# EDI and Graphical Exchanges

John Schmarr
Manager, Product Marketing
Technical Data Communications (Design*Express)
GE Information Services

# DESIGN*EXPRESS?

# EDI User's Group Meeting

March 13 - 16, 1989

GE INFORMATION SERVICES

## The DESIGN*EXPRESS™ Service

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*A New*
*Electronic Data Interchange Product*
*through Marketing and Engineering Teamwork*
*which makes*
*Worldwide Sourcing A Reality*

J. Schmarr

Systems Marketing
GE Information Services



## Agenda

- What is the DESIGN*EXPRESS™ Service?
- What is it's component parts?
- Why is it Important?
- What are the Functions?
- What are the Features?
- What are the Benefits?
- Questions & Answers

# What is it?

# DESIGN*EXPRESS™ Service

BSR

GE INFORMATION SERVICES

*is*

*an Electronic Data Interchange (EDI) Services*

*for*

*Product Definition Data and related documents*

*being offered by*

*GE Information Services*

*to*

*Facilitates Worldwide Sourcing*


# DESIGN*EXPRESS™ OVERVIEW

GE INFORMATION SERVICES

## WHAT IS DESIGN*EXPRESS ?

A SYSTEM TO FACILITATE THE

INTER and INTRACOMPANY,

ELECTRONIC EXCHANGE OF

GRAPHIC AND TEXT DATA

IN DEFINED FORMATS.

## WHAT ARE GRAPHIC AND TEXT DOCUMENTS ?

+ CAD/CAM MODELS

  Not a picture, but a collection of expressions which define the exact geometry and sometimes the physical properties of a part or assembly of parts. These models may be used to automatically create machine instructions for the manufacturing, or they may be used for strength, structural, vibration or other analysis

+ DRAWINGS

  A collection of expression which may be used by a plotter or graphics terminal to create a picture of a part or assembly of parts.

+ ENGINEERING AND MATERIAL SPECIFICATIONS

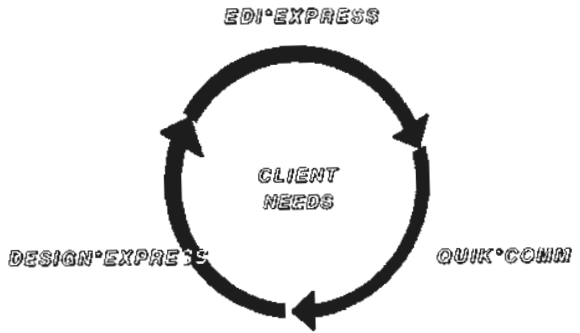
  May be textual material or a combination of text and drawings. Used to define material physical and mechanical properties or min or max design stresses preferred configurations etc.

# DESIGN*EXPRESS™ OVERVIEW

USA

GE INFORMATION SERVICES

## DESIGN*EXPRESS WILL CLOSE THE LOOP !



Component?


# DESIGN*EXPRESS™ OVERVIEW

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WORLDWIDE TELEPROCESSING NETWORK

SECURITY FEATURIES

ALLIANCES

ENGINEERING CONSULTING SERVICES

QUALITY ASSURANCE SOFTWARE
(RELIABILITY, AVAILABILITY AND MAINTAINABILITY)

PROFESSIONAL SERVICES PERSONNEL
FOR SOFTWARE DEVELOPMENT

CUSTOMIZED SOFTWARE
(CAD/CAM TRANSLATION SOFTWARE)

COMMUNICATION SOFTWARE

# DESIGN*EXPRESS™ OVERVIEW

GE INFORMATION SERVICES

## Component Parts

The DESIGN*EXPRESS™ System

The DESIGN*PC™ System

The DESIGN*DISPLAY™ System

The MicroNet Express Service

The MicroNet Express PC System

The DESIGN*Encrypt Systems
- PC System
- Mainframe System

The DESIGN*DAC Systems
- PC System
- Mainframe System

The DESIGN*Compress Systems
- PC System
- Mainframe System




# Important?

## GLOBAL BUSINESS ENVIRONMENT

- COMPETITION IS WORLDWIDE
- COMPANIES SEEK NEW SUPPLIER RELATIONSHIPS
  - Shrinking Supplier Base
  - Joint Product Development
  - New Trading Partner Arrangements
- TECHNOLOGY INTRODUCED AT INCREASING RATES

# Functions?


# DESIGN*EXPRESS™ OVERVIEW



## REDUCED TO THE SIMPLEST TERMS

The DESIGN*EXPRESS™System

→ RECEIVES

→ AUTHENTICATES

→ TRACKS &

→ DISTRIBUTES

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small or LARGE
ASCII OR BINARY
FILES

# DESIGN*EXPRESS™ OVERVIEW



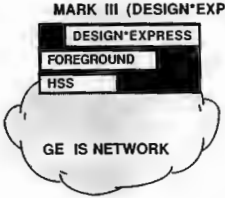
IT'S HOW IT DOES IT !

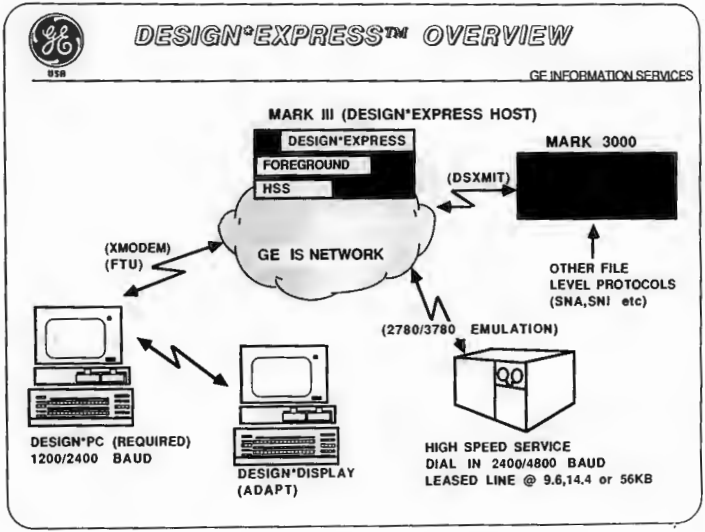
IT'S THE VALUE WE ADD, - - - -

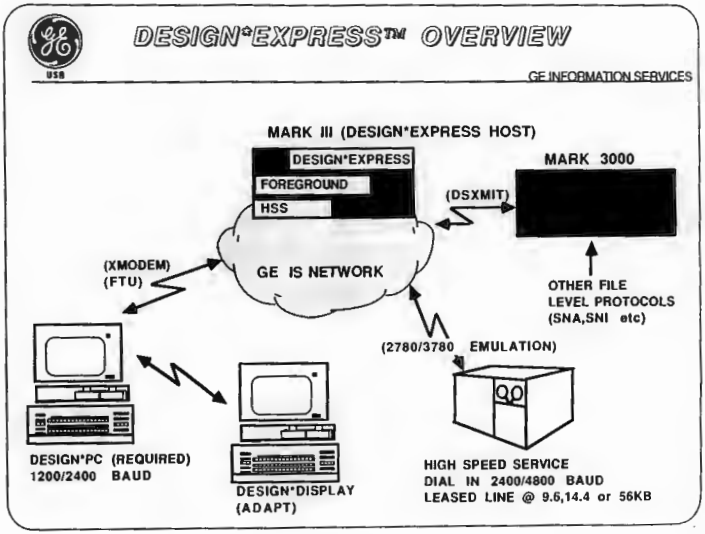
THAT COUNTS!

# DESIGN*EXPRESS™ OVERVIEW

GE INFORMATION SERVICES




DESIGN*EXPRESS™ OVERVIEW
GE INFORMATION SERVICES
MARK III (DESIGN*EXPRESS HOST)
DESIGN*EXPRESS
FOREGROUND
HSS
MARK 3000
(DSXMIT)
(XMODEM)
(FTU)
GE IS NETWORK
OTHER FILE
LEVEL PROTOCOLS
(SNA,SNI etc)
(2780/3780 EMULATION)
DESIGN*PC (REQUIRED)
1200/2400 BAUD
DESIGN*DISPLAY
(ADAPT)
HIGH SPEED SERVICE
DIAL IN 2400/4800 BAUD
LEASED LINE @ 9.6,14.4 or 56KB


DESIGN*EXPRESS™ OVERVIEW
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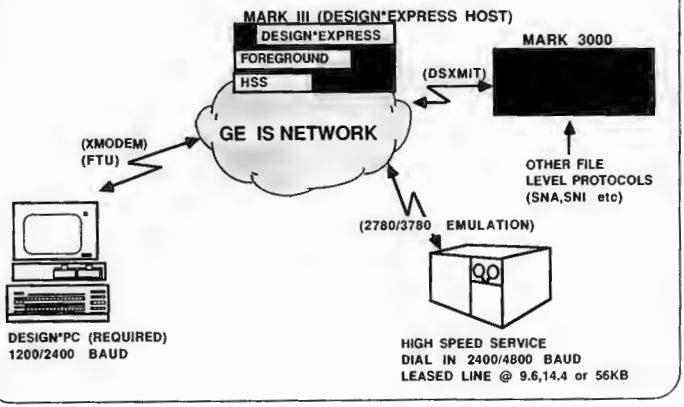
GE INFORMATION SERVICES



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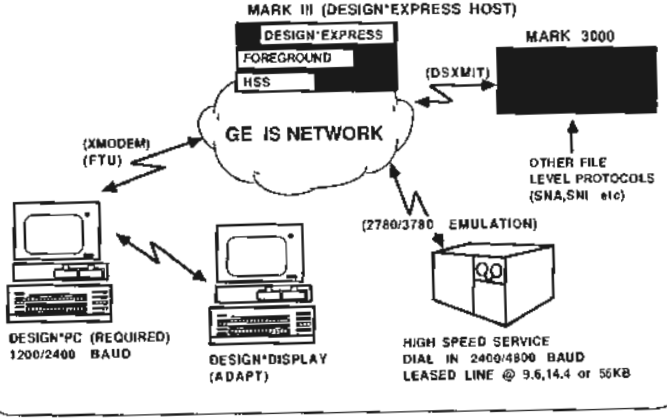
GE INFORMATION SERVICES



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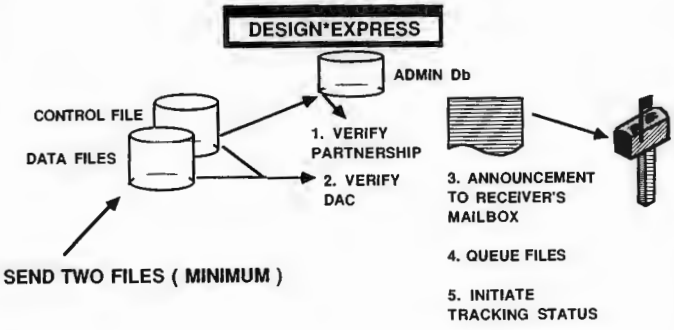
GE INFORMATION SERVICES



# Features?

# DESIGN*EXPRESS™ OVERVIEW

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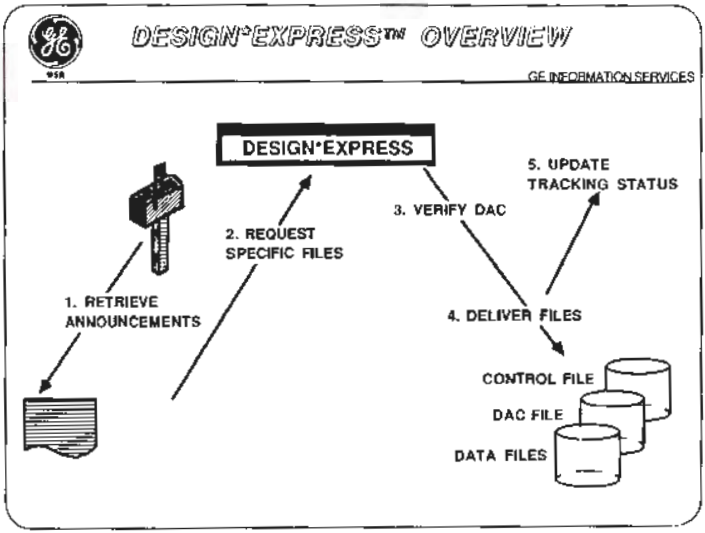
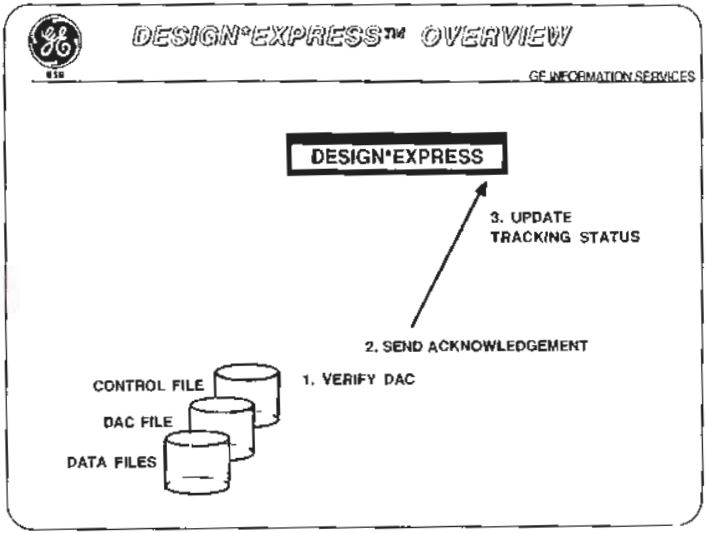
- OUR DAC IS PROPRIETARY
- OUR DAC HAS BEEN REVIEWED AND ACCEPTED BY;
  - > NATIONAL SECURITY AGENCY
  - > NATIONAL BUREAU OF STANDARDS
  - > DEPARTMENT OF DEFENSE
- IT IS BASED ON THE;
  NUMBER, LOCATION, PATTERN &
  RELATIONSHIP OF BITS IN THE FILE
- A TYPICAL DAC - 0003DBYXslr7fn
- THE PROBABILITY OF A UNDETECTED
  ERROR IS 1 CHANCE IN $10^{22}$ BITS
- A DAC MUST BE TRANSMITTED WITH THE CONTROL FILE
  OR THE DATA FILE WILL NOT BE DISTRIBUTED


DESIGN*EXPRESS™ OVERVIEW
GE INFORMATION SERVICES
DESIGN*EXPRESS
1. RETRIEVE ANNOUNCEMENTS
2. REQUEST SPECIFIC FILES
3. VERIFY DAC
4. DELIVER FILES
5. UPDATE TRACKING STATUS
CONTROL FILE
DAC FILE
DATA FILES


DESIGN*EXPRESS™ OVERVIEW
GE INFORMATION SERVICES
DESIGN*EXPRESS
3. UPDATE
TRACKING STATUS
2. SEND ACKNOWLEDGEMENT
1. VERIFY DAC
CONTROL FILE
DAC FILE
DATA FILES

## OTHER GOOD STUFF

- CARBON COPY --- ONE TO MANY.
- GROUP ADDRESSES --- a la QUIKCOMM $
- ARCHIVING --- OFFLINE STORAGE
- TRACKING --- THROUGH 8 REPORTS

## A COUPLE OF THINGS TO THINK ABOUT:

- BECAUSE OF DAC REQUIREMENT NO TRANSLITERATION OF DATA IS PERMITTED

  ie. IF DATA IS TRANSMITTED TO MARKIII AS EBCDIC IT MUST BE DELIVERED AS EBCDIC OR ASCII AS ASCII.

  A CONSIDERATION WHEN DIFFERENT COMPUTERS ARE TO COMMUNICATE

- WATCH FOR NETWORK CONTROL CHARACTERS IN BINARY DATA

  OUR PROPRIETARY ENCRYPTION PROGRAM WILL ELIMINATE THIS PROBLEM.

# Benefits?

# DESIGN*EXPRESS™ OVERVIEW

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- ACCURACY / SECURITY
  - Provided by the Data Authentication Code
  - Provided by Network Security
  - Provided by Encryption
  - Provided by DESIGN*EXPRESS Addressing

  Means that it can be the NORMAL MODE OF OPERATION no matter how sensitive, or complex or important the data

- TRACEABILITY / AUDITABILITY
  - Provided by DESIGN*EXPRESS Tracking/Reported
  - Provided by Document Acknowledgements

  Means that it can be the NORMAL MODE OF OPERATION even when proof of delivery or an audit trail is required.


# DESIGN*EXPRESS™ OVERVIEW



- DEPENDABILITY / AVAILABILITY

  Means that it can be the NORMAL MODE OF OPERATION
  The service will always be there.

  Whether it's 5:10pm or the 4th of July or The Queen's Birthday you never have to wait for tomorrow, you never miss the " LAST SHIPMENT"

- WORLDWIDE NETWORK REACH & CONNECTIVITY

  Means that it can be the NORMAL MODE OF OPERATION
  The service is going to reach and connect with your trading partner

- SPEED - SPEED - SPEED

- Provided by the Network
- Provided by DESIGN*EXPRESS System Processing

Means that it can be the NORMAL MODE OF PROCESSING NO MATTER HOW FAST IT HAS TO GET THERE.

USA

# DESIGN*EXPRESS™ OVERVIEW

GE INFORMATION SERVICES

- *THE BOTTOM LINE IS*
  *SPEED, ACCURACY,*
  *DEPENDABILITY, SECURITY!*

TO YOUR CLIENT THAT MEANS;

- » GETTING TO MARKET FIRST
- » REACTING TO CHANGE FASTER
- » REDUCING INVENTORIES

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*QUOTES FROM FORTUNE MAGAZINE ARTICLE - FEB.13, 1989*
*HOW MANAGERS CAN SUCCEED THROUGH SPEED.*

" ONE OF THE BIGGEST MISTAKES IS TO TRY TO DO THE SAME THING FASTER"
" MARKET SHARE GROWS BECAUSE CUSTOMER LOVE GETTING THEIR ORDER NOW"
" EVEN QUALITY IMPROVES"
" IF YOU GET TO MARKET FIRST WITH A NEW TECHNOLOGY YOU CAN CHARGE A PREMIUM"
" IF YOU COME UP AGAINST ONE OF THOSE FAST CORPORATIONS AND YOUR
NOT PREPARED,..... YOUR HISTORY"

# Summary?

## Field Test Experience . . . . . .

are in the following Industries:

Aerospace, Heavy Equipment and Retail/Apparel

The DESIGN*EXPRESS™ System is being used Internally within GE for the transmission of Product Definition Data and Related Information for:

- Design Data
- Quality Assurance and Test Data
- Near Net Shapes

While the DESIGN*EXPRESS™ System is being used externally for the transmission of Product Definition Data as well as:

- Engineering & Material Specifications
- Engineering Design Evaluation Data
- Patterns, Sketches and Drawings within within the Retail/Apparel Industries

John E. Schmarr II
Product Marketing Manager
Technical Data Communications
GE INFORMATION SERVICES

John E. Schmarr II is Product Marketing Manager, Technical Data Communications, for GE Information Services. In this capacity he is responsible for the product definition, packaging, pricing, and positioning of GEIS' DESIGN*EXPRESS System family of products.

Before joining GEIS in 1982, Schmarr held a series of management, consulting, and electronic data auditing positions while working for engineering and manufacturing companies, as well as for the local and federal governments. He has over 20 years' experience in data processing and management, including systems design, development, and implementation, contract negotiations, and labor relations.

Schmarr holds a B.S.B.A. in Personnel Management, General Business Administration and Computer Science, Urbana University, Urbana, Ohio, and an M.B.A. in Management and an M.S. in Management Information Science from DePaul University, Paris, France.

# EDI and Graphical Exchanges

Ted Annis
CEO
Supply Tech

SUPPLY TECH, INC.

# GRAPHICAL EXCHANGE

# Introduction

# Software for:

- EDI (STX12 for the IBM PC)
  (STX12 for the IBM Mainframe)
- Bar Coding (STBAR)
  (STSCAN)

# In the World of EDI:

- Over 1900 Installations
- U.S., Canada, Mexico, Europe, Australia
- Agent for EDI Networks (VANs)
- EDI Software Co-Marketed by AT&T
- EDI Software Resold by Infonet

# In the World of EDI:

- Member of ANSI ASC X12
  (Board of Directors)
  (Vice Chair Committee C)
- Member of Various Industry Groups
- Assisted in Reconciling the X12
  and EDIFACT EDI Standards

# In the World of EDI:

- Supply Tech's Implementation of the Methodology for CAD Transfer Within the EDI Standards (X12) Became the Model Upon Which the X12 EDI Standards Committee Based This Addition to the EDI Standard

# In the World of EDI:

- Major Customers from Small to Many Fortune 500 Companies:
  - AT&T
  - IBM
  - Ford Motor Company
  - Jordache
  - Ball Jar
  - Veterans Administration

# GRAPHICAL EXCHANGE

# VIA

# EDI

Job No. 125.127

# Accommodation of Non-X12 Data Within the X12 Framework

Initial Impetus for this Was the Need to Have Engineering Drawings Accompany a "Standard" X12 Transaction Such as a Request For Quote

There Exist Three Basic Issues:

1. How to Insert Non-X12 Data With Standard EDI Transactions
2. Transport (Communications)
3. Translation of the Non-X12 Data

We Shall Devote Ourselves to Discussion of This First Issue, Except to Say ...

On Issue 2:

The Communications Protocols Employed Must Handle Both Binary and Text Data and Avoid Confusing the Two, and Avoid Possible Confusion Between ASCII and EBCDIC Based Computers

On Issue 3:

Translation of CAD Data and Other Data Types is the Subject of Other Subcommittees

The Current X12 Draft Proposal Deals With the First Issue:

How to Insert Non-X12 Data Within Standard X12 Transactions

The Insertion of Non-X12 Data Is Accomplished With Two Proposed Segments:

1. EFI (Electronic Format ID)
2. BIN (Binary Data)

The EFI Segment Contains 15 Elements Which Provide Largely Descriptive and Identification Data

The BIN Segment Contains 2 Elements to Accomplish the Mission:

| | | |
|---|---|---|
| BIN01 | Length | 1/9 |
| BIN02 | Binary Data | 1/999,999,999 |

The BIN Segment, in Practice, Looks Like:

BIN*1000000*<1MB DATA>@

These Segments May Be
Inserted Into Any of the
"Standard" X12 Transactions
in Almost Any Spot

There Have Been Actual Implementations of This Idea for About a Year Using an XFR Segment Which Was Proposed at That Time

The Results Are Great!

Using Current Modem Technology, Which Yields an Effective 17,200 bps, a Request For Quote With an Embedded 1MB CAD File Can Be Sent Nearly Anywhere in 10 Minutes Over a Voice-Grade, Dial-Up Phone Line

The Capability Goes Beyond CAD Files, Of Course:

Spread Sheets, Digitized X-Rays, Photographs, Computer Programs, Etc. All Could Be Inserted

SUPPLY TECH, INC.

Ted C. Annis
Chief Executive Officer
Supply Tech, Inc.

Ted C. Annis is one of four founders of Supply Tech, Inc. Founded in 1984, Supply Tech designs, produces, and markets EDI and bar-coding software. Before starting Supply Tech, Mr. Annis spent 19 years with Ford Motor Company developing applications for production control, shop floor, labor performance, accounting, warehousing, real-time monitoring, and inventory systems. Prior to joining Ford, he was with Central Trust Company Bank.

Mr. Annis has a B.S. degree and an M.B.A. from Xavier University.