

IO2 Integrated Planning & Logistics

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Trondheim - March 6th 2014





CENTER FOR INTEGRATED OPERATIONS IN THE PETROLEUM INDUSTRY



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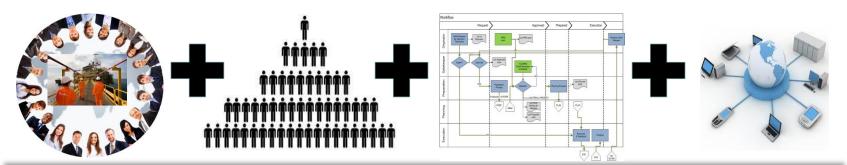
Industrial partners in the Center for Integrated Operations in the Petroleum Industry:







IN SHORT, OUR DEFINITION OF INTEGRATED OPERATIONS



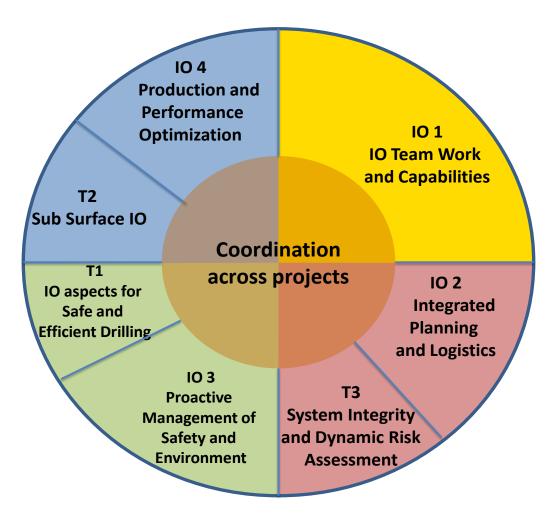
Integrated Operations (IO) is the integration of people, organizations, work processes and information technology to make smarter decisions. It is enabled by global access to real time information, collaborative technology and integration of multiple expertise across disciplines, organizations and geographical locations.







IO- phase 2







PROJECT ACTIVITY DESCRIPTION 2014

PROJECT:

Case study: Petrobras - How to improve IPL practices based on "The IPL Lab" concept An IPL Learning Lab pilot will be carried out including development, execution and evaluation. Evaluation and further development of the IPL Learning Lab will be done to prepare for possible implementation in several units. Delive rables: workshops/ training seminars, evaluation reports, contributions to "The IPL Learning Lab." concept, one master thesis (two master students), one paper Case study Aker Solutions- IPL from a subcontractor's perspective In- depth studies of planning practices focusing on the GAP between expectations to planning, plans and the planner role and actual planning practices. Improvement activities based on in-depth studies- e.g. organized as an IPL Learning Lab pilot Evaluation of improvement activities Deliverables: workshops, reports, contributions to "IPL Learning Lab" concept, three master thesis (5 master students), two papers **Case study: Statoil** – Improving IPL, focusing on the planning processes Activities related to implementation of IPL in Statoil based on collaboration with the unit Future Operations and the units involved in IPL. Focus is on improvement of the planning processes. Deliverables: workshops, reports, contributions to "IPL Learning Lab" concept, one master the sis (2 master students), one paper The IPL Learning Lab: The IPL Learning Lab – development of a client-focused collaborative space supporting the development and implementation of Integrated Planning and Logistics practices. It is based on tailoring of learning arenas and modules to specific needs of groups and roles within organizations'. The IPL Storyboard- development of a collection of "IPL best practices" and lessons learned. The objective is to utilize the "stories" in the industry for learning and improvement of their IPL practices, based on experiences from several companies showing how they have succeeded in handling challenges related to IPL. This will constitute a database where the structure is based on the IPL Model. This will be based on already collected information in our pilots in addition to information which needs to be gathered from other industry partners. IPL eBook: This will be a main activity in 2014 to document/disseminate the result of the IO2 work. The target group is the industry partners and the work will be based on collaboration with industry partners/reference group. Deliverable: eBook containing short articles focusing on the seven IPL-capabilities PhD activities: Kristin Halvorsen will complete her work in June 2014. Research topic is: Decision Making in Cross-Professional Team, Deliverables in 2014: PhD thesis including four articles Harald Rødseth will continue his work in 2014 and 2015. Research topic is Integrated Planning – A novel concept for planning for technical condition, Delive rables in 2014: min. two articles

 Eric Fernandez Questa will continue his work in 2014 and 2015. Research topic is: Optimization of logistics. Deliverables in 2014: min. one article





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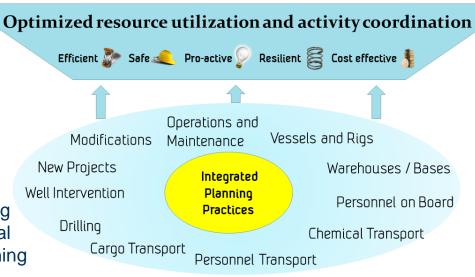
Defining Integrated Planning (IPL)

Integrated Planning (IPL) is defined as *holistic, cross-domain planning* enabling optimal resource allocation and activity prioritization for safe and efficient production.

IPL involves integrating a range of plans:

- production plans
- logistic plans
- project plans
- maintenance plans
- drilling plans
- etc.

With the improved ability to coordinate activities across disciplines and between different planning levels, IPL provides a live and holistic operational picture. This in combination with improved planning processes and roles description. We call these practices Integrated Planning Practices.











The IPL Model - A holistic perspective

Organizational and Technical Enablers:

Organizational tools that are designed and implemented for rendering the organization capable of achieving IPL.

- ICT
- Roles & Processes
- Arenas for Plan Coordination



Human & Cultural Capabilities:

Cultural and personal abilities that need to be developed and cultivated over time in order to realize the value potential in IPL.

- Commitment
- Competence
- Collaboration
- Continuous Learning





The Statoil Case, 2013-14

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Collaboration with the internal Statoil project LERC

- **Report**: Analyses of the logistical planning in Statoil, January 2013
 - White Paper: Integrated Planning and Logistics under stable and unstable conditions, February 2013
 - Master Thesis : Planning and disruption challenges in the logistical offshore supply chain based on a simulation model by Gry M. Oleivsgard, June 2013

Collaboration with Future Operations

collaboration arenas: operational planning meetings & POG-meetings- developing and implementing a "best practice" (including Master Thesis)

 Innovation Forum 2013 – collaboration between UC Berkeley, Statoil & IO2- Lean & Last Planner

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Report
Analyses of the logistical planning in Statoil
Integrated Plenning and Logistics
Authors Grethe Oxborg Ose, Lone Sietbakk Ramstad and Kay Endre Fjortoft
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Norwegian Marine Technology Research Institute Marine Transport Systems 2020-047

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The Petrobras Case, 2013

Extended As-Is and To-be studies:

- Report D2, April 2013
- Report D3, September 2013

The report's main objective is:

- Supplement previous As-Is investigations of IPL practice within
- Provide recommendations for To-Be
- Provide some examples of IPL best practice
- Basis for design of the IPL Learning Lab pilot in 2014

 Master thesis: Routing and Scheduling of Platform Supply Vessels, Friedberg & Uglane, May 2013

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Report – D2

An AS-IS description Integrated Planning at Petrobras – findings from Unit of Operation Espirito Santos (UO-ES)

Integrated Planning and Logistics

Authors Even Ambros Holte and Kay Endre Fjørtoft, MARINTEK



Norwegian Marine Technology Research Institute Maritime Transport Systems 2013-04-22





The Aker Solutions Case, 2013

Collaboration with Statoil M&M Contract

- Report: Planning Practices in Aker Solutions , July 2013
 - Including planning practices internally and in the interface between Aker Solutions and Statoil
- Report: The IPL Screening of Aker Solutions , Statoil M&M Contract

In -depth studies 2013-2014

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- Ongoing work expectations to plans, planning and the planner role vs. compared with how planning and the roles are actually executed
- Master Thesis: Lean Design Management in Aker Solutions Concept Studies, Nawras Skhmot, August 2013

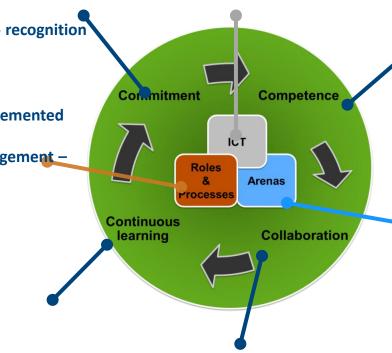


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	The IPL Screening of Aker Solutions
	 a summary of main findings
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Main challenges in the interface

- 1. Too many ICT systems which are not integrated
- 2. Too much data on detailed level and rigid structures for reporting
- 3. Tools do not offer scenario planning (consequences of plan changes)



- 1. Lack of IPL competence in general
- Lack of understanding of interdependencies/consequences
 Planners IPL competence and practice differs substantially
- 4. Differential interpretation of Contracts within and across organisations

1.

Few procedures for crossorganizational collaboration for IPL

- Defined participants do not participate in meetings (what to do & how)
- **3.** Lack of participants with offshore experience
- 4. Communication channels are few

- 1. Lack of commitment to plan and the planning process unpredictability
- 2. Lack of commitment to roles and units
- 3. Contractual community- recognition & trust vs. control
- 1. Lack of designed or/& implemented processes for IPL
- 2. Processes for change management different interpretations, bureaucratic and resource demanding
- 3. Responsibilities and "Micromanagement"
- 1. Lack of common arenas for discussing contractual interpretations
- 2. Historical data are not applied for learning
- Should also focus upon training between the disciplines and in



- 1. Operators have "many voices"
- 2. Operators participation crucial to define & agee on scope
- 3. Detailed control vs. problem solving
- 4. Collaboration as a *subjective* KPI



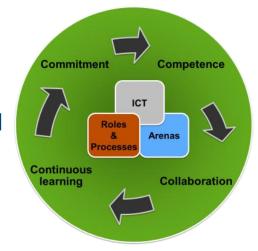
"The IPL Learning Lab"- Methods/ tools for improving IPL practices

The IPL Learning Lab is a client-focused collaborative space supporting the development and implementation of Integrated Planning and Logistics practices.

- A structured approach for jointly creating, refining and applying robust and adaptive IPL practices
- Content and structure tailored to company-specific needs and IPL maturity
- A creative environment to support mutual exchange of knowledge and experience

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 Events crossing industry and company boundaries (workshops, seminars, conferences, courses, etc.)





The IPL Learning Lab main focus



- Establish a shared understanding and definition of Integrated Planning and Logistics (IPL)
- Identify main challenges related to IPL within and across disciplines and organizations
- Identify recommendations for improved IPL practice according to the IPL model (i.e. technical & organizational enablers, human & cultural capabilities)
- Provide an arena for IPL advancement, facilitating experience exchange and R&D activities.
 - Including methods and tools
- Facilitate identification of key learning points and success-factors





The IPL Learning Lab Phases

Phase 1 Definition of Scope and Objectives

Phase 5 Debrief and Follow-up

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Phase 2 AS-IS investigations

Phase 4 Roadmap implementation Learning by Doing Phase 3 IPL Topics and Case Studies



IPL Learning Lab Toolbox



Definition of scope and

The IPL Toolbox

- The IPL Model
- The IPL Screening Tool
- The IPL Handbook
- The IPL eBook
- Interactive Resources (App ...)
- IPL Workshops
- IPL Storyboard

uction to IPL descriptions

Learning by doing

De-brief and Follow

IPL Topics/ case studies To-Be descriptions



