



# Data-driven supply chain featuring lifecycle management with AI

Overcoming fragmented information traceability and power-up your circular economy

7th – 9th October, 2025



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# Lifecycle Management for Aerospace



What is our ambition ?

 **AI/ML to digitise your maintenance history**

 **Highly customised & commercialised SaaS serverless platform**

 **50% saving on aircraft records inspections**

 **Circularity with + 20% remarketed parts**

# The Future Begs Your Listening



**3X**

**The circular economy has reached megatrend status...**

- The volume of discussions, debates and articles on the concept has almost tripled over the past five years

**-21%**

**...but global circularity is still in decline...**

- The share of secondary materials consumed by the global economy has decreased from 9.1% in 2018 to 7.2% in 2024 – that's a 21% drop over the course of five years

**28%**

**...and consumption continues to accelerate**

- In the past 6 years, we have consumed over 600 gigatonnes (i.e. >10 million Titanic ships).
- That's 28% of all the materials humanity has consumed since 1900
- 50% of global carbon emissions is due to resource extraction

Source: Circularity Gap Report 2024 – 2025 numbers not yet published

# The Climate Leadership Opportunity



**~52%**

## Consumers want to be led...

- Consumers want to, but don't take climate action due to lack of awareness, cost, quality, buying implications or convenience.
- Over half do not trust climate claims being made by companies.

**10%**

## ...company action is lagging...

- Only 10% of businesses are designed to re-enter materials back into nature or the production cycle.
- Legislative posture in US, China and EU trapped in perpetual strategy and planning cycle since 2002.

**70%**

## ...the transition is complex...

- 70% companies cite complexity and geopolitical (tariff) dynamics as the main obstacle for implementing circular business models.
- Have now incorporated sustainable design principles over the past 3 years but are still struggling to influence scope 3 emissions

**~15%**

## ...but top & bottom line value is clear...

- Increase in revenue growth for circular products and solutions since 2019.
- The cost of commodity prices rose by 150% between 2002 - 2010. Finite materials will become scarcer and more price volatile.

Sources: Capgemini Research Institute the world in balance Sept 2024

# Aviation is Primed for Circularity

**20%**

**aircrafts are 20+ years old**  
and retired from service at around 25/30 years old

**90%**

**aircraft components can be recycled**  
This is a very high standard with an established & recognised factors

**30%**

**of parts are today reused**  
There is room for improvement

**200**

**tonnes of CO<sup>2</sup> can be saved**  
per dismantled aircraft

**70**

**tonnes of raw materials can be avoided**  
only by adopting circular processes



# Circular Practices in Aviation is as Much About Paper as Parts



Full traceability  
across

**300,000**  
Documents

for each middle-  
age long range  
aircraft.

## Parts Mgmt.



**REUSE**



**RESELL**



**REPAIR**



**RECYCLE**

Lifecycle optimisation for Aerospace provides an example of how digital transformation can deliver benefits to the entire value chain.

We want to pave the way for a revolution in the industry by promoting circular economy and enhancing the value chains in four key business areas.

# Focus on our GenAI Functionalities



|                                                                                                                     |                                                                                                      |                                                                                               |                                                                                            |                                                                                            |                                                                                            |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Under instruction                                                                                                   | Delivery date: 21.JUL.2023                                                                           | Under instruction                                                                             | Delivery date: 22.JUL.2023                                                                 | Under instruction                                                                          | Delivery date: 15.FEB.2023                                                                 |
| <b>SAFRAN LANDING SYSTEMS LANDING GEAR</b><br><b>A330 L/H MLG</b><br>Owner : FAVRETTO<br>SN : SN<br>Operator : Remi | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner :<br>MSN : 007<br>Operator :                   | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner :<br>MSN : 111<br>Operator : TEST NOTIF | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner : cp<br>MSN : 88812<br>Operator : cp | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner : cp<br>MSN : 88812<br>Operator : cp | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner : cp<br>MSN : 88812<br>Operator : cp |
| Under instruction                                                                                                   | Delivery date: 29.FEB.2024                                                                           | Under instruction                                                                             | Delivery date:                                                                             | Under instruction                                                                          | Delivery date:                                                                             |
| <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner : Amber airline<br>MSN : 1234<br>Operator : Ambre Test        | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner : phoenix<br>MSN : 66719<br>Operator : Phoenix | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner : cp<br>MSN : 88812<br>Operator : cp    | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner : cp<br>MSN : 88812<br>Operator : cp | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner : cp<br>MSN : 88812<br>Operator : cp | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner : cp<br>MSN : 88812<br>Operator : cp |
| Under instruction                                                                                                   | Delivery date:                                                                                       | Under instruction                                                                             | Delivery date: 13.SEP.2023                                                                 | Under instruction                                                                          | Delivery date:                                                                             |
| <b>AIRBUS AIRCRAFT</b><br><b>Airbus A300</b><br>Owner :<br>MSN :<br>Operator :                                      | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A318</b><br>Owner : Amber airline<br>MSN : 1234                  | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A319</b><br>Owner : SATAIR<br>MSN : 1234                  | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A319</b><br>Owner : SATAIR<br>MSN : 1234               | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A319</b><br>Owner : SATAIR<br>MSN : 1234               | <b>AIRBUS AIRCRAFT</b><br><b>Airbus A319</b><br>Owner : SATAIR<br>MSN : 1234               |

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------|----------------------------------|
| 1. Approving Competent Authority/Country<br>DIRECTION GÉNÉRALE DE L'AVIATION CIVILE / FRANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      | 2. <b>AUTHORISED RELEASE CERTIFICATE</b><br><b>Certificat d'Autorisation de Mise en Service</b><br><b>EASA FORM 1 – Formulaire 1 de l'EASA</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              | 3. Form Tracking Number<br>Numéro de traçage du formulaire<br>*C299943*               |                                  |
| 4. Organisation Name and Address<br>Nom et adresse de l'organisme<br><b>AIRFRANCE</b><br>45 rue de Paris<br>95747 ROISSY CDG Cedex<br>FRANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      | 5. Work Order/Contract/Invoice<br>Bon de Commande/Contrat/Facture<br>C149397                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                                                                                       |                                  |
| 6. Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7. Description       | 8. Part No / Numéro de la pièce                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 9. Qty / Qté | 10. Serial No. / Numéro série                                                         | 11. Status / Work État / Travaux |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | AVIONICS COOLING FAN | CVT3454J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1            | 5110                                                                                  | OVERHAULED                       |
| 12. Remarks<br>Observations TECHDFAN CHN 21-26-43 REV00 JUK00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                                                                                       |                                  |
| For work details, see Work Shop Report with same number as mentioned in block 3.<br>The work identified in block 11 and described herein has been accomplished in accordance with 14 CFR part 43 and in respect to that work, the items are approved for release or return to service under certificate ID: 00991202.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                                                                                       |                                  |
| 13a. Certifies that the items identified above were manufactured in conformity to:<br>Certifie que les éléments identifiés ci-dessus ont été fabriqués conformément à:<br><input type="checkbox"/> approved design data and are in condition for safe operation<br>aux données de définition approuvées et sont en état de fonctionner en toute sécurité<br><input type="checkbox"/> non-approved design data specified in block 12<br>aux données de définition non approuvées indiquées au case 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      | 14a. Part 145.A.50 Release to Service<br>Partie 145.A.50 Remise en service<br>Certifies that unless otherwise specified in block 12, the work identified in block 11 and described in block 12, was accomplished in accordance with Part-145 and in respect to that work the items are considered ready for release to service.<br>Certifie que, sauf dispositions contraires mentionnées dans le case 12, les travaux indiqués dans le case 11 et décrits dans le case 12, ont été accomplis conformément à la Partie 145 et, compte tenu de ces travaux, les éléments sont considérés comme prêts à être remis en service. |              | 15. Other regulation specified in block 12<br>Autre réglementation visée à la case 12 |                                  |
| 13b. Authorized Signature<br>Signature autorisée                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      | 13c. Approval / Authorisation Number<br>Numéro de l'approbation / autorisation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              | 14b. Authorized Signature<br>Signature autorisée                                      |                                  |
| 13d. Name / Nom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      | 13e. Date (dd mm/yyyy) / (à remplir)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              | 14c. Certificate / Approval Ref. No.<br>N° de Certificat / d'agrément<br>FR. 145.0010 |                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              | 14d. Date (dd mm/yyyy) / (à remplir)                                                  |                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              | 27SEP2021                                                                             |                                  |
| <b>USER / INSTALLER RESPONSIBILITIES / RESPONSABILITÉS DE L'UTILISATEUR / INSTALLATEUR.</b><br>This certificate does not automatically constitute authority to install the item(s).<br>Ce certificat ne vaut pas automatiquement autorisation d'installer le ou les éléments.<br>Where the user/installer performs work in accordance with regulations of an airworthiness authority different than the airworthiness authority specified in block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts items from the airworthiness authority specified in block 1.<br>Lorsque l'utilisateur/installateur effectue des travaux conformément à la réglementation d'une autorité responsable de la navigabilité, autre que l'autorité responsable de la navigabilité indiquée dans le case 1, il est essentiel que l'utilisateur/installateur s'assure que l'autorité responsable de la navigabilité dont il relève accepte les éléments approuvés par l'autorité responsable de la navigabilité indiquée à la case 1.<br>Statements in blocks 13a and 14a do not constitute installation certification. In all cases aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.<br>Les mentions figurant dans les cases 13a et 14a ne constituent pas une certification d'installation. Dans tous les cas, le dossier d'entretien de l'aéronef doit contenir une certification d'installation délivrée conformément aux réglementations nationales par l'utilisateur/installateur avant que l'aéronef puisse décoller.<br>EASA Form 1 (NF-CAC145) / Formulaire 1 de l'EASA (NF-CAC145) - Issue 3 / Edition 3 |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                                                                                       |                                  |

- Back to birth records used to train the model
- Using Gen AI & natural language models vs natural language model
- Got more aspects into production rapidly - analyses lots of unstructured data
- Can assess dual regulation & compliance checking to create at vectorised RAG

# Human + Machine Maximising the Value OEM Produced Parts



amazon  
Prime Air



## 2-6 hours

For full aircraft automated analysis

## 30-50%

Time saving on end-to-end process

OCR was used successfully for missing items



# Solution Overview Powered by AWS



AWS  
Lambda



AWS  
Fargate



AWS  
Step  
Functions



Amazon  
Texttract



Amazon  
Sagemaker



Amazon  
OpenSearch



Amazon  
Aurora



Amazon S3



Amazon  
Bedrock



AWS Control  
Tower



AWS KMS



Amazon Cognito

## Serverless

Modular, ranging from platform to full service

No infrastructure provisioning, no management

Automatic Scaling

Pay for value

Highly available and secure

## AI/ML

Scale ML

Faster time to value

Purpose build AI Services

## Analytics

Purpose-build for performance and cost

Serverless, Scalable and easy to use

Security and Governance

Built-in machine learning

## Generative AI

Choose the best model

Securely customize with your data

Apply safety and responsible AI Checks

Build and orchestrate Agents

## Security

The most secure infrastructure

Security automation

End-to-End security and guidance

Data policies & regulation compliant



# BUSINESS TO PLANET

TO CONSCIOUSLY ACCELERATE SUSTAINABILITY JOURNEYS

**REALISE  
INNOVATION**

**UNLOCK  
VALUE**

**BUILD  
ECOSYSTEMS**

**ACT ON  
PURPOSE**

**DELIVER  
IMPACT**



Learn more about Capgemini's Lifecycle  
Optimisation solution for Aerospace:



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## About Capgemini

Capgemini is a global business and technology transformation partner, helping organizations to accelerate their dual transition to a digital and sustainable world, while creating tangible impact for enterprises and society. It is a responsible and diverse group of 340,000 team members in more than 50 countries. With its strong over 55-year heritage, Capgemini is trusted by its clients to unlock the value of technology to address the entire breadth of their business needs. It delivers end-to-end services and solutions leveraging strengths from strategy and design to engineering, all fueled by its market leading capabilities in AI, cloud and data, combined with its deep industry expertise and partner ecosystem. The Group reported 2024 global revenues of €22.1 billion.

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