

Infusing Intelligence into
Aviation Enterprise Applications

AI & ML POWERED MRO SOFTWARE



Airlines



Heli Ops



MROs



Charters



Defense



OEMs

(((•))) **CONNECT TO THE FUTURE WITH RAMCO**



Ramco Systems – Company Overview

Part of **USD 1 billion** Ramco group

over
80 Customers

across
29
Countries

24 Global
offices



4000+ Aircraft



24000+
Users

Serving



Airlines



Heli Ops



MROs



Charters



Defense



OEMS

20+ Years of implementation Experience

ramco

**Move away from clutters of
disintegrated solutions to...**

Flight Operations

**Maintenance
& Engineering**

**Procurement
& Inventory**



MRO

**Legacy Accounting
Systems**



**Unified, Modularized and
Scalable**



RAMCO Aviation Solutions®

Power of One

ramco

Fully Grounded-up Aviation Software

Complete Solution Offering for
Part 121, 135, 145, 21, CAMO, FTM, ITM

Engineering & CAMO	Maintenance	Supply Chain Mgmt.		Safety, Compliance & Quality	Flight Operations	Employee Records	MRO & Part Sales	Manufacturing	Finance & Accounting
Configuration Mgmt.	Line Maint.	Parts Admin.	Supplier Mgmt.	Compliance Reporting	Journey Log Entry Mgmt.	Employee Information	Customer Mgmt.	Product Data Mgmt.	General Accounting
Maintenance Program Admin	Hangar Maint.	Warehouse Mgmt.	General Procurement	Std. Reliability Analysis	Flight Charter Contracting	Certifications & Qualification	Contract Mgmt.	Planning & Scheduling	Supplier Invoicing
Technical Records	Shop Maint.	Material Planning	Repair & Exchange	Safety /Occurrence Mgmt.	Flight Sheet Mgmt.	Training	Customer Order Mgmt.	Manufacturing Execution	Accounts Payable
SB / AD Admin.	Engine Maint.	Stock Mgmt.	Loan / Borrow	Quality Audit Mgmt.	Crew Scheduling		Quote &Pricing Mgmt.	Engineering Change	MRO Invoicing
Maintenance Planning	Tool & GSE Mgmt.	Physical Inv & Cycle Counting	Consignment & PBH	Adv. Reliability Analysis	EFB Central		Part Exchanges & Pool Programs		Accounts Receivable
Task Card Mgmt.	Dent & Buckle	Inventory Analysis	Warranty tracking & Claims Mgmt.		Flight Contract Invoicing		Part Sale Mgmt.		Mgmt. Accounting
Library Mgmt.	Time Tracking	Scrap Mgmt.	Goods Receiving				Customer Portal		Fixed Assets
e-Publication	E- Signature	Shipping	Part Certification & Hazmat				MRO Warranty	Financial Posting Engine	

Enterprise Add-ons

Mobile Apps

Mechanic Anywhere

Warehouse Anywhere

Offline MX – Line Anywhere

EFB – Fly Anywhere

Approval Anywhere

Tool Anywhere

Customer Anywhere

Crew Anywhere

Digitization

Digital Task Card

Optical Character Recognition(OCR)

In-memory Planning & Optimization (iPO)

Resource Optimization

Inventory Optimization

Ecosystem

Aerexchange / OneAero

FedEx

Technical Data Replication

OEM Data Interface

Alerts, Notifications and Actions (ANA)

Smart Watch

Phone/Tablet

Hubs

Tech Record Hub

Procurement Hub

Engineering Hub

Inventory Hub

Work Execution Hub

Accounts Payable Hub

Fleet Operations Hub

Fixed Asset Hub

Platforms

AI/ML

Integration Gateway (iRIS)

Dashboards

MAIL IT

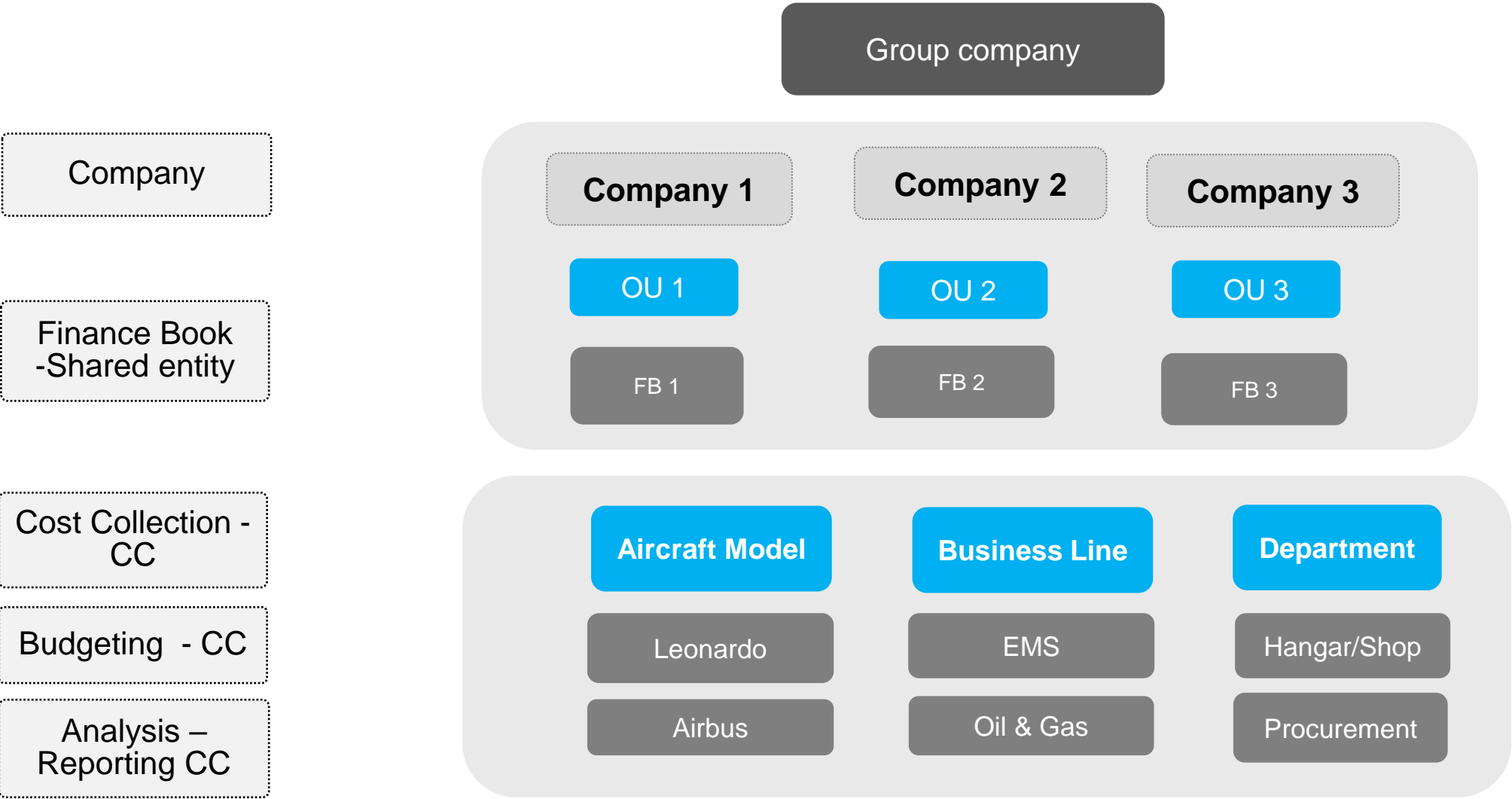
Workflow

BOTs

Report Writer

I-Extension Development Kit

Scalable Enterprise Framework for managing multi entity operations – across countries, currencies, operations and regulatory authorities



Multi OU Implementations

Era[★]
HELICOPTERS LLC

COBHAM

ERICKSON

babcock

HEVILIFT

AirMedicalGroup
Holdings

Pfi

AirMethods

Apps Driving Digital Transformation



**Warehouse
Anywhere**




**Mechanic
Anywhere**



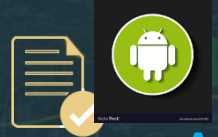
**Line
Anywhere**




**Crew
Anywhere**




**Customer
Anywhere**



**Approve
Anywhere**



**Tool
Anywhere**



Bar Codes



AI / ML



E Sign



Notifications



Voice



Facial & Camera



Chats



Multi-language



Maps &
Live Tracking



Offline

5:22 PM eLog 23%

Aircraft Reg # | Nose # | Model # | Exec Ref # | Package Type | Work Center / Station | Status | Due Item

N24105 | N24105 | B777-10 | VP-001960-2017 | Hangar Package | YEG-100-00 | YEG | Planned

More

Manage Package | Discrepancies | Tasks | Preview and Acceptance

Discrepancy CDP-000571-2017 Under resolution

Discrepancy Details | Resolution/Deferral Details

CR 0 +

Description: ADB port '56-ADB' found not damaged.

Log Item #: 0/11

ATA #: 05-00

Disc. Category: POST FLIGHT

Reported Station: YEG

Cabin Position #: 1A,2A,3A

Source Type No.: Task

B777-PA... 1

Reported By: 00041383

Reported Date & Time: 31-10-2017 05:06:19

Affected Function: IFE MALFUN...

Defect Type:

No. of Channels: 1

Equipment Category: ev1 ev2 ev3

Attachments

Attachments

Save

E-Sign Off

Sign Off By

Inspector

Employee ID: 000007

Pin:

Password:

Skill #: A&P

Date And Time: 9/21/2016 1:36 PM

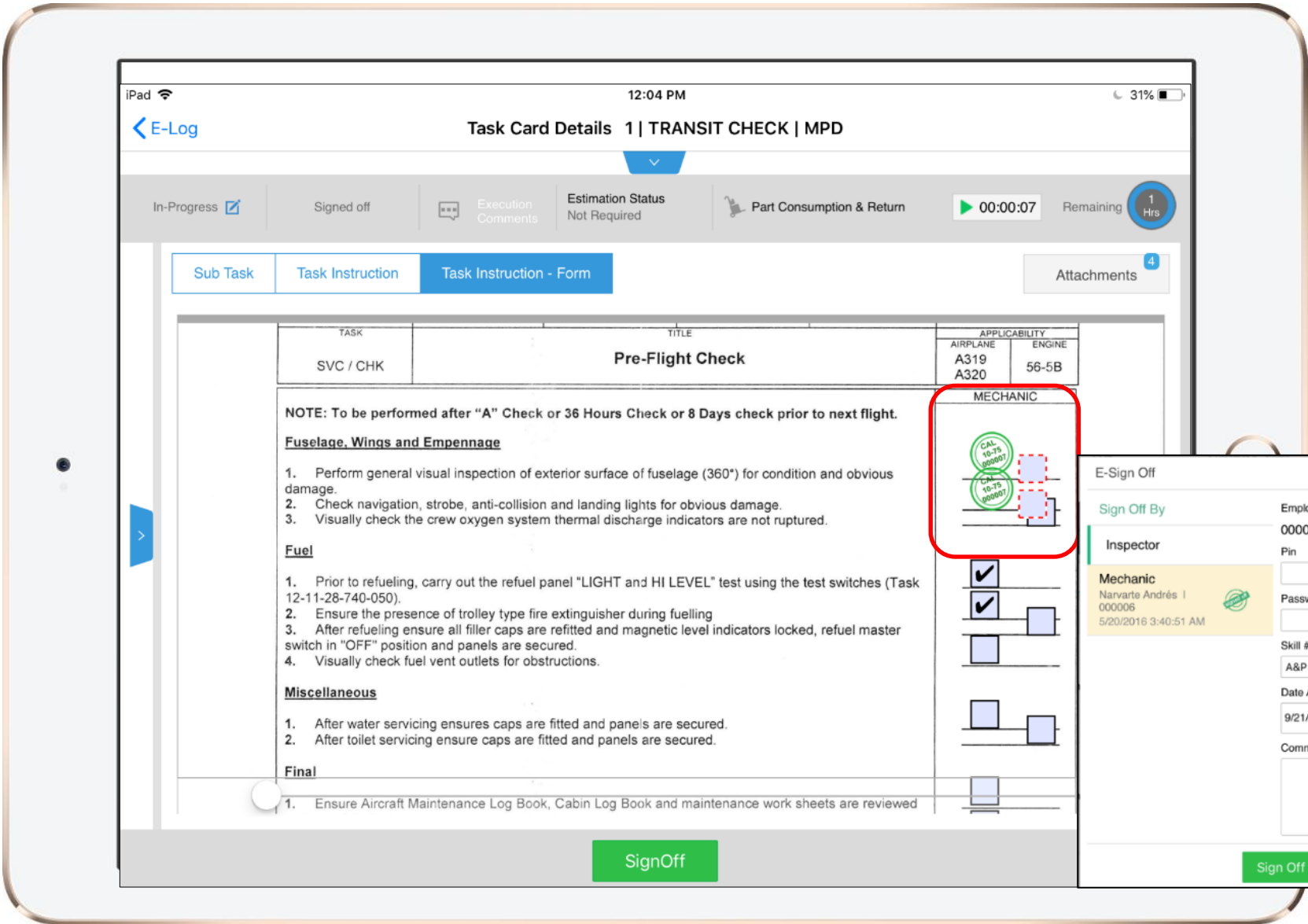
Comments:

Sign Off

LOPA View

Mobility – Easy task card access for mechanics with OFFLINE capabilities

Mobile Application – Perform Sign-off directly on PDFs in mobile app with electronic signature



Meets regulatory compliance for Electronic Document Keeping

Mechanic – AI/ML Enabled Discrepancy Reporting

The screenshot shows the 'E-Log' app interface on an iPad. The top status bar indicates 10:40 AM and 28% battery. The app header is blue with a back arrow, 'E-Log' title, and a menu icon. Below the header, a grey bar contains fields for Aircraft Reg# | Model (JS-101 | A320-211), Log Card # | Ref. #, Station, Date & Time, FH, and FC. A 'Status' dropdown is set to 'In-Progress'. The main content area shows a 'Discrepancy Write Up' form. The form has a header with Aircraft # 325, Log Card # | Ref. # Layover Check/ L000265-18, and ATA # 100. The 'Description' field contains a list of suggestions: 'Crew O2 Bottle Pressure Low', 'FWD O2 Bottle used for Sick PAX', 'Rear O2 Bottle Used', and 'O2 Bottle shows 1/2 Amber'. The 'O2 Bottle shows 1/2 Amber' suggestion is highlighted in yellow. Below the description field are 'Discr. Category' and 'Repair Classification' dropdowns, and 'Inspector' and 'RII' toggle switches. At the bottom are 'Attachments' and 'Create' and 'Create & SignOff' buttons. A black arrow points from the highlighted suggestion to a yellow callout box on the right.

Discrepancy Write Up

Aircraft # 325 Log Card # | Ref. # Layover Check/ L000265-18 ATA # 100

Description

O2 [...]

Crew O2 Bottle Pressure Low

FWD O2 Bottle used for Sick PAX

Rear O2 Bottle Used

O2 Bottle shows 1/2 Amber

Discr. Category Repair Classification

Inspector RII

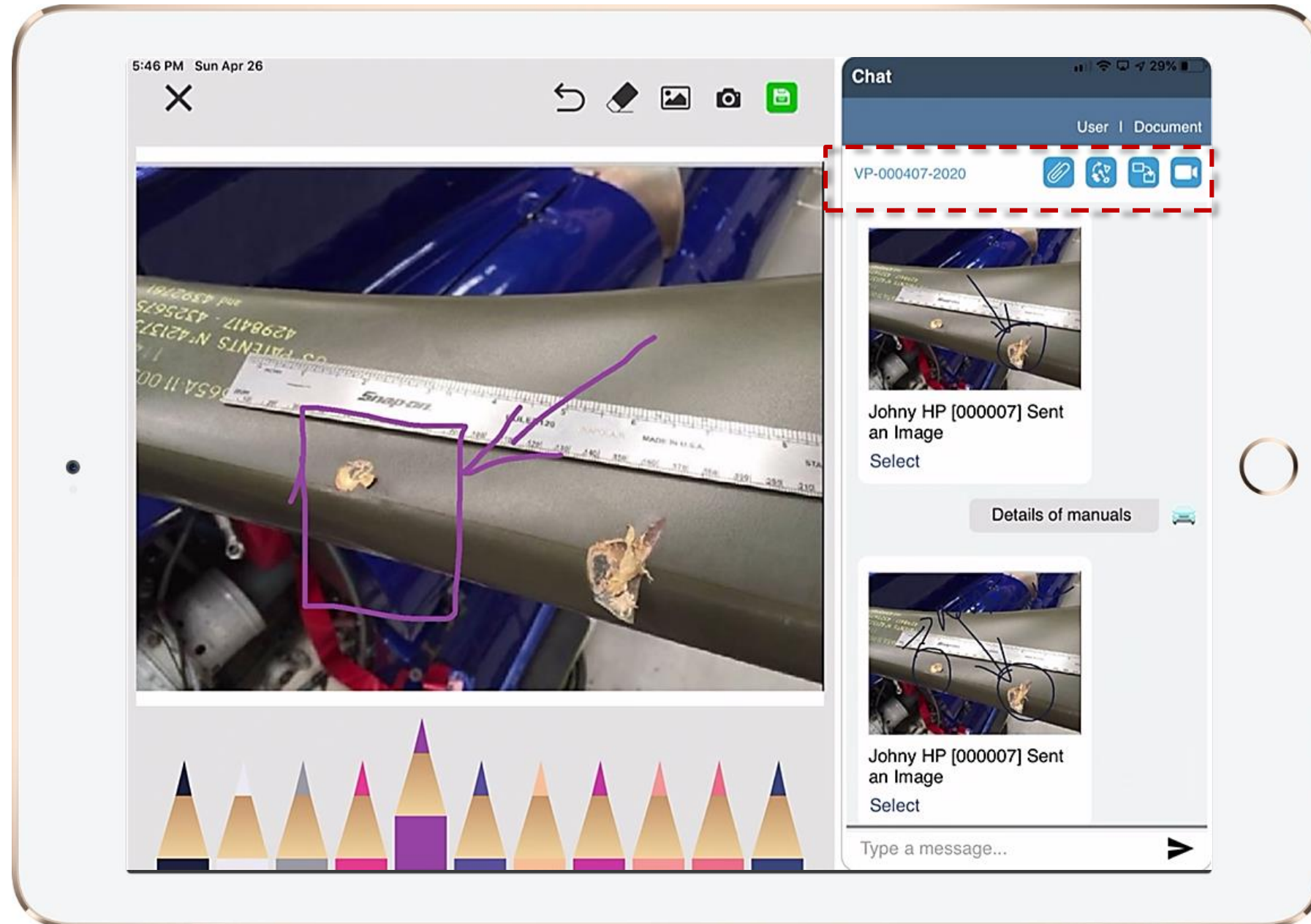
Attachments

Create Create & SignOff

AI/ML enabled capability provides cognitive support for mechanics to report discrepancy and automatically helps in next step of part request and replacement

- The system brings up the probable list based on history & context
- The mechanic simply chooses one from the list

Mechanic – Live Chat with Supervisor / Team Members



- Enables mechanics to
- Take pictures and annotate
 - Share screen with supervisors for review
 - Perform Live Video chat for troubleshooting and training

A breath of fresh air in usability – One Role One Screen!

Home > Default > Inventory Operations > Inventory Operations Hub

Inventory Operations Hub

My Area Warehouse - MAIN-SER

Easy Launch Create Edit / View Goods Receipt

Go

Inv. Overdue & Alerts

External Receiving

Issues & Returns

Transfer

All 862

Goods Receipt 741

Repair Receipt 74

Customer GR 26

Loan Receipt 10

Warehouse View

Go

Search - Filter

MAIN-SER

Goods Receipt (741)

Repair Receipt (74)

Orders - Due for Receipt (34)

Open Orders - Not Due (16)

Draft (3)

To be Confirmed (3)

To be Inspected (10)

To be Moved (6)

To be Binned (2)

Customer GR (26)

Repair Receipt

Orders - Due for Receipt

Go

1 - 5 / 34

All

#	Type	Document #	Date	Priority	Status	A/C Reg #
1	RO	AFRO-000152-2012	05/23/2012	Normal & 27	Create Receipt	
2	RO	AFRO-000197-2012	01/18/2013	Medium	Create Receipt	
3	RO	AFRO-000226-2013	06/14/2013	Medium	Create Receipt	
4	RO	AFRO-000259-2013	07/31/2013	Medium	Create Receipt	
5	RO	AFRO-000230-2013	02/06/2015	Medium	Create Receipt	

Confirm / Auth. Cancel

Doc. Details

Document # AFRO-000152-2012

Date 23 May 2012

Status Authorized

Type Normal

References

Part Details

1 - 3 / 3

All

#	Part #	FLG	Part Desc.	Qty	Next Action	Source Doc.	Stock Status	Serial # / Lot #	CND	PCT
1	340-001-027-0		FAN BLADE	1 EA	Create Receipt		Owned	VT-AYE-505		
2	340-001-027-0		FAN BLADE	1 EA	Create Receipt		Owned	VT-AYE-508		
3	340-001-027-0		FAN BLADE	1 EA	Create Receipt		Owned	VT-AYE-509		
4										

Action Links

Quick Links

Create Receipt

Manage Repair Quote

Maintain Repair Shop Corresponden...

View Repair Order

Global Visibility of Inventory

★ **Inquire Material Count and Location Information**

Part #
Owned ☒
Supplier #
Customer #
Trading Partner #
Get Details

Material Count Summary
 125329D1 ACTUATOR Component A320 EA 20806 No Of Alt Part 4 Serviceable Un-Serviceable

#	Main / Alternate Part #	Total Qty	Stock Value	WH	Due In - Others	Due In - On Orders	Due Out	PR	WH	Due In - Others	Due In - On Orders	Due Out	PR
1	125329D1	776.00	2,453,075.91	672.00	83.00	433.00	317.00	382.00	13.00	8.00	14.00	7.00	0.00
2	10-61286-1	5.00	0.00	4.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	10-61359-3	4.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	9082-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	R15048	14.00	157,666.70	11.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	TOTAL	799.00	2,610,742.61	691.00	87.00	433.00	317.00	382.00	13.00	8.00	14.00	7.00	0.00

Part # ACTUATOR 20806

1 - 17 / 17

Map
Satellite

Entity	Sub-Entity	Serviceable	Unserviceable
Due-In-Others			
	Spares Due	0.00	0.00
	In Shop Due	0.00	1.00
	Pending return	21.00	1.00
	Under Return	1.00	3.00
	In Transit	10.00	0.00
	Under Receipt	55.00	3.00
	Quarantined Receipt	0.00	0.00
Due-In-On Orders			
Due Out			
	Material Request	317.00	0.00
	Loaned Pending Return	0.00	0.00
	Pending Core - Exchange PO	0.00	7.00

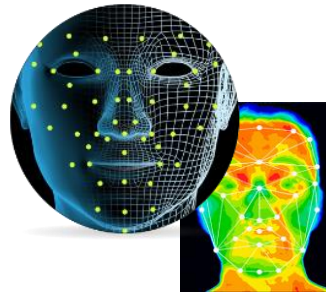
Warehouse Qty Summary

Bringing Leading edge technology to Market



AI/ML driven Intelligence
and automation

Facial and Thermal



Natural Language based
Chat BOTS and Voice Assistants

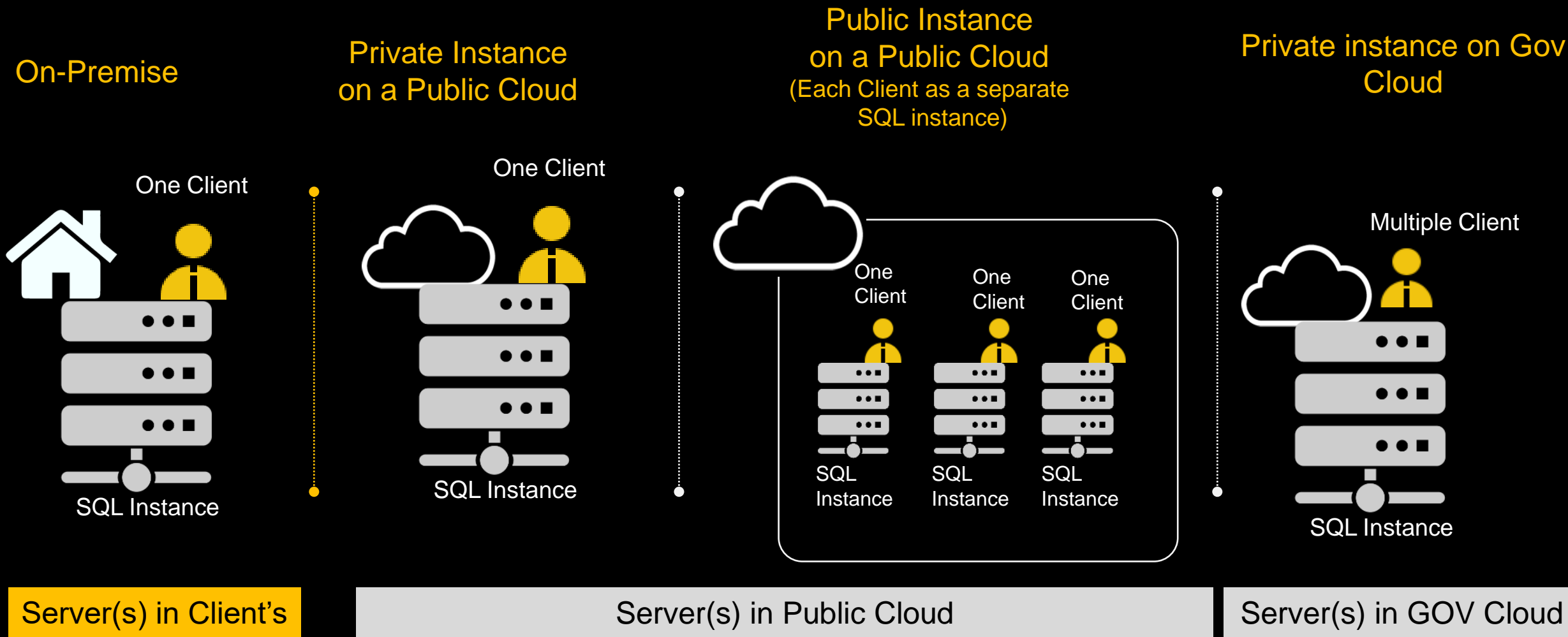
Augmented and Mixed Reality
(AR/MR)



Powered by Today's Technology



Flexibility of Deployment Models





PANASONIC AVIONICS **GOES LIVE** ON RAMCO AVIATION V5.8

64+ line stations | 7 repair stations | 1700 Users | 28 Countries

1700 Active Users Managing 4000+ Aircrafts | 1000 Active Users –Mobile Line

200 Unique customer contracts | 40 Touch points with 3rd party systems

Value Add Solutions
Inventory Optimizations
Line Anywhere (Offline)



COBHAM AVIATION **EMBARKS ON** **AI & ML JOURNEY** WITH RAMCO

Automated Invoice Processing | Discrepancy Reporting Assist | Part Ordering Assist



- Headquartered in Hong Kong
- One of the World's largest MRO service providers in terms of capacity and Manhours
- Over 60 years of excellence in Aircraft services and Component MRO services based in Hong Kong, Xiamen (China) and Jinjiang (China).
- Full spectrum of services including airframe, line, component, landing gear, engine Services, ITM, FTM, cabin solutions, private jet solutions, freighter conversion, parts manufacturing and technical training

Key Business needs

- Integrated Solution to manage end to end Simple and Complex Component Maintenance Solutions
- Reduce overall TAT and eliminate the revenue leakage
- Optimization of the component maintenance, task card digitization, production, inventory and sales functions
- Scalable Solution hosted on cloud to support growing Business Needs

Solution offered

- Configured for Multi instance across four entities
- Integrated Production Planning , Production control , Technical Services, Quality, Procurement, Supplies, Finance, Commercial functions
- 3rd party Integration with AeroXchange , Fedex, Banking and Custom systems
- We Chat based user interactions

Expected Business benefits

- To standardize the shop processes across all 4 entities
- Effectively managing component repair contracts with their customers.
- To optimize the complex process cards by adopting digitized eTaskcard
- To provide seamless integration across all functions and automate the receipt to cash cycle
- To optimize the TAT and customer services through efficient shop process management

Thank You



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