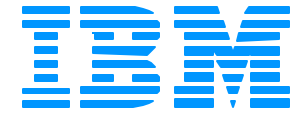
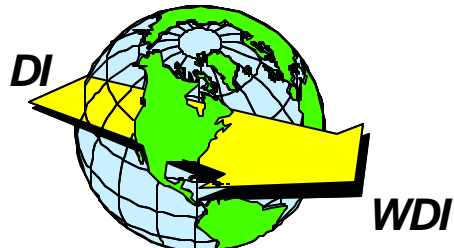


BNSF



How BNSF Railway found the needle in the hay stack

The Next Generation

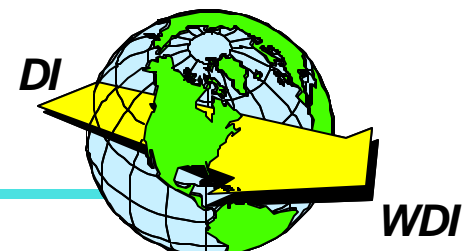


2002 User
Conference

Chuck Ferrise
BNSF Railway
Charles.Ferrise@BNSF.com

Agenda

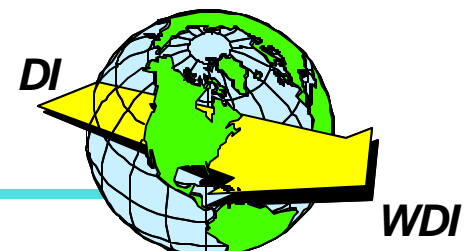
- ★ Overview
- ★ VuTran
- ★ Benefits



Overview

★ BNSF

- 33,500 Route Miles of Track
- 40,000 Employees
- 200,000 Freight Cars
- 5,000 Locomotives
- Hauls enough coal to generate more than 10 percent of the electricity produced in the United States
- Moves more intermodal traffic than any other rail system in the world
- America's largest grain-hauling railroad



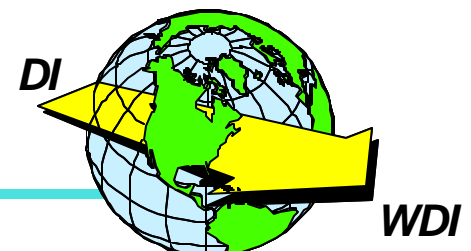
Overview

★ Collection of applications

- CLM, Train II
- Communications
- EDI Pipeline
- VuTran
- VuPro (Trading Partner Profile Management)

★ Technology

- AIX / IBM Mainframe
- COBOL / C++ / PL1 / Websphere / Java
- DB2 / VSAM / IMS
- DataInterchange / Enterprise



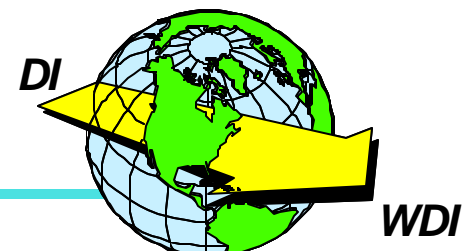
Overview

★ Data Formats

- X12
 - ✍ 60 Transactions
 - ✍ 35 Versions
- EDIFACT
- Car Location Message (CLM)
- TeleRail Automated Information Network (TRAINII)

★ Communication Protocols

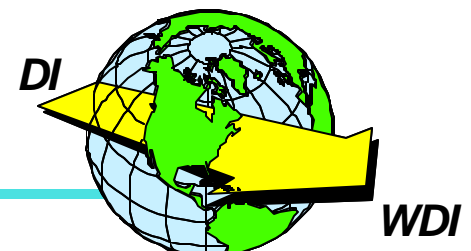
- SMTP
- FTP
- BiSync
- Async
- MQ
- LU 6.2



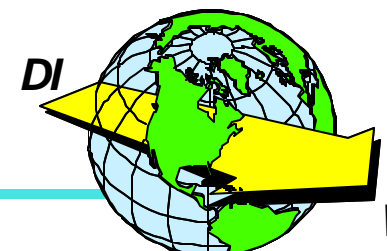
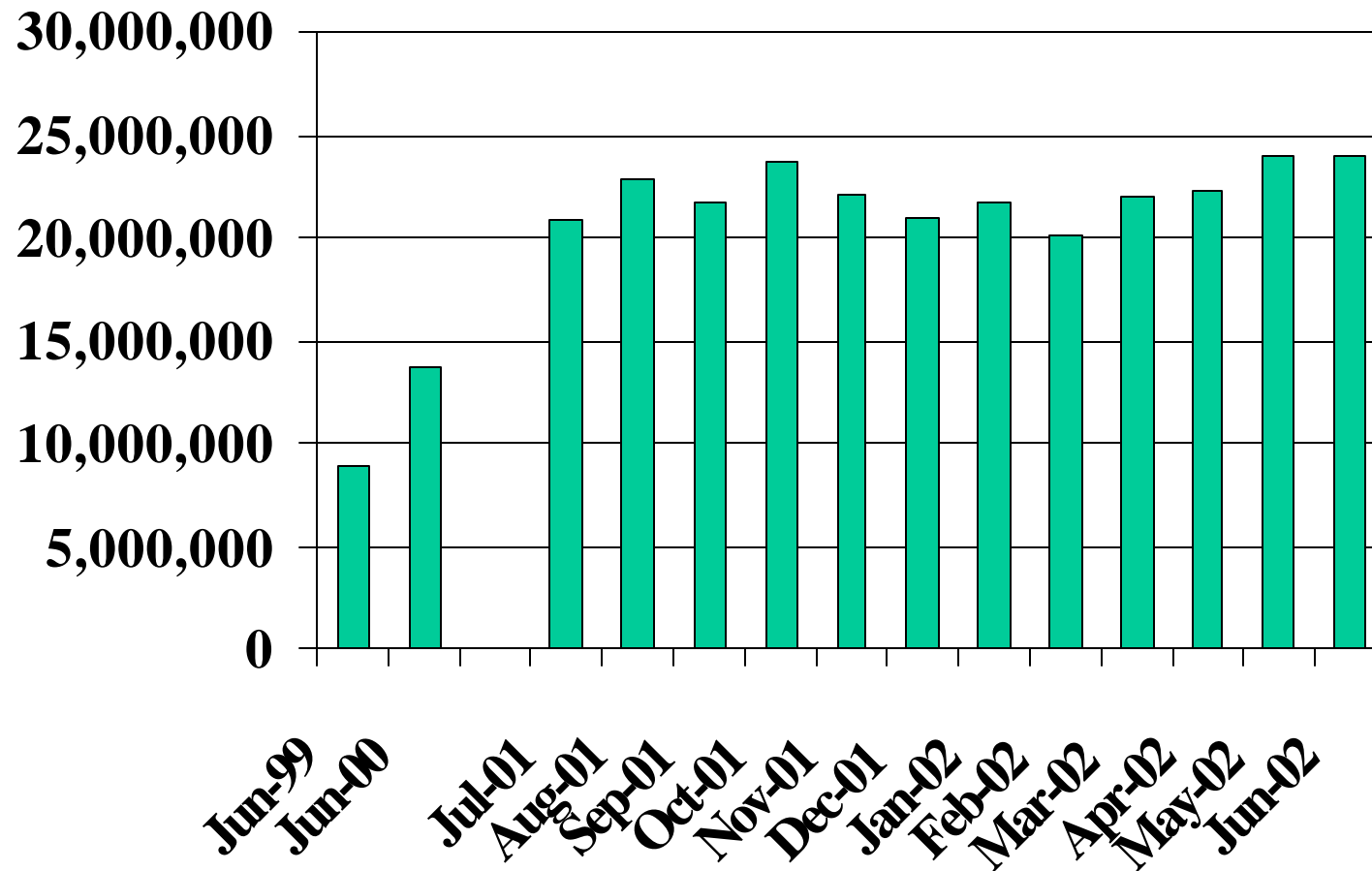
Overview

★ Information

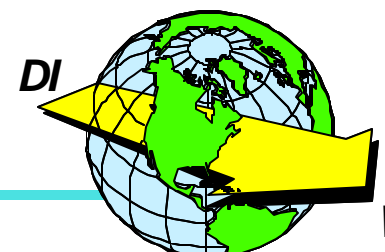
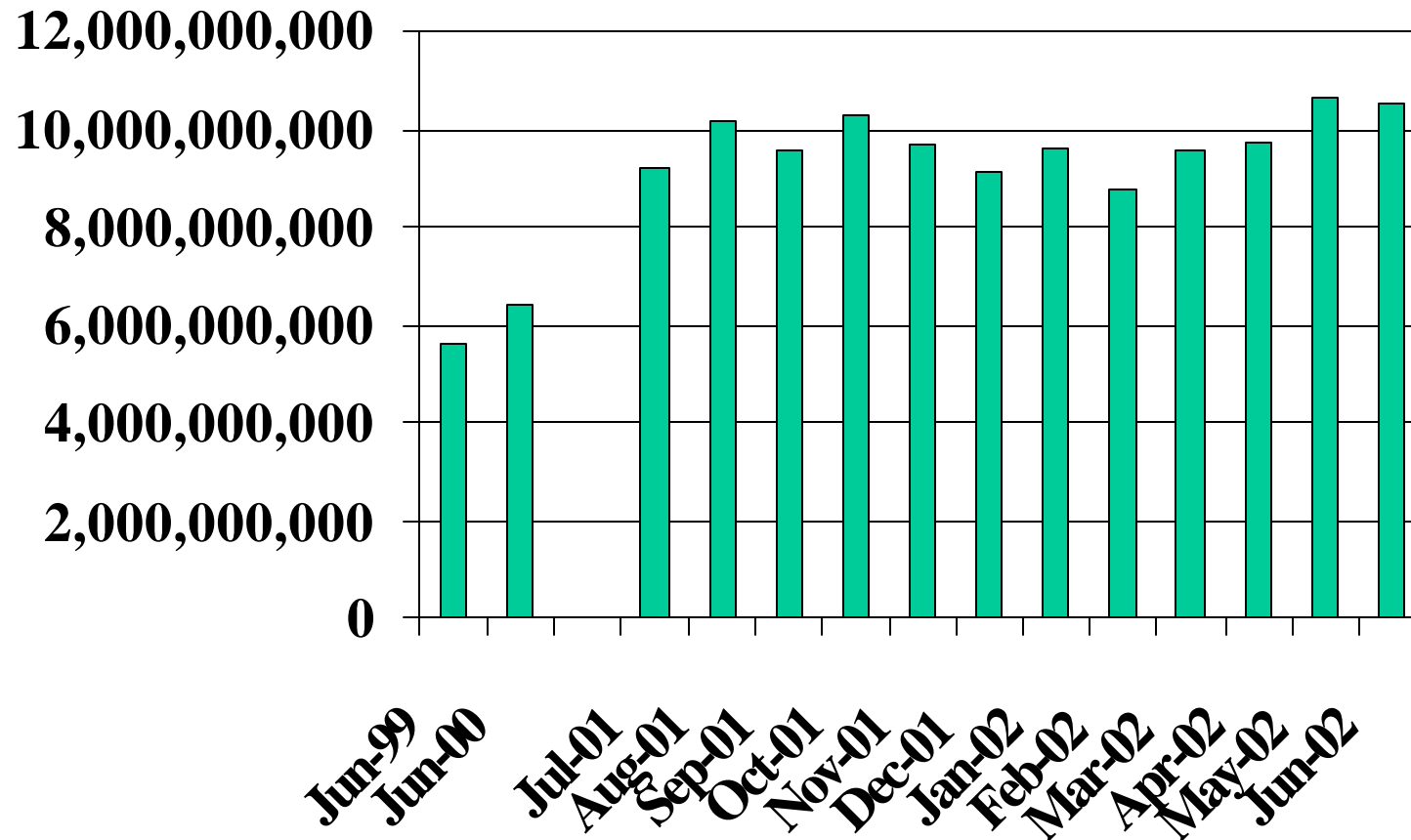
- Released in 1999
- Over 600 hits per day
- Very popular in non-production environments
- Legal retention of data




Overview X12 Transaction Counts



Overview X12 Character Counts



 **TEAM BNSF** [Home](#) [Departments](#) [Emp. Services](#) [Policies](#) [SiteMap](#) [Search](#)

EDI Transaction Viewer

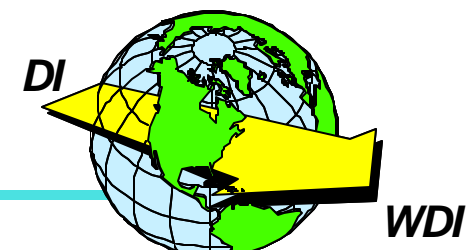
[◆ Test a Message](#) [◆ Help](#) [◆ FAQ](#) [◆ EDI Home Page](#)

Enter search criteria below. If you would like more search parameters, select **More Options**. Otherwise, select **Search**.

Trading Partner Criteria		Equipment Criteria	
Trading Partner	GS Seq Num	ISA Partner	Eqp Init & Number
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Date/Time Criteria			
Start Date	Start Time	End Date	End Time
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
(mm/dd/yyyy)	(hh:mm)	(mm/dd/yyyy)	(hh:mm)
Click here for the NEW shortcuts			

Transaction Criteria		
Transaction Code	Transaction Level	Transaction Direction
<input type="text"/>	<input type="radio"/> Transmission <input checked="" type="radio"/> ST	<input type="radio"/> Inbound <input type="radio"/> Outbound <input checked="" type="radio"/> Both
(comma delimited)		
<input type="button" value="Clear"/>	<input type="button" value="More Options ->"/> <input type="button" value="Search"/>	



VuTran More Search Options Page

TEAM BNSF Home Departments Emp. Services Policies SiteMap Search

Search Options

◆ Main Page ◆ Help Page ◆ EDI Home Page

The following fields reflect searchable data items that are found in your transaction selection. Add any additional search criteria then click on **Begin Search**.

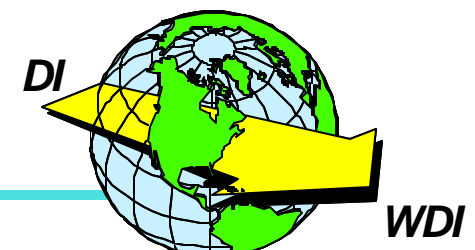
Optional Search Criteria

Purchase Order	Agent	Comment Type	Ack Status
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="- All Statuses -"/>

Other Options

equipment initial/number
VIN
waybill number
bill of lading number
freight bill
purchase order
train ID
customs manifest
tracking number
SPLC interchange
rate docket
claim number
invoice number
bid & offer number
urrwin number
acknowledgment status
comment type
industry code
road in route
booking number

Available Search Options are based upon transaction type entered on previous page



VuTran Search Results Page

TEAM BNSF

[Home](#) | [Departments](#) | [Emp. Services](#) | [Policies](#) | [SiteMap](#) | [Search](#)

Search Results

[◆ New Search](#) | [◆ Modify Search](#) | [◆ Help Page](#) | [◆ EDI Home Page](#)

*To view a transaction, select the transaction type for the transaction.
To retransmit, select the transactions and click the **[Retransmit]** button. If there is not a retransmit box, the transaction is part of a previous transaction and you will need to retransmit the previous transaction instead.*

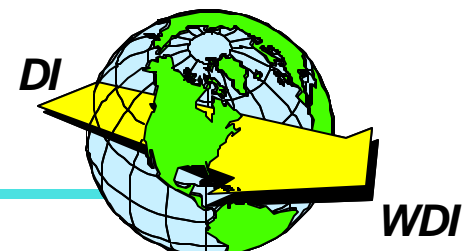
Page 1 of 5 (68 Messages Found)
Go To Page...

Dates are: 08/01/2002 16:33:00 - 08/03/2002 23:59:59
Transaction type is: 404

Direction is: INBOUND & OUTBOUND

Retransmit | Select Inbound | Select Outbound | Clear All

Direction	Type / Comments	Partner	Agent	Date/Time	GS Control	ST Control	Retransmit?	Acknowledgment/ Cmts/Retransmit?
Inbound	404 / 0	BNSF	BNSF	08/01/2002 16:33:23	84	840001	<input type="checkbox"/>	Accepted 997 / 0 / <input type="checkbox"/> Rejected 824L / 1 / <input type="checkbox"/>
Inbound	404 / 0	BNSF	BNSF	08/01/2002 16:33:29	85	850001	<input type="checkbox"/>	Accepted 997 / 0 / <input type="checkbox"/> Accepted w/Errors 824L / 1 / <input type="checkbox"/>
Inbound	404 / 0	BNSF	BNSF	08/01/2002 16:33:43	86	860001	<input type="checkbox"/>	Accepted 997 / 0 / <input type="checkbox"/> Accepted w/Errors 824L / 1 / <input type="checkbox"/>
Inbound	404 / 0	BNSF	BNSF	08/01/2002 16:33:43	86	860002	<input type="checkbox"/>	Accepted 997 / 0 / <input type="checkbox"/> Rejected 824L / 1 / <input type="checkbox"/>
Inbound	404 / 0	BNSF	BNSF	08/01/2002 16:45:32	884	8840001	<input type="checkbox"/>	Accepted 997 / 0 / <input type="checkbox"/> Accepted 824L / 1 / <input type="checkbox"/>



VuTran Detail Transaction Page

TEAM BNSF

[Home](#) | [Departments](#) | [Emp. Services](#) | [Policies](#) | [SiteMap](#) | [Search](#)

Message Detail

[♦ Main Page](#) | [♦ Help Page](#) | [♦ EDI Home Page](#)

Please contact edimaster@ediprod.bnsf.com for help with April-August 2000, June 2001 and all data prior to March 2000.

Partner	Control #	Type	Date/Time
ITIN	002310813	322	02/01/2002 00:02:02

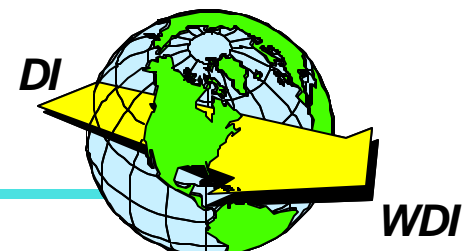
View ASCII Hex Dump
View Comment Log
View Entire Batch

Note: It is not possible to edit a message unless you are viewing the entire batch.


Message Detail

```

ISA*00* 00* 02*BNSF 02*ITIN 020201*0002*U*00401*002310813*0*P*~
GS*SO*BNSF*ITIN*20020201*0002*2310813*X*004010
ST*322*108130001
QS*B*20020201*0001*CT
NZ*NCQU*280006*59949*N*****CC*TIPZ***4800**L***114*102**BNSF
W2*NCQU*280006**CC*L**25****BNZ*138442
R4*5*SL*668100*ALLIANCE TX****TX
R4*6*SL*667262*IRVING TX
R4*7*SL*878600*FRESNO CA
R4*M*SL*878600*FRESNO CA
N1*SH*ALLIANCE SHIPPERS INC
N4*SHREVEPORT*LA
N1*N1*U.S. TRANSPOR
N9*WY*138401
N9*SI*9519-01-30-08.56.59.482002
N9*BM*040011611501
N9*YS*3 1
LD*1***42049*N***1872*PCS**L*RE
SE*17*108130001
[ 176 lines skipped ]
GE*11*2310813
IEA*1*002310813
                    
```



VuTran Stats Query Page

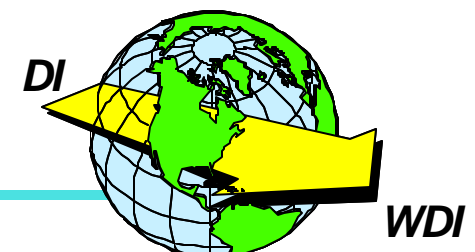
 **TEAM BNSF** [Home](#) [Departments](#) [Emp. Services](#) [Policies](#) [SiteMap](#) [Search](#)

EDI Transaction Statistics

[◆ EDI Home Page](#)

Enter the parameters for the statistics you need and click the **Show Stats** button.


Year	2002
Month	September
Starting Day	01 <small>Required if # of Days is less than a month</small>
# of Days	1 day
Partner	<input type="text"/> <input type="checkbox"/> Ignore Partner
Agent	<input type="text"/> <input checked="" type="checkbox"/> Ignore Agent
Transaction Type	<input type="text"/>
Version	<input type="text"/> <input checked="" type="checkbox"/> Ignore Version
Direction	<input type="radio"/> Both <input checked="" type="radio"/> Inbound <input type="radio"/> Outbound
Environment	<input checked="" type="radio"/> Production <input type="radio"/> Education <input type="radio"/> VAN Production
	<input type="button" value="Show Stats"/> <input type="button" value="Reset"/>



VuTran Statistic Results Page

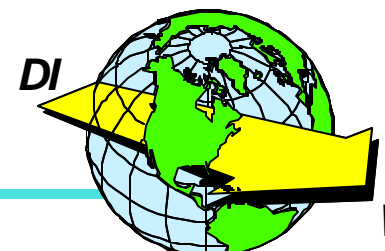
TEAM BNSF [Home](#) [Departments](#) [Emp. Services](#) [Policies](#) [SiteMap](#) [Search](#)

Statistics Query Results
[EDI Home Page](#)



Date: 9/01/2002 # of Days: 1 Direction: Inbound
 Environment: Production

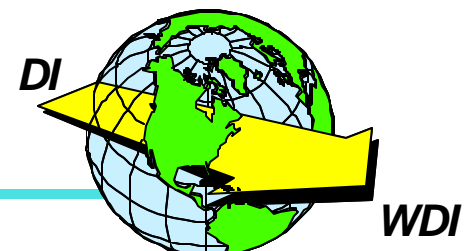
Trading Partner	Type	INBOUND				
		ISA	GS	ST	Char Count	Last Used
ADFS	404	17	17	21	17,366	09-01-2002
ACM	404	7	7	16	15,074	09-01-2002
	997	3	3	16	1,337	09-01-2002
AERC	997	5	5	5	1,284	09-01-2002
AGPROTECH	CLU	62	62	62	9,680	09-01-2002
AGR	418	3	3	3	2,361	09-01-2002
ALCOATECH	CLU	2	2	2	368	09-01-2002
ALLSHIPE	CLM	2	2	2	318	09-01-2002
ALS	419	10	10	10	3,577	09-01-2002
	421	9	9	9	4,266	09-01-2002
AMX	161	110	110	110	69,114	09-01-2002
AMXME	322	15	15	48	25,681	09-01-2002
AMBUTECH	CLU	122	122	122	17,783	09-01-2002
ANDH	404	8	8	8	9,004	09-01-2002
APCO	997	1	1	1	332	09-01-2002
APLOGIST	CLM	1	1	1	321	09-01-2002
APLETRIC	CLU	691	691	691	97,707	09-01-2002
ARCDANNO	CLM	1	1	1	153	09-01-2002
ARR	997	1	1	1	218	09-01-2002
ASHORENOR	CLM	4	4	4	628	09-01-2002
ASHPETROL	CLM	1	1	1	141	09-01-2002
ASTARTECH	CLU	1	1	1	136	09-01-2002



VuTran Reports

GS Time	TransLog Time	Delay	Size
2001/05/27 05:32:00	2001/05/27 05:32:41	0 m 41 s	3116
2001/05/27 05:32:00	2001/05/27 05:32:49	0 m 49 s	4075
2001/05/27 08:23:00	2001/05/27 08:23:15	0 m 15 s	1305
2001/05/27 11:19:00	2001/05/27 11:19:52	0 m 52 s	771
2001/05/27 11:38:00	2001/05/27 11:38:37	0 m 37 s	1122
2001/05/27 15:04:00	2001/05/27 15:04:51	0 m 51 s	5360
2001/05/27 16:57:00	2001/05/27 16:57:57	0 m 57 s	372
2001/05/27 17:19:00	2001/05/27 17:19:13	0 m 13 s	551

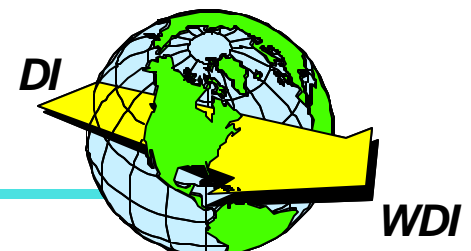
Total Batches 8
Average Delay 0.65 minutes
Minimum Delay 0 m 13 s
Maximum Delay 0 m 57 s



Benefits

★ Who Benefits?

- Marketing
- Accounting
- Purchasing
- Customer Service
- Rail Operations
- Technology Services
 - ✎ EDI Development
 - ✎ Application Development
 - ✎ Operations
 - ✎ Engineering



Questions ??

