Project Interface Management

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Presentation By:

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WISON Floating Systems
# Project Interface Management (PIM)

## Definition of Interface

An interface is the place at which independent systems meet or communicate with each other. It is an interaction of cross-project Delivery Team members necessary to exploit the synergy that is possible by having the right people engaged in communication.

This dialogue is focused on ensuring that project identifies and implements the best solutions effectively.

**PS:** Today’s discussion primarily relates to Mega-Projects in Energy and Offshore Oil & Gas industry from Client & Contractor’s viewpoint. Interface Management in general is also applicable to IT and other industrial mega-projects.

<table>
<thead>
<tr>
<th>Main Entry:</th>
<th>amalgamate</th>
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<tbody>
<tr>
<td>Part of Speech:</td>
<td>verb</td>
</tr>
<tr>
<td>Definition:</td>
<td>blend</td>
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<tr>
<td>Synonyms:</td>
<td>admix, alloy, <strong>ally</strong>, coalesce, combine, come together, compound, consolidate, fuse, hook up with, incorporate, integrate, interface, intermix, join together, meld, merge, mingle, network, pool, team up, tie in, tie up, <strong>unite</strong></td>
</tr>
<tr>
<td>Antonyms:</td>
<td>divide, separate</td>
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**Courtesy:** WISON Group - QMS

http://thesaurus.com
**Interface Management Plan**

- It’s built-in & integral part of overall Project Management.
- Supports Project Director for project execution on-time & within budget.
- The responsibility is entrusted to Project Interface Manager (PIM).
- Is developed for Client, Contractor(s) and subs (suppliers/vendors).
- Example of a project life-cycle is: Pre-FEED/FEED, Detailed Engineering, Procurement, Construction, Installation & Commissioning (EPCIC).
- This presentation summarizes the scope of Interface Management, procedure, systems & processes, where appropriate?
- On mega-projects, how it is implemented? Across Continents in different time zones and in multi-cultural environments? And, finally the . . . .
- **Key to successful interface is frequent and effective Communication.**

- PS: On small projects the functions of Interface Management are inherent and there is no need to assign a dedicated ‘Project Interface Manager (PIM)’, the functions are performed the troika of Project Manager (PM), Project Controls Manager (PCM), and the Engineering Project Manager (EPM). Follow up actions are assigned to the Project Administrator.
Project Interface Management (PIM)

Manage Interfaces via enhanced Communication

Multi-discipline communication, it's colorful!

Open doors... Communication is the key.

Communication is the key in Project execution!

Develop friendly culture of communication among project teams!

Nope! Not this way!

Courtesy: Internet - Cartoons

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www.wisonfs.com
### Interface Management Plan – Contd/-

- Is utilized to manage the interfaces between all parties involved during project execution.

- Is employed to incorporate processes, tools, and organizational structure. The Interface Management System tools consist of an Interface Data Register, a Tie-in Point Register, an Action Item Register, and an Interface Query & Response Form and other as needed associated Registers.

- Later in the project the interface system is developed to incorporate delivery control, status of equipment, fabrication and finally the management of lessons learned.


### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>PIM</td>
<td>Project Interface Manager</td>
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<tr>
<td>FEED</td>
<td>Front End Engineering &amp; Design</td>
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<tr>
<td>HSSE</td>
<td>Health, Safety, Security, Environment</td>
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<tr>
<td>IDR</td>
<td>Interface Data Register</td>
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<tr>
<td>IQR</td>
<td>Interface Query &amp; Response</td>
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<tr>
<td>KPI</td>
<td>Key Performance Indicators</td>
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<tr>
<td>TIP-0xx</td>
<td>Tie-In Points Register</td>
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<tr>
<td>PMT</td>
<td>Project Management Team</td>
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<tr>
<td>SPOC</td>
<td>Single Point Of Contact</td>
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Table: Interface

- Interface: An interface is a situation or location where independent work areas, organizations or systems meet and act on or communicate with one another.

- Interface Management Plan: The plan describes PMT methods and strategies for managing internal and external interfaces. Also provides for control of associated interface processes as the project develops through engineering, equipment procurement, construction, installation and closeout.
**Offshore Oil & Gas Projects**

1, 2) Conventional Fixed Platforms; 3) Compliant Tower; 4, 5) Vertically Moored Tension Leg and mini-Tension Leg Platform (TLP); 6) Spar; 7,8) Semi-Submersible Drilling & Production /FSO; 9) Floating Production, Storage & Offloading Facility (FPSO); 10) Sub-Sea completion and tie-back to host facility.
Interface Management Encompasses Entire Project Life-Cycle

Interface Management Covers All Facets of Project Management

- Project Integration Management
- Project Scope Management
- Project Time Management
- Project Cost Management
- Project Quality Management
- Project HR Management
- Project Communications Management
- Project Risk Management
- Project Procure Management
Interface Categories

- **External Interfaces**
  - Occur between Contractor & Client and their external org/entities.
  - Outside of the Contractor’s responsibility (If specified by Client).
  - Cross scope boundaries of two or more Delivery Teams and/or Development Systems, (Ex. PL contractors for Export Lines, etc.)
  PS: For Client and their sub-contractors these are internal interfaces.

- **Internal Interfaces**
  - Occur within work areas of Contractor’s responsibility.
  - Allow flow of information, identify Recipient and Responder.
  - Occur between the disciplines, e.g., Engineering, Construction, Quality, Procurement, Project Services, Commissioning, etc.
  PS: This includes Project Controls, Document Controls and any of Contractor’s suppliers / vendors.

Note: Looking from Contractor’s & Client’s view point and vice versa.
**Interface Types**

- **Tangible or Hard Interfaces**
  - Have a physical connection such as a structural steel connection, pipe termination, or cable connection, Ex. Tie-In Points.

- **Intangible or soft interfaces**
  - Involve only the exchange of information such as design criteria, clearance requirements or utility needs between Delivery Teams or between a Delivery Team and an external party.

- **Technical interfaces**
  - Are tangibles or hard interfaces that occur within structures, systems and equipment, Ex. Tie-In Points.

- **Execution interfaces**
  - Occur when different contractors conduct their scope of work in series with interfaces that are dependent on each other or simultaneous when concurrent activities impact each other. (Here Construction Manager is in lead).

- **Organizational Interfaces**
  - Result in a significant loss/gain in schedule or capital to the originating Delivery Team or to the project in general.

- **Critical interfaces**
  - Result in a significant loss/gain in schedule or capital, those not performing have potential to negatively impact project performance.
### Definitions as applied in Interface Management System

<table>
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<th>Term</th>
<th>Description</th>
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<tr>
<td>Management of Change - (MOC)</td>
<td>A process by which all temporary and permanent changes, which occur after a freeze point (e.g. HAZOP), to organization, personnel, systems, procedures, equipment, products, materials or substances will be evaluated. The process manages these changes to ensure that health, safety, and environmental and Integrity Management risks arising from these changes remain at an acceptable level.</td>
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<tr>
<td>Recipient</td>
<td>The organization / person receiving the information; typically the originating delivery team (Discipline).</td>
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<tr>
<td>Respondent</td>
<td>The designated interface owner who is the person responsible for ensuring that an interface issue is properly assessed and responded to by the responding Delivery Team by the required date (Discipline).</td>
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<tr>
<td>SPOC</td>
<td>Single Point of Contact is a designated position responsible for implementing an effective interface process within team. Accountability lies with the Interface Manager however a delegate may be appointed to perform day to day functions.</td>
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<tr>
<td>Support Teams</td>
<td>Support Teams include HSSE, Regulatory, Engineering, Project Services, Commercial, Risk and Interface Management.</td>
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<tr>
<td>Tie-In Point Register - (TIP)</td>
<td>Spreadsheet for logging and tracking physical connection points (x, y, z coordinates) between platform elements, Ex. Piping, I&amp;E, Struc, etc.</td>
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Interface Management System

- Interface Management Plan
- Responsibility Matrix
- Interface Register
- Interface Meetings
- Technical Query Register
- Weekly Interface Report
- Action Items Register
- Outstanding Work Register
- Open Deficiency Register
- Lessons Learned Report

**Interface Management system is used to manage:**

- External interfaces between Client and Contractor(s), between Client and their subcontractors, and
- Internal interfaces within Contractor’s disciplines, for the project execution.

Courtesy: WISON Group – QMS / Presentations

www.wison.com
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Deepwater Systems

- Fixed Platform (FP) (to 1,650 feet)
- Compliant Tower (CT) (1,500 to 3,000 feet)
- Sea Star (SStar) (600 to 3,500 feet)
- Floating Production Systems (FPS) (1,500 to 6,000 feet)
- Tension Leg Platform (TLP) (1,500 to 7,000 feet)
- Subsea System (SS) (to 7,000 feet)
- SPAR Platform (SP) (2,000 to 10,000 feet)

Courtesy: Source: U.S. Minerals Management Service, Gulf of Mexico Region, Offshore Information, October 1999

 Courtesy: Wison Floating Crane

 Courtesy: Wison TLP Design
Project Interface Management (PIM)

Interface Management Information Flow Chart

COMPANY Responsibility Matrix
COMPANY Interface Register
COMPANY Progress Reports
COMPANY Close out Report

INTERFACE SYSTEMS

Interface Management Plan
Responsibilities Matrix
Interface Register
• Project
• Regulatory
Weekly Interface Report
• KPI’s
Technical Query Register
Tie-In Points Register
Outstanding Work Register
Vendor Close out

Interface Meetings
• Client
• Regulatory
• 3rd Party
Project Meetings
Technical Queries
Project Drawings
Final Deliverables

Action Items Register
Interface Meeting Minutes

Project Start-up

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STRATEGIES OF INTERFACE MANAGEMENT PLAN

- Ensures all interfaces between the various parties are identified and controlled to ensure integrity between the different elements associated with the project.
- Maintains up-to-date Interface Registers and forms bridge between various parties involved in the execution of the Project.
- Defines precisely the interface requirements associated with each party involved in a particular interface.
- Defines the responsibilities for the parties involved with the interface so that individuals can be assigned and made accountable to follow-up the required actions.
- Monitors the transfer of information relating to interfaces between the relevant parties, including Risk Identification & Mitigation Management, and VEP (Value Engineering & Constructability) Programs.
- Monitors the status of the interface actions to enable active follow-up if necessary by the Project Management Team, including potential change requests, variation requests, etc.
- In short, creates an environment to minimize loss of revenue.
Project Interface Management (PIM)

Courtesy: A typical offshore Oil/Gas platform; www.wikipedia.org

Courtesy: A typical jacket platform / Encana Natural Gas, Panuke, Canada
Project Interface Management (PIM)

External
- COMPANY Interface Manager
- MPDR Contractor
- Subsea Contractor
- Flowline Installation Contractor
- Class Society
- Marine Warranty Surveyor

Internal
- Yankee DTU’S Project
  - Engineering
  - Fabrication
  - Transport
  - Installation
- Contractor Interface Manager
- Engineering Managers & Leads
- PMT
  - Hull Engineering
  - Topsides Engineering
  - Tendon Engineering
  - Riser Engineering
  - Foundation Engineering
  - Fabrication Management
  - Marine Engineering
  - Commissioning Engineering
  - Installation Engineering

External – Internal Interface Structure

Courtesy: WISON Group – QMS / Presentations

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**INTERFACE MANAGEMENT FRAMEWORK – (1 OF 2)**

**Interface Identification**
- All interface issues and activities identified by any of the interfacing parties are captured. Items may also arise from various sources, including interface meetings, risk workshops, review of contractor Document Registers, interface planning, and needs identified as the Project progresses.

**Interface Responsibility Matrix**
- Is developed and executed for project work scope for all interfaces, and particularly the tangible or hard interfaces.

**Interface Query and Response Form (IQRs)**
- Is initiated for each open interface item with parties involved for their external and critical internal interfaces. Is used to document details of an interface, request interface information from another organization (Respondent) with due date and priority, and/or formally closeout an interface. Delivery Teams will agree among themselves on which organization (Respondent) is responsible for supplying the interface information and which organization is the receiving organization (Recipient).
INTERFACE MANAGEMENT FRAMEWORK – (2 OF 2)

Interface Data Register (IDR)

- Interfaces are managed between parties via an Interface Data Register (IDR), all interfaces are recorded, monitored and controlled. (Use Excel spreadsheet or PIM modules).
- Each interface item has unique ID & sequence number.
- IDR is a “live” document, updated continually throughout the project life cycle.
- Format the IDR to transfer data associated with an interface on to an Interface Data Sheet (IDS), a convenient means to transmit interfaces to concerned parties; hard-copy file or email attachment.
- Sorted and updated IDR is transmitted regularly and prior to Interface Meeting conducted by PIM; attendees could be in person or via Conf-call & include the Interface Coordinators / Engineers of concerned parties (SPOC’s).
- Revisions & updates are entered into copy IDR and returned to the PIM for inclusion in ‘Master’ Interface Data Register.

Interface Kick-Off & Weekly Meetings

- Conduct KO-meeting, and then regularly schedule and participate in Interface Meetings with Client(s), Contractors, Vendors, Discipline Leads, & concerned attendees as required.
- Review outstanding interface issues, record in the IDR, agree on means to resolve issues, set new target dates or revise, record action items with due dates.
Not that short!

"Everyone here? Good. Meeting topic: Setting world record for shortest meeting. All in favor say aye. Ayes have it. Meeting over."

"I've called this meeting to discuss absenteeism."

Rick Khadimally conducting an Interface Meeting, . . Ha Ha!

Not when you feel bored!

Courtesy: Internet Cartoons.misc / images
Project Interface Management (PIM)

METHODOLOGY - PROCESS PRINCIPLES

- Prime objective of interface management is to improve business (project) performance, avoid surprises, and reduce frequency of poor outcomes.
- Achieve objectives through robust process, manage and assure flow of critical information in a timely manner between the various project Development Systems.
- Support the proactive management ‘culture’ that empowers team members to follow the system and resolve mismatches between parties.

Interface Management Plan is based around following principles:

- Achieve clear project organization, prompt communication methods, adequate plans and procedures, correct communication structure, face-to-face discussions, person-to-person formal/informal interactions, scheduled group meetings (Breakout Sessions), etc.
- Improve interface management team’s roles & responsibilities; incorporate full understanding of interface accountability, responsibility and respective contractual interfaces within the Project.
- Assign a Single Point of Contact (SPOC) with authority and/or responsibility to ensure that interfaces are fully controlled within their team.
- Ensure that interfaces are identified early, cataloged and updated regularly.
Project Interface Management (PIM)

Courtesy: Goldeneye Gas Platform, North Sea Northern, UK

Courtesy: www.altinex.ca/subsea
RESPONSIBILITY FOR INTERFACES – (1 OF 2)

**Project Director (PD)**

Its Interface responsibilities are:

- Single point accountable for successful execution of Project with quality of work, maintenance of schedule, within budget and profit margins, and Client satisfaction from commencement to close-out.
- Ensures that interface management process is appropriate, well established and maintained; project decisions take account of outputs from the interface management process.
- Responds to key non-performing interfaces, risks (threats and opportunities) to respective Managements.

**Discipline Lead (DL)**

Reports to respective discipline manager,

- Has technical responsibility and accountability for particular interface identification and integration,
- Checks validity/correctness of inputs generated from within discipline, checks and ensures timely information received from other parties,
- Identifies new or ancillary interfaces generated that are not already covered in the IDR, circulates copy of latest & sorted IDR within discipline on regular basis,
- Ensures timely responses & regular updates on copy IDR are transferred to PIM.
RESPONSIBILITY FOR INTERFACES – (2 OF 2)

Project Interface Manager (PIM)

Reports to and is connected to PD at hip-level:

- Manages identifies and resolves internal & external interfaces with respective Client and Contractor(s) teams.
- Develops and implements a robust Interface Management program including plan(s) and supporting procedures.
- Ensures interface agreements are developed and all actions are implemented and closed, coordinates the identification and management of interface technical data.
- Prioritizes delivery team’s focus to support regulatory submittals and approvals, drives the interface management process and is the owner of Master Project Interface Register.
- Provides training to project team to improve the efficiency, elevates critical & non-performing interfaces to PD.
- Owns the Interface Management Plan procedure, Interface Data Register, Tie-in Point Register, Action Item Register, Query Register and Query Forms, regularly distributes copy of sorted Interface Registers to relevant & concerned parties, identifies and enters new items not already covered in IDR.
- Implements continuous updates into the Registers, reports to the PD.
<table>
<thead>
<tr>
<th>Sr. #</th>
<th>Forms &amp; Templates (Interface Management System Tools)</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Interface Management &amp; Control Procedure</td>
</tr>
<tr>
<td>2</td>
<td>Interface Responsibility Matrix Template</td>
</tr>
<tr>
<td>3</td>
<td>Interface Query &amp; Response (IQR) Form</td>
</tr>
<tr>
<td>4</td>
<td>Interface Registry Template</td>
</tr>
<tr>
<td>5</td>
<td>Tie-In Points Register (TIP) Template</td>
</tr>
<tr>
<td>6</td>
<td>Value Enhancement Plan (VEP) Form</td>
</tr>
<tr>
<td>7</td>
<td>VEP Register Template</td>
</tr>
<tr>
<td>8</td>
<td>Technical Query Procedure</td>
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<td>9</td>
<td>Technical Query (TQ) Form</td>
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<tr>
<td>10</td>
<td>Technical Query Register Template</td>
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<tr>
<td>11</td>
<td>Design Change Register Template</td>
</tr>
<tr>
<td>12</td>
<td>Outstanding Work List (OWL) Register</td>
</tr>
<tr>
<td>13</td>
<td>Lessons Learned (LL) Database Entry</td>
</tr>
</tbody>
</table>

PS: A short group discussion on forms and templates
About the Speaker:

Rafiq Khadimally, PMP | Interface Manager

Mr. Khadimally has managed the crucial aspect of Interface Management on major Oil and Gas Projects for nearly three decades. Throughout his career he has performed this role on TLP, Semisubmersible, SPAR and Offshore Drill-Rig projects for SBM Atlantia and J. Ray McDermott, before joining WISON. Additionally he has served in Project Management and Engineering capacities on several major Oil Refinery Projects. He holds an MBA in Global Energy, B.S. in Mechanical Engineering, and is project management certified as PMP.
Questions?

Thank You!