



Practical Use of Funding Instruments

Implementation of Digitalization in Railway Transport

Petr Kroča, OLTIS Group
Director Research & Innovation

INNOVATION 2017 | Prague | 7 December 2017



Presentation content

- 1 | Company introduction
- 2 | EUREKA
- 3 | EU Framework Programme
- 4 | Connecting Europe Facility
- 5 | Comparison | Summary | Recommendations





OLTIS Group Profile

1

WE LISTEN AND
EFFECTIVE RESPONSE
TO YOUR NEEDS
AND THOSE YOUR
CLIENTS WE ARE
EXPERT TRAINING
NEED MARKETING IN

We offer a
YOUR needs
We employ
and we will
and we will
and we will

Our
We
and we will
and we will

Back to history – milestones



- 1993** First OG company was founded
- Now **8** companies, **3** subsidiaries, **3** representations

- 2003** International R & D **EUREKA**

- 2009** Member of UNIFE
- International cooperation
 - European R&D projects
 - TAF/TAP TSI



- 2013** Contribution to Shift2Rail JTI

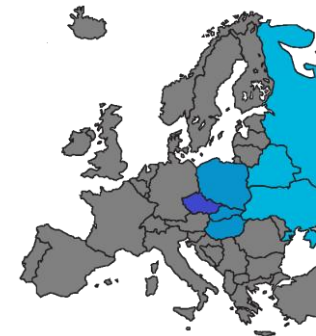


- 2017** Leader in implementation of IT systems communication standards in Central Europe

oltis group
oltis









oltis slovakia
oltis polska
oltis hungaria



Products and customers

Software solutions for

- Infrastructure managers
- Railway undertakings
- Freight forwarders
- Freight carriers
- Wagon keepers
- Passengers
- Logistics

RAIL FREIGHT TRANSPORT 	RAIL INFRA-MANAGERS 	RAILWAY UNDERTAKINGS 
LOGISTICS & FORWARDING 	MOBILITY 	GENERAL PURPOSE 

Customers

- More than **1000** users in **25** EU countries + USA



Membership



UNIFE

Association of the European Rail Industry (Brussels)



DTLF

Digital Transport & Logistics Forum (Brussels)



OSJD

Organization for Cooperation of Railways (Warsaw)



CCTT

The International Association Coordinating Council on Transsiberian Transportation (Moscow)



RFE

Rail Forum Europe (Brussels)



IBS

Community of European Railway Forwarders (Berlin)



Polska Izba

Polish Chamber of Railway Devices and Services Producers



BUSINESS

2 | EUREKA

NETWORK SEARCH

WORLD
- EUROPE
- AMERICA
- ASIA
- AFRICA

200

- SHOW BUSINESS
- NETWORK
- MUSIC
- CINEMA
- BUSINESS/FINANCE
- WORLD NEWS

WORLD

- SHOW BUSINESS
- NETWORK
- MUSIC
- CINEMA
- BUSINESS/FINANCE
- WORLD NEWS

- CULTURE
- ECONOMIC
- BUSINESS
- MEDIA
- PEOPLE
- CREATIVE
- TUTORIALS
- INVESTMENT
- NETWORKING

- VIDEO
- MUSIC
- FILMS
- SEARCH
- CONTRACTS
- MESSAGES

- SHOW BUSINESS
- NETWORK
- MUSIC
- CINEMA
- BUSINESS/FINANCE
- WORLD NEWS

```
1201011010101001
0010101010100101
1101010110010101
1101010020011011
1111101101001001110
1011010101010101
1111110010101011011011010
101101010101
10101101010101010101
0110111110101
111110101010101010101
0110101011111111
```

- SHOW BUSINESS
- NETWORK
- MUSIC
- CINEMA
- BUSINESS/FINANCE
- WORLD NEWS

WORLD

```
101001001010101010101
1010111101010020011011
0110111010101010101
1011010101010101011111
1110110101010101010101
01101010101010101111111
```

EUREKA & EUROSTARS

- **Market oriented** research and development
- EUREKA: **32** years | in **40** countries
- **> 6,000** R&D projects | **9,500** SME participants
- Funds from national budgets | **Bottom-up projects**
- In Czechia the grants cover **50%** of costs for SMEs

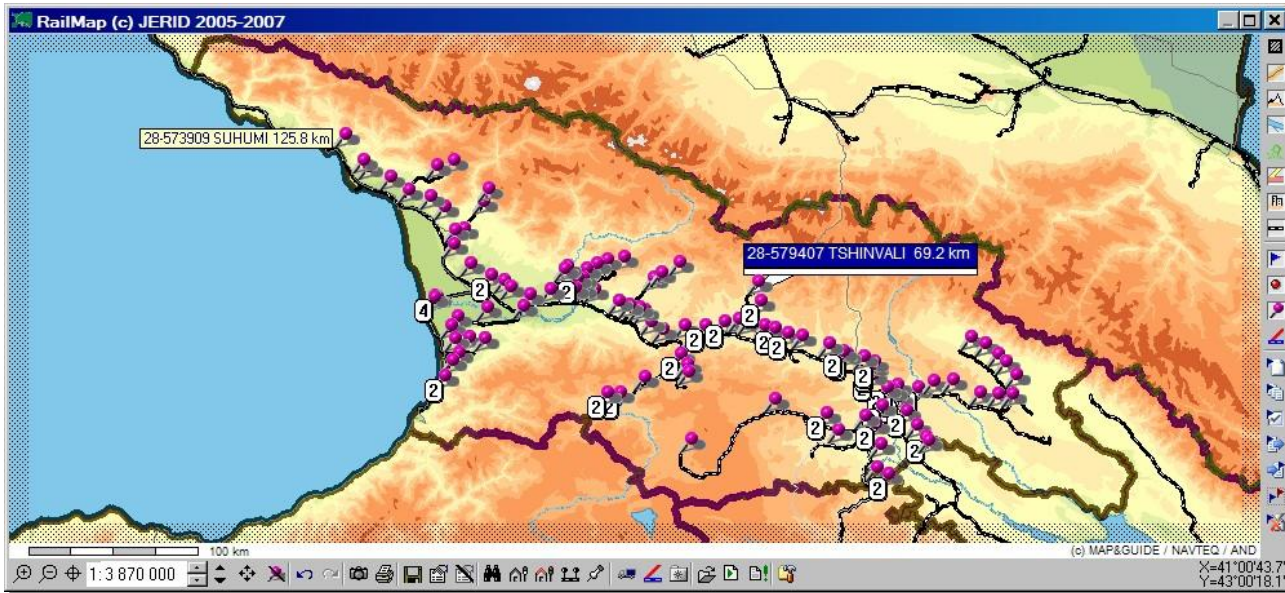


14 years of OLTIS Group involvement in EUREKA (**2003–2017**)

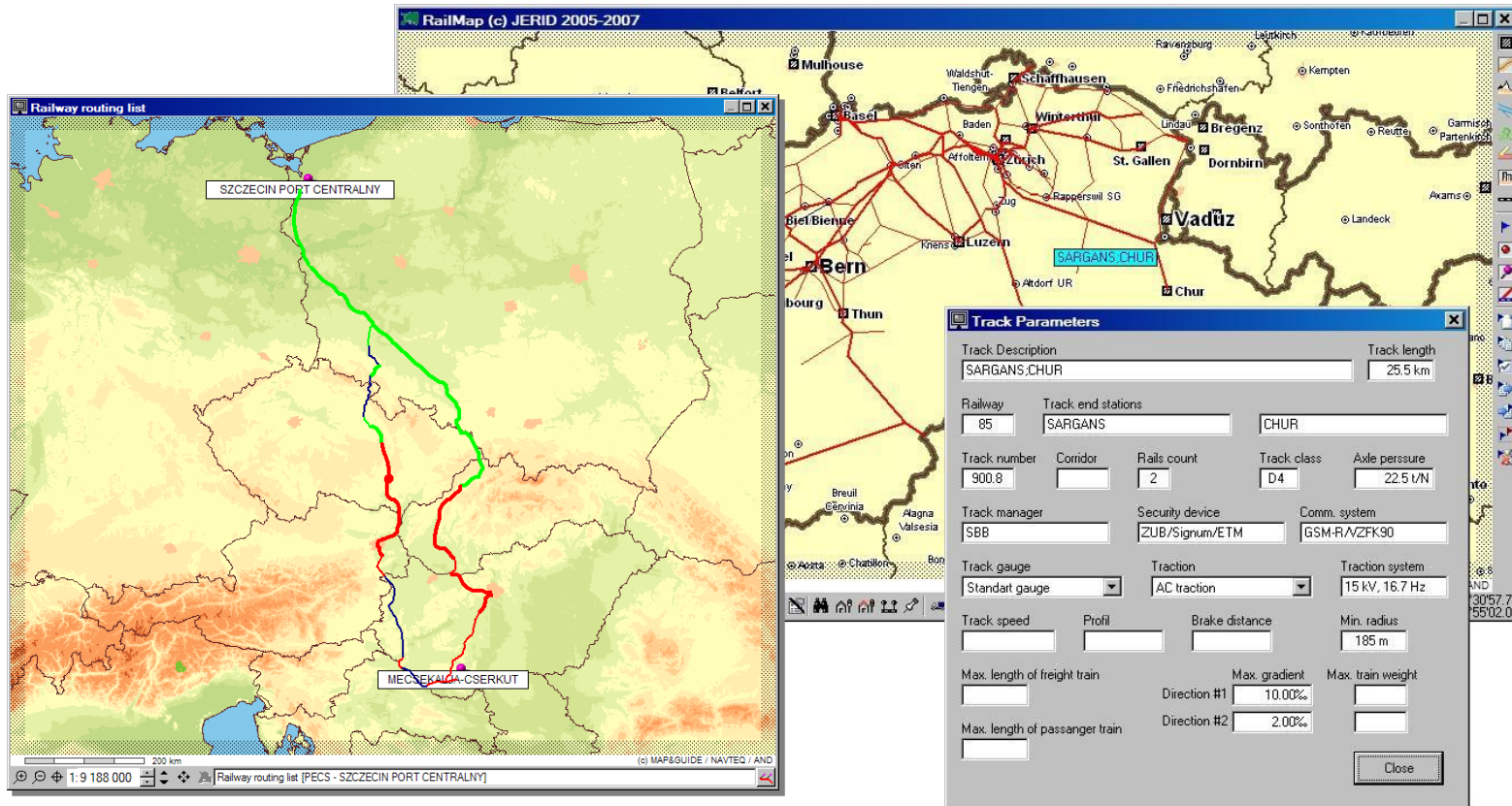
- **15** projects | Total budget of **>10** MEur
- **18** partners (from Germany, Slovakia, Austria, Poland, Hungary, Turkey, Korea)
- Implementation into the **real railway transport & logistics praxis**
- **3** examples of successful EUREKA projects in **digitalization of rail freight** ►

Examples of successful EUREKA projects in railway digitalization

-  **E! 3161 E_RAILMAP – Eurasian Railway Map (2004–2007)**
 - AWARDED AS THE BEST EUREKA PROJECT IN 2009**



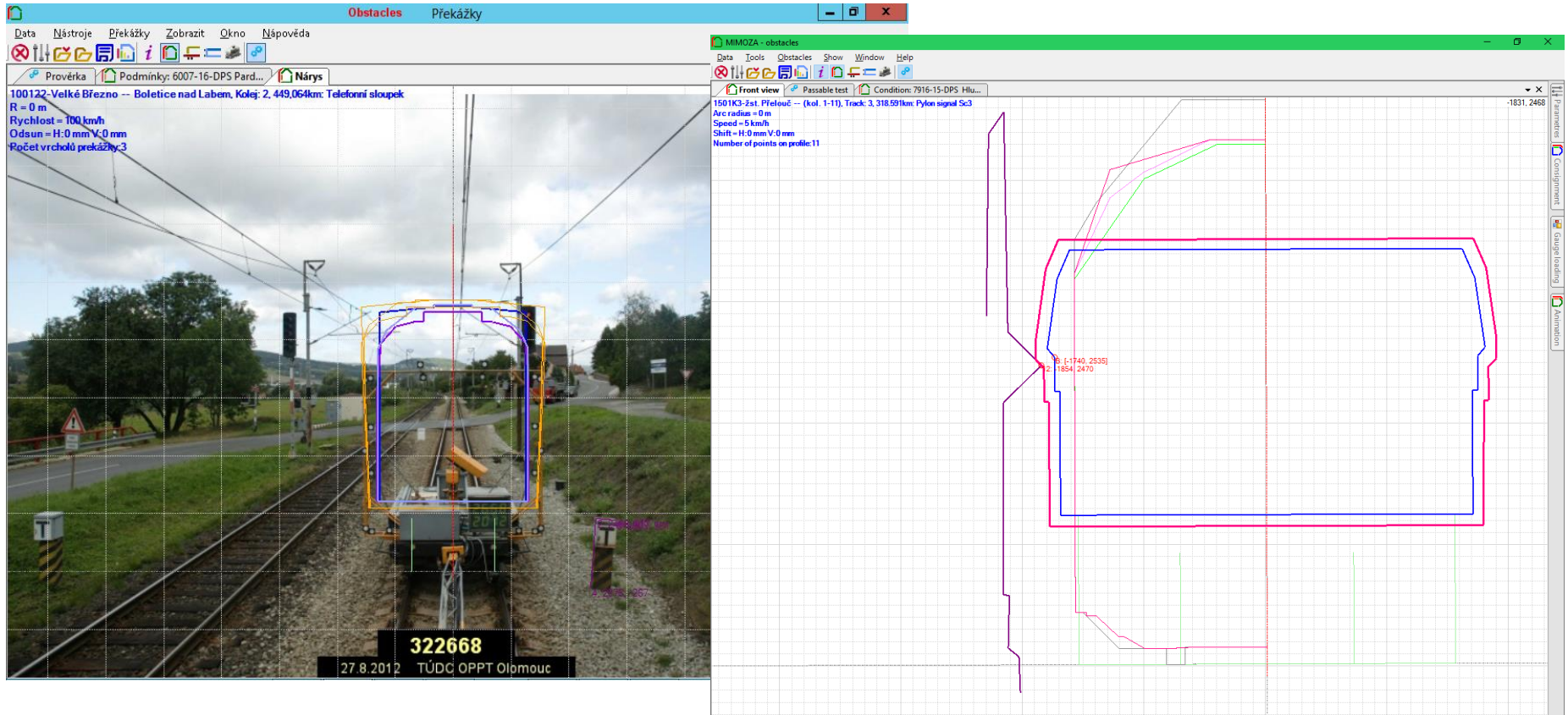
E! 4062 ERWIN – European RailWay Infrastructure Network (2008–2011)



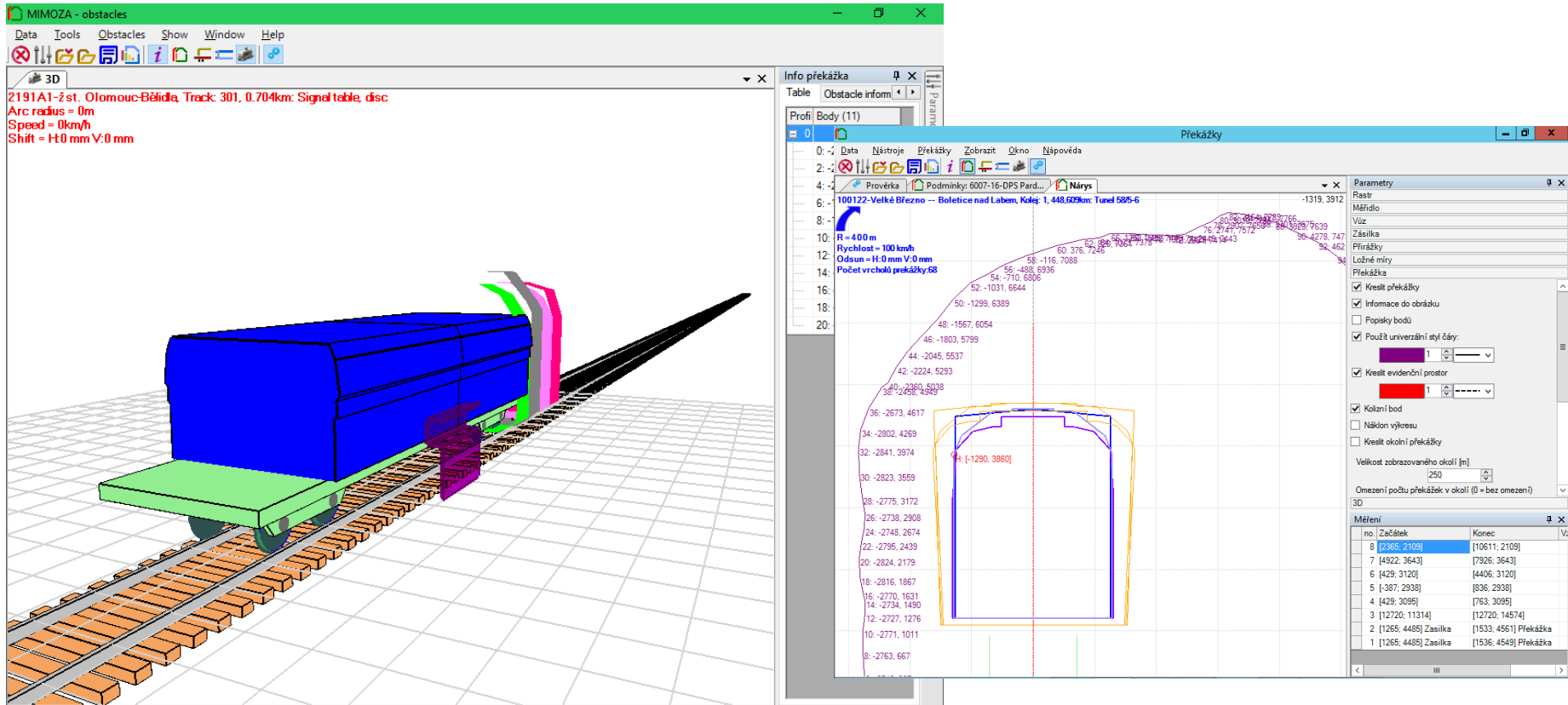
The screenshot displays the RailMap (c) JERID 2005-2007 software interface. It features a main map window showing a railway network in Central Europe, with a specific route highlighted in green and red. The route starts at SZCZECIN PORT CENTRALNY and ends at MECSEKAJA-CSERKUT. A 'Railway routing list' window is open, showing the route details. A 'Track Parameters' window is also open, displaying technical specifications for the track SARGANS:CHUR.

Track Description		Track length		
SARGANS:CHUR		25.5 km		
Railway	Track end stations			
85	SARGANS	CHUR		
Track number	Corridor	Rails count	Track class	Axle pssure
900.8		2	D4	22.5 t/N
Track manager	Security device	Comm. system		
SBB	ZUB/Signum/ETM	GSM-R/VZFK90		
Track gauge	Traction	Traction system		
Standart gauge	AC traction	15 kV, 16.7 Hz		
Track speed	Profil	Brake distance	Min. radius	
			185 m	
Max. length of freight train	Max. gradient	Max. train weight		
	Direction #1			
	10.00%			
Max. length of passanger train	Direction #2			
	2.00%			

E! 7624 TRES – IT support for exceptional railway transport (2014–2017)



E! 7624 TREX – IT support for exceptional railway transport (2014–2017)



The screenshot displays the MIMOZA - obstacles software interface. The main window shows a 3D perspective view of a blue train on a green track. The left sidebar contains project information: "2191A1-žst. Olomouc-Bělidla, Track: 301, 0.704km; Signal table, disc; Arc radius = 0m; Speed = 0km/h; Shift = H 0 mm V:0 mm".

The right sidebar shows the "Info překážka" (Obstacle Info) window, which includes a table of obstacle data:

no	Začátek	Konec
8	[2365; 2108]	[10611; 2108]
7	[4922; 3643]	[7926; 3643]
6	[429; 3120]	[4406; 3120]
5	[1387; 2938]	[836; 2938]
4	[429; 3095]	[763; 3095]
3	[12720; 11314]	[12720; 14574]
2	[1265; 4485] Zásilka	[1533; 4561] Překážka
1	[1265; 4485] Zásilka	[1536; 4549] Překážka

The main window also displays a 2D profile view of the bridge structure, showing the track profile and the bridge structure. The profile view includes a table of data points:

no	X	Y
0	0	0
2	76	2747
4	80	1004
6	84	1004
8	88	1004
10	92	1004
12	96	1004
14	100	1004
16	104	1004
18	108	1004
20	112	1004
22	116	1004
24	120	1004
26	124	1004
28	128	1004
30	132	1004
32	136	1004
34	140	1004
36	144	1004
38	148	1004
40	152	1004
42	156	1004
44	160	1004
46	164	1004
48	168	1004
50	172	1004
52	176	1004
54	180	1004
56	184	1004
58	188	1004
60	192	1004
62	196	1004
64	200	1004
66	204	1004
68	208	1004
70	212	1004
72	216	1004
74	220	1004
76	224	1004
78	228	1004
80	232	1004
82	236	1004
84	240	1004
86	244	1004
88	248	1004
90	252	1004
92	256	1004
94	260	1004
96	264	1004
98	268	1004
100	272	1004
102	276	1004
104	280	1004
106	284	1004
108	288	1004
110	292	1004
112	296	1004
114	300	1004
116	304	1004
118	308	1004
120	312	1004
122	316	1004
124	320	1004
126	324	1004
128	328	1004
130	332	1004
132	336	1004
134	340	1004
136	344	1004
138	348	1004
140	352	1004
142	356	1004
144	360	1004
146	364	1004
148	368	1004
150	372	1004
152	376	1004
154	380	1004
156	384	1004
158	388	1004
160	392	1004
162	396	1004
164	400	1004
166	404	1004
168	408	1004
170	412	1004
172	416	1004
174	420	1004
176	424	1004
178	428	1004
180	432	1004
182	436	1004
184	440	1004
186	444	1004
188	448	1004
190	452	1004
192	456	1004
194	460	1004
196	464	1004
198	468	1004
200	472	1004
202	476	1004
204	480	1004
206	484	1004
208	488	1004
210	492	1004
212	496	1004
214	500	1004
216	504	1004
218	508	1004
220	512	1004
222	516	1004
224	520	1004
226	524	1004
228	528	1004
230	532	1004
232	536	1004
234	540	1004
236	544	1004
238	548	1004
240	552	1004
242	556	1004
244	560	1004
246	564	1004
248	568	1004
250	572	1004
252	576	1004
254	580	1004
256	584	1004
258	588	1004
260	592	1004
262	596	1004
264	600	1004
266	604	1004
268	608	1004
270	612	1004
272	616	1004
274	620	1004
276	624	1004
278	628	1004
280	632	1004
282	636	1004
284	640	1004
286	644	1004
288	648	1004
290	652	1004
292	656	1004
294	660	1004
296	664	1004
298	668	1004
300	672	1004
302	676	1004
304	680	1004
306	684	1004
308	688	1004
310	692	1004
312	696	1004
314	700	1004
316	704	1004
318	708	1004
320	712	1004
322	716	1004
324	720	1004
326	724	1004
328	728	1004
330	732	1004
332	736	1004
334	740	1004
336	744	1004
338	748	1004
340	752	1004
342	756	1004
344	760	1004
346	764	1004
348	768	1004
350	772	1004
352	776	1004
354	780	1004
356	784	1004
358	788	1004
360	792	1004
362	796	1004
364	800	1004
366	804	1004
368	808	1004
370	812	1004
372	816	1004
374	820	1004
376	824	1004
378	828	1004
380	832	1004
382	836	1004
384	840	1004
386	844	1004
388	848	1004
390	852	1004
392	856	1004
394	860	1004
396	864	1004
398	868	1004
400	872	1004
402	876	1004
404	880	1004
406	884	1004
408	888	1004
410	892	1004
412	896	1004
414	900	1004
416	904	1004
418	908	1004
420	912	1004
422	916	1004
424	920	1004
426	924	1004
428	928	1004
430	932	1004
432	936	1004
434	940	1004
436	944	1004
438	948	1004
440	952	1004
442	956	1004
444	960	1004
446	964	1004
448	968	1004
450	972	1004
452	976	1004
454	980	1004
456	984	1004
458	988	1004
460	992	1004
462	996	1004
464	1000	1004
466	1004	1004

OG EUREKA Projects

E! 3161 LOGCHAIN E-RAILMAP (JERID)

- Electronic railway map of Europe (2004–2007)

Awarded as the best EUREKA project in 2009

E! 3579 NARVIK (JERID)

- European rail cargo portal (2006–2008)

E! 4062 LOGCHAIN+ ERWIN (JERID)

- European railway infrastructure network (2008–2011)

E! 4509 EIMIS (JERID)

- European inter-modal information system (2010–2012)

E! 5025 LOGI-GATE (OLTIS Group)

- RFID reader gate for railway rolling stock, road vehicles and storage mechanisms (2010–2012)

E! 6725 REAL-BRIDGE DBS (JERID)

- Railway Euro-Asian Land Bridge Data Base System (Info Support of CIM/SMGS Transports) (2012–2015)

E! 6726 LOADFIX (OLTIS Group)

- Development of the web application for loading and fixing goods in railway freight wagons (2013–2016)

E! 7663 INNOLOGI (JERID)

- Innovative Logistics (2013–2016)



E! 7619 TABLOG (CID International)

- Use of mobile devices such as tablets & smartphones for data collection, data processing & operational process management (2013–2016)

E! 7624 TREX (OLTIS Group)

- Development of it support for exceptional railway transports, broad gauge, EC TSI impl. (2014–2017)

E! 9172 MONET (CID International)

- Central system for monitoring and evaluating of transport movements (2015–2017)

E! 9173 EDMOND (OLTIS Slovakia)

- Electronic transport data services for monitoring of dangerous goods (2015–2017)

E! 11156 ERIC Mobile (JERID)

- European rail information centre in freight transport for end-users on mobile platforms (2017–2020)

E! 11159 OPTILOAD (OLTIS Group)

- Optimisation of loading of oversized goods and special equipment on open railway wagons (2017–2020)

E! 11214 EPLOS (CID)

- European Portal of Logistics Services (2017–2020)



3

EU Framework
Programme

R&D&I Projects (FP7, H2020, S2R)



OPTIYARD (S2R-OC-IP5-01-2017)

- Optimized Real-Time Yard and Network Management (2017–2019)



GoF4R (S2R-OC-IP4-01-2016)

- Governance of the Interoperability Framework for Rail and Intermodal Mobility (2016–2018)



ST4RT (S2R-OC-IP4-02-2016)

- Semantic Transformations for Rail Transportation (2016–2018)



VITE (S2R-OC-IP2-02-2016)

- Virtualisation of Testing Environment (2016–2018)



IT2RAIL (HORIZON 2020 1st CALL)

- Information Technology for Shift2Rail (2015–2018)



CAPACITY4RAIL (FP7 6th CALL)

- Project focused on development new railway technology for increasing capacity till 2050 (2013–2016)



MERLIN (FP7 5th CALL)

- Project focused on energy efficiency with the aim of 10% energy reduction (2012-2015)



D-RAIL (FP7 4th CALL)

- Project focused on prevention of derailment in rail freight operation (2011–2014)



Statistics Horizon 2020 / Transport

Institutions	Sector	RIA	JTI-SESAR-RIA	JTI-CS2-IA	JTI-Shift2Rail-RIA	IA	CSA	JTI-CS2-RIA	JTI-SESAR-CSA	JTI-Shift2Rail-CSA	SME-1	JTI-SESAR-IA	SME-2	Total
Řízení letového provozu České republiky, s.p.	OTH		15						3			1		19
České vysoké učení technické v Praze	HES	4				4	2							10
Výzkumný a zkušební letecký ústav, a.s.	REC	2		5				1						8
OLTIS Group a.s.	PRC	1			3					1				5
Vysoké učení technické v Brně	HES	1		1	2									4
AŽD Praha, s.r.o.	PRC	1			2									3
Honeywell International, s.r.o.	PRC			1			1	1						3
UniControls, a.s.	PRC	1			1									2
Vysoká škola báňská - Technická univerzita Ostrava	HES					1		1						2
Honeywell, s.r.o.	PRC	1				1								2
LA composite, s.r.o.	PRC			2										2
Jihostroj, a.s.	PRC			2										2
<i>Others (19 institutions)</i>		6		3	4		2			1	2		1	19
Total		17	15	14	12	6	5	3	3	2	2	1	1	81



4

Connecting
Europe
Facility

CEF 2016 Transport Calls



The Connecting Europe Facility

- CEF supports trans-European networks and infrastructures in the sectors of transport, telecommunications and energy
- Cohesion Calls **€1.1 Billion** (General calls **€800 Million**)
- **Priority – Rail interoperability / TSI Implementation**
- **Cohesion Fund** – eligible recipients receives **85%** support

- Our projects will enable to **implement standards for data exchange** between the IT systems of the selected private railway freight operators from Slovakia, Hungary and the Czech Republic in **2017–2020** and systems of infrastructure managers, wagon keepers and other rail (national) operators

- The **total budget** of these projects is **€7 Mil.**
to support the implementation of the TSI **in Central and Eastern Europe**

CEF Transport Projects



Co-financed by the European Union
Connecting Europe Facility

CEF Transport 2015

Implementation of TAF TSI at Czech & Slovak private railway undertakings

2017–2019 | 1 MEur | 10 Companies involved | 1 Beneficiary: **oltis** group



BF LOGISTICS



CEF Transport 2016

Implementation of TAF TSI at Hungarian private railway undertakings

2018–2020 | 1,25 MEur | 3 partners | Leader: **oltis** group





Comparison

5

Summary | Benefits

Funding instruments (1)

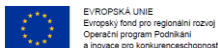
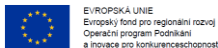


Fast Track to Innovation Pilot

The **SME Instrument**
Your highway to innovation



EUREKA



Funding instrument	Success rate %
Horizon 2020	14
CEF	33
Shift2Rail Open Calls	? 5–15
Fast Track Innovation	5
SME Instrument	6–11
EUROSTARS	22
EUREKA	50→100
OPPIK ICT and SS	→100
OPPIK Innovation	?
OPD 2	→100

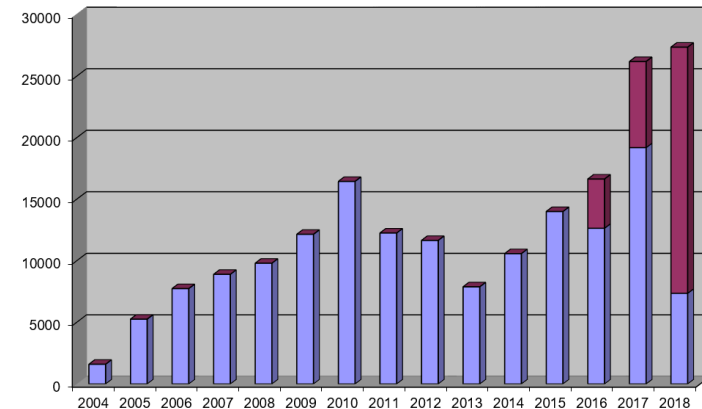
Funding instruments (2)

	FP7 /Horizon 2020	EUREKA	CEF
OLTIS Group Projects	8	15	2
Idea, topic	↓	↑	↓
Support rate	100%	50%	85% (cohesion)
Content	Research & Innovation	R & D & I	Implementation
Number of partners	5–10	2	1–2
Number of countries	5–10	2–3	1–2
Project value (MEur)	1–2	< 1	>> 1
Budget source	EU	National	EU
Success rate	35%	50–100%	33–100%
Consortia creation	Difficult	☺	☺
Man-Month	Pre-set	☺	☺

International cooperation benefits

- Participation at newest EU research and development
- Leading & coordination of international working groups
- New technologies
- Gaining financial sources for own innovations
- Raising salaries of employees, new jobs
- Creation of new partnerships
- Work in international teams
- International experience...

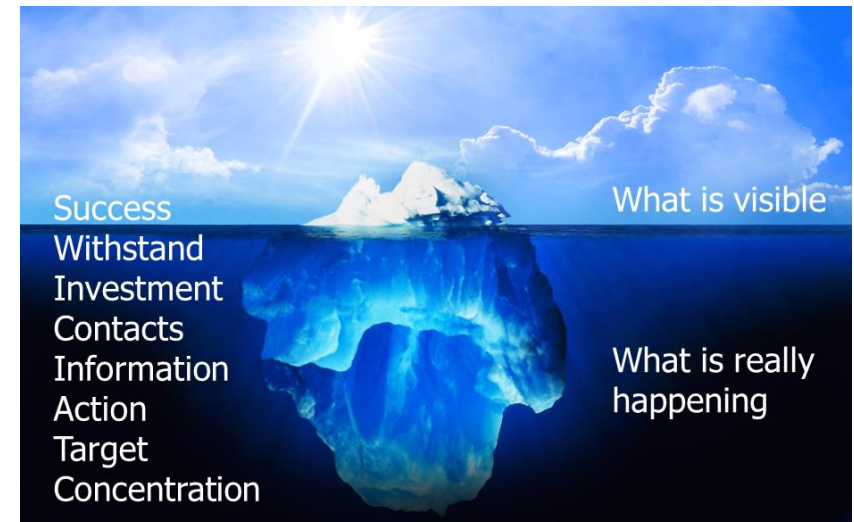
- Improving in English
- Travelling 😊



Optimistic outlook to the future

- Funding instruments accessible for everyone
- Do not worry, do not "sit in the corner"
- International activities and cooperation (English!)
- Databases & searching portals
- Participate at workshops and conferences
- Participate at Info days in Brussels
- Get international experience
- Be active and visible
- Participate at discussions
- "Push" at the others...

- ...And do not forget, success is as a top of an iceberg!



EUREKA 



More
Ideas &
Success

oltis group

