

Implementation of Real-Time Electronic Delivery of Technical Publications

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imagination at work

Agenda

Technical Publications Data Flow

Process Improvements

Operational Efficiencies Achieved Using ATA
Specs

S1000D Functionality Scorecard



Technical Publications Data Flow

Technical Publications Supply Chain

Step 5
OEM -
distribute
manual

Step 6
Customer -
implement
change

Step 1
Customer -
identify need
for change;
notify OEM

Step 2
OEM -
analyze,
create and
approve
change



> 2 Years To Complete
The Cycle

Step 4
OEM -
publish
manual



Step 3
OEM - create
new or
modified
page block

Process Improvements

Effect of Process Improvements on Cycle Time



2005

90 days

78 days

180 days

40 days

90 days

478 days

2007

30 days

21 days

1 day

17 days

21 days

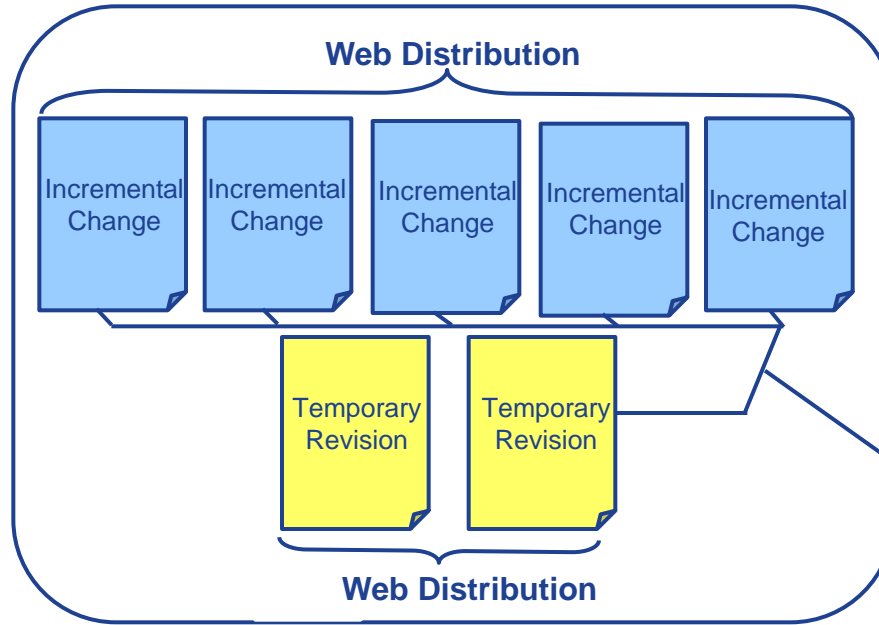
90 days

Lean 6σ

Incremental Change

Incremental Change Process

Rev 20 + IC's + TR's



IC = Incremental Change
TR = Temporary Revision



**TR's and IC's Will Be Incorporated and Used
By Customers Between Revisions**

Effect of Process Improvements on Cycle Time

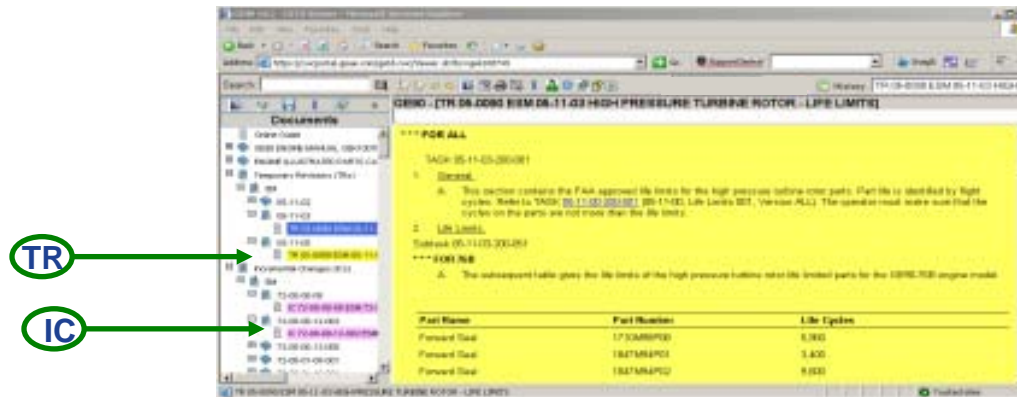


**Operational
Efficiencies
Achieved
Using
ATA Specs**

Operational Efficiencies Utilizing ATA Spec

Web Incorporation of ICs, TRs and SBs

- “INCREV” feature of ATA Spec.
- Technical & Non-Technical changes highlighted
- Web Manuals automatically updated in minutes
- eMail Subscriptions



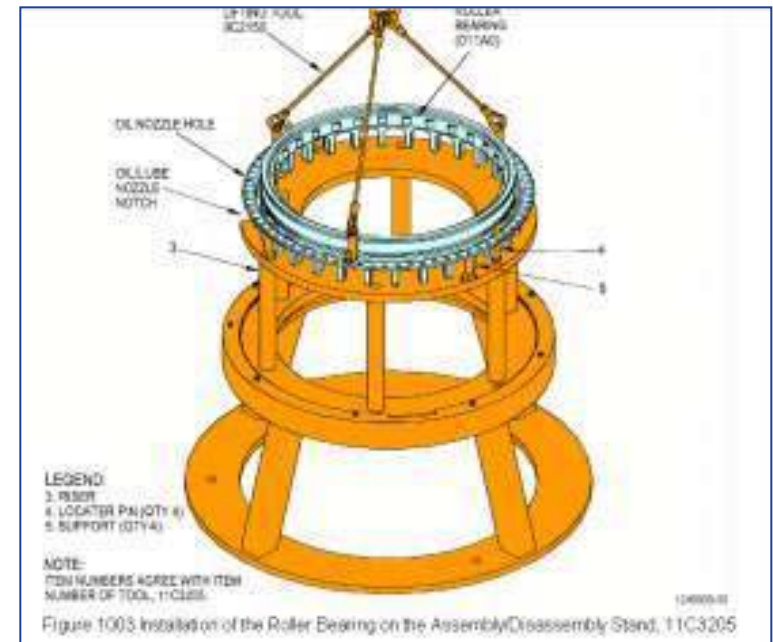
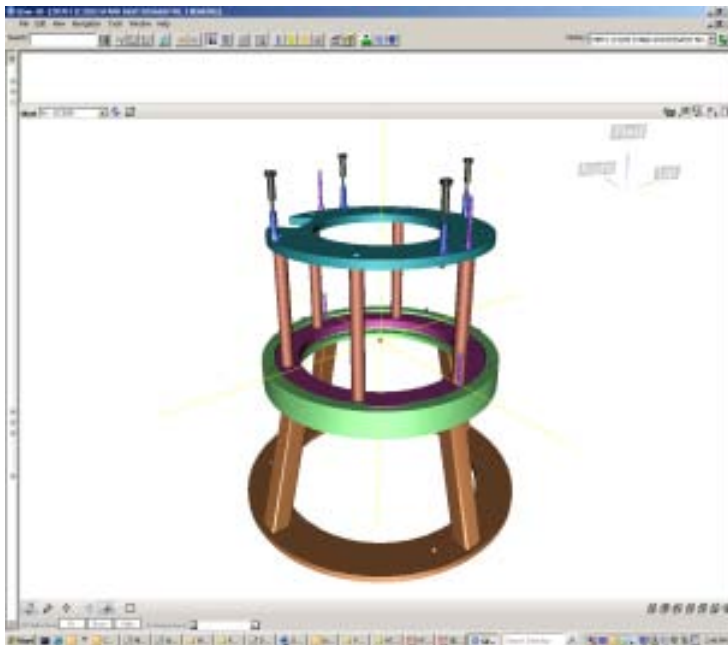
SGML Downloads available for all Documents

- ATA compliant SGML

Operational Efficiencies Utilizing ATA Spec

Utilizing ATA 3D and CGM formats for graphics

- ATA Color palette
- 3D and CGM enhanced features
- 3D exploded views



Operational Efficiencies Utilizing ATA Spec

Transitioned from PDF to HTML

- Resolved Adobe Acrobat incompatibilities
- iSpec 2200 compliant
- HTML printing format
- Fully searchable and linkable
- Fully Integrated suite of manuals
- Data reuse

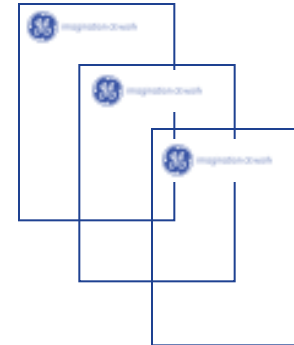


Flow of Engineering Data to Customer

Customer



Training CBT



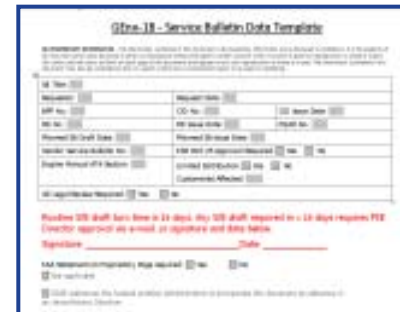
Engineering Change In Design



Engine Shop Manual



IPC



Service Bulletin

Path to S1000D Efficiency



ATA 100

5 documents touched

Change in Design Document

Authored / Issued Service Bulletin

Authored Change to EM / IPC

Published Manual Revision

Customers Incorporate Changes into Their Manuals

ATA iSpec 2200

3 documents touched

Change in Design Digitally Creates SB

Authored Change to Affected IPC Figure / ESM Page Block

Incremental change published and available for Customer Incorporation

S1000D (future)

2 documents touched

Common Source Database

Change in Design Digitally Drives Data Module Change in the Common Source Database

Data Module Available for Customer Incorporation

S1000D Functionality Scorecard

S1000D Functionality Matrix

Delivery and distribution

Linking

User operation mode

Navigation and tracking

Special content

**Diagnostics and prognostics
processes**

Graphics

Updates

Access

Printing

Annotation

External



S1000D Functionality Matrix



GE Publications meet the intent of S1000D functionality in these areas today

Delivery and distribution	100%
Graphics	100%
Linking	100%
Updates	100%
User operation mode	100%

Document Types Reviewed

- Engine Shop Manual (ESM)
- Illustrated Parts Catalog (IPC)
- Illust'd Tool & Equip. Manual (ITEM)
- Service Bulletins (SB)

S1000D Functionality Matrix

GE provides the majority of the functionality in these areas – expect additional enhancements soon

Access	67%
Navigation and tracking	78%
Printing	75%
Special content	73%

Document Types Reviewed

- Engine Shop Manual (ESM)
- Illustrated Parts Catalog (IPC)
- Illust'd Tool & Equip. Manual (ITEM)
- Service Bulletins (SB)

S1000D Functionality Matrix

Areas of future enhancement

Annotation	33%
Diagnostics and prognostics	33%
External processes	13%

Document Types Reviewed

- Engine Shop Manual (ESM)
- Illustrated Parts Catalog (IPC)
- Illust'd Tool & Equip. Manual (ITEM)
- Service Bulletins (SB)

Current Systems provide 66%
of optimal S1000D functionality

Summary

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Data flow 6.5X faster

Data re-use improves
efficiency and quality

Significant progress towards
S1000D functionality



Questions

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