Applying Open Standards in Oil Spill Responses

George Percivall, OGC Chief Engineer
Bart de Lathouwer, OGC Director Interoperability Program
Athina Trakas, OGC Director European Services

SLC Paris
18th February 2014
Pipeline map: Any incidents near you? From small to large-scale spills to fires, explosions & worker deaths

By Michael Pereira, CBC News Last Updated: October 22, 2013
Oil Industry Response to Deepwater Horizon

- Oil and Gas Producers (OGP) formed a 3-year Joint Industry Project (JIP) funded by oil industry members.
- Oil Spill Response JIP managed by IPIECA for OGP based on its long-standing experience with Oil Spill Response.
- OSR JIP composed of several Work Programs (Wps)
  - WP1 - In-Water Surveillance
  - WP2 - Surface Surveillance
  - WP3 - Modelling & Prediction
  - WP4 - Metocean Databases
  - WP5 - GIS/Mapping and Common Operating Picture

http://oilspillresponseproject.org/
OSR JIP WP5
GIS/Mapping and Common Operating Picture

• Produce a Recommended Practice for GIS/Mapping
  • Support of Oil Spill response using of GIS technology
  • Geo-information in a “Common Operating Picture” for management of the response

• OGP and IPIECA choose OGC and RDI to lead an open process to develop a recommended practice based on open standards

• The OGC Interoperability Program
  • An essential part of OGC’s fast, effective, inclusive user-driven process to develop, evolve, test, demonstrate and promote OGC Standards.
OGC IP Introduction

Link to Video:  http://www.opengeospatial.org/ogc/programs/ip
OGC Concept Development

- Initiative to assess emerging technologies & architectures to support interoperability initiatives and open standards.

- **Process**
  1. **Request for Information (RFI)**
     - Wide request for input on relevant technologies and open standards
     - RFI contains draft Recommended Practice
  2. **Engineering Workshops**
     - Workshop to discuss and advance the concepts in the RFI
     - Workshop participants selected from the RFI Responses
     - Engineering Report of open standards and architecture views
     - Describe implementations indicating feasibility and maturity
OGP/IPIECA
Oil Spill Response COP
Concept Development
OGP-IPIECA Oil Spill Response COP

• Oil Spill Response Common Operating Picture
  • Request for Information (RFI) – Responses due 30 October 2013
  • Engineering Workshops – Dec 2013 in UK, January 2014 in USA
  • Prepare a Reference Architecture and Feasibility Report, 2014

• Team
  • OGP (International Association of Oil and Gas Producers)
  • IPIECA (Global oil and gas association for environmental and social issues)
  • Resource Data Inc. (RDI)
  • OGC
Common Operating Picture (Incident Command)
A COP is established and maintained by gathering, collating, synthesizing, and disseminating of incident information to all appropriate parties involved in an incident.

Achieving a COP allows on−scene and off−scene personnel to have the same information about the incident, including the availability and location of resources, personnel, and status of requests for assistance.

Additionally, a COP offers an overview of an incident thereby providing incident information which enables the Incident Commander (IC), Unified Command (UC), and supporting agencies and organizations to make effective, consistent, and timely decisions.

In order to maintain situational awareness, communications and incident information must be updated continually.

Having a COP during an incident helps to ensure consistency for all emergency management/response personnel engaged in an incident.
Common Operating Picture

Blockchain

OSR Enterprise Viewpoint

Oil Containment & Recovery Data

Location and Status of Response Assets

Procurement Status

Spend & Payment Tracking

Claims and Recovery

Finance & Logistics

Operations

Common Operating Picture (Incident Command)

GeoSpatial COP

Planning

Response Objectives and Tactics

Spill Trajectory Modelling

Sensitive Areas Protection Plan

Resource ETA & Capability

Aerial Surveillance & Control

ROY Data & Imagery

Satellite Imagery with Coordinates

Map Overlays & Video Feed

Situation Status Reports
Oil Spill COP Workshops


- Objectives of the Stakeholder Workshops:
  - Review responses to the Request for Information
  - Engage the stakeholder community in discussion
  - Refine the focus for the Recommended Practice

### UK Workshop
- December 19, 2013
- Hosted by ExxonMobil,
- 47 people registered

### US Workshop
- January 9, 2014
- Hosted by Shell
- Houston, Texas.
- 68 people registered
Responses to the Oil Spill COP RFI

• ASA Science
• Astrium
• EMSA
• ERM
• Esri
• Finland SYKE
• GeoCento
• Jacobs Univ.
• IHO

• MDA
• MWCC
• NOAA ERMA
• Oceaneering
• Primal Innovation Tech
• SINTEF
• Terradue
• Witt Obriens
• 34 North
Oil Spill COP Recommended Practice

• By March 2014: Recommended Practice Outline – based on RFI
  – Enterprise Viewpoint (COP Definition, Users, Scenarios)
  – Information Viewpoint (base map & reference information, drill & incident information)
  – Delivery/Services Viewpoint (Web Services, Schemas & Encodings, disconnected users, records retention etc.)
  – Deployment Viewpoint

• Major Emphasis
  – Data Types, Map Templates, Symbology
  – Data Types Task Team; Application Schema/Data Models
  – Portal Based; Funneling inputs into a dashboard.
  – Coordinate with other JIPs for surveillance and modeling
  – “Deployment View” added; basis for planning drill/exercise