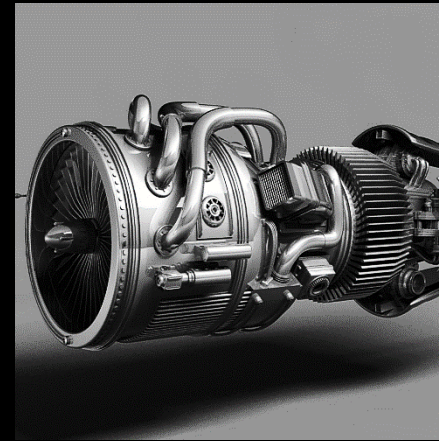# DATA
CAPTURE & ANALYSIS

AN MRO SOFTWARE
VENDOR PERSPECTIVE

By: Praveen PN
Principal – Ramco Systems
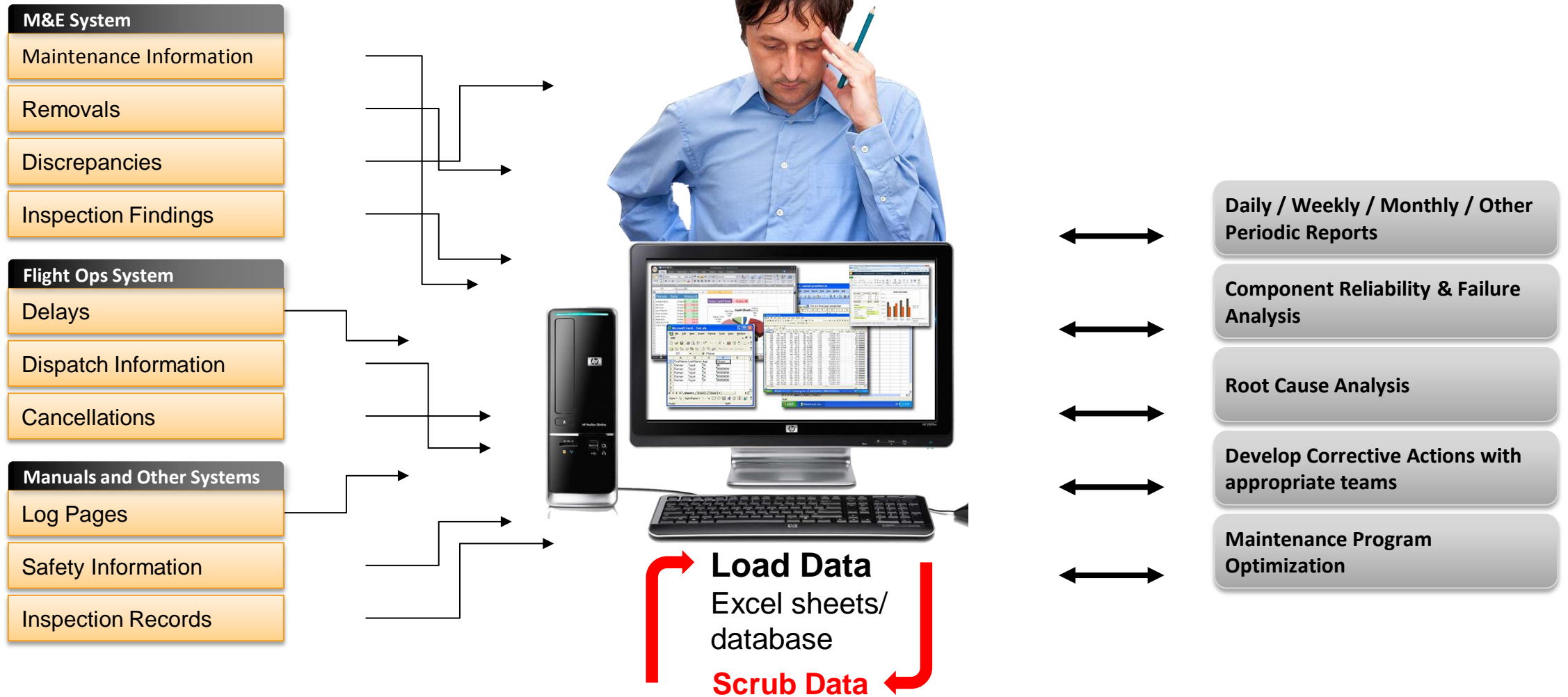14th October, 2014

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Agenda

Data Analysis

 - Case study on how analytics was effectively used to derive value from M&E/MRO and other maintenance system data

Data Capture

 - How new technologies are driving more accurate and real-time data capture within the M&E/MRO space.

Reliability Analyst -Typical Day

Business Issues

Delay in Reporting

Takes lot of time to compile data from multiple systems / departments

Consolidation of Data

Cumbersome to consolidate the information from various systems

Data Integrity and Consistency

Difficulty in scrubbing and maintaining accuracy

Inadequate Analysis & Lack of Insights

Inability to manage voluminous data and inadequate tools for analysis and inferences

Lack of Standardization

High dependency on individuals, inability to transform data to required standards like Spec2000

Advanced Reliability Management
How Analytics can Help

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Dispatch reliability of B777s, A380, ATR72 etc…

Actual fleet performance vs Industry avg

Drill down to identify rogue units

Monitor repeat defects

Total revenue FH/FC

and more…

at the
click
of a button

Multidimensional Reliability Analysis across **fleets** Owned Leased…

Mix & match, Sequence reports to generate report books.

Pre-configured work flow to publish OEM & Statutory reports

Flexible, Intuitive and ad-hoc reporting

Configurable Analytics dashboards for management reporting
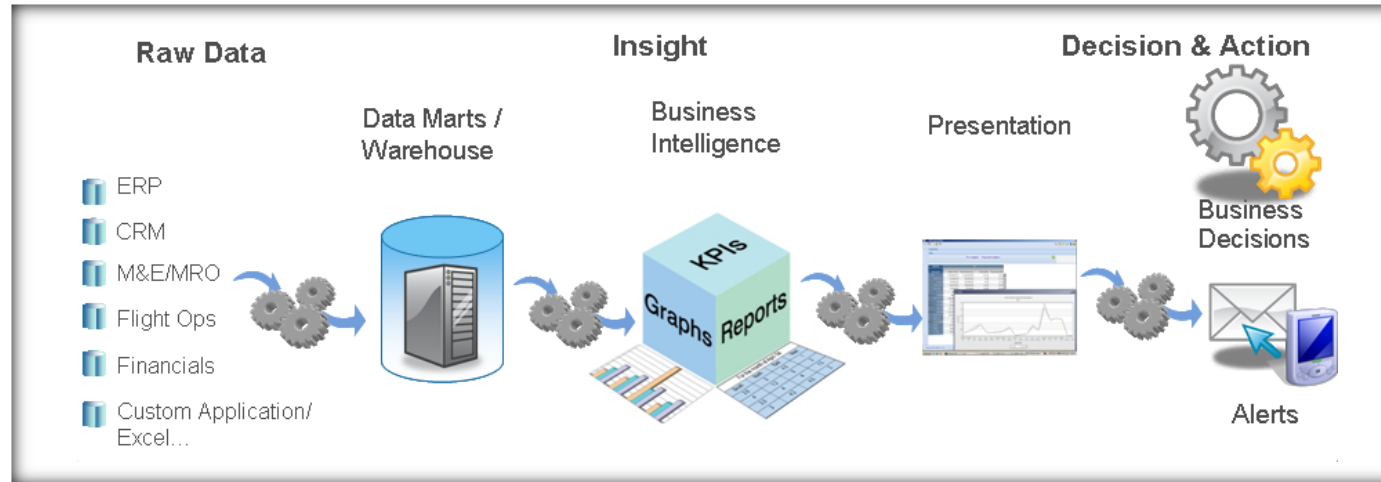
1
Click Data Consolidation

0
Data Silos

1
Click Report Publishing

Advanced Analytics | Informed Decision making

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Raw Data
- ERP
- CRM
- M&E/MRO
- Flight Ops
- Financials
- Custom Application/ Excel…

Data Marts / Warehouse

Insight

Business Intelligence

KPIs

Graphs Reports

Presentation

Decision & Action

Business Decisions

Alerts

> **Robust**
Data Integration/ Warehouse

> **Plug & Play**
Business Intelligence

> **Configurable**
Scorecards/ Dashboards & Alerts

Options

Emirates

- One of the Largest Airline in the world
- Fleet of 200+ aircraft | Worlds Largest Fleet of A380
- Operates over 2500 flights per week to 130 cities across six continents

Key Business needs

- Airline's reliability team spent most of their time in collecting and consolidating data (using excels),leaving little time for analysis
- Inability to publish reliability data in SPEC 2000 format for OEMs
- Difficulties faced in back-dating updates and iterative processing of reliability reports

Solution offered

- Seamless integration with multiple external systems like M&E, safety etc. that was being used by the
- airline
- Consolidation of over 500+ data points for churning out valuable graphical trend analyses, reviews,
- corrections and report generations
- Enables 'click of a button generation' for ad hoc reports, executive dashboards and SPEC 2000
- (Chapter 11) compliant reporting for OEMs

Key Business benefits

- Reduced time to furnish monthly reports from 7 to 2 days
- 100% increase in the identification of rogue components
- Complete data integrity across multiple systems, removing data silos out of the equation
- Tracking changes to reliability data with just a click
- Prepackaged analytics with complete cycle coverage from contract to collection
- Instant reliability report generation for regulatory compliance

Ramco M&E MRO solution – Quick Snapshot

Trusted by the likes of

over 60 customers

Emirates | malaysia airlines | AIR INDIA | Able | COLUMBIA HELICOPTERS

FLTECHNICS YOUR RELIABLE MRO PARTNER | Kenya Airways The Pride of Africa | Air Methods | PHi

across 24 countries

| **24** | **6** | **14** | **22** |
| Americas | MEA | Europe | APAC & Oceania |

serving 03 segments

36 Airlines | **21** Heli Operators | **9** MROs

Over **3,000** aircraft & **16,000** users trust

ramco | aviation software

now on **Wearable devices**

Switching to Data Capture...

We are the system at the point of entry of data.

Why capture data at source?
Accuracy
Avoid duplication down the line – 'capture once, use throughout'
Avoid 'Loss in Translation'
Prevent missed entries and chasing the paper trail after the fact.

Why is it not Captured at Source?

Connectivity

'I do not have a terminal where I work'

'I cannot carry a machine to the aircraft'

'We have machines, but poor network connection'

Could be device, network or application.

Complexity

Application too complex – we will finish the work, release aircraft or ship the part first, then put the entry in later.

Too many steps/fields to complete – same as above.

Seeing the
big picture by
cutting
through
clutter

Does your Mechanic **spend more time** updating the M&E/MRO software than fixing the Aircraft?

Why should a user

- go through multiple screens to perform a single transaction

- Access multiple modules to complete a report

- Search the system to identify high priority tasks for the day

WorkSpace | One screen does it all

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Transaction

Visualization

(fusion)

Analytics

Optimization

Role-Based
WorkSpace

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Welcome **SUPERUSER**
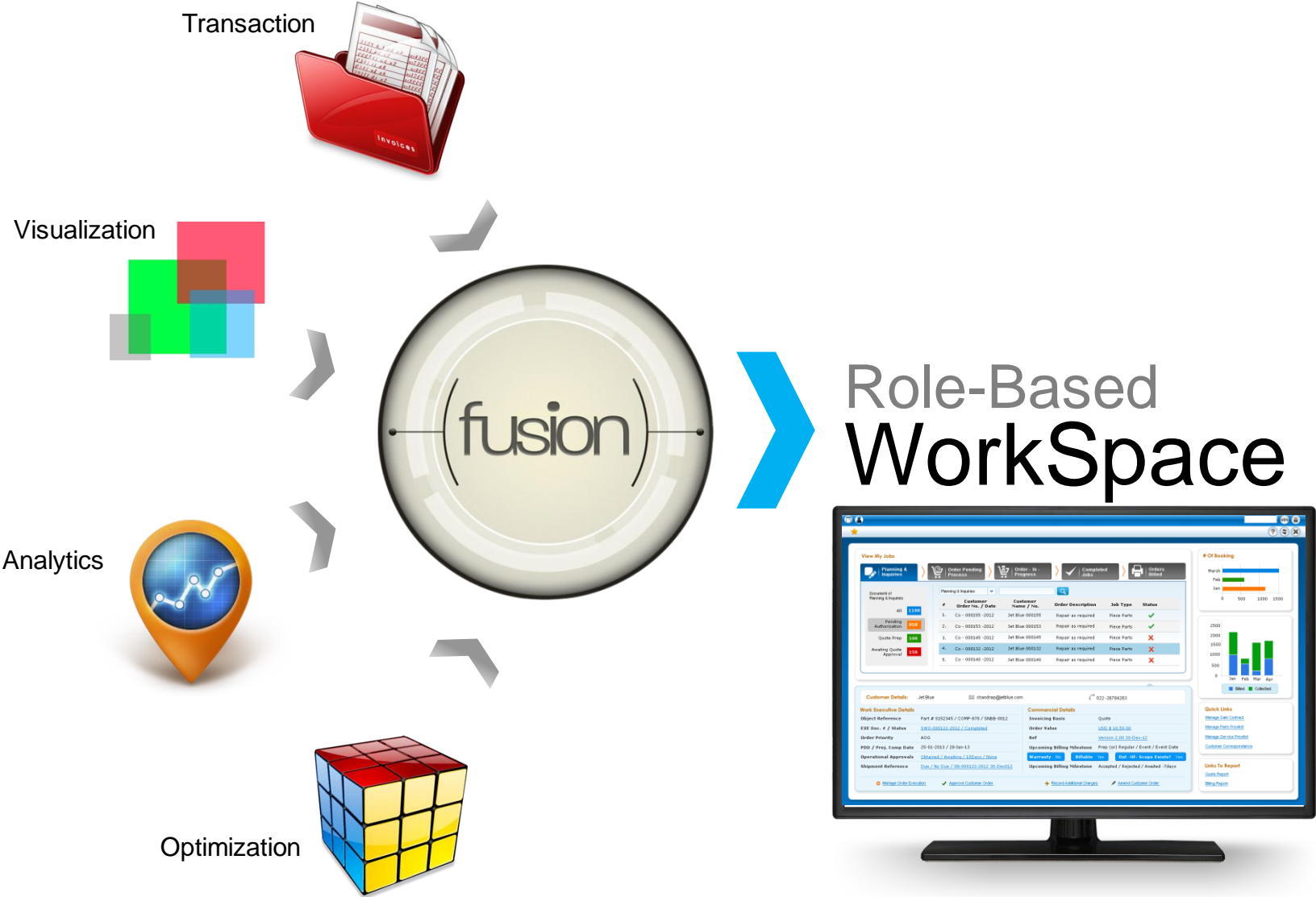
	Purchasing Operations	Receivable Management	Receiving Operations	Stores Operations	Technical Records

Purchase Operations

In-Progress > PO

Search On: | PO in Prog ▼ | PO # ▼ | | **Go** |

	Buyer Group Wise	Across Buyer Group

AOG :	**11**	▶
Overdue :	**7**	
<1 Week :	**0**	
>1 Week:	**7**	

- ☐ ▶ In-Progress - 2
  - ▶ PO - 2
- ☐ ▶ Pending Req. - 6
- ☐ ▶ To Process - 3

#	Document #	Supplier Name	Priority	Need Date	Status	Age
1	PORD-000004	AIRSIGNA GMBH & COMPANY K G	AOG	03/19/2014	Fresh	9
2	PORD-000005	GESTRA ESPAQOLA S.A	AOG	03/30/2014	Fresh	10

Page 1 ▼   :2

PO - Receipt Metrics

Units — Months (JAN, FEB)

■ No Of PO ■ Delivery
■ Quality   ■ Rate

Document Preview

Buyer Group : BG - AC PARTS
PO : PORD-000004
Date : 2014-02-19
Status : Fresh
Type : General

Supplier
Number : 061CS
Name : AIRSIGNA GMBH &
Value : € 15105.000

#	Part #	Description	Qty	Cost	Per	Cond.	Need Date	WH #
1	1851M36P10	AIR STARTER	1 EA	8585.00	1	New	03/19/2014	MAIN-SER
2	2010590-01	SPRING # LOCK, AY	5 EA	4.00	1	New	03/19/2014	MAIN-SER
3	201110001	MLG LH DOOR ASSY	3 EA	100.00	1	New	03/19/2014	MAIN-SER
4	201117022-A-1	MLG UPLOCK RH	6 EA	1000.00	1	New	03/19/2014	MAIN-SER
5	201419001	DAMPER # DAMPER	8 EA	25.00	1	New	03/19/2014	MAIN-SER

Page 1 ▼   :5
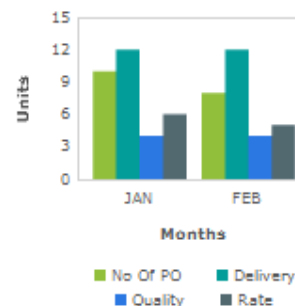
Activities
▶ Edit Purchase Order
▶ Edit Terms and Con...
▶ Edit Schedule & Distr...
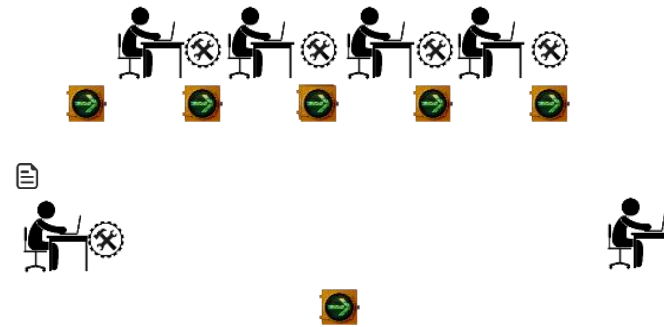▶ Edit PO-PR Coverage
▶ Edit Drop Ship Details

Quick Links
▶ Create PO
▶ Quotation based PO
▶ Create RFQ
▶ Create Loan Order
▶ Create Release Slip

disrupting the status quo

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AUTOMATING THE 80%

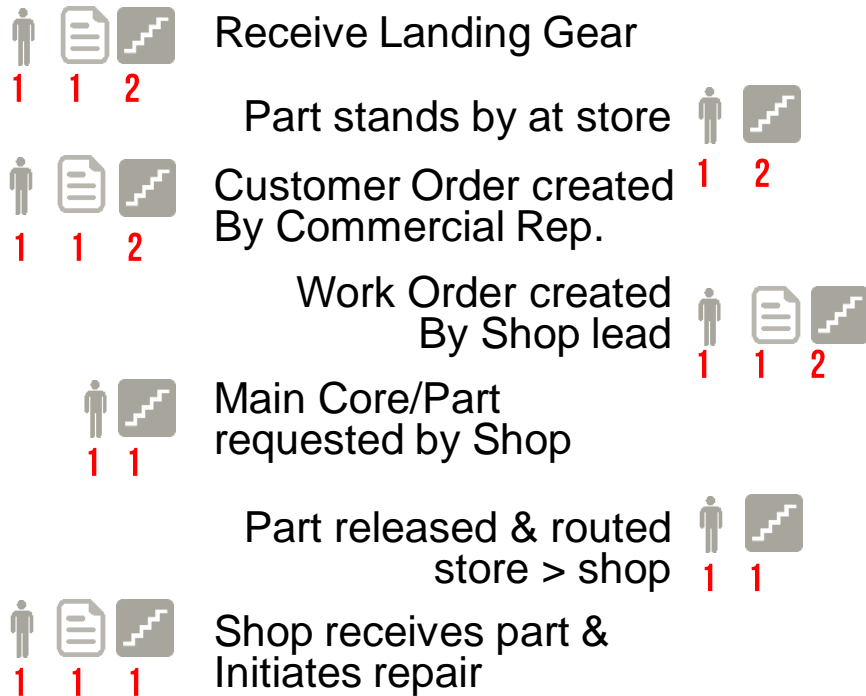Propelling Aviation M&E MRO with
STRAIGHT THROUGH PROCESSING

SO THAT YOU WORK ON THE CRITICAL 20% ONLY

Without
Straight Through Processing

resources **4**
paper work **4**
steps **11**

With
Straight Through Processing

1
4 Auto-generated
2

Benefits
75% Resource optimization

70% process leaning

>50% Process TAT reduction

Receive Landing Gear
1 1 2

Part stands by at store
1 2

Customer Order created By Commercial Rep.
1 1 2

Work Order created By Shop lead
1 1 2

Main Core/Part requested by Shop
1 1

Part released & routed store > shop
1 1

Shop receives part & Initiates repair
1 1 1

Receive Landing Gear
1 1 1

Using inteli contracts **embedded STP engine initiates entire process**
3

Shop receives part & Initiates repair
1 1

Infrastructure has evolved

Next-Gen

Scan to **access data**
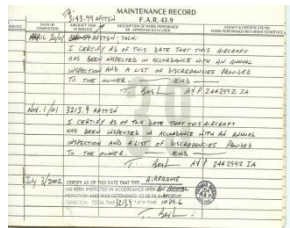
Get work done **on the go**
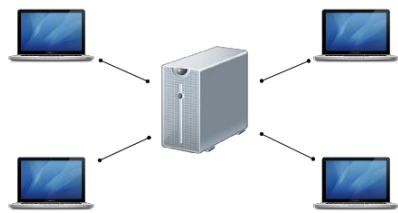
Access **anywhere anytime**

Systems & Applications have evolved

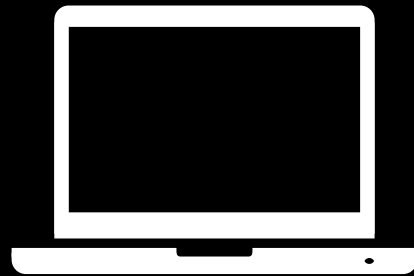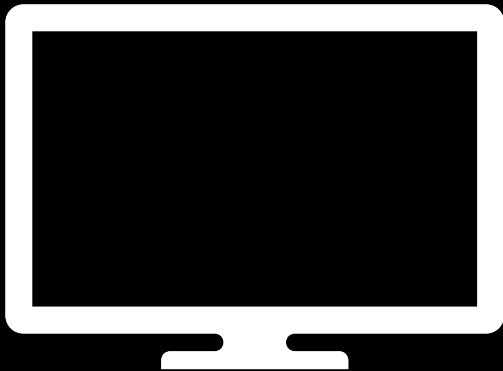**Multi step** transactions

One screen is all you need
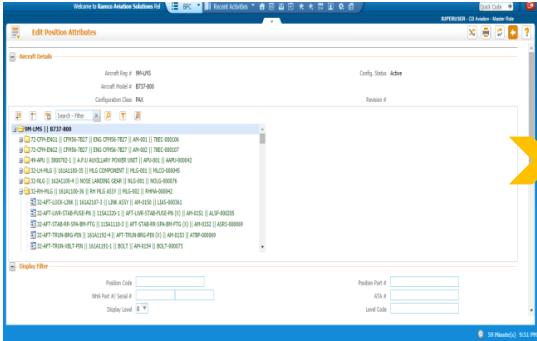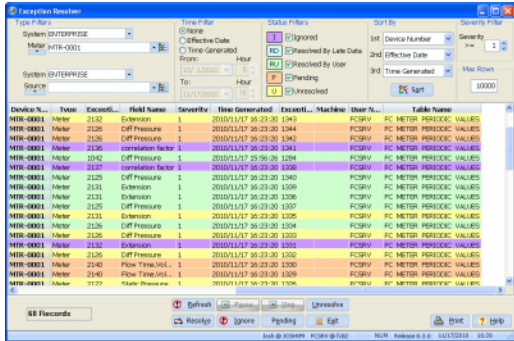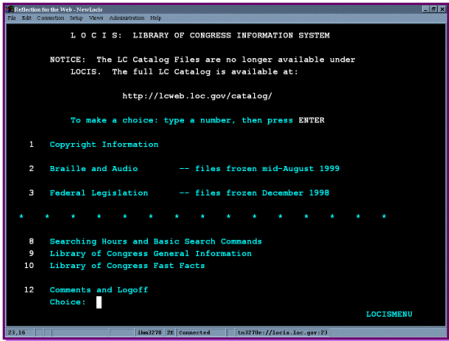
Next-Gen

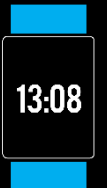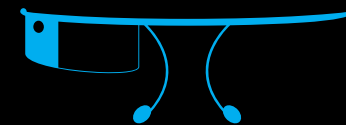**Maintaining records** in paper

Leveraging data to optimize M&E MRO

Parts Request ---------------------- On Wearable devices

at the touch of his glass,
Line maintenance Engineer
checks parts availability in store

based on their
📍 **Store Location,**
📊 **Stock availability &**
⚒ **Project in hand**

Fan duct	2 days
Store 11-A	delivery
Dallas, TX	
745 Miles away	3 units in store

Alternator	3 hrs
Store 2-C	delivery
Phoenix, AZ	
50 Miles away	1 unit in store

A.P.U	7 days
Store 1-A	delivery
Hradec, CZK	
5235 Miles away	3 units in store

THANK YOU

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Airlines　　Helicopters　　MROs　　Business Aviation