THE DESCARTES SYSTEMS GROUP INC.

HELPING CUSTOMERS DELIVER™

BUSINESS WHITE PAPER

Descartes Networked Transportation Management Solution

The Rapid Time-to-Value You Demand; the Advanced Capabilities and Flexibility You Need.

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Descartes Transportation Management Solution (TMS)

Transportation management system (TMS) solutions should be about rapid time-to-value. However, the market is saturated with costly, complex, slow to implement and tough to maintain transportation solutions that serve far too few companies. Descartes Networked TMS takes a completely different approach to transportation management. The solution provides easy to use, end-to-end multi-modal functionality, comprising order and contract management, optimized consolidation, carrier selection, execution and freight audit. The SaaS 2.0 delivery model, which includes Descartes' Global Logistics Network (GLN), making the solution ready to implement on day one and already providing electronic communications to many of the carriers you use today. Descartes' "pay as you use" approach is highly cost effective for small to large enterprises and reduces large up front license fees. Many enterprises need more advanced functionality that extends beyond "traditional" TM solutions. Descartes Networked TMS is part of Descartes' Delivery Management Suite which provides robust capabilities in the areas of route planning and wireless mobile solutions, global shipment visibility, dock appointment scheduling, yard management, ocean contract management and audit, and reporting services - all built upon the same web native advanced technology platform.

Networked TMS: The Next Generation of Transportation Management Solutions

Transportation management solutions have been offered to the public for several decades. The first generation of TMS solutions had to be implemented on premise, was extremely complex to configure, use and maintain, and focused largely on optimized load planning as opposed to the end-to-end transportation management process. They were essentially complex consolidation math models wrapped in a package that did not support the complete transportation management business process to plan and execute freight. As a result, the first generation of TMS solutions struggled to deliver the value expected by their customers. Even today, a large number of TMS still apply the original design concept and, despite rewriting their architectures in more current technology, still put their customers through long, expensive, difficult to maintain and narrowly-focused TM implementations.

In the recent past, a number of new vendors recognized that the first generation of complex product, on premise model TM solutions only served a handful of the largest shippers. Instead, these new vendors created a second generation of TM solutions based upon the SaaS paradigm to drive down implementation costs, dramatically reduce upfront fees and lower the overall support effort required by customers. While these SaaS applications did begin to change the cost/complexity paradigm for customers, they did not address one of the fundamental issues all companies using a TMS face – how to cost effectively connect and communicate with carriers and trading partners using the TMS. The SaaS vendors therefore have suffered with the some of the same critical shortcomings as the first generation TMS - the inability to cost effectively deliver end-to-end TM business processes including carriers and suppliers.

Descartes Networked TMS is the third generation of TMS solutions. The fundamental problem

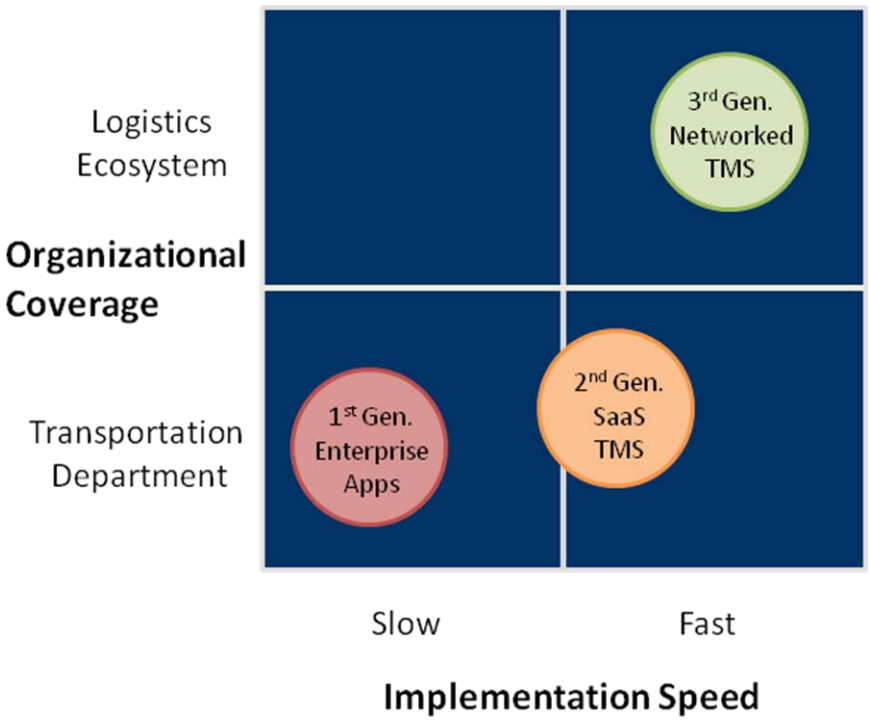
with the first two generations of TMS is that they are “enterprise centric applications”. However, in reality transportation management is an inter-enterprise business problem with collaborative processes between multiple parties.

Sample list of multi-party TM processes:

- Supplier request for a pick up
- Freight forecasting and capacity bookings
- Load tendering
- Carrier pickup request
- Dock appointment scheduling for a pick up or delivery
- Delivery status
- Freight settlement

Descartes Networked TMS was designed to take full advantage of SaaS 2.0 collaborative inter-enterprise paradigms, but goes beyond by having one of the world’s largest logistics messaging networks, Descartes’ GLN, designed into the architecture and access to over ten thousand organizations already using that network. With Descartes’ networked TM, logistics organizations can dramatically improve their time to value and quickly implement end-to-end TMS – in weeks, including the carriers and trading partners that are part of the transportation management process.

Figure 1: TMS Evolution



A Functionally Comprehensive Solution that can be Implemented End-to-End or in Logical High Value Components

Descartes' networked TM addresses the lifecycle of transportation management challenges from turning purchase or sales order fulfillment into transport orders, carrier contracts, carrier communication methods and formats via the GLN, capacity booking with carrier partners, to optimized planning of loads and multi-factor carrier selection including holistic order assignment to the fleet vs. for-hire carriers, appointment scheduling for Carriers and assigned BOLs, tracking pick up through delivery, and auditing of the freight invoice. With the component architecture of Descartes Networked TMS, customers can address their entire transportation management process or implement only the workflows in areas such as optimized planning, carrier assignment compliance, execution, or audit. The component architecture allows logistics organizations to rapidly fill holes and garner more value from their existing transportation solutions. It is not unusual for components of Descartes Networked TMS to be implemented in conjunction with other leading TMS packages to provide a more comprehensive solution. The GLN makes integration straightforward with its support of transportation industry and commercial transaction standards.

Figure 2: Networked TMS Footprint

Order Management	Contract Management	Rating	Load Planning	RFQ/ Spot Market	Load Tendering	Shipment Documentation	Tracking	Audit/ Claims	Analysis Reporting

Order Management

Descartes Networked TMS has the ability to receive purchase or sales order content and allow the user to turn those orders into shipments. The key process supported is the transformation of raw orders that may be incomplete in terms of logistics data (shipping origins, item weights, etc.), and potentially not shippable for reasons such as size (100,000 lbs of widgets can fit on one truck) into actionable shipments. PO/SO lines are used to create shipments within Descartes Networked TMS. Releases and partial fulfillment of PO/SO lines are tracked, and quantities decremented for items shipped. PO reference numbers are kept on each shipment generated, to facilitate greater visibility to order data in the transport process. This functionality is especially important to shippers that are controlling and executing their inbound transportation. They must often work at a PO/SO level and derive shipments from large volume purchases. Orders can be entered into Descartes Networked TMS manually via a web interface, or electronically by XML or other documents routed through the GLN.

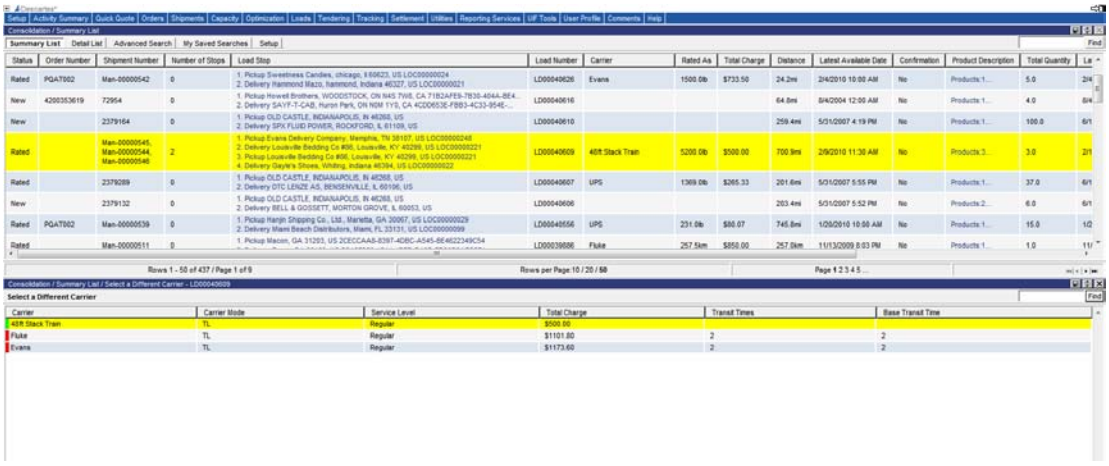
Collaborative pickup planning is supported through shipment creation processes enabled for

suppliers. Suppliers can login, set up a shipment pick up request, and planners instantly have the information needed for assigning carriers, consolidating multiple requests into multi-stop inbound loads, including cross-docked line hauls. Exception management features include off-day supplier pick up request notifications, address verification, hazardous materials indicators, and shipment line weight and volume verifications.

Contracts

Contracts are the "heart" of leading TMS solutions. Descartes Networked TMS has developed rich contract functionality that can handle multi-modal agreements with significant flexibility, yet provide for ease of set up for pricing agreements. The solution supports thousands of contracts and millions of rate lines in real time. Customizable geography definitions for lanes, zones and, transit times can be incorporated into the carrier profile. You can manage agreement effective dates with notification for expiring contracts. It has the ability to manage carrier insurance dates and only select carriers who have insurance at the time of tender. With the referential rate management functionality you can publish a set of rates on lanes and contract with many carriers on that same rate base - adjusting single lanes up or down therefore affects all carrier contracts based on that tariff. Descartes Networked TMS addresses mode specific contract rules such as LTL freight class mappings, discount structures, and coverage areas. The solution supports industry standards such as SMC^3 Rateware for North American LTL and parcel rating, CZARLite tariffs and hundreds of individual published carrier tariffs available from SMC^3. Small package manifesting and labelling is available, including fully compliant interfaces for small package carriers like UPS, FedEx, DHL and hundreds of other small package and LTL carriers. Note that only a select few solution providers including Descartes maintain full compliance with the integrated package carriers such as the UPS Ready program.

Figure 3: Carriers, Rates, Services by Load



1. Parcel Rates

Carrier compliant parcel rates are handled via multiple methods including full pack and ship with compliant labelling for the major integrated parcel carriers, or the configuration of rates directly into Descartes Networked TMS via the same type of rate structures. Descartes Networked TMS may also be used as a parcel manifesting system and shipping label generation system. It can be used to define the right mode for shipments, and if parcel is determined to be the right mode, those shipments can be handed off to the Descartes Order Express solution with a local dock installed label printer or alternatively to a system owned and operated by the customer at each shipping location.

2. US LTL and small package

LTL rating is provided via a rating engine that can reference carrier rate tariffs published by SMC[3]. In addition to these rate tariffs, coverage tables that define geographical coverage for the contract, class maps that define commodity rules, and accessorial charges can all be configured to support LTL and small package rating. Discounts by weight break and region of the move can also be specified so as to arrive at the precise rate negotiated with the carrier.

3. LTL/Flatbed/Specialty/Air Cargo/Other LTL

Descartes Networked TMS supports any carrier rates that encompass the following types.

Supported Elements – ($ symbol used for convenience)

- Based freight charge calculations
  - $/distance unit
  - $/weight unit
  - $/quantity unit
  - $/Container type
  - Matrix of the above
- Distance calculation sources
  - PC Miler
  - Rand McNally
  - Straight line, circuitry factor adjusted
- Base freight charges are defined on a “lane”
  - Lanes can be defined by using the following geography types to define the origin and destination of a lane. They can be used in any combination.
    - Country
    - State
    - 3 Digit Post Codes
    - Full Post Code
    - City, State
    - Custom Region
    - Location Number

- Additional Charges can be configured by the user with calculation of charges based on the following methods:
    - $/Stop
    - $/Shipment
    - $/Unit
    - $/ Weight or Weight Multiple (charges per multiple of a weight unit i.e. $50 per 1000kg)
    - $/Volume
    - % of Shipment Base Cost

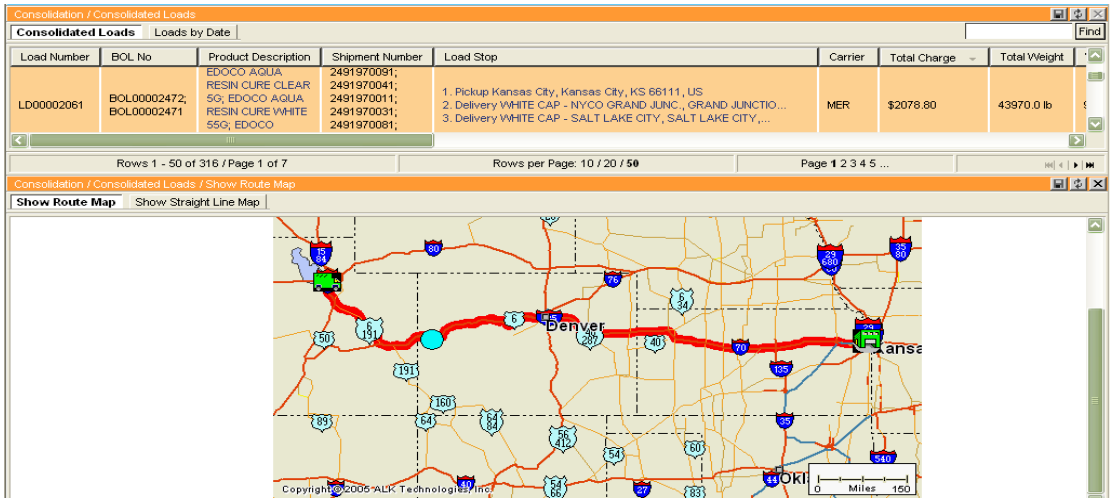
A sophisticated dimensional rating capability exists to support modes that price based on dim weight, volume to weight ratio overrides, and length versus weight or density factors. It is also important to note that the rating engine is capable of processing rates that are based on user defined commodity types. Deficit rating is supported for cases when jumping to the next unit break can cut costs.

Rate Base Import Spreadsheet Tool
Descartes Networked TMS includes a downloadable Excel spreadsheet tool with macros for assisting the user with lane, price, and custom region definition for capturing points of service from a carrier terminal or port (Air, Sea, Rail). Validation tools within the spreadsheet find duplicate lanes, mismatched lane definition types, and missing ranges. The spreadsheet tool also generates and xml file formatted for upload. This tool enables users to convert other spreadsheets of rates and paper based contracts into a standard format and is often used as a format during bid collection for new rate negotiations.

Optimized Planning and Consolidation

Descartes Networked TMS offers solid optimized planning and consolidation capabilities based upon over 26 years of decision support history for load and route planning. Descartes has used this expertise to develop its proprietary multi-stop, aggregation, and pooling optimization functionality. Fast and efficient planning algorithms take minutes, not hours, to run, keeping your operation's focus on keeping the warehouse picking and freight moving. Using a settings based approach, optimization and consolidation configuration are straightforward to understand and adjust. The solution provides transportation planners with the ability to optimize all shipments or easily sort, group and select shipments for consolidation and quickly review the results for refinement. Descartes uses a number of techniques including the following:

Figure 4: Multi-Stop Loads in Descartes Networked TMS



Aggregation

Aggregation finds separate shipments going from and to the same places with compatible service requirements and puts them together. Doing this can result in significant cost savings, by changing the mode of the individual shipments from a higher unit cost option like Parcel or LTL, to a lower unit cost option like TL.

Routing

Routing combines shipments that don't share an origin or destination onto a truck that makes multiple stops. Again, this can result in a significant cost savings.

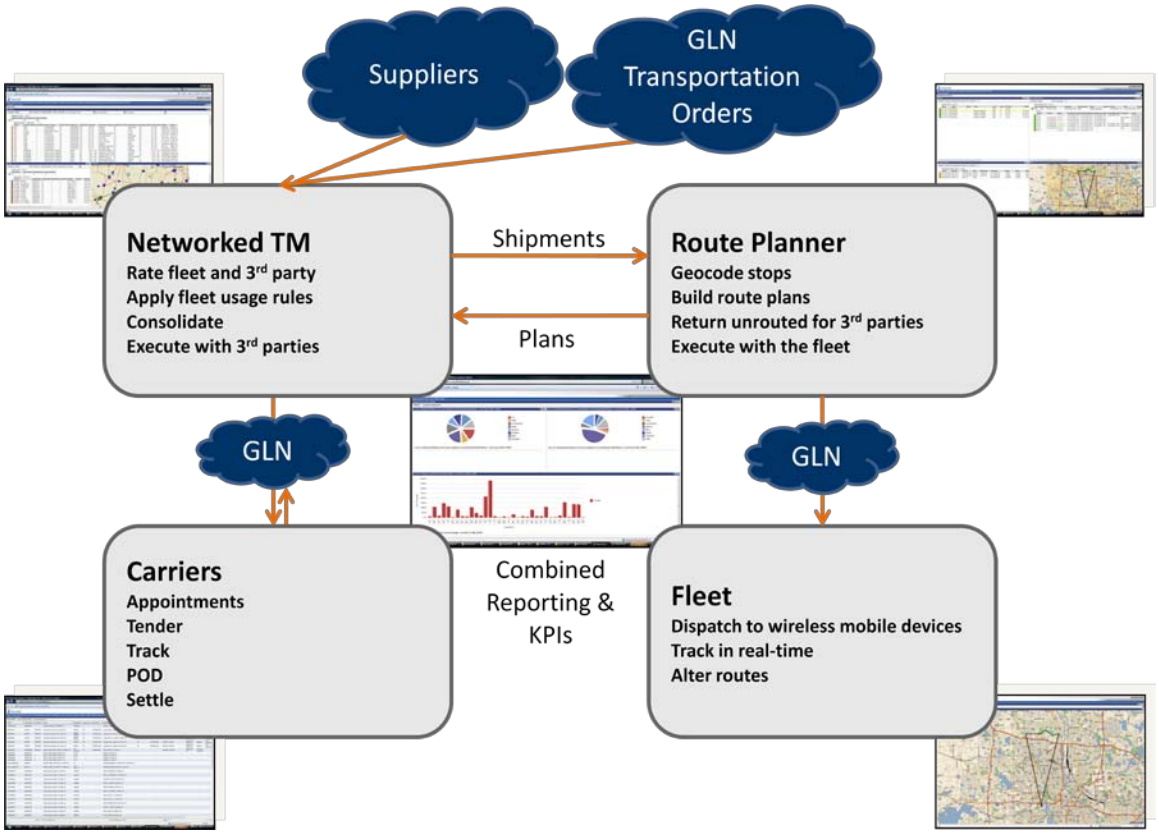
Pooling

Another load planning option supported by Descartes Networked TMS is pooling. When the user consolidates shipments with pooling the optimization engine considers the pool point locations appropriate for the shipment address to optionally create a line haul in or out of the pool point location. The engine considers multi-stop opportunities on the way to the pool point as well for additional savings over assignment to an LTL carrier.

Fleet vs. For-Hire

The shipment optimization engine further enhances the difficult fleet vs. for-hire load assignment problem by exploiting the economic trade-offs of the fleet's capacitated cost and the for-hire carrier's rate matrix. By forcing the engine to find solutions more profitable than the cost of moving a shipment on the private or dedicated fleet, the shipment's alternatives are back tested to ensure incremental cost improvements are made with every shipment added to a for-hire carrier assigned load. Similar proprietary techniques are used to assign shipments to the correct route and resources, and for the trade-offs of parcel and LTL vs. Truckload mode assignments.

Figure 5: Integrated Fleet and For Hire Transportation Management



Carrier Selection

Carrier selection is a critical part of the transportation management compliance process. Descartes Networked TMS decision engine's automated carrier selection quickly assesses a range of user-established decision criteria, such as contractual obligations, shipping lanes, shipment priority, cost and carrier past performance and evaluates how to best convey the shipment. The solution tracks when planners deviate from the system selected carriers and provides historical analysis of the extra costs incurred to curtail "maverick" transportation spending. Descartes Networked TMS goes beyond common carrier selection, handling economic trade-offs for handing orders off to your capacitated private fleet versus 3rd party carriers. It has the ability to model the cost structures of the organizations' contract agreements. The most profitable orders to deliver with the fleet are dispatched and the remaining are handled via 3rd party carrier selections processes that can include least cost, volume committed lanes, and volume balancing strategies. A route guide provides full control over the apportioned, price based, or rule based allocation of freight to carriers and fleets on lanes.

Route guides are used by Descartes Networked TMS to define the primary and alternative carriers on a lane, as well as to define those carriers that are excluded from taking loads on a lane. Route guides alter the results of a call to the Rating engine, by overriding lowest cost carrier assignments. Route guides can be configured based on flexible geography definitions. Any of the elements from the below list can be combined to define the geographies in a route guide. Custom Regions consist of combination of the other geography types. For example, Georgia, Florida, and Alabama, can be combined and dubbed "Southeast US" to define a custom region.

Route guide elements:

- Country
- State
- 3 digit post codes
- Postal code range
- Full post code
- City, state
- Custom region
- Location number

Additional constraints that can be configured to define a route guide are:

- Weight range
- Volume range
- Quantity range
- Service level

Rating is the process by which the shipments and loads in Descartes Networked TMS are referenced against the carrier contracts, rate tariffs, and route guides previously discussed. The result of a rating request is a list of carriers that can handle the shipment or load, and a price for each of those carriers. The results of the rating process can be overridden or modified by a user with sufficient rights. The list of available carriers that results from the rating process is used later by tendering functions to derive a list of candidate carriers to communicate load tenders to.

Additionally, a quick quote facility exists in the system to provide approximate pricing and available carriers based on a minimum of information being entered. This quoting feature is often called via web services from CRM systems for the sales force to use when quoting sales opportunities or 3PL portals for self-service portal users.

Carrier Assignment and Capacity Booking Considerations

Often the details for a shipment are not entirely known, though the transportation planners know they will need some number of trucks from their carriers in a few days or weeks. Planners can create and tender capacity bookings as they would with any other actual shipments, then in a day's time or whenever the shipment details become available, update the capacity bookings with real data, keeping the carrier partner informed to any changes that may affect their operation.

Execution

Execution is where "reality meets the road" in terms of achieving desired costs savings and services levels. Effective collaboration with carriers is essential to streamlining the end-to-end transportation management process and ensuring carriers meet the service levels your organization demands. Descartes Networked TMS uses the GLN to connect and collaborate with "high tech", "low tech", and "no tech" carriers and logistics services providers for the tender through proof of delivery execution process. Because many of the carriers that your organization uses today are members of the GLN, Descartes can reduce your implementation costs and accelerate the rollout of your TM solution to your carriers and logistics partners. The solution supports full maintenance of customer business keys and reference numbers in the exchange of information with carrier. If a carrier cannot maintain the reference data, the TM completes the data and maps it back into all communications and business documents. Scanned proof-of-delivery (POD) document upload, visibility, and storage support are available via the GLN. Because messaging is so important to an effective TM implementation, Descartes provides the ability for your organization to decide the kind of messaging compliance program you want to maintain with your carriers and logistics partners. Descartes has the ability to track the compliance messaging quality KPIs of the carriers.

Tendering

Tendering is the process of offering a load to a carrier and efficiently managing their response. If a carrier accepts the load, Descartes Networked TMS flags the load as *Accepted* and moves the load forward in the transportation management process. However, if the load is rejected, then you must take appropriate action. In most cases, that action is tendering the load to the next most desired carrier.

The following Descartes Networked TMS functionality involves tendering loads and handling carriers' responses to the tenders:

- Communication methods used for tendering
- Handling tendered loads
- Handling accepted tenders
- Handling rejected tenders

Automated retendering (the system handles re-tendering to the carrier whenever details change that require the carrier to be notified such as destination address, or equipment type requirements)

- Tendering available loads
  - One by one
  - Sequentially (the system handles the process of communicating to next carrier after rejection)

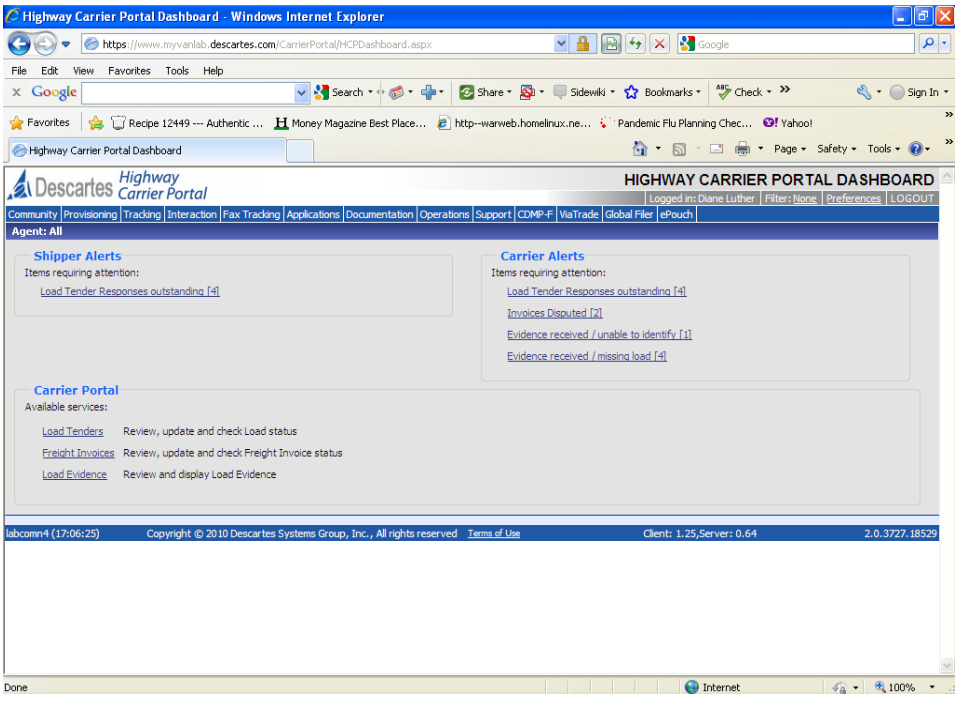
Tenders can be communicated to the carrier via the following methods.

- Electronic methods include auto-faxing, e-mails (text or HTML), XML and EDI.
- Manual methods include telephone, auto faxes, and via the user interface.

Descartes Highway Carrier Portal and E-forms

An important keystone to effective collaboration with carrier partners is the set of tools and enablement processes provided for and catered to the carrier. As part of the GLN, Descartes' Highway Carrier Portal provides a single site for the carrier to use to review and respond to loads tendered from all of their customers, and is not limited to the Descartes Networked TMS initiated load tenders. Processes supported include tender responses, status updates and invoicing of completed loads. Also part of the GLN, Descartes e-Forms solution provide intelligent connected emails for carriers to respond to email tenders, turnaround status updates upon pickup and delivery events, and freight bill submission after POD events are submitted. These solutions bring many more carriers into the network-connected world of logistics messaging, which the GLN serves as a messaging backbone for thousands of network participants.

Figure 5: Highway Carrier Portal Dashboard



Documentation

Shipment documentation is a key component of the logistics process. Descartes Networked TMS contains much —and in some cases, all—of the source data required to produce shipping documents. The current documents (modeled on the VICS standard documents) supported by Descartes Networked TMS are:

- BOL – Bill of Lading
  Describes the goods moving from an origin to a destination
- MBOL – Master Bill of Lading
  Used for multi-stops to describe the Bills of Lading on the truck and the delivery sequence.
- Compliant parcel and LTL carrier labelling

Figure 7: TM Generated Master BOL

Date: 4-15-2010 **MASTER BILL OF LADING** Page 1

SHIP FROM
Name:
Contact Name:
Hours: *Not Available*
Address: *2000 Powers Ferry Road*
City/State/Zip: *Marietta, GA 30067*
SID#: *LOC00000029* Dock Name FOB:

SHIP TO
Name:
Contact Name:
Hours: *Not Available*
Address: *2 Cumberland Street*
City/State/Zip: *Charleston, SC 29401*
SID#: *LOC00000030* Dock Name FOB:

THIRD PARTY FREIGHT CHARGES BILL TO:
Name: *Transport company*
Contact Name: *Accounts Payable*
Hours: *Not Available*
Address: *2030 Powers Ferry Rd*
City/State/Zip: *Atlanta, GA 30339*
SID#: *LOC00000016* Dock Name FOB:

SPECIAL INSTRUCTIONS: SPINST-1 B00003802 B00003803

Bill of Lading Number:

Load/Master Bill Number: ***LD00021196***
Quote Number:

CARRIER NAME:
Trailer number:
Seal number(s):

SCAC:
Pro number:

Freight Charge Terms: *(freight charges are prepaid unless marked otherwise)*
Collect

Master Bill of Lading: with attached underlying Bills of Lading

CUSTOMER ORDER INFORMATION

CUSTOMER ORDER NUMBER	# PKGS	WEIGHT	PALLET/SLIP (CIRCLE ONE)		ADDITIONAL SHIPPER INFO
SEE ATTACHED					
SUPPLEMENT PAGE					
GRAND TOTAL	*0*	*25000lb*			

CARRIER INFORMATION

HANDLING UNIT QTY	HANDLING UNIT TYPE	PACKAGE QTY	PACKAGE TYPE	WEIGHT	H.M. (X)	COMMODITY DESCRIPTION	LTL ONLY NMFC #	LTL ONLY CLASS
						Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged as to ensure safe transportation with ordinary care. *See Section 2(e) of NMFC Item 360*		
See Attached Supplement Page								
0		0		25000lb		GRAND TOTAL		

Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property as follows:
"The agreed or declared value of the property is specifically stated by the shipper to be not exceeding
_____per_____.

COD Amount: $_____
Fee Terms: Collect: Prepaid:
Customer check acceptable:

NOTE Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C.-14706(c)(1)(A) and (B).

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request. The shipper hereby certifies that he/she is familiar with all the terms and conditions of the NMFC Uniform Straight Bill of Lading, including those on the back thereof, and the said terms and conditions are hereby agreed to by the shipper and accepted for him/herself and his/her assigns.

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
_____**Shipper Signature**

SHIPPER SIGNATURE / DATE
This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the DOT

Trailer Loaded:
By Shipper
By Driver

Freight Counted:
By Shipper
By Driver/pallets said to contain
By Driver/Pieces

CARRIER SIGNATURE / PICKUP DATE
Carrier acknowledges receipt of package and required placards. Carrier certifies emergency response information was made available and/or carrier has the DOT emergency response guidebook or equivalent documentation in the vehicle.
Property described above is received in good order, except as noted.

Tracking

Once a carrier has accepted a load, the associated BOLs are available for tracking updates. The time, location, and comments associated with an event are all part of the data collected and presented on tracking updates.

Status updates may be received against a specific BOL or PRO number via EDI messages (i.e. 214), or the carrier can be given a login that allows them to update statuses via a web form. Alternatively the Descartes Highway Carrier Portal or E-Forms solutions are available to the carrier for facilitating BOL Status collection.

Settlement

A key feature of Descartes Networked TMS is freight audit and settlement. Freight bills can be handled via multiple workflows including self-billing, e-invoicing, and traditional match-pay processes. The solution can be optionally configured for audit processes in a distributed bill audit/centralized bill payment in large or divisional organizations. Settlement features enable your organization to stay current with your incurred expenses and identify and publish freight accruals for accurate financial liability reporting.

Self-billed freight upon receipt of carrier's proof of delivery (POD)

- Pay your carrier weekly or the interval of your choice on one invoice for all loads
- Control the audit and exception handling process
- Reduce audit exceptions and unexpected accessorials

E-invoicing and Match-Pay freight bill processing

- Carriers may submit EDI freight bills for import, match to loads in the system, discrepancy review, match and pay. The Descartes Highway Carrier Portal and E-Forms provide alternative ways for your less sophisticated carriers to submit bills through the GLN.

Exception Handling

- Trap bills for freight that didn't move
- Identify and stop payment on duplicate bills
- Discrepancy resolution enabled, comment tracking, freight bill refute and review record flagging
- Matching criteria can be defined for processing freight bills that allows an error tolerance based on % variance and maximum amount variance from contract defined rates. For example, a 5% or $5 maximum threshold can be set. Freight bills that are accurate to within 5% or $5

are automatically approved for payment. Functions for reconciling freight bills that exceed match tolerance are provided.

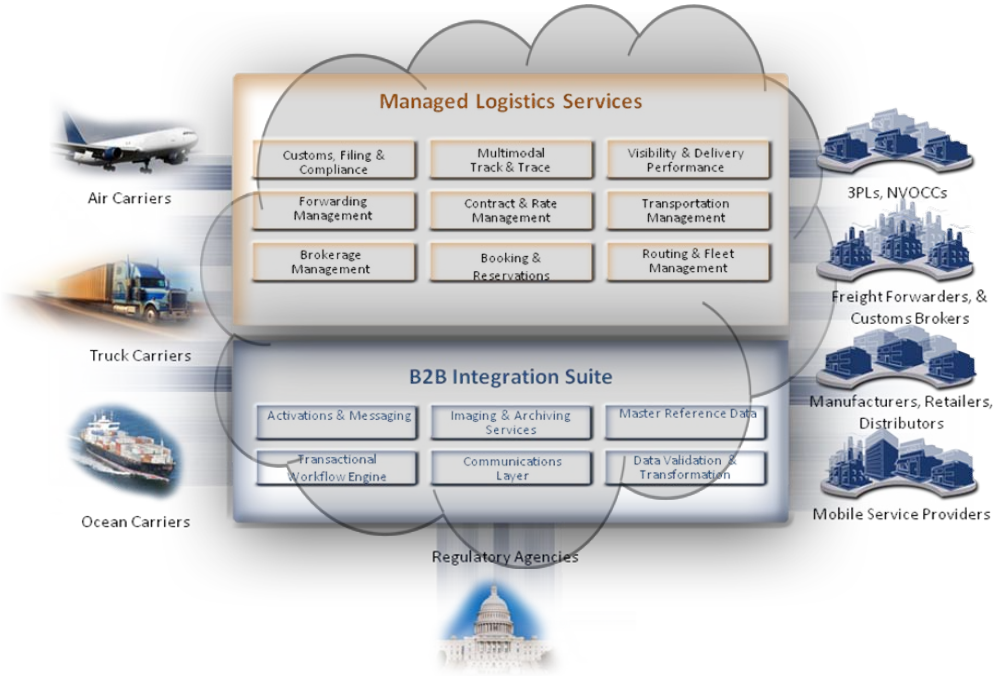
Automation

- Force compliance to POD delivery before payment processing whether self-billed or freight bill received from carrier
- Utilize all available reference numbers and bill details to automatically match invoices to loads to avoid manual processing
- Automated processing of all bills that match customer established tolerances
    - Manage the matching strictness down to the carrier and contract level as well as processes 3rd party and Freight Collect invoices
- Easily integrate payment processing back to finance or ERP package

Descartes' Global Logistics Network

Descartes' GLN is one of the largest multi-modal logistics messaging networks with over 20,000 logistics focused organizations connected in over 160 countries. Descartes' GLN is differentiated by its management of data semantics, message delivery and transformation of data pertaining to regional or global operations. The GLN speeds time to value by having many of the carriers and trading partners pre-connected to the network. Unlike traditional EDI oriented networks that use "store and forward" technology, the GLN is a current generation high speed messaging network that provides integration to not only your carriers and trading partners, but to your "back end ERP" systems such as order management and finance. The GLN supports logistics industry standard messaging formats across all modes of transportation, many of the common commercial transaction sets and emerging regulatory compliance filing formats, but also has the flexibility to address customer specific needs. Having full standing within the EDI industry, the GLN maintains interconnects to 26 general and logistics specific messaging networks to help customers gain access to the widest array of carriers and trading partners. For those carriers and trading partners that do not have sophisticated connectivity capabilities, the GLN offers portal and e-form technology that gets logistic partners up and communicating quickly. This technology allows "low tech" carriers and trading partners to act and respond as if they have "high tech" capabilities. The GLN's messaging management services gives customers full access to their data moving through the network, helping to ensure the timeliest and highest data quality. If your carriers and trading partners are not already on the GLN, Descartes offers activations services to rapidly connect them to the network.

Figure 8: The GLN



Descartes Delivery Management Suite: Going Beyond Traditional TMS

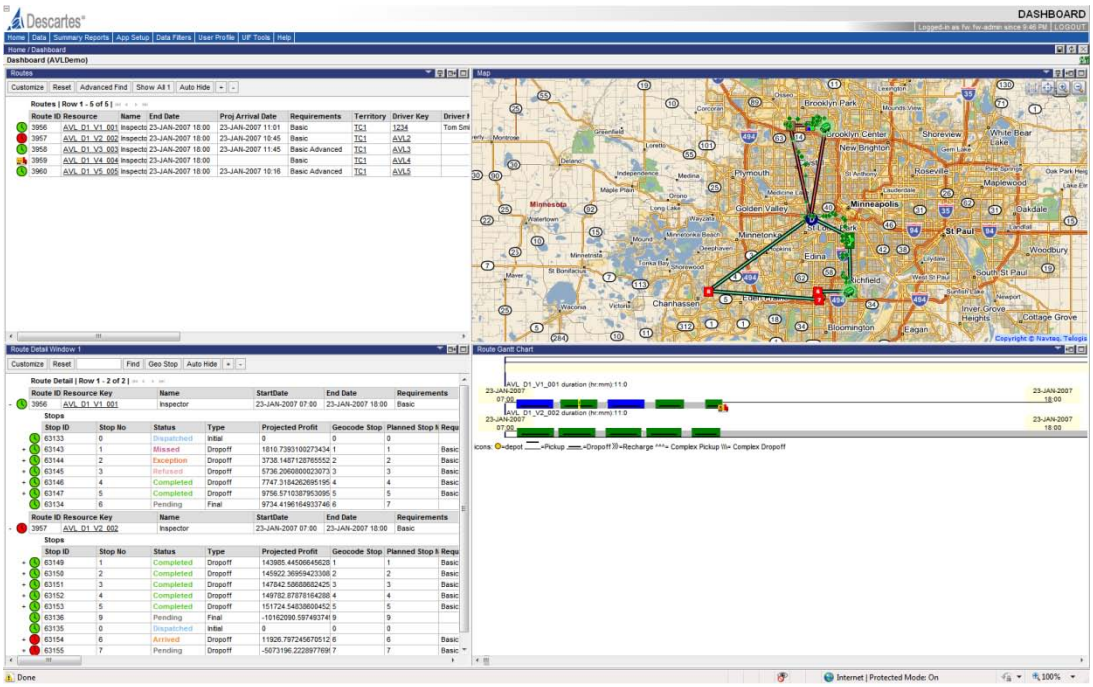
Our customers have spoken clearly: they need capabilities beyond traditional consolidation-oriented transportation management solutions. Unlike many other leading TMS vendors, Descartes' entire suite of products and services is focused on transportation and logistics. These solutions have deep domain expertise built-in that address many of the advanced transportation and logistics areas requested by our customers and used to differentiate their operational performance. Descartes Networked TMS is part of Descartes' Delivery Management Suite of transportation solutions. These solutions are not simply "check box" extensions of Descartes TM. Instead, they are offer industry leading functionality and can be used in combination with Descartes TM, in other configurations, or by themselves. Architected on the same technology platform called the Logistics Network Operating System, they allow customers to tackle the most challenging problems as integrating fleet and for hire logistics operations, coordinate the flow of transportation and inventory in and out of their facilities, visibility to shipments and inventory on a domestic or global level, advanced reporting tools to scorecard carrier and supplier transportation performance and the unique needs of ocean contract management and auditing. Below are very brief explanations of the comprehensive suite of solutions offered on one of the most advanced technology architectures in the logistics industry.

Figure 9: Descartes Delivery Management Suite

Route Planning and Mobile Solutions

Descartes Route Planner is the one of the most comprehensive and advanced route management technologies in the industry today. The solution combines optimized pickup and delivery appointment scheduling, multi-day planning, dispatch, automated vehicle location and mobile wireless solutions. Descartes Route Planner provides sophisticated incremental optimization technology that works in real time to optimally place pickups or deliveries on routes. Unlike the batch optimization technology used by most other route planning solutions, the incremental optimization technology of Route Planner is a perfect complement to the real time fleet or for-hire optimization within Descartes TM. As new orders or changes occur, customers can dynamically plan and adjust shipments or loads within the combined fleet and fore hire solution, seeing their changes move through the GLN and its wireless component (the wireless GLN) in real time out to carriers or to the mobile technology used by the fleet. The extended architecture provides a single platform for standardizing routing related business processes, eliminates the need for multiple stand alone solution deployment, and is multi-lingual for multi-country implementations, diverse working environments and management of third party carriers and dedicated fleets.

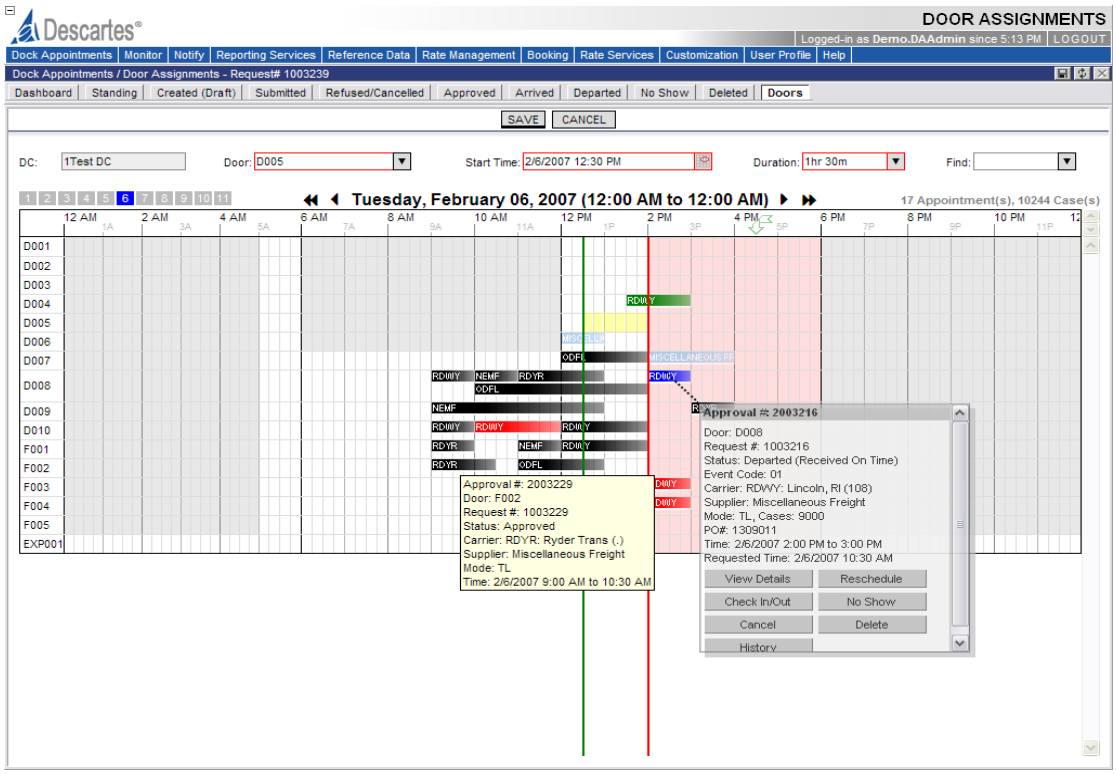
Figure 10: Route Planner with AVL Tracking



Dock Appointment Scheduling

Descartes Dock Appointment Scheduling is a collaborative solution that enables shippers, carriers and consignees to schedule dock door appointments. It streamlines the dock appointment process by distributing the responsibility for scheduling warehouse deliveries or pickups to carriers and suppliers. By ensuring all supply chain partners are involved in the process and have visibility into requested, scheduled and rescheduled dock appointments, this solution optimizes receiving operations for inbound shipments and helps coordinate outbound pickups. Dock Appointment Scheduling allows facilities to “load level” resources to minimize overtime and maximize productivity. It also provides critical inbound delivery visibility to help manage overall carrier and supplier delivery performance and make product deployment decisions in advance of the actual warehouse receipt. The solution provides online and recurring appointment scheduling, automated scheduling with load/unload service time calculations taking into consideration trailer type, dock type, special equipment, and product handling unit types, appointment audit trail, milestone notification, historical data analysis and compliance tracking, and integration to warehouse management systems. The solution’s straightforward design and network delivery model ensures rapid time to value and scales from the largest enterprises managing thousands of shipments monthly to smaller organizations that want advanced capabilities but do not have the technical where-with-all in house.

Figure 11: Dock Appointment Scheduling

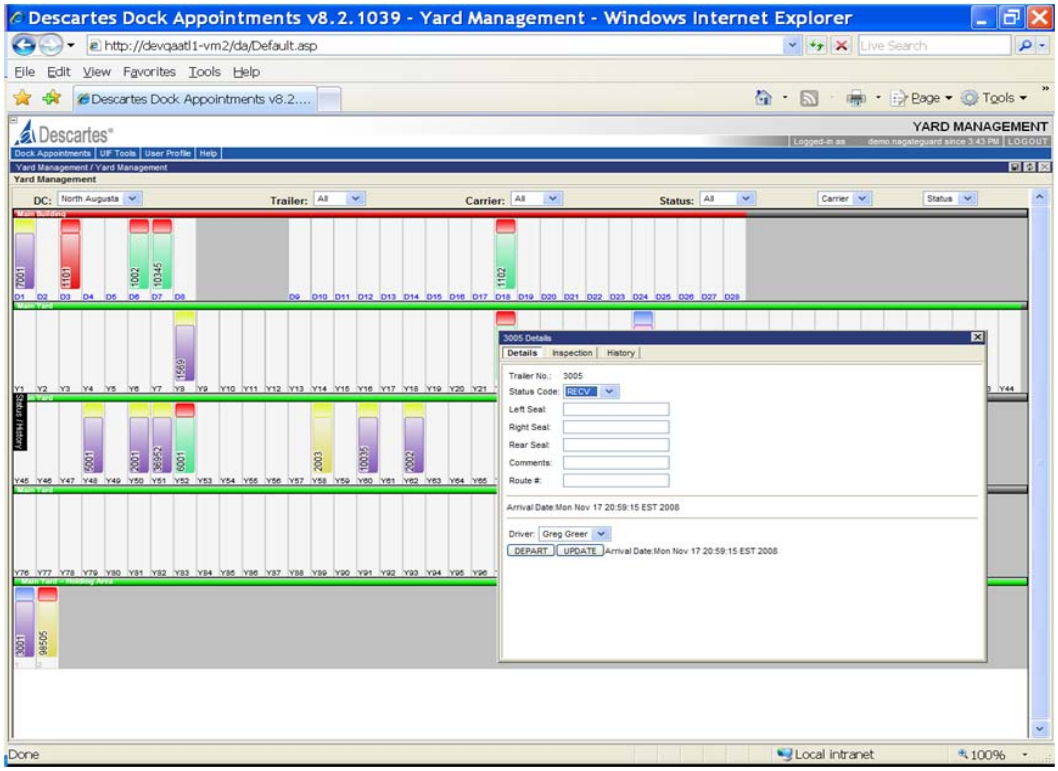


Yard Management

Descartes Yard Management is specifically designed to help operators more effectively manage the movement of trailers and the associated inventory. Real-time visibility into trailer content and locations within the yard enables organizations to quickly identify and access stock on hand, thereby reducing inventory requirements to save costs and improve efficiencies. With Descartes Yard Management, coordinators can plan and track trailer positions, arrivals and departures across distributed or centralized yards; as well as record trailer status, moves, inspections and security seal changes. The solution also provides the ability to assign parking, quickly locate trailers in the yard, and identify contents within a trailer as well as its age and condition. With support for satellite yards, Descartes Yard Management is an enterprise solution that provides insight into the movement and location of trailers across all yards in a single instance. It enables users to search for specific inventory within a trailer and also makes it easy to prioritize trailers for unload according to its contents, trailer age(by hours or days), carrier, or a driver's current hours of service. The solution automatically records all trailer movements and maintains a valid audit trail for loss prevention and security. Descartes Yard Management offers a graphical user interface that is optimized for use with a touch screen tablet PC. These devices can be used in-cab, while walking through the premises, or in the guard shack to identify and validate loads that

arrive and leave the yard, or confirm the location of a trailer. Built specifically for low Internet connectivity, the devices ensure that content is never lost even when an Internet connection is not available.

Figure 12: Yard Management

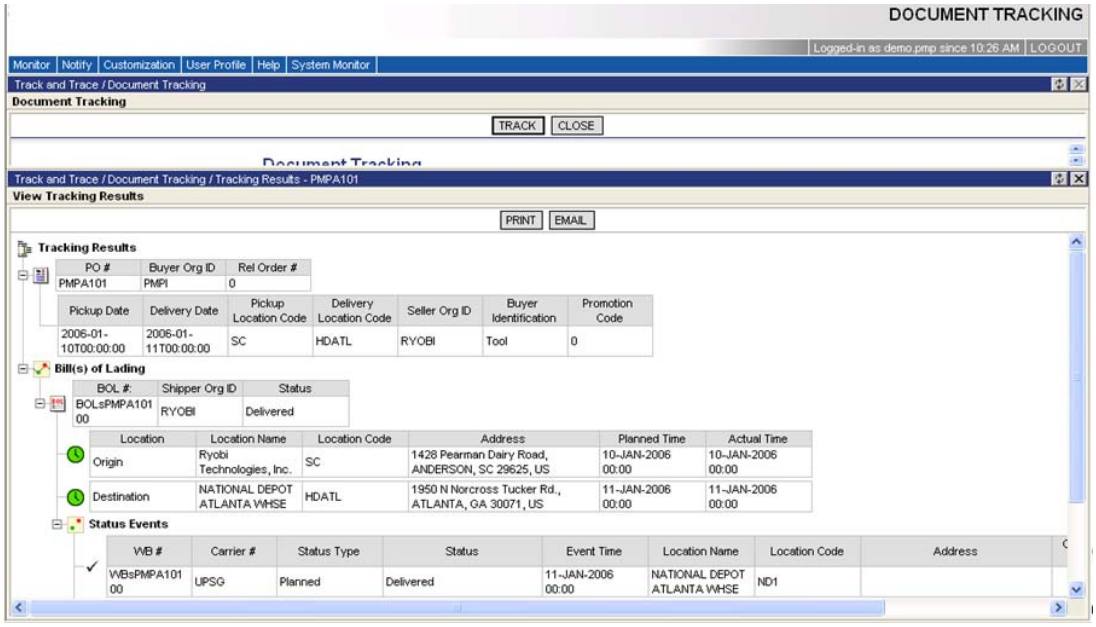


Visibility

Descartes Visibility helps improve logistics efficiency by providing organizations and their supply chain partners with a single integrated view of shipments, inventory, cross border compliance status and delivery performance. Integrated with Descartes' Global Logistics Network, Descartes Visibility is already connected or can be easily connected to the disparate set of carriers, logistics services providers, trading partners and regulatory agencies that make up your supply chain. For manufacturers, retailers and distributors, Descartes Visibility can provide a comprehensive view – purchase order to warehouse receipt, of the product delivery process. The solution's multi-company role based access allows logistics services providers, to provide value-added visibility services to their customers in virtually segregated environments. The solution continuously gauges material movement against shipment milestones and helps monitor at-risk or critical orders. Descartes Visibility enables trend analysis of performance versus prior periods or service level commitments, provide score-carding of carriers and suppliers based on lead-time, fill rate, or on-time rates, and tracks key performance indicators (KPIs) for various user orientations, such

as buyer, seller, carrier, or forwarder. The advanced comments functionality enables written logs of arrangements made between buyers and suppliers outside the parameters of the system (e.g., a note attached to an item indicating expediting arrangements discussed over the telephone).

Figure 13: Visibility

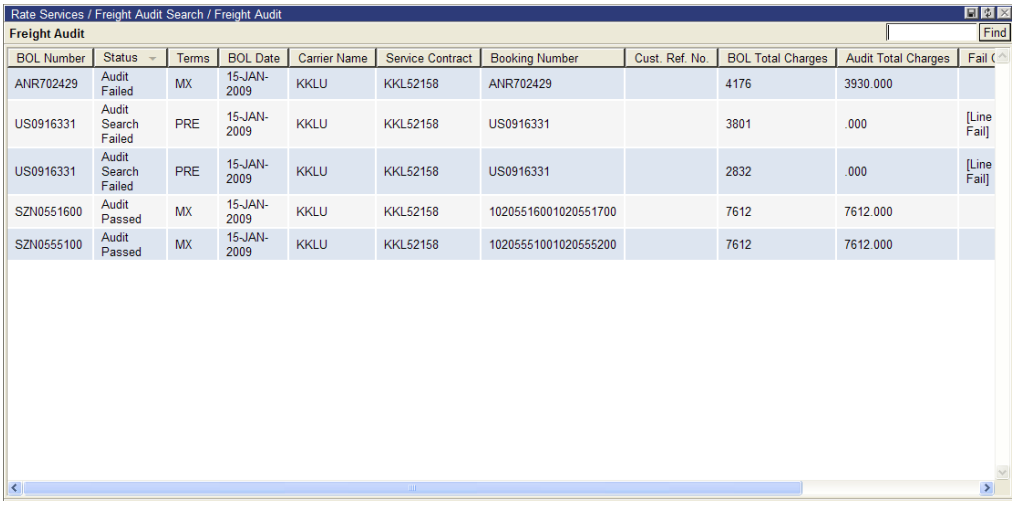


Ocean Rate Management & Audit

Ocean freight pricing, costing and auditing is the most sophisticated and unique form of commercial process in all of the transportation modes. Total ocean freight rates are made up of a complex combination of base rate, surcharges and inland rates. Attempting to “dumb down” the rates by more generalized TMS solutions produces inaccurate results, robbing revenues and margins for carriers and resulting in higher costs for shippers. For non-vessel-operating common carriers (NVOCC), Descartes Rate Builder is a solution designed to effectively manage a global rate network and help enable logistics services providers to create and manage both buy-side and sell-side rates digitally; enforce a standardized global pricing policy; implement a global rate request process; and have increased confidence when making time critical business decisions. Descartes Rate Builder also gives logistics services providers the ability to centralize disparate rate management systems into a single, global system that can optimize global rate management processes and effectively leverage rate information to improve productivity, profitability and customer service. The solution’s contract database technology can also be used by NVOCCs and shippers to audit ocean freight. Overcharges can be minimized as contracts can be modeled correctly eliminating inaccuracies. This solution can be used as a “black box” service as Descartes

offers services to enter and manage contracts for customers and connect carriers through the GLN for automated invoice feeds.

Figure 14: Rate Builder Freight Audit

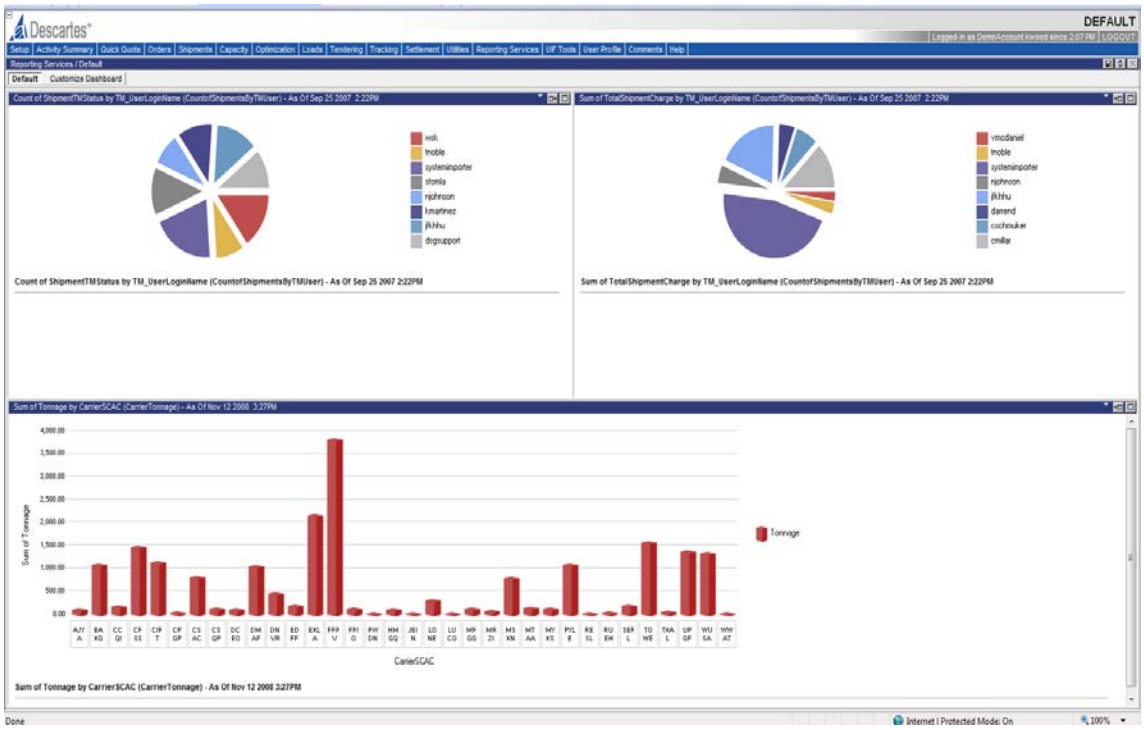


BOL Number	Status	Terms	BOL Date	Carrier Name	Service Contract	Booking Number	Cust. Ref. No.	BOL Total Charges	Audit Total Charges	Fail
ANR702429	Audit Failed	MX	15-JAN-2009	KKLU	KKL52158	ANR702429		4176	3930.000	
US0916331	Audit Search Failed	PRE	15-JAN-2009	KKLU	KKL52158	US0916331		3801	.000	[Line Fail]
US0916331	Audit Search Failed	PRE	15-JAN-2009	KKLU	KKL52158	US0916331		2832	.000	[Line Fail]
SZN0551600	Audit Passed	MX	15-JAN-2009	KKLU	KKL52158	10205516001020551700		7612	7612.000	
SZN0555100	Audit Passed	MX	15-JAN-2009	KKLU	KKL52158	10205551001020555200		7612	7612.000	

Reporting Services

Descartes Reporting Services is a standard reporting tool that works with Descartes solutions as well as any non-Descartes solution that is an open database-compliant (OBDC) system. Its robust graphical interface allows easy report generation by dragging and dropping selected fields. Users can create sophisticated reports in minutes. Customers can mine all types of supply chain data and more easily display it through the solution's dashboard capabilities. Descartes Reporting Services has the ability to organize data using hierarchies such as product lines, locations and regions, or organizations and divisions. It can create quick and easy bar charts or pie charts. The solution's role-based access control allows the reports to be distributed to supply chain partner and carriers for "360^0" performance reporting. Descartes Reporting has data extract capabilities to populate data warehouses and customer's existing third-party reporting tools.

Figure 15: Descartes Reporting Services



Descartes Networked TMS Technology Architecture – the power to run your logistics operations, but without all of the hassles of managing the complexity yourself

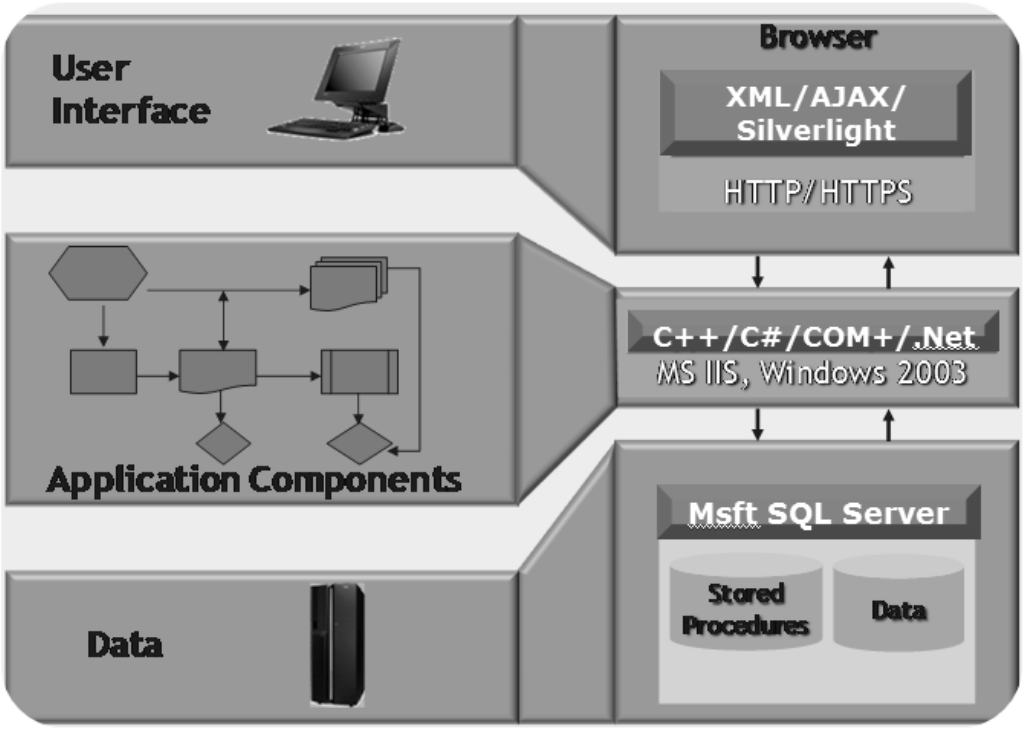
All of Descartes' powerful technology was developed with one thought in mind: to create and design a technology architecture that is scalable but also quick to implement. With the SaaS 2.0 delivery model and power of the GLN, Descartes customers need only a browser, a simple way to pass and receive data reliably to the GLN, and a list of carriers and trading partners that need to be federated. This may sound simple but it is the essence of our technology that helps accelerates time-to-value.

The technology under the "hood" is what makes the difference. As part of Descartes' Delivery Management Suite, Descartes Networked TMS is built on the Logistics Network Operating System (LNOS) architecture. LNOS is an advanced, web native architecture designed to facilitate multi-enterprise applications and business processes. Based upon the latest Microsoft technology and a stateless component architecture, LNOS based applications can scale "horizontally or vertically" to handle large-scale multi-enterprise business processes with thousands of users and millions of messages and enable small to mid size enterprises to work cost effectively in a multi-tenant environment. The LNOS architecture was designed to support international operations. Users can

log in to the solutions in the language of their business. Some of the leading languages supported include English, French, Spanish and Mandarin Chinese. Expansion to new languages such as Polish – which is supported, happens quickly because of the language enhancement features within the architecture.

The LNOS platform manages and standardizes the architectural tier model, user interface patterns, security, component interaction, data access, command processing and activity logging across the Delivery Management suite. By standardizing on the LNOS architecture and tool set Descartes can rapidly enhance and extend its overall transportation offering as evidenced by the wealth of functional enhancements that have been made to the "traditional" TMS components and the addition of major components such Route Planning, Dock Appointment Scheduling, Yard Management, Rate Builder, Visibility and Reporting Services. The GLN integrates seamlessly with the LNOS architecture to manage data in and out of the Delivery Management suite. The GLN dramatically simplifies the integration and ongoing data communications process through support of industry standard protocols, flexibility to address customers' unique requirements and built in customer support tools. The GLN has the where-with-all to distribute information not only between our customers and Descartes, but to all of the connected carriers and trading partners.

Figure 16: The LNOS Architecture (Illustration)



Descartes Low Cost Pricing and Implementation – making networked TMS fast to implement and affordable for all

One of the biggest challenges with the traditional license purchase and on premise TMS model is the extremely high upfront license and implementation costs. This model has customers waiting many, many months if not years waiting to break even. SaaS only solutions fall down when it comes to rapidly enabling the carriers and trading partners. Descartes breaks these limitations in four ways.

1. TMS pricing is activity based. You pay based upon the volume of shipments and other activities associated with using the solution.
2. The solution has been designed for ease of implementation. Typically, our implementations are measured in weeks, not months and years. With only a very limited number of professional services resources involved – and most not full time, the implementation costs are quite reasonable.
3. As one of the largest logistics messaging networks in the world, the number of preexisting connections to carriers for you organization's implementation can be quite high. Descartes' years of investment and expertise in the logistics community eliminates the much of the cost and time associated with making TMS solutions productive. Descartes also provides cost effective on-boarding services to connect those carriers and trading partner not already "on the network".
4. Other than browser access and a network connection to the GLN, there is no technological foot print to bring in house. Gone are the IT resource constraints, costs and time associated with building and maintaining a system infrastructure. Descartes does all of this as part of its service offering.

Customer Support

Descartes follows the Information Technology Infrastructure Library *(*ITIL®*)*, a set of concepts and practices for managing Information Technology (IT) services. ITIL is the one of the most widely accepted approach to IT service management in the world. ITIL provides a cohesive set of best practice, drawn from the public and private sectors internationally. From an infrastructure perspective, Descartes supports a robust hosting and operations environment to help ensure reliable performance across the globe. With "24X7" support coverage and one number to call, Descartes is always available to help keep its customer delivering results.

Summary

Descartes Networked TMS is the most advanced of TMS available on the market today. The Web 2.0 solution is straightforward to implement and use and combined with the GLN is specifically designed to accelerate your time to value. As part of the Delivery Management Suite, Descartes Networked TMS provides the advanced functionality you need to keep your logistics organization competitive. The GLN and its large community of carriers, logistics services providers and trading

partners allows you to quickly get connected to your logistics ecosystem. Descartes "pay as you use" pricing and component architecture allows you the flexibility to choose how much functionality your organization needs to deliver value and cost effectively align your expenditures with your use of the solution.

About Descartes

Descartes is making the world a better place by enabling global organizations with logistics-intensive businesses to save money by improving the productivity and performance of their operations. Underlying Descartes' offerings is the Descartes Global Logistics Network (GLN), one of the world's most extensive multi-modal business applications network. Descartes' logistics management solutions provide messaging services between logistics trading partners, shipment management services to help manage third party carriers, global customs filing and compliance services to meet regulatory requirements and private fleet management services for organizations of all sizes. Descartes' hosted, transactional and packaged solutions deliver repeatable, measurable results and fast time-to-value. Descartes customers include an estimated 1,600 ground carriers and more than 90 airlines, 30 ocean carriers, 900 freight forwarders and third-party providers of logistics services, and hundreds of manufacturers, retailers, distributors, private fleet owners and regulatory agencies. For more information, visit www.descartes.com.