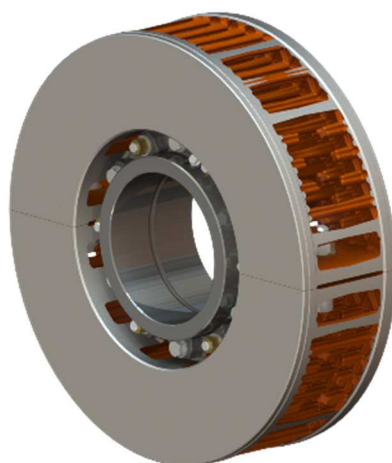




WORK PACKAGE 6 (WP6)
**Communication, dissemination
and exploitation**

PROJECT DELIVERABLE 6.7
**PROMOTION MATERIAL (500 LEAFLETS, 500
BROCHURES, 1 ROLL-UP, 500 USB FLASH
DRIVES, 500 FOLDERS, 500 PENS)**



FUTUre RAIl freight transport: cost-effective, safe, quiet and green! – FUTURA



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December 2017

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1 INTRODUCTION

The scope of the present document is to report and present the preparation of the promotional material and distributes at all events within FUTURA action.

2 MAIN OBJECTIVES

The main objectives of the promotion materials are to increase awareness of the action and to inform business partners, general and professional public, decision-makers and policy makers, knowledge and research institutions about the FUTURA action.

3 PREPARATION OF PROMOTION MATERIAL

Promotion material for the FUTURA project was created to increase awareness of the action and to inform the main stakeholders, for the presentations on conferences, fairs, actions at schools and other events. Promotion materials consider EC guidelines about mentioning the co-financing party. Multilingual materials were prepared in five languages: Slovenian, Slovakian, Czech, English and German.

To achieve the promotion materials we have defined different stages described below.

3.1 Stage 1 – Project definition

This stage involves defining the best solution for promotion material contents within project team members. The project graphical designer and print shop were defined and were contracted to carry out the work. Few meetings were held to achieve the agreement on promotion materials.

3.2 Stage 2 – Proposals

The design team provided a few proposals for leaflets, brochures, roll-up posters and on the common meeting the project team confirmed one.

3.3 Stage 3 – Translations

Multilingual materials are available in 5 languages. We have defined a translation agency and contracted them to translate the texts in Slovakian, Czech, English and German language.

3.4 Stage 4 – Delivery of promotion materials

This stage included printing and creating of all promotion materials.

4 SET OF PROMOTION MATERIALS

In the first stage the set of promotion materials consists of 500 multilingual leaflets, 1 Roll-up, 500 USB flash drivers, 500 folders, 500 pens. All promotion materials consider EC guidelines about mentioning the co-financing party.

Due to the good response on the number of the events we needed to order additional 200 pcs English leaflets, 150 folders and 500 pens.

For additional promotion on the Open House week 150 water glass bottles were ordered.

On the final conference of the project FUTURA were presented 500 multilingual brochures.

4.1 Multilingual leaflets

The multilingual leaflet contains basic information about the project. Leaflets are available in 5 languages: Slovenian, Slovakian, Czech, English and German.



Figure 1: Multilingual leaflet

In total 2.500 pcs of leaflets (500 pcs per language) were ordered in the beginning. During the project we ran out of English leaflets and an additional quantity was ordered.

4.2 Roll-up

On most of the events and in our show room in the company KOVIS, the Roll-up FUTURA was used.

The roll-up consists of all the basic information about the FUTURA project.



Figure 2: Roll-up

4.3 USB flash drives

USB flash drives have got the logotype as a corporate identity of the project.



Figure 3: USB flash drives

4.4 Folders

The multilingual folders contain basic information about the project.



Figure 4: Multilingual folders – inside



Figure 5: Multilingual folder – outside

4.5 Pens

A pen has got the logotype as a corporate identity of the project.



Figure 6: Pen

4.6 The pedestrian reflectors

For the promotion of the FUTURA project at the primary and secondary schools the pedestrian reflectors were used. They have got the logotype as a corporate identity of the project and the EU flag.



Figure 7: The pedestrian reflector

4.7 Water glass bottle

For the promotion on the Open House week the water glass bottles with the logo of FUTURA and considered EC guidelines about motioning the co-financing party, were used.



Figure 8: Water glass bottle

4.8 Multilingual brochures with action results

The multilingual brochures with action results of the DRFB discs were prepared. Brochures are available in 5 languages: Slovenian, Slovakian, Czech, English and German. They will be used at the final conference and for final promotion of potential customers and stakeholders.

FUTURA project results

During the FUTURA project, two final prototypes were developed and produced. The first one with brake plate width of 170mm, and latter one with 110mm. Both of them went through demanding dynamometer bench tests according to UIC 541-3 and TSI standards, as well as a real environment test on the wagon.

With final prototypes of DRFB disc, the focus was on safety, thermal performance, lowering vibrations (due to accurate connection of crown and hub), as well as further reduction of mass of DRFB disc.

A new patented brake plate to hub mounting design, which enhanced torque transfer capability and reduced the possibility of vibrations was introduced. Stresses induced in the brake disc, caused by thermal expansion were reduced (as this design allows expansion in a radial direction), thus increasing safety and decreasing stopping distance.

Connection of DRFB disc crown and hub was simplified with use of six bolts and self-centering fins with the special shape of connecting arcs in between. More low drag cooling fins were used to reduce ventilation losses. As this design has larger air intakes, the air mass flow through the disc is higher, as well as thermal power dissipation.

With the final design of the 170mm wide DRFB disc, mass was lowered by 22.7%, air resistance was decreased by 21%, and thermal dissipation efficiency was increased by 17.3% in comparison with the initial DRFB disc.

DRFB disc final prototype (590x110mm)

From market analysis, face-to-face dialogues with potential buyers and producers of freight wagons, as well as from received information while attending international fairs, the finding was that great interest exists for the narrower DRFB disc. Based on this research data, the decision was made to design a narrower 110mm wide disc.

With the final prototype of a 110mm wide DRFB disc, the focus was on further reduction of the mass of the DRFB disc, while maintaining same level of safety and thermal performance.

The design of the 110mm wide prototype followed a similar structure for both DRFB disc crown and the hub – as for the 170mm wide prototype. The design was proven by numerous FEM thermal and structural analysis tests, as well as laboratory tests performed on a dynamometer test bench. With this prototype, mass was lowered by 34.5%, air resistance was decreased by 34%, and thermal dissipation efficiency was increased by 32.7% in comparison with initial DRFB disc.

Tests performed on dynamometer test bench:

- Test program B.1 (Freight wagons, Energy class A1, UIC 541-3, 8th Edition)
- Tests according to TSI for freight wagons [COMMISSION REGULATION (EU) No 321/2013]

Main characteristics of the 170mm wide DRFB disc

Outer diameter	590mm [610 optional]
Inner diameter	325mm
Width	170mm
Mass	112kg
Ventilation losses	372W at 165km/h
Connection crown/hub	Special patented shape
Connection hub/axle	Shrunken/Pressed
Material	Cast iron
Imbalance value	max 16gm
Wear limit	10mm



Operational characteristics of the 170mm wide DRFB disc

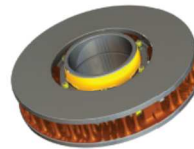
Maximum velocity	160km/h
Wheel diameter new/worn	920/840mm
Maximum axle load	25t
Average life time of brake disc	1,800 000 – 2,600,000km



Tests performed on dynamometer test bench:
Test program B.1 (Freight wagons, Energy class A1, UIC 541-3, 8th Edition)
Tests according to TSI for freight wagons [COMMISSION REGULATION (EU) No 321/2013]

Main characteristics of 110mm wide DRFB disc

Outer diameter	590mm [610 optional]
Inner diameter	325mm
Width	110mm
Mass	96kg
Ventilation losses	311W at 165km/h
Connection crown/hub	Special patented shape
Connection hub/axle	Shrunken/Pressed
Material	Cast iron
Imbalance value	max 16gm
Wear limit	10mm



Operational characteristics of 110mm wide DRFB disc

Maximum velocity	160 km/h
Wheel diameter new/worn	920/840mm
Maximum axle load	25t
Average life time of brake disc	1,800 000 – 2,600,000km



Figure 9: Inside of the English brochures with action results

5 PROMOTION MATERIALS ON THE EVENTS WITHIN FUTURA ACTION

5.1 Promotion materials on the international fairs

5.1.1 Innotrans 2016, Berlin

During the InnoTrans fair, the FUTURA action and its main goals were presented to the relevant regional, national and EU stakeholders and suppliers.

On the booth of company Kovis we have set the promotion material on view to the visitors. Most used were multilanguage leaflets and pens.



Figure 10: Roll-up and leaflets



Figure 11: Leaflets and pens on Innотrans 2016

5.1.2 Expo Rail 2017, Mexico

In February 2017, the FUTURA action and its main goals were presented on the Exporail Mexico 2017, which represents an important international rail trade show that has gained regional relevance. It combines freight rail as well as passenger transit rail systems.

On the booth which company Kovis shared with other companies the promotion materials were set on view to the visitors. Most used were English leaflets.



Figure 12: Promotion material on Expo Rail 2017, Mexico



Figure 13: Promotion material on Expo Rail 2017

5.1.3 Middle East Rail 2017, Dubai

From 7th till 8th of March KOVIS presented project FUTURA on the Middle East Rail –International Conference and Trade Exhibition in Dubai.

Kovis visited the exhibitors and presented the second prototype of the New Divided Rail Freight Brake Disc (DRFB Disc), findings, results of laboratory tests and first information from testing in real environment.

For promoting the FUTURA project on Middle East Rail event the multilanguage leaflets and folders were used.

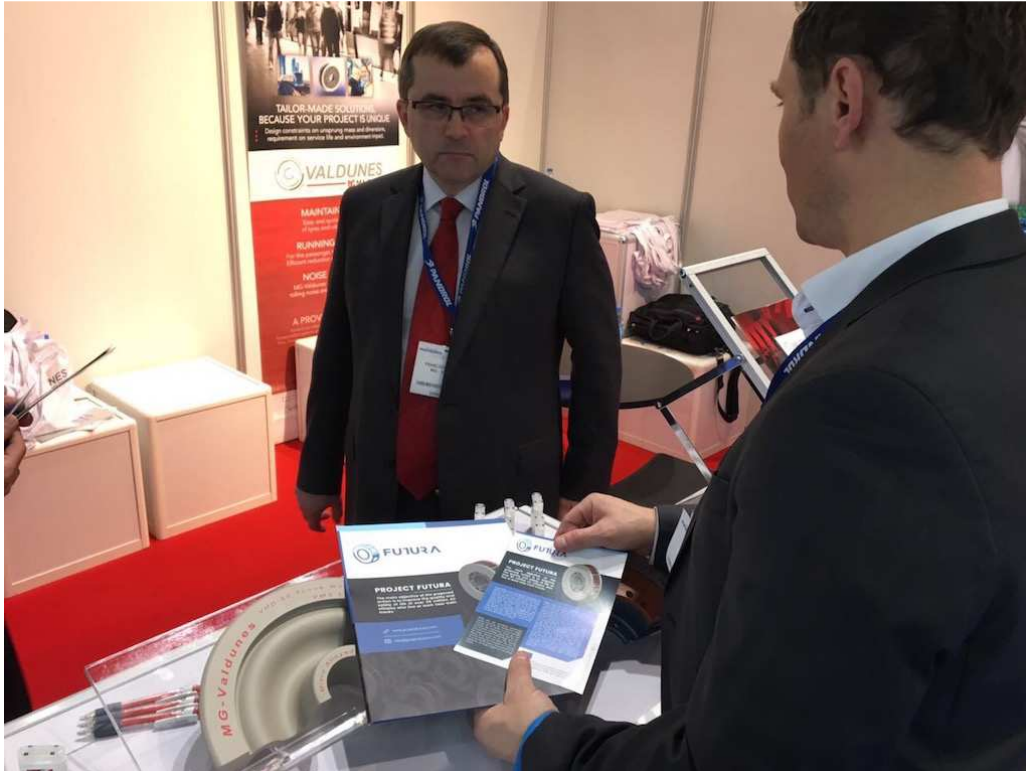


Figure 14: Promotion material on Middle East Rail



Figure 15: Promotion material on Middle East Rail

5.1.4 Transport logistic Fair, Munich

From 9th till 12th of May KOVIS presented project FUTURA on the transport logistic Fair in Munich in Germany.



Figure 16: Presentation of the FUTURA project on the Transport logistic Fair in Munich

5.1.5 Iran Rail Expo 2017, Tehran

KOVIS presented project FUTURA on the Iran Rail Expo, which was held 16th till 19th of May 2017, in Tehran, Iran. There were quite a few manufacturers of trains (Wagon Kowsar, Green Plour Industrial Group, IRICO, and TWM) present, who are struggling to produce trains for Iranian Railways. The third prototype of the DRFB disc was presented to them. To increase the awareness about the project the English leaflets and folders were used.



Figure 17: Kovis presenting Project FUTURA on Iran Rail Expo

5.1.6 Czech RailDays 2017, Ostrava

From 13th till 15th of June KOVIS and ZX-BENET presented the project FUTURA on the Czech Raildays in Ostrava. Czech Raildays is an international trade fair of railway technology, products and services for the rail and city transport.

On the fair the FUTURA day was organised in order to present the third prototype of the New Divided Rail Freight Brake Disc (DRFB Disc) to the visitors. All of the existing promotion materials were used for promotion.



Figure 18: Kovis booth on the Czech RailDays



Figure 19: Kovis booth on the Czech RailDays



Figure 20: ZX-Benet's booth on the Czech RailDays

5.1.7 TRAKO, Gdansk

In the beginning of October 2017 the Project FUTURA was presented on the TRAKO fair – 12th international railway fair – in Poland.

TRAKO is the largest and most prestigious rail industry meeting in Poland and one of the largest in Central and Eastern Europe.

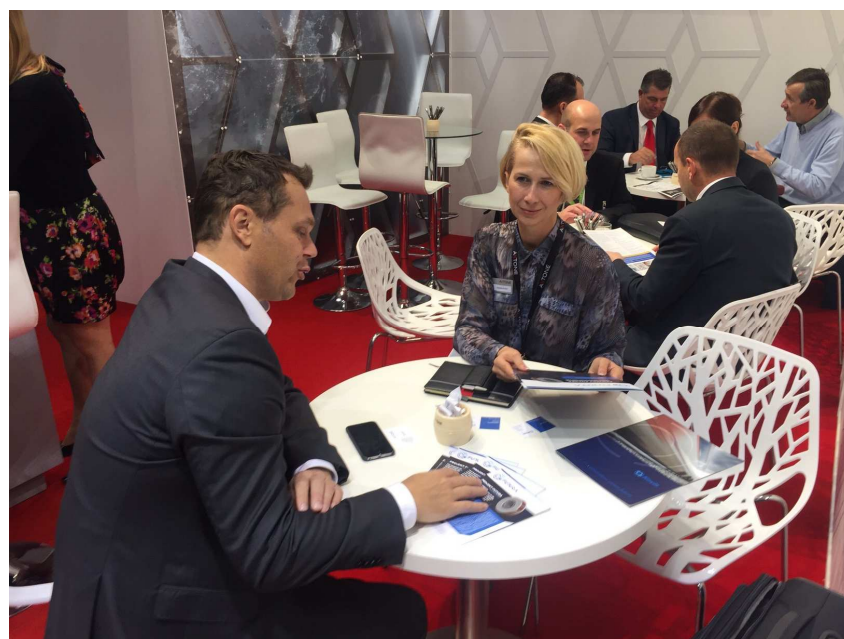


Figure 21: Promotion of project FUTURA on TRAKO fair

To the exhibitors and visitors we have presented the fifth prototype of the New Divided Rail Freight Brake Disc (DRFB Disc), its findings, results of laboratory tests and first information from testing in real environment.

For promoting the FUTURA project we used the multilanguage leaflets and folders.



Figure 22: Promotion material used on the TRAKO fair

5.1.8 Elmia Nordic Rail 2017, Jönköping

In October 2017 FUTURA project was presented on the NORDIC RAIL fair in Sweden. For promoting FUTURA project on Elmia Nordic Rail event the multilanguage leaflets and folders were used.

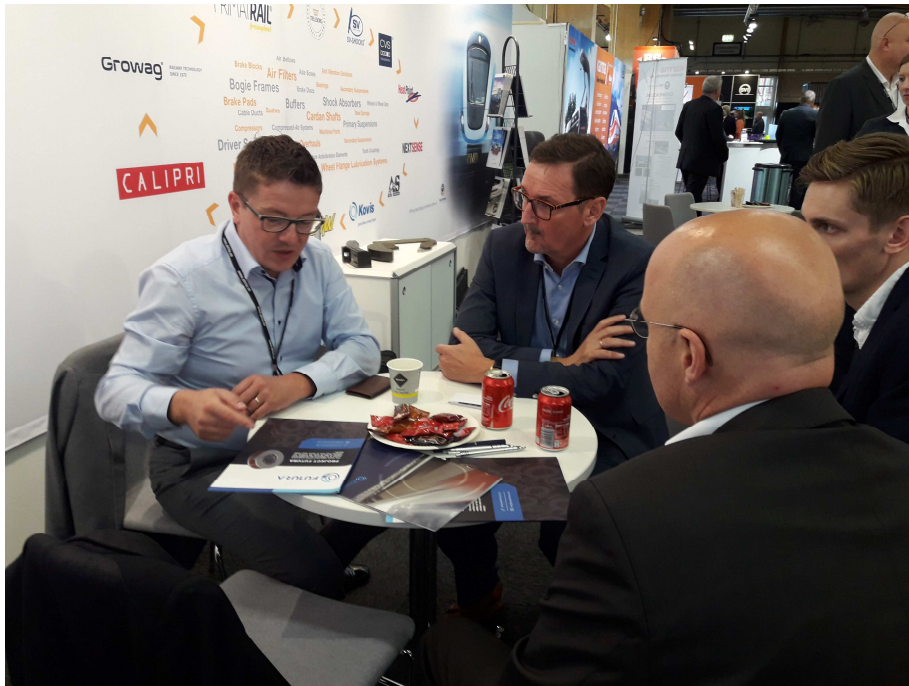


Figure 23: Promotion material used on the Elmia Nordic Rail



Figure 24: Promotion material used on the Elmia Nordic Rail

5.1.9 APTA 2017, Atlanta

Kovis presented itself on the APTA EXPO 2017, that took place from 9th to 11th of October in Atlanta, United States of America.

American rail market, from the view of the freight transport, is a quite new market for company Kovis. Kovis organised a FUTURA day, where the innovated product, DRFB disc, was presented. On the presentation we used English leaflets, USB flash drivers, folders, pens and presentation of the FUTURA project on the graphic stand.



Figure 25: Promotion material used on the APTA fair



Figure 26: Graphic with FUTURA logo for booth on APTA fair

5.1.10 AusRail+ 2017, Brisbane

From 21st till 23th of November KOVIS presented project FUTURA on the AusRail+ in Brisbane, Australia. AusRAIL has firmly established itself as the major Australasian rail event.

On the FUTURA day we used English leaflets, U flash drivers, folders, pens and presentation of the FUTURA project on the graphic stand.

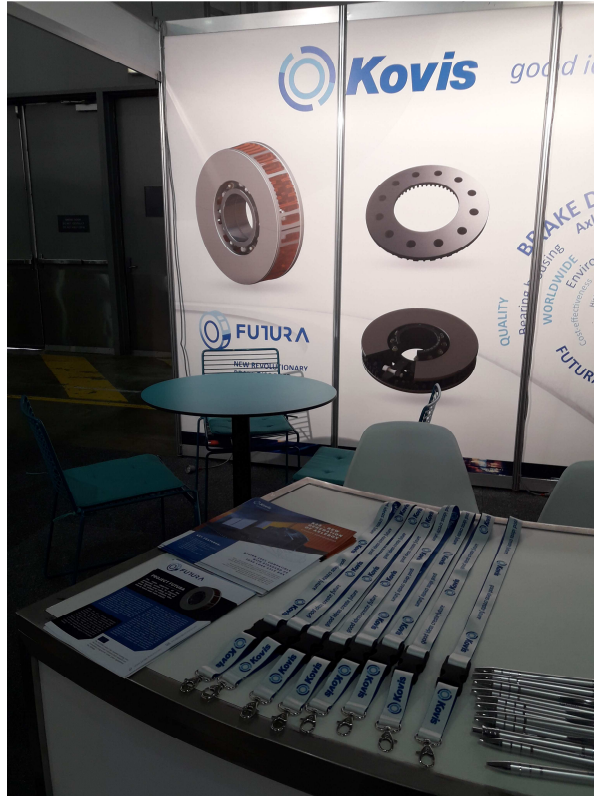


Figure 27: Promotion material used on the AusRAIL fair

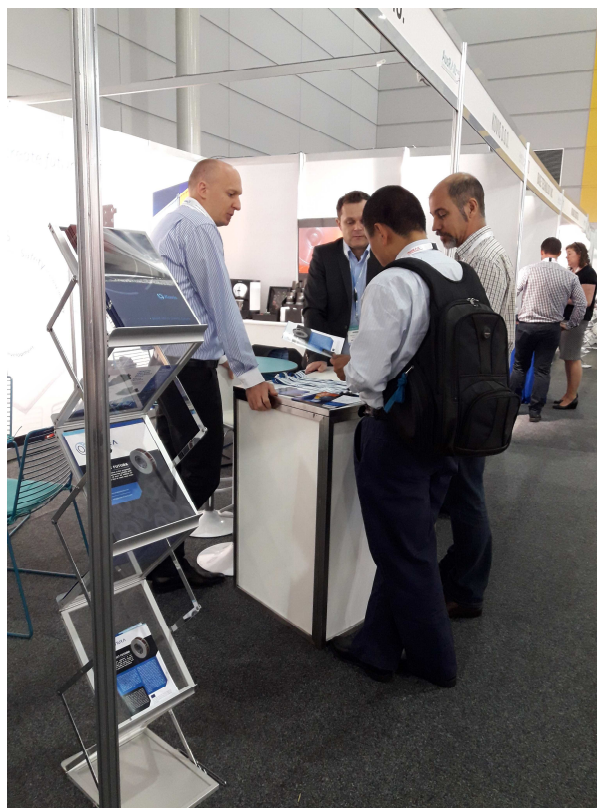


Figure 28: Promotion material on FUTURA day used on the AusRAIL fair

5.1.11 Rail + Metro China – China International Rail and Metro Exhibition

Rail + Metro China is an international trade fair for rail and metro, which took place in Shanghai, from Tuesday, 21 November to Thursday, 23 November 2017.

For promoting on FUTURA project on Rail + Metro China event the multilanguage leaflets and folders were used.

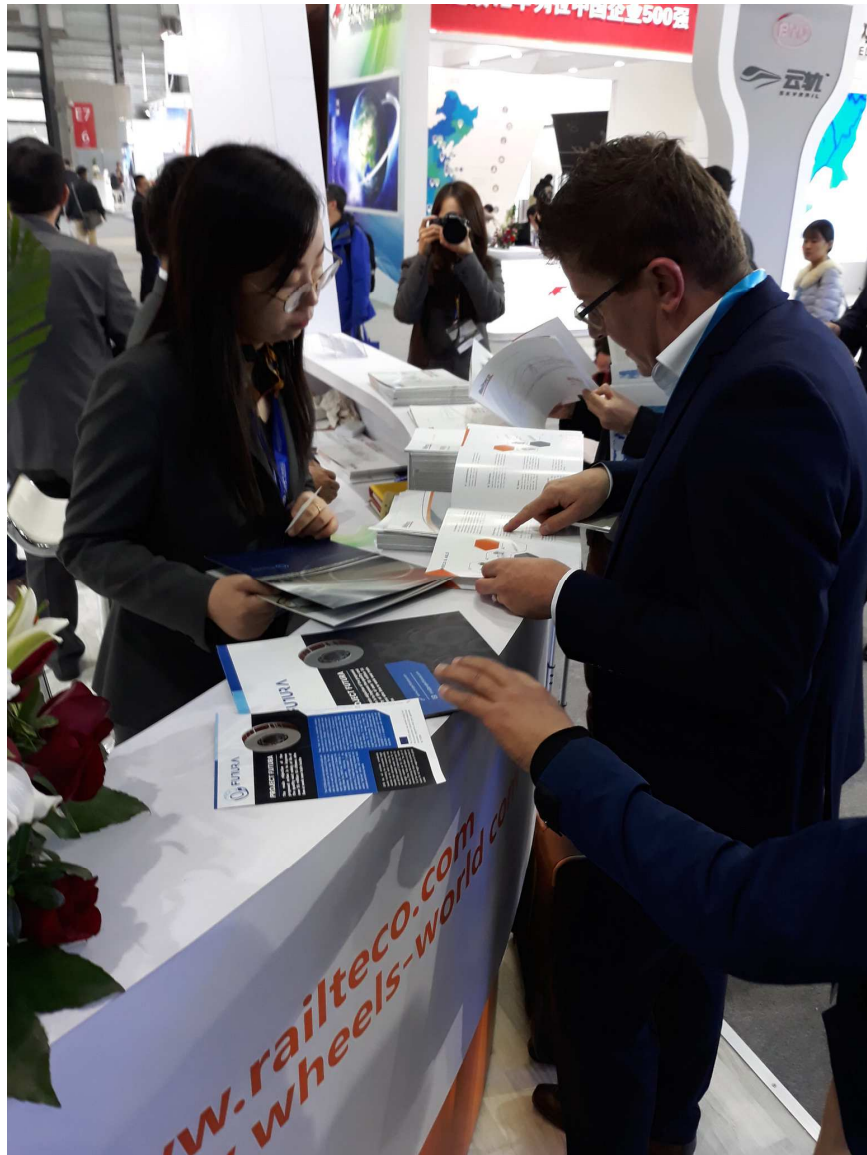


Figure 29: Promotion material used on the Rail + Metro China



Figure 30: Promotion material used on the Rail + Metro China

5.2 Promotion materials on the conferences

5.2.1 Kick-off conference, Brežice

On the Kick-off conference we have used the promotion material to increase the awareness of the project FUTURA. Each guest received a leaflet, USB flash driver, folder and pen.



Figure 31: Promotion material on Kick-off conference

5.2.2 International professional and interactive conference

On 13th of June 2017 ZX-Benet organised an International professional and Interactive conference in the conference hall at castle of Šilheřovice. The purpose of the conference was to inform academic, technicians, politicians, general and professional public about the FUTURA project.

To increase the awareness of the project FUTURA each guest received a leaflet, USB flash driver, folder and pen.



Figure 32: Promotion material on International professional and Interactive conference

5.2.3 Final conference

On 14th of December 2017 Omnia KLF organised the 3rd Final Conference of FUTURA project in the Hotel BYSTRÍČKA, Martin, Slovakia. The purpose of the conference was to inform academic, technicians, politicians, general and professional public about the action results of FUTURA project. To increase the awareness of the project FUTURA each guest received a brochure, USB flash driver, pen and Water glass bottle.



Figure 33: Promotion material on Final Conference

5.3 Open House week

From 6th till 10th of November 2017 Kovis opened the door to the professional public and the general public to present the show room with all five prototypes of DRFB discs. The event took place on the Kovis Business Unit Velika Dolina. The purpose of the open house week was the presentation of the last stage of the project of developing Divided Rail Freight Brake Disc.

On the presentation the Roll-up was used as well as additional posters as explanatory material of individual prototype.

For this occasion, the water glass bottle with FUTURA logo was prepared for additional increasing awareness of the project FUTURA. Each visitor received also the leaflet, USB flash driver, folder and pen.



Figure 34: Show room on Open House week

5.4 Organizing activities in schools

5.4.1 1st presentation at Secondary School Center Krško-Sevnica

Promotion materials were used to present the purpose of the project FUTURA to pupils and students.



Figure 35: Promotion material for presentation in elementary and secondary school



Figure 36: Promotion material on School Center Krško-Sevnica

5.4.2 2nd presentation at the Secondary School Center Krško-Sevnica

On 14th of May 2017, during the 4th global week of traffic safety, the company Kavis presented the FUTURA project to the teachers, headmaster and 3rd grade students of the Secondary Vocational and Technical School Krško.

Each student and teacher received the leaflet in Slovenian language, USB flash driver, folder and pen. In relation to safety the pedestrian reflectors with FUTURA logo were made



Figure 37: Promotion material of FUTURA project on the primary and secondary school



Figure 38: Promotion material on Secondary Vocational and Technical school Krško

5.4.3 Presentation at the Elementary School Leskovec pri Krškem

During the global week of traffic safety, on 14th of May, the company Kojis presented the FUTURA project to the teachers and pupils from 8th grade of Elementary school Leskovec pri Krškem.

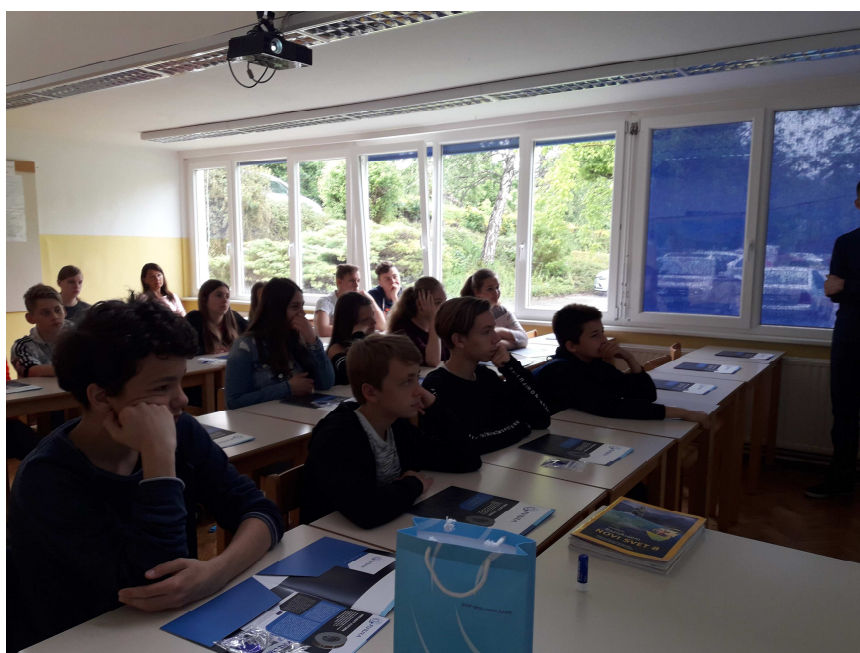


Figure 39: Presentation of the FUTURA project to the pupils from 8th grade

5.5 Face to face dialogues

Since the start of the FUTURA project till the end of the year 2018 more than 60 face to face dialogues with different potential customers were conducted.

For a better presentation of the project the multilanguage leaflets and folders were used. To increase the awareness about the project the USB flash drives and pens were offered.



Figure 40: Face to face dialogue with company Trade Dam

6 CONCLUSION

During the promotion of the FUTURA project among different branches most of the promotion materials were consumed. At the face to face dialogues, fairs and similar events the multilanguage leaflets and folders were used. On this material all the important information about the project were stated. After the development finish and testing of the last, fifth prototype of DRFB disc, the multilanguage brochure with action results was prepared. It was used at the final conference and will be sent to stakeholders by mail.

During the project, the consumption of materials was monitored – how much of each was used for individual event.

Based on the positive feedback from the public it is supposed, that the design and set of all material was pleasant, with all usefull information.

The dissemination of the FUTURA project will be continued and for the promotion will be used the multilanguage brochures, folders, pens and others.

Table 1: Promotion materials for project FUTURA¹

Event	Leaflets	Roll-up*	USB flash Drives	Folders	Pens	Brochures	Pedestrian reflex	Water glass bottle
Ordered quantity	2700	1	600	500	750	1800	120	150
Fairs								
Innotrans 2016, Berlin	150	x	50	60	80			
Expo Rail 2017, Mexico	50		20	20	30			
Middle East Rail 2017, Dubai	30		20	20	30			
Transport logistic Fair, Munich	30		15	30	20			
Iran Rail Expo 2017, Tehran	30		20	20	20			
Czech RailDays 2017, Ostrava	100	x	30	40	50			
TRAKO, Gdansk	20		20	20	20			
Elmia Nordic Rail 2017, Jönköping	20		20	20	20			
APTA 2017, Atlanta	100		20	30	50		15	
AusRail+ 2017, Brisbane	100		20	30	50			
Rail + Metro China – China International Rail and Metro Exhibition	20		10	20	20			
Events for professional public								
Kick-off conference, Brežice	25	x	25	25	25			
International professional and interactive conference	22	x	22	22	22			
Final conference		x	30		30	50		30
Open House Week	30		30	30	30			30
Actions at schools								
Presentation at Secondary School Center Krško-Sevnica	100	x	70	70	70		70	
Presentation at the Elementary School Leskovec pri Krškem	35	x	35	35	35		35	
Other								
Other (face to face dialogues;)**	500		135		100			20
TOGETHER	1362		592	492	702	50	120	80

With the promotional materials for the FUTURA project the importance and effectiveness of its use was achieved successfully. Nevertheless, the promotion will continue after the end of the FUTURA project.

*Roll up was in use several times

**Other event cover the events such as face to face dialogues, presentations on the university, the conferences at the Chamber of Commerce and Industry; different testings...