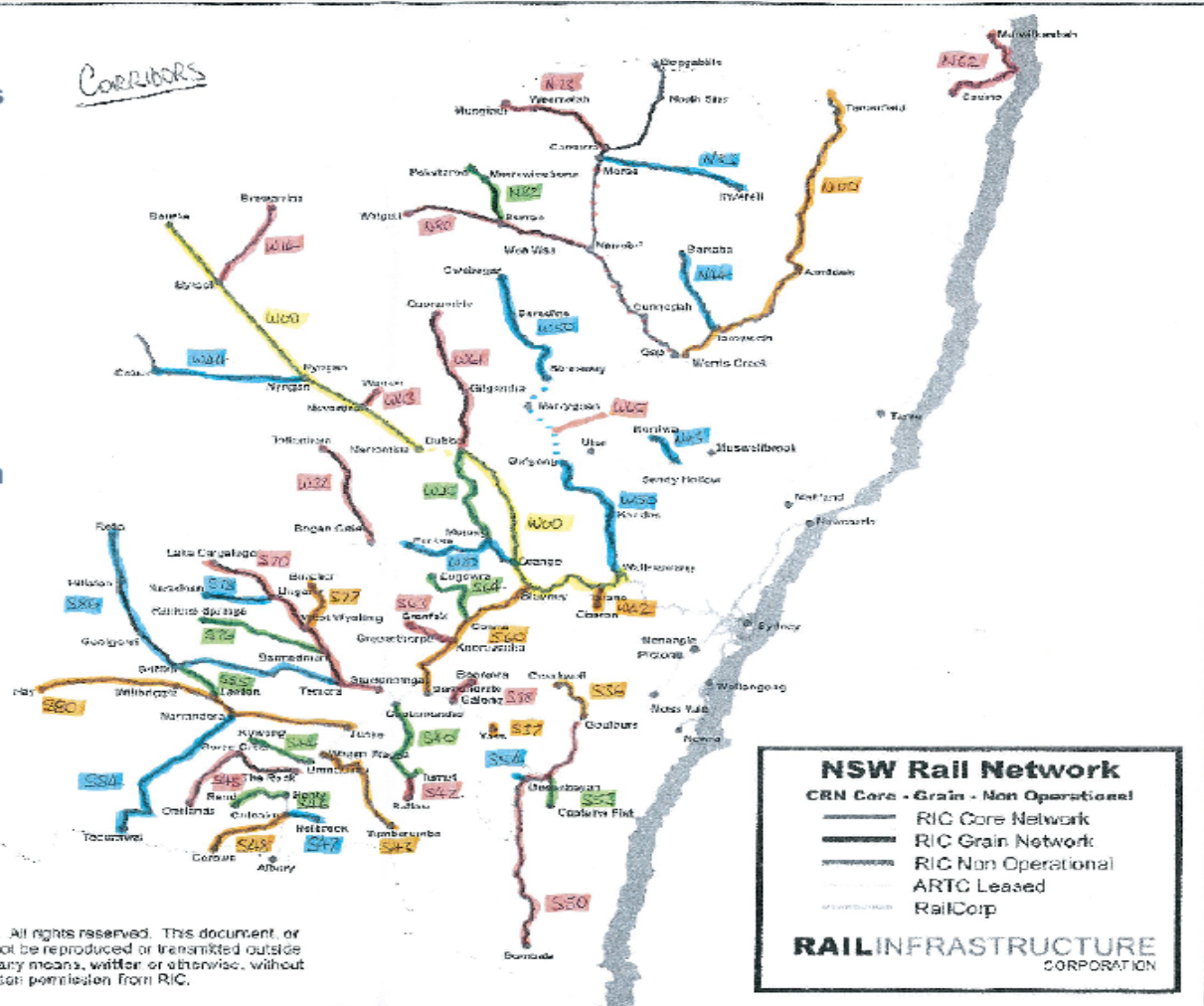
- RAIL
- SLEEPERS
- WELD JOINTS

- CORRIDORS
- BASE CODES
- SECTOR CODES
- SPEED
- NODES
- ELEC BOUNDRIES

# Linear Assets

1. A Corridor is an area that contains one or more tracks identified for a business purpose (e.g. Main North Corridor). It can also contain one or more Sectors.
2. The name of a Corridor is the 'traditional' name wherever practicable.
3. A Corridor consists of everything that lies between the boundary fences.

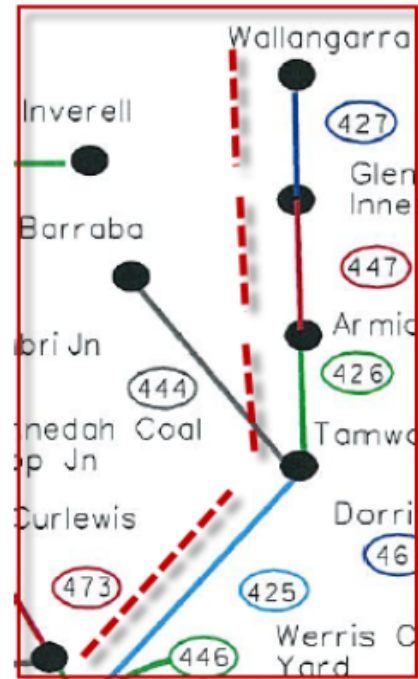
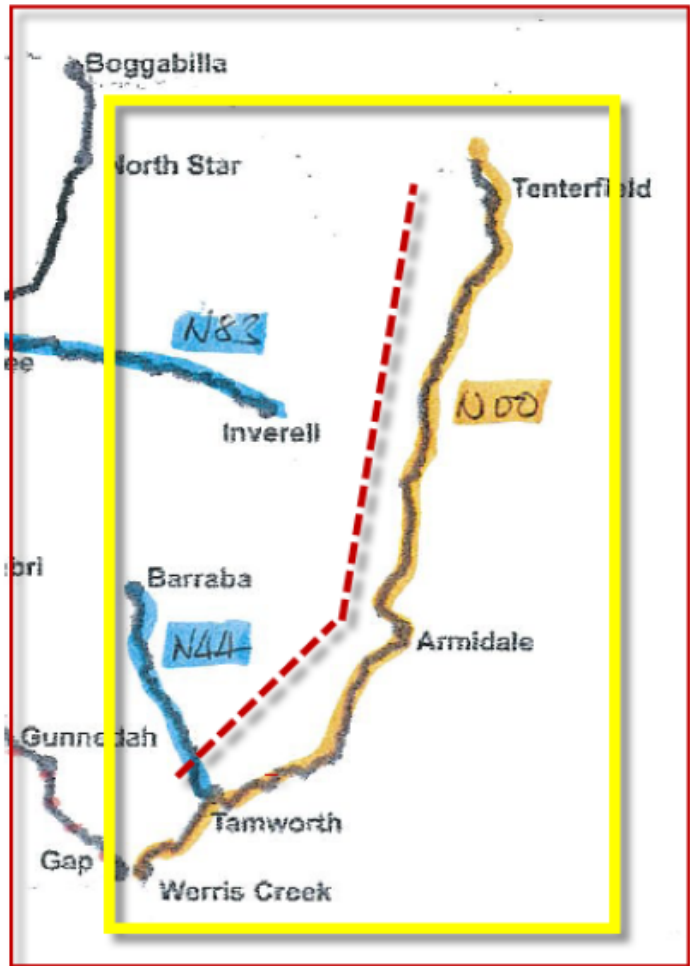
A LOGICAL /  
VIRTUAL /  
FUNCTIONAL  
WRAPPER



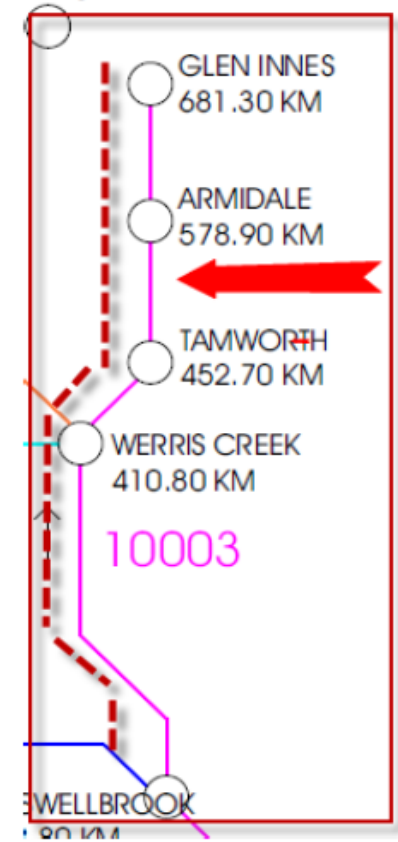
Version	1.0
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## CORRIDORS / SECTOR CODES / BASE CODES

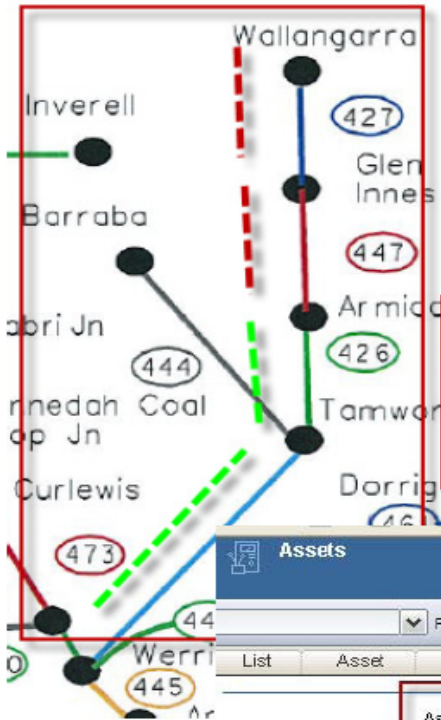


ONE BASE  
CODE –  
MULTIPLE  
SECTORS



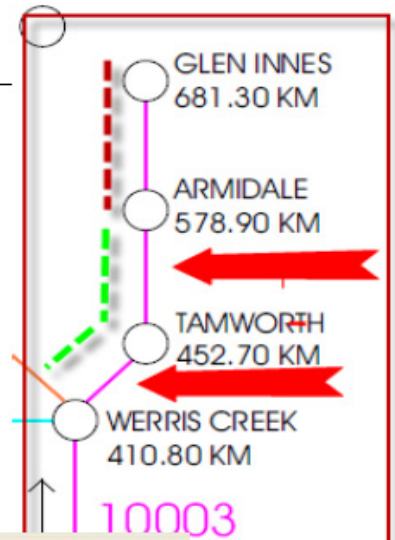
# Linear Assets

## Asset Model



Sector Code	Sector Name	Sector Type
427	Glen Innes To Wallangarra	Non-Op
443	Sandy Hollow Jct To Merriwa	Non-Op
444	West Tamworth To Barraba	Non-Op
447	Armidale To Glen Innes	Non-Op

Sector Code	Sector Name	Sector Type
425	Werris Creek To West Tamworth	CP
426	West Tamworth To Armidale	CP



**Assets**

Find:  Select Action:

List Asset Spare Parts Safety Meters Specifications Features Relationships

Asset: 2087 Tamworth - Armidale Rail Track

Classification: TRACK From: 452.70 To: 578.90

Class Description:

Specifications Filter 1 - 3 of 3

Attribute	Description	Alphanumeric Value
CORRIDOR	Corridor Codes	N00
BASECODE	Base Codes	10006
SECTOR	Sector Codes	426

## Maximo Linear Asset Model – Relationships

**Assets**

Find:  Select Action:

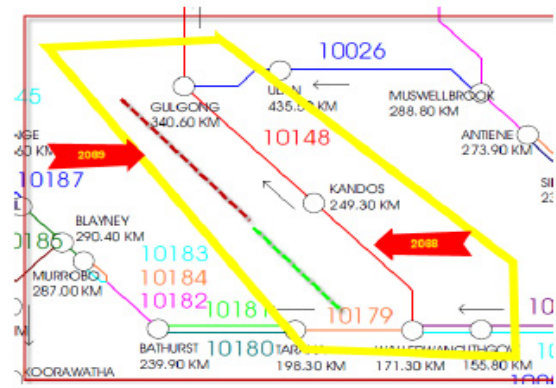
List Asset Spare Parts Safety Meters Specifications Features Relationships

Asset: 2088 Walerawang - Kandos Rail Track Site: BEDFORD

Classification: TRACK From: 171.30 To: 249.30

Specifications

Attribute	Description	Alphanumeric Value	Start Measure	End Measure
CORRIDOR	Corridor Codes	WV50		
BASECODE	Base Codes	10148		
SECTOR	Sector Codes	750	171.90	193.80
SECTOR	Sector Codes	751	193.80	246.26
SECTOR	Sector Codes	752	246.26	249.30



**Assets**

Find:  Select Action:

List Asset Spare Parts Safety Meters Specifications Features Relationships

Asset: 2069 Kandos - Gulong Rail Track Site: BEDFORD

Classification: TRACK From: 249.30 To: 340.60

Specifications

Attribute	Description	Alphanumeric Value	Start Measure	End Measure
CORRIDOR	Corridor Codes	WV50		
BASECODE	Base Codes	10148		
SECTOR	Sector Codes	766	249.30	340.27

Problem	Solution
Data Migration methodology, scope, approach, roles and responsibilities not a core skillset	Data Strategy established and endorsed by the JH Senior Management and Client
Access to legacy data restricted	JH Data team established early in design phase to build the data model from numerous sources
Validation of data design decisions in the absence of legacy data and to be business processes	Rail SMEs dedicated to the design phase
Business ownership of data and visibility of data readiness	Data Governance Structure established chaired by the business



# Data Migration

## Data Governance Council

Last Amended: September 9th, 2011

Asset Management  
Steering Committee

DGC Sponsor

Glenn Dewberry

DGC Chairperson

Stewart Douglas

Project Resources

Primary goal of DGC:  
Approve Maximo data sets for 01/11/2011 and 15/01/2012

Meeting Frequency:  
Weekly

What is required:  
Data set owners (Glenn, Chris and Ken) present readiness status each week:

Green – all data sets ready

Amber – some data sets not ready but plan and resource in place to get ready in time

Red – some data sets not ready and plan/resource not in place to get ready in time

### Data Governance Council

#### Department Members

Eng, Asset Mgt &  
Int Logistics  
Glenn Dewberry

Business Services  
Chris Payne

RM & MPM  
Ken Lingabala

Maximo System  
Owner  
Stewart Douglas

EAM  
Ross McKnight

Data Migration  
Stevan Hammond

Data Migration  
Ian Shortt

Implementation PM  
Phill Edwards

#### Data Stewards

Eng, Asset Mgt &  
Int Logistics

Assets  
Attributes/Classifications  
Domains  
Asset Specification  
Asset Features  
Failure Codes  
Defects  
Item Master  
Storerooms  
Inventory parameters  
Tool assignment

Business Services

GL components  
Chart of Account  
Control Accounts  
GL default  
Resource codes  
Craft Rates  
Plant for billing  
Labour Rate Contracts  
Billing rules  
Property  
Companies

RM & MPM

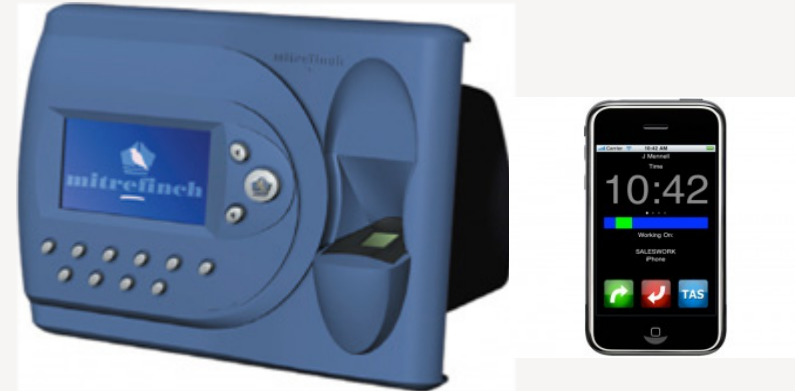
Work Group assignment to  
Assets  
Tool assignment to  
individuals  
Preventative Maintenance  
Schedules  
Annual Works Plan  
Labour and Crafts

### Data Sets for Approval

## Staff Rostering

## Time Allocation & Job Costing

- Hours per work order to Maximo
- Hours per employee to Chris 21
- Cost per employee to Finance System

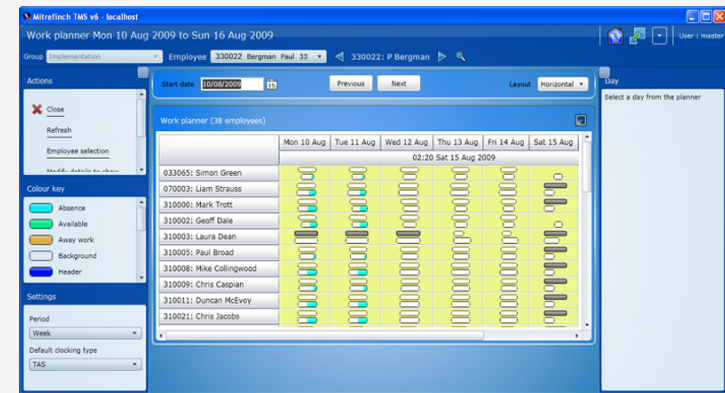


## Employee Time & Attendance

## Plant Time Capture on Job

## Time Collection through:

- Biometric Time & Attendance in Depot's
- Mobile Phone
- Desktop \ Laptop



# Planning & Scheduling

- Master Schedule
- Resource types- UNIT RATES. E.g. sleepers \$44
- Forecast/Production Schedule
- Resource types per day – ( LABOUR e.g. Operator Lvl 2 , PLANT e.g. Tamper )

**Activities**

Layout: R225 Tender Program Layout Filter: All Activities

Activity ID	Activity Name	Original	Start	Finish
<b>Annual Works Plan</b>				
		240	06-Jul-11	02-Mar-12
<b>Resleeping - Orange</b>				
A1000	Start Resleeping Orange to	0	06-Jul-11	06-Jul-11
A1040	Order Materials/Plant	30	06-Jul-11	04-Aug-11
A1070	Onsite	90	05-Aug-11	02-Nov-11
A1080	Project Management	120	06-Jul-11	02-Nov-11
A1090	Finish Resleeping Orange to	0	03-Nov-11	03-Nov-11
<b>Resleeping - Bathurst</b>				
A1100	Start Resleeping Bathurst to	0	03-Nov-11	03-Nov-11
A1110	Order Materials/Plant	30	03-Nov-11	02-Dec-11
A1120	Onsite	90	03-Dec-11	01-Mar-12
A1130	Project Management	120	03-Nov-11	01-Mar-12
A1140	Finish Resleeping Bathurst to	0	02-Mar-12	02-Mar-12

General | Status | Resources | Relationships | Codes | Notebook | Steps | Feedback | WPs & Docs | Expenses | Summary

Activity: A1070 Onsite Project: AWP-0001

Resource ID Name	Curve	geted Cost	Price / Unit	Budgeted Units	Cost Account	Remaining Units / Time	ial This Period Units	Actual Units	Completion Units

## Successes

- Strong Sponsorship and project governance at all levels
- Drop dead date keeps you focused
- Keep it simple – Don't bite off too much
- Vanilla product
- Data strategy and dedicated data team

## Improvements

- Don't underestimate the impact of change
- New sites need higher level of support
- Reconciliation processes between Maximo & Financial systems
- Detail business rules in time management systems
- Error checking in system interfaces
- Report Development

# Questions

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# Asset Management System

## End of Presentation