Silent Inspector - Potential Applications for Latin America

James Clausner

- US Army Engineer Research and Development Ctr
- 601 634-2009
- james.e.clausner@erdc.usace.army.mil
Silent Inspector (SI)

Improved dredging contract administration through public-private partnership for an automated inspection system
Corps Dredging Statistics

- 200+ Contracts Annually
- Contract Dredging, 80+% of 200M cubic meters
- $900 M total, $500M+ Contract
- More scrutiny, more data, reduced staff
- Silent Inspector
  - Start 1990, Industry partner
  - Initial application in 1999
  - Corps-Wide Implementation 2006
  - Investment >$5M
- Bottom Line – Better and Faster Contract Monitoring
Silent Inspector – What Does it Do for Dredging Managers - Basics

- Where
- When
- How Deep
- How Much
- How efficient
- Where was it Placed
Contractor Benefits

- Reliable digital record of operations and performance
- Minimize disputes
- Faster dispute resolution
- Reduced paperwork and reporting burden on contractors
- Consistent requirements
Port/ Government Benefits

- 24x7 coverage of operations
- Flexible scheduling of human inspectors
- Fast response to public and environmental inquiries
- Reduced claims
- Better government estimates and planning studies
How does it work?

- Uses contractor’s sensors and instrumentation
- Corps does QA and analysis
- Contractor hardware - Corps Software
- Contract specs provide detailed implementation guidance
What does it do?

- Records data from contractor’s computers
  - Every 10 seconds
- Produces reports based on actual dredge performance
- Data stored in sophisticated relational database
SI District Concept

Site office - Dredging Data, Daily Reports, Surveys, Project, contract info only on projects in AOR

Contractors provide QCR and daily reports

- DB Server
- Contractor
- Removable Storage
- Links to other DB's

District office - Reports, Surveys?, Project info for all projects
Using the SI

- Production / Operations Assistance
  - Cycle Time, load, digging depths, position

- Environmental
  - Depths, Turtle & Fish operating restrictions
  - Disposal site monitoring
  - Dredge Leakage
Hopper SI Measurements
SI On-dredge display
TONS DRY SOLIDS

Continuous IDS Data - DAC No: 99 C-0009

- Tons Dry Solids (Tons)
- Empty Displacement
- Loaded Displacement

Time:
- Feb
- Mar
- Apr
- May
- Jun
- Jul
Turtle Monitoring
SI Scows

- Corps standard spec – competitive sources
Scow & Hopper Tracking
Pipeline SI Measurements
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<tr>
<th>Production</th>
<th>Time and Distance</th>
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<tr>
<td>Prod Meter (Lt)</td>
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<tr>
<td>1713</td>
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<td>Dredging (00:24)</td>
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<tr>
<td>1689</td>
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<tr>
<td>Bin density (g/cc)</td>
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| Ullage and Hopper             |                  |
|-------------------------------|                  |
| Empty                         |                  |
| Displacement (Lt)             |                  |
| 7912                          |                  |
| Volume (cyds)                 |                  |
| 1140                          |                  |
| Loaded                        |                  |
|                               |                  |
| Empty                         |                  |
|                               |                  |
| Loaded                        |                  |
|                               |                  |
|                               |                  |

| Total                          |                  |
|                               |                  |
| Empty                         |                  |
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|                               | 05:36             |
Cell Phone Message

[Diagram showing the process of handling cell phone messages through SI Mail Robot and database integration.]

- **SI Mail Robot** connected to
  - Internet SMTP Messages
  - SMS Messages
  - Email Messages

- **SI Database** connected to
  - Client Server Applications
  - Web Pages

- **Device Display**:
  - **Urgenze: Sample 1**
  - **L# 156 #Aims: 0**
  - **Load LT: 1768**
  - **TTime: 4:45**
  - **Options**
  - **Back**
http://si.wes.army.mil
Requirements for SI Application

- **Infrastructure**
  - Satellite Phone System (Real Time)
  - Internet

- **Volume**
  - Approximately $100M to justify investment
  - Lesser systems possible
Mr. Stephen Collinsworth

- ERDC (Corps) Latin American Liaison
- Mobile, Alabama
- Stephen.R.Collinsworth@sam.usace.army.mil
- (251) 690-2042
The End