

Executive summary

Ukraine plays a strategic role in facilitating East-West transport connections, the country's strategic road network. It however, cannot handle the increasing traffic load due to insufficient technical parameters.

The overall objective of the INCRIS coordinating action is to ensure that the cooperation capacities of Ukraine's leading road research centre, the Shulgin State Road Research Institute (DNDI) are reinforced in order for it to foster its integration into the European Research Area and this improve road infrastructure in Ukraine through joint research. The project aims to establish strategic partnerships between DNDI and EU road research centres in order to facilitate knowledge sharing.

INCRIS addresses one of the objectives of the FP7 priority "Improving International Cooperation and R&D Road Infrastructure Strategy for Ukraine". The project has focused on improving the road infrastructure in Ukraine through joint research and helping to build a stronger future transport strategy for Ukraine linked with the rest of the European countries. This has been done via establishing strategic partnerships between DNDI and EU road research centers, and setting up joint research programmes through networking in order to help the Ukrainian transport researchers in their assessment of the Ukrainian transport policy.

Summary description of project context and objectives

European research and development (R&D) has seen a shift towards orientating the R&D activities of the European Union towards international cooperation with third countries. The 7th Framework Research Programme is open to countries outside the EU in response to the globalisation of science and knowledge and with the intention to increase the competitiveness of the EU. The European Research Area (ERA) is intended to be expanded to include EU neighbours in accordance with the European Neighbourhood Policy (ENP). Correspondingly objectives of the proposed project are strongly related to the Transport Strategy of Ukraine for the period until 2020.

Closer cooperation with third countries can only be facilitated if the Science and Technology (S&T) infrastructure, human resources and policies are well-prepared for such cooperation in the target countries.

Ukraine, as one of the largest neighbours of the EU, with a population of more than 46 million, is part of the ENP process and the EU/Ukraine action plan foresees the preparation of Ukraine's integration into the ERA, to "develop Ukraine's research and technological development capabilities in the service of the economy and the society and reinforce the exchange of research personnel within joint projects and promote the participation of Ukrainian scientists in international fora and debates".

Ukraine is an important transit country with major Pan-European transport corridors (III. V. IX) and important E-roads crossing it. The country has a strategic role for Europe in facilitating its connections to the East. Hence, it is crucial that roads are in a good state of repair and are able to handle traffic while causing the least possible disturbance to citizens and the environment.

In Ukraine, due to insufficient funding, 40000 km of the road network is not repaired regularly, some sections have not been renewed for 20-30 years and over 90% of roads require urgent repairs. In addition, as of 1 January 2009, 657 bridges needed major repairs or reconstruction.

Premature damaging of road surfaces is partly due to the design and construction methods still used in Ukraine dating from the 1970-80s. Since then, loading, composition and speed of traffic have changed considerably and road specifications (in particular for surface unevenness) have been altered accordingly. In addition, new materials and non-traditional construction solutions have appeared around the world. All this underlines the need for a revision of road surfacing calculation theory in Ukraine.

Increased traffic of heavy vehicles and high summer temperatures together with low quality of construction and maintenance as well as outdated pavement design techniques have led to the mass appearance of rutting on Ukraine's roads, which is one of the most dangerous phenomena for traffic safety.

As regards the development of the national road network, the most serious problems are the lack of bypass roads and the resulting deterioration of urban areas, increased risk of accidents and reduced efficiency of roads due to congestion. In addition, 370 villages still do not have a hard surfaced road connection.

To alleviate the above-mentioned problems, comprehensive implementation of modern materials and technologies of construction and repair of roads and bridges need to be accelerated. However it is also important to develop a new way of thinking about road infrastructure, like creating sustainable development while taking into consideration pedestrian needs, bicycles, public transport, environmental friendly solutions etc. In order to facilitate this, a more efficient and up-to-date research agenda, the establishment of close contacts with highway research activities in EU member states, human resources with the capabilities of taking part in Pan-European research projects and the application of knowhow from other countries are of utmost importance. Diverse experiences in road infrastructure issues of EU countries and Ukraine could initiate synergy effects and contribute to implementation of new ideas and technologies in respect markets.

State Enterprise State Road Scientific Research Institute named after M.P. Shulgin (DNDI) is the main research centre for construction, maintenance and repair of roads and bridges and the leading think tank for Ukravtodor – the State Road Administration of Ukraine. This proposal relates to the ENP and the ERA in the field of highway research by fostering the integration of DNDI into European research.

While the objectives of road research activities are similar around the world and especially within Europe, the lack of cooperation between research institutes leads to ineffective use of R&D capacities and also to their duplication. The integration of DNDI, as the most important road research organisation in Ukraine, into the ERA would lead to a more optimal use of research capacities on a European scale and strengthen the research competencies and competitiveness of Europe while promoting knowledge transfer between the parties and thus helping the dissemination and utilisation of European research results in Ukraine.

Based on the above, the overall objective of the INCRIS coordinating action was to ensure that the cooperation capacities of Ukraine's leading road research centre, State Enterprise State Road Scientific Research Institute named after M.P. Shulgin (DNDI) are reinforced well in order to achieve its successful integration into the European Research Area and this improve road infrastructure in Ukraine through joint research.

The project was also aimed to assist in building a research strategy for DNDI in order to increase its scope and regional coverage in Ukraine as well as to improve its responses to the socio-

economic needs of the country. Eventually, the project will contribute to improve transport infrastructure in Ukraine through enabling researchers to find the best solutions, locally initiated, or an adaptation of existing know-how while taking the principle of sustainability into account.

So, the overall activity under the project was targeted at achieving the following key targets:

1. establish strategic partnerships between research centers;
2. strengthen the ability of Ukrainian researchers to take part in future EC research projects;
3. build a research strategy for DNDI in order to increase its scope and regional coverage in Ukraine as well as to improve its responses to the socio-economic needs of Ukraine;
4. facilitate the sharing, dissemination and exploitation of knowledge between DNDI and research institutes in member states.

These key project targets were implemented through the activities defined in 4 Work Packages.

The main objective of Work Package 1 (Networking) is to facilitate and encourage cooperation between DNDI and research centres in Member States and Associated Countries. This was done through activities such as:

- Strengthening and developing partnerships.
- Workshop and conferences.
- Setting up of joint experiments.

The main objectives of Work Package 2 (Training) are:

Develop and implement training modules to strengthen the ability of Ukrainian researchers to:

1. take part in future FP7, HORIZON 2020 and other funded research projects.
2. Transfer knowledge about best solutions and practices.
3. Exchange experiences and knowledge about building strategy, project management, financing etc.
4. Strengthen the cooperation with other EU countries through international projects and initiatives.

The main objectives of Work Package 3 (Strategy Building) are:

- To develop of a new long-term R&D strategy for DNDI in order to increase its scope, regional coverage and prepare it to better respond to the socio-economic situation of Ukraine.
- To create a short-term action plan, this includes the most important steps to be taken to reach the goals of the strategy and to conduct initial follow-up review of its implementation.

The main objectives of Work Package 4 (Management) are:

- Management and coordination of the project (financial administration, quality management, knowledge management, progress management) towards the management of the objectives - Coordination and communication with EC.

During the project implementation the following project objectives were achieved:

1. Establishment of close partnership between DNDI and EU research centers by means of:

- 11 multilateral short-term visits between DNDI and FEHRL institutes (8 of them according to the research theme matrix plus 3 extra short visits carried out due to defined new research interests between INCRIS partners);

9 DNDI and 13 project partners' researchers actually travelled to and from DNDI Kiev. It exceeds the target of 5 and 7–10 respectively as stated in DoW. Total number of researchers involved in the short-term visits (including hosting researchers) is more than 50.

- Highway Infrastructure Workshop #1 & 2 were held in Kyiv, DNDI
 - 14-15 Feb 2013
 - 10 Sep 2013.

2. Strengthening the ability of Ukrainian researchers to take part in future EC projects by means of:

- International Project Management (IPM) Training:

Six training courses took place within the course of the project:

- Five project management training (two in Kiev, three in Brussels);
- One finance management training focused on the new rules of participation in EC projects (HORIZON 2020) ;

In total more than 20 DNDI staff took part in the various training courses.

- Secondment of 3 DNDI staff at FEHRL office.

3. Facilitating the sharing, dissemination and knowledge transfer between DNDI and research institutes in member states by:

- Setting INCRIS Website in English/ Translation done of INCRIS website ;
- Publication of bi-lingual leaflet and newsletters 1,2,3, 4 &5;
- Presentation at FIRM 2013;
- Translation of SERRPV into national language (Ukrainian);
- News articles on INCRIS website – incris.fehrl.org ;
- INCRIS article in FIRM magazine
 - November 2013; *“Third IPM training held and three secondees hosted at FEHRL Offices for INCRIS”* ;
 - June 2014; *“INCRIS project shows significant results so far”* ;
 - December 2014: *“Final project event brings seamless closure to INCRIS project”* ;
- Leaflets distributed at joint event in European Parliament on 4th March; *“Showcasing the EU – EU Neighbourhood countries research and innovation cooperation”*

4. Building the R&D strategy for DNDI by means of:

- Providing an overview of the current R&D strategy for DNDI and compare it with the EU institutes strategies;
- Two R&D strategy workshops were held in Kiev, DNDI:
 - 13 Feb 2013
 - 9 Sep 2013
- Identification of the key stakeholders for DNDI and analysing their expectations basing on the results of a workshop on stakeholder expectations;
- Suggesting a new R&D strategy for Ukraine (Ukrainian long-term road research strategy for 2014-2028);
- Providing a system for project proposal tendering;
- Setting up a Short Term Action Plan (STAP) to help carry out the first steps in the implementation of the long-term strategic programme developed in the DNDI's New Research and Development Strategy.

Eventually, the following tasks were successfully fulfilled in the course of INCRIS project implementation:

- Opportunity to meet researchers from other countries and to visit research laboratories across Europe was successfully used by DNDI staff.
- Identification of fields of cooperation was carried out and strategic partnership was launched (e.g. between DNDI and IBDiM).
- Dissemination of research results was made possible.
- Project management skills of potential DNDI project managers enhanced.
- Opportunity to work on other EC projects during secondment facilitated significant enhancement of managing skills of DNDI staff.
- Development of new R&D research strategy was fulfilled and Action Plan for its implementation provided for DNDI.

Description of main S&T results foregrounds

INCRIS addresses one of the objectives of the FP7 priority "Improving International Cooperation and R&D Road Infrastructure Strategy for Ukraine". The project has focused on improving the road infrastructure in Ukraine through joint research and helping to build a stronger future transport strategy for Ukraine linked with the rest of the European countries. This has been done via establishing strategic partnerships between DNDI and EU road research centers, and setting up joint research programmes through networking in order to help the Ukrainian transport researchers in their assessment of the Ukrainian transport policy.

The overall transport situation in Ukraine is far from ideal, but INCRIS project has assisted in building a research strategy for DNDI in order to increase its scope and regional coverage in Ukraine as well as to improve its responses to the socio-economic needs of the country. In general, some steps to Ukrainian transport strategy development goals have been made including strengthen the ability of Ukrainian researchers to take part in European funded research projects through training on project management as well as sharing and dissemination of knowledge between DNDI and research institutes in member states .

The main ambition of INCRIS coordinating action was to ensure that the cooperation capacities of Ukraine's leading road research centre, DNDI are reinforced in order for it to foster its integration into the European Research Area and this improve road infrastructure in Ukraine through joint research. The project aims to establish strategic partnerships between DNDI and EU road research centres (FEHRL, VTI, KTI, IBDiM, etc.) in order to facilitate knowledge sharing. It was planned to help DNDI to develop partnerships and set up joint research programmes through networking. An additional ambition was to strengthen the ability of Ukrainian researchers to take part in future FP7 funded research projects through training on project management accompanied by secondment of DNDI staff at the Brussels FEHRL office. The sharing and dissemination of knowledge between DNDI and research institutes in member states would be facilitated by setting up a bilingual website, translating scientific results of DNDI into English and disseminating them through various channels. The project will assist in building a research strategy for DNDI in order to increase its scope and regional coverage in Ukraine as well as to improve its responses to the socio-economic needs of the country. Eventually, the project will contribute to improve transport infrastructure in Ukraine.

The new version of long-term road research strategy developed as one of the most important outcomes (deliverables) of INCRIS project is based partly on the former version of DNDI1s former road research strategy, and partly on the typical tendencies of the similar strategies created by several Central and Western European countries, as well as the FEHRL (Strategic European Road Research Programmes). The quality of the new strategy has been improved by the outcomes of the interviews made with prominent representatives of the Ukrainian road research, education, planning, etc. in and outside DNDI.

An important elements of the further developed long-term road research strategy was the description of a new research project tendering system including the aim and content a call for proposals; the requirements of the submission of research project proposals; the procedure of the pre-evaluation and the final evaluation; the rules of signing a contract; the monitoring procedure of project execution using independent reviewer. As major innovative elements of this project tendering system, the possibility for pool-funding (inclusion of private money into project financing) and the important role of former references of project proposers in the evaluation procedure can be highlighted.

Also a so-called Short Tem Action Plan was made to guide and help carrying out the first steps in the implementation of the new long-term road research strategic programme. It includes a list of recommendations on the extent and sustainability of research budget, research staff development, raising road research recognition at national level, RD project tendering system, participation in European Research Programmes, quantifying the contribution of the new research programme to the development of national economy, research equipment and research methods/processes.

Project objectives

The following project objectives were achieved:

1. Establishment of close partnership between DNDI and EU research centers by means of:

– multilateral short-term visits between DNDI and FEHRL institutes according to the research theme matrix;

Short-term visits:

In total, 11 research visits took place (6 by DNDI staff to partners and 5 by project partners to DNDI), all focusing on DNDI staff either travelling to partners' organisations or hosting researchers from these organisations. The list is as follows:

1. DNDI to IBDiM Poland, 21-27 Oct 2012.
2. DNDI to KTI Hungary, 26 – 30 Nov 2012.
3. DNDI to NETIVEI Israel, 08 – 13 Jan 2013.
4. IBDiM Poland to DNDI, 23 – 25 Jan 2013.
5. KTI Hungary – DNDI, 12 – 13 March 2013.
6. VTI Sweden to DNDI, 13 – 15 March 2013.
7. DNDI to VTI Sweden, 10 – 14 June 2013.
8. VTI Sweden to DNDI, 19 – 20 Aug 2013.
9. IBDiM Poland to DNDI (Donetsk), Oct 2013.
10. DNDI to KTI Hungary, 2 April 2014.
11. DNDI to IBDiM Poland, 26-30 May, 2014.

Detailed reports of individual visits have been prepared and are available on the INCRIS website (<http://incrism.fehrl.org/>).

A broad range of research topics were covered. They are:

- The use of industrial waste (fly ash, blast furnace slag, etc.) in the construction of roads.
- Road maintenance management system.
- Road Safety Audits.
- Design of pavements of roads and bridges.
- Application of innovative geosynthetics.
- Application of bored piles with base preloading by grouting.
- Road asset management (including PMS, BMS).
- Cement concrete pavements.
- Advanced maintenance materials and techniques.
- Child safety in cars.
- Traffic safety and traffic accidents.
- Asset management.
- Crash tests.
- Infrastructure for cyclist and pedestrians' safety.
- Winter road maintenance.
- Coal-associated shale for road construction.

9 DNDI and 13 project partners' researchers actually travelled to and from DNDI Kiev. It exceeds the target of 5 and 7–10 respectively as stated in DoW.

Total number of researchers involved in the short-term visits (including hosting researchers) is more than 50.

In conclusion, the objective of networking of researchers was achieved. These short-term research visits also served as a platform for exchange of knowledge and good practices. They have been useful in identifying potential fields of research cooperation.

Among the key findings originated from the established research cooperation ties between INCRIS partners, a field of potential cooperation with IBDiM identified during a short visit of IBDiM experts to DNDI in January 2013 as part of WP1 Networking related to the *Use of coal waste in the construction of road embankments* has been emphasized as the most promising and priority. It is based on the need in full-scale and complex investigations on the topic coming from the assumption that the issue of the use of coal waste is common for both, Ukraine and the European countries. A research programme between DNDI, IBDiM and other organisations is being discussed. The idea could result in developing a joint research project on the use of coal waste in road construction.

Two Highway Infrastructure workshops were held in Kyiv at DNDI and summarized the results of short-term visits:

- 14-15 February 2013
- 10 September 2013

2. Strengthening the ability of Ukrainian researchers to take part in future EC projects by means of :

- attending IPM training courses.

Six training courses took place within the course of the project including:

- Five project management training:
 - two in Kiev;
 - three in Brussels;
- One finance management training in Brussels

In total more than 20 DNDI staff took part in the various training courses.

- Secondment of DNDI staff at FEHRL office.

Secondments to FEHRL, Brussels:

- Natalya Bidnenko, 6 weeks;
- Olena Belska, 4 weeks;
- Maryna Mokhovikova, 3 weeks.

3. Facilitating the sharing, dissemination and knowledge transfer between DNDI and research institutes in member states by such dissemination activities as:

- Setting INCRIS Website in English and translation it into Ukrainian;
- Issuing INCRIS flyer and 5 newsletters (in both English and Ukrainian)
- News articles on INCRIS website – incris.fehrl.org
- INCRIS articles in FIRM magazine
 - November 2013; “*Third IPM training held and three secondees hosted at FEHRL Offices for INCRIS*”;
 - June 2014; “*INCRIS project shows significant results so far*” ;
 - December 2014; “*Final project event brings seamless closure to INCRIS project*”.
- Leaflets distributed at joint event in European Parliament on 4th March; “*Showcasing the EU – EU Neighbourhood countries research and innovation cooperation*”.
- Presentation at FIRM13 session “Knowledge transfer for infrastructure research” about INCRIS results “INCRIS – improving international cooperation and road infrastructure research with Ukraine” on the 6th of June 2013 in Brussels.
- Translation of the information brochure produced by FEHRL “Strategic European Road Research Programme V (SERRP V) into Ukrainian.

4. Building the R&D strategy for DNDI included the following:

- Overviewing of current R&D strategy for Ukraine;
- Stakeholder consultation;
- New R&D strategy for Ukraine was developed basing on the Ukrainian long-term road research strategy for 2014-2028;
- System for project proposal tendering was proposed;
- a Short Term Action Plan (STAP) to help carry out the first steps in the implementation of the long-term strategic programme developed in the DNDI’s New Research and Development Strategy was set up.

The work of the project was organised around four work packages (WP). Each of them was placed under the responsibility of a WP leader, who was an experienced researcher and research project manager.

Work package WP 1 aimed to facilitate networking between the participating institutions through disseminating research results, sharing knowledge and developing partnerships by making the results available on a webpage in English and Ukrainian, as well as organising a workshop and visits. A research theme matrix was developed in task 1.1 which not only served as a base for the networking activities, but also became a starting point for outlining the research strategy. The workshops in task 1.3 involved stakeholders who contributed both to networking but also gave input to the formulation of the strategy.

WP2 organised a training programme for DNDI staff to get acquainted with EU research projects and project management methods.

The methodology for producing a research strategy (WP3) was one of the topics in the training programme. This part ensured that Ukraine, in an effective way, could participate in the work of WP3 producing their own strategy. WP3 helped DNDI to develop a research strategy through workshops and consultations.

WP4 coordinated the action and ensured efficient cooperation of all participants.

Main S&T results/foregrounds:

1. Research theme matrix (Fig.2)
2. The project website <http://incris.fehrl.org> (Fig. 3)
3. INCRIS flyer.
4. INCRIS newsletters 1-5.
5. SERRP V translated into Ukrainian.
6. New R&D strategy for DNDI.
7. Proposed research projects tendering system.
8. Short Term Action Plan (STAP).

1. Research theme matrix

Based on the research competencies of the participating institutes, the potential fields of cooperation were identified. Participants were surveyed on their research competencies and research equipment as well as their expectations of the exchange of researchers (Task 1.2) and know-how/research results (Task 1.3). Areas of research for cooperation were also recommended based on the current European research focus. FEHRL's Strategic European Research Agenda provided a starting point for this subtask, while FEHRL's recently completed or ongoing joint research projects provided the input and know-how. Some research themes have already been identified during the proposal stage as possible areas of cooperation and research strategy.

They are:

- Safety and Security,
- Design and Production,
- Energy, Environment and Resources,

Innovation Themes	DNDI priorities	IBDiM	KTI	VTI	INRC	external experts*
Future proof manufacturing, design and construction	<ul style="list-style-type: none"> • Design concepts for pavements • Use of waste materials • Road safety audit and inspection 	X	X X		X X	X
Durable and integrated pavements, bridges, tunnels and structures	<ul style="list-style-type: none"> • Diagnostic testing for monitoring road conditions • Modern materials for long life road pavements • Innovative geosynthetic materials • Crash tests 	X	X X	X X	X	
Advanced utility, sensory and communication systems					X	
Flood, snow and ice free pavements, tunnels and bridges	<ul style="list-style-type: none"> • De-icing and snow clearance 	X		X		
Low cost, rapid and year-round maintenance strategies	<ul style="list-style-type: none"> • Infrastructure concepts for pedestrians, cyclists 			X		
Intelligent traffic management strategies	<ul style="list-style-type: none"> • implementation of ITS and ICT for traffic management 	X				
Asset management toolbox and public business models	<ul style="list-style-type: none"> • Asset management for national roads 		X		X	

* Experts from an EC project, PILOT4SAFETY, will be invited to DNDI to share their experiences on RSA and RSI

Figure 1: Identified topics of cooperation

The outcome of this task is the development of a final theme matrix showing specific areas of cooperation between DNDI and the other research centres.

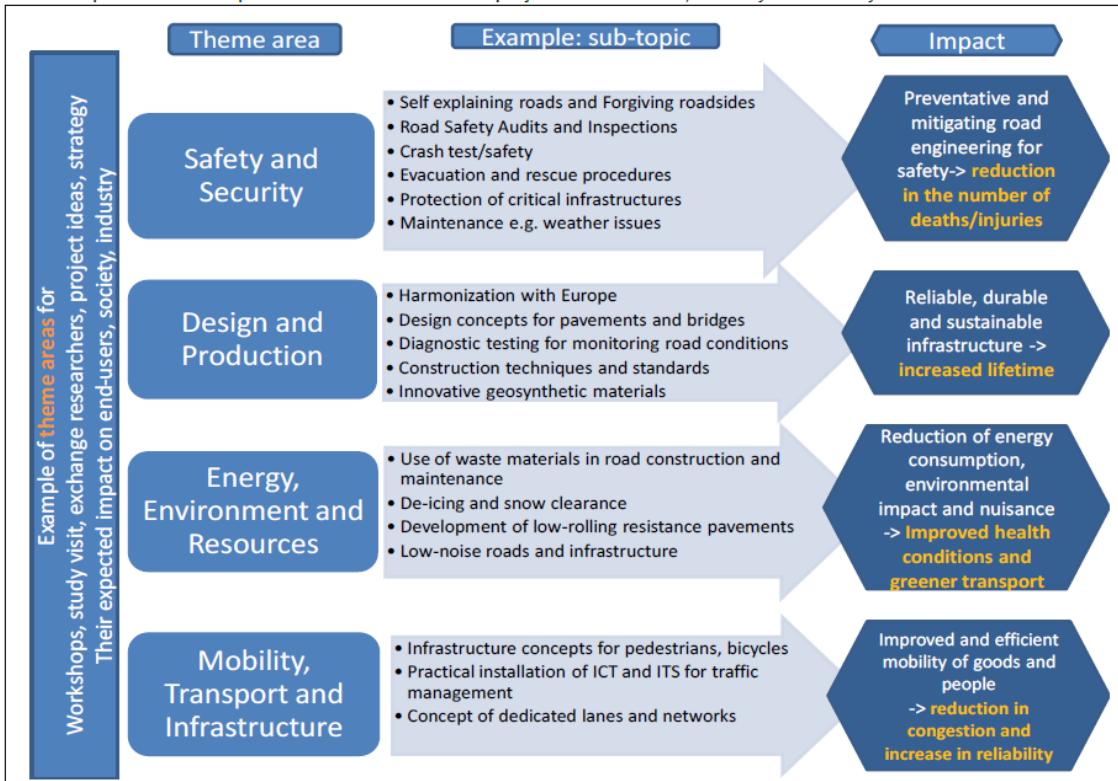


Figure 2: Research theme matrix

2. The project website <http://incriss.fehrl.org>

As part of Task 1.4 (WP1 Dissemination), a dissemination strategy was created detailing the activities to be carried out to distribute the knowledge obtained in the project and to facilitate the public awareness activities. The strategy included the project's website with public and private areas that was launched in March 2012; FEHRL's project database and FEHRLopedia were developed. The web pages for the project was placed within a clustered website area for SERRP (FEHRL's Strategic European Road Research Program) projects. This will provide users with a streamlined portal for access to related projects in the programme. To overcome possible language difficulties the website was translated in Ukrainian.

The project website <http://incriss.fehrl.org> (Fig.3) was set up at the start of the project. It performs the essential functions of:

- Dissemination tool
- Internal coordination and networking platform
- Workspace for the project partners
- Information resource

The website is run as part of the FEHRL group of websites. All public deliverables, relevant presentations and newsletters can be found in the public part of the website.

Catherine Birkner

**IMPROVING INTERNATIONAL COOPERATION AND
R&D ROAD INFRASTRUCTURE STRATEGY FOR UKRAINE**

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Ukraine plays a strategic role in facilitating East-West transport connections using the country's strategic road network. It cannot, however, handle the increasing traffic load due to insufficient technical parameters. The overall objective of the INCRIS project is to ensure that the cooperation capacities of the Ukraine's leading road research centre, the Shulgin State Road Research Institute (DNDI), are reinforced to both foster its integration into the European Research Area (ERA) and improve road infrastructure in the Ukraine through joint research. The project aims to establish strategic partnerships between DNDI and EU road research centres to facilitate knowledge sharing.

The INCRIS project will also help DNDI set up joint research programmes through networking and strengthen the ability of Ukrainian researchers to take part in future FP7-funded research projects through training on project management, accompanied by the secondment of DNDI staff to the Brussels office of the Forum of European National Highway Research Laboratories (FEHRL). The sharing and dissemination of knowledge between DNDI and research institutes in member states will be facilitated through a bilingual website, the translation of DNDI's scientific results into English and dissemination through various channels. A bilingual project brochure will also be produced and participation of DNDI researchers in international conferences in the partner countries will be supported. In addition, the project will assist DNDI in building a research strategy to increase its scope and regional coverage in the Ukraine, as well as improve its responses to the socio-economic needs of the country. Eventually, the project will contribute to improving transport infrastructure in the Ukraine through enabling researchers to find the best solutions, either initiated locally or by adapting existing know-how while taking sustainability into account.

Project Coordinator: Ms. Kateryna Krayushkina, DNDI

NEWS

- » FEHRL organises another International Project Management training course 11.12.2012
- » FEHRL publishes first issue of new FIRM magazine 07.11.2012
- » INCRIS project management training held on 18-20th September in Kiev 17.10.2012
- » INCRIS strategy building workshop in Kiev on 20th September 17.10.2012
- » FEHRL's July/August 2012 newsletter now published 03.09.2012
- » TRA2012 proceedings now published by Elsevier 28.07.2012
- » First INCRIS newsletter now published 17.07.2012
- » New flyer now available for INCRIS project 29.06.2012

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Fig. 3: Home page of the project website

3. INCRIS flyer.

A flyer was issued at the beginning of the project being a part of dissemination tools and it was widely used as dissemination materials distributed among the stakeholders (Fig. 4).

4. INCRIS newsletters 1-5

During the project implementation, 5 project newsletters were published on a regular basis (once per half a year) highlighting the key events and achievements under the projects. They were translated into Ukrainian to raise awareness about project activities among wide circles of national research communities and stakeholders (Fig. 5, 6).

INCRIS PARTNERS

Derzhdr NDI
Shulgin State Road Research Institute
www.dndi.org.ua

FEHRL
Forum of European National Highway Research Laboratories
www.fehrl.org

IBDIM
Road and Bridge Research Institute, Poland
www.ibdim.edu.pl

INRC
Israel National Roads and Transportation Company
www.iroads.co.il

KTI
Institute for Transport Sciences, Hungary
www.kti.hu

VTI
Swedish National Road and Transport Research Institute
www.vti.se



<http://incris.fehrl.org>



COORDINATION AND SUPPORT ACTION

THEME [INCO.2011-6.1]
[Eastern Europe and South Caucasus: Moldova, Georgia, Ukraine, Belarus, Armenia, Azerbaijan]

Project runs for 30 months (from 01.12.2011 to 31.05.2014)

Project Coordinator
DNDI - Shulgin State Road Research Institute
Prospect Perekopiy 57
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Improving International Cooperation and

R&D Road Infrastructure Strategy for Ukraine



INCRIS PROJECT



2012-05-29 14:29:50

THE INCRIS CONCEPT

Road transport remains the dominant mode of transport for goods and people in Europe. Ukraine, because of its geographical location, is an important transit and destination country for traffic from and to the EU. It is therefore of pan-European interest to ensure that the roads in Ukraine are in good condition to accelerate the movement of goods and people and thus promote economic and social development.



However, road transport in Ukraine, compared to the EU countries, is currently below standard in terms of quality, safety, energy efficiency and environment. There is an urgent need for a massive upgrading of road infrastructure in the country which has suffered from many years of neglect due to a lack of investment. Reversing the deterioration of road infrastructure, improving mobility and road safety for all are some of the issues that need to be tackled in Ukraine. One way of doing this is to encourage and facilitate cooperation between the R&D communities in Ukraine and the EU. The INCRIS project will work within this scope to ensure that the cooperation capacities of Ukraine's leading road research centre, the Shulgin State Road Research Institute (DNDI), are reinforced to foster its integration into the European Research Area (ERA).

The knowledge of European and other experiences gained from this project will be used to improve road infrastructure in Ukraine through the dissemination of results to the stakeholders in the country.

OBJECTIVES

The main objectives of INCRIS are:

- 1** To build a research strategy for DNDI in order to increase its scope and regional coverage in Ukraine
- 2** To establish strategic partnerships between Ukrainian and EU research centres
- 3** To strengthen the ability of Ukrainian researchers to take part in future FP7 and Horizon 2020 research projects
- 4** To facilitate the sharing, dissemination and exploitation of knowledge between DNDI and research institutes in member states



<http://incris.fehrl.org>

EXPECTED IMPACT

Contribution to RTD capacity building and management in Ukraine

Through the proposed dissemination and communication actions, the project will contribute to the exchange of experience and know-how. The proposed trainings will enhance the ability of staff at DNDI to manage research projects effectively.

Enhanced participation of Ukraine in the 7th and Horizon 2020 Framework Programmes

The project aims to improve the capacities of DNDI staff to be able to participate in FP7 and Horizon 2020 research projects, especially through the training programme.

Increased visibility and scope

With the help of the participants from EU member states and external experts, a new long-term strategy will be prepared for DNDI, which will address its linkage with current and future socio-economic conditions in Ukraine.

Networking with other research centres in Member States or Associated Countries

Networking activities are expected to lead to joint research projects, which will contribute to a more effective use of European research potential.

Increased job opportunities in particular for young scientists

The proposed new strategy for DNDI will ensure that the institute plays an increasingly important role in national and international research and provides a firm base for young researchers to start their scientific career.



2012-05-29 14:29:50

Fig. 4: INCRIS flyer

Figure 5: Pages 1, 2 of the INCRIS Newsletter #3 of July 2013

Fig. 6: Pages 1, 2 of the INCRIS Newsletter #3 of July 2013 translated into Ukrainian

5. SERRP V translated into Ukrainian

For the purpose of contributing to raising awareness of the Ukrainian researchers on FEHRL's role in encouraging joint research among its institutes and laboratories and providing solutions for the challenges in the transport sector, FEHRL's brochure presenting an on-going "Strategic European Road Research Programme V (SERRP V) for 2011-2016 was translated into Ukrainian (Fig. 7).



Fig. 7: Brochure produced by FEHRL "Strategic European Road Research Programme V (SERRP V) in Ukrainian and in English

6. New R&D strategy for DNDI

The objectives of WP3 in the INCRIS project are defined as:

1. to develop of a new long-term research and development strategy for DNDI in order to increase its scope, regional coverage and prepare it to better respond to the socioeconomic situation of Ukraine,
2. to create a short-term action plan, it includes the most important steps to be taken to reach the goals of the strategy and to conduct initial follow-up review of its implementation.

For the purpose of the project the proposed R&D strategy deals with all the elements of which influence the performance of DNDI as a leading Ukrainian road research institution as follows:

- a. Research facilities;
- b. Research Staff;
- c. Research budget;
- d. Organisation's procedures- and mainly QA/QC procedures;
- e. Involvement of stakeholders in financing, formulating and implementation of the strategy.

SWOT analysis of the present strategy was performed in INCRIS project concentrated partly on the valid medium-term road research strategy of DNDI (Proposals to the State “Strategic Programme of Road Research in Ukraine for 2011-2021” Final version) and partly on the INCRIS-project itself (its goals and planned activities).

A suggested road research strategy for Ukraine (*See Deliverable D3.3 New DNDI research and development strategy (Ukrainian long-term road research strategy for 2014-2028)*) is based, to large extent, on extensive fact finding activities, interviews and workshops conducted with Ukraine stakeholders.

The main problem in the development of a road sector is that the riding qualities of roads and road structures do not enable a fast, comfortable, economical and safe transportation of passengers and goods by motor transport. Improvement of riding qualities of roads in conditions of a limited funding will be able due to effective fulfillment of research that will promote the introduction of modern scientific and technical achievements into production. The present usually poor road and bridge condition causes a yearly economic loss of several billion UAH for Ukraine).

The precondition of the effective fulfillment of the road research is the reform of the research organizational and functional structure, selection of priority goals for R&D policy, development of industry research companies and design institutes, strengthening their human resources and logistics, increase in funding scope designed for research, promotion of university scientific activity, creation of research laboratories in leading universities, involvement of university scientific resources to the solution of the industry problems.

To attain effective road science research the following measures should be taken:

- to set long-term strategic research priorities, together with Action Plans in every 3-5 years, - to develop an objective project proposal tendering system which may help attaining the Strategic goals using the most appropriate research providers for the given topic;
- to authorize one of the leading research institutions in the field with the functions of a unified Coordination center which will have full information about the research performed and the introduction of the research outcomes into manufacture. This would form a unified scientific-technical policy in the sector and ensure its effective and efficient implementation;
- to provide modern technical equipment, information and software envisaging concentration of highly-qualified scientific personnel and the majority of testing equipment and instruments in a single scientific institution;

- to implement effective employment policy by attracting with marketable income (salary+bonus) and career opportunities for promising young researchers and for highly qualified, experienced professionals and by optimizing the number of employees for the present and planned works;
- to implement research results efficiently;
- to introduce a developed system of commercialization of research results;
- to build an effective, efficient and stable system for financing research, including also financing from the private sector- industry etc.

Ways and directions of the programme implementation

Building an effective research system in the road sector is one of the most important preconditions for the improvement and development of public highways system. The processes of improving scientific and technological development of road sector are based on the principles of consistency, i.e. all the issues are supposed to be solved in close relationships and on the principle of hierarchy, when settled priorities are solved primarily together with gradual solution of strategic tasks.

Ways of creating an efficient system of road research were as follows:

- adaptation of road science to the conditions of globalization and increasing competitiveness;
- focusing the system of research on market demand, consumer and stakeholders needs;
- creation of favourable conditions for researchers and stimulation of their intellectual activity;
- implementing system approach to science management, information society.

Solution of the problem related to non-compliance of the research level with potential needs of the road sector is planned in the following areas:

- identification of priority areas of research;
- creating conditions for the active work of the main scientific center of State Road Agency of Ukraine (Ukravtodor) and other scientific road organizations;
- defining the basic methods and techniques of research in the road sector;
- defining of functional and technical requirements for a basic research laboratory equipment and software;
- selection of optimal solutions of a unified research area;
- creating a unified research database;
- defining field research facilities needed for the introduction of innovative technologies;
- creation and implementation of effective information system of road sector (information block) based on the results of scientific research;
- creation of information exchange with research institutions of CIS , European Community and globally.

Reforming R&D organizational and functional structure

1. Clear identification (delimitation) of the special functional purposes of the research institutions, i.e. carrying out the research by the research institutions according to their research profile.

2. Ensure functioning of a single research center by involving other organizations for joint implementation and discussion of the results followed by optimization of its qualitative and staff structure.
3. Organization of scientific research through an integrated solution of interrelated problems as follows: Research Proposal → Research Approval → Commissioning → Research → Trial sections (trial projects) → Their Monitoring → Changes in Technologies and Specifications → Routine use in projects implementation.
4. Development of a long-term Programme of scientific research in various fields and implementation of a long-term system of scientific research performance.
5. Creation of initiative working groups from among the leading scientists of the country and appointing coordinators of the research fields for the development and follow-up of a long-term Research Programme in various fields.
6. Mandatory scientific and technical support in carrying out construction, reconstruction, repair of highways and promoting the test practices for new materials and technologies. Accumulation of scientific and technical support results in a single coordinating center and creation of national scientific databases.
7. Introduction of monitoring system of scientific institutions' effectiveness and their regular evaluation, including the involvement of foreign experts according to criteria used in developed countries and carrying out ratings on this basis.
8. Promotion of joint international scientific Programmes including participation of foreign institutions that will stimulate an international exchange of scientific results and personnel.
9. Ensuring State support of the transition process to an internationally recognized practice in the field of patents and intellectual property protection.
10. Clear regulation of tenders with regard to determining the performers of scientific and technical innovation projects that will guarantee an objective transparent and fair examination of the relevant proposals.
11. Introduction of customs facilities for research institutions that purchase scientific devices and experimental equipment abroad, allowances for land tax and VAT.

Carrying out an effective human resource policy in research organizations

1. Development of departmental employment Programmes that will be aimed at advanced training of road industry staff, staff upgrading and employment, creation of a reserve of highly qualified managers of subordinate organizations.
2. Conducting a targeted policy regarding involvement in work of the best highly experienced professionals of the road sector and perspective university graduates. Formation of the generation of the researchers having independent and progressive thinking.
3. Development of a system of quality and performance assessment of scientists with regard to innovation development, the level of developed regulations/guidelines/specifications, availability of publications, participation in international conferences, international organizations, academic degrees etc..
4. Assessing of scientific and human resources with regard to their compliance with the priorities of scientific and innovative development of the country, as well as conducting employee rating of the researchers to determine the actual number of experts qualified in relevant areas.

5. Carrying out employee rating (certification) at all research institutions to assess the level of researchers' compliance with their professional qualifications and performance criteria and standards existing in developed European countries.
6. Based on the results of this certification, State support will be concentrated on efficient financial management and logistics, mainly of effectively working scientists and research teams, and creation high-tech research centers of international importance on the basis of the best research teams, where work conditions will facilitate the return of Ukrainian specialists from abroad, and will be attractive for foreign scientists.
7. Implementation in business relationship in scientific field of a special contract form that will allow setting for the individual, the most productive scientists higher wage level close to European standards.
8. Development and implementation of State support for training of young scientists in international research centers, ensuring conditions for their return to work in scientific area of Ukraine.
9. Implementation of the system of advanced training of scientists, envisaging the provision of creative vacation every 5-7 years for the scientists to summarize their research results obtained and for the preparation for issuing their scientific works (thesis, monographs, etc.).

Updating road R&D funding system

1. Creating special Research Funds by the accumulation of funds from private contractors, partly from tax benefits and privileges (such as exemption or partial exemption of income tax);
2. Introduction of targeted research funding.
3. Exclusion from the tax base of companies and organizations spending funds on R&D.
4. Introduction of accelerated depreciation of scientific devices and test equipment of research institutions and innovative companies.
5. Exclusion from taxable income the cost of scientific equipment and hardware sent on a free of charge basis to the universities and research organizations, cancellation of land tax and VAT.

Provision of road R&D with modern technological equipment

1. Increasing efficiency of existing fixed assets of scientific organizations and conducting a policy of equipping research laboratories with modern equipment and devices:
 - providing departmental research laboratories of scientific institutions with modern equipment and devices;
 - maximum use of all available instruments and equipment in research works;
 - creation of specially designed training classes and laboratory facilities for the organization of workshops for professionals of different research areas.
2. Improving the system of scientific and technological information and wider application of modern information and communication systems:
 - holding workshops in Ukravtodor and field workshops on different fields, providing information and consulting services via telephone lines and the Internet;
 - improving the skills of road managers and specialists of different areas;
 - keeping thematic headings in professional specialized publication on various issues and preparing articles for publication in other specialized road publications;

- the use of information Internet technologies to cover the introduction of highly efficient materials, technologies, machines and mechanisms (keeping subject headings in the appropriate fields on the website of the company, open forum on the website of the company for expert discussion of issues in the appropriate directions);
- preparation of thematic files of existing regulations on relevant directions.

Expected impact.

The Programme will enable to achieve an international road research level, to create an effective system of long-term research of basic problems related to the provision of the road sector and the road users with innovative development ensuring the establishment and operation of a unified scientific area.

Conducting strategic research and a creation of a database on their basis will allow performing the analysis of accepted technical and technological solutions in relation to the design of road facilities, construction and operational maintenance. This will improve economic efficiency. Comprehensive implementation of innovative developments in the road sector will be the main instrument for effective development of enterprises and organisations, it will facilitate the increase in the efficiency of transport and the operational condition of roads, and produce a positive impact on safety.

Introduction of modern system for road research will improve the efficient use of budget funds, the provision of the required scientific information on the implementation of advanced materials, structures and technologies for building durable and safe roads.

Implementation of a long-term road research goals and implementation of the Programme will ensure:

- the opportunity of innovative development of the road sector;
- the implementation of scientific potential at the facilities of road complex;
- improvement of highway traffic safety;
- protection of the environment from the negative impact of road transport sector;
- implementation of research-intensive materials in road sector and technologies for building reliable and durable road structures.

7. Proposed research projects tendering system.

The implementation of a new long-term road research and development strategy (a suggested version for Ukraine – DNDI) – can be significantly promoted by the development and use of an innovative system for project proposal tendering. An efficient road research tendering system can be based on the national level or long term road research strategy of Ukraine agreed by every major stakeholder. Its main goals or at least some of them could be the topics of the call initiated by, for example, Ukravtodor every year.

A new road research project proposal tendering system is suggested for Ukraine (*See Deliverable D 3.4 Development of research project tendering system*) with the following main features:

- clear and transparent tendering system,
- predetermined yearly (pooled?) funds,
- a single yearly submission deadline,

- special form (bidder, title, goal, main tasks offered, duration, budget needed etc.) to be filled in by applicants with a short suggested description of the proposal,
- strict timetable for the two-stage project evaluation
- competent and objective Evaluation Board for proposal prioritization,
- priority to proposals in line with long-term strategic goals (Directions) and solid reference to bidder,
- multi-year projects (sustainable financing),
- project budget could include – depending on the actual topic – research + tests/trials/experimental section monitoring before implementation; preparation to standardisation,
- independent monitoring and evaluation of the whole process of research and the performance of researchers for creating a data base to be utilized in future tenders,
- monitoring, evaluating and eventually up-dating road research project tendering system.

8. Short Term Action Plan (STAP).

One of the central goals for INCRIS project is to improve the long-term strategy for road and transport infrastructure research in Ukraine. Successful and effective implementation of this strategy relies on actual preparatory actions to be taken in the immediate run in various fields, such as: budget, human resources, equipment and methodology. For this purpose, a Short Term Action Plan (STAP) (*See Deliverable D3.5 Short Term Action Plan*) which highlights the preparation actions to be considered to develop these issues has been developed. Practical recommendations for each of the aforementioned parameters are described in this document.

The STAP has mainly been developed considering DNDI as a key player in the Ukrainian research arena, however, the roles of other players and stakeholders are considered, as well. The STAP is based on the inputs from several workshops and discussions with Ukrainian stakeholders, as well as on international best practice and inputs from INCRIS partners' institutes.

The action plan includes a list of recommendations which encompass four components, namely, the research budget, the research staff, the research equipment and the methods/processes. The rationale behind each recommendation, the responsible organization and the time table for implementation are provided.

The recommendations (See Table 1) highlight several topics such as the research budget – extent and sustainability, research equipment modernisation - alignment with best EN practice, research staff development, raising road research recognition at national level, R&D project tendering system, participation in European and international research programs and projects, quantifying the contribution of the long term research program and follow-up. The realisation of some of the recommendations could lead to future international cooperation and facilitates opportunities for the Ukrainian experts to apply for assistance from foreign road research institutes and to support and develop further the transport sector in Ukraine through new projects, similar to the INCRIS project.

Table 1: Summary of Recommendations

Recom m. No.	Activity Description	Responsibility	Timetable	Comments
I	Multi-Annual R&D Budget - Extent & Sustainability	UKRAVTODOR	Continuously	
II	Financing R&D providing services to private sector	DNDI	5 years	
III	Testing Equipment Modernization Process	DNDI	2-4 years	
IV	English Courses Program	DNDI	1 year	
V	Human Resources Development Plan	DNDI	1.5 years	
VI	Informatics Unit	DNDI	1 year	
VII a	Establishment of Ukraine Road Research Alliance - URA	UKRAVTODOR + DNDI	2 years	
VII b	First Annual Conference organized by URA	URA	2 years	
VIII	Implementation of Research Project Tendering System	UKRAVTODOR	1 year	
IX	Participation in European/International Research Programmes/Projects	DNDI	1 year +	
X	Quantifying the contribution of the Long-Term Research Programme	DNDI	1 year +	
XI	Follow-Up on STAP implementation	UKRAVTODOR + DNDI	Annually	

Potential impact and main dissemination activities and exploitation results

Potential impact

The INCRIS project contributed towards the expected impacts expressed in the work programme in the following manner:

- **Contribution to RTD capacity building and management in Ukraine**

Through the proposed dissemination and communication actions (workshops, web site, translation and publication of research results) the project contributed to the exchange of experience and know-how. The conducted IPM trainings enhanced the ability of staff at DNDI to manage research projects effectively. The exchange of researchers between the participating institutions also provided an opportunity for researchers at DNDI to learn new skills, competencies and exchange know-how.

- **Enhanced participation of Ukraine in the 7th Framework Programme and other EC programmes (HORIZON 2020, CEDR calls, Marie-Curie Actions, Twinning calls, etc).**

The project aimed to improve the capacities of DNDI staff to be able to participate in FP7 research projects. The training programme helped DNDI staff to familiarize themselves with the preparation and management of FP7 and, respectively, HORIZON 2020 and other on-going and future research projects. The experience of the other participants from EU member states in the field of EU research projects and cooperation between research institutes promoted an efficient knowledge transfer.

- **Increased visibility and scope (regional coverage, subjects, activities) of the centres with increased linkage with economic and social environment considering stakeholders expectations**

With the help of the participants from EU member states and external experts a new long-term strategy was prepared for DNDI, which addresses its linkage with current and future socio-economic conditions in Ukraine as well as its regional scope in order to strengthen the position of DNDI and prepare it for major European research projects. The aim of the new strategy is to work towards research projects that will help to alleviate the negative impacts of road transport on society and the environment (new maintenance and management methods, bypass roads, new calculation methods for capacity and endurance of roads, etc.) and contribute to economic and social development. Novel research topics and methods in the field of climate change, Intelligent Transport Systems and mitigation of the environmental effects of road transport are likely to be included on the research agenda of DNDI.

- **Networking with other research centres in Member States or Associated Countries (mobilising the human and material resources existing in a given field, disseminating scientific information as well as the results of research, facilitating communication between the centres having similar scientific interest)**

The inclusion of prestigious research centres from EU member states and the proposed actions (workshops, web page, translation and publication of scientific results, exchange of researchers,) ensured that dissemination of information on research results and a two-way communication between internationally recognised centres would develop and contribute to strengthening their

cooperation. Networking activities have led to starting preparation for launching joint research projects, which will contribute to a more effective use of European research potential.

- **Increased job opportunities that encourage gender equality in the country, in particular for young scientists (measures to avoid 'brain drain' phenomena: better career opportunities, better work conditions, access to research infrastructures)**

The proposed new strategy for DNDI will ensure that the institute will play an increasingly more important role in national and international research and provide a firm base for young researchers to start their scientific career. By enabling DNDI to participate in FP7 and other EC research projects, better work conditions can be provided, new research infrastructure can be purchased and the opportunity to work in an international team can be offered to young scientists, which will make working at DNDI more attractive and thus reduce brain drain.

Main dissemination activities

Dissemination of information about the project and of research results of the participating institutions is carried out through the publications on the project website, FEHRL website, DNDI website and Ukravtodor website and at various international conferences and workshops (e.g. FIRM, TRA, international exhibitions and satellite events), as well as at the national dissemination events such as an annual international Highway Construction and Maintenance Forum “Avtodorexpo” held in Kiev. This event combines normally an exhibition and scientific and practical conference on the issues of designing and construction of highways and bridges targeted at a wide audience of the national experts in the domain. It is planned to present the findings of INCRIS project based on the results of short term visits carried out during project implementation to share the experience available to the INCRIS partners in the area of innovative road construction and maintenance technologies.

An **Internet-based platform** was developed to provide means for easy communications between participants. This includes all the tools and components (file managers, forums, searching tools, database of project members and end-users, etc.). Of special importance for users will be its *bilingual* feature, which will allow users in Ukraine with lack of English proficiency to benefit from the information published on its public part (scientific results of the participating institutions, workshop conclusions, networking opportunities, contact information for end-users, etc.).

The password-protected part of the site contains standard features of a European research project web site, including a file manager for all project documents (final deliverables, minutes of meetings, decisions, draft reports, etc.), to allow for swift communication between the partners. The website is controlled and maintained by FEHRL.

To open up communication channels between DNDI and EU research institutes limited by language difficulties and limited attendance to European or international conferences, **workshops** were organised by FEHRL to help disseminate scientific and research results. The participation of Ukrainian scientists at major international events is also supported (e.g. the yearly Transport Forum in Stockholm, Transport Research Arena Conference – biennial, National Road Conference in Hungary – yearly; AUTOSTRADA-POLSKA – yearly,

ENVIROAD – biennial). Special emphasis was laid on young researchers by encouraging them to take part in events such as the FEHRL-FERSI-ECTRI Young Researchers Conference and the Young European Arena of Research. In this respect, participation of a young researcher from DNDI at TRA2014 in poster session should be mentioned.

A **project brochure** in Ukrainian and English will be produced to raise awareness about the project and inform the road research community and end users about the project all around Europe through FEHRL's network of road research centres.

Regular **project newsletters (5 in total)** were produced to give information about the development of the project and to disseminate scientific information to project partners, FEHRL institutes and stakeholders.

Selected research results achieved at DNDI not yet published in English will be **translated** into English and will be **presented** at workshops and conferences and **published** on the project website, on local websites and in national professional periodicals such as a yearly collection of scientific articles “Roads and Bridges”, monthly professional periodicals “Road Branch” and “Roadworker”, etc. to disseminate knowledge accumulated at DNDI but not communicated because of lack of communication channels and/or proficiency in English.

Exploitation results

The outcomes of INCRIS project – the increased knowledge of DNDI research staff about the recent world-wide road research innovations, higher ability in road research management, further developed long-term Ukrainian road research strategy, etc. – can be readily exploited directly by the higher level road research activities in Ukraine, mainly in DNDI research institute, and indirectly in the improvement of Ukrainian transport infrastructure due to the higher quality supporting research works.

Plans for exploitation

As R&D Strategy developed during INCRIS project Implementation can be considered as the key achievement, a road map for the exploitation could be established using the activities and deadlines in Deliverable 3.5 “Short Term Action Plan”. Among others, the professional documents translated into Ukrainian during INCRIS project could be utilized in various areas of road sector.

Road map for exploitation of the key result (R&D strategy): Short Term Action Plan for R&D strategy implementation

Recom m. No.	Activity Description	Responsibility	Timetable	Comments
I	Multi-Annual R&D Budget - Extent & Sustainability	UKRAVTODOR	Continuously	
II	Financing R&D providing services to private sector	DNDI	5 years	
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IV	English Courses Program	DNDI	1 year	
V	Human Resources Development Plan	DNDI	1.5 years	
VI	Informatics Unit	DNDI	1 year	
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VIII	Implementation of Research Project Tendering System	UKRAVTODOR	1 year	
IX	Participation in European/International Research Programmes/Projects	DNDI	1 year +	
X	Quantifying the contribution of the Long-Term Research Programme	DNDI	1 year +	
XI	Follow-Up on STAP implementation	UKRAVTODOR + DNDI	Annually	

Conclusions

In conclusion, it should be noted that the following aims of cooperation project INCRIS have been successfully reached:

- Opportunity to meet researchers from other countries.
- Opportunity to visit research laboratories across Europe.
- Identification of fields of cooperation.
- Dissemination of research results made possible.
- Project management skills enhanced.
- Opportunity to work on other EC projects during secondment.
- Development of new R&D research strategy.

The process of project implementation was described by the INCRIS partners as follows:

- The partners have been committed to the project.
- The project has achieved its objectives.
- DNDI have been given the opportunity to take part and lead an EC project.
- Positive impact on and prestige for the institute was produced.

Speaking about the success of INCRIS project, it is necessary to emphasize its high effectiveness. DNDI initiated several concrete steps towards achieving the goal of improved road research, aligned with the Institute's evolving strategy:

1. The communication of DNDI institute with the European partners (through FEHRL, project group, etc.) has improved much since the beginning of the project.

2. There is a high level of involvement of DNDI staff in INCRIS initiatives, especially of the young professionals, including active participation at workshops, discussions, etc. The participants express high extent of “thirst” for new knowledge and practices.
3. There is an active participation of DNDI in the recent call(s) of HORIZON 2020. DNDI participated in 6 consortia for research proposals submitted in the frame of HORIZON 2020 and considers participation in several additional projects (e.g. CEDR calls (Transnational research program) and Marie Skłodowska-Curie actions). This step specifically, can be considered as a swift realisation of one of the concrete recommendations in the STAP.

On the other hand, there is a strong consensus among the partners that much work has to be done yet and it is important to continue in common effort several initiatives that had started during INCRIS. Here are some of the examples, as they emanate from the Short-Term Action Plan document:

1. Guidance in the process of modernization and new acquisition of lab and testing equipment, compatible with the EN requirements.
2. Assistance in establishment of Ukrainian Road Research association, which would bring together engineers and professionals from the road and transport infrastructure sectors and associate bodies from abroad.
3. Help in distribution and dissemination of knowledge on road research in general, and European research in particular (e.g. help in establishment of information services unit and distribution of road research digest).

Address of project public website and relevant contact details

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