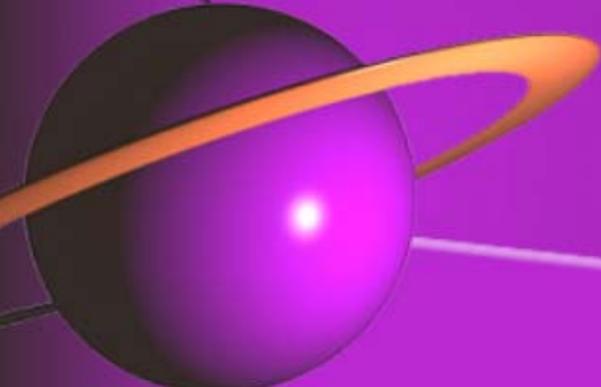


**FedEx**

Corporation

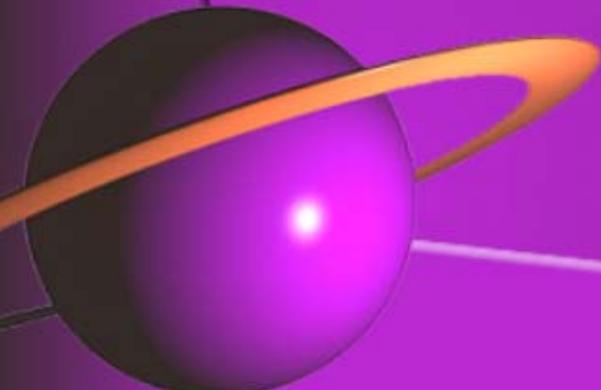
# Implications of Digital Data for Operations

*Grover Trask*



# Purpose

- Where we get data
- Tools to produce and how we produce data
- What we do with data



# Overview

- Goals
- Information Sources
- Information Management
  - Document Management
  - Workflow & Document Approval
- Information User (PAT)

# Project Goals

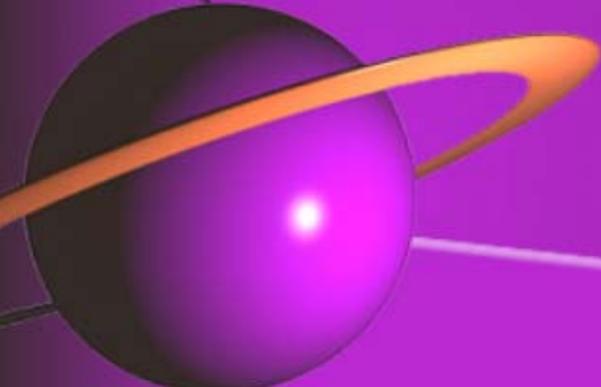
- Get accurate flight information to crews in the shortest period of time
- Save money
  - Reduce personnel
  - Reduce printing cost
  - Reduce distribution cost and time
- Standardize Documents

# How We Intend to Meet These Goals

- Reuse of Data
- Standardize where information is found in manuals
- Automated Production
- CD
- Web Based Documents
- Paperless Flight Deck

# Information Sources

- Boeing
- Honeywell
- Internal Management



# Authoring Tools

- Use the same tools as the manufacturer
- Coordinate formats
  - FM+SGML
  - SGML
  - XML
  - SVG
  - CGM

# Structured Document

Structure View

- SubChapter -
  - Highlights = <no value>
  - Include\_In\_Index = Yes
  - Include\_In\_Toc = Yes
  - UniqueID = <no value>
  - Chapter\_Name = System Description
  - Chapter\_Number = 8
  - PubNum = -
  - SubChapter\_Name = APU
  - SubChapter\_Number = 8-5
- Title - ..... ▶ Auxiliary Power Unit
  - For\_Volumes = All
  - Title\_Context = Systems\_Description
  - Highlights = <no value>
- Chapter\_Part +
  - Title - ..... Description and Operation
    - For\_Volumes = All
    - Title\_Context = Systems\_Description
    - Highlights = <no value>
  - + Section - ..... Overview (1.0.0)
    - For\_Volumes = All
    - Highlights = <no value>
  - Intentional\_Blank

Microsoft

Microsoft Po... | Inbox - Outlo... | Adobe Acrob... | Adobe Fra... | FrameMaker... | 3:33 PM

Adobe FrameMaker+SGML - [d:\Framelink Download\Checkout\Fedexedd.fm]

File Edit Element Format View Special Graphics Table FrameLink+SGML FedEx Window Help

? [Icons] P B I U AA Aa ab Ab AB [Icons]

\*Body

0 1 2 3 4 5 6 7

real attribute called Cell\_Font\_Size, and an optional choice element called Cell\_Alignment.

**Element (Container): Para**

**General rule:** (<TEXT> | CrossReference | Page\_Date | Continued\_Footer | Continued\_Header), AFMLimit?

**Inclusions:** Bold, Italic, Underline, Blue, Orange, Alert, CrossReference, Superscript, Subscript, Symbol, Footnote, Marker

**Attribute list**

1.	<b>Name:</b> For_Volumes	<b>Choice</b>	<b>Optional</b>
	<b>Choices:</b> All, FCOM/QRH, FCOM/VOL2, FCOM/VOL3		
	<b>Default:</b> All		
2.	<b>Name:</b> Highlights	<b>String</b>	<b>Optional</b>
3.	<b>Name:</b> Cell_Font_Size	<b>Choice</b>	<b>Optional</b>
	<b>Choices:</b> 6,6.5,7,7.5,8,8.5,9,9.5,10,10.5, 11, 11.5		
	<b>Default:</b> 10		
4.	<b>Name:</b> Cell_Alignment	<b>Choice</b>	<b>Optional</b>
	<b>Choices:</b> Left, Center, Right, Decimal		
5.	<b>Name:</b> Cell_Vert_Alignment	<b>Choice</b>	<b>Optional</b>
	<b>Choices:</b> Top, Middle, Bottom		
6.	<b>Name:</b> Cell_Tab_Offset	<b>Choice</b>	<b>Optional</b>
	<b>Choices:</b> 1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1		
7.	<b>Name:</b> Cell_Tab_Type	<b>Choice</b>	<b>Optional</b>
	<b>Choices:</b> Left, Right, Center, Decimal, None		
8.	<b>Name:</b> Cell_List_Alignment	<b>Choice</b>	<b>Optional</b>
	<b>Choices:</b> Left, Normal_Indent		
	<b>Default:</b> Normal_Indent		
9.	<b>Name:</b> ID	<b>Unique ID</b>	<b>Optional</b>
10.	<b>Name:</b> Line	<b>Choice</b>	<b>Optional</b>
	<b>Choices:</b> Yes, No, Down_To_The_Line, Under_Line, Plain		
	<b>Default:</b> No		
11.	<b>Name:</b> Position	<b>Choice</b>	<b>Optional</b>

Alert\_Head, Alerts\_List, Alert\_Procedure, AndOr Book Elements, Normal Checklist Elements,

Flow: A E: Choices 121 of 328 \* 80%

The screenshot shows the Adobe FrameMaker+SGML interface. The title bar reads "Adobe FrameMaker+SGML - [d:\Framelink Download\Checkout\fedexedd.fm]". The menu bar includes File, Edit, Element, Format, View, Special, Graphics, Table, FrameLink+SGML, FedEx, Window, and Help. The toolbar contains various icons for file operations, editing, and formatting. The main window displays a list of text format rules for the "Body" style. The rules are numbered 1 through 4 and include conditional formatting based on context and specific aircraft types.

**Text format rules**

- 1. In all contexts.**  
Use paragraph format: Body
- 2. If context is: \* < [Same\_as\_Primary\_Aircraft="MD10"]**  
Default font properties  
Color: Grey  
Else, if context is: \* < [Same\_as\_Primary\_Aircraft="MD11"]  
Default font properties  
Color: Grey  
Else, if context is: \* < [Same\_as\_Primary\_Aircraft="A300"]  
Default font properties  
Color: Grey  
Else, if context is: \* < [Same\_as\_Primary\_Aircraft="A310"]  
Default font properties  
Color: Grey
- 3. If context is: Section**  
Basic properties  
Paragraph spacing  
Space below: 6 pt  
Space above: 6 pt
- 4. If context is: \* < Table\_Cell**  
Basic properties  
Indents  
First indent: .015  
Left indent: .015

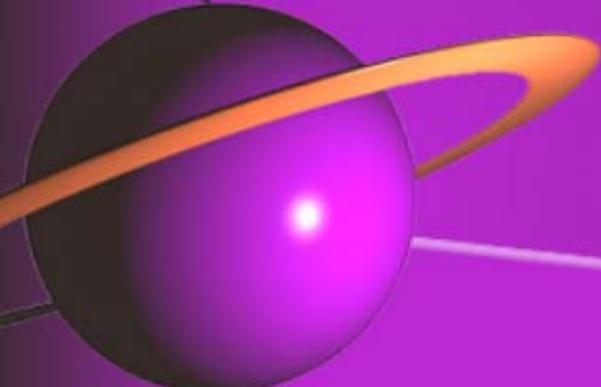
Flow: A E: FirstIndent | 122 of 328 \* | 80%

# Authoring Tools Training

- \$350 per day
- Caxton
- Authoring, EDD, Import/Export
- FDK
  - C programming
  - 5 day course

# Data Conversion

- MAC Pagemaker to PC FM+SGML
  - manual process
- Two (2) years

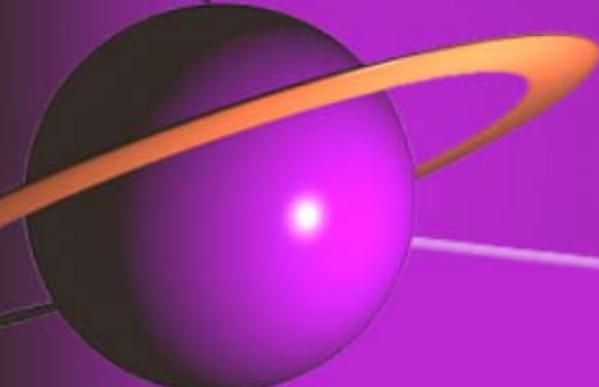


# Information Management

- Part of Air Operations Document Management System
- Documentum
  - Storage and Protection of data
  - Workflow to ensure correct documents
- FrameLink+SGML
  - Integration with Documentum

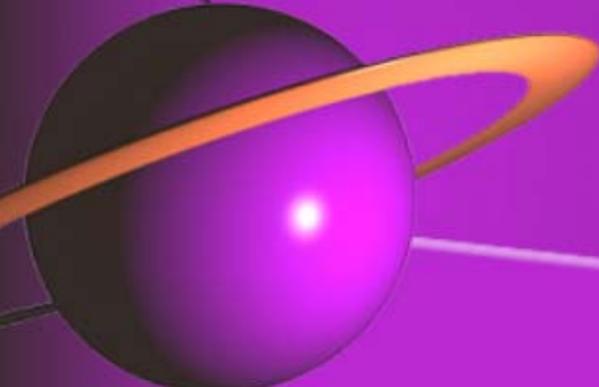
# Implementation

- Two implementation methods
  - Integrator
    - Customize
  - Internal Deployment
    - Deployed “Out of the box”



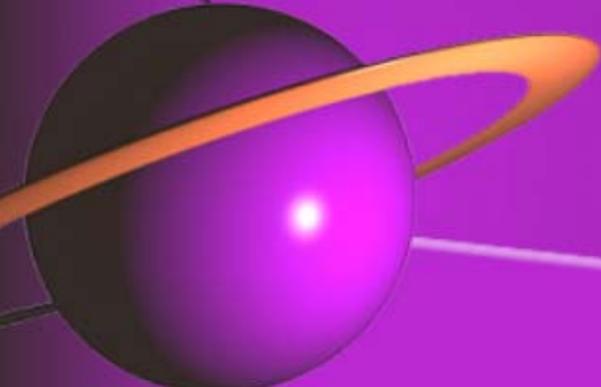
# Required Personnel

- Server Administrator (NT or UNIX)
- Database Administrator
- DMS Administrator
- Local DMS Administrator



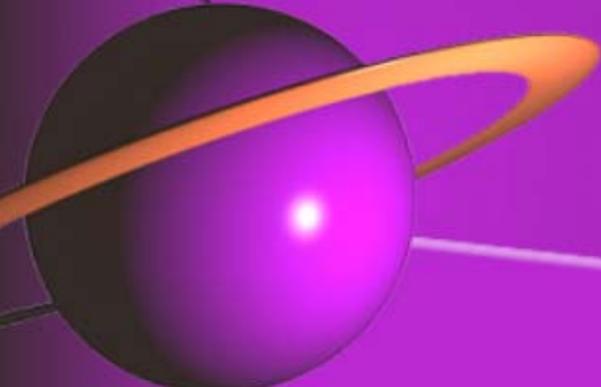
# Training at Documentum

- \$500 per day + travel

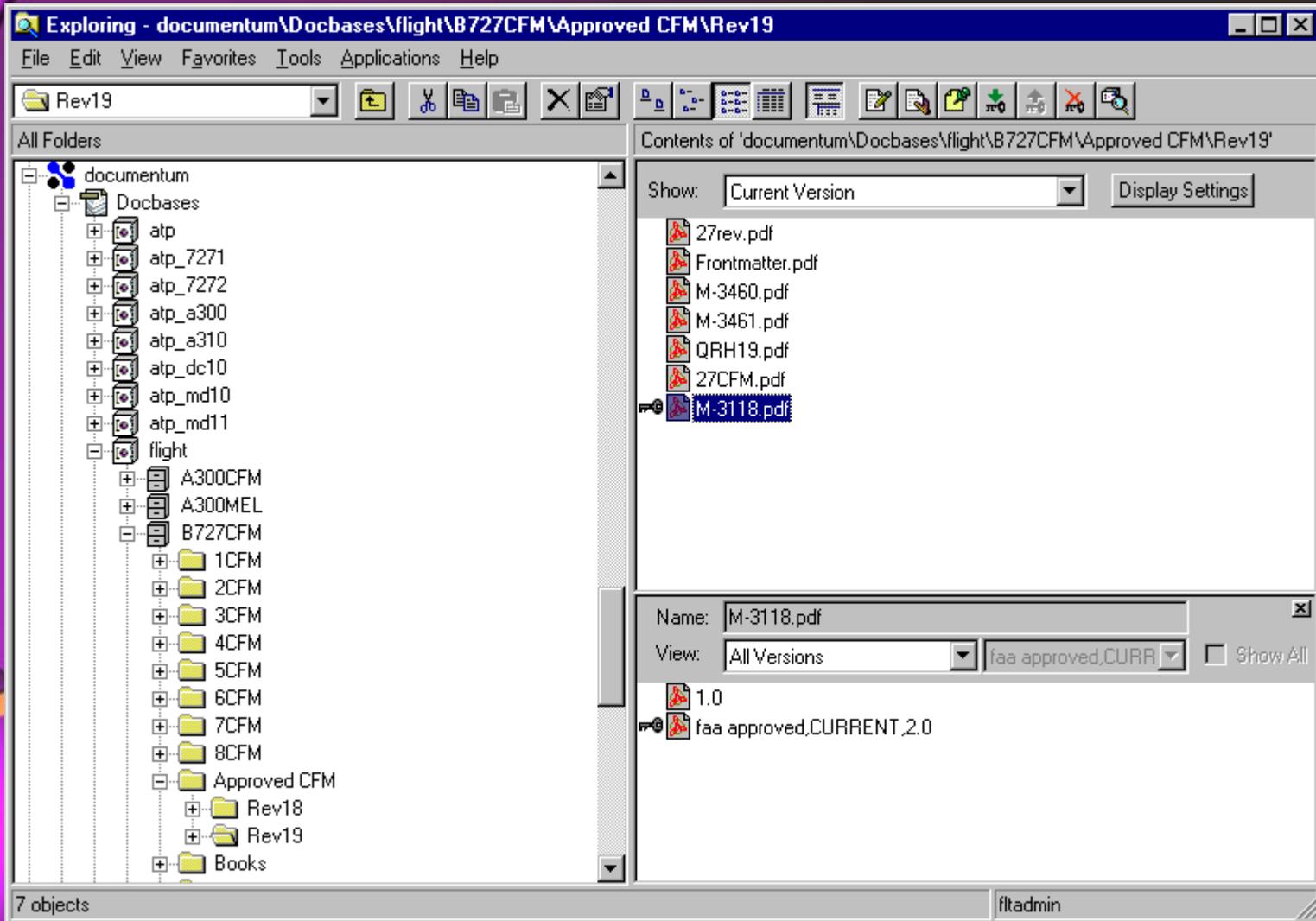


# Document Storage

- Check-in & Check-out
- Version
- Revision

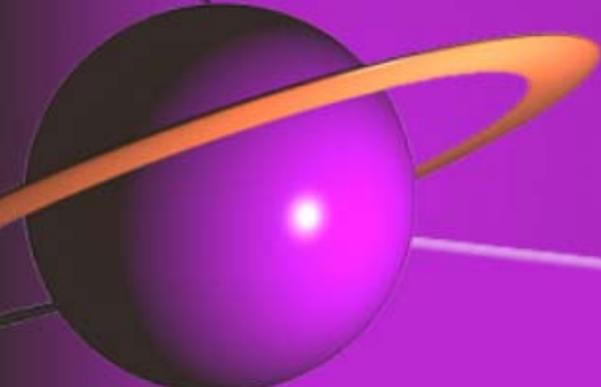


# Documentum



# Workflow

- **USED TO GET THE WORDS CORRECT**

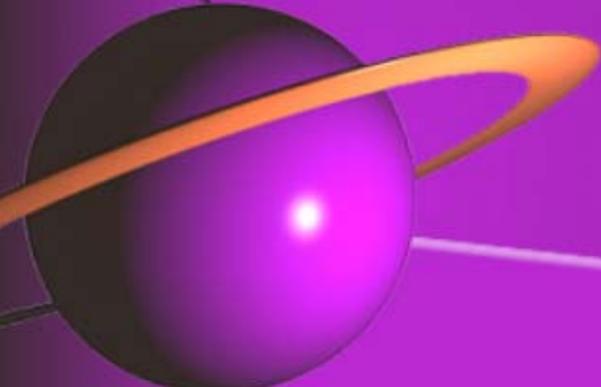


# Workflow

- Documents who has reviewed the document
- Faster revision process
- Stores who has made specific comments
- Records the time reviewers have to make comments and when they made them.

# Digital Signature

- Acrobat Signature Tool
- Date time stamp
- Stamp of POI signature on document



# FAA Digital Signature

The screenshot shows the Adobe Acrobat interface with a document titled "M-3118.pdf". The document content includes a checklist with the following items:

- Set
- Off & Light Out
- Fastened
- Flt
- Standard/Max
- Idle
- Complete, Rwy \_\_\_\_  
Rwy \_\_\_\_
- 
- Out
- Set
- On
- As required
- Normal
- Ground Off/  
Not installed

At the top right of the document, there is a section titled "Bleed Air Switches" with a "5" and "Set" next to it. Below this is a box containing the following text:

- Tow In Checklist
- \* Accomplish amplified procedures on thru flights
- ▶ To be completed silently

NOTE: See QRH section 2-16 for Delayed Start Checklist.

Below the note, it says "FAA Approved:" followed by a handwritten signature "Robert A. Cowell" and a horizontal line. Underneath the line, it reads "Robert A. Cowell, Principal Operations Inspector".

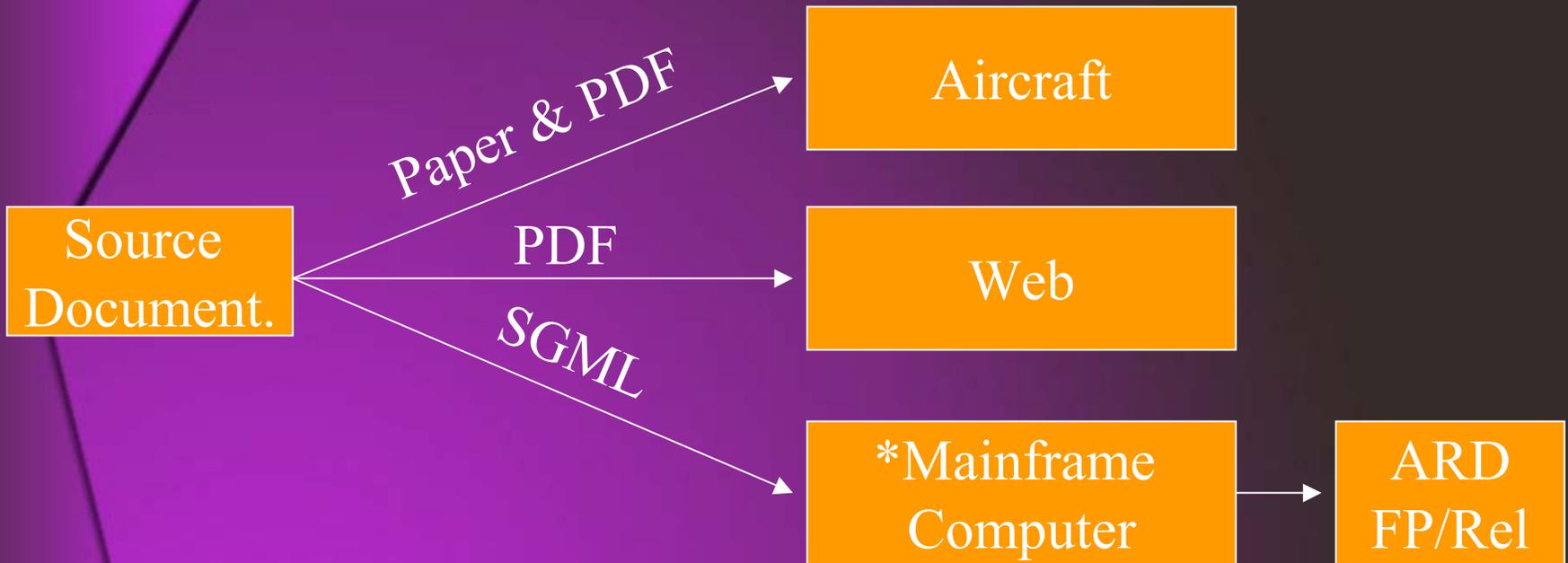
At the bottom of the document, there is a timestamp: "2001.04.19 11:13:23 -06'00'".

The Adobe Acrobat interface includes a menu bar (File, Edit, Document, Tools, View, Window, Help), a toolbar with various icons, and a status bar at the bottom showing "262%", "1 of 2", and "11 x 8.5 in".

# Information User

- Flight Crew
  - In flight (Pilot Access Terminal “PAT”)
  - Study document
- Office personnel
- Maintenance
- Mainframe Computer

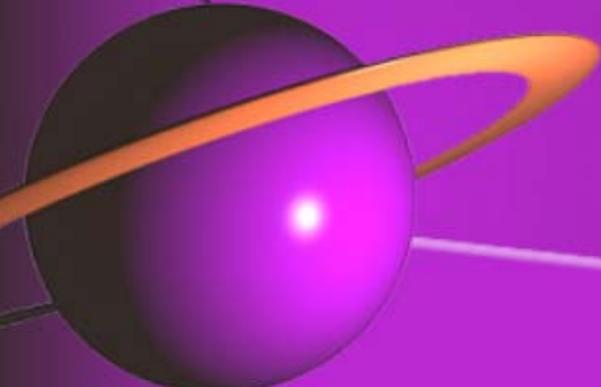
# MEL



\*Omnimark script  
to parse FM+SGML  
SGML

# Conclusion

- Where we get data
- Tools to produce data
- What we do with data



# Future

- XML
- PAT expansion
- Server based delivery
- SVG Animation in CFM

