



Research and Development of Integrated Components for Railway Seats





genesis

1

onsortium

World leading cork solutions



Automotive parts group supplier



Leather company for transportation



R&D organization, experts in composites



participation of

Industrial design



Technical advice





High Tech Cork Solutions Provide

Amorim Cork Composites is one industrial applications brand



Automotive parts group supplies

components and sub-systems for interiors of several transportation industries



Leather Industry

Innovative branch of a 50 year major Iberian leather group – Carvalhos - supplying



inegi modelling and engineering



Research and Engineering

INEGI is one of the most important Engineering and R&D Centers in Portugal



alma
DESIGN



Concept and Development

Product and transportation design company. with 14 year experience in creating



Technical and user advice

Objectives of the project

Presenting companies as solution integrators and providers.

Offer integrated taylor-made solutions for railway interiors.

Building competencies through collaboration in common projects.

Building a demonstrator project of combined competencies.

Fostering innovation, integration, visibility, and a vision for the future.

A R&D project to overcome challenges of the present railway interiors industry and focused on the **future passenger experience**:

1. LIGHTER
2. INTEGRATED
3. FRIENDLY
4. ECO-EFFICIENT



Making it possible and tangible!



process

- research
- concept
- development
- prototyping

2



Compin



Compin



Compin



Compin



Research



Zanotta - Derbi



Zanotta - Evolution

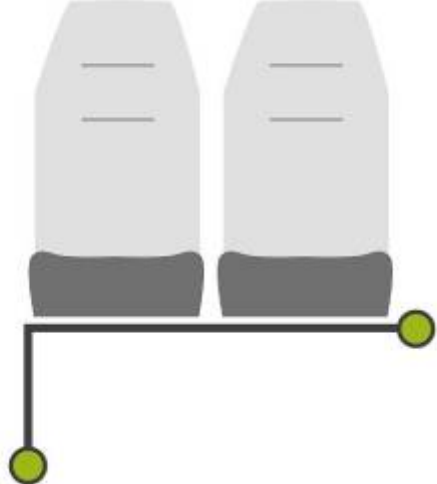


Cassina - Auckland



Cassina - Auckland

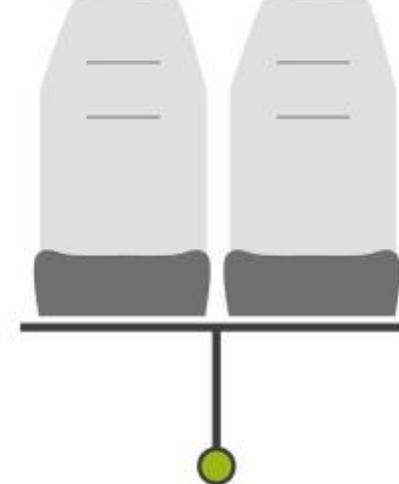
Research



op 01 pé lateral e fixação à estrutura do comboio

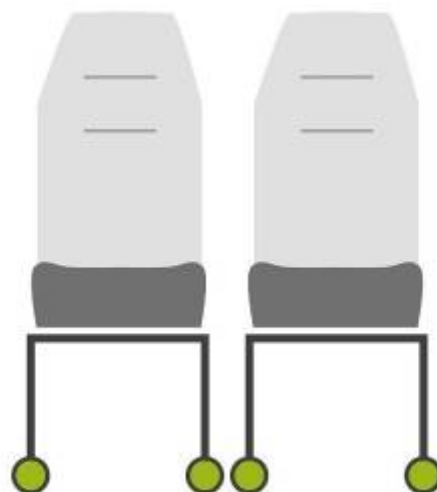
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31



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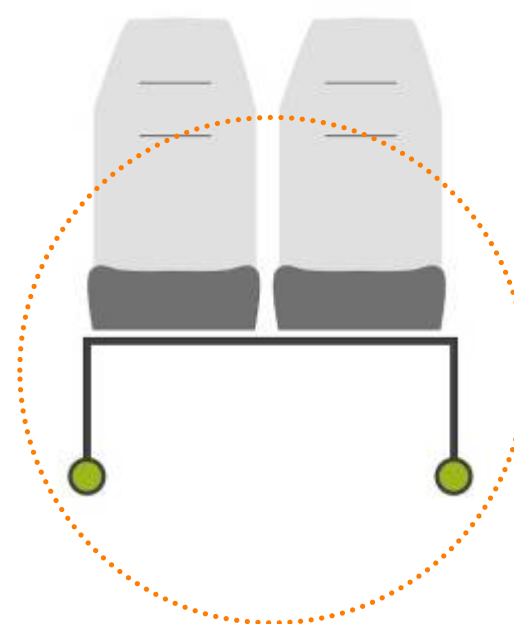
23



op 02 bancos individuais

%

5



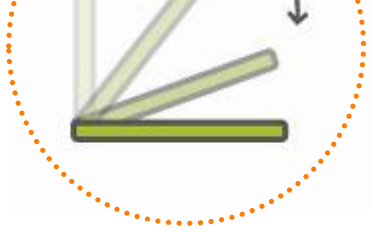
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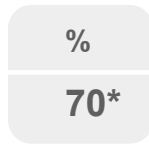


situação mais comum

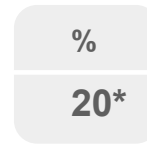
Research



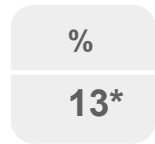
op 01 mesa rebatível



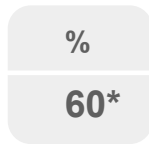
op 04 mesa com iluminação



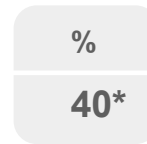
op 07 apoio copos



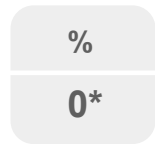
op 02 mesa fixa



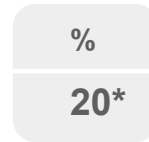
op 05 apoio revistas



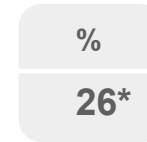
op 08 cinzeiro



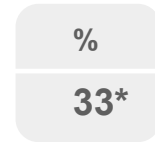
op 03 luz individual




op 06 lixo



op 09 audio/ radio



 situação mais comum

* num total de 100%

Research



enriching experience



required experience



social experience



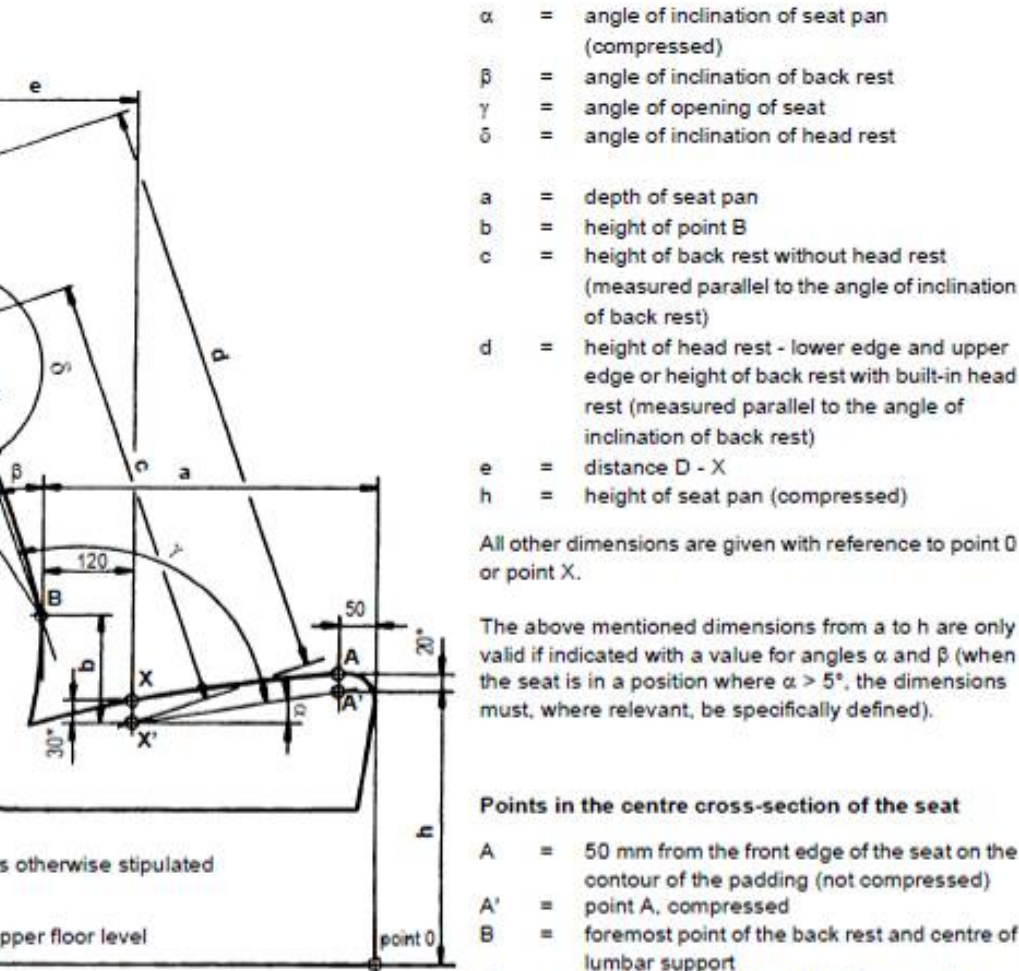


Fig. 3 -

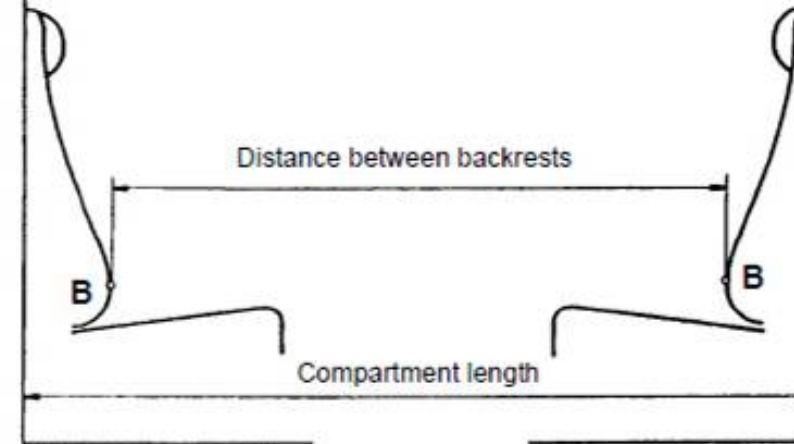


Fig. 1 - Face-to-face arrangement

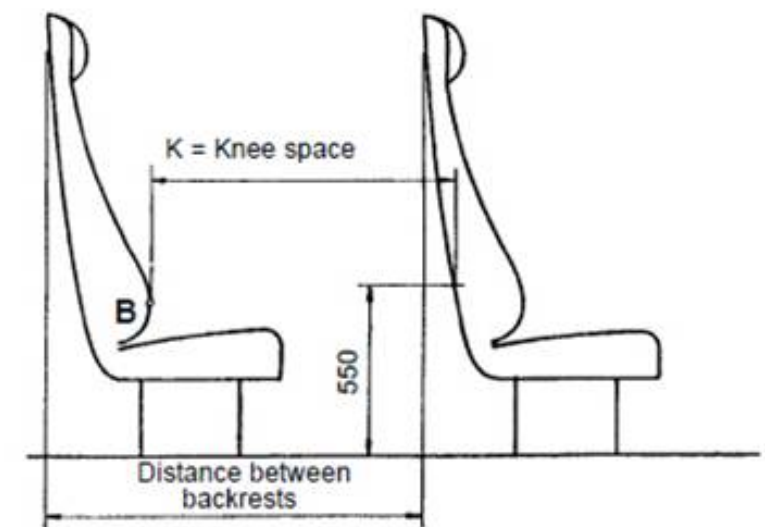


Fig. 2 - Row-type arrangement

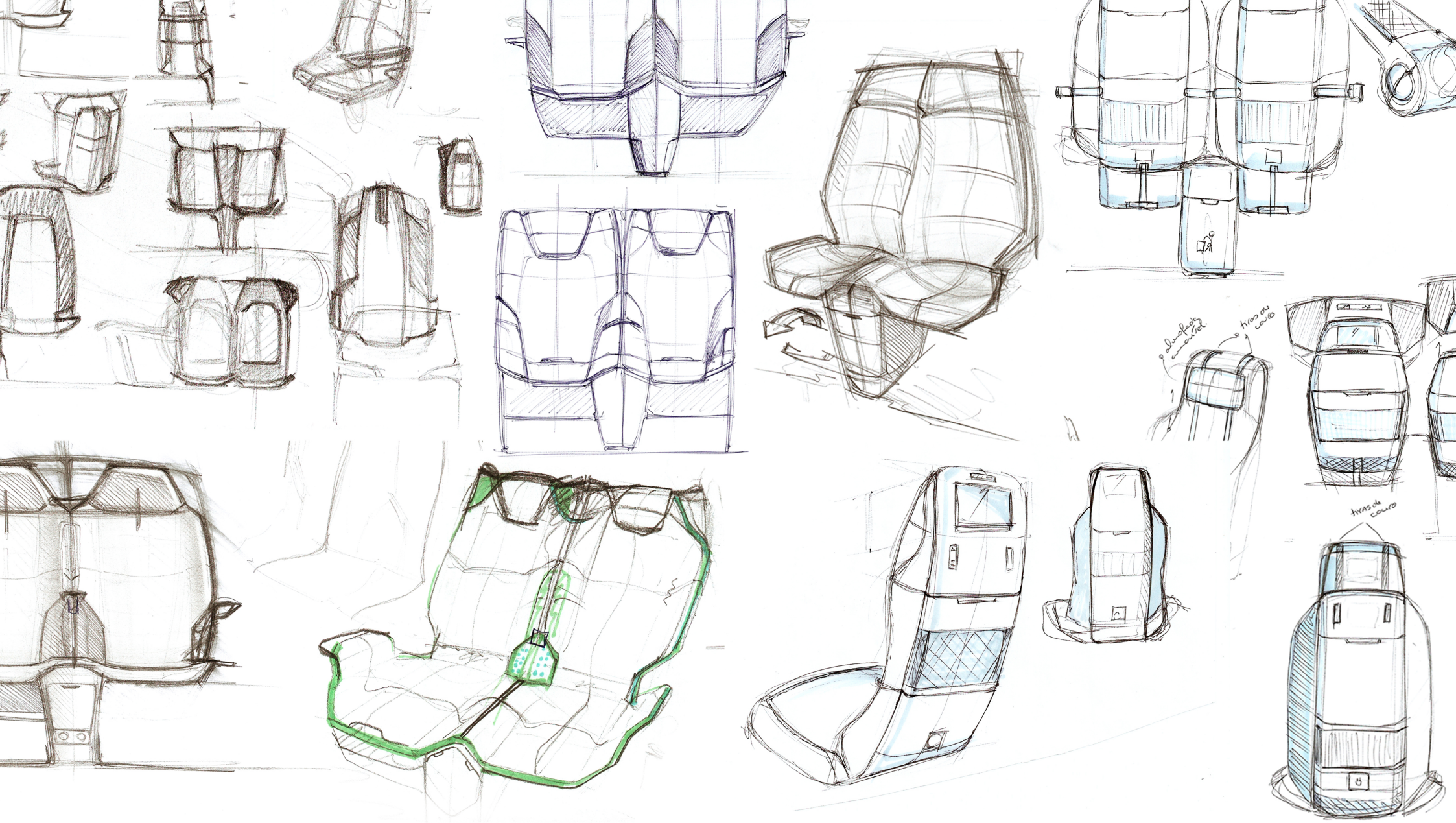
Research



Concept



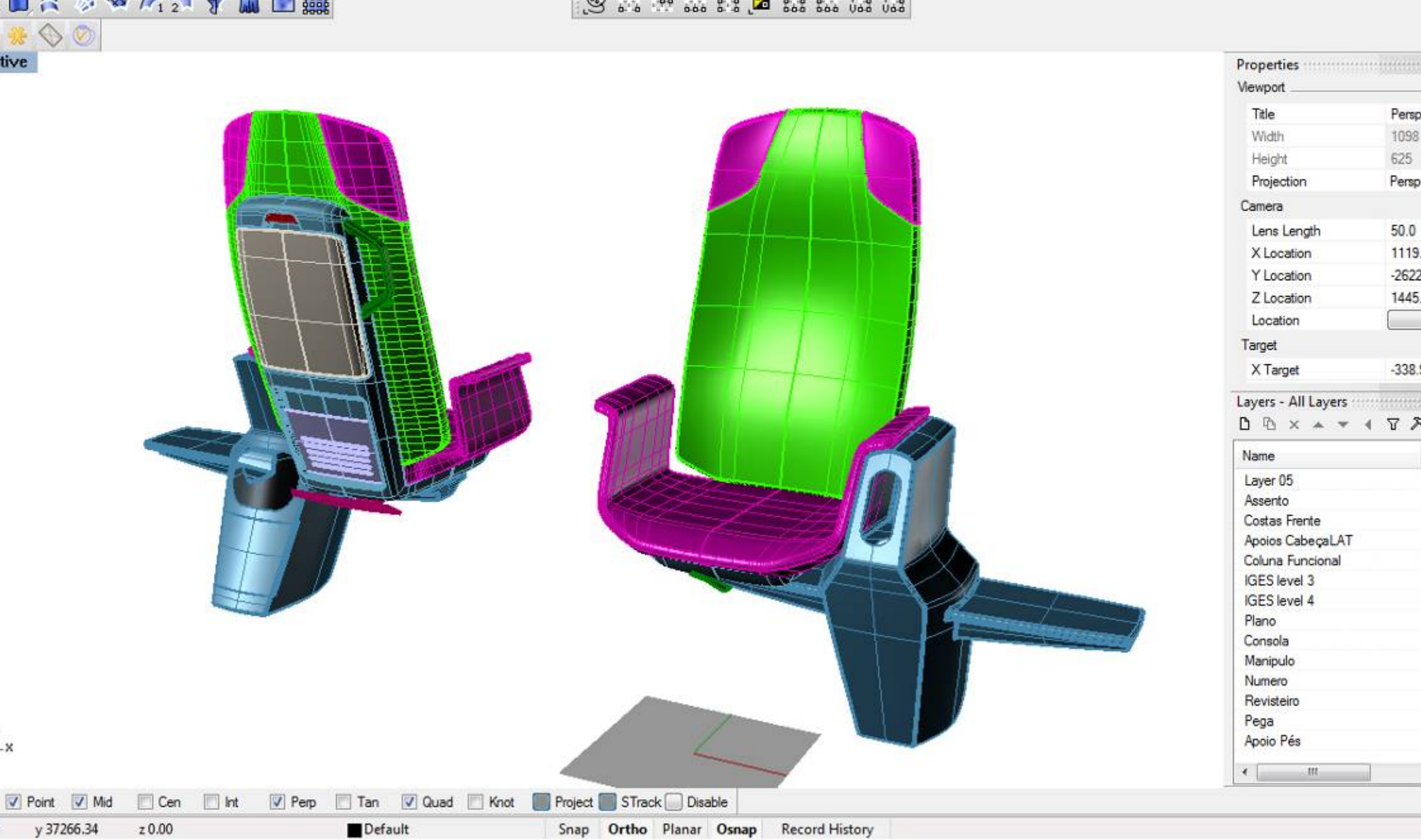
Concept



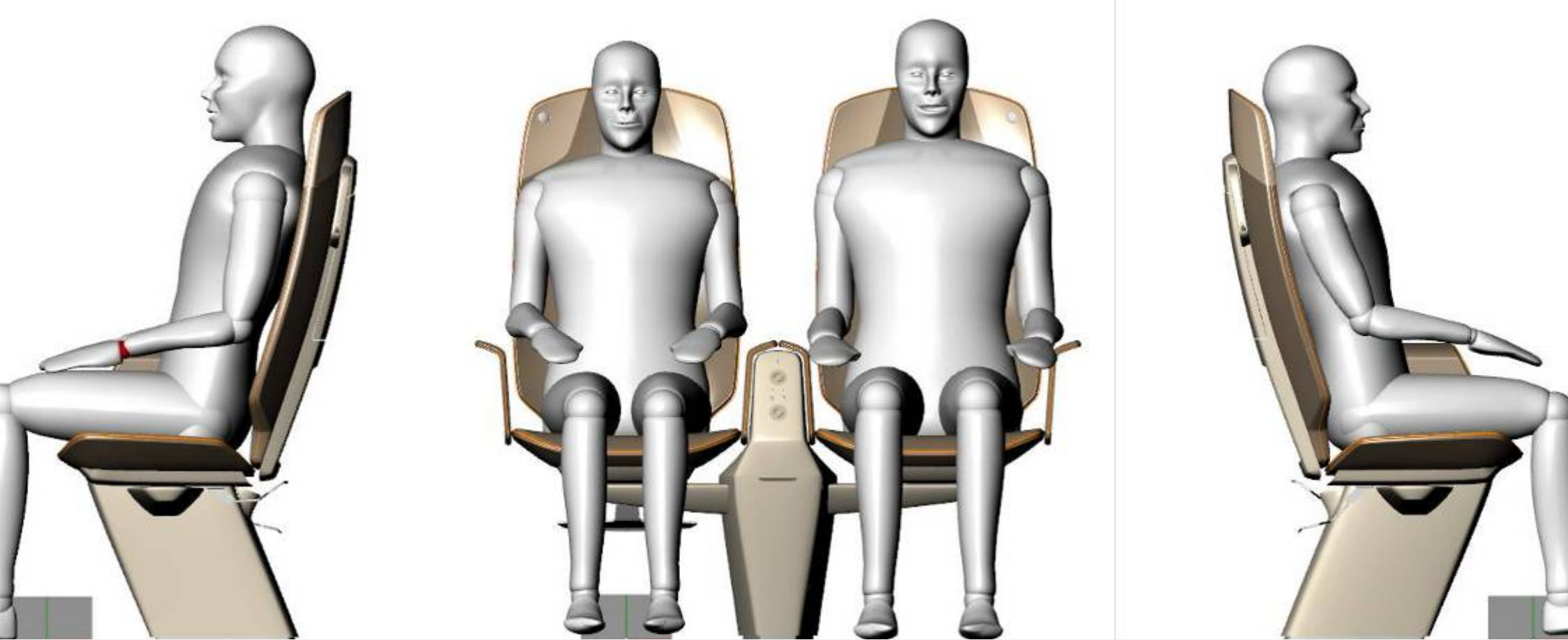
Concep



Concept



Development



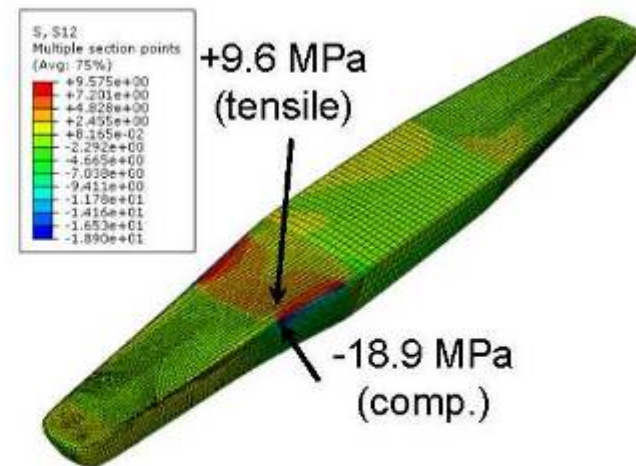
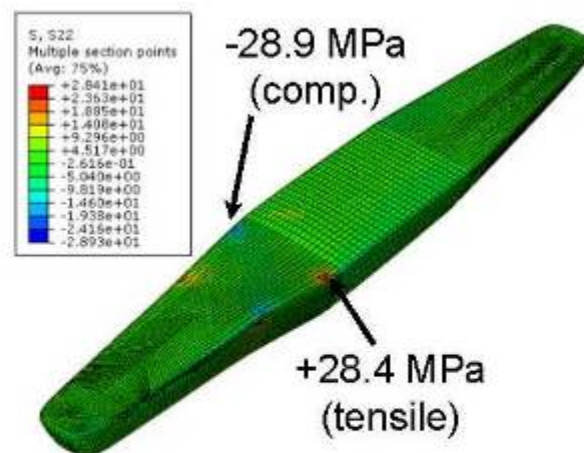
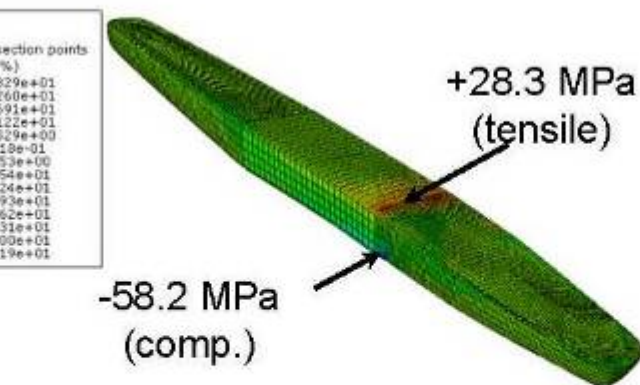
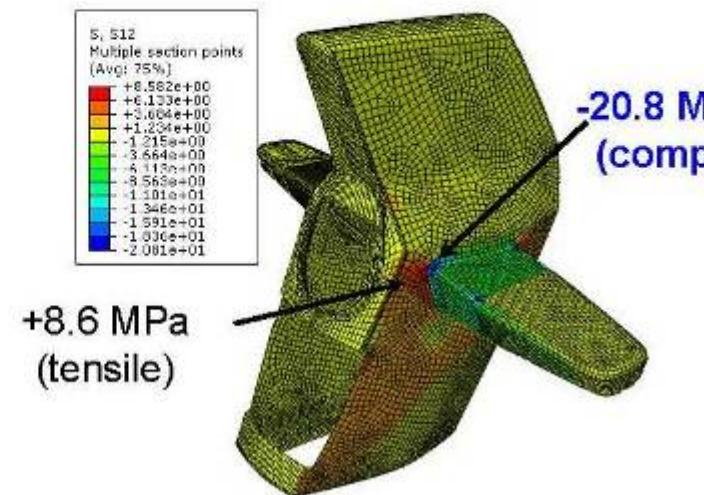
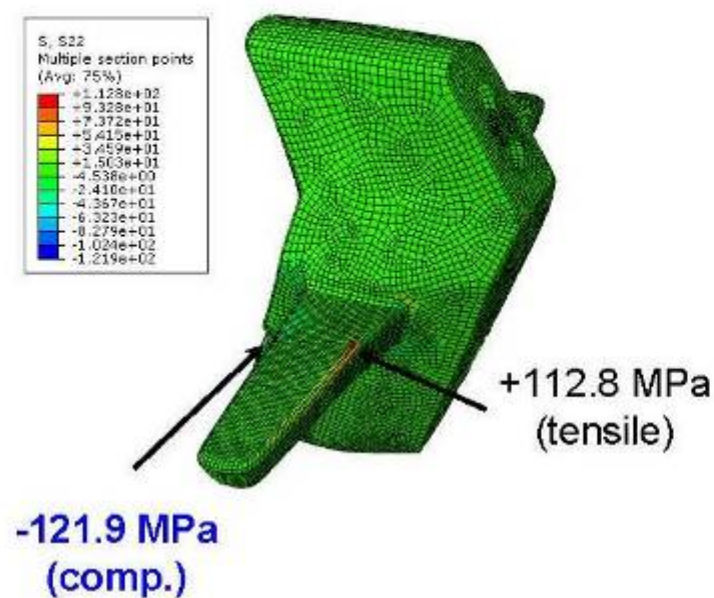
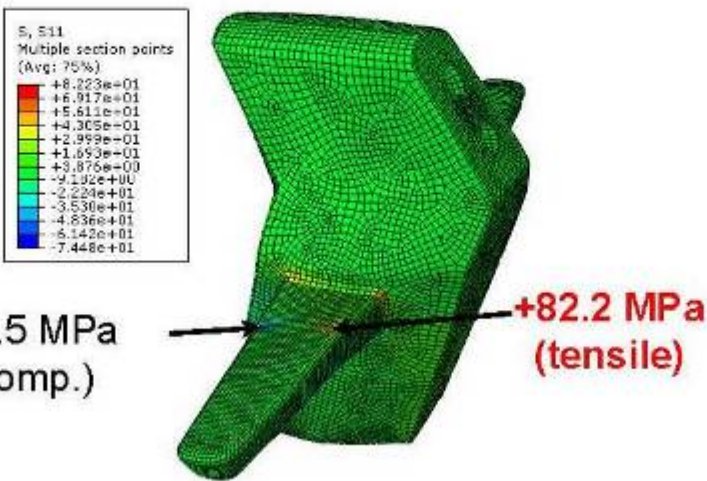
P 95

P 50

P 95

P 50

Development



CS = 4.7 (>1.50)

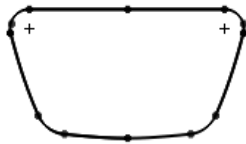
CS = 3.2 (>1.50)

CS = 3.1 (>1.50)

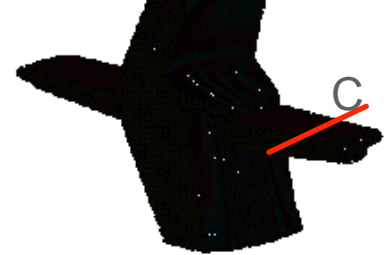
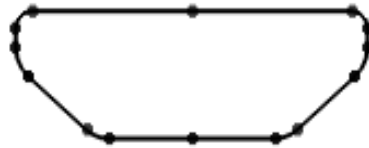
Development



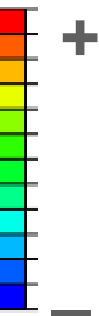
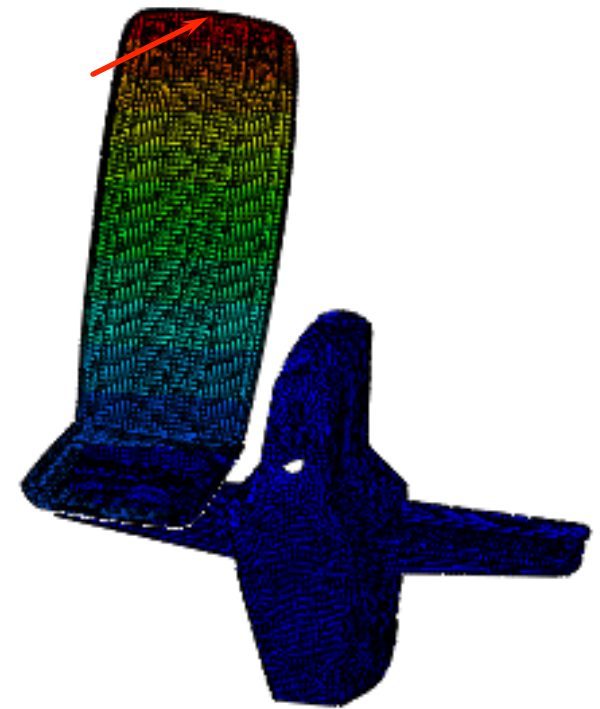
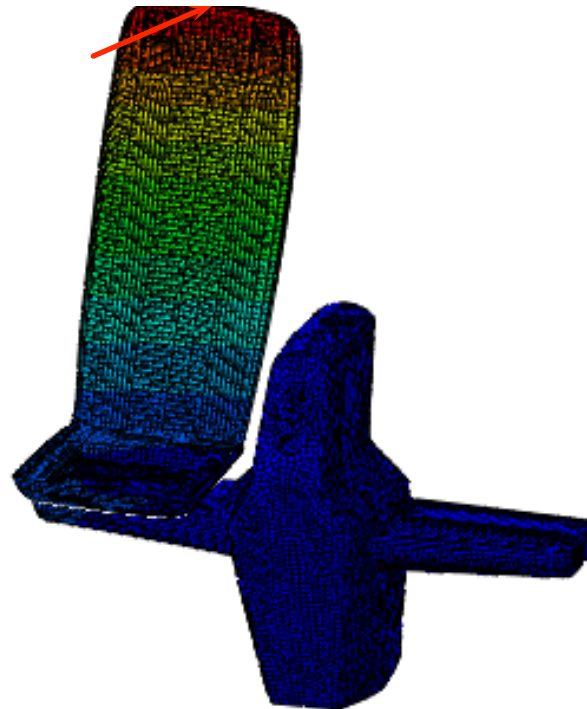
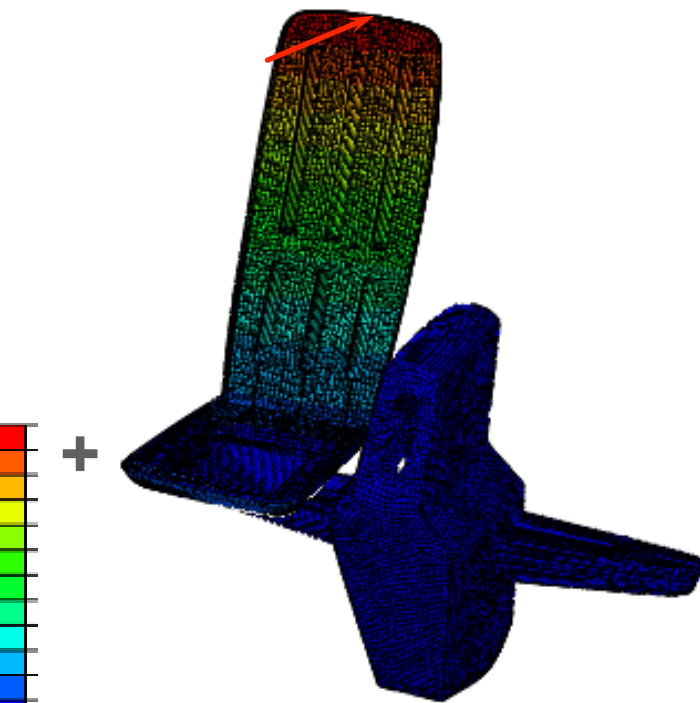
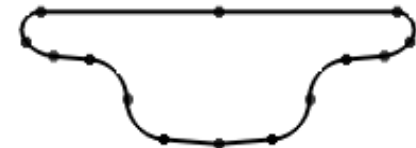
Secção A



Secção B



Secção C



Deslocamento

Develo



Developmen



Development

Material

Resina: SR1500

Fibra: FC215g/m²(T)+FV300g/m²

Espessura: 3,05mm (2+10+2cmds)

Processo: Infusão por vácuo

Densidade: 1,71g/cm³

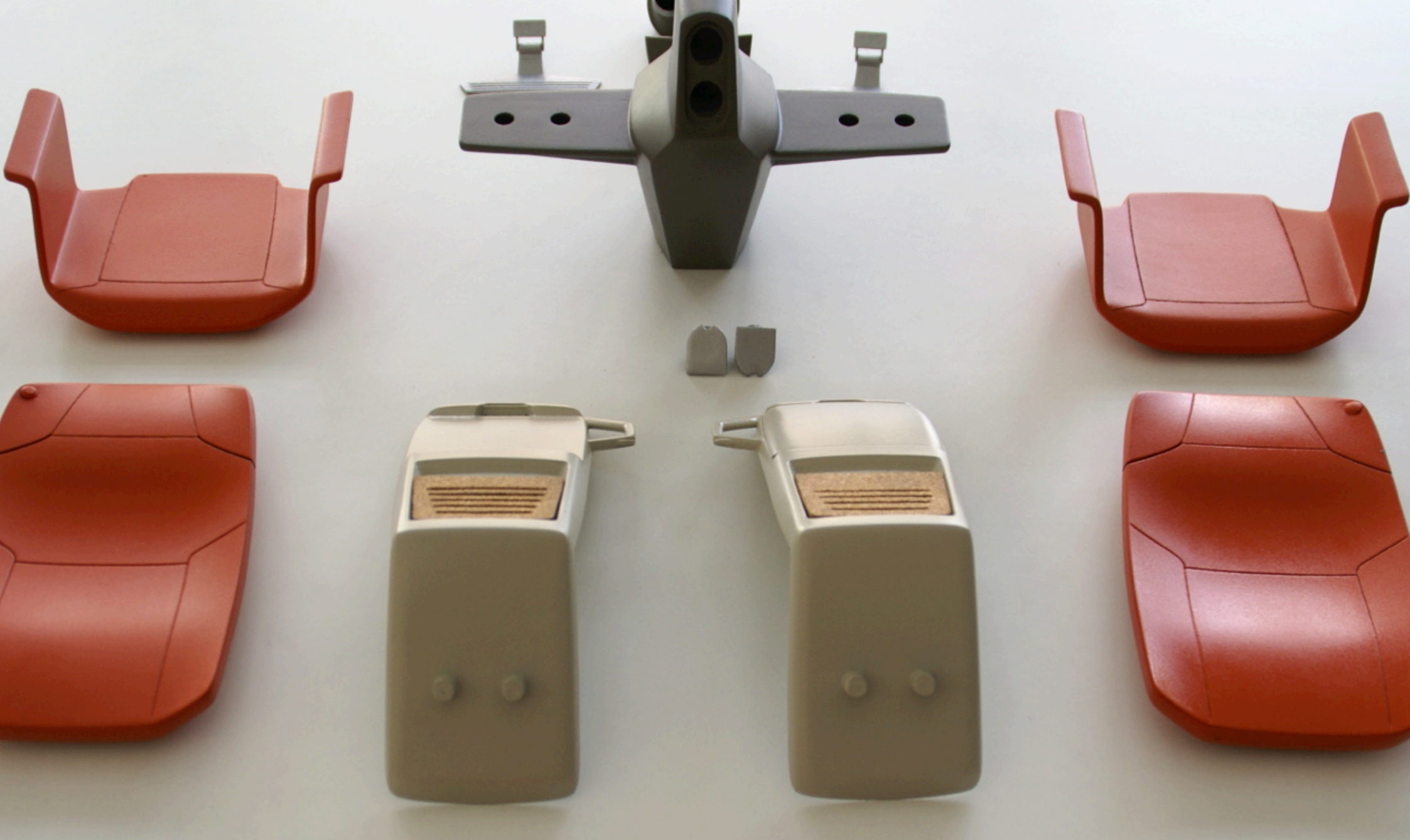
Data: 22-03-2011

12

Developmen



Developmen



Study models



Study models



Study models



Prototyping



Prototyping



Prototyping



Prototyping



Prototyping



product

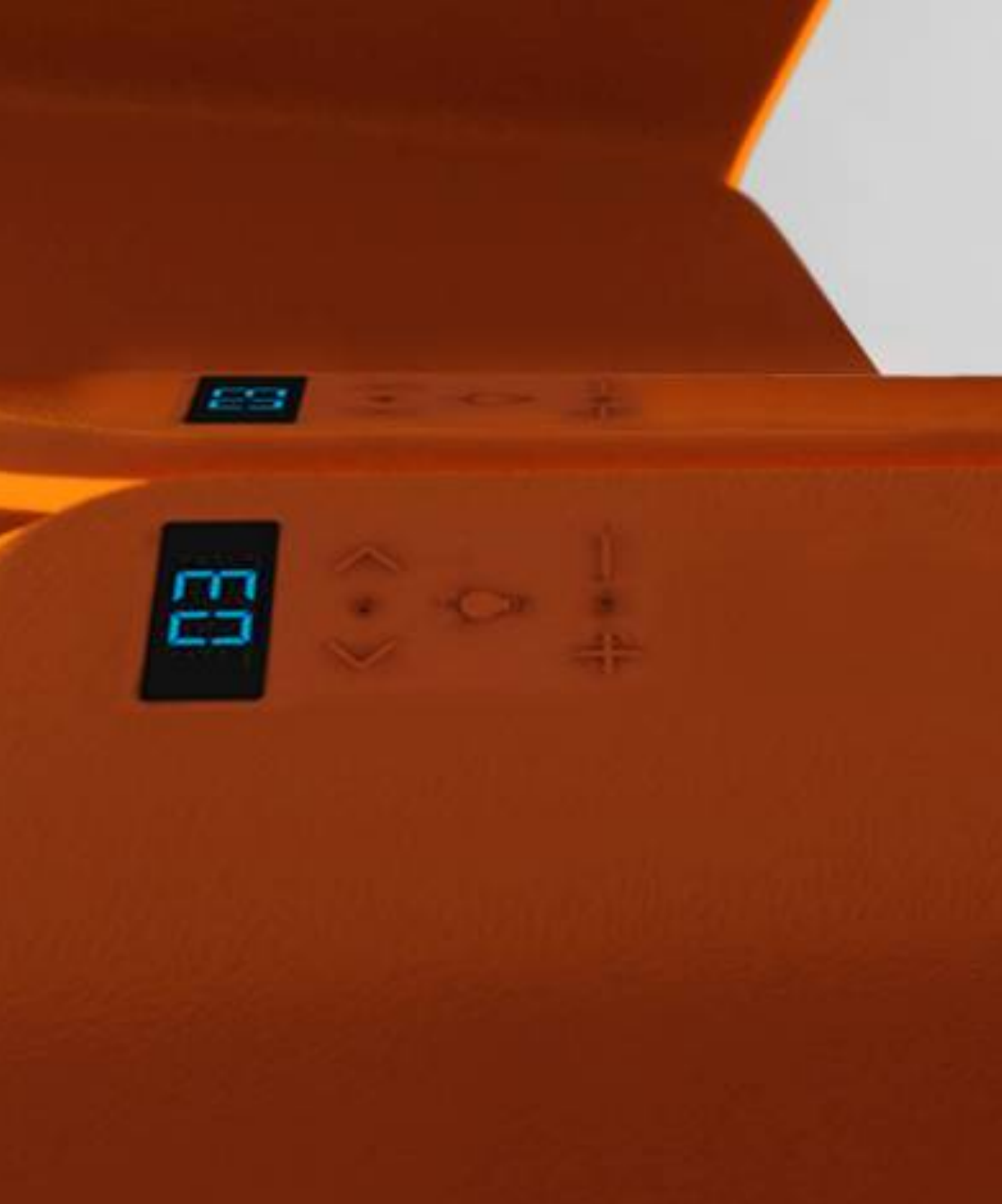
3



Product



Produc



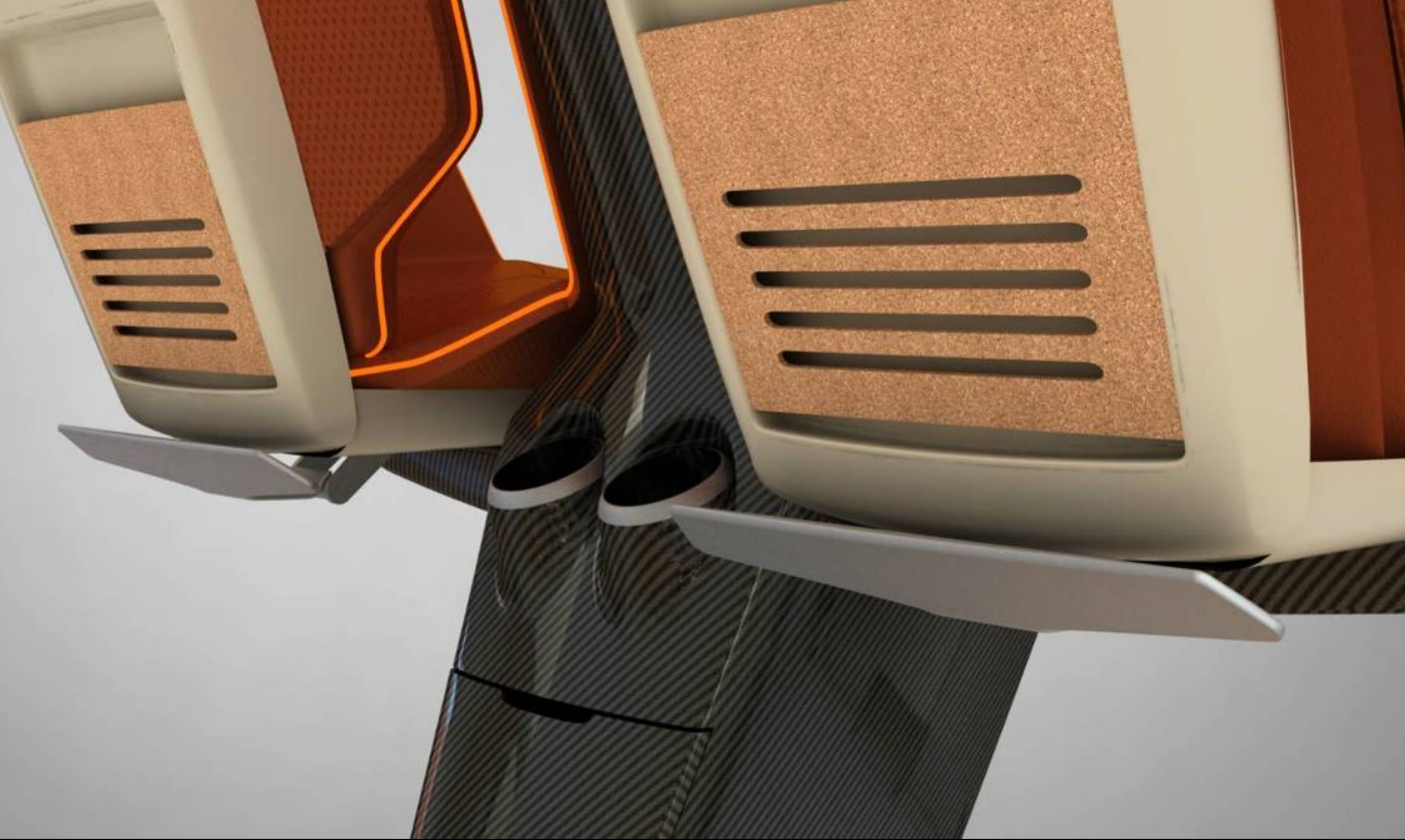
Produc



Produc



Produc



Produc



Produc



In train



In train



In train



future

4

Building and promoting competencies:

GETTING SCALE, VISIBILITY, COMPETITIVENESS;

INNER AND OUTER knowledge transfer from very different competencies.

Leveraging collaboration through **INFORMAL AND FORMAL** practices for bigger innovation.

Test-bench for future projects, **SPIN-OFFS** and
PRODUCTION

A vision and a process for creating **NEW PRODUCTS**, based
on a holistic, user-centered approach:

A DESIGN THINKING PROCESS

**Providing SOLUTIONS for taylormade interiors and
prototypes with the Portuguese Railway Cluster.**



**special
thanks**

5

pecial thanks

Electronics and engineering

NIBBLE®

Paints and varnishes



o - Funding

Funded by Fundo Europeu de Desenvolvimento Regional (FEDER) under the COMPETE – Programa Operacional Factores de Competitividade (POFC)





Thank you!

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QUADRO
DE REFERÊNCIA

