



MANAGING RISK

DNV

IOHN Workshop Sum Up



DNV Høvik
15 August 2008

Ron Montgomery, IBM

Ellen Sjølie, DNV

Magne Valen-Sendstad, DNV

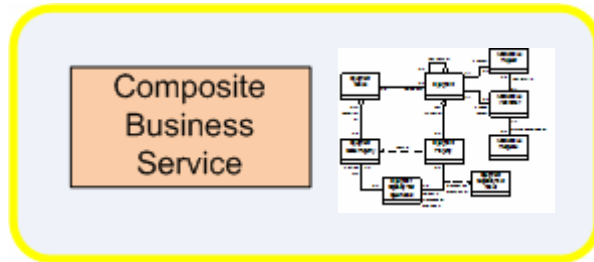
Reliability, Availability and Maintenance Analysis (RAM)

- All cases tested with ice on the surface: comparison between base case and one case with perfect condition monitoring
- Gas price 2 NOK/Sm³, discount factor 10 %

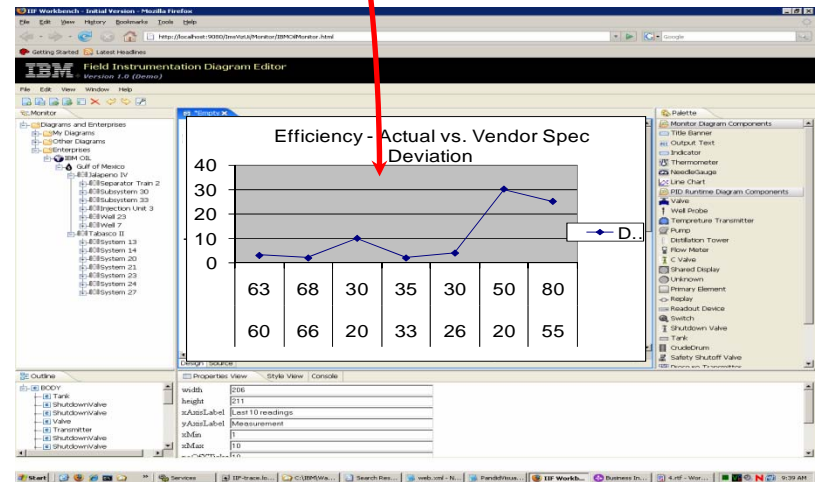
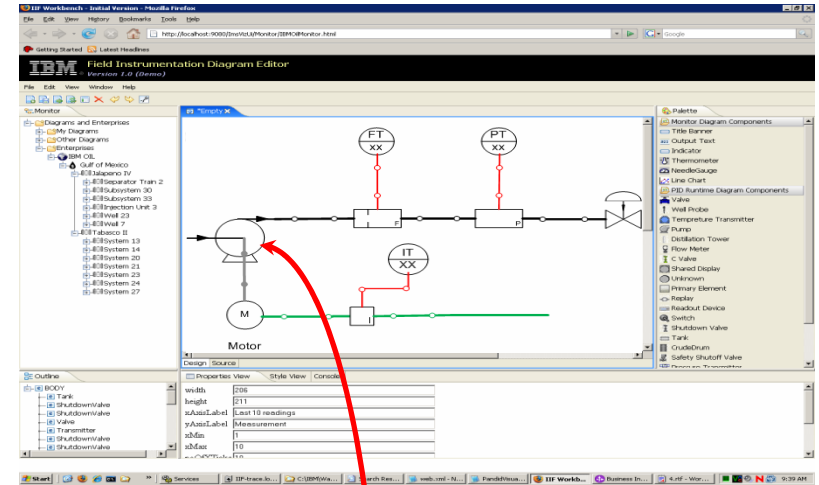
Module	Contribution to unavailability	
	Base Case	No CM
Xmas tree	58000	82000
Multiphase pump	49000	56000
Water injection pump	45000	56000
Compressor	33000	41000
Separator	15000	19000
Water injection Xmas tree	11000	14000
Choke Module	4300	6500
Sand removal system	820	860
Anti-surge system	700	1200
Water injection choke module	650	1100
Template	470	920

Real / Right Time Conditioned Based Monitoring Value

A Conditioned Based Monitoring Composite Service Leveraging the Reference Semantic Model

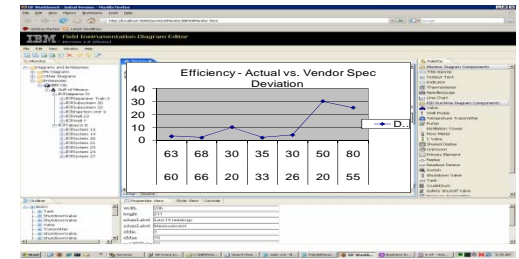
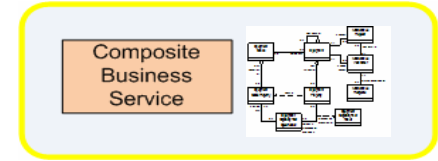
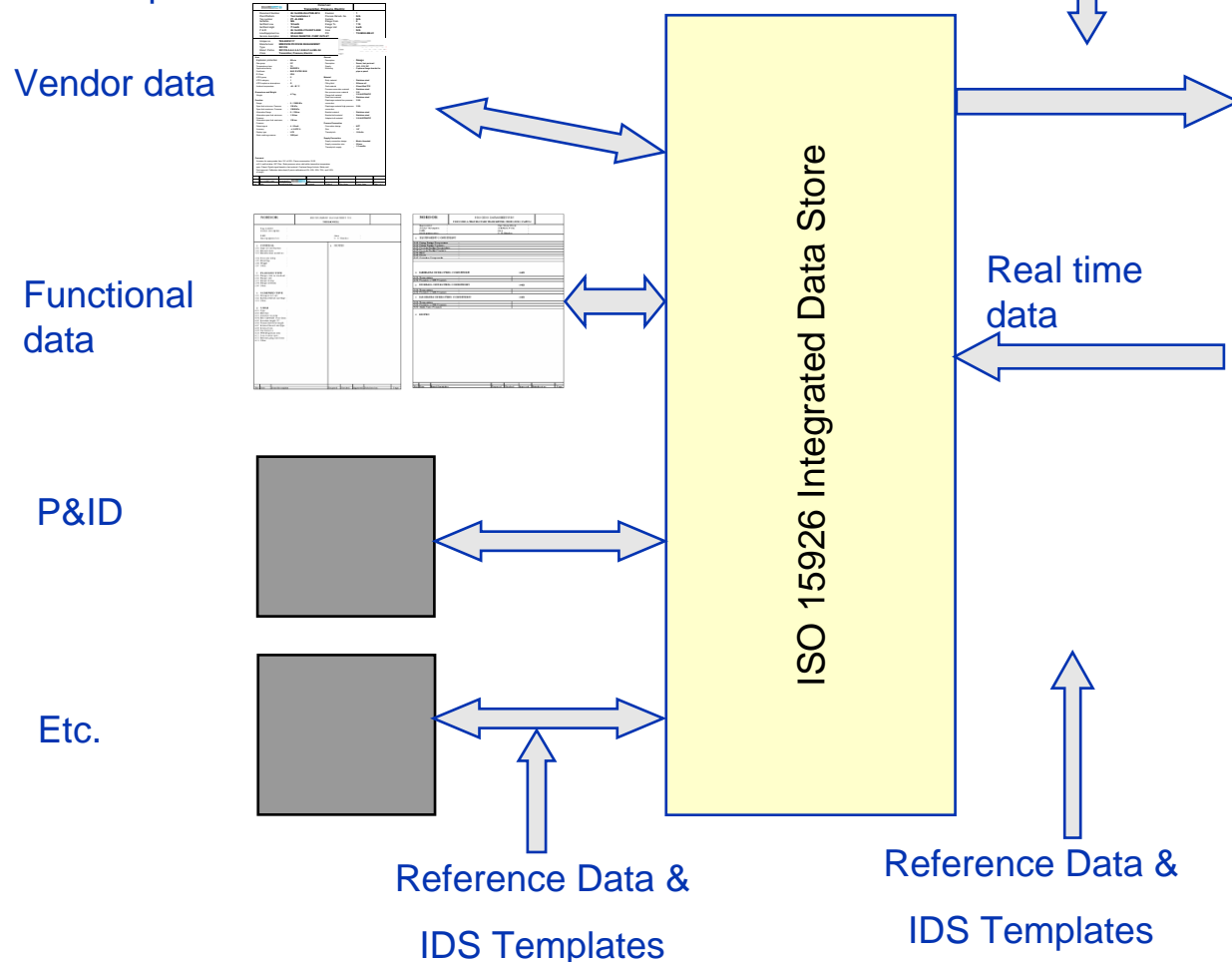


- Events / Event Timer Driven
- KPI / Production Calculations
 - Efficiency
 - Comparison to Vendor Specs
 - Effective Time
- Modeling and Reference Data Needs
 - Asset ID ad Type
 - Connectivity or Attributes
 - Vendor Specifications
 - Bench Marks for Performance
 - etc.



Proposed Solution

Existing systems, each holding parts of the required data
 Implicit data definitions
 Not computer sensible



- Events / Event Timer Driven
- KPI / Production Calculations
 - Efficiency
 - Comparison to Vendor Specs
 - Effective Time
- Modeling and Reference Data Needs
 - Asset ID ad Type
 - Connectivity or Attributes
 - Vendor Specifications
 - Bench Marks for Performance
 - etc.



MANAGING RISK

DNV

www.dnv.com
