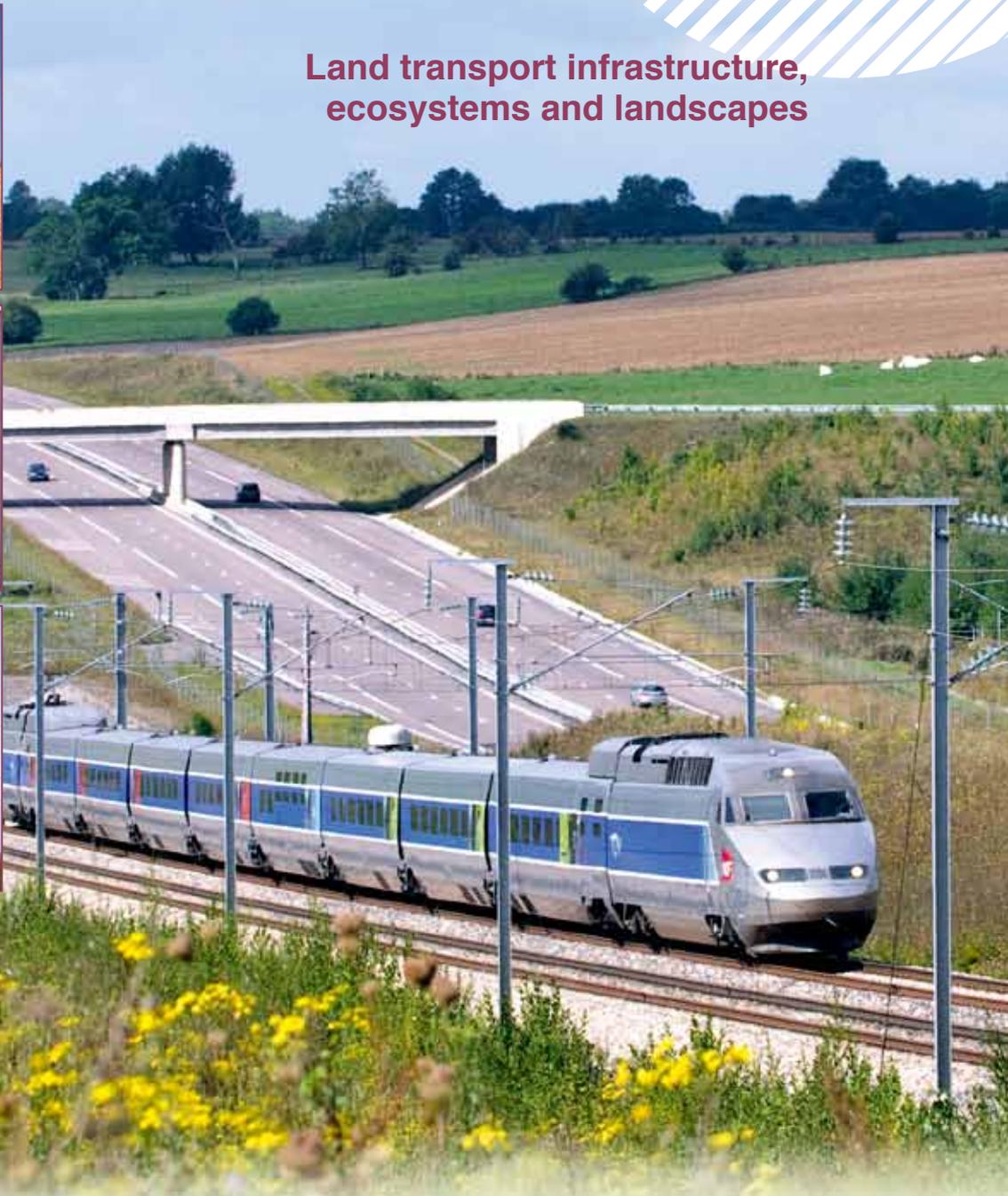


Research Programme ITTECOP

Land transport infrastructure,
ecosystems and landscapes



ittecop.fr



Programme • **ITTECOP**
Land Transport Infrastructure, Ecosystems and Landscapes



Arnaud Bouissou/MEDDE-MLET

VNF

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ITTECOP Research Focuses



Since its creation in 2008, ITTECOP has financed over 30 research projects and has backed 20 projects resulting from call for operational proposals (Restoration of ecological continuities on existing transport infrastructures and Experimentation of compensatory measures). Centered on the relationships between landscapes, ecosystems and infrastructures, these projects have several research focuses, among which:

Territories and projects

How are new landscape-related constraints and new challenges in local administrations integrated in territorial projects? What are the consequences of technical and economical choices made in specific physical, political and societal conditions? How and why should stakeholders be involved in the definition of a territorial project?

Ecosystems and landscapes

What are the interactions and retroactions at play between infrastructures and human and natural habitats? What conditions are necessary for viable interactions between LTIs, landscapes and ecosystems? How can infrastructure contribute to ecological connectivities that are at the heart of green and blue belt frameworks?

Prospective and innovation

How can prospective analysis help to integrate infrastructures in its local context and to evaluate their degree of reversibility? What are the prospects for LTIs in an evolving ecological, social and political context? How can LTIs be adapted to strengthening ecological constraints?



Dissemination Tools for Shared Research

Webdocumentary
Design : Caroline Tric,
Archipel&co

In addition to supporting researchers at an international level through Horizon 2020 or the IENE, and supporting young researchers in collaboration with the IDRRIM, ITTECOP also seeks to develop several tools to foster the dissemination of funded or associated projects, thus ensuring the largest possible transfer of scientific knowledge to both public policy stakeholders and practitioners.

ITTECOP's website: ittecop.fr

Regularly updated to keep up with the evolution of the programme and projects, the website is the privileged place for information-sharing and exchanges: between research teams, members of the Scientific Board or Steering Committee, and for anyone interested in the programme. Final reports and summaries of research projects are available for download.

The Webdocumentary: ittecop.fr/webdoc4-3

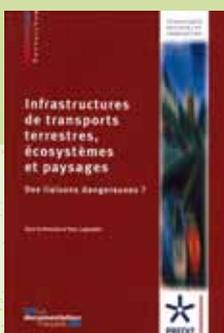
Didactic and interactive, it proposes to discover the projects and the programme through thematic or territorial focuses, thanks to videos, interviews and simplified access to launched actions.

The Newsletter

With over 900 individual subscribers and counting, the ITTECOP newsletter is released twice a year and is available on the ITTECOP website dedicated to the programme. It reviews highlights and forthcoming events. Any news related to topics of the programme is welcome and can be relayed through the newsletter (events, PhD thesis defenses, publications, etc.).

The book

«Infrastructures de transports terrestres, écosystèmes et paysages – Des liaisons dangereuses ?» (Land Transport Infrastructures, Ecosystems and Landscapes - Dangerous Liaisons?) was published in 2013. It seeks to transfer the knowledge acquired on the topic and to initiate dialogue between researchers, public policy officials and operational stakeholders.



The Programme Governance

Two complementary bodies contribute to the programme governance

The **Steering Committee** defines the strategic orientations of the programme by expressing the needs of operational managers. It sets research priorities and contributes to the implementation of facilitation and dissemination activities. Chaired by Philippe COURTIER, head of research at the MEDDE Research and Innovation Department, the Steering Committee includes representatives of the MEDDE, and of public and private structures:

- MEDDE – French Ministry for Ecology, sustainable Development and Energy
- ADEME - French Environment and Energy Management Agency
- FRB – Foundation for Research on Biodiversity
- CEREMA – Expertise Center for Risks, the Environment, Mobility and Spatial Planning
- RFF – Réseau Ferré de France
- VNF – Voies Navigables de France
- RTE - Réseau de transports d'électricité
- ASFA – Association of the French Motorway operators
- CDC Biodiversité - Caisse des Dépôts et Consignations biodiversité
- SETEC – Engineering firm
- Chairman of the Scientific Board of the Programme

The **Scientific Board** guarantees the scientific quality of the program. It sets the programme's scientific orientations, prepares the call for research proposals, assesses the proposals and research reports and launches programme facilitation and dissemination activities. Chaired by Bruno VILLALBA, political scientist of the environment at AgroParisTech, the Scientific Board includes multidisciplinary scientific figures:

- AUBRY Pascal - École nationale supérieure du paysage Versailles Marseille
- BONIN Sophie - École nationale supérieure du paysage Versailles Marseille
- DAVASSE Bernard - École nationale supérieure d'architecture et du paysage de Bordeaux - CEPAGE
- DELBAERE Denis - Landscaper ENSAPL LACTH
- GASTINEAU Pascal - Environmental economist - IFSTTAR
- GUTTINGER Philippe - Université Paris 10 UFR Droit et Science Politique
- HAY Julien - Environmental economist - Université de Brest
- LE LAY Yves-François - École nationale supérieure de Lyon
- LUGINBÜHL Yves - CNRS LADYSS Université Paris 1
- CLERGEAU Philippe – MNHN - UMR 7204 – Département Ecologie et Gestion de la Biodiversité
- MARTY Pascal - École nationale supérieure de Lyon
- TABACCHI Éric - Ecolab CNRS UMR 5245
- RANDOIN Bernard - Ministry of Culture DGP subdirector of archeology
- RAYMOND Richard - CNRS LADYSS

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ITTECOP in the networks

CILB: the Club of Linear Infrastructures and Biodiversity is an informal association seeking to deepen the common involvement of independent businesses for biodiversity.

FRB: the Foundation for Research on Biodiversity brings together over 110 structures, non-profit structures, businesses, practitioners or local authorities, around the common objective of promoting research and innovation.
fondationbiodiversite.fr

IDRRIM: the Institute of Roads, Streets and Infrastructures for Mobility brings together all the public and private stakeholders involved with mobility infrastructures and urban areas. idrrim.com

IENE: Infra Eco Network Europe is an European network of experts and institutions involved in the study of phenomena linked to the fragmentation of natural habitats caused by the development of large transport infrastructure networks. iene.info

PREDIT: Programme of Research, Experimentation and Innovation in Land Transport is led by the Ministries in charge of sustainable development, research and industry, the ADEME, the ANR (National Research Agency) and BPIFrance (French Public Investment Bank). predit.prd.fr





Programme • **ITTECOP**
Land-Transport Infrastructures, Ecosystems and Landscapes



Call for Research projet proposals 2012 - 2015

Land transport infrastructure, ecosystems and landscapes

A multi-disciplinary research programme supporting public policy

ITTECOP is a research programme managed by the French Ministry for Ecology, Sustainable Development and Energy (MEDDE) in coordination with the French Environment and Energy Management Agency (ADEME). ITTECOP mainly focuses on land-transport infrastructure (LTI) (encompassing river, rail or road transport) as well as territorial interfaces (such as train stations, ports and airports). This covers spatial and temporal dimensions, regional governance methods and ecological factors. ITTECOP aims to develop an sustainable community (made up of researchers, professionals and members of NGOs) that contributes to original thinking that can be used by public decision-makers when evaluating LTI impacts, especially on landscapes and biodiversity. The 2012-2015 programme builds on experience gained through projects launched since 2008. It also takes into account changes to the institutional context such as the Grenelle environmental forum, Grenelle legislation, the French biodiversity

An essential programme for decision-making

A new call for proposals was launched in 2012 under the direction of Bruno Villalba, chairman of the scientific board, and an environmental policy scientist at Sciences Po Lille. ITTECOP's main focuses were reinforced: encouraging interdisciplinarity, basing research on actual projects in coordination with LTI operators, developing tools to support public decision-making, taking into account the different dimensions of landscapes, sharing knowledge with decision-making networks and taking a prospective approach to global environmental issues. Priority was given to two areas of research:

The first first questions the relation between territories, landscapes and LTI projects. LTI are part of areas that have their own identity (from the historical, landscape and ecological points of view). How do local actors develop territorial project(s) that integrate and create new perspectives for infrastructure?

The second addresses the relation between LTI and landscape dynamics: interactions with ecological and socio-economic systems. How are new landscape constraints (such as biodiversity management and ecosystem functioning) and regional administration issues (including compensation measures and ecological continuity) managed when creating new LTI?

Operational programmes linked to the research programme

To encourage meaningful dialogue between research and practice, ITTECOP has joined forces with two of the MEDDE's operational programmes that aim to:

- 1) rétablissement des continuités écologiques des infrastructures de transport existantes, porté par la direction de l'Eau et de la Biodiversité ;
- 2) Test experimental implementing of off-site "compensatory measures" which would compensate on-site damages to biotopes and/or species. This project is run by the Economy, evaluation and integration of sustainable development Service.



Seven research projects

Seven projects have been selected for funding which explore the idea that new infrastructure has an impact on a territory's future, and therefore should be part of a territorial project that takes into account interactions between human and natural environments. Such impacts must be analysed in line with different geographical and temporal scales (which may be very large, depending on the stakes) and considered from the ecological (i.e. ecosystems, species, etc.), social (i.e. the different players), economic (the different activities affected by infrastructure) and heritage points of view. These projects enable ITTECOP to effectively bring together researchers and operational actors such as LTI operators, politicians and other stakeholders societywide.



Plateformes – Multimodal transport and service centres : Delta 3 - Dourges, Canal Seine Nord Europe, Eterpigny-Barleux (80). Fabrice Raffin, braffin@gmail.com, Université de Picardie Jules Verne (UPJV), Équipe Habiter, AEP (Anthropologie et Écologie du Paysage).

Autres partenaires: Laboratoire EDYSAN (Écologie et Dynamique des Systèmes ANthropisés), UPJV; SEA Europe (Sociologues et Ethnologues Associés); Passeurs (Paysagistes DPLG associés).

D-TRANSECT – Those left behind as a result of the Huveaune Valley crossings: species dispersal, vernacular practices and the mediation of landscapes. Frédéric Pousin, f.pousin@versailles.ecole-paysage.fr, LAREP, École nationale supérieure de paysage de Versailles.

Others partners: CRESSON, École nationale supérieur d'architecture de Grenoble; LPED UMR IRD; Université Aix-Marseille.

ECOFRICH – The ecological and social future of zones – wastelands, housing and cultivated areas – surrounding the Great Stadium of Lille Métropole. An analysis of planned LTI, urban operations and alternative solutions. Alain Lepretre, alain.lepretre@univ-lille1.fr, Université Lille 1 Sciences & Technologies - LGCgE Lille Nord de France – EA4515 - Écologie numérique et écotoxicologie et Bénédicte Lefebvre, benedict.lefebvre@univ-lille1.fr, MESHS, USR 3185.

Others partners: CLERSE, axe Développement durable et Culture Patrimoine Média; LAVUE, Architecture Urbanisme et Sociétés AUS; CETE Nord-Picardie.

GRAPHAB 2 – Using landscape graphs to evaluate and mitigate the impacts of major transport infrastructure on species. Jean-Christophe Foltête, jean-christophe.foltete@univ-fcomte.fr, ThéMA UMR 6049.

Others partners: Chrono-Environnement UMR 6249 (Besançon); Université des finances et de l'économie du Yunnan (Kunming); Lehna UMR 5023 (Lyon); LIRIS UMR 5205 (Lyon); Écosphère; RFF; DREAL de Franche-Comté; ONF.

IMPACT – LTI and landscape modelling as part of an ongoing appraisal of regional impacts (IMPACT). Éric Barbe, eric.barbe@teledetection.fr, Irstea UMR Tetis. Others partners: Région Languedoc-Roussillon; DREAL Languedoc-Roussillon; Conservatoire des espaces naturels Languedoc-Roussillon; Cogard; Chambre d'agriculture du Gard; INEXIA; RFF; Agence d'urbanisme de Nîmes Métropole, CETE Méditerranée.

Jumelage-ITT – Evaluating the effects of dual LTI on how the region functions and is viewed. Michel Deshaies, michel.deshaies@univ-nancy2.fr, université de Nancy 2, département de Géographie.

Others partners: LAE UMR 1121; TRIANGLE UMR CNRS 5206; CETE de l'Est; CETE de Lyon, CETE Méditerranée.

NATURE-ROUTE – Nature alongside roads – 2. Grégoire Chelkoff, gregoire.chelkoff@grenoble.archi.fr, et Magali Paris, parismagali@yahoo.fr, Cresson; École nationale supérieure d'architecture de Grenoble.

Others partners: CETE Île-de-France; CETE Nord-Picardie; UMR Environnement et Grandes Cultures de Agroparistech; SETRA; CERTU; foreign research teams: Permacouture Institute (San Francisco-États-Unis) and the Atelier de Arquitectura (Lisbonne-Portugal).

Contacts

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Programme • **ITTECOP**
Land Transport Infrastructure, Ecosystems and Landscapes



Call for Research project proposals 2014 - 2017

Linear transport infrastructure, biodiversity and landscape : an original partnership

The 2014 ITTECOP (Land transport infrastructure, ecosystems and landscapes) call for research project proposals was initiated thanks to the alliance of the Linear Infrastructure and Biodiversity Club (CILB), the French Ministry of Ecology (MEDDE) and the Foundation for Research on Biodiversity (FRB). It is an opportunity to reaffirm the importance of coordinating research and action in relation to linear transport infrastructure of people, goods and

energy (also called LTI), with biodiversity (ecosystem dynamics, synergies between LTI of different types, etc). This shared commitment aims to make research available as a technical and critical tool for public policies and project developers (improvement and transfer of knowledge to operational stakeholders, developers and decision-makers).

Partners of the call for proposals



CILB. An informal group of organizations created by the signing of its June 2011 founding charter, the Club of Linear Infrastructure and Biodiversity (CILB) seeks to deepen businesses' commitment towards biodiversity. Among its members, RFF, VNF, RTE, GRTgaz, TIGF and ERDF, are engaging their resources in the current call for proposals.



ITTECOP. ITTECOP (Infrastructures de Transports Terrestres, ÉCOsystèmes et Paysages or Land Transport Infrastructure, Ecosystems and Landscapes) is an incentive-based research programme led by the French Ministry of Ecology (MEDDE), with the support of the French Environment and Energy Management Agency (ADEME). It was created in 2008 under the framework of the first National Strategy for Biodiversity, and in close association with the Predit 4 (Land-Transport Research and Innovation Program) ittecop.fr



FRB. The Foundation for Research on Biodiversity was created in 2008 by the Ministries of Research and Ecology and by eight public research institutions (BRGM, CIRAD, CNRS, IFREMER, INRA, IRD, IRSTEA and MNHN). It is a convergence point of different scientific and operational stakeholders working on biodiversity. Over 110 organizations, non-profit groups, businesses, developers or local authorities have joined the FRB so far around the common objective of promoting research and innovation for biodiversity. fondationbiodiversite.fr

A variety of projects

Research projects

Contained within a 3 year time-frame, (fundamental or applied) research projects aim at answering scientific questions through multidisciplinary approaches and a joint review of linear infrastructure of different kinds.

Exploratory projects

Of a maximum duration of one year, exploratory projects conduct prospective analyses for emerging, controversial or fluctuating issues, both among operational actors and in fundamental research. They could potentially evolve into larger research projects.

A systematic review

The wealth of existing literature regarding LTI needs to be synthesized in order to tap its full potential. The so-called "systematic review" method thus assesses the quantity and quality (trustworthiness) of all the available knowledge, in order to draw unbiased and clear conclusions.



Arnaud Bouissou/MEDDE-MLET



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BIOTOPE

16 projects supported between 2014 and 2017

Research projects

CIRFE-CUMUL – Multiple linear land transport infrastructure and ecological functional relationships • Sylvain MOULHERAT - TerrOïko

COMPILSA – Compensation and linear infrastructure: strategies and scenarios for action • Denis COUVET - French National Museum of Natural History, Center for Ecology and Conservation Sciences (UMR 7204)

DYNARP – The dynamics and management of Japanese knotweed from a landscape perspective: impacts and observations • André EVETTE - Irstea Grenoble

INÉDIT – Incorporating ecology and biodiversity into public decision-making on transport infrastructure • Cécile BLATRIX - AgroParisTech

POLLINEAIRE – Using verges in land transport infrastructure for the preservation and dispersal of wild pollinators • Denis FRANÇOIS - IFSTTAR

RENATU – Analysis of renaturation processes in dense urban areas in connection with urban linear transport infrastructure: the Case of the Greater Paris Metropolis • Pierre PECH - UMR – LGP 8591 Laboratory of Physical Geography

SYNERGIE – Network synergies : evaluating RTE's and RFF's linear infrastructure verges' contribution to ecological continuities • Magalie FRANCHOMME - Université Lille 1

TGB – Between grey and blue belts : mutual impacts of linear land transport infrastructure and waterway corridors on the structure and dynamics of plant biodiversity • Éric TABACCHI - CNRS, Université Toulouse III, UMR ECOLAB

Exploratory projects

ANIMAL-ILTe – Using necrophagous arthropods as indicators of animal mortality connected with linear transport infrastructure • Damien CHARABIDZE - Université Lille 2 – Forensic taphonomy unit

INFRALIN-DYNPOP – The population dynamics of fauna in areas bordering linear land transport infrastructure • Éric GUINARD CEREMA DTer SO

IRCC – Cultivated road-field interfaces : does the adaptive management of roadside verges create self-propagation problems in cultivated fields? • Francesca DI PIETRO – CNRS, Université de Tours – UMR 73 24 CITERES

PEP – Combining landscaping practices and ecological knowledge to implement a regional biodiversity project : the example of areas covered by linear transport infrastructure and their expansion • Sylvain MORIN - National Superior School of Nature and Landscape (École Nationale Supérieure de la Nature et du Paysage, ENSNP)

RHIZU – Managing heavy runoff around a rail network to help create wet zones with ecological potential • Pascal BREIL - IRSTEA

SERV-ECO – Can evaluating the ecosystem services of green verges in linear transport infrastructure help when developing biodiversity measures that are adapted to project management budget constraints and social uses? • Dorothee LABARRAQUE - Egis Structures and Environment

SCOP-SAGNE – Correcting disruptions to water flows supplying wet zones: current knowledge and practices • Jacques THOMAS - Scop SAGNE

SYSTEMATIC REVIEW

COHNECS-IT – Longitudinal connectivity and potential of verges as habitats in terms of their nature, species and context : a systematic review of transport infrastructure • Romain SORDELLO - National Museum of Natural History

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