

2017-12-14, Martin (Slovakia)

3rd Final Conference of FUTURA project



The FUTURA project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 700985.

Agenda:

- ⦿ 11:00 – 11:15 Welcome speech of the project manager
- ⦿ 11:15 – 11:30 Presentation of project partners
- ⦿ 11:30 – 12:00 Presentation of the FUTURA project and results
- ⦿ 12:00 – 12:30 Press conference
- ⦿ 12:30 – 13:15 Discussion
- ⦿ 13:15 – 13:30 Snacks and coffee



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FUTURA

„FUTURE RAIL freight transport:

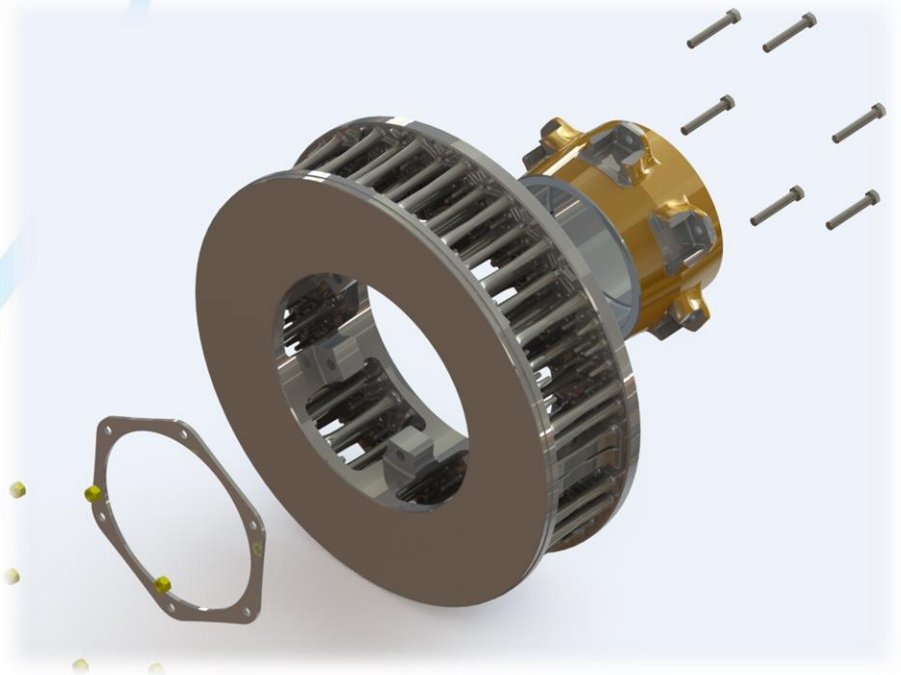
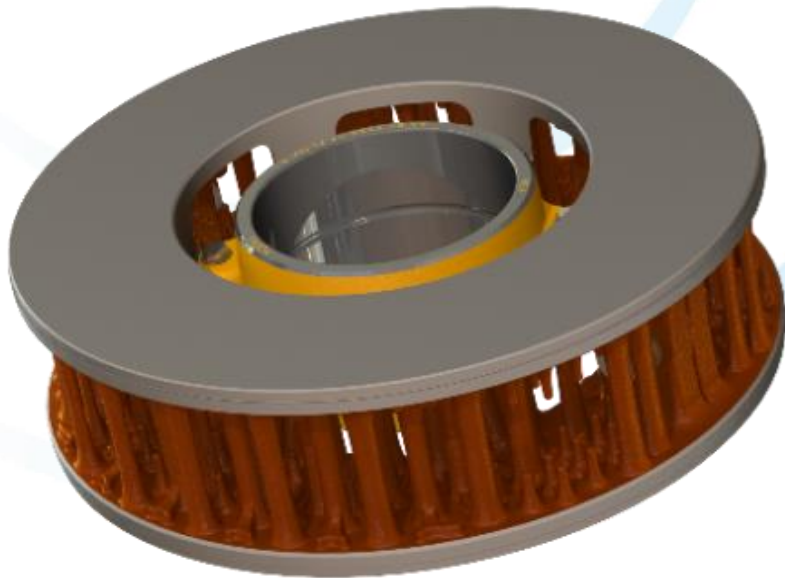
Cost-effective, safe, quiet and green



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FUTURA

project will focus on the final steps of development of new generation of axle mounted **Divided Rail Freight Brake (DRFB)** disc.



FUTURA

- ④ The FUTURA project is an answer to all challenges in Horizon 2020 call Fast Track to Innovation Pilot (FTIPilot-1-2015).
- ④ This call targets relatively mature new technologies, concepts, processes and business models that need a last development step to reach the market and achieve wider deployment.



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MAIN OBJECTIVE

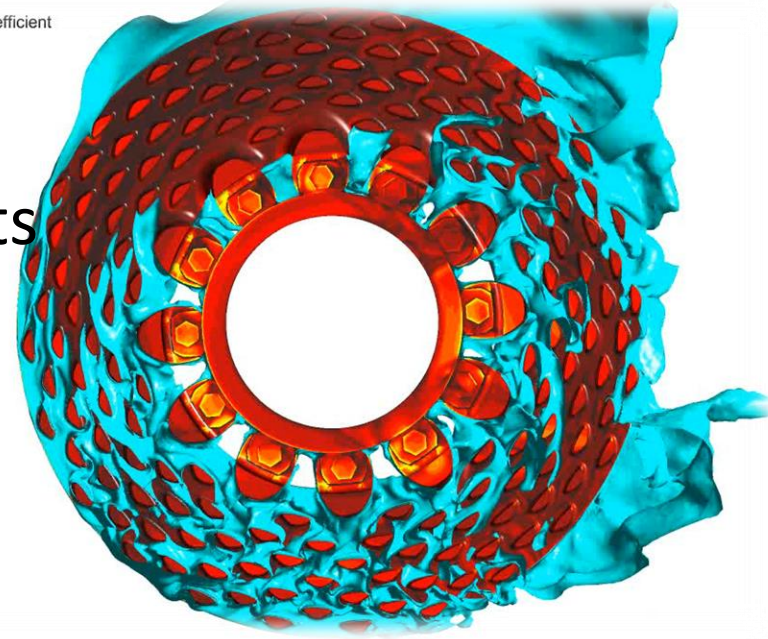
- ④ The main objective of the FUTURA project is to improve the quality and safety of life of over 55 million EU citizens who live or work near train tracks.
- ④ With its innovative solution, FUTURA project will influence the following 3 key elements:
 - Safety and Security
 - Health and Environment
 - Cost-effectiveness in rail freight transport (RFT)



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SPECIFIC OBJECTIVES

- ⦿ Enable higher speeds in RFT (160 km/h)
- ⦿ 11% shorter braking distance and higher safety
- ⦿ 11% greater efficiency through 15% better heat dissipation and 14% less vibrations
- ⦿ 21% lower mass
- ⦿ 10 dB lower noise
- ⦿ 60% lower maintenance costs
- ⦿ 13% lower LCC



EXPECTED IMPACTS OF FUTURA PROJECT

- ⦿ A significantly higher safety and security in RFT
- ⦿ Improving cost-effectiveness of rail transport
- ⦿ Reduced level of noise
- ⦿ Positive environmental impact
- ⦿ Increase of private sector's investments and innovation activities

EXPECTED BENEFITS

- ④ Total available market size around 12 billion € per year
- ④ Key target markets:
EU, USA, Canada, Russia, China, India and Brazil
- ④ Capture 7% of the market share in the production of brake discs for RFT



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CONSORTIUM

- 4 partners from 3 different countries:

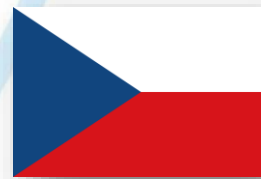
KOVIS



OMNIA KLF



ZX-BENET



VUD

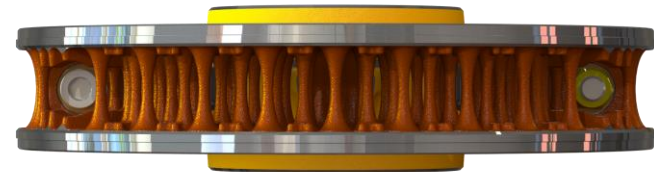
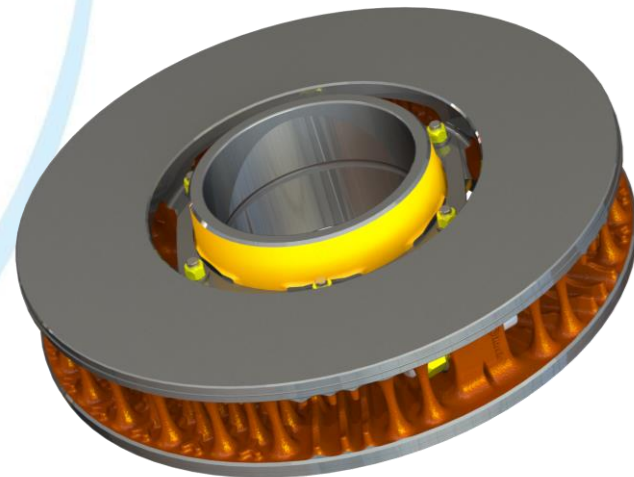
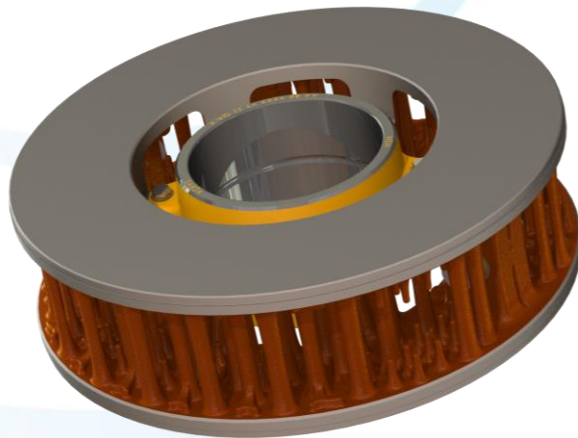


PROJECT RESULTS

① Two final prototypes of DRFB disc:

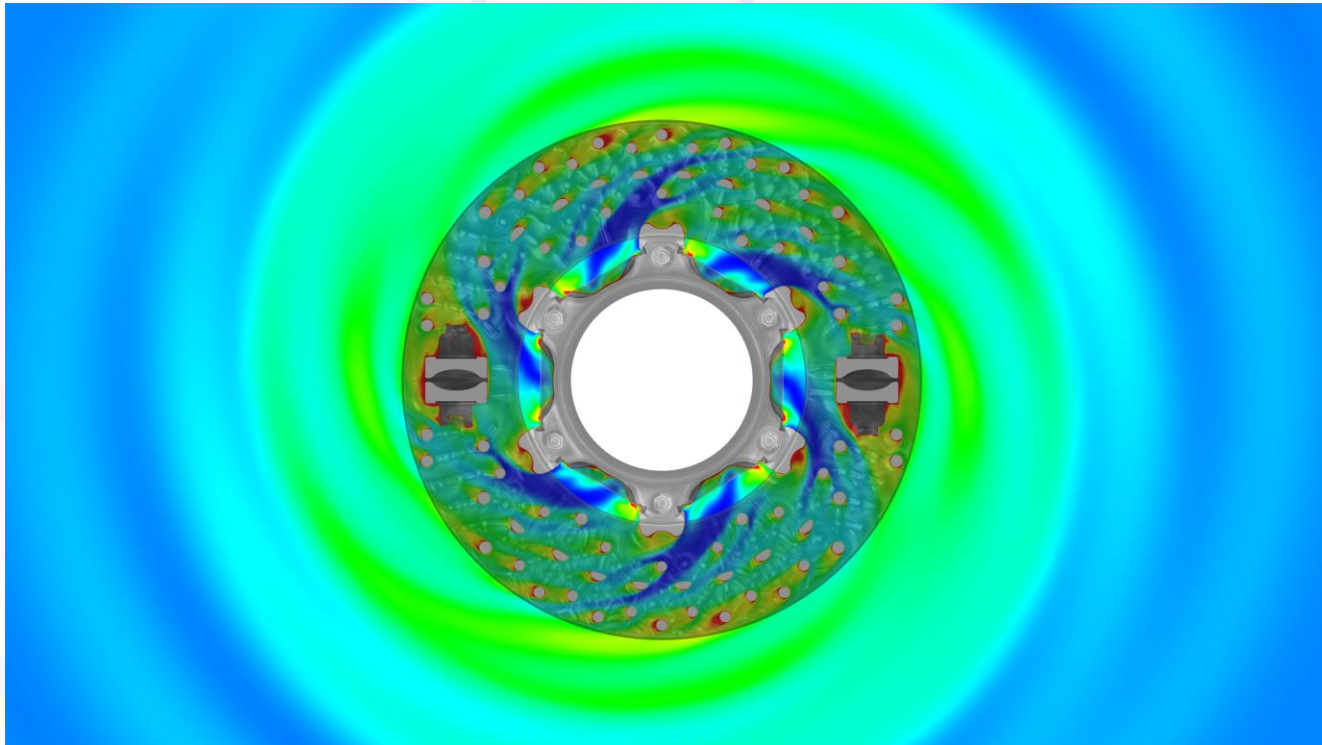
① 170mm of width

① 110mm of width



PROJECT RESULTS

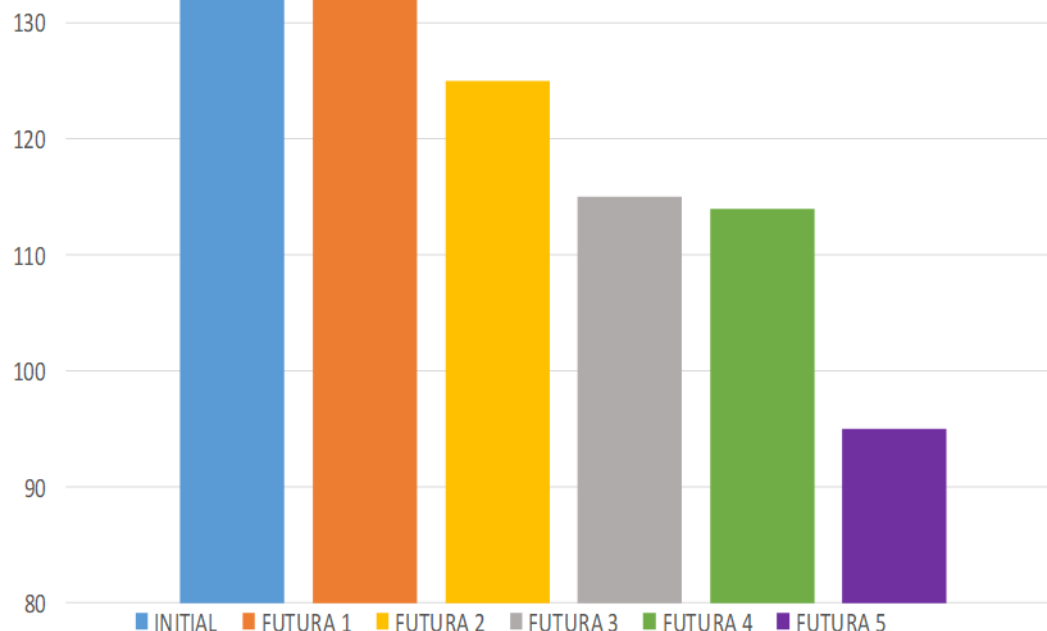
🎯 Suitable for higher speeds in RFT (160 km/h)



PROJECT RESULTS

🎯 22,7% lower mass for 590x170mm disc

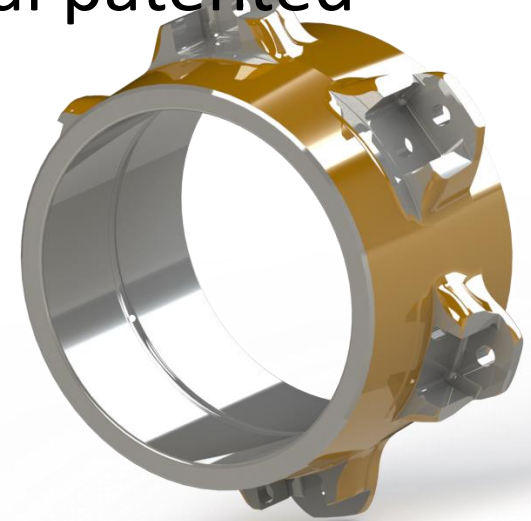
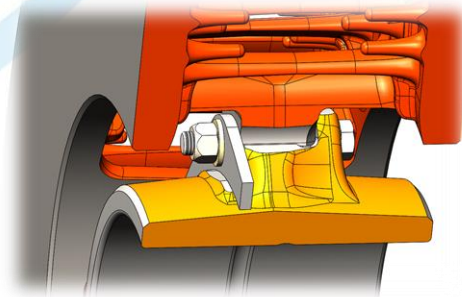
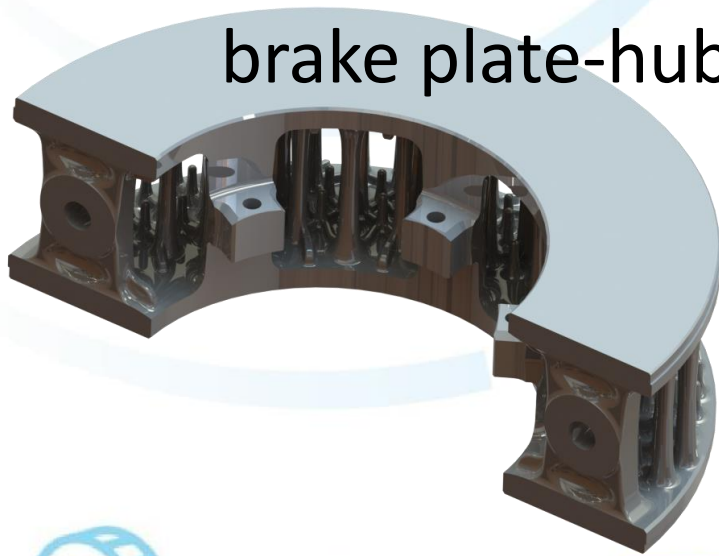
🎯 34,5% lower mass for 590x110mm disc



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PROJECT RESULTS

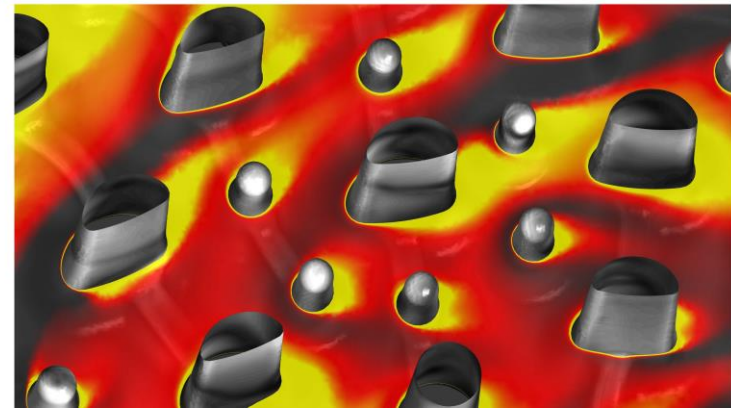
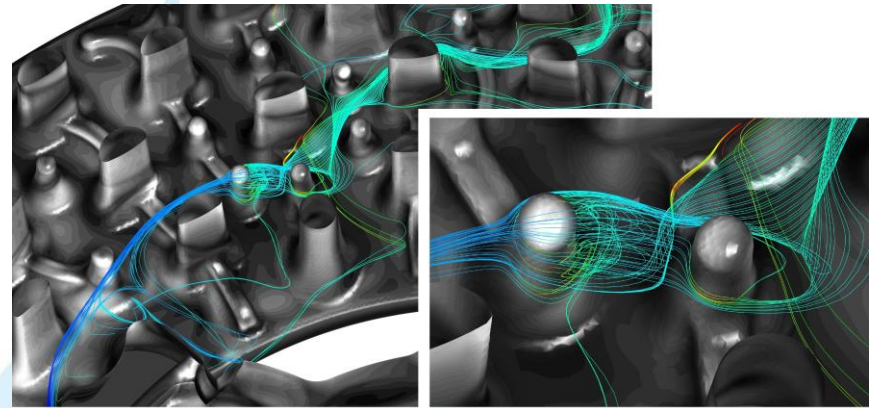
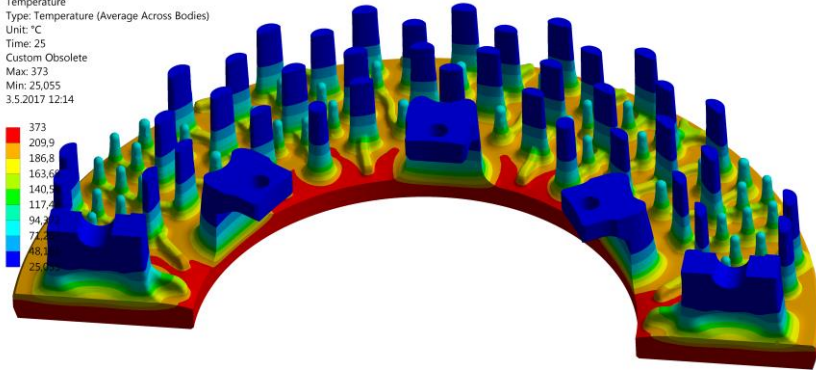
- ① 11% shorter braking distance and higher safety due to special patented brake plate-hub connection
- ② 15% less vibrations due to special patented brake plate-hub connection



PROJECT RESULTS

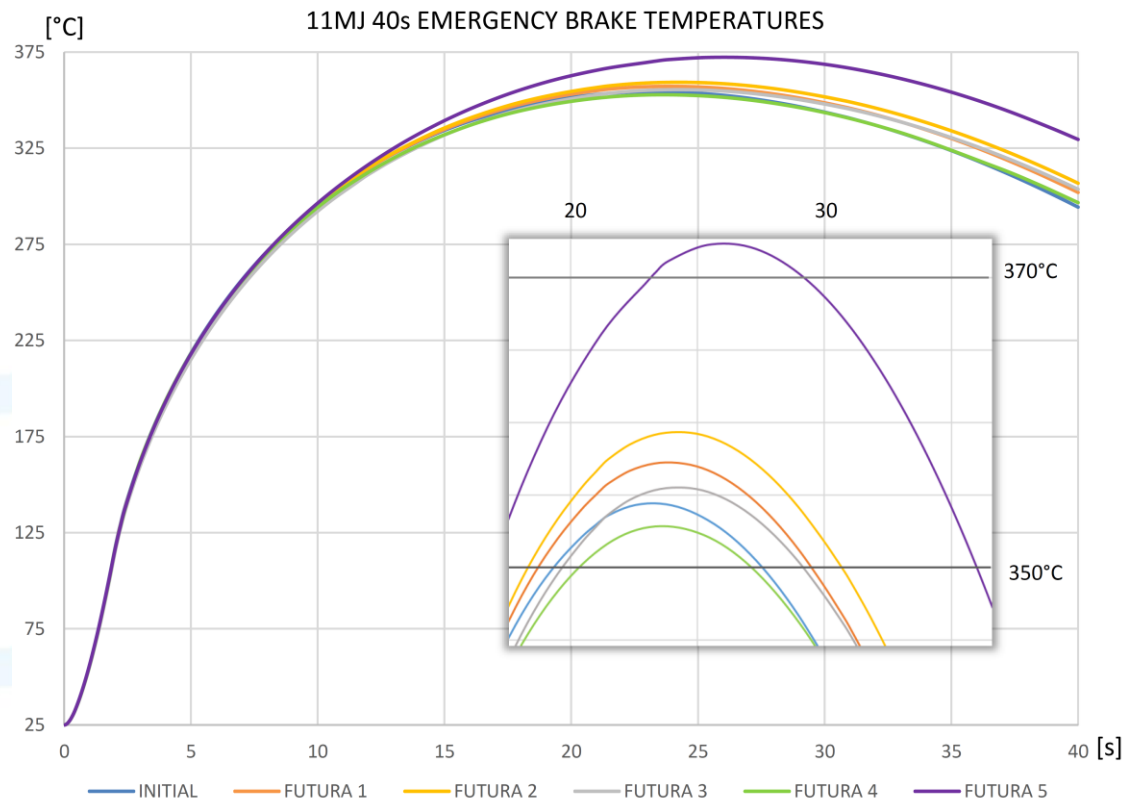
🎯 11% greater efficiency through 15% better heat dissipation

CB: 40s futura 4 LD
Temperature
Type: Temperature (Average Across Bodies)
Unit: °C
Time: 25
Custom Obsolete
Max: 373
Min: 25.055
3.5.2017 12:14



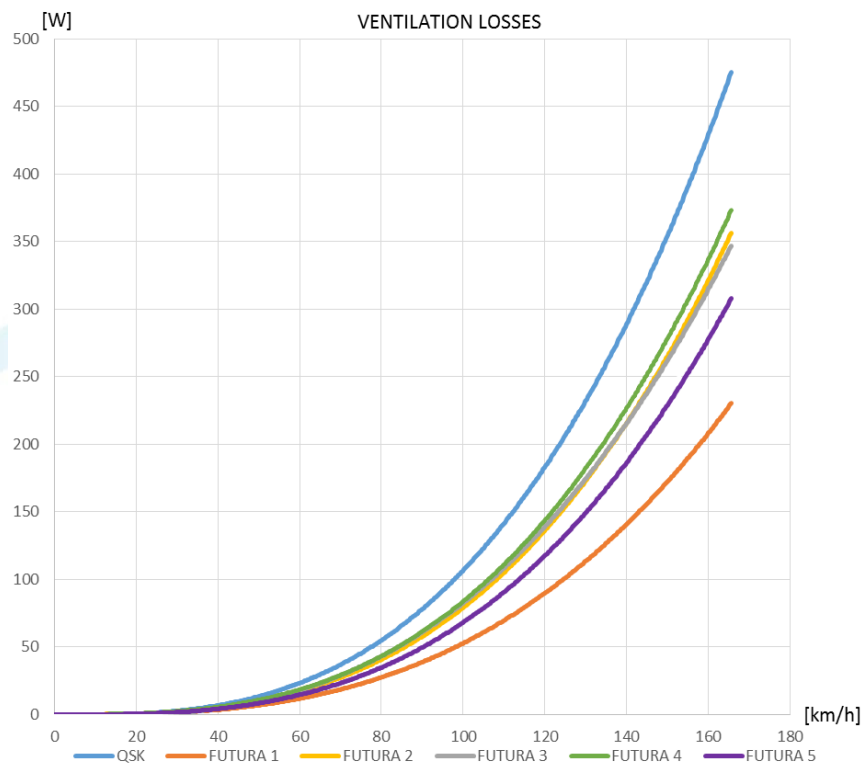
PROJECT RESULTS

11MJ Emergency brake temperatures



PROJECT RESULTS

🌀 Ventilation losses (Air resistance)



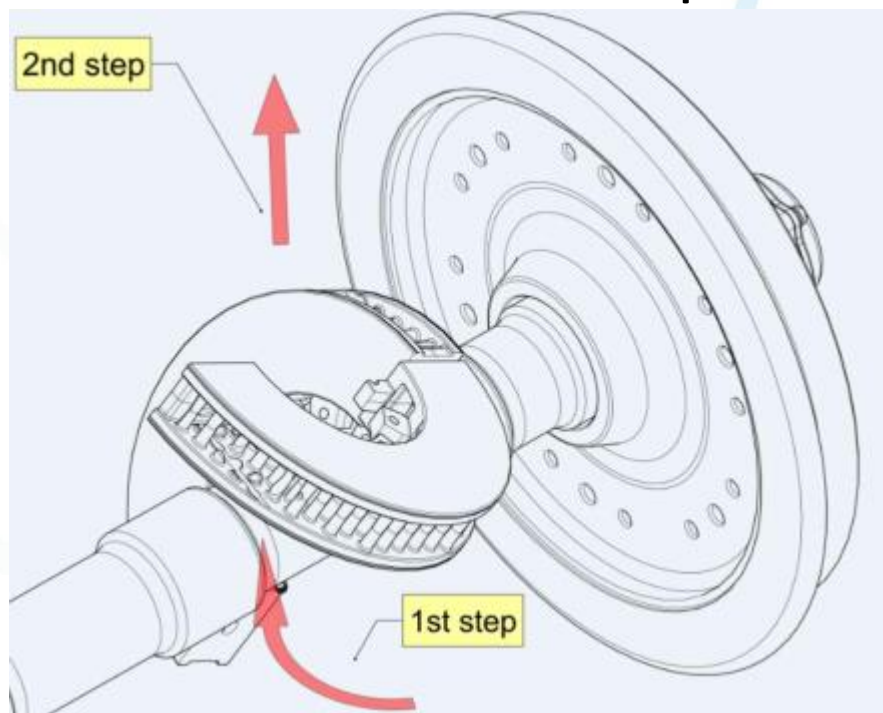
PROJECT RESULTS

- ① 10 dB lower braking noise in real environment test in comparison to K-block
- ① 6 dB lower noise level of unbraked disc 590x170 (4 dB for 590x110)



PROJECT RESULTS

- 60% lower maintenance costs due to divided version and simple mounting procedure



PROJECT RESULTS

🎯 20% lower LCC of DRFB disc



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PROJECT RESULTS

Successfully passed tests:

- ① Test program B.1 (Freight wagons, Energy class A1, UIC 541-3, 8th Edition)



- ① Tests according TSI for freight wagons (COMMISSION REGULATION (EU) No 321/2013)

PROJECT RESULTS

- ① 1,800 000 – 2,600 000 km – Average predicted lifetime of DRFB disc



FUTURA ON WEB

<http://www.projectfutura.com>

FUTURA ON FACEBOOK

<https://www.facebook.com/projectfutura>



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Facebook



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THANK YOU !



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