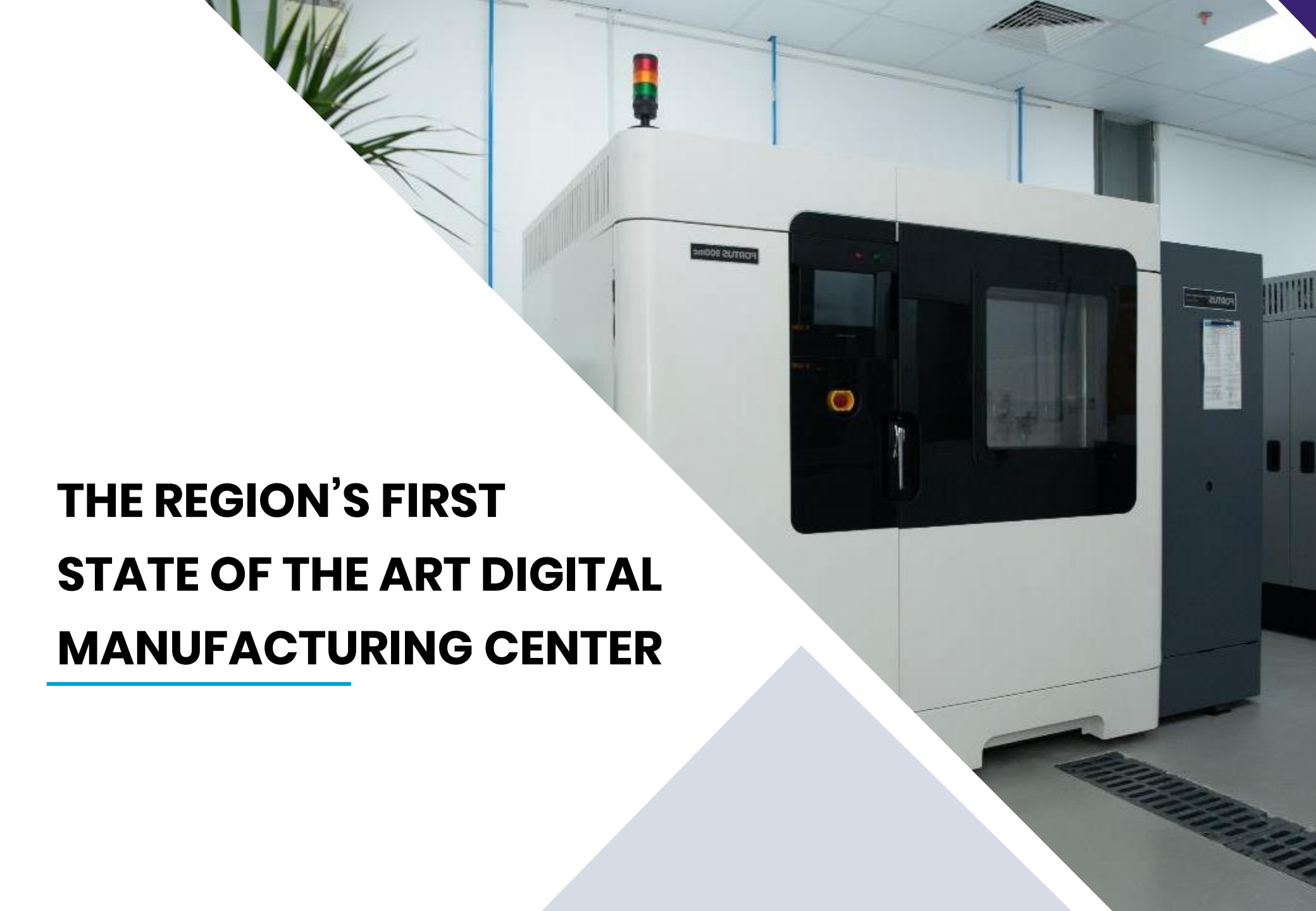


THE REGION'S FIRST STATE OF THE ART DIGITAL MANUFACTURING CENTER

1. Mission & Vision

MISSION

To transform the perception of 3D printing into a competitive manufacturing process that can help local industrialists explore new concepts for localization and value-added product innovation.

Vision

To align with UAE's vision of becoming a hub for MRO in Aerospace by decentralizing the standard supply chain to create a unique "Made in UAE" manufacturing environment to serve this vision.

2. Our current capacity

AM machines & materials

2 x Stratasys F900 FDM 3D Printers

1 x Stratasys F450 FDM 3D Printer

1 x E-Plus Metal 3D Printer

Polymer Materials: High performance- ULTEM, Antero, PC, Nylon and Regular – ABS, ASA

Metal Materials: Aluminum, Steel, High Temp Alloys, Magnesium Alloys, Titanium, Other (tungsten)

2. Our current capacity - facility

3.Why additive Manufacturing

Additional design freedom

- Increased part functionality through unique design solutions
- Potential for weight saving and
- Decreased number of components (smaller assemblies).

Reduction of waste material

- More sustainable than conventional manufacturing.
  - No unrecyclable composite waste
  - Eliminate use of hazardous materials
  - Reduced logistics-related costs & carbon footprint

“Bottleneck” reduction

- Reduced labor intensiveness and dependency on specific skills (in-house CNC work, CAM, bonding, etc.)

Supply chain simplification

- No MoQs
- No requirement for part storage
- On-demand (JIT) manufacturing
- Digital inventories

4. Markets and Services

- Commercial Aviation
- Space & Transportation
- Oil & Gas

- Re-engineering of mechanical parts for additive manufacturing (Dfam & 3d printing)
- Manufacturing of certified interior cabin components for Aviation
- Reverse Engineering of mechanical components
- Customized (individualized) design solutions based on customer needs
- Managements of Digital inventories

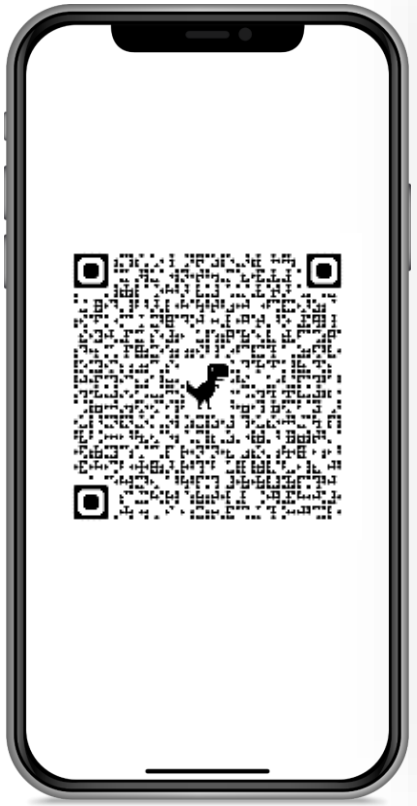
Strategic engagement with our customers to allow them to exploit the full capabilities of additive as an alternative manufacturing process

CERTIFICATIONS

EASA Part 21G approval

POA certification scope:

“Non-structural parts in non-metallic material for aircraft systems, cockpit and passenger cabin, produced by Fused Deposition Modelling (FDM) additive manufacturing technology”



Valsts aģentūra "Civilās aviācijas aģentūra"
State Agency „Civil Aviation Agency" Republic of Latvia

Apstiprinājuma nosacījumi / *Terms of Approval* — TA:LV.21G.0002

Šis dokuments ir daļa no Ražošanas organizācijas apstiprinājuma apliecības Nr. LV.21G.0002, kas izsniegta:
This document is part of Production Organisation Approval Number LV.21G.0002 *issued to:*

Organizācijas nosaukums: / *Company name:*	SIA "AM Craft"

1. sadaļa DARBA APJOMS / *Section 1. SCOPE OF WORK.*

RAŽOŠANA / *PRODUCTION OF*	RAŽOJUMU KATEGORIJAS / *PRODUCTS CATEGORIES*
C2 Daļas / *Parts*	Nestrukturālas detaļas no nemetāliskā materiāla gaisa kuģu sistēmām, pilotu kabīnei un pasažieru kabīnei, ražotas ar kausētās nogulsnēšanās modelēšanas piedevu ražošanas tehnoloģiju / *Non-structural parts in non-metallic material for aircraft systems, cockpit and passenger cabin, produced by Fused Deposition Modeling additive manufacturing technology*

Detalizēta informācija un ierobežojumi norādīti Ražošanas organizācijas pārskatījumā 1.9. sadaļā.
For details and limitations refer to the Production Organisation Exposition, Section 1.9.

2. sadaļa ATRAŠANĀS VIETAS: / *Section 2. LOCATIONS:* — SIA "AM Craft" Braslas iela 22B, Rīga, LV-1035, Latvija

3. sadaļa PREROGATĪVAS / *Section 3. PRIVILEGES:*

Ražošanas organizācija drīkst, ievērojot Apstiprinājumā norādītos nosacījumus un Ražošanas organizācijas pārskatījumā norādītās procedūras, realizēt privilēģijas, kas noteiktas 21.A.163. punktā, ievērojot nosacījumu.
The Production Organisation is entitled to exercise, within its Terms of Approval and in accordance with the procedures of its Production Organisation Exposition, the privileges set forth in 21.A.163. Subject to the following:

Pirms rēķinājuma projektu apstiprināšanas, EASA 1. veidlapu var tikai izmērīgu tikai attīstības nolūkā.
Prior to approval of the design of the product an EASA Form 1 may be issued only for conformity purposes.

Sākotnējās izdošanas datums: 14.04.2022 / *Date of original issue:*
Pārskatīšanas datums: 14.04.2022 / *Date of this revision.*
Pārskatīšanas Nr.: 0 / *Revision No.*
Paraksts: / *Signed*
Valsts aģentūras „Civilās aviācijas aģentūra" vārdā: / *For the State agency „Civil aviation agency":* Lidotspējas daļas vadītājs G. Lapi

Paradigm 3D operates under AM Craft EASA Part 21G to deliver certified cabin interior parts for EMEA clients.

FEATURED PARTS

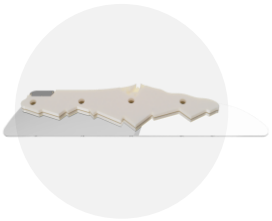
Installation-ready interior parts with 3D printing and EASA FORM 1

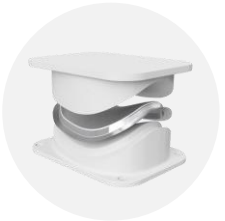
Categories by Application


Brackets


Seat parts


Decorative


Custom


Tools for MRO

Categories by Sections


Flight Deck


Monuments


Overheads


Seats


Panels

FEATURED PARTS

Brackets

Housing for Wi-Fi and Bluetooth modules

Aircraft Overhead Bin Dividers with integrated Custom Housings for On-Board electronics are typical large-size cabin Products - best fit for 3D production.

Seats

Seat Armrest U-foil Protective Cover

Armrest Cosmetic parts with 3D printing benefit from improved design to reduce further cracks. Delivered identical in weight, finishing color and EASA Form 1.

Seats

Business Class Seat Leg Rest

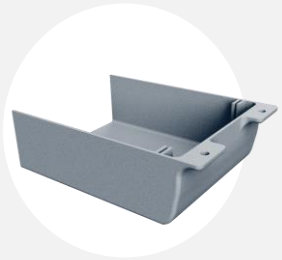
Leg-rests Spare parts are perfect fit for 3D printing: low volume, several part consolidation, honeycomb structure to match weight of original OEM part.

Decorative

Side Cover Curtain Rail

Replacement parts for Cabin fittings, such as Curtain Rail side cover allow to replace the cover without replacing the whole Curtain rail.

Decorative



Surface Housing Electronics Compartment

Surface housings for various onboard equipment need replacement on case by case basis. For low volume, high mix 3D Digital inventory helps to source parts fast.

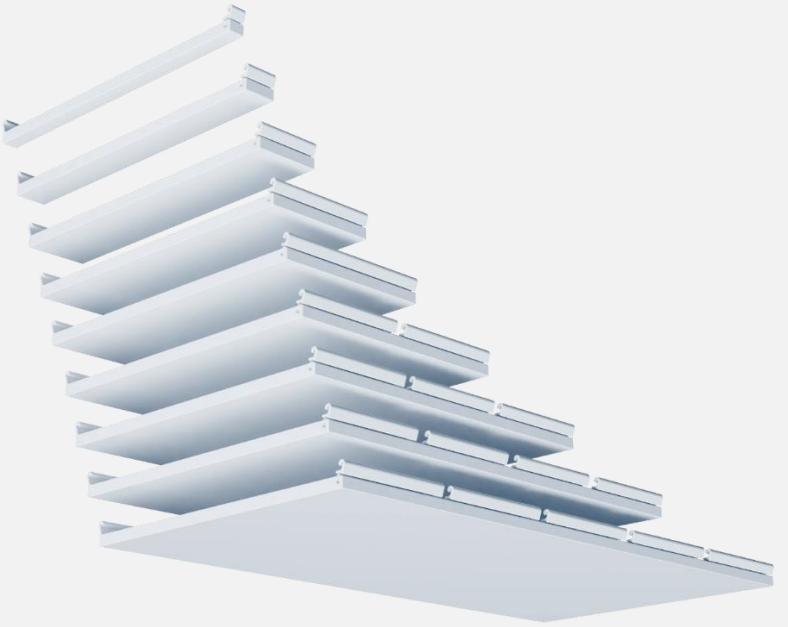
This is only a selection from our ever-expanding catalogue. Contact us today to explore the full range

FEATURED PARTS

”Flight-ready” PSU Spacer Panel

Item	**PSU Spacer Panel with/without cutouts, 20” inch** (any length in between 1-21” inch available)
Part Category	Overhead
Application Cat.	Surfaces
Aircraft Type	Airbus A320 family
Unique P/N	PSI251485-1-3
Replaces P/N	D252-77512-110-00 H

Material	ULTEM 9085CG
Color	Aircraft Grey
Post Processing	Filler / Base / Paint Mankiewicz
Weight	179 grams
Dimensions, mm	508 x 260 x 20,50 mm
Conformity	EASA CS/FAR 25.853
Certificate	EASA Form 1
Lead time	4 weeks from PO
Price	On request

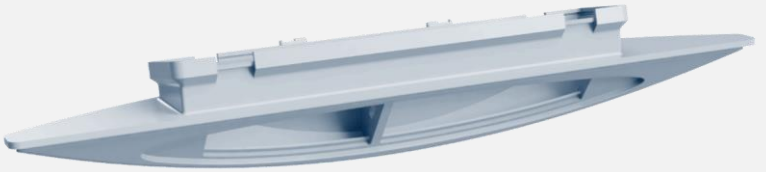


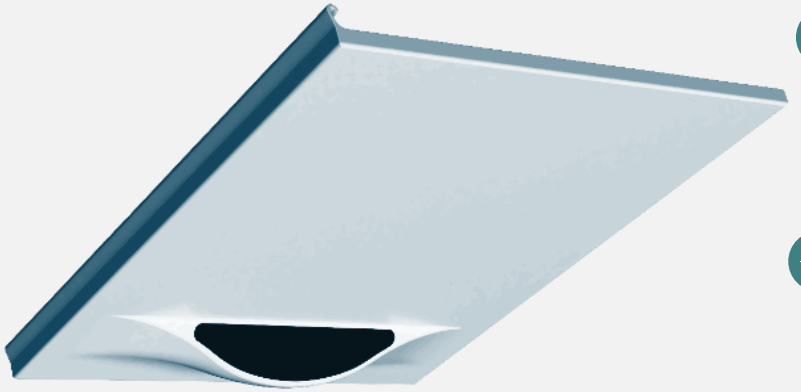
- CAD file & Prototype **READY**
- Sample Fit-Check **APPROVED** by airline
- FST/HR & Mech. Tests **PASSED**
- Part is Certification **READY**
- Part 21J approval **RECEIVED**
- Parts **DELIVERED** with Form 1

FEATURED PARTS

Flight-ready NSFSB Sign Housing

Item	**PSU Panel NSFSB Sign Housing**
Part Category	Overhead
Application Cat.	Surfaces
Aircraft Type	Airbus A320, A350
Unique P/N	99022531
Replaces P/N	Original Part Design
Material	ULTEM 9085CG
Color	Aircraft Grey
Post Processing	Filler / Base / Paint Mankiewicz
Weight	87.5 grams
Dimensions, mm	236 x 43,2 x 42,8 mm
Conformity	EASA CS/FAR 25.853
Certificate	EASA Form 1
Lead time	4 weeks from PO
Price	On request





CAD file & Prototype **READY**

Sample Fit-Check **APPROVED** by airline

FST/HR and Mech. Tests **PASSED**

Part is Certification **READY**

Part 21J approval **RECEIVED**

Parts **DELIVERED** with Form 1

FEATURED PARTS

Flight-ready Seat Armcap

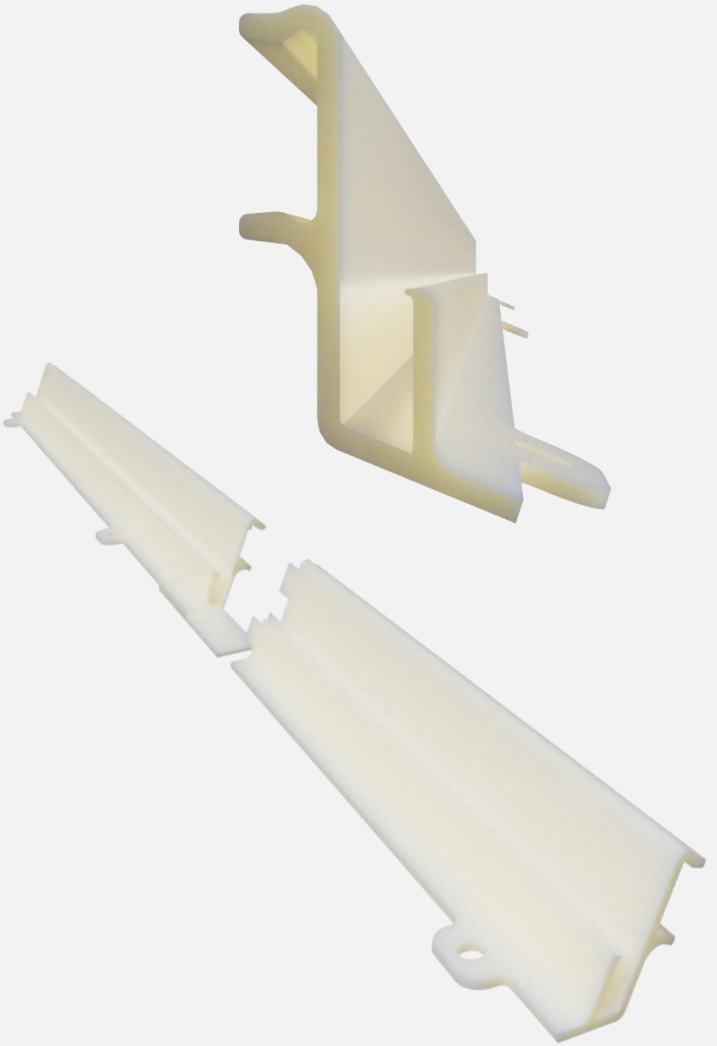
				
Seat Model:	LIFT by EnCore (Adient) PART NO. 0001118-1/-2	Z105-SERIES by Zodiac Seats	5600 TOURIST CLASS by Safran	5600 TOURIST CLASS by Safran
Item Name:	Armcap	Armcap IAT	Armcap + Escutcheon	Armcap IAT
Unique p/n: Replacement p/n:	0001116-1 / 0001116-2 PSD251801-1	F0433167 and F0432905 P02723-001_EPA and P02723-002_EPA	854675-401A + 854676-401A 854676-401U-LAT	854760-413 854760-413F-LAT
Post Processing:	Mankiewicz paint system			
Lead Time:	4 weeks from PO	4 weeks from PO	4 weeks from PO	4 weeks from PO
Conformity: Certificate:	EASA CS/FAR 25.853 Form 1	EASA CS/FAR 25.853 Form 1	EASA CS/FAR 25.853 CofC	EASA CS/FAR 25.853 CofC

- CAD file & Prototype **READY**
- Sample Fit-Check **APPROVED** by airline
- FST/HR and Mech. Tests **PASSED**
- Part is Certification **READY**
- Part 21J approval **RECEIVED**
- Parts **DELIVERED** with CofC/Form 1

FEATURED PARTS

Flight-ready Mopsil Assembly

Item	Mopsil Assembly
Part Category	Overhead
Application Cat.	Holders, Housings, Brackets
Aircraft Type	N/A
Unique P/N	B8255299-03
Replaces P/N	B8255324-300
Material	ULTEM 9085CG
Color	**Aircraft Grey**
Post Processing	Filler / Base / Paint Mankiewicz
Conformity	EASA CS/FAR 25.853
Certificate	EASA Form 1
Lead time	4 weeks from PO
Price	On request



- CAD file & Prototype **READY**
- Sample Fit-Check **APPROVED by airline**
- FST/HR and Mech. Tests **PASSED**
- Part is Certification **READY**
- Part 21J approval **RECEIVED**
- Parts **DELIVERED with Form 1**

FEATURED PARTS

Flight-ready Footrest Panel

Item	**Footrest Panel**
Part Category	Seats
Application Cat.	Seat parts
Aircraft Type	B787
Unique P/N	C714WP01CZ0010/C714WP01CZ0012
Replaces P/N	C714WP01CZ0010A/C714WP01CZ0012A
Material	ULTEM 9085CG
Color	**Upon request**
Post Processing	Filler / Base / Paint Mankiewicz
Dimensions, mm	496.6 X 100.2 mm
Conformity	EASA CS/FAR 25.853
Certificate	EASA Form 1
Lead time	4 weeks from PO
Price	On request

- CAD file & Prototype **READY**
- Sample Fit-Check **APPROVED by airline**
- FST/HR and Mech. Tests **PASSED**
- Part is Certification **READY**
- Part 21J approval **RECEIVED**
- Parts **DELIVERED with Form 1**

FEATURED PARTS

Flight-ready USB Shroud

Item	**USB Outlet Housing** *(electronics and wiring not included)*
Part Category	Seats
Application Cat.	Seat Replacement Parts
Aircraft Type	A320, A350, B737, B777, B787
Unique P/N	PSD251446-1
Replaces P/N	Original Part Design

Material	ULTEM 9085CG
Color	Aircraft Grey
Post Processing	Filler / Base / Paint Mankiewicz
Weight	163 grams
Dimensions, mm	35,76 x 47,76 x 28,85 mm
Conformity	EASA CS/FAR 25.853
Certificate	EASA Form 1
Lead time	4 weeks from PO
Price	On request

CAD file & Prototype **READY**

Sample Fit-Check **APPROVED by airline**

FST/HR and Mech. Tests **PASSED**

Part is Certification **READY**

Part 21J approval **RECEIVED**

Parts **DELIVERED with Form 1**

FEATURED PARTS

Flight-ready Overhead Bin Divider

Item	**Overhead Bin Divider with equipment provisions**
Part Category	Overhead
Application Cat.	Holders, Housings, Brackets
Aircraft Type	A320, A350, A380, B737, B777
Unique P/N	Custom for each AC type
Replaces P/N	Original part design

Material	ULTEM 9085CG
Color	Aircraft Grey
Post Processing	Filler / Base / Paint Mankiewicz
Weight	1700 grams
Dimensions, mm	641 x 342 x 105 mm
Conformity	EASA CS/FAR 25.853
Certificate	EASA Form 1
Lead time	8 weeks from PO
Price	On request

CAD file & Prototype **READY**

Sample Fit-Check **APPROVED by airline**

FST/HR & Mech. Tests **PASSED**

Part is Certification **READY**

Part 21J approval **RECEIVED**

Parts **DELIVERED with Form 1**

FEATURED PARTS

Flight-ready Rubstrip panel

Item	**Rubstrip panel**
Part Category	Monuments
Application Cat.	Brackets
Aircraft Type	A320, A350, A380, B737, B777
Material	ULTEM 9085CG Aircraft Grey
Color	**Aircraft Grey**
Post Processing	No
Conformity	EASA CS/FAR 25.853
Certificate	EASA Form 1
Lead time	2 weeks from PO
Price	On request

PNs Dimensions	**XC-80-802-0814** *(625x17.5x21mm)*	**XC-80-803-0081** *(790x16x14mm)*	**XC-80-801-0003** *(820x21.5x18.5mm)*
	XC-80-802-0005 *(820x17.5x21.5mm)*	**XC-80-809-0002** *(840x21x19mm)*	**XC-80-809-0001** *(840x18.5x30.5mm)*

- CAD file & Prototype **READY**
- Sample Fit-Check **APPROVED** by airline
- FST/HR & Mech. Tests **PASSED**
- Part is Certification **READY**
- Part 21J approval **RECEIVED**
- Parts **DELIVERED** with Form 1

FEATURED PARTS

Flight-ready Slider

Item	**Slider**
Part Category	Decorative
Application Cat.	Panels
Aircraft Type	A320, A350, A380, B737, B777
Unique P/N	P06123-101 EPA
Replaces P/N	Support-Ty-Rap
Material	Ultem 9085
Color	**Upon request**
Post Processing	Filler / Base / Paint Mankiewicz
Conformity	EASA CS/FAR 25.853
Certificate	EASA Form 1
Lead time	8 weeks from PO
Price	On request

- CAD file & Prototype **READY**
- Sample Fit-Check **APPROVED by airline**
- FST/HR & Mech. Tests **PASSED**
- Part is Certification **READY**
- Part 21J approval **RECEIVED**
- Parts **DELIVERED with Form 1**

IFEATURED PARTS

Flight-ready Cockpit Cup Holder

Item	**Cockpit Cup Holder (Upper Tray)**
Part Category	Cockpit
Application Cat.	Holders
Aircraft Type	Embraer E175 and E195
Unique P/N	PSI251485-1-1
Replaces P/N	Original Part Design

Material	ULTEM 9085CG
Color	Aircraft Grey
Post Processing	Filler / Base / Paint Mankiewicz
Weight	263 grams
Dimensions, mm	130,20 x 181 x 53 mm
Conformity	EASA CS/FAR 25.853
Certificate	EASA Form 1
Lead time	8 weeks from P.O.
Price	On request

CAD file & Prototype
READY

Sample Fit-Check
APPROVED
by airline

FST/HR & Mech. Tests
PASSED

Part is Certification
READY

Part 21J approval
RECEIVED

Parts
DELIVERED
with Form 1

PART FINISHING

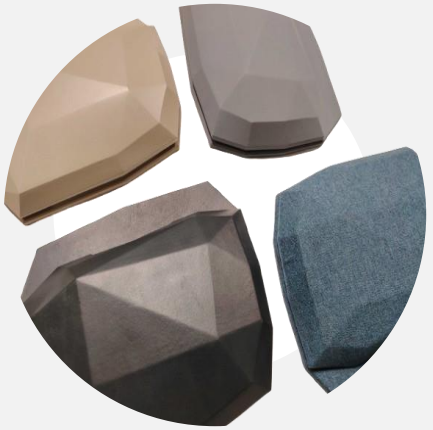
We delivers “Flight-ready” Parts with finishing compliant with EASA Form 1 in 6-10 weeks.

Finishing

Mankiewicz paints ULTEM compatible

Paradigm 3D production facilities operate under EASA PART 21G approval, including a certified paint shop, able to deliver part finishing according to the stringent OEM requirements.

Finishing



Laminated Polymer Cosmetic parts

Part finishing can include lamination, metallization, leather furnishing and other custom solutions, compatible with Aerospace material standards.

Finishing

Laser Marking, engraving of parts

Paradigm 3D production facilities can deliver all EASA Form 1 parts with Laser engraved P/N, batch No, Aircraft MSN numbers, Logo and any other labeling required by Airlines.

USE CASES (REAL EXAMPLES)

AIRCRAFT SEATS

Current situation:

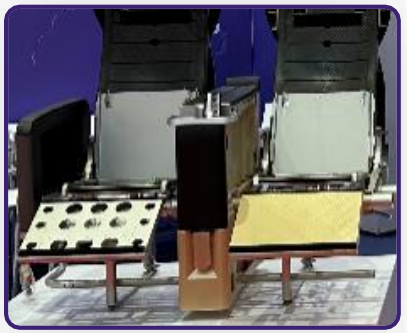
- Custom structures (i.e. middle console, leg rest, seat back cover bracket) made out of several hundred of sheet metal parts
- Long assembly times
- Expensive customization (both assembly and design)
- Cable management problematic during assembly and maintenance

Results:

Reduction of assembly time: 8-> 3 -38%

Reduction of number of components: 700+ -> 300+ -40%

- Seat back bracket, middle console & leg rest sheet metal components replaced with polymer parts of higher rigidity and reduced complexity



- Structural components kept in their original CNC milled form to ensure structural integrity (i.e. the pull out table assembly)

- Cable management streamlined with labeled and correctly angled channels

USE CASES (REAL EXAMPLES)

CABIN INTERIOR

Current situation:

- B/C seat compartment door originally constructed using aluminum sheet metal infill with thermoformed shells
- Complex construction requires at least 3 different machining steps with intermediate assembly

Results:

Weight reduction 913 g -> 496 g **- 46%**	Subcomponent consolidation 10 -> 3 **- 66%**
Reduction in production processes 12 -> 2 **- 84%**	Possibility to easily change the product to fit new hardware or another seat model.

USE CASES (REAL EXAMPLES)

AERO

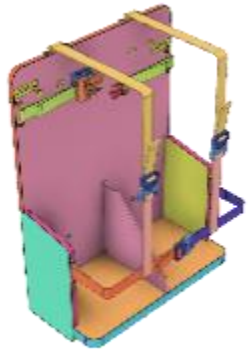
Current situation:

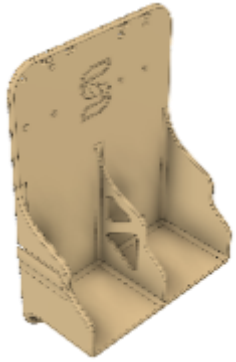
- Customer manufactures equipment bag holders for MedEvac helicopters using known and proven honeycomb construction
- Waste generation: composite panels are supplied in specific sizes, cuttings are discarded; excess mixed bonding adhesive must be discarded as well
- Manufacturing composite panel shelf involves at least 13 production steps; lead time is typically 4-5 weeks

Results:

Subcomponent consolidation	Reduction in production processes
47 -> 12	13 -> 5
- 74%	**- 61%**

Possibility to easily implement changes to fit different equipment and improved hygiene and cleanability due to a reduced number of crevices and sharp corners.





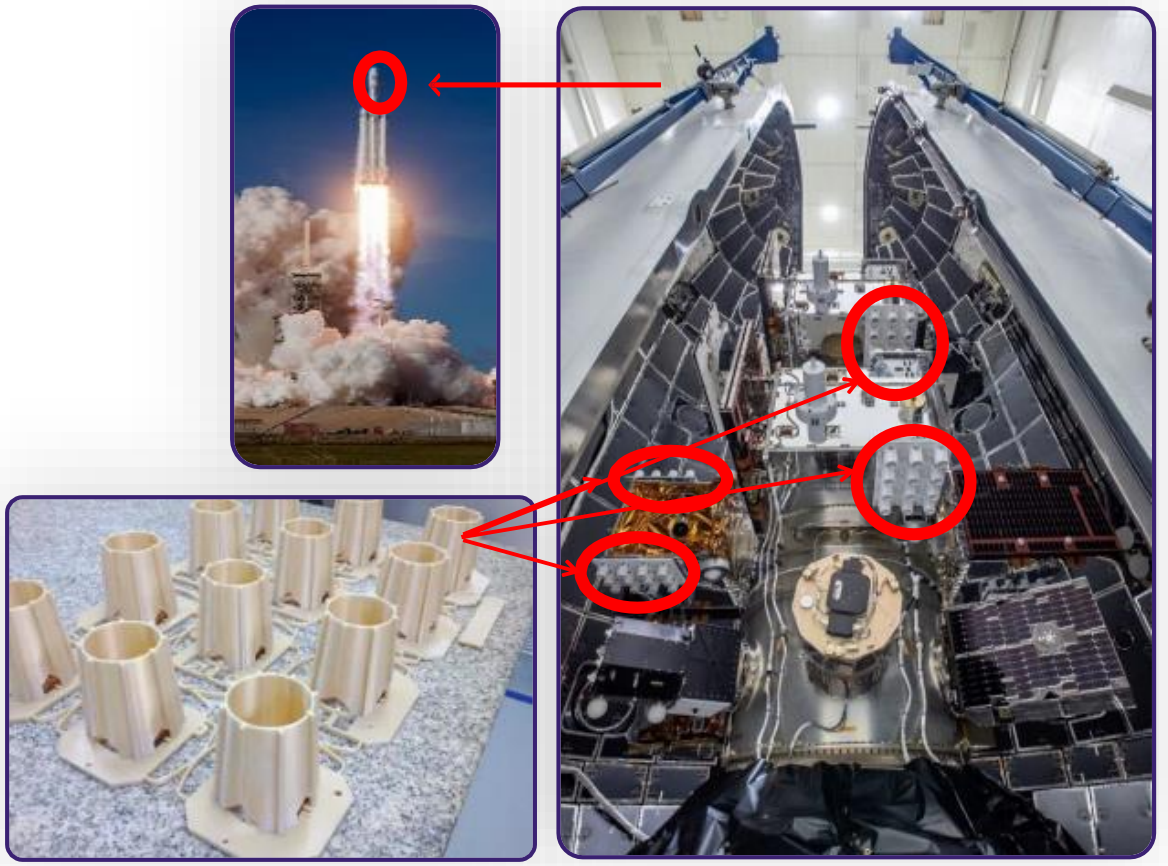
USE CASES (REAL EXAMPLES)

SPACE

NASA JPL

Satellite Parts

ULTEM antenna parts produced at Stratasys Direct

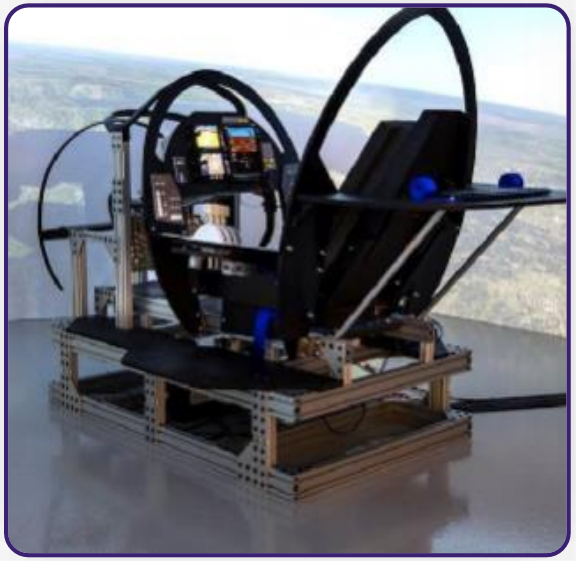


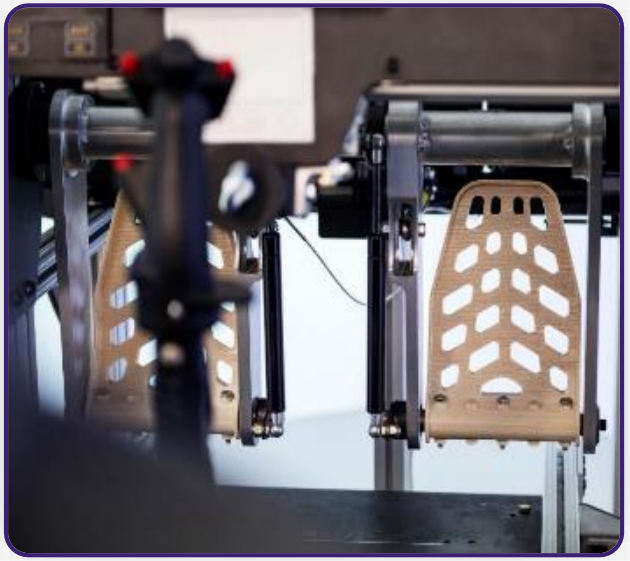
USE CASES (REAL EXAMPLES)

DEFENCE

Simulator Throttle

Functional hardware in the flight simulator: throttle controls and the q-feel mechanism





USE CASES (REAL EXAMPLES)

DEFENSE

Results:

World's first jet-powered, 3D printed UAV tops 150 mph with lightweight Stratasys materials.

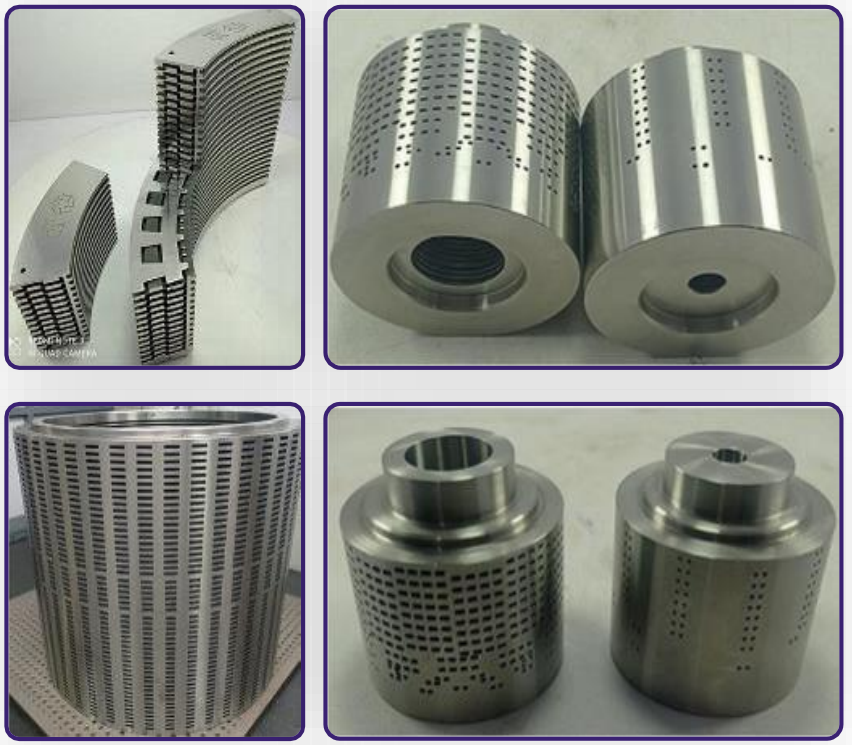
Using 80% 3D printed parts, the UAV is composed of Stratasys' ULTEM™ 9085 resin lightweight material to achieve flight speeds of over 150 mph.

The high-speed system boasts an impressive 9-foot wingspan and weighs in at only 33 lbs.

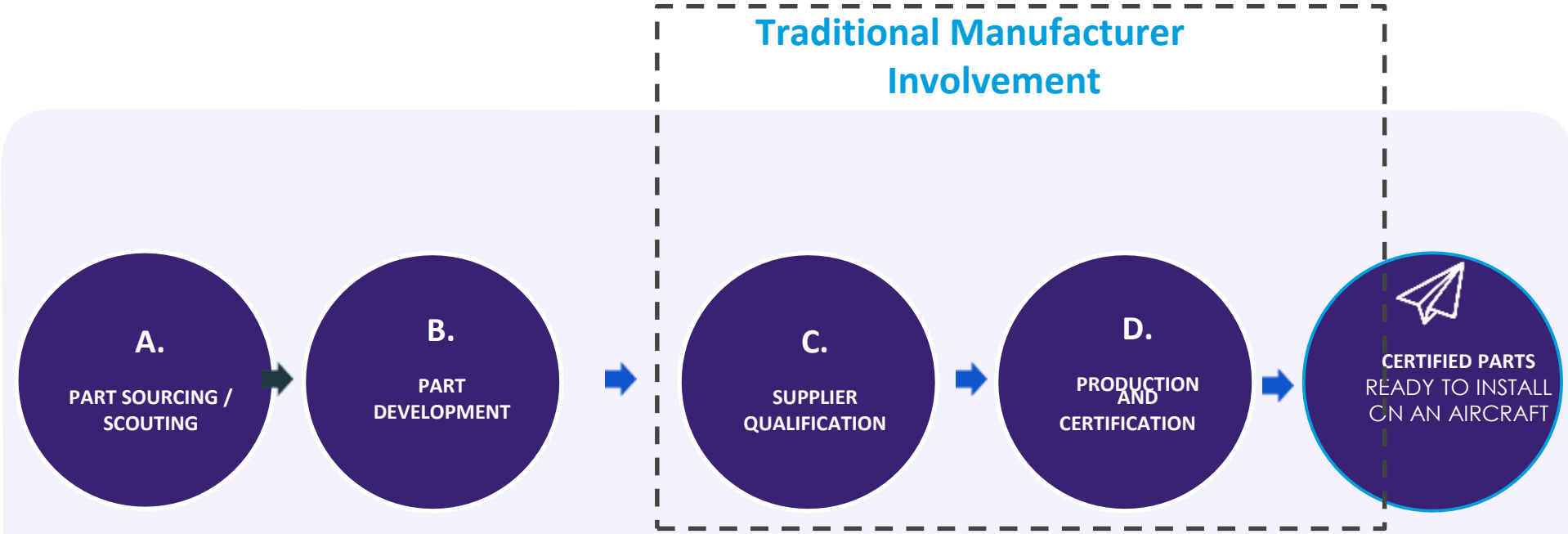
USE CASES (Control valve- labyrinth cage) – OIL & GAS

Results:

- Innovative use of additive manufacturing to improve traditional manufacturing techniques (from weeks to days).
- 20%-30% reduction on price.
- Possibility to also repair damaged cages.



End-to-End Delivery of Certified Parts



- **Engage earlier**
- **Co-develop and finance parts**
- **Decentralized manufacturing**
- **Fully certified** (Design & Production)
- **12 Design Partners**

Our Customers: Installation-ready Cabin interior parts with 3D technology and EASA Form 1

ORDER NOW

Send us your required Interior Parts list

Receive ROM Quote with Delivery Lead time

ROM Offer Received

Arrange a Technical Call with our Application Engineers

Quote Clarified

Issue PO and receive Sample parts for “Fit-check” in 1-2 weeks

Fit-check Successful

Batch of parts produced EXW with EASA Form 1 in 6-10 weeks

Parts Delivered