



Data to Information The Last Competitive Advantage !

Geraldine Paull

October 2102

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This presentation contains forward looking statements that are subject to risk factors associated with oil and gas businesses. It is believed that the expectations reflected in these statements are reasonable but they may be affected by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially, including but not limited to: price fluctuations, actual demand, currency fluctuations, drilling and production results, reserve estimates, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory developments, economic and financial market conditions in various countries and regions, political risks, project delay or advancement, approvals and cost estimates.

All references to dollars, cents or \$ in this presentation are to Australian currency, unless otherwise stated.

References to “Woodside” may be references to Woodside Petroleum Ltd. or its applicable subsidiaries.

Information – the Missing Asset?

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Information – the Missing Asset?



We spend a great amount of time and \$\$ to manage our financial, human and reputational assets.

Do we even know what our information asset is worth?

What we Own



Physical assets
The Balance Sheet
Financial Asset

What we can do



Talents, Relationships
Our “Human Energy”
The Human Asset

What we know



Data, Records,
Knowledge, Know-how
Information Asset

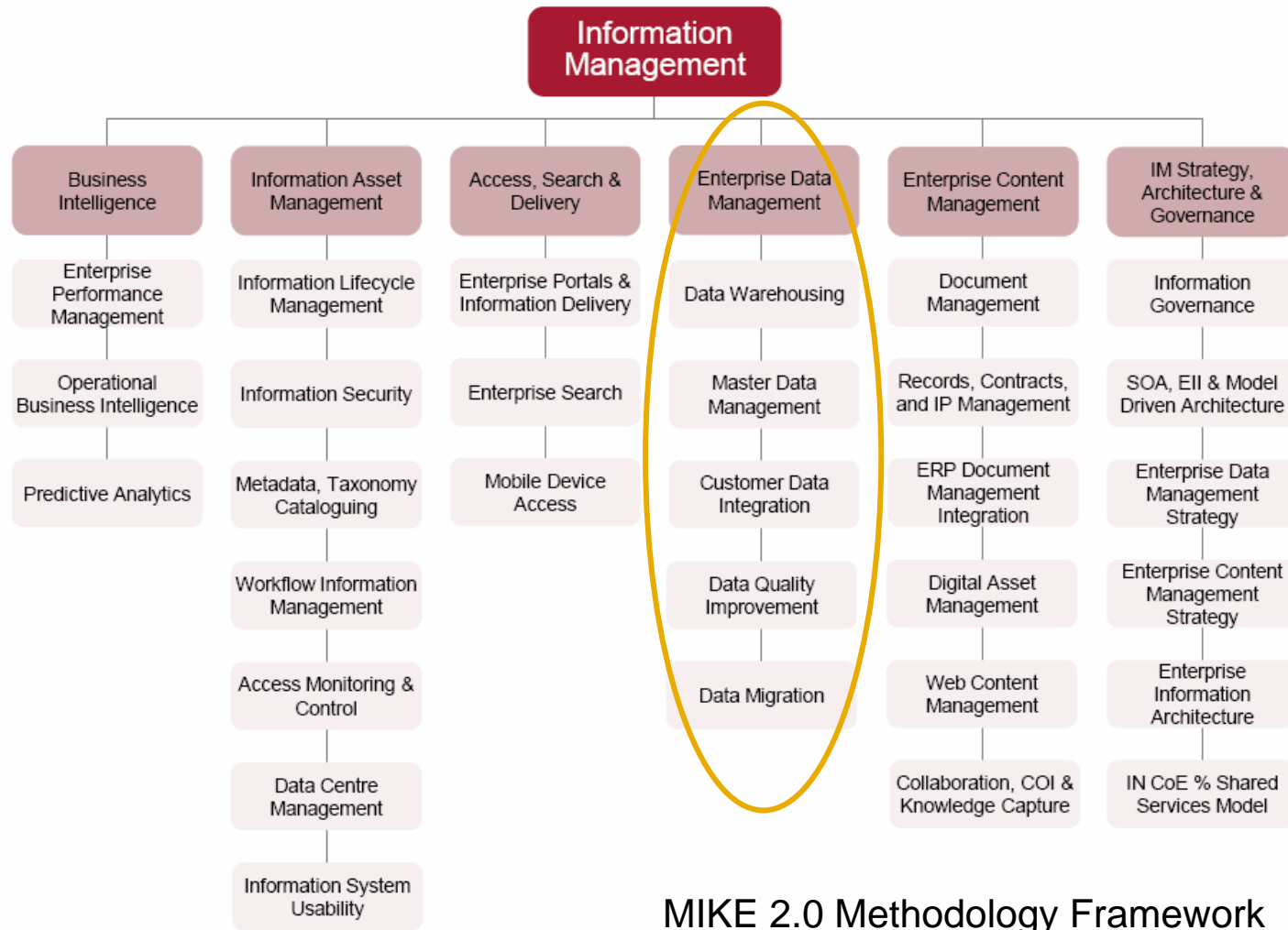
How we are seen



Partnerships,
Stakeholder Opinions
Customer views
Reputation Asset

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Where does one start ? – Data Management



MIKE 2.0 Methodology Framework

EDM Challenge - Diversity of end users

Operations

- Onshore & offshore facilities operating since 1983
- Legacy data non electric format of 320,000 drawings
- Multiple styles & ways of collecting data (EPC dictated)
- Legacy satellite systems
- No single source master repositories

Brownfield Projects

- Multiple joint venture partners & systems
 - Variety of engineering deliverables
- Move to electronic handover from 1998
- Diverse set of engineering design tools
- Legacy data not linked to physical areas, units or equipment

Greenfield Projects

- Multiple EPCs
- Variety of electronic engineering tools
- Electronic handover specified as standard
- Use of multiple engineering warehouses and libraries
- Variety of Standards

EDM Roadmap - Operations

- Define key engineering deliverables, and develop process maps
- Revise engineering standards & guidelines to reflect today's requirements
- Develop a single metadata profile
- Deploy a fully integrated suite of engineering design tools, and engineering software system & libraries (VNET, VPE, SPI, SPE, PDS, PDMS)
- Implement common software platforms
- Develop gateways to our key systems (SAP, document management system, commissioning system, intranet)
- Develop an intelligent set of corporate datasheets
- Replace legacy systems & migrate to new tools
- Link data to engineering portal
- Measure, evaluate effectiveness & achieved cost savings

EDM Roadmap – Brownfield and Greenfield Projects

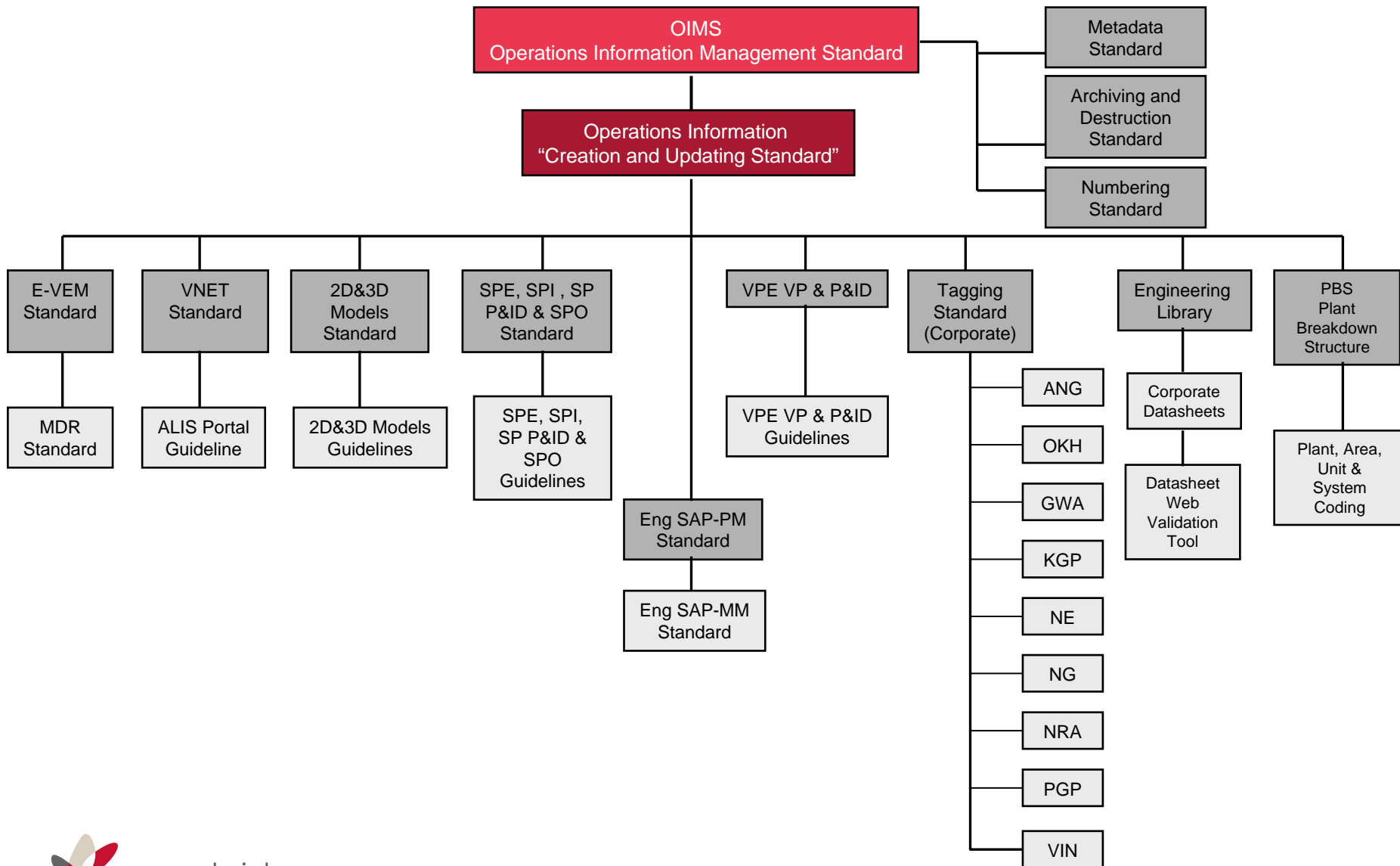
Brownfield Projects

- Deploy software systems & standards
- Provide project access to Portal & design tools
- Train & develop internal resources
- Support projects, review implementation, fine tune

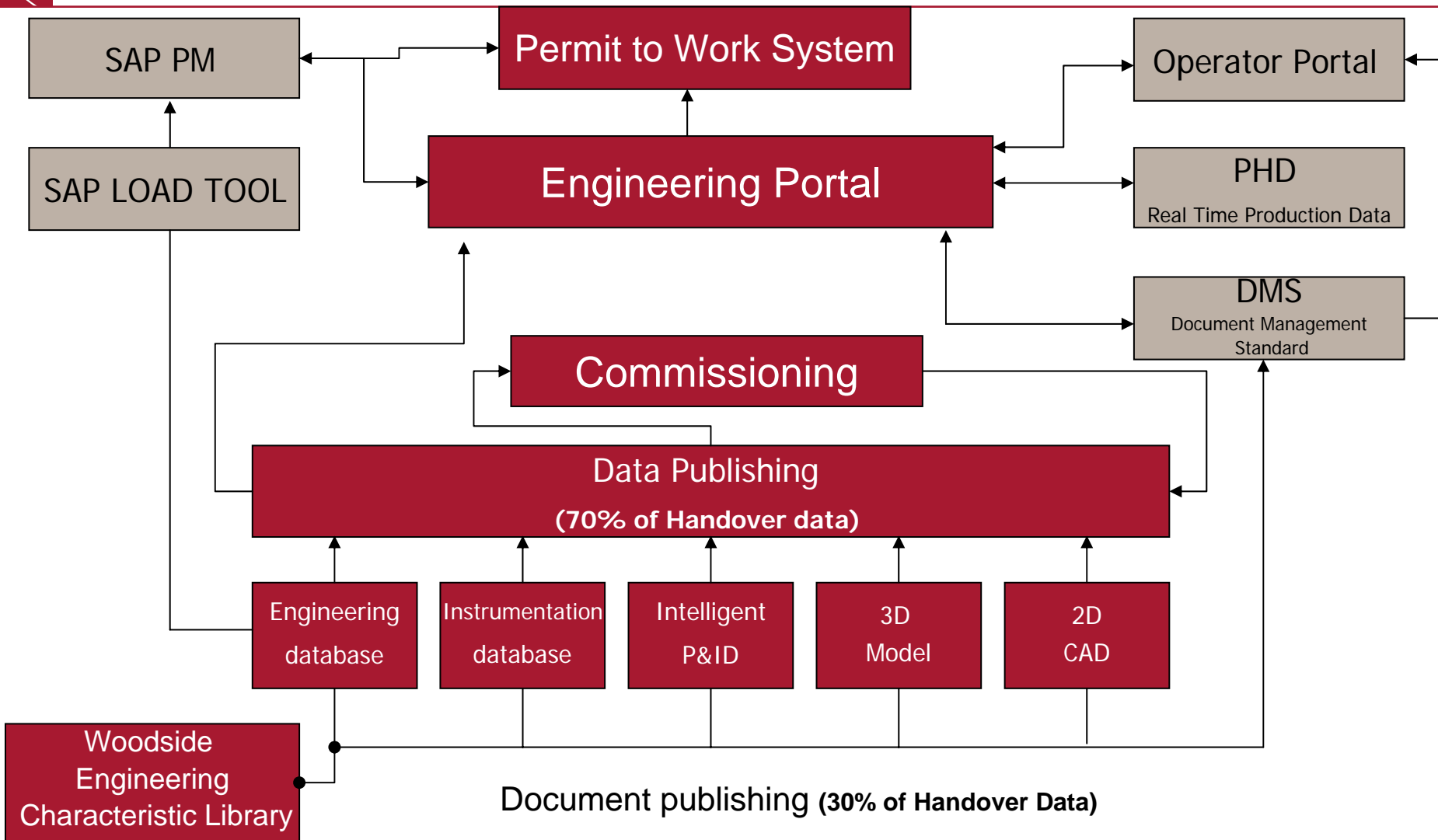
Greenfield Projects

- Promote WEL software systems
- Enforce standards
- Provide up-front information engineering support
- Ensure engineering libraries are adopted (VPE, SPE, E-Warehouse)
- Issue seed files (VPE, SPI, SPE) to EPCs

Operations Information Management Standard (OIMS) Overview



EDM landscape today



Enhancing Data quality & migration to a digital plant

Photogrammetry rejuvenation and capital projects

ALIS Home > North Rankin 'A'

North Rankin 'A'

North Rankin 'A' > ALIS Portal > Portal

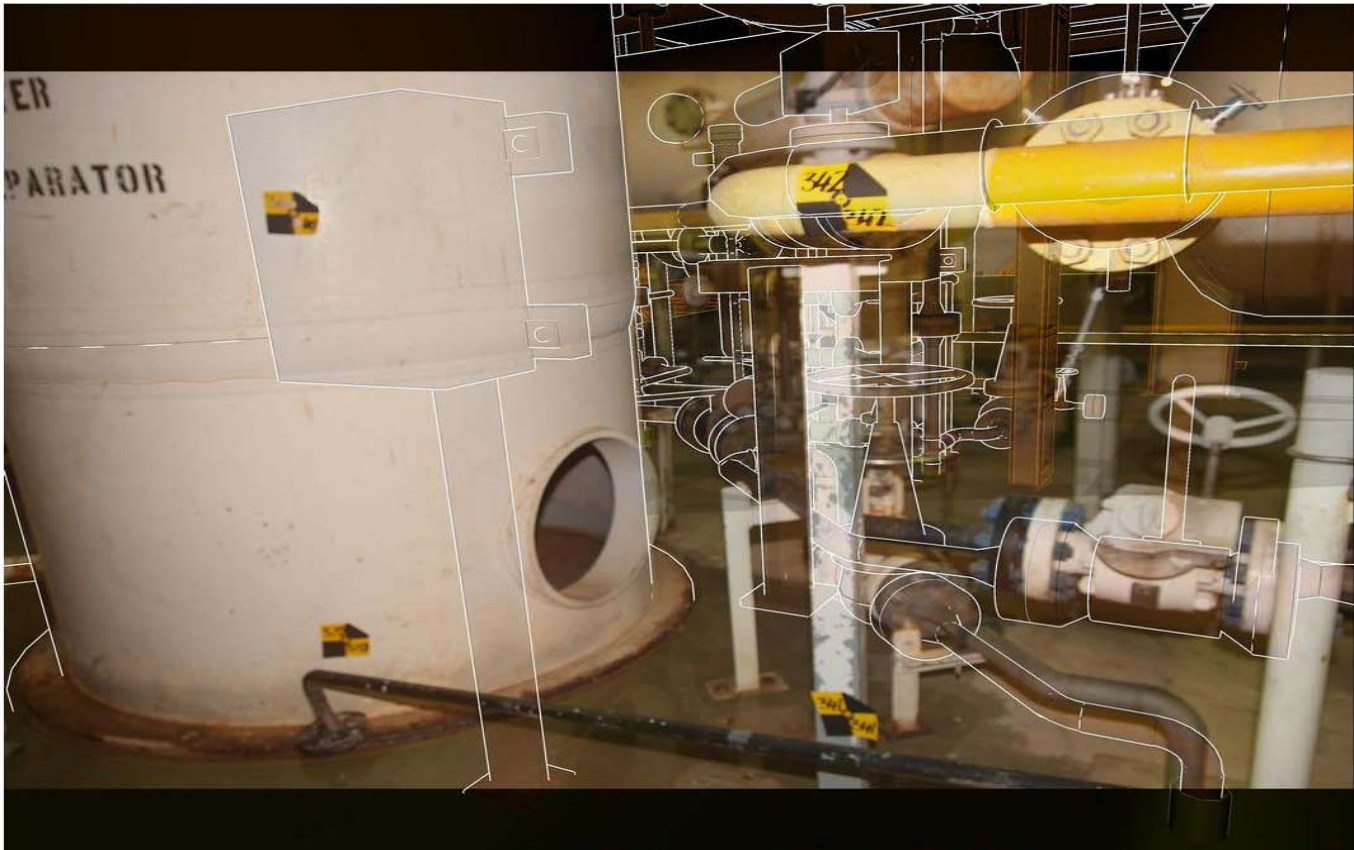
Enterprise Explorer

User: admsyj
Role: VNET User
Hide Find | Show Toolbar
Any type | Find | Mode: By ID

- Module 04
- Module 05
- Module 06
- Module 07
 - As-built 3D Models
 - Index Pages
 - Navigational Photos
 - Photopairs
- Module 08
- Module 09
- Module 10
- Module 11
- Module 12
- Module 13
- Module 14
- Module 15
- Module 16
- Module 17
- Module 18
- Module 19
- Module 20
- Module 21
- Module 22
- Module 39
- Overlay Photo Examples
 - NRA-001r
 - NRA-002r
 - NRA-003r
 - NRA-158r
 - NRA-167r
 - NRA-405r
 - NRA-658r
 - NRA-715r
 - NRA-753r

Content Viewer

Content List: NRA-M7-118L.svg | AB-07-1008 Index.mht | NRA-M7-125L.svg | NRA-M7-211L.svg | NRA-M7-236L.svg | AB-07-1009 Index.mht | NRA-M7-085L.svg | NRA-753r.jpg | NRA-757r.jpg | NRA-715r.jpg



Content Explorer

Overlay Photo Example: NRA-167r

Revisions:

Revision	Notes	Properties
???		

Com30 17.00mm - NRA Module 7 Offshore M7 MP 16-1-08

Outdated hardcopy drawings or using photos...

Karratha Stabiliser 1 – from photos to digital plant in 29 days....

Point Cloud and S3D Model - Hybrid



Laser Scanning with High-Resolution Photos



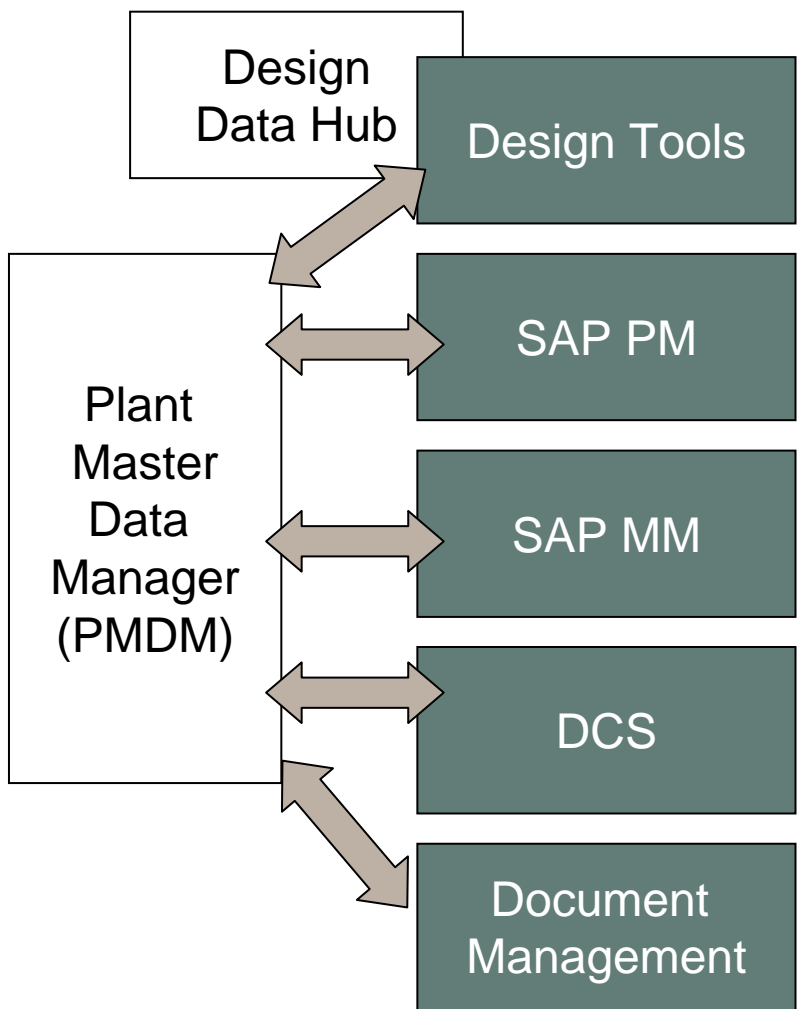
EDM is not enough, it is just the beginning of the journey

	Engineering	Maintenance	Materials Management	Operations
Focus:	Will this equipment fulfil it's Process requirements?	How do we maintain this equipment and make sure the costs of that maintenance are charged back appropriately?	How do we buy, stock and replace this equipment, either as a single unit or as a collection of spare parts (BOM)?	How can this equipment be monitored and controlled?
Typically interested in:	<ul style="list-style-type: none"> • Connectivity within the process • Design specifications 	<ul style="list-style-type: none"> • Design Specifications • How it has been Operated (actuals) • Maintenance History 	<ul style="list-style-type: none"> • Manufacturer Specifications • Elements defined and managed 	<ul style="list-style-type: none"> • Overlaying Process Model with Controls Model
Key elements defined and managed:	<ul style="list-style-type: none"> • P&IDs, • Mechanical model • Instrument model • Electrical model 	<ul style="list-style-type: none"> • Functional Locations • Work definition and execution • Cost allocation 	<ul style="list-style-type: none"> • Item No • Price • Lead Time to source • Usage Patterns (for Stocking / Reorder Options) 	<ul style="list-style-type: none"> • SCADA Tags • DCS Model • Measuring Points • Isolation Points (iSSoW)
Change Management:	Technical Change Management	SAP Master Data Change Notifications	Manual forms	Nothing official, for changes to the DCS, tools like Honeywell's Doc4000 are used, but not consistently.

In the end, it is all the SAME piece of equipment !!



Plant Master Data Management (at a High Level)



Transactional Systems

- Plant Identification Data is mastered in one tool, the PMDM. It becomes the single registry of all Plant at Woodside.
- Because the PMDM is independent of Transactional Systems such as SAP PM, SPI, SPEL, VPE and PHD it can be configured with the right building blocks around classifications and templating, aligned with industry standards. This can be done with little or no impact on our current Transactional Systems
- Rather than point to point interfaces, PMDM will become the integrator between systems that consume Plant related information. With this model improving and changing out systems becomes more unplug and re-plug rather than re-engineer.

The Blue Box Project

PLANT MASTER DATA MANAGEMENT – High Level ‘To Be’

MASTERS

- Object Class (aligned with ISO 15926)
- Object Sub Class (aligned with ISO 15926)
- Manufacturer Register
- Manufacturer – Make/Model
- Preferred Manufacturers / Vendors
- Spec Sheet Templates
- Datasheet Templates
- Equipment BOM Templates
- Failure Code List of Values by Object Class, by Component
- Hierarchies (Functional; EDCs; Physical; Shutdown; etc); Routes
- Op Stats Network
- FLOCs
- Physical Location (GIS, Barcodes, RFIDs)
- Equipment (Unique Equipment Nos (UENs))
- Tags
- Catalogue Items
- Tag to Documents link
- Tag to Media Link

HOLDS RULES FOR:

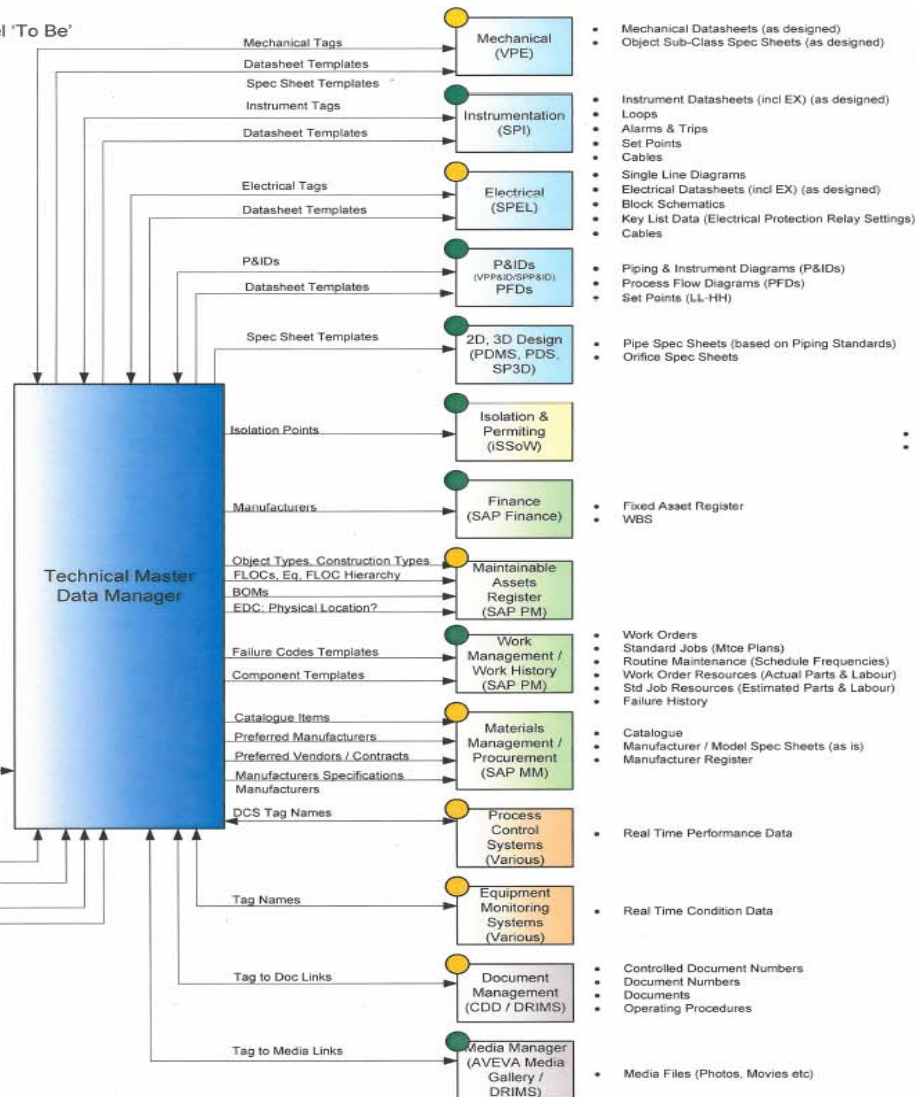
- Compliance to Drawing / Document Numbering Guidelines
- Maintainable Units
- Repairables / Rotables
- Special Tools (initial definition in Mechanical)
- Insurance Spares (initial definition in Mechanical)
- Capital Spares (initial definition in Mechanical)
- Commissioning Spares
- Change Management across all systems
- Federation of information across systems based on one common plant register

Industry Standards

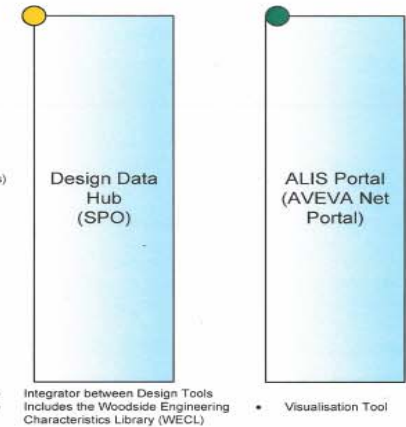
Reference Data Libraries

External Manufacturers Catalogue (Pearson / Harper)

Manufacturer / Models updates
 Manufacturer / Model Specifications
 Vendor / Manufacturer Docs
 Vendor / Manufacturer BOM

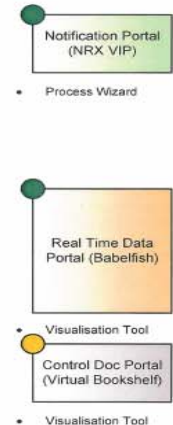


- Mechanical Datasheets (as designed)
- Object Sub-Class Spec Sheets (as designed)
- Instrument Datasheets (incl EX) (as designed)
- Loops
- Alarms & Trips
- Set Points
- Cables
- Single Line Diagrams
- Electrical Datasheets (incl EX) (as designed)
- Block Schematics
- Key List Data (Electrical Protection Relay Settings)
- Cables
- Piping & Instrument Diagrams (P&IDs)
- Process Flow Diagrams (PFDs)
- Set Points (LL-HH)
- Pipe Spec Sheets (based on Piping Standards)
- Orifice Spec Sheets
- Fixed Asset Register
- WBS
- Work Orders
- Standard Jobs (Mtoe Plans)
- Routine Maintenance (Schedule Frequencies)
- Work Order Resources (Actual Parts & Labour)
- Std Job Resources (Estimated Parts & Labour)
- Failure History
- Catalogue
- Manufacturer / Model Spec Sheets (as is)
- Manufacturer Register
- Real Time Performance Data
- Real Time Condition Data
- Controlled Document Numbers
- Document Numbers
- Documents
- Operating Procedures
- Media Files (Photos, Movies etc)



Legend

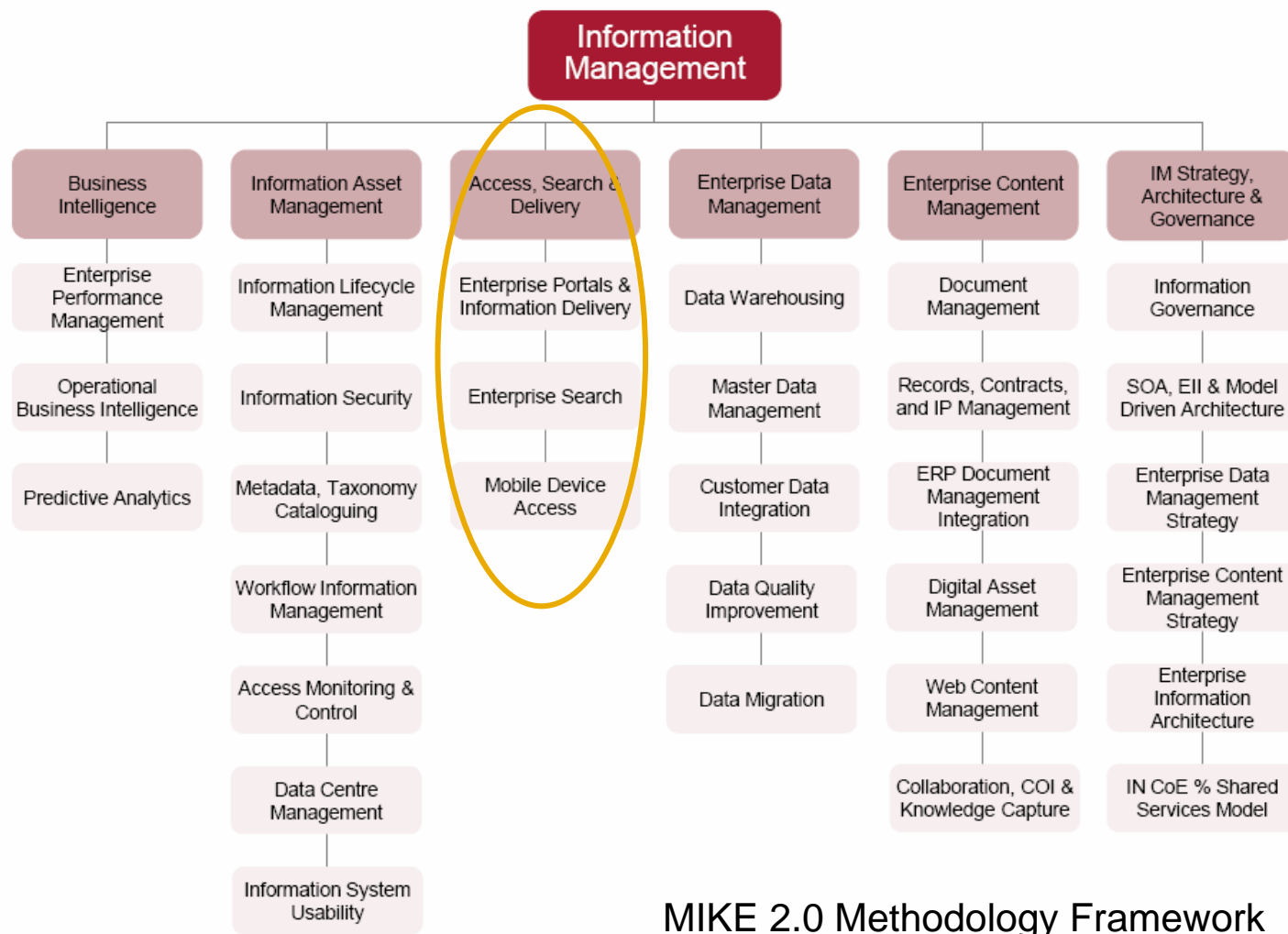
- System stable
- Data quality reasonable
- System new, being refreshed or needs refreshing, or Data quality issues, or data incomplete



The Blue Box Project

- What we can deliver, based on work to date:
 - Validate & streamline the OIMS Standard & Schedule
 - Validate & standardise Engineering Datasheet Templates
 - Use these templates to develop seed files for the various Engineering Design Tools and SAP PM / MM Master Data Loaders
 - Use the seed files to systematically enforce the collection and update of Plant Data for Greenfield, Brownfield and Production changes
 - Orchestrate the subset of truly critical data to guarantee its integrity across all process and systems at all times (via the Vault)
 - Remodel some elements of SAP PM and MM to allow the correct connection of information to the right tag so that our maintainers and buyers have a lower margin for errors
 - Exploit the concept that some information is better stored, managed and accessed from outside the Woodside environment, especially if it is Manufacturer / Vendor related

Data Visibility



MIKE 2.0 Methodology Framework

Strategic Data Management Portal

Production Division
Content Custodian: Santostefano, Vince V.
Content Manager: Oiler, Helen H.
Site Feedback: Please complete form

Classification: Restricted
Last Updated: 09/06/2009

Daily Provisional Production Report
For Wednesday 1st July

Facility	Product	Target	Actual	ALIS
NWS	LNG (tonnes)	42.02	44.109	2,651
	LPG (tonnes)	2.53	2.334	-291
	Domgas (t/a)	64	678	36
Creswick	Oil (boe)	42.9	137,656	5,172
			44,252	
Northern Endeavour	Oil (boe)	13.32	13,492	182
			33,584	2,581
Napanura	Oil (boe)	31.03	33,584	2,581
			27,306	-1,766
Vincent	Oil (boe)	18	2,121	872
			207	3
Oway	Domgas (t/a)	15	143	5
	LPG (tonnes)	5	207	3
Operated Total (boe)		77.32	866,614	31,424
Mutineer Exeter	Oil (boe)	15.94	11,470	-6,578
			32,611	822
Stybarrow	Oil (boe)	32.89	12,385	-197
			16,361	2,662
GoM Shelf	Oil (boe)	16.30	8,660	126
GoM Neptune	Oil (boe)	16.30	8,660	126
GoM Power Play	Oil (boe)	8.54		
All Facility Total (boe)		866.2	866,614	36,425

Note: GoM is latest full day data available; Oway is the VIC's final day.

Production Commentary

- Oway Gas Day Production 140 TJ's (8am - 8am SA time). Met nominations.
- NWP - LNG 1, 2 and 4 at max rates. LNG 5 rates increased to max rates following NRV re-torquing. LNG 3 shutdown progressing with expected start-up planned for All 0407. Step 2 at reduced rates due to faulting. Domgas at 144 TJ's.
- NWS - Production shutdown planned operation due to Train 2 Domgas planned shutdown.
- ALNG - Not Normally Manned status commenced at 14:45hrs.
- VIN - Production shortfall due to cycling Well VIN-A2.

Technical Integrity Awareness

I am pleased to inform that a self-learning, self-assessment tool has been developed to enhance awareness on Technical Integrity amongst our staff in the Production Division. In addition to what, why & how of the Technical Integrity, this learning module covers what role you play in the management of TI.

This on-line training will be made available very soon with instructions from your manager. I encourage you to take up the training & assessment at an earliest opportunity.

Virtual Bookshelves
Facility: Angel

- Engineering and Technical Standards and Guidelines
- Reporting and Monitoring
- ALIS Engineering Data
- Production Processes
- Site (Seabfish) - Process Monitoring
- Health and Safety Homepage
- iSSW (Surpass)
- Budget & Business Planning Timeline
- Strategic Technology Plan

Production Status - May 2009
Production Status: 5.24 MBoD
Actual Production: 5.24 MBoD
Forecast Production: 2.27 MBoD

Engineering and Technical Standards and Guidelines

Standard	Description	Status	Version
Engineering and Technical Standards and Guidelines	Engineering and Technical Standards and Guidelines	Approved	1.0
Safety	Safety	Approved	1.0
Health and Safety	Health and Safety	Approved	1.0
Environmental	Environmental	Approved	1.0
Operational Procedures	Operational Procedures	Approved	1.0
Production Processes	Production Processes	Approved	1.0
ALIS	ALIS	Approved	1.0

WOODSIDE Process Library

Yellow Copy Process

Information Change Request (ICR) Process

5.1.6 Manage Change to Production Information

WOODSIDE


Asset Lifecycle Information System

Navigation: Home, Documents and Lists, Create, Site Settings, Help

Content Explorer: ALIS Quick Reference Guide, Operations User Guide, Reg. Links & Registers, Company Forms, Document Searching

Quick Reference & User Guide: ALIS Quick Reference Guide, Operations User Guide, Reg. Links & Registers, Company Forms, Document Searching

Engineering Standards

woodside  Woodside Connect Intran

Welcome Home, Richard S.H. | Home | My Site | Quick Links | My Links | Help | Feedback

Search

Corporate | Woodside Management System | Organisation | Applications | My Department

Production Division

Woodside Connect Intran > Organisation > Production Division

Engineering and Technical Standards and Guidelines

Content Custodian: Hamblin, Michael H.G. Classification: Restricted
 Content Manager: Howard, Godfrey S.R.C. Last Updated: 19/08/2009
 Provide Feedback on the Engineering & Tech Standards and Guidelines page

Filter By: Discipline: Area:

Category	Electrical	Commissioning	Control
Standards	(TA - Cordia Johnson)	(TA - Henry Chan)	(TA - Martin Wypych)
Standards		Standards	Standards
Guidelines		Guidelines	Guidelines
Electrical	Engineering Data Management	Environment	Lifting
(TA - Satish Kelkar)	(TA - Richard Harris)	(TA - Jarrod Pittson)	(TA - Hassan Zaghloul)
Standards	Standards	Corp. Environmental Standards	Standards
Guidelines	Guidelines		Guidelines
HSEP Guidelines			
Hydrogen	Maintenance	Harmon	Materials Test and Corrosion
(TA - ...)	(Custodian - Phil Johnson)	(TA - Willie Henry)	(TA - Mike Brameld, Alan Wornock)
Standards	Standards	Standards	Standards
Guidelines	Guidelines	Guidelines	Guidelines
Mechanical	Pipelines	Process	Risk and Safety
(TA - Godfrey Howard)	(TA - Roland Fricke)	(TA - Utpal Hebta)	(TA - Richard Pocock)
Standards	Standards	Standards	Standards
Guidelines	Guidelines	Guidelines	Guidelines
Subsiding Equip	Structural	Subsea	Wells
(TA - ...)	(TA - Hassan Zaghloul)	(TA - David Thain)	(TA - Dan Gibson)
Standards	Standards	Standards	
Guidelines	Guidelines	Subsea Standards Matrix and Action Plan	
External			
Ext. Stds			
Shell DEPs via WEL Library			

Questions about standards should be addressed to the relevant Technical Authority. For access to superceded standards, use CDD or contact Corporate Document Control.

DEIMS Number	Rev No	Controlled Reference Number	Title	Status	Last Modified Date
1042159	2	W1000E104592	Electrical Equipment in Hazardous Area (EHA) Competency Requirements	APPROVED	30/07/2009
2007994	3	W1000E0025	Engineering Standard - Electrical Design	APPROVED	24/06/2009
2200870	02	W1000E002	STANDARD - LOW VOLTAGE SWITCHGEAR	APPROVED	24/02/2009
2507928	03	W1000E001	STANDARD - CABLES AND GLANDS	APPROVED	25/02/2009
2137802	02	W1000E004	STANDARD - HIGH VOLTAGE SWITCHGEAR	APPROVED	24/02/2009
2422758	01	W1000E008	STANDARD - STATIC AC UNINTERRUPTIBLE POWER SUPPLY UNIT	APPROVED	23/02/2009
2728404	1	W1000E039	STANDARD DEFINING WEL APPROVED ELECTRICAL MANUFACTURERS AND EQUIPMENT	APPROVED	23/02/2009
3151991	1	W1000E020	STANDARD ELECTRICAL INSTALLATION	APPROVED	23/02/2009
3151991	1	W1000E020	STANDARD ELECTRICAL INSTALLATION	APPROVED	23/02/2009
3120566	1	W1000E027	STANDARD: ELECTRICAL HEAT TRACING	APPROVED	23/02/2009
3178012	1	W1000E035	STANDARD: ELECTRICAL PROCESS HEATERS	APPROVED	23/02/2009
3142034	1	W1000E007	STANDARD: EMERGENCY GENERATORS	APPROVED	23/02/2009
2741054	01	W1000E005	STANDARD: H.V. AND L.V. ELECTRIC MACHINES CAGE INDUCTION TYPE	APPROVED	23/02/2009
2138104	01	W1000E014	STANDARD: NAVIGATIONAL AIDS FOR OFFSHORE FIXED & MOBILE FACILITIES	APPROVED	24/02/2009
3136328	1	W1000E003	STANDARD: POWER TRANSFORMERS	APPROVED	23/02/2009
2292351	3	W1000E0290001	STANDARD: SELECTION, INSTALLATION AND MAINTENANCE OF EX CERTIFIED ELECTRICAL EQUIPMENT GUIDELINE.	APPROVED	15/01/2009
2421176	01	W1000E006	STANDARD: STATIC DC UNINTERRUPTIBLE POWER SUPPLY UNIT	APPROVED	23/02/2009
3128143	01	W1000E011	STANDARD: SYNCHRONOUS AC MOTORS AND GENERATORS	APPROVED	23/02/2009
2163856	01	W1000E018	STANDARD: VARIABLE SPEED DRIVE SYSTEMS	APPROVED	23/02/2009
2220892	00	W1000E028	W1000E028 CODE OF PRACTICE FOR HAZARDOUS AREA VERIFICATION DOSSIER	APPROVED	09/01/2006
2261104	00	W1000E164287	W1000E164287 ELECTRICAL SAFETY STANDARD	APPROVED	18/05/2006
2599484	00	W1000E2599455	W1000E2599455 STANDARD - COMPETENCY REQUIREMENTS FOR AUTHORISED ELECTRICAL PERSONS	APPROVED	17/11/2006

Process Mapping

woodside **energy** In Our Lives

Welcome Hans, Richard R.J.M. | Home | My Site | Quick Links | My Links | Help | Feedback

Woodside Connect **Intranet**

Search:

Corporate | **Woodside Management System** | Organisation | Applications | My Department

Woodside Connect Intranet > Organisation > Production Division

Production Processes

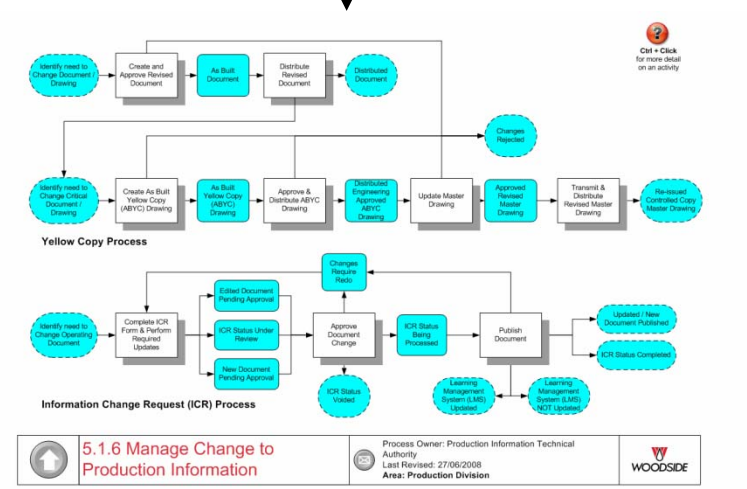
Core Production Processes

1.0 Plan Production	2.0 Deliver Production	3.0 Hydrocarbon Accounting	4.0 Maintenance and Inspection	5.0 Technical Control
1.1 Business Planning	2.1 Operate Plant and Facility	3.1 Metering and Measurement	4.1 Set Maintenance Direction	5.1 Technical Change Management
1.2 Product Planning	2.2 Integrated Safe System of Work	3.2 Process Data	4.2 Work Prep, Schedule & Exe. Maint. Work	5.2 Technical Integrity Management (TDM)
1.3 Integrated Activity Planning	2.3 Custody Transfer	3.3 Allocate Product	4.3 Measure, Analyse and Improve	
		3.4 Product Reporting	4.4 Inspection	

Supporting Production Processes

Production Health and Safety	Operations Readiness and Assurance	Marine	Human Resources	Production Risk Management
Production Environment	Commissioning Start Up	Supply Chain Management	Prod. Emergency Response & Security	Production Assurance

Production Processes Challenge



Engineering portal configuration

Karratha Gas Plant > ALIS Portal > Portal

Enterprise Explorer

User: wgrh5
Role: VNET User

Hide Find Show Toolbar

Any type

4V1421 Find Mode: By ID

- KGP
 - Assets by Equipment Type
 - Assets by EDC Code
 - Information Types
 - Query Forms
 - Notes
 - Sets
- KBS
 - Public Folders
 - Personal Folder
 - Search Results

Content Explorer

Vessel, Pressure 4V1421


VESSEL_HP MR SEPARATOR

Documents:

- 3D Models - (3)
- LNG4 - (3)
- 1400 - Liquefaction
- LNG4 - Equipment Only
- LNG4 Process Train - Equipment
- DRIMS Documents - (19)
- Intelligent P&IDs - (83)
- Photographs - (10)
- 4V1421 VPE Eng Data
- AU01.4V1421 SAP Link

Content Viewer

Home Page Unt 1400.zgl L1404DP115.0001.svg L1404DP228.0001 L1404DP228.0001.svg 4V1421 VPE Eng Data Rendition

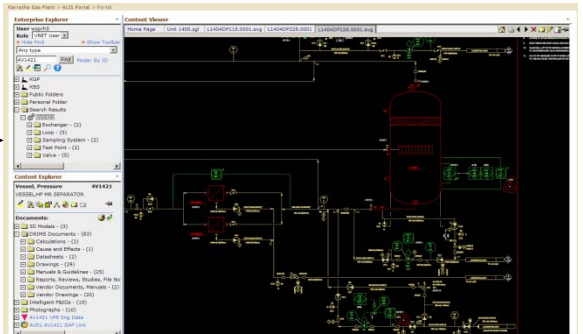
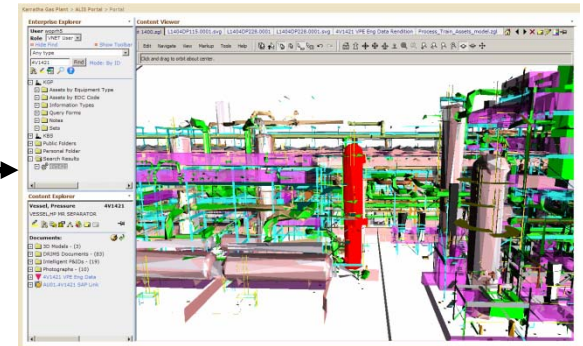
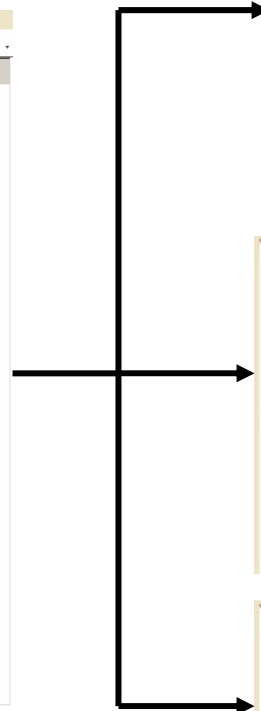


Got a problem or issue with ALIS? Contact the [IT Help Desk](#) for assistance: x84444.

Need help using ALIS, or want to find out what ALIS can do? See the [ALIS Help Page](#) for videos, how-to's and quick reference guides.

Something wrong with the info in ALIS, or can't find info that should be in ALIS? Contact the [ALIS Information Custodian](#) to report it.

See the [Production Division Homepage](#) for more information about Woodside's facilities & other information systems.



Enterprise Explorer

User: wgrh5

Role: VNET User

Content Explorer

VPE Eng Data 4V1421 VPE Eng Data

VPE Eng Data (Data No: 4V1421)

Documents:

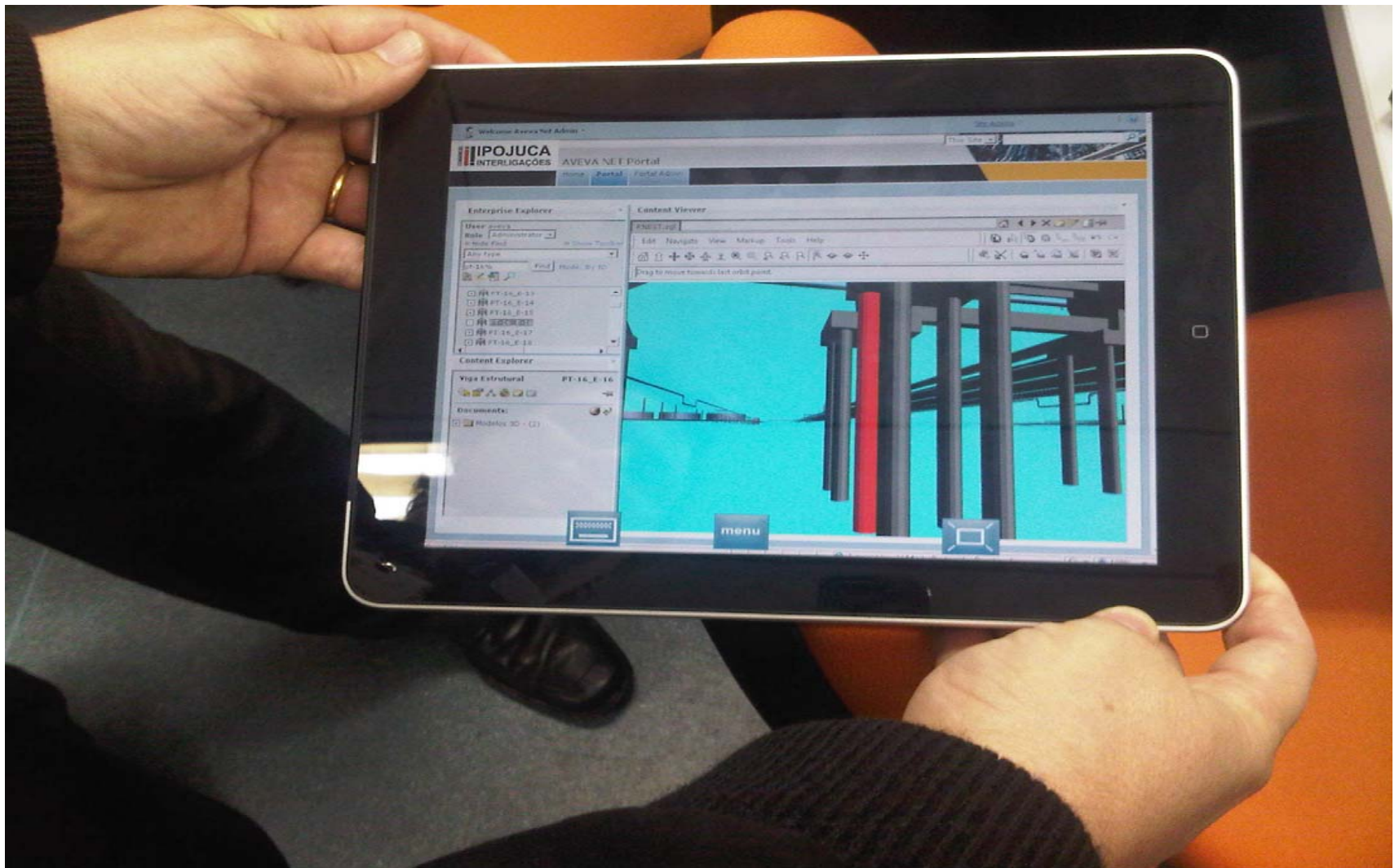
- VPE Eng Data - (1)

Content Viewer

Home Page Unt 1400.zgl L1404DP115.0001.svg L1404DP228.0001 L1404DP228.0001.svg 4V1421 VPE Eng Data Rendition

4V1421 - VPE Engineering Data	
ITEM TYPE	VESSEL, VESSEL, PRESSURE
PAID DESCRIPTION	VESSEL HP MR SEPARATOR
MANUFACTURER	LARSEN AND TOUBRO
MODEL NO.	SP1007
OPERATING WEIGHT	159500
PERFORMANCE STANDARD	API
EDC CODE	IS 34 KGP 10E 11
CENTRICAL OF GRAVITATION NO	10071004
ORIGINAL PURCHASE ORDER NO	LNG4-9167
DESIGN CODE	ASB70E CLASS 1H
HANDLED LEVEL	0
SCHEDULE	136.000 01 L 06
WALL THICK. SHELL LWRN MM	0.00 mm min.
CONSTRUCTION ALLOWANCE MM	0.00 mm min.
SAP TAG	AU01 4V1421
SAP CLASS	VEI
PARSET TAG	AU01 4V1424
MODEL REV NO	1
SERIAL NO	1
CONSTRUCTION TYPE	AU1000 L24
MATERIAL LINE	A200 040 A200 VPE AND RETRO
MATERIAL STD BOLTS	A200 A100
MATERIAL STD NUTS	A200 A100
MATERIAL STD WELDS	A200 A100
MATERIAL HEAD	A200 040A
MATERIAL INTERIORS	A200 040A
MATERIAL SHELL	A200 040A
DESIGN PRESSURE	8.4 MPa
TEST PRESSURE	8200 kPa

Options for delivery – mobile



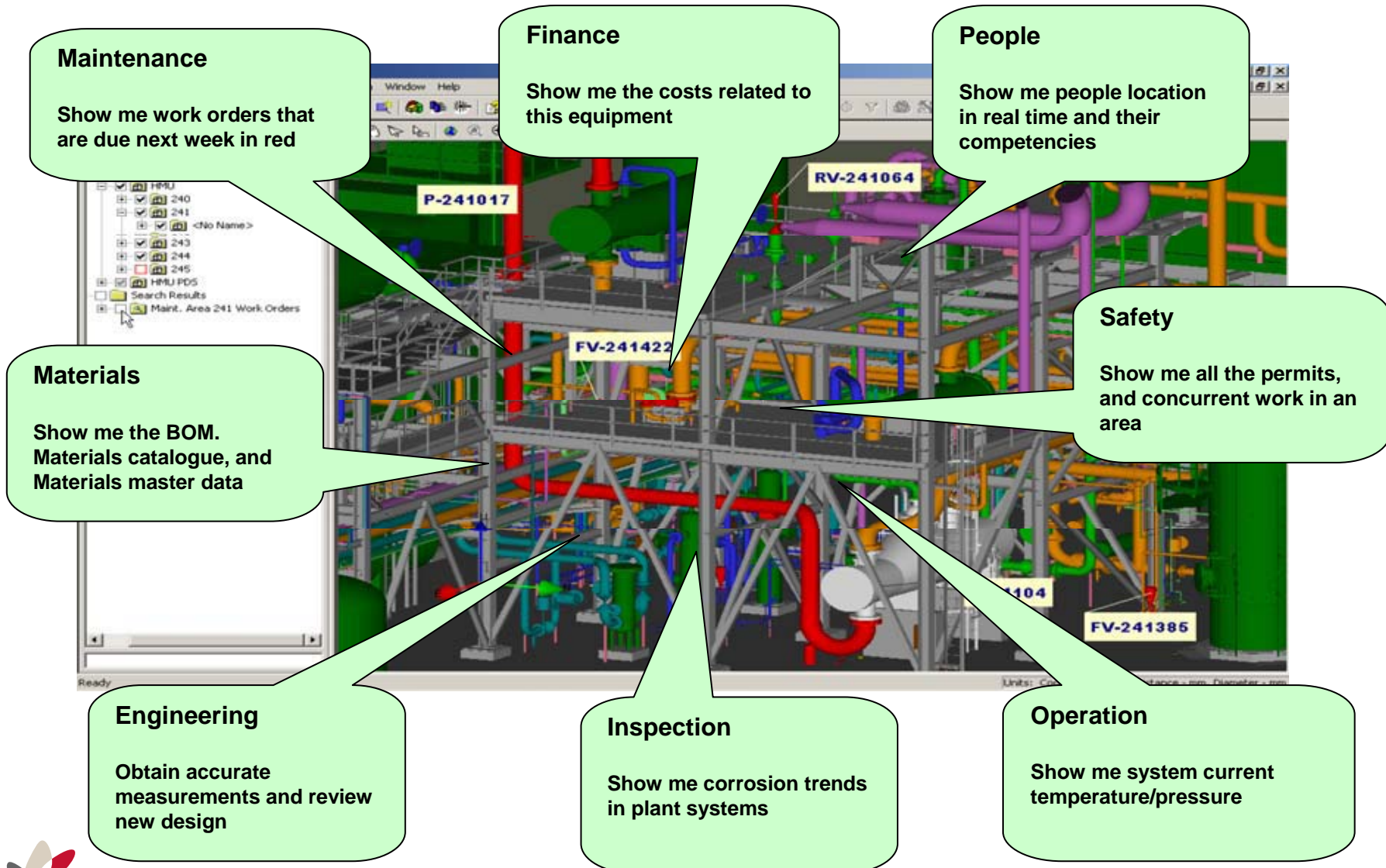
Options for delivery - kiosks



Industrial specifications:

- ✓ Solid steel construction
- ✓ Intrinsically safe
- ✓ Dust-proofed body prevents damage to the PC
- ✓ Onscreen Keyboard removes requirement for external keyboard
- ✓ Secured browser interface
- ✓ Optional Bar code reader
- ✓ IR Touch screen usable with gloves and dirt build-up

Bringing the pieces together



Intelligent Operations



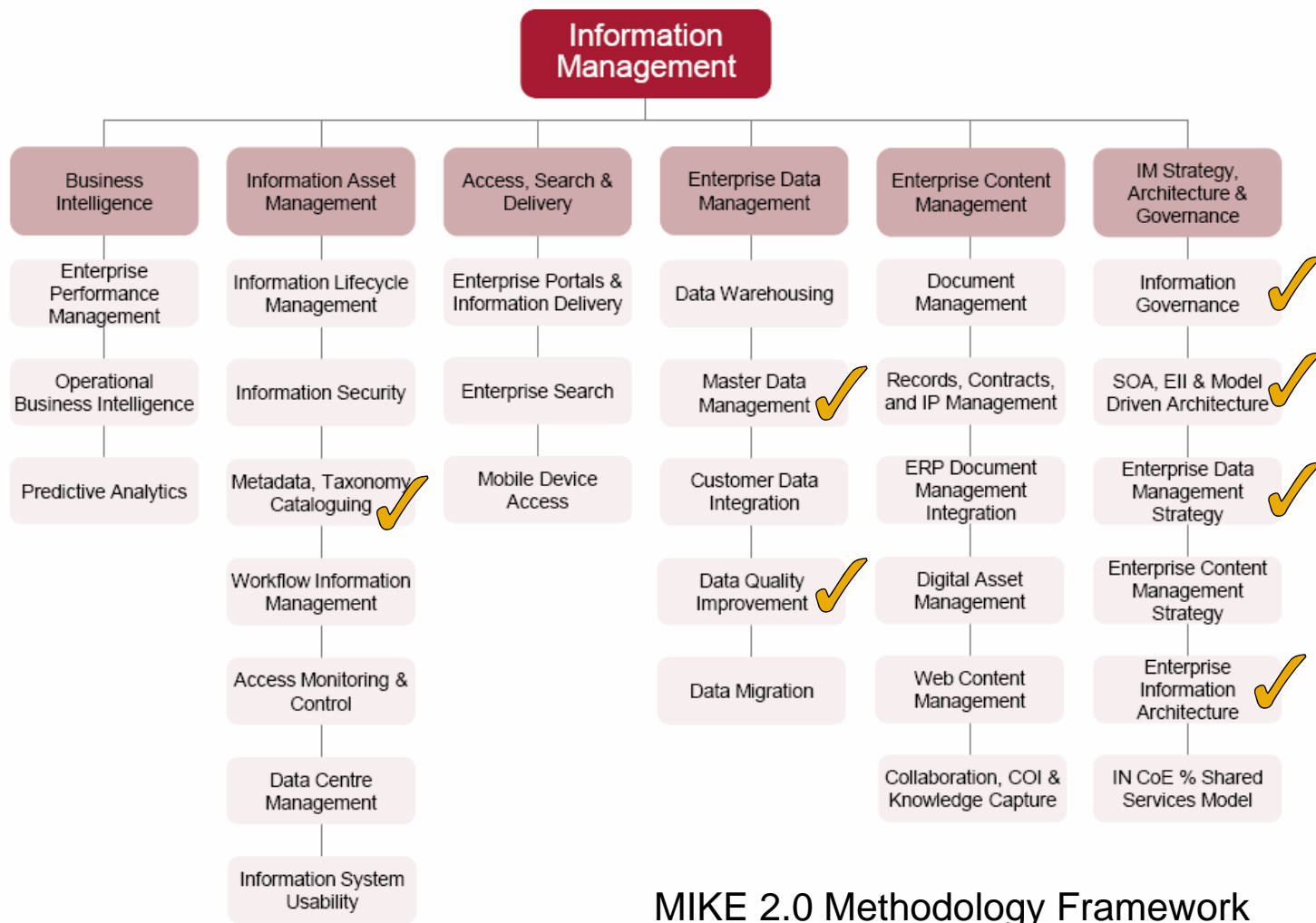
Integration of Real Time Data

DCS installations on every facility, and nearly every unit, hundreds of thousands of process data tags

Challenges we are facing:

- Volume is growing rapidly, engineers are drowning in data
- Our focus has to be on exceptions
- Smart surveillance and analytics need to be part of the new engineers toolkit
- Using history to predict the future, model driven analytics
- Upstream systems are demanding consistent and verified values
- Change management is paramount

Where do Industry Standards come in ?



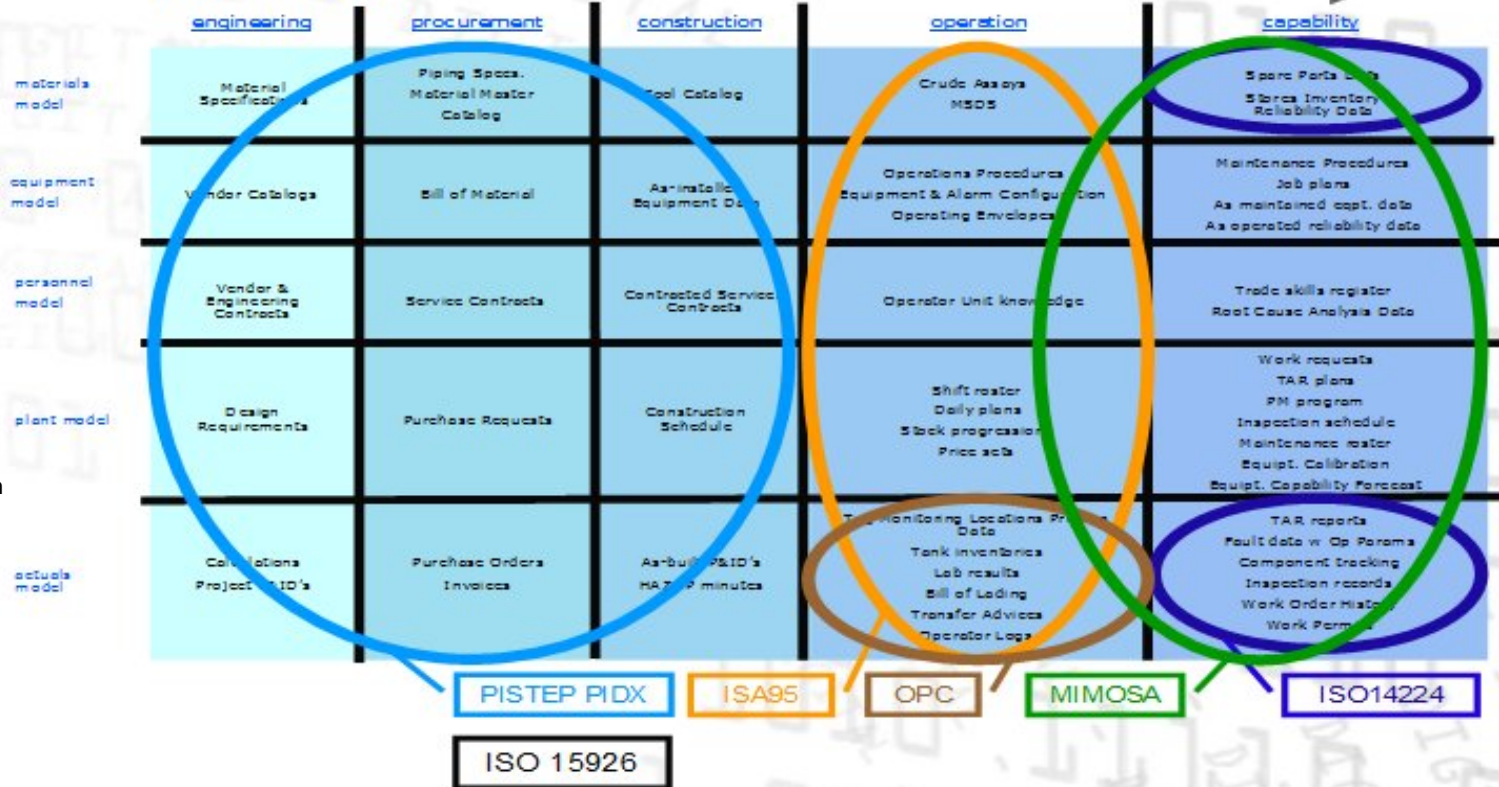
MIKE 2.0 Methodology Framework

What standards ? where?

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bp data model map

plant lifecycle



ISO 15926 is a standard about interoperability in the process industry. An important part of it is the Reference Data library, which holds technical class descriptions of all the main equipment items, pipe, instruments, buildings, activities and anything else used in engineering, constructing, procuring, operating and maintaining process facilities

ISA 95 is the international standard for developing an automated interface between enterprise and control systems

OPC standards specify the communication of industrial process data, alarms and events, historical data and batch process data between sensors, instruments, controllers, software systems, and notification devices.

MIMOSA standardizes the interface between plant floor systems (including PDM) and EAM systems. The MIMOSA standard is complementary to OPC, which handles the real-time communication aspect of interfacing with plant devices.

ISO 14224 – sets the standards for collection and exchange of reliability and maintenance data for equipment

We are still working that out !

Questions!