Horizon Lines Active RFID Container Tracking Program

An Ocean-Container Shipping Industry First
Horizon Lines, Inc.

- Horizon Lines, LLC
- Horizon Logistics, LLC
- Aero Logistics
- Horizon Lines of Guam
- Horizon Services Group
- Sea-Logix
- Hawaii Stevedores, Inc.
Horizon Lines Services
Enhanced Equipment Visibility

- Container Stuffing and Seal-on at Origin Factory
- Trucking from Factory to Port Terminal
- Port of Load
- Ocean Move
- Container Seal-off at Destination DC
- Trucking / Rail from Port Terminal to Destination
- End-To-End Visibility

Enhanced Equipment

HORIZON SERVICES GROUP
TRANSPORTATION SYSTEMS

ALASKA DIVISION
RFID Project Key Events
RFID Project Key Events

**Project Start**
April 4, 2006

**Vendor Selection**
May 25, 2006

**Start Site Surveys**
July 8, 2006

**RFID Sightings in TOMS**
NetCaptain for SAFEWAY
October 1, 2006

**SPAN Goes Live**
January 14, 2008

**Begin Reader Installs**
August 14, 2006

**SAFEWAY Presentation**
June 8, 2006

**Tacoma Express RFID Enhancement**
August 11, 2008

**Application/Infrastructure design-deployment-integration**
Vendor Selection

Sampling of Identec’s customer base
Infrastructure
Container with Active RFID Tag

- Tags set to beacon every five seconds
- Can be read as far as 600 feet @ 65 MPH
- Internal battery lasts 4-5 years at operating temps -40
RFID Components
Small Signature

NEMA enclosure for housing components outdoors
RFID Reader Infrastructure

Washington Reader Deployments
- Safeway DC
  Bellevue, WA
- Port of Tacoma
- Safeway and Span DC’s
  Auburn, WA

Ports
- Anchorage
- Kodiak
- Dutch Harbor

Anchorage and Wasilla
Safeway DC & Storefronts
Span Warehouses

Span Warehouse

Alaska Reader Deployments
- Safeway Storefront
  North Pole
- Alaska DOT Sites
  Fox
  Ester
  Fairbanks
  Healy
  Houston
  Knik Arm
  Turnagain Pass
- Turnagain Pass

HORIZON LINES
ALASKA DIVISION
Tacoma Terminal RFID Reader Coverage

5.1 Overhead View of Tacoma Horizon Facility

Building Locations Marked

Coverage Area:

Travel direction

GATE Lanes

Overhead view of site - Courtesy of Google Earth
Anchorage Terminal
RFID Reader Coverage
Safeway DC RFID Reader Coverage

[Image of an aerial view of a warehouse with a red line indicating coverage area and a not used section labeled]
An RFID reader can be deployed to capture containers as they travel in and out of a distribution center.
Safeway’s Auburn, WA Distribution Center
Alaska Highway RFID Reader Site

Reader & Comms Device Inside

Transportation & Public Facilities
Road Weather Information System
rwiss
erways

ALASKA DIVISION
Application Integration
<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>SCI</th>
<th>STA</th>
<th>Location</th>
<th>Carr</th>
<th>Resource</th>
<th>MAJ/MIN</th>
<th>User</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFID Sighting</td>
<td>10-19-2007 04:18 ET</td>
<td>80</td>
<td>I</td>
<td>Auburn</td>
<td>ULIG</td>
<td>SWAY Pacific Ave Gate</td>
<td>TAC/ULIG</td>
<td>(RFID)</td>
<td></td>
</tr>
<tr>
<td>RFID Sighting</td>
<td>08-25-2007 12:59 ET</td>
<td>80</td>
<td>I</td>
<td>Auburn</td>
<td>ULIG</td>
<td>SWAY C-Street Gate</td>
<td>TAC/ULIG</td>
<td>(RFID)</td>
<td></td>
</tr>
<tr>
<td>RFID Sighting</td>
<td>08-24-2007 02:58 ET</td>
<td>80</td>
<td>I</td>
<td>Bellevue</td>
<td>ULIG</td>
<td>SWAY 124th St Gate</td>
<td>TAC/ULIG</td>
<td>(RFID)</td>
<td></td>
</tr>
<tr>
<td>RFID Sighting</td>
<td>08-30-2007 04:23 ET</td>
<td>80</td>
<td>I</td>
<td>Auburn</td>
<td>ULIG</td>
<td>SWAY Pacific Ave Gate</td>
<td>TAC/ULIG</td>
<td>(RFID)</td>
<td></td>
</tr>
<tr>
<td>RFID Sighting</td>
<td>08-25-2007 14:58 ET</td>
<td>70</td>
<td>I</td>
<td>Auburn</td>
<td>HL</td>
<td>SWAY C-Street Gate</td>
<td>TAC</td>
<td>(RFID)</td>
<td></td>
</tr>
<tr>
<td>Gate Out Port</td>
<td>05-25-2007 14:31 ET</td>
<td>80</td>
<td>I</td>
<td>Tacoma</td>
<td>ULIG</td>
<td>TAC/ULIG</td>
<td>(MCSC)</td>
<td>(MCSC)</td>
<td></td>
</tr>
<tr>
<td>VSL Unload</td>
<td>05-15-2007 22:42 ET</td>
<td>70</td>
<td>I</td>
<td>Tacoma</td>
<td>HL</td>
<td>Tacoma: Msk</td>
<td>TAC</td>
<td>(MCSC)</td>
<td></td>
</tr>
<tr>
<td>VSL Initialize</td>
<td>05-15-2007 15:19 ET</td>
<td>56</td>
<td>O</td>
<td>Tacoma</td>
<td>HL</td>
<td>TW683S</td>
<td>TW684N</td>
<td>E Beaubouef</td>
<td></td>
</tr>
<tr>
<td>VSL Confirm</td>
<td>05-11-2007 20:23 ET</td>
<td>56</td>
<td>O</td>
<td>Dutch Harbor</td>
<td>HL</td>
<td>TW683S</td>
<td>J Villamor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VSL Initialize</td>
<td>05-09-2007 23:40 ET</td>
<td>56</td>
<td>O</td>
<td>Dutch Harbor</td>
<td>HL</td>
<td>TW683S</td>
<td>A Sabater</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VSL Confirm</td>
<td>05-09-2007 22:17 ET</td>
<td>56</td>
<td>O</td>
<td>Kodiak</td>
<td>HL</td>
<td>TW683S</td>
<td>J Saunders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VSL Initialize</td>
<td>05-09-2007 12:03 ET</td>
<td>56</td>
<td>O</td>
<td>Kodiak</td>
<td>HL</td>
<td>TW683S</td>
<td>J Saunders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VSL Confirm</td>
<td>05-09-2007 03:39 ET</td>
<td>55</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>TW683S</td>
<td>P Shadura</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VSL Load</td>
<td>05-08-2007 02:55 ET</td>
<td>55</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>TW683S</td>
<td>TW688S</td>
<td>(SPARCS)</td>
<td></td>
</tr>
<tr>
<td>RFID Sighting</td>
<td>08-08-2007 21:26 ET</td>
<td>63</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>ANC Port N. Berth</td>
<td>ANC</td>
<td>(RFID)</td>
<td></td>
</tr>
<tr>
<td>VSL Plan</td>
<td>05-06-2007 19:02 ET</td>
<td>53</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>TW683S</td>
<td>ANC</td>
<td>(SPARCS)</td>
<td></td>
</tr>
<tr>
<td>VSL Release</td>
<td>05-08-2007 17:56 ET</td>
<td>40</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>Anchorage</td>
<td>ANC</td>
<td>L Smullock</td>
<td></td>
</tr>
<tr>
<td>VSL Release</td>
<td>05-08-2007 17:54 ET</td>
<td>40</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>Anchorage</td>
<td>ANC</td>
<td>(GATESANC)</td>
<td></td>
</tr>
<tr>
<td>BKG Assoc</td>
<td>05-08-2007 17:53 ET</td>
<td>20</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>Anchorage</td>
<td>ANC</td>
<td>(GATESANC)</td>
<td></td>
</tr>
<tr>
<td>Gate In Port</td>
<td>05-08-2007 17:53 ET</td>
<td>20</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>Anchorage</td>
<td>ANC</td>
<td>(GATESANC)</td>
<td></td>
</tr>
<tr>
<td>BKG Disassoc</td>
<td>05-08-2007 17:52 ET</td>
<td>20</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>Anchorage</td>
<td>ANC</td>
<td>(GATESANC)</td>
<td></td>
</tr>
<tr>
<td>Event</td>
<td>Date</td>
<td>SCI</td>
<td>STA</td>
<td>Location</td>
<td>Carr</td>
<td>Resource</td>
<td>MAJ/MIN</td>
<td>User</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>-----</td>
<td>-----</td>
<td>-----------</td>
<td>------</td>
<td>----------</td>
<td>---------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>VSL Load</td>
<td>10-12-2007</td>
<td>55</td>
<td>O</td>
<td>Tacoma</td>
<td>HL</td>
<td>KO687N</td>
<td>KO687N</td>
<td>(MCSC)</td>
<td></td>
</tr>
<tr>
<td>VSL Release</td>
<td>10-12-2007</td>
<td>55</td>
<td>O</td>
<td>Tacoma</td>
<td>HL</td>
<td>TAC</td>
<td>TAC</td>
<td>(RFID)</td>
<td></td>
</tr>
<tr>
<td>RFID Sighting</td>
<td>10-12-2007</td>
<td>55</td>
<td>O</td>
<td>Tacoma</td>
<td>ULIG</td>
<td>TAC/GFS Bldg #400</td>
<td>TAC/ULIG</td>
<td>(RFID)</td>
<td></td>
</tr>
<tr>
<td>Gate In Port</td>
<td>10-12-2007</td>
<td>55</td>
<td>O</td>
<td>Tacoma</td>
<td>HL</td>
<td>TAC</td>
<td>TAC</td>
<td>(MCSC)</td>
<td></td>
</tr>
<tr>
<td>RFID Sighting</td>
<td>08-23-2007</td>
<td>55</td>
<td>O</td>
<td>Bellevue</td>
<td>ULIG</td>
<td>SWAY 124th St Gate</td>
<td>TAC/ULIG</td>
<td>(RFID)</td>
<td></td>
</tr>
<tr>
<td>RFID Sighting</td>
<td>08-31-2007</td>
<td>55</td>
<td>O</td>
<td>Auburn</td>
<td>ULIG</td>
<td>SWAY C-Street Gate</td>
<td>TAC/ULIG</td>
<td>(RFID)</td>
<td></td>
</tr>
<tr>
<td>Gate Out Port</td>
<td>05-18-2007</td>
<td>55</td>
<td>O</td>
<td>Tacoma</td>
<td>ULIG</td>
<td>TAC/ULIG</td>
<td>TAC/ULIG</td>
<td>(MCSC)</td>
<td></td>
</tr>
<tr>
<td>VSL Unload</td>
<td>05-16-2007</td>
<td>55</td>
<td>O</td>
<td>Tacoma</td>
<td>HL</td>
<td>TW834H</td>
<td>TW834H</td>
<td>B Beaucoupf</td>
<td></td>
</tr>
<tr>
<td>VSL Initialize</td>
<td>05-16-2007</td>
<td>55</td>
<td>O</td>
<td>Tacoma</td>
<td>HL</td>
<td>TW833S</td>
<td>TW833S</td>
<td>J Villamor</td>
<td></td>
</tr>
<tr>
<td>VSL Confirm</td>
<td>05-11-2007</td>
<td>55</td>
<td>O</td>
<td>Dutch Harbor</td>
<td>HL</td>
<td>TW833S</td>
<td>TW833S</td>
<td>A Sabater</td>
<td></td>
</tr>
<tr>
<td>VSL Initialize</td>
<td>05-09-2007</td>
<td>55</td>
<td>O</td>
<td>Kodiak</td>
<td>HL</td>
<td>TW833S</td>
<td>TW833S</td>
<td>J Saunders</td>
<td></td>
</tr>
<tr>
<td>VSL Confirm</td>
<td>05-09-2007</td>
<td>55</td>
<td>O</td>
<td>Kodiak</td>
<td>HL</td>
<td>TW833S</td>
<td>TW833S</td>
<td>J Saunders</td>
<td></td>
</tr>
<tr>
<td>VSL Load</td>
<td>05-09-2007</td>
<td>55</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>TW833S</td>
<td>TW833S</td>
<td>P Shadura</td>
<td></td>
</tr>
<tr>
<td>VSL Plan</td>
<td>05-08-2007</td>
<td>55</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>TW833S</td>
<td>TW833S</td>
<td>(SPARCS)</td>
<td></td>
</tr>
<tr>
<td>Vsl Release</td>
<td>05-08-2007</td>
<td>55</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>Anchorage</td>
<td>ANC</td>
<td>(GATESANC)</td>
<td></td>
</tr>
<tr>
<td>Gate In Port</td>
<td>05-08-2007</td>
<td>55</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>Anchorage</td>
<td>ANC</td>
<td>(GATESANC)</td>
<td></td>
</tr>
<tr>
<td>RFID Sighting</td>
<td>05-08-2007</td>
<td>55</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>Anchorage</td>
<td>ANC</td>
<td>(GATESANC)</td>
<td></td>
</tr>
<tr>
<td>RFID Sighting</td>
<td>05-08-2007</td>
<td>55</td>
<td>O</td>
<td>Anchorage</td>
<td>HL</td>
<td>Anchorage</td>
<td>ANC</td>
<td>(GATESANC)</td>
<td></td>
</tr>
</tbody>
</table>
## ShipStat Reports

### Container Status - CXCU878089-4

<table>
<thead>
<tr>
<th>Equipment Type (in feet):</th>
<th>IBC</th>
<th>Imperial Weight (lbs):</th>
<th>20700</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reefer Temperature:</td>
<td>F</td>
<td>Imperial Cube:</td>
<td></td>
</tr>
<tr>
<td>Hazardous Ind.:</td>
<td></td>
<td>Metric Weight (kg):</td>
<td>9389.525</td>
</tr>
<tr>
<td>Seal No.:</td>
<td>489548</td>
<td>Metric Cube:</td>
<td></td>
</tr>
<tr>
<td>Row No.:</td>
<td></td>
<td>LTL Indicator:</td>
<td></td>
</tr>
<tr>
<td>Door Type:</td>
<td></td>
<td>Warehouse Location:</td>
<td></td>
</tr>
</tbody>
</table>

### Trip Plan

<table>
<thead>
<tr>
<th>Description</th>
<th>Event Location</th>
<th>Scheduled Date</th>
<th>Actual Date</th>
<th>Transported By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vessel CUTOFF **</td>
<td>Tacoma, WA</td>
<td>2/16/2007 8:00:00 PM</td>
<td></td>
<td>Vessel</td>
</tr>
<tr>
<td>Gate In Port</td>
<td>Tacoma, WA</td>
<td>2/16/2007 3:17:00 PM</td>
<td>Yard</td>
<td></td>
</tr>
<tr>
<td>VSL Load</td>
<td>Tacoma, WA</td>
<td>2/16/2007 6:39:00 PM</td>
<td>Vessel</td>
<td></td>
</tr>
<tr>
<td>Vessel DEPARTURE</td>
<td>Tacoma, WA</td>
<td>2/17/2007 1:00:00 AM</td>
<td>2/17/2007 2:24:00 AM</td>
<td>HORIZON ANCHORAGE (AZ676N)</td>
</tr>
<tr>
<td>Vessel ARRIVAL</td>
<td>Anchorage, AK</td>
<td>2/20/2007 11:00:00 AM</td>
<td>2/20/2007 10:12:00 AM</td>
<td>HORIZON ANCHORAGE (AZ676N)</td>
</tr>
<tr>
<td>VSL Unload</td>
<td>Anchorage, AK</td>
<td>2/20/2007 11:18:19 AM</td>
<td>Yard</td>
<td></td>
</tr>
</tbody>
</table>

*All Times in EST*

**RFID Sighting**
- Anchorage, AK - ANC Port N. Berth: 2/20/2007 12:10:56 PM - Truck
- Anchorage, AK - ANC Port Guard Gate: 2/20/2007 4:10:32 PM - Truck
- Houston, AK - AKDOT: 2/20/2007 5:23:20 PM - Truck
- Healy, AK - AKDOT Healy: 2/20/2007 8:55:04 PM - Truck
- North Pole, AK - SWAY Store 1821: 2/21/2007 2:09:05 AM - Truck
Enhanced Equipment Visibility Benefits
Customer Satisfaction

• Can our customers expect on time cargo delivery?
• Can we extend to them the same visibility we have?

• Benefits:
  ✓ Workforce scheduling
  ✓ Enhanced NetCaptain reporting
  ✓ Service differentiation from our competitors
Reducing Service Failures

• Can we track loads as they come off the vessel?
• Are Hot Hatch or Keep From Freezing loads tracked?

Benefits:

✓ Alerts for time-sensitive loads
✓ Proactive monitoring for insulated KFF loads
Linehaul Operations

• Are our drivers on time and at the right place?
• Can we verify driver log entries?
• Benefits:
  ✓ Sightings serve as an honest broker
  ✓ Verifies trip plans
  ✓ Metrics for Detention and Demurrage
Equipment Control

• Can we manage our specialized equipment pool?
• Can we reduce stand-by time for our maintenance personnel?
• Benefits:
  ✓ Shift to value-added work by leveraging operational resources
  ✓ Increased turnaround time and efficient utilization of equipment
  ✓ Empowering decision makers with up-to-the-minute information
Public Sector Benefits

Multimodal Connections & Information Sharing
Road Weather Information Systems

Sharing our Success!

Horizon Lines Active RFID Container Tracking Program
An ocean-container shipping industry first

UAF
Alaska University Transportation Center
Current Calls for Proposals

Highway Network Visibility, Monitoring and Information System