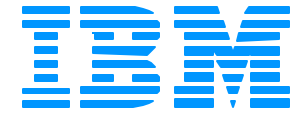
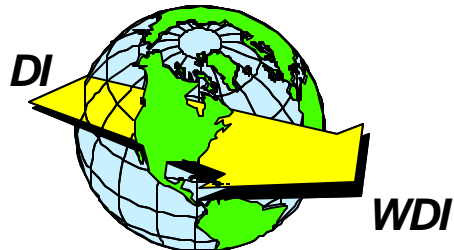


**BNSF**



# *How BNSF Railway found the needle in the hay stack*

The Next Generation



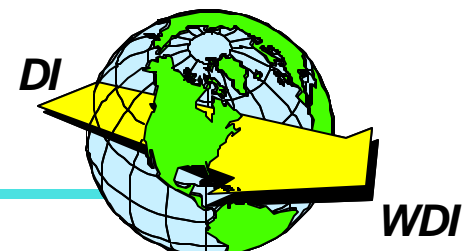
2002 User  
Conference

Chuck Ferrise  
BNSF Railway  
[Charles.Ferrise@BNSF.com](mailto:Charles.Ferrise@BNSF.com)

# Agenda

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- ★ Overview
- ★ VuTran
- ★ Benefits

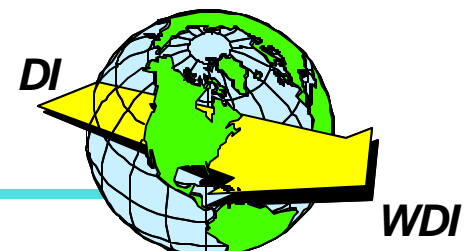


# Overview

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## ★ BNSF

- 33,500 Route Miles of Track
- 40,000 Employees
- 200,000 Fright 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

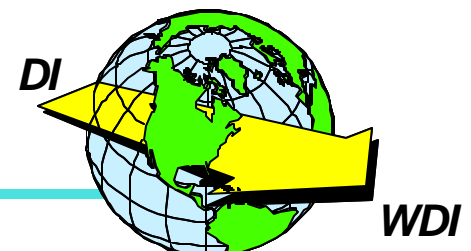
---

## ★ 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

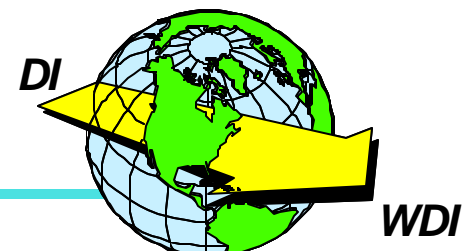
---

## ★ 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

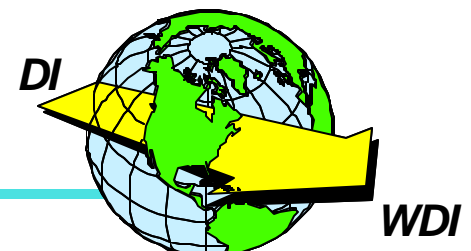


# Overview

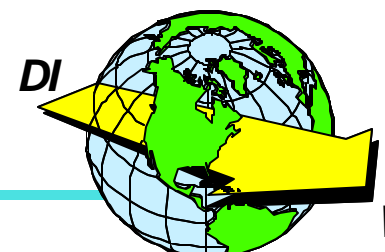
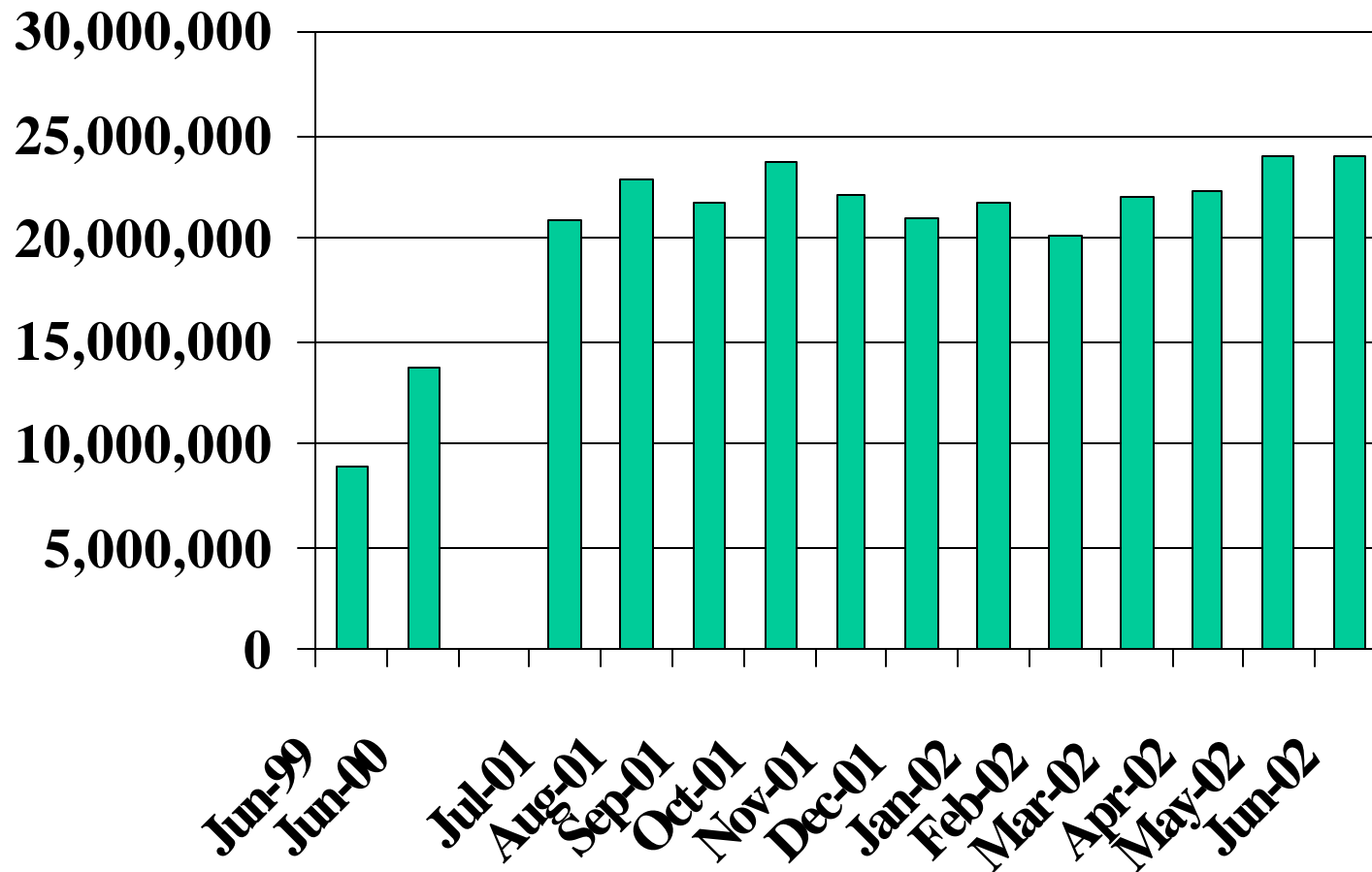
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## ★ Information

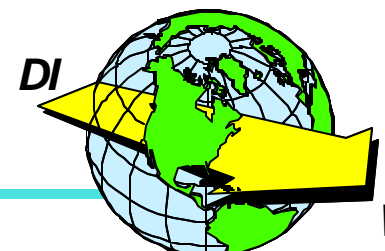
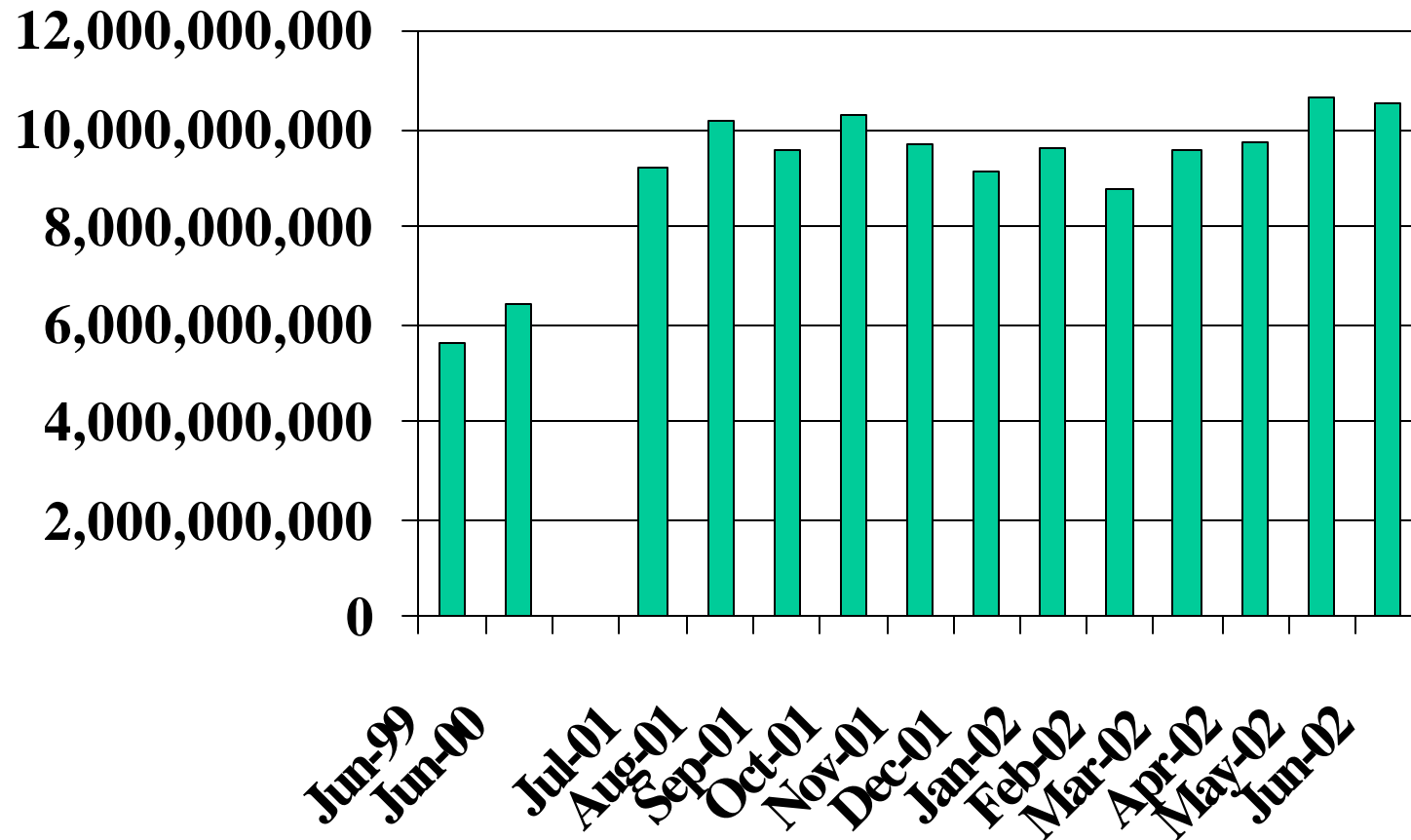
- Released in 1999
- Over 600 hits per day
- Very popular in non-production environments
- Legal retention of data




# Overview X12 Transaction Counts



# Overview X12 Character Counts





**TEAM BNSF**Home Departments Emp. Services Policies SiteMap Search

## EDI Transaction Viewer

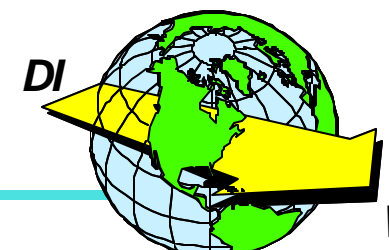
[◆ Test a Message](#) ◆ [Help](#) ◆ [FAQ](#) ◆ [EDI Home Page](#)

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

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

Date/Time Criteria			
<u>Start Date</u>	<u>Start Time</u>	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)
<a href="#">Click here for the NEW shortcuts</a>			

Transaction Criteria		
<u>Transaction Code</u>	<u>Transaction Level</u>	<u>Transaction Direction</u>
<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)		



# 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**.

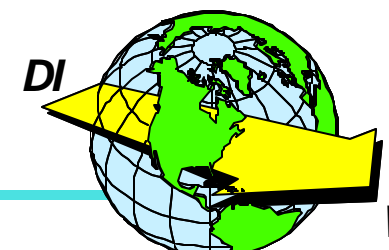
### Optional Search Criteria

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



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

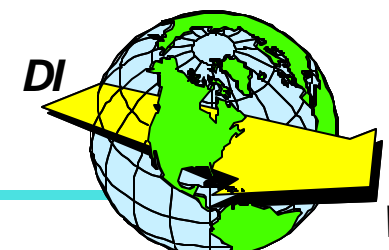
Retransmit

Select Inbound

Select Outbound

Clear All

Direction	Type / Comments	Partner	Agent	Date/Time	GS Control	ST Control	Retransmit?	Acknowledgment/ Cmts/Retransmit?
Inbound	<a href="#">404</a> / <a href="#">0</a>	<a href="#">BNSF</a>	<a href="#">BNSF</a>	08/01/2002 16:33:23	84	840001	<input type="checkbox"/>	<a href="#">Accepted 997</a> / <a href="#">0</a> / <input type="checkbox"/> <a href="#">Rejected 824L</a> / <a href="#">1</a> / <input type="checkbox"/>
Inbound	<a href="#">404</a> / <a href="#">0</a>	<a href="#">BNSF</a>	<a href="#">BNSF</a>	08/01/2002 16:33:29	85	850001	<input type="checkbox"/>	<a href="#">Accepted 997</a> / <a href="#">0</a> / <input type="checkbox"/> <a href="#">Accepted w/Errors 824L</a> / <a href="#">1</a> / <input type="checkbox"/>
Inbound	<a href="#">404</a> / <a href="#">0</a>	<a href="#">BNSF</a>	<a href="#">BNSF</a>	08/01/2002 16:33:43	86	860001	<input type="checkbox"/>	<a href="#">Accepted 997</a> / <a href="#">0</a> / <input type="checkbox"/> <a href="#">Accepted w/Errors 824L</a> / <a href="#">1</a> / <input type="checkbox"/>
Inbound	<a href="#">404</a> / <a href="#">0</a>	<a href="#">BNSF</a>	<a href="#">BNSF</a>	08/01/2002 16:33:43	86	860002	<input type="checkbox"/>	<a href="#">Accepted 997</a> / <a href="#">0</a> / <input type="checkbox"/> <a href="#">Rejected 824L</a> / <a href="#">1</a> / <input type="checkbox"/>
Inbound	<a href="#">404</a> / <a href="#">0</a>	<a href="#">BNSF</a>	<a href="#">BNSF</a>	08/01/2002 16:45:32	884	8840001	<input type="checkbox"/>	<a href="#">Accepted 997</a> / <a href="#">0</a> / <input type="checkbox"/> <a href="#">Accepted 824L</a> / <a href="#">1</a> / <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](mailto:edimaster@ediprod.bnsf.com) for help with April-August 2000, June 2001 and all data prior to March 2000.

Partner	Control #	Type	Date/Time
<a href="#">ITIN</a>	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**

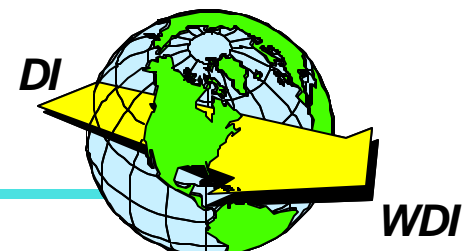
```

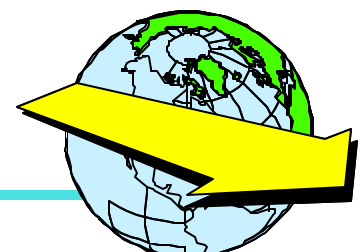
ISA*00* 00* 02*BNSF 02*ITIN 020201*0002*U*00401*002310813*0*P*~
GS*SO*BNSF*ITIN*20020201*0002*2310813*X*004010
ST*322*108130001
QS*B*20020201*0001*CT
NZ*NCQU*280006*59949*N*****CC*TIPZ***4800**L***114*102**BNSF
W2*NCQU*280006**CC*L**25****BNZ*138442
R4*5*SL*668100*ALLIANCE TX****TX
R4*6*SL*667262*IRVING 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
          
```

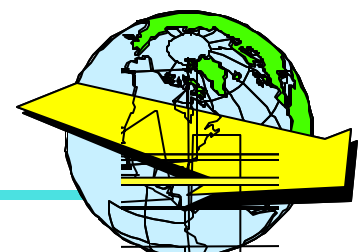
[ 176 lines skipped ]

```

GE*11*2310813
IEA*1*002310813
          
```





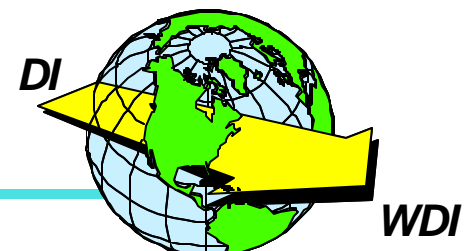


# VuTran Reports

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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

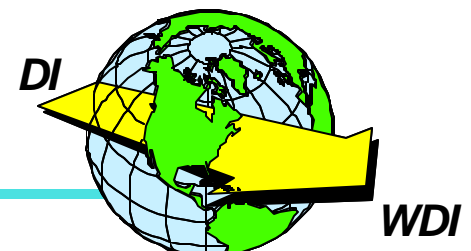


# Benefits

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## ★ Who Benefits?

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





# Questions ??

