

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









The circular economy has reached megatrend status...

The volume of discussions,

debates and articles on the

concept has almost tripled over

...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

...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 past five years

The Climate Leadership Opportunity











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.

...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.

...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

...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 CO² 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 middleage long range aircraft.

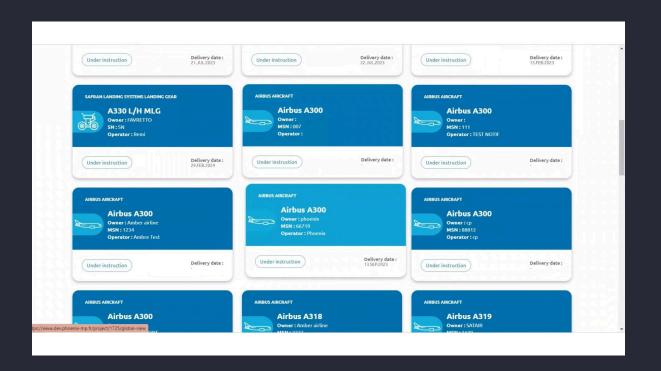


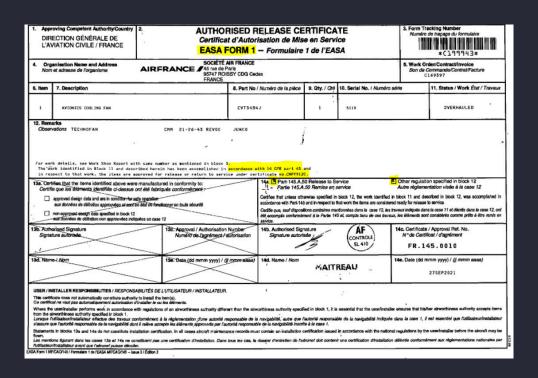
Lifecycle optimisation for Aerospace provides an example of how digital transformation can deliver benefits to the entire value chain.

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







- 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





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 Textetract



Amazon Sagemaker



Amazon OpenSearch



Amazon Аигога



Amazon S3



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 Al

Amazon

Bedrock

Choose the best model

Securely customize with your data

Apply safety and responsible Al Checks

Build and orchestrate Agents

Security

The most secure infrastructure

Security automation

End-to-End security and quidance

Data policies & regulation compliant



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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