# GDF SUEZ E&P Norge

- GDF SUEZ E&P Norge is an affiliate of GDF SUEZ Exploration & Production, og part of a major energy corporation with 218 000 employees

- Establishedin Norway 1. april 2001

- GDF SUEZ E&P Norge i 2011:

    – 1 of 8 operators of fields in production on the NCS

    – Gjøa – startup November 2010

    – Exploration drilling fall2011 in the Barents sea(PL 530 Heilo)

    – Operator of 3 more exploration licenses in the Barents sea

    – A total 0f 180 employees on Forus main office, the Florø base and the Gjøa crew (ca 45 offshore/135 onshore)
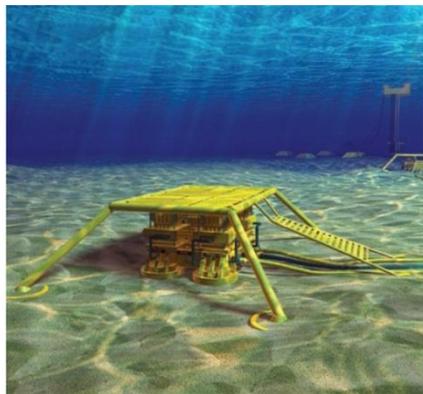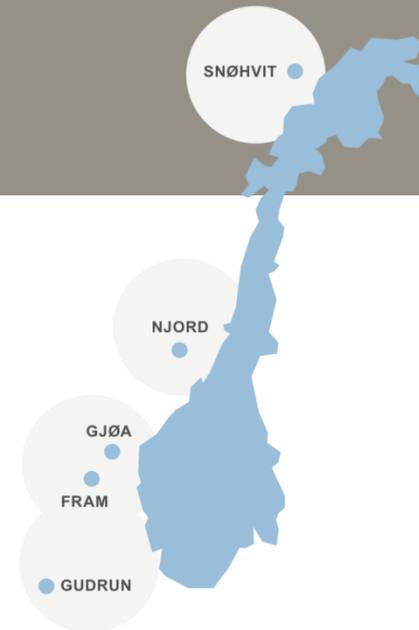
# GDF SUEZ – Assets in Norway



Snøhvit (Barents Sea)

Njord (Norwegian Sea)

Fram (North Sea)

Gudrun (North Sea)

Gjøa/Vega (North Sea)

http://edocs/dmweb/quickstart.asp?show=VIEW:51497&version=P

# Gjøa key figures

- Discovered in 1989
- PDO approved in june 2007
- Reserves (inkluding Vega):
    - 108 mill. bbl olil/condensate
    - 58 Bill. metercubes gass
- Produksjon from November 2010
- Total investment ca. 40 BNOK
- Lisence partners:
    - Gaz de France (30%)
    - Petoro (30%)
    - StatoilHydro (20%)
    - Shell (12%)
    - RWE Dea (8%)

# Gjøa location
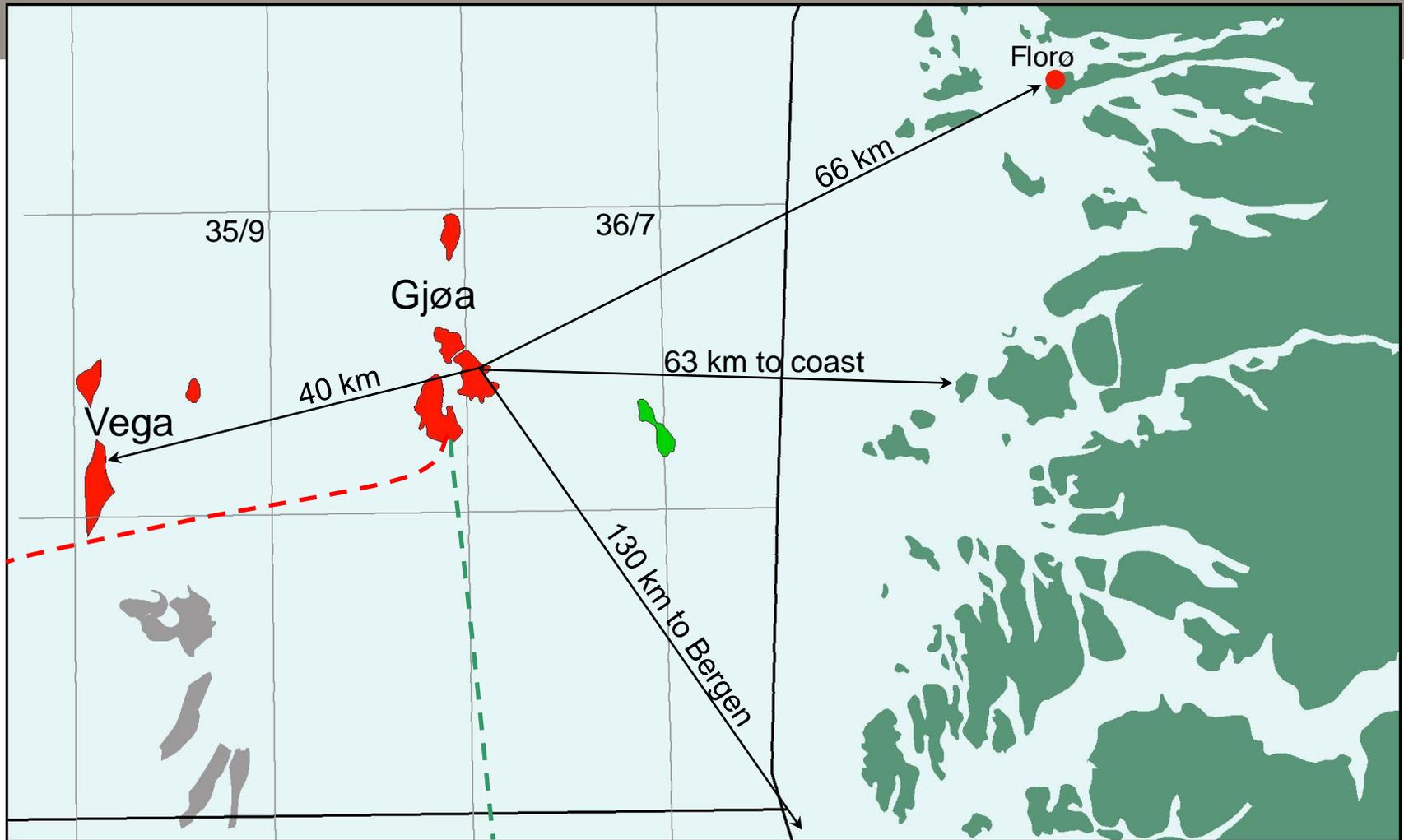
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# Agenda – IO realiziation from an ICT perspective

- The Vision

- Realizing the IO vision
  - Comos
  - IPL
  - Energy Components
  - EPN Datawarehouse

- ICT lessons learnt during the Gjøa project

- The GDF SUEZ E&P Norges AS' contribution IO integration challenges

# Gjøa Vision

**Gjøa Vision Statement**

"…improving performance and hydrocarbon recovery
through improved and faster decision making
in a distributed organisation based on right-time information,
which is simultaneously available across the different disciplines
independent of location throughout the field life"

**Integrated Operations Objectives for Gjøa**

- Improved HSE performance
- Improved and earlier decision making
- Achieving the production forecast, and having the capability for increased production and improved regularity when required
- Improved hydrocarbon recovery
- Reduction in operating cost

*Several initiatives have been and are currently run throughout the organization to ensure that Gjøa is moving in the right direction in relation to the vision and the IO objective obtainment.*

# Realizing the IO Vision from an ICT perspective

Selected solutions to enable EPN to meet its vision:

- Comos – Integrated maintanance and TDL/LCI
- IPL – Integrated Planning
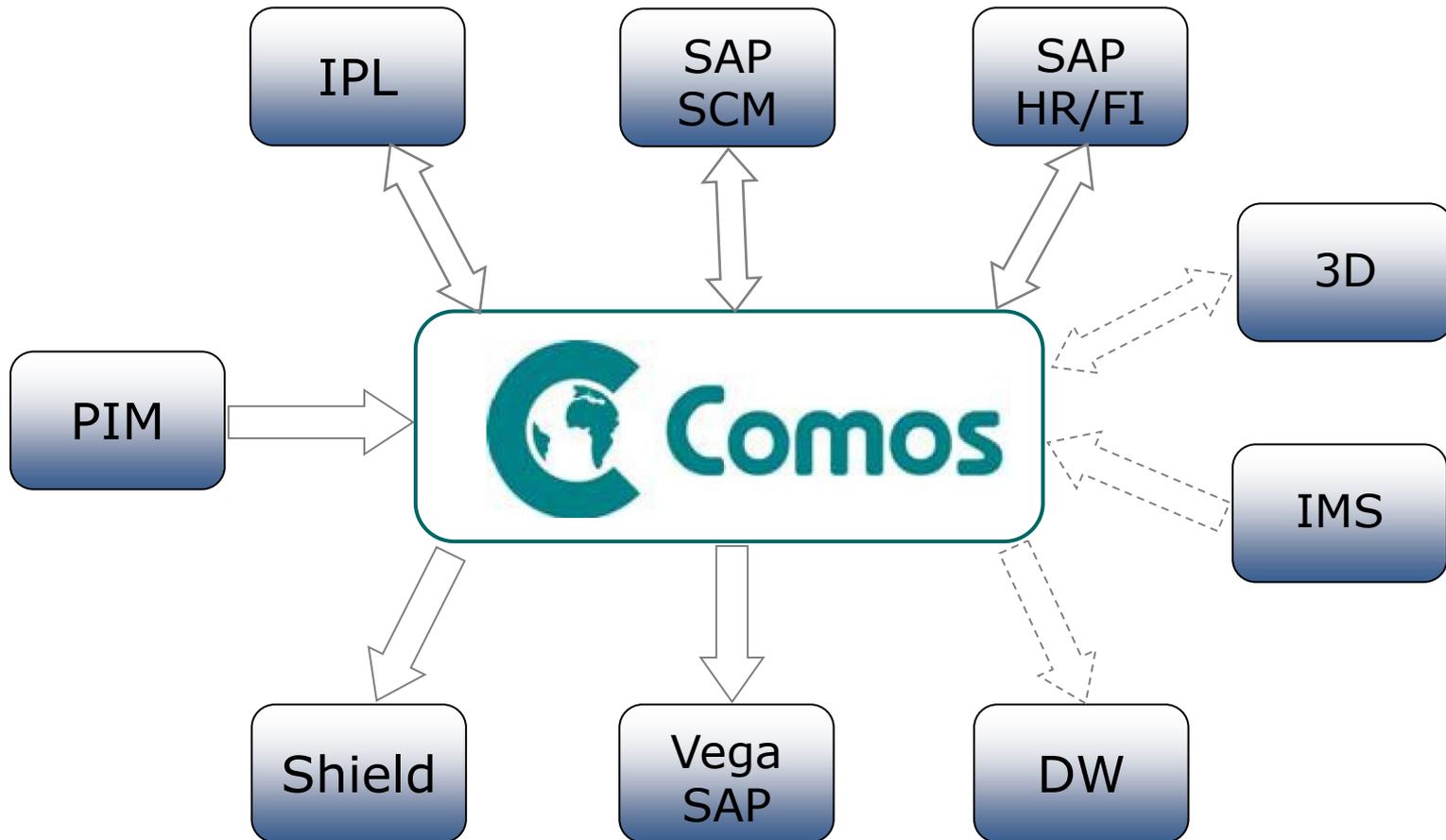- Energy Components
- EPN Datawarehouse

- Other initiatives:
  - Integrated SAP environment(FI, SCM, HR, Competence)
  - PSSTool: Production Surveillance System Tool
    - » Optimize recovery and production by automating analysis and data transfer.
    - » Provide a unified visualization layer of topside, subsea and subsurface values
  - EPN Portal:
    - » Enabling collaboration, knowledge sharing and personalized information
  - Common Reporting:
    - » Common reporting solution on top of EPN Datawarehouse
  - PM – Performance Management
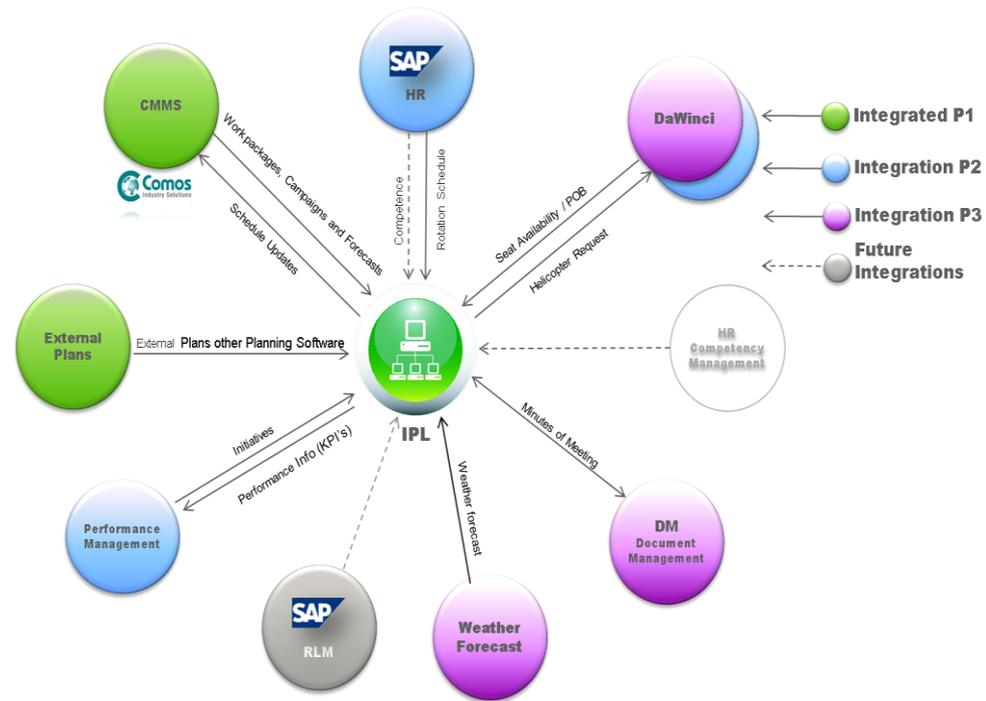    - » Balanced Scorecared Model and KPI's

# COMOS - An integrated application
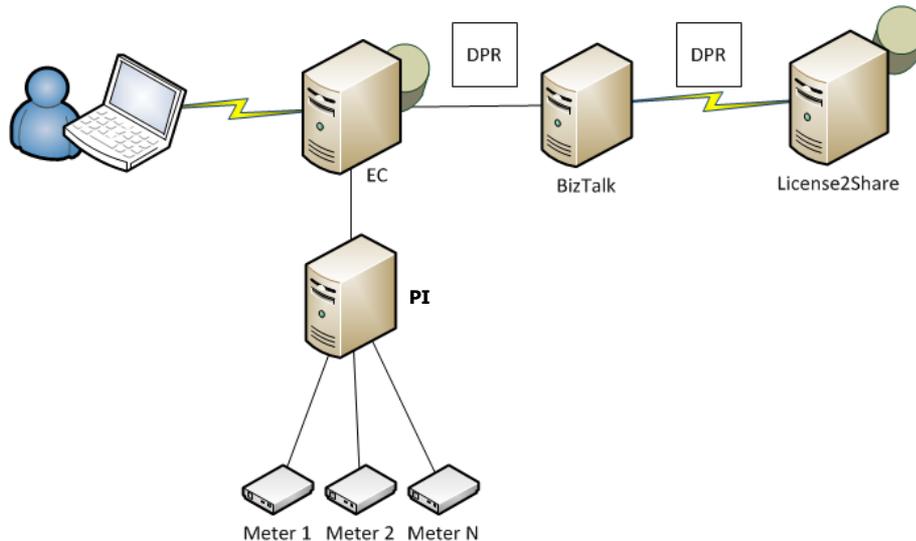- TDL and CMMS Software Architecture

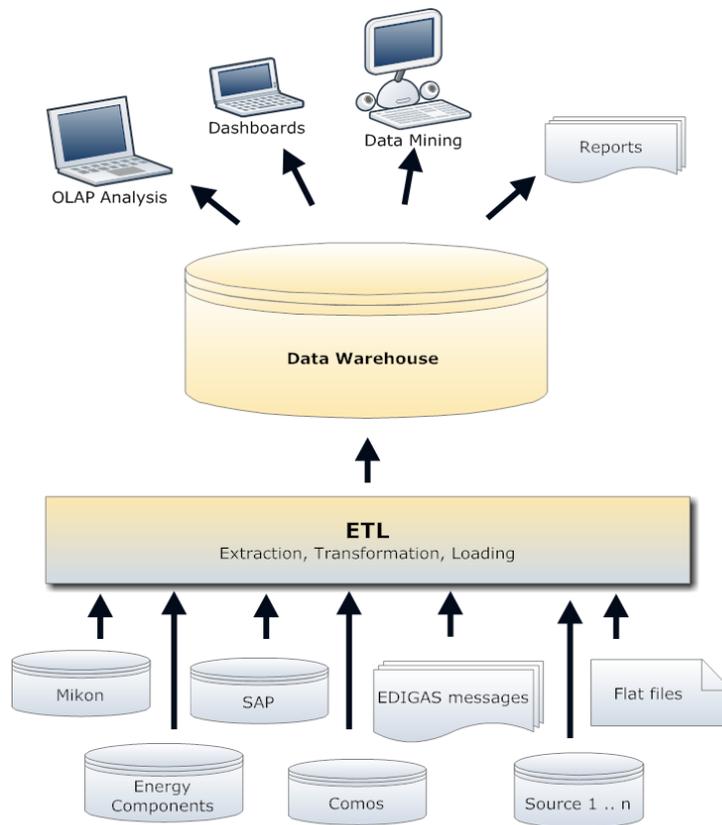# Comos Integrations

# IPL – A solution of integrations

# EC – The standard integration



- Energy Componets by Tieto used for HC-Allocation
- Issues Daily and Monthly allocation report as specified by EPIM(structured according to ISO 15926 and in compliance with ProdML)

# EPN Datawarehouse



- Currently in first phase
- Realizing the vision of an integrated operation, allowing for multi-dicipline and cross-departemental reporting and analysis
- Expected to include top 15 business applications from Operations and support functions
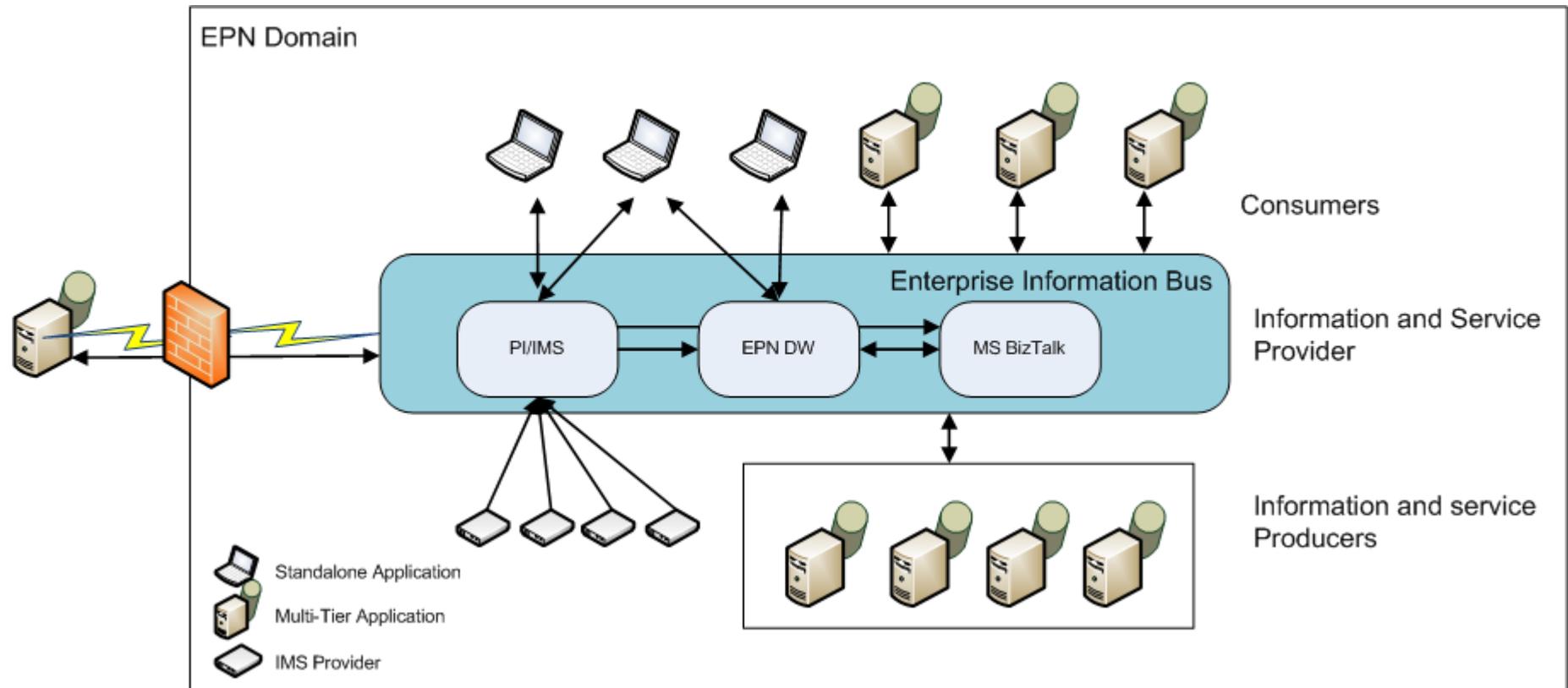
# Challenges

- Terminology
- Functionallity vs interoperability
- ICT involvement
- Maturity on standards and technology
- Vendor vs Buyer vs Regulators pushing standardization
- Application level vs transport level standardization
- "If it works why break it" solutions

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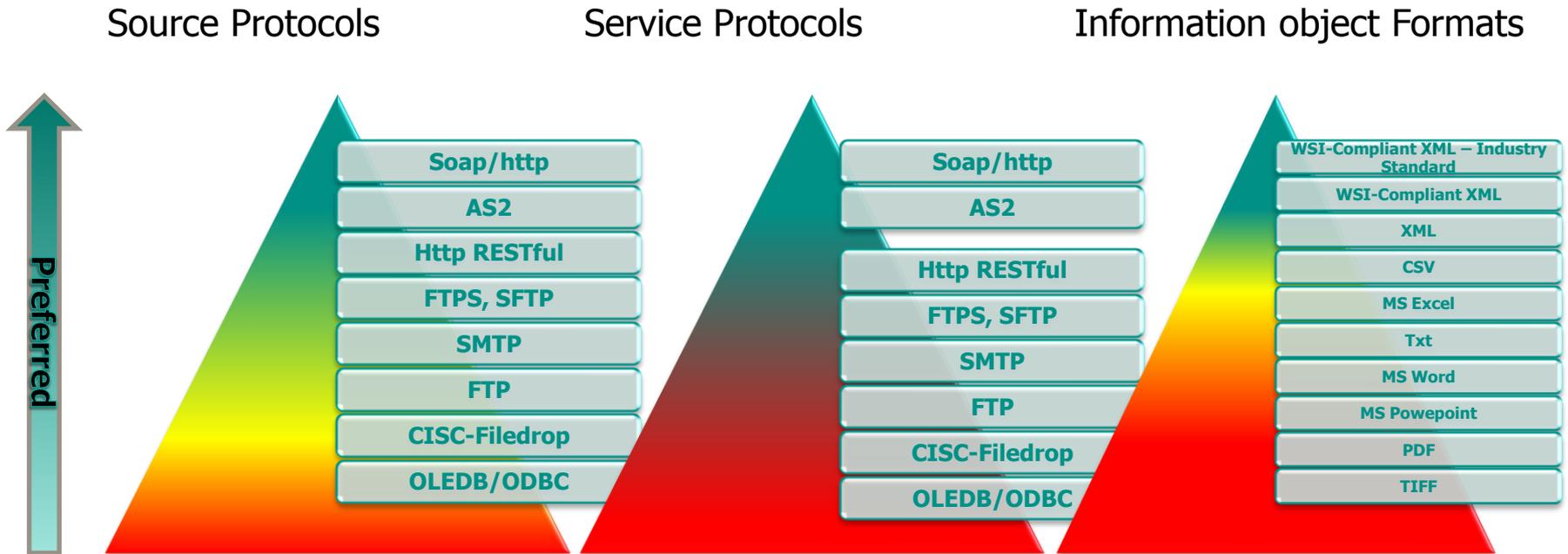# The EPN part of the solution
# - An approved Integration Policy

- Why an Integration Policy
  - Scalability
  - Flexibility
  - Reliability
  - Reduced maintenance cost of ICT portfolio lifecycle
  - Visible impact of changes
  - Increased security
  - Consistent application integration

- Who should be aware of the Integration Policy
  - ICT Project Managers
  - Application Super-Users
  - Application Vendors
  - Technical Tender Team members for ICT related procurements
  - Anyone initiating a procurement of software which will (*or in the future can*) be integrated with other EPN applications

- ICT involvement during requirement specification
- Focus on off-the-shelf applications AND standard integrations
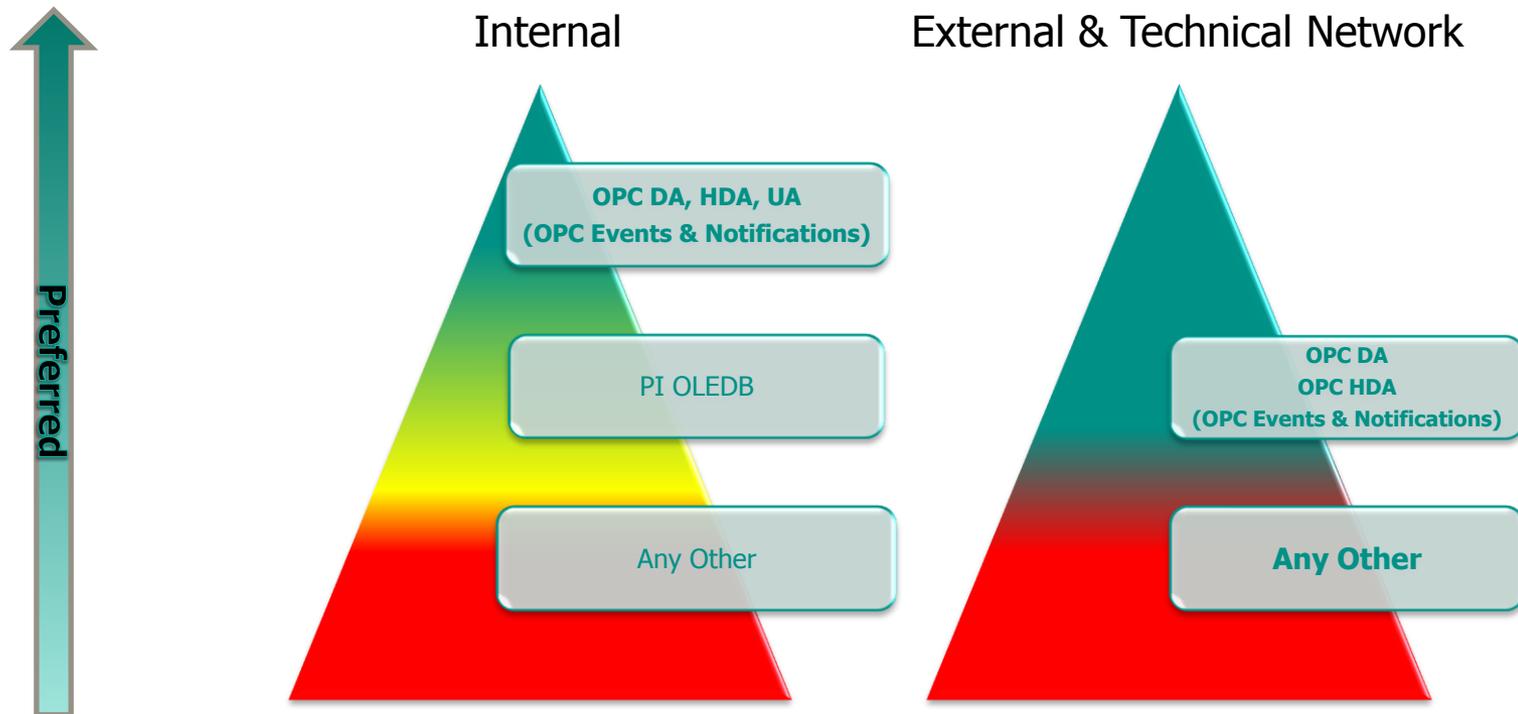
# Overview Information Architecture

# BizTalk Protocols

**Source Protocols**

**Service Protocols**

**Information object Formats**

Preferred ↑

| Source Protocols |
| --- |
| Soap/http |
| AS2 |
| Http RESTful |
| FTPS, SFTP |
| SMTP |
| FTP |
| CISC-Filedrop |
| OLEDB/ODBC |

| Service Protocols |
| --- |
| Soap/http |
| AS2 |
| Http RESTful |
| FTPS, SFTP |
| SMTP |
| FTP |
| CISC-Filedrop |
| OLEDB/ODBC |

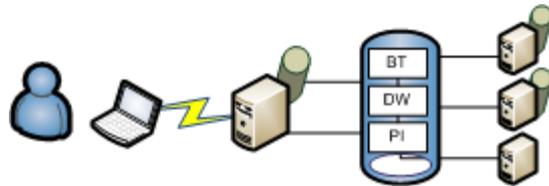| Information object Formats |
| --- |
| WSI-Compliant XML – Industry Standard |
| WSI-Compliant XML |
| XML |
| CSV |
| MS Excel |
| Txt |
| MS Word |
| MS Powepoint |
| PDF |
| TIFF |

# PI System Protocols

# Integration Pattern
## IntPattern01: Multi-Tier Application to Multi-Tier Application – Transaction



**Name**: Multi-Tier Application to Multi-Tier Application – Transaction
**ID**: IntPattern01
**Owner**: ICT Service Manager
**Responsible**: ICT Advisor
**Description**:
Exchange of transactional data between systems. Also referred to as server-to-server communication.
**Integration**:
MS BizTalk
**Use Case**:
Something
**Examples**:
Energy Components to Teams, SAP to Comos
**Principles**:
Data shall be retrieved as directly from the originating source as possible. Approvals and Security shall be taken into consideration.

Long-running/large requests should be asynchronous.

Applications utilizing integration mechanisms shall take into consideration execution time and not result in a perceived "freeze" from a user point of view.

**Source Protocols**:
Required: Soap/HTTP, AS2, HTTP RESTful,
Accepted: FTPS, SFTP, SMTP
Discontinued: OLEDB, JDBC,CISC-Filedrop,
**Source Formats**:
Required: WS-I Compliant XML, ns-qualified XML, XML
Accepted: csv, txt, MS Excel
Discontinued: MS Word, pdf, tiff
**EIB Service Protocols**:
Required: SOAP/HTTP, AS2
Discontinued: HTTP RESTful, OLEDB, JDBC,CISC-Filedrop, SMTP, FTPS, SFTP
**EIB  Service Formats**:
Required: WS-I Compliant XML, ns-qualified XML, XML
Accepted: csv, MS Excel
Discontinued :TXT, MS Word, pdf, tiff
**Security**:
Secure: Encrypted  with minimum 256bit EAS or similar
Authenticated: Minimum encrypted Username/password.
Authorized: IP access control. Receiving system authorization depending on legal requirements.
Auditable: Data impacting HSE and Finance must be traceable and ensure non-repudiation
**Logging:**
BAM, Error-logdb
**ErrorHandling:**
1. Fallbackurl
2. Error in initiating application
3. SMTP notification

# Thank you for your attention ☺

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