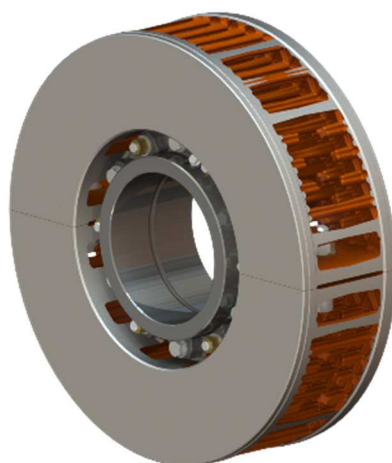




WORK PACKAGE 6 (WP6)
**Communication, dissemination
and exploitation**

PROJECT DELIVERABLE 6.2
JOINT REPORT ON PROTOTYPE
PRESENTATIONS AND TESTING RESULTS –
PERSONAL AND AT FAIRS



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



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1 INTRODUCTION

The scope of the present document is the joint report with findings and results of presentations to the professional public. Every year at least 25 international personal visits have to be done as well as presentations of prototypes and testing results on more than 7 fairs, dealing with transportation throughout the world. A presentation has to be done also through the Slovenian Business Club which is part of the World Network of Business Clubs.

2 MAIN OBJECTIVES

The main objectives are to inform business partners, general and professional public, decision-makers and policy makers, knowledge and research institutions about the FUTURA project and its results, to raise awareness on the impact on environment, health, the quality of life and safety in rail freight transport.

2.1 Identifying the audience

One of the fundamental step is to identify and profile the audience that the communication and dissemination activities should address.

Freight rail market was defined to the three different market segments:

- **Owners of Freight Wagons and ECM holders (Entity Charge of Maintenance):** This group of existing and potential customers is very important. Its goals vary and it is looking for benefits such as; lower LCC, lower maintenance cost in the life span of wagons, lower weight of brake discs, less damages on the wheel surface and wheel sets.
- **Producers of Freight Wagons and Wheel sets:** This group needs to fulfill the requirements of investors as well the regulatory requirements (in Europe – TSI; USA – AAR.). They are looking for good services, good quality of products, longer lifespan due to wear of brake discs, simple montage of products, lower weight and higher speeds. They are looking for additional advantages of products, which will bring them some added value and greater success.

- **State and private Railways, Logistic and Transport providers:** This group is the smallest and for them the Regulations and Directives are very important. The most important decision factor is price.

2.2 Questionnaire

To be successful and attract the customer attention, the new product must fulfill their needs and maintain the brand promise.

To get useful feedback from customers regarding FUTURA project, the decision was accepted to use the additional research method face to face interview (Annex 1) with new, potential and existing customers.

With the interviews the first impression and feedback about the development process of the new generation of DRFB discs has been achieved. By face to face interviews the standardized questions were used. This method gives more additional advantages as follows:

- Personal contact, motivation source.
- We can help the participants to understand the question.
- We can use different techniques: open- ended questions, under questions, visual aids, answers scales, etc.
- Convenient for the participants, especially in their company.
- Use additional questions to collect detailed information.
- Body language and reaction of both sides.

All 5 prototypes of DRFB disc and test results were presented through the face to face dialogues and exhibition on the international fairs dealing with the railway industry.

During the project time Kovis, ZX-Benet and Omnia KLF conducted more than 60 face to face interviews.

The face to face interviews were made with potential customers from the freight railway industry and were connected to braking systems in some way. Presented was the positive influence of the FUTURA project on safety in the rail transport, influence on health, environment and quality of life for those who live and work near train tracks. At the face to face interview the overview of the possibilities of cooperation in the field of divided brake discs for the freight program was introduced.

During the meeting the specialties, advantages and the potential of the use of discs was presented. Feedback from the market is positive.

3 FACE TO FACE DIALOGUES

Face to face dialogue is an oral communication with different participants on the meeting. Face to face communication channel has lots of strengths – it is personal and the feedback can be received immediately, with low probability of misunderstandings. Additional questions about the topic can be explained immediately. During the stages of developing the prototypes the consortium must keep on building awareness on the project. To communicate research findings to stimulate ongoing interest in the work of the project to the research community, special attention must be paid to provide detailed technical information.

The communication of the project's results and potential benefits needs to be differentiated depending upon the target group.

All the feedback from the face to face dialogues are used in the next circle of developing a new prototype.

Face to face dialogues with relevant regional, national, EU stakeholders, decision makers and suppliers, are to ensure the project's anchorage and clarify synergies with parallel initiatives. The dialogues about the prototype presentation and testing results are presented on the personal visits.

Based on all face to face dialogues conducted by three consortium partners (Kovis, ZX-Benet, Omnia) during the project time the common findings or stated questions can be summarized:

- all interlocutors were very interested and gave positive feedback on the intend of the FUTURA project,
- when will the final product be available on the market,
- who will be the producer,
- what is the lifecycle of the product,
- for sure they would recommend the product to other potential customer,
- aspects regarding represented benefits for users of DRFB discs.

3.1 Face to face dialogues - Kavis

All five prototypes and test results were presented through the face to face dialogues.

Since the start of the FUTURA project, from March 2016 till the end of the January 2018, Kavis made 55 face to face dialogues. The 1st prototype was presented to the existing customers and new potential buyers (especially on the InnoTrans fair) in the first year of the project. In the years 2017 and 2018 four additional prototypes were presented.

The customers with whom the face to face dialogue were done are from the freight railway industry and are connected with braking systems in some way. At the face to face dialogue the possibilities of cooperation in the field of divided brake discs for freight program was introduced and an overview was done.

During the meeting the specialties, advantages and the potential of the use of discs was presented to the customers. Feedback from the market is positive.



Figure 1: Face to face dialogues with Dako

The following table lists all face to face dialogues where KOVIS presented the FUTURA project.

Table 1: List of face to face dialogues – 1st prototype DRFB disc – Kovis.

No	When	What	To whom	Who	Where	Customer
1st prototype of DRFB - KOVIS						
1	24.3.2016	Face to face dialogue - PN20160072	Presentation of 1st prototype to the MIBA FRICTION FACTORY	Matjaž Volk	Austria	Friction materials
2	4.4.2016	Face to face dialogue - PN20160086	Presentation of 1st prototype to the Ferroviana Torino	Matjaž Volk	Italy	ITALY'S SHOWCASE FOR RAILWAY TECHNOLOGY, PRODUCTS AND SYSTEMS
3	19.4.2016	Face to face dialogue - PN20160097	Presentation of 1st prototype to the KES, HANNING&KAHL, BTDE SIEGEN	Matjaž Volk	Germany	KES has long-standing experience in the field of development and production of micro-electronic controls and components for rail vehicles.
4	22.4.2016	Face to face dialog - PN20160098	Presentation of 1st prototype to the OEGB	Matjaž Volk	Austria	Austrian Federal Railways
5	3.5.2016	Face to face dialogue - PN20160107	Presentation of 1st prototype to the DAKO, TRINITES	Matjaž Volk	Czech Republic	DAKO BRAKE SYSTEMS DAKO-CZ is a leading manufacturer of pneumatic, electro mechanic and hydraulic brake for rail vehicles with 200 year proven track record.
6	9.5.2016	Face to face dialogue - PN20160115	Presentation of 1st prototype to the WIENER LINIEN	Matjaž Volk, Alen Šinko	Austria	Wiener Linien (Vienna Lines) are the company running the largest part of the public transit network in the city of Vienna, Austria
7	16.5.2016	Face to face dialogue - PN20160116, 20160117	Presentation of 1st prototype to the TCDD ISTAMBUL, YD	Matjaž Volk	Turkey	Turkish State Railways
8	22.5.2016	Face to face dialogue - PN20160125	Presentation of 1st prototype to the CAF, STADLER VOSSLOH, RENFE, METRO, TALGO	Matjaž Volk	Spain	CAF is a leader of the railway industry offering one of the most comprehensive and flexible arrays of products in railway related markets, such as rolling stock, components, infrastructure, signalling and services (maintenance, refurbishing and financial services) Vossloh is a leading global provider in the rail infrastructure industry. Renfe is a state-owned passenger and freight rail transport operator overseen by the Ministerio de Fomento. Talgo is leading company in the Spanish railway sector.
9	22.6.2016	Face to face dialogue - PN20160175	Presentation of 1st prototype on VPI conference, Germany	Andrej Hočevár	Germany	
10	19.7.2016	Face to face dialogue- PN20160214	Presentation of 1st prototype to the BTDE, SIEMENS	Matjaž Volk	Austria	Siemens as a single-source supplier and system integrator, Siemens combines all the expertise necessary for sustainable solutions in all areas of rail transportation.
11	19.7.2016	Face to face dialogue - PN20160215	Presentation of 1st prototype to the VBK Verkehrsbetriebe Karlsruhe GmbH and Darmstadt Verkehrsbetrieb	Andrej Hočevár	Germany	Conference for railway industry
12	31.8.2016	Face to face dialogue - PN20160249	2016-08-31; Presentation of 1st prototype to the Škoda Transportation	Mitja Črpič	Czech Republic	Producer of Rail Transport
13	2.11.2016	Face to face dialogue - PN20160343	2016-11-02; Presentation of 1st prototype to the Trenitalia	Andrej Hočevár	Italy	Trenitalia is the primary train operator in Italy.
14	9.11.2016	Face to face dialogue - PN 20160349, 20160348	2016-11-09; Presentation of 1st prototype to the Bonatrans	Mitja Črpič, Šinko Alen	Czech Republic	Bonatrans is producer of wheelset for railway industry.
15	16.11.2016	Face to face dialogue - PN20160352	2016-11-16; Presentation of 1st prototype to the ZNTK Opole	Mitja Črpič	Poland	ZNTK Opole offer services in range of repairs of carriages as well as production and repairs of freight cars.
16	4.12.2016	Face to face dialogue - PM20160372	2016-12-04; Presentation of 1st prototype to the DB, Gmeinder, Kessel, BT, ETS, H&K	Andrej Hočevár	Germany	DB AG is a German railway company. Gmeinder is dealing with development, manufacture and maintenance of locomotives.
17	6.12.2016	Face to face dialogue - PN20160374	2016-12-06; Presentation of 1st prototype to the Smart Corporation a.s., Trinites, Wagony Swidnica..	Mitja Črpič	Slovakia Czech Republic Poland	Smart Corporation a.s. Trinites is producer for rolling stock industry. Swidnica wagons specializing in the manufacture and repair of railway wagons.
18	7.12.2016	Face to face dialogue - PN20160377, 20160375	2016-12-07 Presentation of 1st prototype	Alen Šinko, Smolej Ivan	Czech Republic, Slovakia	Česke drahy (ČD) is the main railway operator in CZ providing regional and long-distance services.
19	8.12.2016	Face to face dialogue - PN20160395	Presentation of 1st prototype	Alen Šinko	Turkey, Greece	The Turkish State Railways operate freight trains on all of their lines.
20	9.12.2016	Face to face dialogue - PN20170009, PN20170010	Presentation of 1st prototype	Alen Šinko, Smolej Ivan	Austria	Siemens Transportation.
21	11.12.2016	Face to face dialogue - PN20160384	2016-12-11; Presentation of 1st prototype to the Kurimoto, Dusseldorf	Mitja Črpič	Germany	Kurimoto has been widely supplying brake discs used in various rolling stocks.
22	15.12.2016	Face to face dialogue - PN20160385, 20160386	2016-12-15; Presentation of 1st prototype to the S.C. Astra Rail Industries	Mitja Črpič, Rožman Marko	Romania	Astra Rail Industries, a company steeped in tradition, is an innovative developer and manufacturer of cutting-edge freight wagons and bogies.
23	6.2.2017	Face to face dialogue - PN20170061	2017-02-06; Presentation of 1st prototype to the Bonatrans, Wagony Swidnica, Novexim, Pesa Bydgoszcz, Dako	Mitja Črpič	Czech Republic	Bonatrans is producer of wheelset for railway industry. DAKO BRAKE SYSTEMS DAKO-CZ is a leading manufacturer of pneumatic, electro mechanic and hydraulic brake for rail vehicles with 200 year proven track record. PESA is the largest Polish manufacturer of nearly all types of railway vehicles - electric and diesel multiple units, railway engines and tram cars.

Table 2: List of face to face dialogues – 2nd prototype DRFB disc – Kovis

No.	When	What	To whom	Who	Where	Customer
2nd prototype of DRFB - KOVIS						
24	11.2.2017	Face to face dialogue - PN20170049	2017-02-11; Presentation of 2nd prototype in Mexico	Mitja Črpič	Mexico	Ferrocarril Mexicano, S.A. de C.V. operate the largest railroad network in Mexico, with more than 10,000 km of track covering the major industrial and commercial zones in the country. Kansas City Southern de Mexico (KCSM) is a company dedicated to freight transportation using rail in the northeastern part of Mexico Ferroso is a railroad that serves the south-eastern regions of Mexico.
25	16.2.2017	Face to face dialogue - PN201700	2017-02-16; Presentation of 2nd prototype to the VTG and BVV	Andrej Hočevár	Germany	VTG AG is a publicly traded and leading international wagon hire and rail logistic company with around 80.000 railcars on its books at the current time - the biggest privately owned fleet in Europe. BVV manufacture a wide variety of wheelsets for all types of railway vehicles and applications for domestic and foreign rail companies as well as manufacturers of railway vehicles.
26	23.2.2017	Face to face dialog - PN20170066	2017-02-23; Presentation of 2nd prototype to the DAKO	Ivan Smolej	Czech Republic	DAKO BRAKE SYSTEMS DAKO-CZ is a leading manufacturer of pneumatic, electro mechanic and hydraulic brake for rail vehicles with 200 year proven track record.
27	26.2.2017	Face to face dialog - PN20170068	2017-02-26; Presentation of 2nd prototype to the R&T, Stadler Valencia, Renfe, CAF Beasain	Mitja Črpič	Spain	CAF is a leader of the railway industry offering one of the most comprehensive and flexible arrays of products in railway related markets, such as rolling stock, components, infrastructure, signalling and services (maintenance, refurbishing and financial services) Vossloh is a leading global provider in the rail infrastructure industry. Renfe is a state-owned passenger and freight rail transport operator overseen by the Ministerio de Fomento. Talgo is leading company in the Spanish railway sector.
28	29.3.2017	Face to face dialogue - PN 20170097, 20170098	2017-03-29; Presentation of the 2nd prototype to the SALZBURG AG	Marko Rožman, David Deržič	Austria	SALZBURG AG
29	3.4.2017	Face to face dialogue	Presentation of the 2nd prototype to the NJ Transit	Andrej Hočevár	USA / Canada	New Jersey Transit is a state-owned public transportation system that serves the US state of New Jersey, along with portions of New York State and Pennsylvania. ViaRail Canada is national rail operator. Strato, Inc. develops and manufactures quality products for the railroad and transit industry
30	12.4.2017	Face to face dialogue - PN20170124	2017-04-12; Presentation of 2nd prototype to the Trinites, Trade Dam, Tatravagonka	Mitja Črpič	Slovakia	Trinites is producer for rolling stock industry. Trade Dam Tatravagonka - product capacities is more than 100 different design types of wagons.
31	19.4.2017	Face to face dialogue - PN 20170134	2017-04-19; Presentation of the 2nd prototype to the Tragegal, Metro de Porto	Mitja Črpič	Portugal	Tragegal is specialising in representing worldwide products within the Portuguese and Spanish market place. Metro de Porto is part of the public transport (mass transit) system of Porto.

Table 3: List of face to face dialogues – 3rd prototype DRFB disc – Kovis

No.	When	What	To whom	Who	Where	Customer
3rd prototype of DRFB - KOVIS						
32	25.4.2017	Face to face dialog - PN 20170140	2017-04-25; Presentation of 3rd prototype to the DSB, Copenhagen, // KPH, PPI-Astra Trading,	Mitja Črpič	Denmark	DSB is an independent public corporation owned by the Danish Ministry of Transport KPH, PPI-Astra Trading
33	3.5.2017	Face to face dialogue - PN 20170142, 20170143	2017-05-03; Presentation of 3rd prototype to the ČD, NDT, Wagony Swidnica	Mitja Črpič, David Deržič	Czech Republic	Česke drahy (ČD) is the main railway operator in CZ providing regional and long-distance services. Wagony Swidnica specializing in the manufacture and repair of railway wagons.
34	22.5.2017	Face to face dialogue - PN20170169, 20170170, 20170171	Presentation of the 3rd prototype to the Bombardier Germany	Alen Šinko, Andrej Hočevár, Aleksander Gajski	Germany	Bombardier Germany is a producer of rolling stock.
35	22.5.2017	Face to face dialogue - PN 20170172	2017-05-22; Presentation of 3rd prototype to the Pääkaupunkiseudun Junakalusto Oy	Mitja Črpič	Finland	Pääkaupunkiseudun Junakalusto Oy are rolling stock owners, responsibility to organise maintenance of the fleet;
36	1.6.2017	Face to face dialogue- PN20170184	Presentation of 3rd prototype to the TS Hungaria, B-Metal	Mitja Črpič	Hungary	TS Hungaria company is one of the most important players in the Hungarian market for rail freight repair, modernization, design and production. B-Metal
37	18.6.2017	Face to face dialogue- PN20170201	Presentation of 3rd prototype to the Ireland Railway, Truck&Bus parts, Ferrabyrne, Patrick Esseboom	Marko Rožman	Ireland	Ireland Railway rail provider Truck&Bus parts are a leading distributor of Commercial vehicle, Passenger vehicle & Rail spare parts.

Table 4: List of face to face dialogues – 4th and 5th prototype DRFB disc – Kovis

4th prototype of DRFB - KOVIS						
38	10.7.2017	Face to face dialogues - PN20170224	Presentation of the 4th prototype to the Kolowag, Škoda Transportation, Smart	Mitja Črpič	Bulgaria	Kolowag-Wheel manufacturing; production, maintenance of the freight wagons
39	15.8.2017	Face to face dialogues - PN20170240	Presentation of the 4th prototype to the Kryukovsky Railway Car Building Works	Mitja Črpič	Czech Republic	Smart Corporation a.s. - provider of spare part for rail industry
4th and 5th prototype of DRFB - KOVIS						
40	24.8.2017	Face to face dialogue - PN20170247, 20170246	Presentation of the 4th and 5th prototype to the Coober	Alen Šinko, Andrej Hočevar	Ukraine	Kryukovsky Railway Car Building Works - production of the freight wagons
41	30.8.2017	Face to face dialogue PN20170263	Presentation of the 4th prototype to the Wagony Swidnica	Mitja Črpič	Switzerland	Cooper - the specialist of the spare parts for the rolling stock
42	4.9.2017	Face to face dialogue PN20170270	Presentation of the 4th prototype to the S.C.Astra Rail Industries	Mitja Črpič	Poland	Wagony Swidnica specializing in the manufacture and repair of railway wagons.
43	10.10.2017	Face to face dialogue PN20170322, 20	Presentation of the 4th and 5th prototype to the Buffers	Mitja Črpič, Karmen Vrtovšnik	Romania	S.C.Astra Rail Industries a company steeped in tradition, is an innovative developer and manufacturer of cutting-edge
44	12.10.2017	Face to face dialogue	Presentation of the 4th and 5th prototype to the VIARail	Andrej Hočevar	Sweden	Buffers Rail Industry is a representative of world-leading equipment manufacturers and spare parts for the rail industry.
45	17.10.2017	Face to face dialogue - PN20170342	Presentation of the 4th and 5th prototype to the VTG	Andrej Hočevar	Canada	Astra Trading GmbH is an international trading company focusing on the sourcing and supply of railway spare parts.
46	16.10.2017	Face to face dialogue PN20170339	Presentation of the 5th prototype to the Bonatrans, Smart	Mitja Črpič	Germany	ViaRail Canada is national rail operator.
47	19.10.2017	Face to face dialogue PN 20170344, 20170343	Presentation of the 5th prototype to the Transwagon, Kolowag	Mitja Črpič, Benjamin Gajski	Bombardier	Bombardier Canada is an producer of rolling stock
48	6.11.2017	Face to face dialogue PN 20170365, 20170364	Presentation of the 5th prototype to the R&T, Pyrsa, Renfe, Stadler Valencia, CAF, Metro Madrid	Mitja Črpič, Andrej Hočevar	VTG AG	VTG AG is a publicly traded and leading international wagon hire and rail logistic company with around 80.000 railcars on its books at the current time - the biggest privately owned fleet in Europe.
49	23.11.2017	Face to face dialogue PN	Presentation of the 5th prototype to the AirSprings, Sydney	Andrej Hočevar	Poland	Bonatrans is producer of wheelset for railway industry.
50	23.11.2017	Face to face dialogue PN 20170387, 2	Presentation of the 4th and 5th prototype to the CRRC, TYSJ	Mitja Črpič, Marko Rožman	Smart Corporation	Smart Corporation provider of spare part for rail industry
51	6.12.2017	Face to face dialogue PN20170410	Presentation of the 5th prototype to the Pesa Bydgoszcz	Mitja Črpič	Transwagon	Transwagon - producer of freight wagons
52	11.12.2017	Face to face dialogue PN20170416	Presentation of the 5th prototype to the ČD, Dako, Trinites	Mitja Črpič	Kolowag-Wheel manufacturing; production, maintenance of the freight wagons	Kolowag-Wheel manufacturing; production, maintenance of the freight wagons
53	17.12.2017	Face to face dialogue PN2017426	Presentation of the 5th prototype to the S.C.Astra Rail Industries	Mitja Črpič	R&T - provider of spare part for rail industry	R&T - provider of spare part for rail industry
54	22.1.2018	Face to face dialogue PN20180	Presentation of the 5th prototype to the Tradegal, EMEF	Mitja Črpič	Pyrsa - Spanish foundry	Pyrsa - Spanish foundry
55	29.1.2018	Face to face dialogue	Presentation of the 5th prototype to the Gmeinder Getriebe; VTG	Andrej, Alen Dolinar	Renfe	Renfe is a state-owned passenger and freight rail transport operator overseen by the Ministerio de Fomento.
					Stadler Valencia	Stadler Valencia - spanish rail operator
					CAF	CAF is a leader of the railway industry offering one of the most comprehensive and flexible arrays of products in railway related markets, such as rolling stock, components, infrastructure, signalling and services.
					Air Springs	Air Springs is a distributor for spare parts for railway industry.
					Sydney Trains	Sydney Trains provides train services throughout the Sydney CBD and metropolitan area
					Downer	Downer is the leading provider of integrated services in Australia and New Zealand. Through trusted relationships and world-leading insight we work closely with our customers to design, build and sustain assets, infrastructure and facilities.
					CRRC	CRRC undertakes design, manufacture, testing, commissioning and maintenance of locomotives and rolling stock
					TVJS	TVJS producers of rolling stock.
					Pesa Bydgoszcz	Pesa Bydgoszcz is the largest Polish manufacturer of nearly all types of railway vehicles.
					Trinites	Trinites is producer for rolling stock industry.
					DAKO BRAKE SYSTEMS	DAKO BRAKE SYSTEMS DAKO-CZ is a leading manufacturer of pneumatic, electro mechanic and hydraulic brake for rail vehicles with 200 year proven track record.
					Česke drahy (ČD)	Česke drahy (ČD) is the main railway operator in CZ providing regional and long-distance services.
					S.C.Astra Rail Industries	S.C.Astra Rail Industries a company steeped in tradition, is an innovative developer and manufacturer of cutting-edge freight wagons and bogies.
					Tradegal	Tradegal is specialising in representing worldwide products within the Portuguese and Spanish market place.
					EMEF - Empresa de Manutenção de Equipamento Ferroviário, S.A.,	EMEF - Empresa de Manutenção de Equipamento Ferroviário, S.A., is the Main Portuguese Company in the Railway Maintenance Sector and develops its activity in five main fields:
					VTG AG	VTG AG is a publicly traded and leading international wagon hire and rail logistic company with around 80.000 railcars on its books at the current time - the biggest privately owned fleet in Europe.
					BoV Bochum	BoV Bochum manufacturing a wide variety of wheelsets for all types of railway vehicles and applications for domestic and foreign rail companies as well as manufacturers of railway vehicles.

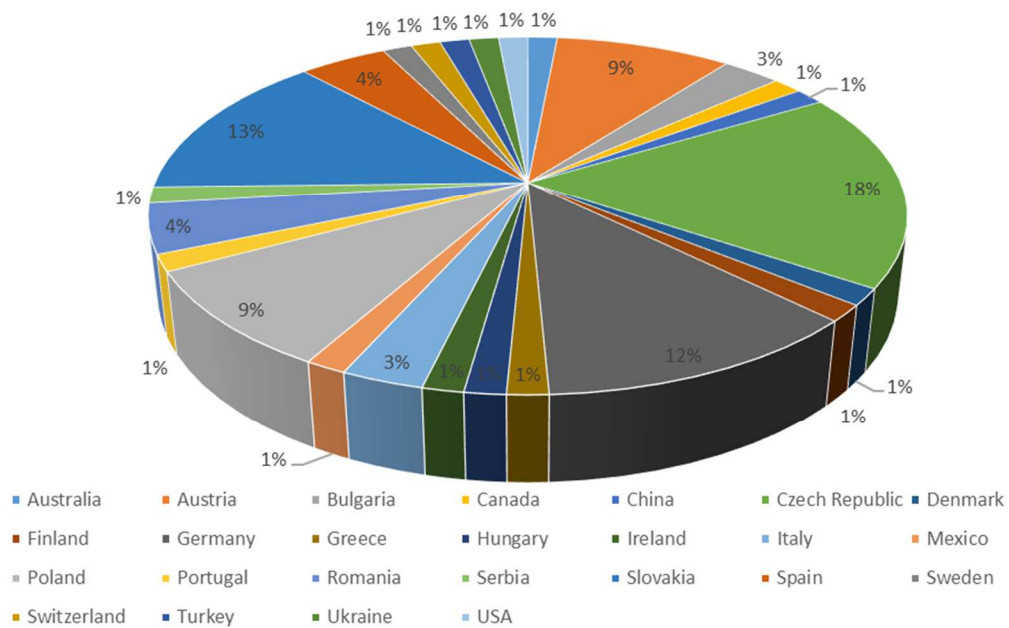


Figure 2: All face to face dialogues – all over the world

3.2 Face to face dialogues – ZX-Benet

Company ZX-Benet performed seven (7) FUTURA project demonstrations as face to face dialogues with individuals and groups interested in the project, further strengthening the visibility of the FUTURA project.

The following table lists all face to face dialogues where ZX-Benet presented the FUTURA project.

Table 5: List of face to face dialogues - ZX-Benet

No.	When	What	To whom	Who	Where	Customer
1st prototype of DRFB - ZX-BENET						
1	28.7.2016	Face to face dialog	Presentation of 1st prototype to the LEGIOS A.S., Louny	Petr Beránek	Czech Republic	LEGIOS - the production and sale of new railway freight wagons, locomotives and railway spare parts; service, repairs, modernization and remotorisation of used railway cars of all brands; renovation of all historic railway locomotives and cars manufactured during the initial years of railway transport.
2nd prototype of DRFB - ZX-BENET						
2	24.2.2017	Face to face dialog	Presentation of 2nd prototype to the Express Group A.S.	Zdeňka Poskočilová	Slovakia	Express Group, a.s. offers an integrated network through the railway, container, truck, sea and river transport, and also railway carrier services, as well as the leasing of wagons.
5th prototype of DRFB - ZX-BENET						
3	23.11.2017	Face to face dialog	Presentation of 5th prototype to the Strabag	Petr Beránek	Czech Republic	STRABAG Rail a.s. is a leading construction company operating in particular on the territory of the Czech and Slovak republics
4	28.11.2017	Face to face dialog	Presentation of 5th prototype to the Tatravagonka Bratstvo DOO	Tomáš Dihel, Zdeňka Poskočilová	Serbia	Tatravagonka Bratstvo DOO - Production program is based on the repair, revision, reconstruction and production of new freight wagons and their spare parts.
5	21.12.2017	Face to face dialog	Presentation of 5th prototype to the HSL Logistic GmbH	Petr Beránek	Praha / Czech Republic	The HSL is the largest private rail logistics service provider without participation of state railway and is in direct competition with road logistics of German domestic container shipping as well as other train operating companies
6	10.1.2018	Face to face dialog	Presentation of 5th prototype to the ZSSK Cargo	Petr Beránek	Slovakia	ZSSK Cargo provide reliable, safe, ecological and costs friendly rail freight transport services focused on needs and requests of our customers.
7	11.1.2018	Face to face dialog	Presentation of 5th prototype to the RTI Wagon s.r.o.	Petr Beránek	Slovakia	RTI Wagon s.r.o. provides long term rental of rail freight cars of its own possession whereas currently held cars are suitable for transport of select petrochemicals.

3.3 Face to face dialogues – OMNIA KLF, a.s

Company OMNIA KLF performed 4 face to face dialogues with potential customers for DRFB disc. On the face to face dialogues with the company TRADE-DAM and Framag Industrieanlagenbau GmbH and Technipoint, s.r.o. the 2nd prototype of the DRFB disc was presented.

The 3rd prototype was presented to Mr. Miroslav Bobák from the company Kinex Bearigns.

The 4th and 5th prototypes were presented to Mr. Peter Čelko from the company MetalTrim.

The following table lists all face to face dialogues where Omnia KLF presented the FUTURA project.

Table 6: List of face to face dialogues – Omnia KLF

No	When	What	To whom	Who	Where	Customer
2nd prototype of DRFB - OMNIA KLF						
1	27.1.2017	Face to face dialog	Presentation of 2nd prototype to the TRADE-DAM	Peter Duchovič, Barbora Klimeková	Slovakia	Trade Dam
2	20.2.2017	Face to face dialog	Presentation of 2nd prototype to the Framag Industrieanlagenbau GmbH and Technipoint, s.r.o.	Peter Duchovič, Barbora Klimeková	Slovakia	Technipoint, s.r.o. - representatives for Framag
3rd prototype of DRFB - OMNIA KLF						
3	26.4.2017	Face to face dialog	Presentation of 3th prototype to the KINEX BEARINGS with Miroslav Bobak	Peter Duchovič, Barbora Klimeková	Slovakia	KINEX BEARINGS offers complex services in the fields of research, development and production of roller bearings. KINEX BEARINGS, a.s. also offers the deliveries of axle units for cargo wagons with a load of 22.5 tons and 25 tons on one axle.
4th and 5th prototype of DRFB - OMNIA KLF						
4	11.12.2017	Face to face dialog	Presentation of 4th and 5th prototype to the Mr. Peter Čelko from METALTRIM	Peter Duchovič, Barbora Klimeková	Slovakia	Metaltrim LTD. company is advanced and efficient engineering plant focused on own production of metal components and parts or machining of raw products and semi-products under contract in serial or piece production.



Figure 3: Face to face dialogues with Kinex Bearings



Figure 4: Face to face dialogues with Trade-Dam

4 FAIRS DEALING WITH THE RAIL TRANSPORTATION

Presence at the fairs provides a channel for dialogue and communication with a range of potential users, opportunities to extend the awareness about the FUTURA project.

Participation at the fairs is key to:

- Communicate about the results and main achievements of the FUTURA project;
- Receiving valuable expert feedback on project goals, work plans and results;
- Raising awareness about FUTURA project and its results.

Purpose of attending and exhibiting on the fairs is to build awareness at a relatively big scale and to meet representatives from different groups of interest in person.

The purpose of attending fairs as visitors is to build awareness at a relatively large scale and to meet representatives from different groups of interest in person.

To ensure that a set of messages with a common visual image was channel, the promotion materials were prepared. In the first stage the Multilanguage leaflets and brochures were prepared.

The five prototypes were developed and tested. The findings and results of laboratory tests of each prototype were presented to the experts from the relevant regional, national and EU stakeholders and suppliers on the fairs, dealing with rail transportation throughout the world.

The common practice is that producers present their innovations and prototypes at fairs, which are usually visited by all important professionals, so immediate feedback on the commercialization purposes can be expected.

In the FUTURA project time the dissemination team has represented the FUTURA project at eleven (11) events with the goal to raise awareness and support for the project.

Presentations were made on six international fairs dealing with railway industry where Kavis or ZX-Benet participated with a booth exhibition and on five international fairs as visitors.

The following table lists all events where the FUTURA project has been represented.

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Table 7: List of fairs with FUTURA project presence

No.	Event - Fair	Place	Date	Presence	Partners covering
1.	InnoTrans	Berlin, Germany	20.-23. September 2016	exhibitor / visitor	KOVIS, ZX-BENET
2.	ExpoRail - Mexico City	Mexico City, Mexico	15. - 16. February 2017	exhibitor	KOVIS
3.	Middle East Rail-International Conference and Trade Exhibition	Dubai, United Arab Emirates	7.-8. March 2017	visitor	KOVIS
4.	Transport Logistic	München, Germany	12. May 2017	visitor	ZX-BENET, KOVIS
5.	Iran Rail Expo 2017	Tehran, Iran	16.-19. May 2017	exhibitor	KOVIS
6.	Czech Raildays	Ostrava, Czech Republic	13.-15. June 2017	exhibitor / visitor	KOVIS, VUD, ZX-BENET, OMNIA
7.	APTA EXPO	Atlanta, USA	9.-11. Oktober 2017	exhibitor	KOVIS
8.	Elmia Nordic Rail	Jönköping, Sweden	10.-12. October 2017	visitor	KOVIS
9.	AUSrail+ 2017	Brisbane, Australia	21.-23. November 2017	exhibitor	KOVIS
10.	Rail + Metro China – China International Rail and Metro Exhibition	Shanghai, China	21. - 24. November 2017	visitor	KOVIS
11.	TRAKO	Gdansk, Poland	26.-29. September 2017	visitor	KOVIS, ZX-BENET

4.1 InnoTrans 2016, Berlin



InnoTrans is the largest rail industry event in the world and takes places every two years in Berlin exhibition center in Germany. The event was held from 20th till 23rd of September. InnoTrans occupies all 41 halls available at Berlin exhibition grounds.

Trade visitors and exhibitors from the railway industry came face-to-face to exchange knowledge and expertise. On every event more than 100.000 people (in 2014: 134.000 visitors) came. More than 75% of trade visitors are decision makers.



Figure 5: Project FUTURA on the fair InnoTrans 2016

For Kavis exhibiting on the InnoTrans was a great opportunity for the presentation of the FUTURA project. On the event the FUTURA DAY was organized, which was deductive to the project FUTURA. The new Divided Rail Freight Brake Disc (DRFB Disc) has generated a great interest. The first prototype, findings and results of laboratory tests were presented to the experts from the relevant regional, national and EU stakeholders and suppliers.



Figure 6: Presentation on the fair InnoTrans 2016

Visitors showed a greatest interest for the technical solution, cost-effectiveness, benefits which the first prototype has shown.



Figure 7: Great interest on the fair InnoTrans 2016



Figure 8: Great interest on the fair InnoTrans 2016

The contacts were collected and they will be informed with the result of the final prototype.

ZX-Benet visited the exhibitors and presented the first prototype of the New Divided Rail Freight Brake Disc (DRFB Disc), findings and results of laboratory tests.

Below is the list of visitors with whom Kovis done the dialogues about the FUTURA project.

Table 8: List of potential customers collected on the InnoTrans 2016

N	Company	First Name	Last Name	Title	Country
1	ALSTOM	MARIUS	LAZAR	SUPPLY CHAIN MANAGER	Romania
2	ALSTOM	DANIEL	CHRISTACHE	MANAGER DEPARTMENT TECHNIK	Romania
3	ALSTOM	GRZEGORZ	PAWLOWICZ	LCC SOURCING COORDINATOR	Poland
4	ASTRA RAIL INDUSTRIES	LUMINITA	VLAICONI	HEAD OF PURCHASING DEPRATMENT	Romania
5	ASTRA RAIL INDUSTRIES	LEVENTE	FAZEKAS GHINEA	PRODUCTION DIRECTOR	Romania
6	BERLINER VERKEHRSBETRIEBE	MARCO	BREDLOW	U-Bahn Abteilung Fahrzeuge	Germany
7	BOMBARDIER	JEREMIE	BICHAT	GLOBAL LEAD BUYER	Germany
8	BONATTRANS	RADKA	KALETOVA	HEAD OF COMPONENTS PURCHASING	Czech Repulic
9	CARGO NET	ERIK	HALLAND	TECHNICAL MANAGER	Norway
10	CARGO NET	HERALD H.	LARSEN	SENIOR ENGINEER	Norway
11	CFL CARGO	STEVICA	VARADINAC	ECM & EXPERTISE WAGONS	Luksemburg
12	CONTINENTAL	ANDREAS	HASS	DIRECTOR SALES & MARKETING CRE	Germany
13	CRRC	CHEN	BINGWEI	ENGINEER R&D CENTER	China
14	CRRC	LI	WENGWEN	PROCUREMENT SUPERVISIOR	China
15	DAKO-CZ, A.S.	JAKUB	ŠUPIK	STRATEGICKY NAKUP	Czech Republic
16	DAKO-CZ, A.S.	KAMIL	PARIZEK	STRATEGICKY NAKUP	Czech Republic
17	DAKO-CZ, A.S.	JURAJ	HUDAČ	HEAD OF PURCHASING	Czech Republic
18	DAKO-CZ, A.S.	STANISLAV	PECHAR	PROJEKTLEITER	Czech Republic
19	DAKO-CZ, A.S.	JOSEF	MATEJA	DEVELOPMENT MANAGER	Czech Republic
20	DAKO-CZ, A.S.	ALEŠ	KABOUREK	technical director	Czech Republic
21	DB	HERMANN	STEIN	Head of Project Supplier Consolidation	Germany
22	DB MOBILITY NETWORKS LOGISTICS	DENNIS	WOHLRAB	FACHREFERENT FÜR RADSATZFERTIGUNG	Germany
23	DEUTSCHE BAHN	STEPHAN	REICHARD	HEAD OF PROCUREMENT MARKET MANAG	Germany
24	DEUTSCHE BAHN	NIKOLAI	NEUGEBAUER	HEAD OF ROLLING STOCK PARTS PURCHASI	Germany
25	ĐURO ĐAKOVIČ	MARIN	NUJIČ	VODJA KOMERCIALNE	Croatia
26	ELECTROPUTERE VFU PASCANI	ADRIAN	DUMITRU	COMMERCIAL DEPUTY GENERAL MANAGER	Romania
27	EMEF	HELDER	NETO	DIRECTOR	Portugal
28	FURKA Reibbeläge AG	FELIX	PFISTER	PROKURIST/leiter verkauf und marketing	Schweiz
29	GOŠA	RADOSLAV	GOLUBOVIČ	SALES MANAGER	Srbija
30	Wagony Swidnica S.A.	ANITA	KOCHAN	DESIGNER	Poland
31	KOLOWAG	DIMITAR	PLACHKOV	RD AND TECHNICAL DIRECTOR - WAGONS	Bulgaria
32	KURIMOTO, Ltd.	RIEKO	ISHII	EUROPE REPRESENTATIVE OFFICE	Germany
33	KURIMOTO, Ltd.	KATSUHIRO	NAKANO	DEVELOPMENT MANAGER	Japan
34	KURIMOTO, Ltd.	SHINYA	KOJIMA	EXECUTIVE OFFICER & GENERAL MANAGER	Japan
35	LUCCHINI Poland Sp. Z o.o.	MONIKA	DABROWSKA	SALES DEPARTMENT	Poland
36	MG-VALDUNES SAS	GUILLAUME	BALDACH	MAINTENANCE DEVELOPMENT MANAGER	France
37	NACCO S.A.S	OLIVER	WOLFARTH	WHEELSET MANAGER	France
38	NEDTRAIN	FRED	NIJMAN	SENIOR BUYER	The Netherlands
39	NORDYSKE JERNBANER A/S	MORTEN	MUFF JENSEN	TEKNISK CHEF	Denmark
40	NORDYSKE JERNBANER A/S	BENNY	JENSEN	SUPERVISOR	Denmark
41	NORDYSKE JERNBANER A/S	HANS	GRAM	WORKSHOP MANAGER	Denmark
42	RAILTECO	SHENG	WEN	PRESIDENT	China
43	RAILTECO	SUE		MARKETING CENTER MANAGER	China
44	ROBEL Bahnbaumaschinen GmbH	ANDREAS	SCHIRMER	HEAD OF APPROVAL & QUALITY	Germany
45	RŽV	DEJAN	POSAVEC	HEAD OF PURCHASING	Croatia
46	RŽV	DRAŽEN	VIDOVIČ	DIRECTOR	Croatia
47	SWEMAINT AB	MARIA	NORDSTROM	PURCHASING MANAGER	Sweden
48	SWEMAINT AB	CHRISTIAN	SVANTESON	TECHNICAL SUPPORT	Sweden
49	SWEMAINT AB	DAVID	PETERSSON	PURCHASE	Sweden
50	TATRAVAGONKA POPRAD	ANDREA	ROVNANOVA	PURCHASING DIRECTOR	Slovakia
51	TATRAVAGONKA POPRAD	MARCELA	MURGAŠOVA NEMCOVA	NAKUPCA	Slovakia
52	TATRAVAGONKA POPRAD	SLAVOMIR	IMRICH	PURCHASING TEAM LEADER	Slovakia
53	TITAGARH WAGONS AFR	PASCAL	VARIN	CEO	France
54	MG VALDUNES SAS	GUILLAUME	BEZIER	BUSINESS DEVELOPMENT MANAGER	France
55	VTG	CLAUS	BRANDHORST		Germany
56	WAGON OPOLE	BARBARA	BODZIARCZYK	DIRECTOR OF LOGYSTIC	Poland

4.2 Expo Rail 2017, Mexico



In February 2017, the FUTURA project and its main goals were presented on the Expo Rail 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.

The fair in Mexico was held instead of the fair in India, which was planned in the first stage. After examination of both options the decision was made that the South American market is more probable for DRFB disk. Kavis already has contacts on the South American market and was easier to get in contact with potential customers than in India.



Figure 9: Project FUTURA on the fair Expo Rail 2017, Mexico

After the show it was concluded that the fair was very interesting and the potential for DRFB disc was noted.

Mexico is a huge market that will continue to grow in the coming years, especially in ager sales (8%) and has a huge freight sector and intend of visiting the Exporail Mexico was also to approach companies like Ferromex, KCSM, Ferrosur.

Some facts about Freight wagons in Mexico:

- Km rail tracks: 23.000km in operation.
- Operators:
 - Kansas City Sourthern de Mexico S. A. de C.V. (KCSM): 4.251 km
 - Ferrocarril Mexicano, S.A de C.V. (FERROMEX): 8.121 km
 - FERROSUR: 1.737 km
 - FERROVALLE: 286 km
 - Linea Coahuila-Durango, S.A. de C.V. (COAHUILA-DURANGO): 974 km
 - Compania de Ferrocarriles Chiapas-Mayab, S.A. de C.V. (CFCHM): 1.550 km
 - Ferrocarril del Istmo de Tehuantepec, S.A. de C.V. (FIT): 207 km
 - Administradora de la Via Corta Tijuana-Tecate. (ADMICARGA): 71 km
 - Other operators: 3.525 km
- Workshops and depots rail tracks: 4.450 km
- Private rail tracks: 1.555 km
- Mexico has a freight wagons fleet of 30.855 cars distributed in different types.

The second prototype, findings and results of laboratory tests were presented to the experts in this field.



Figure 10: Presentation of the Project FUTURA on the Expo Rail 2017



Figure 11: Project FUTURA on the Expo Rail 2017

4.3 Middle East Rail – International Conference and Trade Exhibition, Dubai



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

Middle East Rail is a show for the entire rail industry. It was an excellent opportunity to meet rail and metro operators, contractors, the government and industry organizations from across the Middle East, North African and the Indian Subcontinent.

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. On the fair the presentation of the DRFB disc was presented to the representatives of the companies Pandrol Track System, MG-Valdunes, Kurimoto and others.

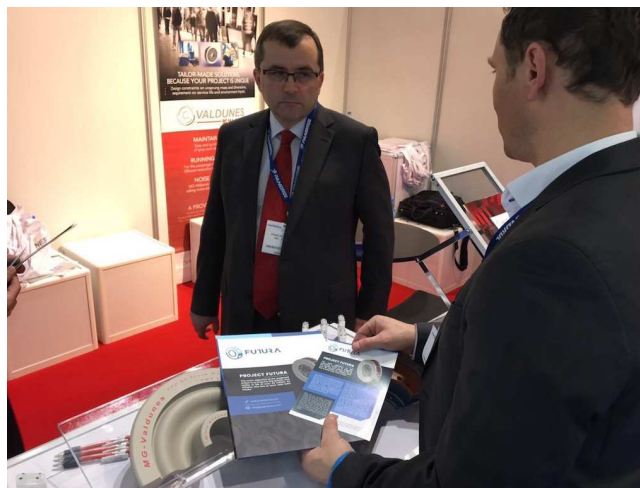


Figure 12: Promotion of the Project FUTURA on the fair Middle East Rail 2017 in Dubai



Figure 13: Dissemination of the project results on the Middle East Rail 2017 in Dubai

4.4 Transport logistic Fair, Munich



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

The Transport logistic 2017 reported a record of participation figures: 2,162 exhibitors from 62 countries showcased their products and services at the industry's leading international trade fair, a rise of 5.4 percent. The number of visitors rose by 9.5 percent to 60,726 from 123 countries. The exhibition space covered by the trade fair grew to 115,000 square meters, all nine halls were fully booked.

The top ten exhibiting countries, after Germany, were: Netherlands, Italy, Belgium, France, Austria, Spain, UK, the Czech Republic, Poland and China.

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.

Below is the list of companies with whom Kovis had face-to-face dialogues on Transport logistic Fair.

Table 9: List of potential customers collected on the Transport logistic Fair in Munich by KOVIS

No	Company	Person	Country
1	VTG	representatives	Germany
2	SŽ	Denis Dolinšek, Robert Kranjc,	Slovenia
3	Astra Rail Industry	Mr. Boese	Romunia
4	Wagony Swidnica	Mrs. Danuta Majeovski	Poland
5	DAKO - CZ	representatives	Czech Republic
6	Aleman	Mario Matas	Serbia
7	Transwagon	Dilyana Vasileva	Bulgaria
8	Kolowag	Yontchev Emil	Bulgaria
9	ARX	Robert Wagner	Czech Republic
10	Toneli d.o.o.	Vinko Čemaža	Slovenia
11	Luccini Poland	Siekerka Albert	Poland



Figure 14: Presentation of the FUTURA project on the Transport logistic Fair in Munich

ZX-Benet visited the company DAKO CZ (Mr. Tomáš Mejtský) where the presentation of the prototype was presented. Dako offered the examining extension of brake recording testing.

Followed by the other meetings was a discussion with Mr. Peter Schreiber from the company Tatravagónka Poprad about the competition and prices of other types.

ZX-Benet visited and presented the project to following companies: Astra Rail (Mr. Lukaš Rath), DB schenker (Hinrich Hempel), PVF Schienenfahrzeuge (Mr. Petr Hron), Legios Loco (Jiří Fořtík, Miloš Toman), GATX (Mr. Ernest Pietrowski), NACCO (Mrs. Šarapatková), ON RAIL – VKS (Mr. Tomáš Komorous).

Table 10: List of potential customers collected on the Transport logistic Fair in Munich by ZX-Benet

No	Company	Person	Country
1	DAKO CZ	Mr. Tomáš Mejtský	Czech Republic
2	Tatravagónka Poprad	Mr. Peter Schreber	Slovakia
3	Astra Rail	Mr. Lukaš Rath	Luxembourg
4	DB schenker	Mr. Hinrich Hempe	Germany
5	PVF Schienenfahrzeuge	Mr. Petr Hron	Czech Republic
6	Legios Loco	Jiří Fořtík, Miloš Toman	Czech Republic
7	GATX	Mr. Ernest Pietrowski	Poland
8	NACCO	Mrs. Šarapatková	Czech Republic
9	ON RAIL – VKS	Mr. Tomáš Komorous	Czech Republic

4.5 Czech RailDays 2017, Ostrava



From 13th till 15th of June KOVIS and ZX-Benet presented the FUTURA project on the Czech RailDays in Ostrava. Companies VUD and Omnia participated on the fair as visitors and presented the FUTURA project as well. Czech RailDays

is an international trade fair of railway technology, products and services for the rail and city transport.

Market of Czech Republic, Slovakia, Poland and other surrounding countries are very important for the railway industry. This exhibition was a great opportunity for Kovic and ZX-Benet to promote the prototype of FUTURA project on this exhibition.

On Czech region Kovic and ZX-Benet have a wide range of the customers from the railway industry, but from different fields. Due to the fact that each company has customers who are relevant also for FUTURA project the decision about two booths was made.



Figure 15: Kavis booth on the Czech RailDays

On the first day of the fair Kavis organized the FUTURA day in order to present the third prototype of the New Divided Rail Freight Brake Disc (DRFB Disc) to the visitors. Findings, results of laborator tests and information from testing in real environment were presented to the visitors on the stand.

Table 11: List of potential customers collected on the Czech Raildays 2017 by Kavis

No	Company	Person	Country
1	TRADE -DAM	Daniel Moric	Slovakia
2	Smart Corporation a.s.	Juraj Murva	Czech Republic
3	DAKO-CZ	Jakub Šupík	Czech Republic
4	Greenbrier Europe	Bodgdan Nowelli	Poland
5	Pesa	representative	Poland
6	SŽVIT	Denis Dolinšek	Slovenia
7	Toneli d.o.o.	Čemažar Vinko	Slovenia
8	Železnička Spoločnosť Slovensko	Peatrik Horny	Slovakia
9	Wagon Opole	Barbara Bodziarczyk	Poland
10	Tatravagonka Poprad	Slavomir Imrich	Slovakia
11	Konex	Marian Fjanor	Slovakia
12	GHH-Bonatrans	Radka Kaletova	Czech Republic
13	ATG	Petr Netek	Czech Republic



Figure 16: FUTURA day on Kovis booth on the Czech RailDays

ZX-Benet organized the event on Czech RailDays where the FUTURA project was presented. To receive feedback about the prototype the standard questionnaire was used.

It was introduced how the divided brake discs were tested in real environment and described the inspections.



Figure 17: ZX-Benet's booth on the Czech RailDays

Table 12: List of potential customers collected on the Czech Raildays 2017 by ZX-Benet

No	Company	Person	Country
1	CTL Logistic	Mr. Lorenc, Mr. Podsaduo	Poland
2	EUROCARGO	Mr. Eike Grundmann	Austria
3	HSL	Ms. Nebeska	Czech Republic
4	Carbo Rail	Mr. Kardoš	Slovakia
5	OOS	Mr. Petr Baránek	Czech Republic
6	TSS Cargo a.s.	Ing. Galva, Mr. Brož	Czech Republic
7	NACCO	Mrs. Šarapatkova	Czech Republic
8	UNITED WAGOND COMPANY	Mr. Yaroslav Mozhaev	Russia
9	VKS	Mr. Hájek, Mr. Komorous	Czech Republic
10	PRVNÍ ŽELEZNÍČNÍ SPOLEČNOST	Mr. Peštál	Czech Republic
11	Express Group	Mr. Mizera	Slovakia
12	INTERCAFGO	Šimovič	Slovakia
13	ŽSR	Hunčík	Slovakia
14	CZ Loko	Rufka	Czech Republic
15	TRANSWAGGON	Steffen Bierschenk	Germany
16	NH-TRANS	Mr. Štula	Czech Republic
17	ODOS	Šraga, Mintíková	Czech Republic
18	RYKO	Mr. Flegel	Czech Republic
19	ČD Cargo	Mr. Máslo, Mrs. Hamrlová	Czech Republic

4.6 Iran Rail Expo 2017, Tehran, Iran



KOVIS presented the FUTURA project on the Iran Rail Expo, which was hold from 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, findings, results of laboratory tests and information from testing in real environment.



Figure 18: Kovis presenting Project FUTURA on Iran Rail Expo

Table 13: List of potential customers collected on the Iran Rail Expo by Kavis

No	Company	Person	Country
1	Wagon Kowsar	representative	Iran
2	Green Plour Industrial Group	representative	Iran
3	IRICO	representative	Iran
4	TWM	representative	Iran
5	Dellner	Georges Younes, Gabriel D. Hornemann	Sweden, Germany
6	ZF Friedrichshafen AG	Frank Ambrozic	Germany
7	RM Rail	Vladimir N. Belay	Russia
8	RTH Railtransholding	Stanislav Kolednik	Russia

4.7 TRAKO, Gdansk, Poland



Poland.

In the beginning of October 2017 the FUTURA project was presented on the TRAKO fair – 12th international railway fair,

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

To the exhibitors and visitors Kavis and ZX-Benet 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. To receive feedback about the prototype the standard questionnaire was used.

On the fair the presentation of the DRFB disc by Kavis was presented to the representatives of the companies Lucchini Poland, Axtone, Pesa, PKP Cargo, ČD Cargo, Wagony Swidnica and others.



Figure 19: Promotion of the FUTURA project on TRAKO fair



Figure 20: Face to face dialogue with company Lucchini on the TRAKO fair

ZX-Benet visited the TRAKO fair to present the FUTURA project to the partners and companies from Poland, Slovakia and Czech Republic.

Table 14: List of potential customers collected on the Gdansk 2017 by ZX-Benet

No	Company	Person	Country
1	VIA Cargo	Anna Malisewska, Agnieszka Maciejciak	Poland
2	Przedsiębiorstwo Usług Kolejowych KOLPREM Sp. z o.o,	Mr. Zoiber, Mr. Superniak	Poland
3	STK, S.A	Mrs. Sylwia Mosiek	Poland
4	ZNTK Paterek S.A	Kinga Adamska	Poland
5	CTL logistic	Mr. Lorenc	Poland
6	Altrans	Mr. Kobierecki, Sarzynski	Poland
7	Express group	Mr. Kováč	Slovakia
8	Budamar Logistics,a.s.	representative	Slovakia
9	ČD Cargo	Mr. Šafarčík and Mrs.Hamrlová	Czech Republic
10	ODOS	Mr. Rutský and Mrs. Vítová	Czech Republic
11	IDS	Mr. Pavel Kiss	Czech Republic

4.8 Elmia Nordic Rail 2017, Jönköping, Sweden



In October 2017 FUTURA project was presented on the NORDIC RAIL fair in Sweden.

Elmia Nordic Rail is the only dedicated railway exhibition in Scandinavia. It's a fair for companies, organizations and individuals with a professional interest in the railway, directly or indirectly.

Elmia Nordic Rail is the industry's most important meeting-place for customers, representatives and other stakeholders. The fair has been held since 1995 and is arranged every two years. To the exhibitors and visitors the fifth prototype of the New Divided Rail Freight Brake Disc (DRFB Disc), findings, results of laboratory tests and first information from testing in real environment, were presented. To receive feedback about the prototype the standard questionnaire was used.

Table 15: List of potential customers visited on the Nordic Rail 2017 by Kovis

No	Company	Person	Country
1	Buffer Rail Industry	Peter Tengros	Sweden
2	ContiTech	representative	Germany
3	Gmeinder	representative	Germany
4	Astra Traiding	Andreass Hass	Germany
5	KPH Handel	Claus Hansen, Casper Hansen	Denmark
6	Swemaint	Kari Arbelius	Sweden
7	CargoNEt	Eric Halland	Norway



Figure 21: Presentation of the FUTURA project to the potential customer on the Elmia Nordic Rail



Figure 22: Face to face dialogue with SweMaint on the Elmia Nordic Rail

4.9 APTA EXPO 2017, Atlanta



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

American rail market, from the view of the freight transport, is a quite new market for the company Kovis.

The APTA fair was a great opportunity to present the 4th and 5th prototype of the DRFB disc. The FUTURA Day which was organized, has shown a great interest. To the potential customers w the

prototypes, findings and results of laboratory tests were presented. Visitors showed a great interest for the technical solution, cost-effectiveness, benefits which prototypes have shown. To receive feedback about the prototype the standard questionnaire was used.



Figure 23: Promotion of the FUTURA project on the APTA fair



Figure 24: Graphics with FUTURA logo for booth on APTA fair

The contacts were collected from the visitors. When the product will be launched on the market the next contact will be made. Below is the list of visitors with whom we had dialogues regarding the FUTURA project.

The Kovis booth was visited well by important visits like Hadady Corporation's president as well as many researchers and developers on the field of freight railways.

Table 16: List of potential customers collected on the APTA by Kavis

No	Company	Person	Country
1	Progress Rail Canada Corporation	Michael Cirnu	Canada
2	Hadady Corporation	Stan Burjek, Tom Austin	IL, USA
3	Bombardier	James Cronin	Canada
4	Penn Machine Company LLT	Greg Holt	PA, USA
5	Hanning & Kahl	Berthold Fingerhut	Germany
6	Bremskerl North America, Inc.	Michael Konrad	IL, USA
7	Power Brake, LLC	Dixon Davies	FL, USA
8	NOACA	Grace Gallucci	Ohio, Canada
9	Amtrak	representative	USA
10	GHH-Bonatrans	representative	Czech Republic
11	Vehicle Inspection Systems, Inc.	representative	USA
12	SKF, USA, inc	representative	USA
13	Amsted Rail	representative	IL, USA

4.10 AusRail+ 2017, Brisbane, Australia



From 21st till 23th November KOVIS presented the FUTURA project on the AusRail+ in Brisbane, Australia.

AusRAIL has firmly established itself as the major Australasian rail event and regularly attracts the leaders of the rail industry as Head of Engineering/Technical, Production/Project/Operations Manager, GM/Director...

AusRAIL is the largest rail event in Australasia and is supported by the leading industry associations, including the Australasian Railway Association (ARA).

The AusRail fair was a great opportunity to present the 4th and 5th prototype of the DRFB disc to the Australasian market. The Kavis booth was visited well by important visitors like Metro Trains Melbourne as well as many potential buyers from the field of freight railways. To receive feedback about the prototype the standard questionnaire was used.

Kavis organized a FUTURA day, where the fourth and fifth prototype of DRFB disc were presented to the important professionals from the railway field. The findings and results of laboratory tests were presented and discussed during the show. Visitors showed a great interest for the

technical solution, cost-effectiveness, benefits and interest for the product when it will be launched on the market.

Table 17: List of potential customers collected on the AusRail by Kovis

No	Company	Person		Country
1	Alstom	Torben Fink-Jensen	Train producer	Australia
2	Bombardier	Martin Loh	Train producer	Australia
3	Bradken	Simon Burgoyne	Wagon producer	Australia
4	Downer	Loic Ayoul	Train producer	Australia
5	Elphinstone Pty Ltd	Graham Robson	Heavy machinery	Australia
6	Gemco Rail Pty Ltd	Russel Goldsworthy	Rolling stock manufacturer and supplier	Australia
7	Liberty OneSteel	Peter Strickland	Steel manufacturers (casting)	Australia
8	TSKY Australia Pty LTD.	David Gao	Spare parts / brake systems / Castings	Australia
9	UGL	Zarek Khan	Maintenance	Australia
10	Trelleborg	Victor Gandolfo	Manufacturing	Australia
11	White Industries	Jim Stevenson	Castings / Spare parts	Australia
12	Metro Trains Melbourne	Mark Stefani	Operator	Australia
13	Queensland Rail	Vikas Mahto	Operator	Australia
14	DPTI	Peter Lindquist	Operator	Australia
15	V/Line	Chris Wakeling	Operator	Australia



Figure 25: Promotion of the FUTURA project on the AusRAIL fair



Figure 26: Presentation of the 4th and 5th prototype on FUTURA day on the AusRAIL fair

4.11 Rail + Metro China – China International Rail and Metro Exhibition, Shanghai, China



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. It brings together developers,

suppliers and consumers from the short-and long-distance transport industry. Exhibitors at the fair are also a number of international companies, so it shows its visitors a comprehensive overview of the latest trends and innovations for the industry. Not least because of this the Rail + Metro China is one of the leading trade fairs of its kind in China.

To the exhibitors and visitors the fourth and fifth prototype of the New Divided Rail Freight Brake Disc (DRFB Disc), findings, results of laboratory tests and first information from testing in real environment were presented. To receive feedback about the prototype the standard questionnaire was used. A great interest was noted on the exhibition and on the meetings.

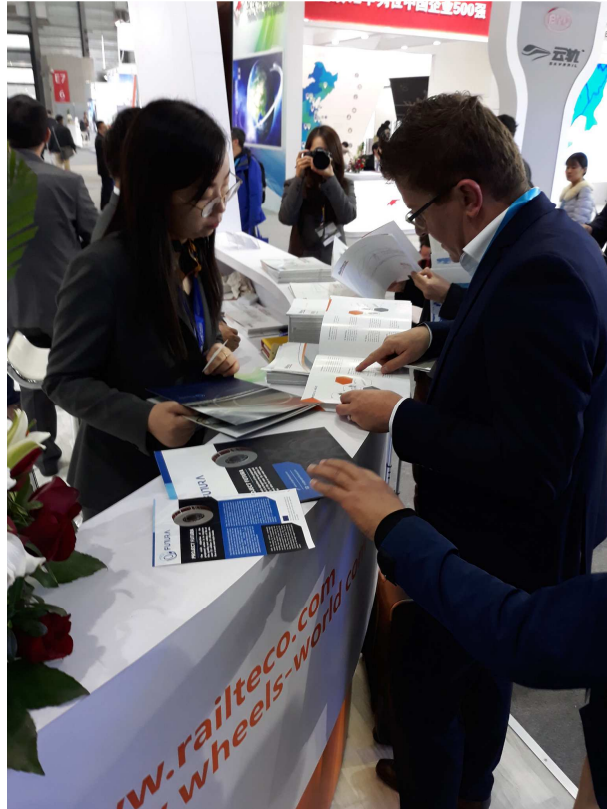


Figure 27: Presentation of the 5th prototype of DRFB disc on the Rail + Metro China



Figure 28: Presentation of the FUTURA project on the Rail + Metro China

5 WORKSHOP ORGANIZATION

Besides the activities that consortium organized within FUTURA project, representatives from the company KOVIS were also invited to participate in events organized by third parties.

Czech NDT (non-destructive test) section invited Kovis to present the FUTURA project on the workshop that they have organized in Prague.

There potential customers for DRFB disc were present:

- ČD Cargo
- ČD a.s.
- Škoda Transportation
- APC Praha
- DPOV
- Českomoravka žel. Oprava




Figure 29: Presentation of the FUTURA project on the NDT workshop

6 SLOVENIAN BUSINESS CLUB

Slovenian Business Club is part of the World Network of Business Club. The FUTURA project was presented through the Slovenian Business Club. The article was prepared and published on 15th December 2016 on the website of Slovenian Business Club.


Link on web page: <http://www.slovenianbusinessclub.si/kick-off-conference-of-the-project-futura/>


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2016
12.15




Kick-off conference of the project FUTURA

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Kovis organized a Kick-off conference of the project FUTURA in the conference room of the Youth Centre Brežice. The purpose of the conference was the presentation of the project of developing Divided Rail Freight Brake Disc to the professional and the general public. The event was also attended by the Mayor of Brežice Ivan Molan, director of Chamber of commerce Posavje, Krško Darko Gorišek, representative of Regional Development Agency Posavje mag. Nataša Šerbec and headmaster of School Centre Krško-Sevnica Jože Pavlovič.

The FUTURA action will improve the quality and safety of life of over 55 millions of EU citizens, who live or work near train tracks. The main objective of the action is to provide last development steps for market launch of Divided Rail Freight Brake Disc (DRFB disc). DRFB disc is a revolutionary solution, influencing 3 key elements in the rail freight transport: 1) safety and security, 2) health and environment and 3) cost-effectiveness with strong horizontal and vertical "spill-over" effects and crucial social, economic and technical impacts.



Today there are two competitive solutions: K-block and non-divided brake disc (the current state-of-the-art). Although non-divided brake disc is a superior solution (as it ensures higher safety, lower noise levels and less vibrations), it is used in practice in less than 10%, because it is too expensive. That is the problem that FUTURA action is solving. Our ambitious solution, DRFB disc, was developed by 4 high impact companies in the field of development, production and testing components for freight rail vehicles. The specific objectives of FUTURA action are: 10-15 dB lower noise, 11% shorter braking distance, 14% less vibrations, 21% lower mass, 7% less accidents, 12% less damage of freight, 50% longer life cycle of wheels, 13% lower LCC of the disc. For an operator with 1,000 6-axle wagons, the savings within a life-cycle would amount to 5,838,000 € in comparison with K-block and 9,840,000 € in comparison with non-divided brake disc.

DRFB disc will contribute considerably toward increasing the transported freight volumes via rail, which is environmentally friendlier than alternative modes (by road and air). Total available market size for our innovation is around 12 billion € per year. Our key target markets are EU, USA, Canada, Russia, China, India and Brazil. The aim of commercialising the innovation is to capture 7% of the market share in the production of brakes for rail freight wagons on the global market. The FUTURA project has received funding from the European Union's Horizon 2020 research and innovation programme.

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Figure 30: Presentation project FUTURA on the web page of the Slovenian Business Club

7 JOINT REPORT ON PROTOTYPE PRESENTATIONS AND TESTING RESULTS - FINDINGS AND RESULTS

During the whole project the partners from the FUTURA consortium conducted more than 60 face to face dialogues all over the world with relevant audience.

From face to face interviews and attendance at international fairs, we noted that on the rest markets (non EU markets), despite the weak legislation, there is a great interest for DRFB disc, but in narrow version. This was a trigger for the decision to start with the development of 5th prototype, which will cover the needs after narrower and even lighter brake disc. After the end of the project we will be able to offer on the market two type of brake discs, now called 4th and 5th prototype.

With the **fourth prototype**, the focus is on safety, thermal performance, lowering vibrations due to accurate connection of crown and hub as well as further reduction of mass of DRFB disc. New mounting design, which enhanced torque transfer capability and reduced the possibility of vibrations (caused by unbalance) was introduced. Stresses induced in the brake disc, caused by thermal expansion were reduced, as this design allows expansion in radial direction, thus increasing safety and decreasing stopping distance.

With the fourth design, mass was lowered for 22,7%, and air resistance was decreased for 21% in comparison with initial DRFB disc.

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, we found out that a great interest for narrower DRFB disc exists. Based on this research data, the decision was made to design the 5th prototype, narrower disc of 110 mm, with same properties as the one with 170 mm width.

With the fifth prototype, mass was lowered for 34,5%, and air resistance was decreased for 34% in comparison with initial DRFB disc.

As a summary based on the 64 face to face dialogues, 11 international fairs, publishing on the Slovenian Business Club, the DRFB disk, as the first divided brake disc for freight wagons in the world, it has a huge potential in Europe, more accurately in german- speaking countries.

ANNEX 1: FACE TO FACE INTERVIEW GUIDE: DEVELOPMENT OF NEW PRODUCT

The interview is a two-way communication process, which gives us the opportunity to find out more about some specific topics. In this method customers interact with aspects of DRFB disc and then express his/her concerns, views and difficulties.

KEY SECTIONS:

- Preparation
- Product Concept
- Questions to ask the interviewer

1. PREPARATION

Preparation is the first essential step towards a successful face to face interview and we need to be aware about:

- Make sure, that you will know the exact location, time and date of the interview and interviewers full name.
- Always wear smart business clothes.
- Investigate specific, relevant facts, about the company of interviewer's.

Think about what question you want to ask the interviewers. Remember an interview is a two way process, you should give some relevant information for Kovis new product.

2. PRODUCT CONCEPT:

Short presentation of the new product which has been developed by Kovis. The product needs to fulfill the customer needs or satisfaction. In the short product presentation the major benefits / advantages of the new product need to be presented and also mention which problems or difficulties can be solved with our new product.

3. QUESTIONS TO ASK THE INTERVIEWER

- What do you think about our new product?

- Does our new product seem interesting to you? (If not: What kind of such product would be interesting for you? Please describe...)
- Are you prepared to use / buy our new product?
- How much are you willing to pay for such new product?
- Based on your opinion is our new product more attractive than other existing products/solutions on the market?
- Based on your opinion, which are the main advantages of our new product?
- Please define your three main decision factors for buying such a new product?
- Could our new product present a good solution for your problems/needs?
- Which solutions / products do you use now?
- Do you think that with our new technical solution and by using this new product you will be more competitive on the market?
- Who is taking the decision about a new product in your company?
- Can you describe your approval process of new products?
- What are the company's key objectives for the next 3 years?

ANNEX 2: PROTOTYPES OF DRFB DISC

Pictures	Drawings	Production documentation	Quality documentation
	Assembly: K-1-14-113-00	Pictures of jigs and DRFB disc: YES	Takeover report: 1042/16
	Brake disc crown: KE-01-02-81-04	Work order (DN): DN11668	IP and QP: QP 002/06, IP 001/05
	Brake disc hub: KE-02-16-01	Technology sheet (Largo): YES	Numbered FAI drawing: NO
	Ring: KE-03-58	Bill of materials: YES	Measuring protocol: YES
	Raw disc crown: KE-60-58	Pictures of machining: YES	Material specification: MSK 014/15
	MP number: 9934		KL Inspection Certificate: YES
	Mass: 141.5 kg za Ø193		
	Real mass: 138 kg za Ø206		
	Assembly: K-7-16-27-01-00	Pictures of jigs and DRFB disc: YES	Takeover report: 1648/16
	Brake disc crown: K-7-16-27-01-01	Work order (DN): DN12782	IP and QP: QP 007/16, IP 010/16
	Brake disc hub: K-7-16-27-01-02	Technology sheet (Largo): YES	Numbered FAI drawing: YES
	Ring: KE-03-58	Bill of materials: YES	Measuring protocol: YES
	Raw disc crown: KE-60-115 (B3082)	Pictures of machining: YES	Material specification: MSK 014/15
	MP number: 11789		KL Inspection Certificate: YES
	Mass: 135 kg za Ø200		
	Real mass: 132.8 kg za Ø206		
	Assembly: K-7-16-27-02-00	Pictures of jigs and DRFB disc: YES	Takeover report: 0000/17
	Brake disc crown: K-7-16-27-02-01	Work order (DN): DN13137	IP and QP: QP 007/16, IP 010/16
	Brake disc hub: K-7-16-27-02-02	Technology sheet (Largo): YES	Numbered FAI drawing: YES
	Ring: KE-03-58	Bill of materials: YES	Measuring protocol: YES
	Raw disc crown: KE-60-126	Pictures of machining: SOME	Material specification: MSK 014/15
	MP number: 12022 (B3114)		KL Inspection Certificate: YES
	Mass: 128 kg za Ø200		
	Real mass: 125kg za Ø206		
	Assembly: K-7-16-27-03-00	Pictures of jigs and DRFB disc: YES	Takeover report: 770/17, 771/17
	Brake disc crown: K-7-16-27-03-01	Work order (DN): DN14139,14140	IP and QP: IP 010/16, QP 007/16
	Brake disc hub: K-7-16-27-03-03	Technology sheet (Largo): YES	Numbered FAI drawing: YES
	Ring: KE-03-58	Bill of materials: YES	Measuring protocol: YES
	Raw disc crown: KE-60-134 (B3170)		KL Inspection Certificate: YES
	MP number: 12415		
	Mass:	New jig ! MP12362,DN13617	
	Real mass: 115kg za Ø206	K-5-16-33-02-01-00	
	Assembly: K-7-16-27-04-00	Pictures of jigs and DRFB disc: YES	Takeover report: YES
	Brake disc crown: K-7-16-27-04-01	Work order (DN): DN14880,14881	IP and QP: IP 010/16, QP 007/16
	Brake disc hub: K-7-16-27-04-02	Technology sheet (Largo): YES	Numbered FAI drawing: YES
	Ring: K-7-16-27-04-04	Bill of materials: YES	Measuring protocol: YES
	Raw disc crown: KE-60-139 (B3177)		KL Inspection Certificate: YES
	MP number: 12761		
	Mass: 114 kg (SW)		
	Real mass: 112		
	Assembly: K-7-16-27-05-00	Pictures of jigs and DRFB disc: YES	Takeover report: YES
	Brake disc crown: K-7-16-27-05-01	Work order (DN): DN15471,15472	IP and QP: IP 010/16, QP 007/16
	Brake disc hub: K-7-16-27-04-02	Technology sheet (Largo): YES	Numbered FAI drawing: YES
	Ring: K-7-16-27-04-04	Bill of materials: YES	Measuring protocol: YES
	Raw disc crown: KE-60-144		KL Inspection Certificate: YES
	MP number: 12818 (B3184)		
	Mass: 95 kg (SW)		
	Real mass: 94,5 kg za Ø206		