

# The Virtual Container Yard:

## Reducing the Operational and Environmental Costs of Container Management



**Trade imbalances present big challenges for how transportation companies manage empty containers across the US. Increasing “street turns” near ports, rail ramps and inland container yards can create significant advantages for ocean carriers, trucking companies and shippers. It can also reduce freeway traffic, pollution and yard congestion at container facilities. Street turns are the basis for the virtual container yard (VCY)—a region around a port or inland container depot in which empty containers on the street are matched with shippers’ equipment needs. The empty boxes are then delivered directly to the shippers without first being returned to the terminal. The key to the success of any virtual container yard initiative is technology that can automate this process. The new web-based InterTurn™ service from International Asset Systems matches empties with shippers’ equipment needs, replacing a cumbersome process based on phone calls, faxes and emails. A virtual container yard sponsored by the ports of Los Angeles and Long Beach and the Alameda Corridor Transportation Authority in Southern California has been operating with IAS technology since July 2006.**

### The Problem with Empty Container Management

Double-digit growth in the world’s container trade is causing ocean terminals, rail ramps and inland container depots to become increasingly congested with equipment. Furthermore, after import containers are unloaded, they are most often moved empty from customers’ premises straight back to terminals, rail ramps and container yards. That represents a lose-lose-lose:

- Carriers pay unnecessary gate charges and storage fees, and experience wear and tear on equipment.
- Truck drivers waste hours waiting in line at ports, rail ramps and container yards to return empty equipment.

- Container-facility operators lose operating efficiency because of congestion, and face pressure from local communities and regulatory bodies to reduce truck traffic and pollution from engines idling at their gates.

The inefficiency stems from simultaneously having two empty containers on the road, when one would suffice. As Figure 1 illustrates, Trucker A carries a full load from the terminal or ramp to Shipper 1, and then hauls back an empty. At the same time, Trucker B carries an empty to Shipper 2, and then brings back a load into the terminal or rail ramp. Because of this, IAS estimates that between 30 and 40% of all containers on the road at any given time are empty.

### The Advantage of Street Turns

Rather than have both truckers move empty containers back and forth, it is much more efficient for one of two things to happen, as shown in Figure 2, Trucker A could take the empty box from Shipper 1 and deliver it to Shipper 2, and then carry Shipper 2’s load to the terminal. As an alternative, Trucker A could interchange Shipper 1’s empty container with Trucker B out on the street. In either case, a trip segment would be eliminated. Although street turns are a highly efficient means of utilizing container assets, they may happen as little as 2% of the time, mainly because of the difficulty of knowing when containers are available. The impacts—on both operational efficiency and pollution—are substantial.

### InterTurn: Automating the VCY

With InterTurn, the region around a port or other container facility can become what is known as a virtual container yard (VCY). In a virtual container yard—which can actually encompass many square miles around the container facility—street turns allow empty containers to transition among import, export and domestic moves without first being returned to the terminal or rail ramp. InterTurn automates what has been a largely telephone-, fax- and email-based process that has traditionally relied on alert dispatchers who have worked hard to find the locations of empty containers and of customers who need them. Thus, a manual, opportunistic process is replaced with an automated, predictable process.

Figure 1.

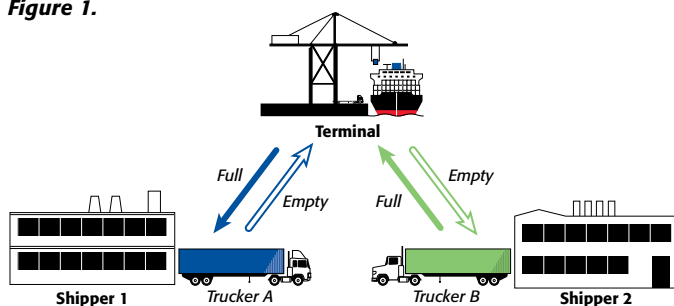
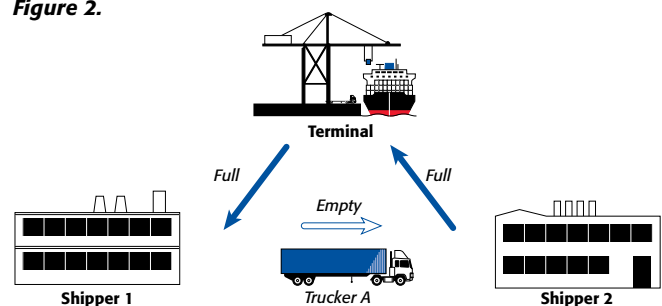


Figure 2.



## IAS Virtual Container Yard

IAS started an initial street-turn program in the US Midwest several years ago. More recently, IAS received a contract to create a VCY for the ports of Los Angeles and Long Beach and the Alameda Corridor Transportation Authority in Southern California. (The contract was awarded jointly to IAS and eModal LLC of Irvine, California, which is responsible for outreach to trucking companies.) Facing long-term environmental pressures, the ports aim for the VCY to reduce truck trips to the port, thereby cutting terminal congestion, port-area freeway traffic and diesel emissions from idling trucks at terminal gates. Each year, the ports together handle approximately 2.5 million local empty containers (i.e., empties delivered to and from shippers in the LA Basin). The VCY offers the potential for a substantial reduction in pollution.

### How It Works

The front end of InterTurn is a website that allows trucking companies to view the location of ocean carriers' empty equipment. In creating this interface between trucking companies and carriers, InterTurn incorporates the following elements:

- Integration with ocean carriers' equipment systems that automatically updates InterTurn with information about the availability and location of empty containers
- Business rules that filter information seen by each trucking company; the rules ensure that only designated trucking companies can view an ocean carrier's containers
- An automated, business-rule-driven process for obtaining an ocean carrier's approval to execute equipment transactions
- A capability for ocean carriers to filter and flag "lease off-hire" and "for sale" units and communicate appropriate notifications to trucking companies
- Automation to minimize manual keying and ensure ease of use for the trucking community

- Rules to ensure that container postings are matched correctly in real time with off-dock equipment needs to cover export and domestic bookings
- An audit trail that identifies further opportunities for efficiencies

InterTurn not only gives ocean carriers, shippers, and trucking companies a streamlined process to communicate equipment availability and information about equipment needs; it

### The Virtual Container Yard Powered by InterTurn

Benefits for Ocean Carriers, Shippers, Trucking Companies, Terminals and the Public

#### **Ocean carriers can:**

- Improve asset utilization
- Reduce fleet size, depreciation or lease costs, and repositioning expenses
- Lower maintenance and repair costs for containers and chassis
- Reduce terminal costs
- Eliminate the administrative overhead of dealing with phone calls, faxes, and emails from trucking companies

#### **Shippers can:**

- Arrange haulage more easily
- Source boxes on the street
- Get faster access to empty containers

#### **Trucking companies can:**

- Make more revenue-producing runs
- Spend less time waiting in line at terminals
- Use fuel more efficiently
- Minimize empty vehicle miles

#### **Terminals can:**

- Decrease truck congestion at gates and in container yards
- Reduce equipment storage and handling in yards
- Achieve greater operational efficiency

#### **The public can:**

- Experience less traffic and air pollution

also allows local communities to enjoy the very significant environmental benefits that a fully automated and integrated VCY program can deliver. The result is greater efficiency among carriers, trucking companies, shippers and terminal operators, and reduced traffic and air pollution for the public at large.

### Summary

International Asset Systems leveraged its experience in running street-turn programs across the US to create InterTurn, the first nationwide virtual container yard service. By automating the creation of a virtual container yard, InterTurn offers significant potential to reduce congestion in port terminals, rail ramps and inland container depots, to lower ocean carriers' and trucking companies' costs of dispatching empty containers, and to create greater efficiency for shippers. Using InterTurn, ocean carriers, shippers, and trucking companies can realize greater equipment utilization, improve operating efficiencies, and reduce empty container mileage. Terminals can alleviate congestion and associated problems. Considerable environmental benefits are also attainable, in the form of reduced truck traffic and diesel emissions.

### About IAS

Founded in 1998, International Asset Systems is the global leader in data-enabled solutions for equipment management and tracking in the container transport industry. Through innovative management applications and Web-based services, IAS enables participants throughout the transport chain to increase container visibility, improve asset utilization, lower operating costs and improve customer service. IAS offers a management team with extensive experience in the container transportation industry. IAS's operational headquarters are in Oakland, California, with additional offices in Chicago, Illinois; Hong Kong; Aarhus, Denmark; Jaipur, India; Nice, France; and London, UK.