Findings Report
October 2015

Action WP6A29:
Integrated Feasibility Assessment:
Developing the Saar-Moselle tram-train network and territorial benefits
Sustainable transport for North-West Europe’s periphery

Sintropher is a five-year €23m transnational cooperation project with the aim of enhancing local and regional transport provision to, from and within five peripheral regions in North-West Europe.

INTERREG IVB

INTERREG IVB North-West Europe is a financial instrument of the European Union’s Cohesion Policy. It funds projects which support transnational cooperation.
Sintropher Project

FINDINGS REPORT

Feasibility studies for the extension of the cross-border public transport network in the Saar-Moselle Metropolitan area

Part 1: Saarbrücken - Forbach link
Part 2: small loop
Part 3b: large loop
Part 4: Biogas Benchmark

Partner: EGTC Eurodistrict of Saar-Moselle
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Introduction

This Findings Report describes the summary findings from technical and economic feasibility studies commissioned by Sintropher project partner Eurodistrict Saar-Moselle (an EGTC - European Grouping for Territorial Co-operation) as part of their contribution to the Sintropher transport project funded by the EU’s North West Europe transnational cooperation programme under INTERREG IVB.

The study reports on the action WP6A29 “Feasibility studies for the extension of the cross-border public transport network in the Saar-Moselle Metropolitan area”. This is one of the five demonstration regions seeking to test and demonstrate exploitation of recent low-cost technology developments for LRT (tram-train and tram-based systems), and at the same time demonstrate how investment in these innovative transport links can help unlock economic development and regeneration benefits, and how better integration with territorial planning can help capture these benefits.

Part 1 provides the background and context to the work, and how this fits in to the overall work of Sintropher, while Part 2 presents the findings and conclusions. Part 3 sets out the next steps for the Eurodistrict in order to utilise the results. Part 4 highlights the wider transnational relevance of these findings in relation to knowledge transfer within the Sintropher Project Partnership and wider target audiences. The main audiences are (a) decision-makers and politicians at regional, national and EU levels; (b) Transport agencies and operators; (c) Practitioners in transport, regional development, and planning across North-West Europe and the EU; and (d) Professional organisations and their members, managers, consultants and technical experts.

Part 5 gives contact details and links to the Eurodistrict’s main Reports, which provides more detail (in French and German). Part 6 summarises the nature and content of the overall Sintropher project.
Part 1
Background and objectives

This Findings Report is about one of the Actions undertaken for the SINTROPHER project funded under the INTERREG IVB North West Europe programme - part of the project extension work implemented in 2014/2015.

The Sintropher project context

The central objective of SINTROPHER has been to use innovative transport links to connect peripheral regions of NWE with the core European transport network of high-speed trains, via effective interchange hubs.

Results from the initial project in 2009-2013, covering pilot investments and actions in 5 regions in five countries (mainly feasibility and marketing assessments - see part 5 What is Sintropher) show that weaker cities/regions are not receiving the investment because they cannot demonstrate adequate economic returns, mainly because current appraisal approaches do not adequately take account of wider potential regeneration and growth benefits. It is in the weaker cities and regions of NWE that the case for transport investment is very important, alongside wider policy initiatives, for economic growth; yet perversely difficult to make through the current appraisal process as the 'user benefits' and 'wider economic benefits', as presently calculated, appear too low. The problem has been exacerbated in the bleak fiscal climate following the 2008 crisis, which has led to delays and cuts in public expenditure programmes.

So three key topics for further work in a Sintropher project extension 2014-2015 were identified:

Low-cost technologies and new service patterns for transport links: Test and demonstrate the innovative low-cost solutions examined in Sintropher, in different city/regional contexts, including new developments in technical solutions and radical improvements in service patterns, bringing major enhancements in accessibility and increased patronage. Demonstrate how lower costs can transform the business case for investment in these transport links.

Capturing the wider urban and economic benefits of innovative transport links: Strengthen and demonstrate a much more proactive approach to investment in these innovative transport links as part of a positive integrated territorial strategy for the city/region e.g. master plans or “corridor” plans. There is a parallel need to develop a new Framework for project development and decision-making for these links (including a practical operational decision support tool) in order to better measure and take account of wider city/region regeneration and growth benefits.

Innovative financing of transport investments: demonstrate new ways to assemble finance for investment in innovative transport links, especially in the current period of economic austerity and cuts in public expenditure.
These topics have been addressed in 5 further regional test-cases: Saar-Moselle (France-Germany) Fylde Coast (UK) North Hesse/Kassel (Germany) West Flanders (Belgium) and Arnhem-Nijmegen (Netherlands): use 5 regional test cases to test and demonstrate a new approach to exploitation of recent low-cost technology developments for LRT (tram-train and tram-based systems) for new/upgraded transport links in 5 peripheral European regions). In parallel, develop a series of cases, to demonstrate how investment in these innovative transport links can help unlock economic development and regeneration benefits, and how better integration with territorial planning can help capture these benefits.

**Saar-Moselle - objectives**

The work in Saar-Moselle focused mainly on the first two topics. The specific objectives were:

- Technical and economic feasibility assessment of low-cost options to extend the region’s transport network including tram-train and BRT, to enhance passenger service in this cross-border old-industrial region, from French and German communes to the employment opportunities in Saarbrücken area.
- Also assess the opportunity to exit innovative technologies for tram and bus, such as bio-gas and battery-cells to enable operation on non-pelletride routes.
- In parallel, assess the socio-economic and urban regeneration effects of the options, to demonstrate how investment in these innovative transport links can help unlock economic development and regeneration benefits. This would act as stimulus for a more integrated territorial plan.

**The Saar-Moselle context**

The Saar-Moselle Eurodistrict is an EGTC governed by French law made up of the Urban Community of Saarbrücken and 7 French inter-communalities in Moselle-East. It covers an area of 1,400 km², and has around 650,000 inhabitants spread over 170 communes.

In the Saar-Moselle area, the local and intercommunal authorities, just like the inhabitants of the border area, are linked by a common history and linguistic roots. Saar-Moselle is a region marked by permanent cross-border exchange: many German companies are based on the other side of the border and vice versa. These strong economic links and interpenetration are also at work in the population: in addition to cross-border workers who cross the border every day (especially from France to Germany), the local populations visit the neighbouring country for leisure activities, shopping or even for studying and training.
Economically speaking, the area is undergoing a complete restructuration, following the closure of the coal mines and the end of heavy industry. In Moselle-East in particular, the unemployment rate is very high (between 15 and 20%). It particularly affects young people and workers with little training. In Saarland, the unemployment rate is around 7%. Despite everything, Saarland is at the back of the pack economically when it is compared with the other German Länder.

The social consequences are palpable: deindustrialisation and the end of a paternalistic system in France have led to a loss of bearings and an impoverishment of the population. The number of inhabitants in Moselle-East is declining, with young graduates leaving the region. In Saarland, a demographic change is in the offing: Saarland currently has 1 million inhabitants. By 2050, it will have lost one quarter of its population.

It was in these circumstances, and in order to face up to the coming changes together that the Saar-Moselle Eurodistrict was created in 2010. In fact, although belonging to different countries, the challenges which our territories face are the same. The Saar-Moselle Eurodistrict is implementing projects within the fields of competence of its partners. One of these is transport, and most particularly public transport.

**The Saar-Moselle feasibility and impact studies**

A stage by stage process has been implemented in this field: first of all, a study was conducted to make an inventory of transport in the Saar-Moselle Metropolitan area. A few significant figures: almost 38,000 people cross the border every day, but less than 1% of them use public transport. However 15% of them would be ready to use public transport for their journey if it was more advanced. The main flows with the
corresponding corridors were then identified, with an action programme to improve public transport throughout the Saar-Moselle Metropolitan area. One of these actions was the creation of a tram-train between Saarbrücken (in Germany) and Forbach (in France).

Following a brief feasibility study and a consultation with the different partners in the project, in particular to fix the budget, it was decided to launch a public tender for an in-depth feasibility study. It was during this period of time (end of 2013-beginning of 2014) and during deliberations on setting up the project, that the in-depth feasibility study was incorporated into the Sintropher project, as part of its extension.

It was then agreed to supplement the feasibility study with a study measuring the socio-economic and urban regeneration effects of the new specific site public transport line.

All the provisions related to the partners involved in the project, their role, the finance plan and the co-funding requested, the organisation of the work, etc. were formalised via different partner agreements.

Following these steps to consolidate the project, the procurement contract for an in-depth feasibility study for the extension of the specific site cross-border public transport network in the Metropolitan area of Saar-Moselle was published. This study is divided into 4 parts:

**Part 1:**

This part concerns the Forbach-Saarbrücken line. This will consist in identifying the most suitable mode of transport (tram-train, high quality service bus or other), studying the alternative routes, without use of Deutsche Bahn or SNCF railway lines but with use of existing railway lines privately owned by VFLI or ARBED (these lines were used during the coal mining era) and establishing the overall costs for each solution (works, rolling stock, etc.). The aim is to be able to compare all the options in order to select one at the end of this stage.
Part 2:

Feasibility of a service in the area of Alt-Saarbrücken and the ZF factory (an automobile subcontractor which has almost 10,000 German and French employees). The constraints are particularly high in both cases.

Part 3:

This concerns an extension of the public transport network throughout the entire Saar-Moselle Metropolitan area. Firstly, by creating a small loop which would go from Forbach to Völklingen via Großrosseln, Emmersweiler and Dorf-im-Waardt as far as Saarbrücken. Secondly, a large loop would be created: from Forbach to Béning then westwards (Freyming-Merlebach, Creutzwald) returning through Germany via Überherrn and Wadgassen and finishing at Völklingen. This large loop would also connect to Sarreguemines, where a tram-train has run for many years between Sarreguemines and Saarbrücken.
Part 3a: Small loop
Part 3b: Large loop
Part 4:
This concerns the creation of a benchmark for the fuelling of the new public transport network by biogas or electricity generated by the processing of biogas. In fact, in Moselle-East and in cooperation with Saar neighbours, household waste is used to produce biogas and it is now a question of integrating these two complementary areas of transport and waste management by developing an innovative approach.
Part 2  
Findings of the studies  

In-depth feasibility study on the extension of the specific site  
cross-border public transport network in the Saar-Moselle  
Metropolitan area  

The Luxembourg agency of the design office Drees & Sommer carried out this in-depth feasibility study. It decided to deal with parts 1 (Saarbrücken - Forbach service) and 2 (additional service for the area of Alt-Saarbrücken and the ZF factory) simultaneously.  

Parts 1 and 2: Saarbrücken- Forbach service and additional services  

The issue here was to propose a route for a tram-train between Saarbrücken and Forbach, using the ARBED and VFLI private lines, to define the necessary works and infrastructure costs, and then to present the same facts (route, works and costs) for a high quality service bus.  

Tram-train option  

First of all it was necessary to identify a route for the tram-train. A total of 48 options were studied.
The route was relatively easy to determine for the French section (only two routes were considered; only one crossing an urban area which was satisfactory in terms of public transport services).

Specific site public transport route, French section

The decision on the route for the City of Saarbrücken was more difficult. In particular, the question of crossing the Saar (the river flowing through the City of Saarbrücken) to reach the railway station was a stumbling block. Each proposal was studied and, through the establishment of discriminatory criteria combined with the informed choices of the members of the technical committee monitoring the study, 2 routes were considered for the Saarbrücken service.

**The Grundvariante (basic route) partly follows existing railway lines and uses ARBED’s private track as far as is technically possible.** The Saar is crossed by the Achterbrücke rail bridge. However, the tracks on this bridge will have to be reorganised in accordance with the following diagram.
The Auswahlvariante (proposed route) was put forward by the design office. It has the advantage of serving the ZF factory and the entire “Alt-Saarbrücken” district, as wished, and therefore reaches many more potential passengers. On the other hand, there are numerous conflict points. These conflict points in the German section are identified on the map below:
For example, conflict point n° 5 is due to the very significant difference in level (more than 30 m) between the arrival point of the tram-train lines below and the embankment which supports the existing railway lines and where a junction has to be made. The proposed solution is to construct a series of bridges to overcome the difficulty.

Conflict point n°7 is linked to a radius of gyration and space problem in the existing streets. In order to get round the problem, the Saarbahn depot will have to be redeveloped in order to allow the tram-train line to pass through, if applicable.

One of the most problematic conflict points is point n°9: the Saar is crossed by the Wilhelm-Heinrich Brücke bridge, a bridge with a particular structure and a resulting state of deterioration, which would only support, in the best case scenario, the passage of one tram-train line or one high quality service bus line. Insofar as this bridge would have to be crossed by the tram-train, it will be necessary to consider either a costly renovation or even to destroy the bridge and rebuild it.
Conflict point n° 9:
Solution considered for crossing the Saar via the Wilhelm-Heinrich Brücke bridge

High quality service bus option
A high quality service bus can only cross via the “Ausgewählte Variante” (selected variant) route, but it is not possible to have separate tracks all along the route. These shared use areas are therefore a major issue in terms of planning but also of urban development, in so far as they allow the use of urban public space to be rethought. On the other hand, even in the case of a high quality service bus, the conflict points identified for the tram-train option remain, even though the solutions proposed to overcome them are less costly.

Financial analysis
Therefore, after an in-depth technical analysis of the selected routes and the carrying out of an exhaustive financial analysis, the costs for the two tram train routes and the high quality service bus option can be summarised in the following table:

Grundvariante for tram-train:

<table>
<thead>
<tr>
<th>Section</th>
<th>Overall costs (in millions of Euros)</th>
<th>Costs per kilometre (in millions of Euros)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forbach</td>
<td>57.6</td>
<td>13.2</td>
</tr>
<tr>
<td>Saarbrücken, shared section</td>
<td>3.0</td>
<td>11.6</td>
</tr>
<tr>
<td>Saarbrücken, remaining sections</td>
<td>72.1</td>
<td>16.8</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>132.7</strong></td>
<td><strong>14.9</strong></td>
</tr>
</tbody>
</table>
### Auswahlvariante for tram-train:

<table>
<thead>
<tr>
<th>Section</th>
<th>Overall costs (in millions of Euros)</th>
<th>Costs per kilometre (in millions of euros)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forbach</td>
<td>57.6</td>
<td>13.2</td>
</tr>
<tr>
<td>Saarbrücken, shared section</td>
<td>3.0</td>
<td>11.6</td>
</tr>
<tr>
<td>Saarbrücken, remaining sections</td>
<td>109.8</td>
<td>17.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>170.4</td>
<td>15.9</td>
</tr>
</tbody>
</table>

### Auswahlvariante for high quality service bus:

<table>
<thead>
<tr>
<th>Section</th>
<th>Overall costs (in millions of Euros)</th>
<th>Costs per kilometre (in millions of Euros)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forbach</td>
<td>34.6</td>
<td>7.9</td>
</tr>
<tr>
<td>Saarbrücken, shared section</td>
<td>1.8</td>
<td>7.0</td>
</tr>
<tr>
<td>Saarbrücken, remaining sections</td>
<td>67.6</td>
<td>11.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>102.8</td>
<td>9.6</td>
</tr>
</tbody>
</table>

These figures were provided by the design office, without recommending a particular solution as the consultants considered that the choices were a political decision to be made by the partners.
Part 3: Extension of the specific site public transport network in the Saar-Moselle Metropolitan area via small and large loops

In the case of the small and large loops, the feasibility study is briefer. Costs are given in orders of magnitude and an in-depth feasibility study would be likely to define them more precisely. In view of the length of the route envisaged, the design office divided the itinerary into different sections, which it analysed separately. The specifications requested that use of existing private tracks should be prioritised; something which the service providers complied with as far as was technically possible. The different conflict points were identified with, as far as possible, proposed solutions in accordance with the situation (adaptation of the route, construction of engineered structures, use of SNCF and DB lines, etc.).

It should however be noted that only one tram-train is possible in the case of an extension of the specific site public transport network in the Saar-Moselle Metropolitan area, for both the small and large loops: The high quality service bus is not an option.

Small loop:

Route for the small loop

The larger problems are located in n° III and n° IV sections. Because of problems linked to the topography of the terrain and the physiognomy of the Großrosseln urban area, the possibilities are limited and the costs linked to the measures to be taken (construction of a bridge, renovation of another bridge, various support works, etc.) are very high. The infrastructure costs can be itemised as follows for the small loop as a whole:
<table>
<thead>
<tr>
<th>Section</th>
<th>Length of section (in m)</th>
<th>Construction costs (in millions of Euros)</th>
<th>Construction costs per km (in millions of Euros/km)</th>
<th>Level of difficulty of the work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1</td>
<td>4,460</td>
<td>42.4</td>
<td>9.5</td>
<td>High</td>
</tr>
<tr>
<td>Section II</td>
<td>3,010</td>
<td>17.7</td>
<td>5.9</td>
<td>Average</td>
</tr>
<tr>
<td>Section III.1</td>
<td>1,730</td>
<td>Not determined</td>
<td></td>
<td>No possibility of continuing the route: variant excluded</td>
</tr>
<tr>
<td>Section III.2a</td>
<td>3,500</td>
<td>42.9</td>
<td>12.3</td>
<td>High</td>
</tr>
<tr>
<td>Section III.2b</td>
<td>3,480</td>
<td>Not determined</td>
<td></td>
<td>Significant problem with the radius of gyration at the roundabout</td>
</tr>
<tr>
<td>Section IV.1a</td>
<td>1,890</td>
<td>Not determined</td>
<td></td>
<td>Exorbitant costs: variant excluded</td>
</tr>
<tr>
<td>Section IV.1b</td>
<td>1,940</td>
<td>Not determined</td>
<td></td>
<td>Exorbitant costs: variant excluded</td>
</tr>
<tr>
<td>Section IV. 2a</td>
<td>2,100</td>
<td>Not determined</td>
<td></td>
<td>Exorbitant costs: variant excluded</td>
</tr>
<tr>
<td>Section IV.2a</td>
<td>2,070</td>
<td>Not determined</td>
<td></td>
<td>Exorbitant costs: variant excluded</td>
</tr>
<tr>
<td>Section V</td>
<td>4,720</td>
<td>31.7</td>
<td>6.7</td>
<td>Moderate</td>
</tr>
<tr>
<td>Section VI</td>
<td>9,100</td>
<td>9.1</td>
<td>1.0</td>
<td>Low</td>
</tr>
<tr>
<td><strong>TOTAL</strong> (for the sections to be implemented)</td>
<td><strong>24,790</strong></td>
<td><strong>143.8</strong></td>
<td><strong>5.8</strong></td>
<td></td>
</tr>
</tbody>
</table>

It should be noted that these costs are in addition to those connected with the creation of a tram-train between Saarbrücken and Forbach to complete the small loop.
For the large loop, the obstacles are more numerous and the number of variants proposed is therefore greater: in fact, it crosses highly urbanised areas where private tracks have however been dismantled (as in Freyming-Merlebach for example), the only solution being the use of SNCF tracks. The same is true for the approach to the commune of Carling: because of constraints linked to the chemical plant, only the rail tracks managed by RFF would be usable. Consequently, the town of Saint-Avold would not be served by the tram-train.

It should also be noted that infrastructure costs will be very high. It will in fact be necessary to construct or resize many engineered structures, both for the tram-train itself and for the surrounding infrastructures.

Costs for the large loop can be itemised as follows:

<table>
<thead>
<tr>
<th>Section</th>
<th>Length of section (in m)</th>
<th>Construction costs (in millions of Euros)</th>
<th>Construction costs per km (in millions of Euros/km)</th>
<th>Level of difficulty of the work</th>
</tr>
</thead>
<tbody>
<tr>
<td>VII.1</td>
<td>3,795</td>
<td>34.2</td>
<td>9.0</td>
<td>High</td>
</tr>
<tr>
<td>VII.2</td>
<td>5,650</td>
<td>34.3</td>
<td>6.0</td>
<td>Moderate</td>
</tr>
<tr>
<td>VIII</td>
<td>4,290</td>
<td>30.3</td>
<td>7.1</td>
<td>Moderate</td>
</tr>
<tr>
<td>IX</td>
<td>8,580</td>
<td>71.9</td>
<td>8.4</td>
<td>High</td>
</tr>
<tr>
<td>X.1</td>
<td>4,750</td>
<td>45.3</td>
<td>9.5</td>
<td>Moderate</td>
</tr>
<tr>
<td>X.2</td>
<td>5,119</td>
<td>45.6</td>
<td>8.9</td>
<td>Moderate</td>
</tr>
<tr>
<td>XI</td>
<td>19,760</td>
<td>111.0</td>
<td>5.6</td>
<td>Low</td>
</tr>
<tr>
<td>TOTAL</td>
<td>41,175</td>
<td>292.7</td>
<td>7.1</td>
<td></td>
</tr>
</tbody>
</table>
It should be noted that construction costs for a tram-train between Saarbrücken and Forbach are not included in the calculation; the same applies to the costs for the section which is part of the small loop (which will have to be created first).

**Part 4: Benchmark for possibilities for fuelling the new specific site public transport network with biogas or electricity produced by the processing of biogas**

In the Saar-Moselle Metropolitan area, the Sydème (Joint Association for Transport and the Processing of Household Waste in Moselle-East) has developed, in collaboration with its German counterpart EVS (Entsorgungsverband Saar) an innovative system for the collection and recycling of household waste. It produces biogas, amongst other things, from green waste sorted by the local population. The fleet of refuse lorries runs on the biogas which the association produces, as does the Forbus bus, the bus network of the Forbach-Porte de France Conurbation Community.

We thought that it would be useful to have an inventory made of public transport systems using, either biogas, or electricity generated by the processing of biogas as fuel for public transport, in order to explore the possibilities which could be adopted by the specific site public transport project run by the Eurodistrict of Saar-Moselle. This would enable, on the one hand, a certain level of integration of the public transport and waste sectors in the Metropolis and on the other hand would allow the specific site public transport project to be based on a decidedly environmentally friendly approach.

Many buses of different sizes run on biogas. All that is needed for this are adapted service stations. There are several in the Saar-Moselle Eurodistrict area, and there are plans to build new ones.

The real innovation comes from fast-charging systems (ultrafast charge electric buses): an electric bus arrives at a stop; while the passengers are getting on and off, an articulated arm positioned above the stop inserts itself into a socket situated on the roof of the coach, and the bus’s electric battery is recharged in 20 seconds, with enough electricity to reach the next stop, following which the operation is repeated. This technology will be used to fuel the City of Luxembourg’s tram line currently under construction.
The innovative technologies linked to the use of hydrogen and fuel cells are also of definite interest. The Alstom company is currently developing, in collaboration with the German State, a new type of rail vehicle fuelled by hydrogen or fuel cells, in order to be able to run on non-electrified rail tracks while drastically limiting emissions of pollutants and CO2 in comparison with classic diesel locomotives. The new vehicle is currently at the experimentation stage.

These innovative businesses are of particular interest in the case of the specific site public transport network in the Saar-Moselle Metropolitan area, as they are more environmentally friendly and also because they may resolve certain technical problems which generate costs and virtually insurmountable difficulties, with knowledge as it currently stand.

Studies on the socio-economic and urban regeneration effects linked to the creation of a new mode of specific site public transport between Saarbrücken and Forbach

Within the context of the inclusion in the Sintropher project (Interreg IVB), of the “in-depth feasibility study for the extension of the specific site cross-border public transport network in the Saar-Moselle Metropolitan area”, it was necessary to have an additional study carried out to measure the socio-economic and urban regeneration effects engendered by the new public transport line between Saarbrücken and Forbach.

Yet, the socio-economic landscape in the 2 cities reveals contrasting situations. Likewise, the regulatory context in terms of urban planning is fundamentally different in France and Germany. It therefore appeared wise to have two different studies carried out, one for the French section of the route and the other for the German section.

The creation of a new specific site cross-border public transport line has a quantifiable impact in terms of mobility. The aim of the socio-economic and urban regeneration study is to measure the effects of the creation and operation of a new specific site cross-border public transport line in terms of economic activity, trade and habitat, and beyond that, to identify the potential for urban regeneration and development of the public space linked to it.

The issue here is to create a broader perspective so that the cross-border public transport project between Saarbrücken and Forbach is not viewed as a project solely related to the issue of transport and mobility. If the socio-economic aspects and potential in terms of urban regeneration are identified sufficiently early in the project
development process, the various consequences can be anticipated and quantified. This different angle will allow us to weight the costs-advantages analysis and extend the project's field of impact.

In carrying out the study, the two service providers chosen (Sodevam for the French part and GIU for the German part) used rather convergent approaches, and in view of the very different economic, social, urban planning and regulatory situations in France and Germany, each service provider concentrated their work on the relevant components which presented the greatest possibilities for impact.

**Findings for the German side:**

In Germany, only the City of Saarbrücken is concerned by the arrival of the future specific site public transport line. First of all, all the projects and development plans in terms of transport, urban planning, trade, housing etc. were analysed and the elements of each programme relevant for the socio-economic study were listed. When combined with statistical elements provided by experience in similar projects, different trends appeared. The findings presented are best case studies.

The different elements which emerge from this study are the following:

- An increase in the economic attractiveness of the City and in the attractiveness of the university site.
- A better overall image of the cross-border conurbation area, which will become a place characterised by innovative public policies,
- An increase in property prices in the area near the future specific site public transport line (5% on average, up to 12% depending on the case), which will lead to renovation of housing in partly rundown areas and new constructions on urban infill sites.
- The economic effects directly linked to the creation of a new specific site public transport network were quantified at around 450 million Euros (through construction, the installation of new businesses, the creation of services or even public services, etc.).
- The creation of a new specific site public transport network would lead to the creation of around 4,000 direct jobs and around 5,800 indirect jobs in the long term (best case study).

**Potential for job creation**

![Job Creation Chart](image-url)
Areas offering development potential around the route of the future specific site public transport line

On the German side, the main effects of the creation of the new specific site public transport line will be chiefly economic. A certain form of reorganisation of the urban space would also be possible, in particular in the “Alt-Saarbrücken” district with noticeable consequences for the quality of the living environment.
Findings for the French side

The 2 French communes crossed by the route defined for the future specific site public transport line are Stiring-Wendel and Forbach. Initially, an inventory of the current situation was drawn up, using data supplied by SCOT Rosselle\(^1\) and data from Local Development Plans and statistics belonging to the communes.

As the socio-economic situation of Moselle-East (on the French side), is more mixed than in the conurbation area of Saarbrücken (unemployment rate of around 15% of the active population, a continued drop in the population for several years and deindustrialisation), the expected effects linked to the creation of a new mode of specific site public transport are lower.

These effects mainly concern housing: a rise in property prices is expected, as are possibilities for the new construction of developments of the housing estate type, for detached houses or collective housing, thanks to a densification of empty plots and the reclamation of spaces within the area for urbanisation. Renovation of the existing real estate stock will also be prioritised. Therefore, all along the tram line a vision of a family friendly environment is being created, which will attract a more economically dynamic population and thus improve the image of the city.

The urban area along the Rue Nationale could be redesigned, with the possibility of the border commune of Spicheren creating an attractive gateway to the town by redeveloping the area directly adjacent to the border.

In the economic field, the main impetus effect may concern trade, in particular town centre and local trade, which has been in difficulty for several years. On the other hand, as the route of the future specific site public transport line does not pass near the economic zones of the Forbach conurbation area, the effects in terms of the installation of businesses operating in the industrial field, for example, will remain limited. Therefore, the creation of direct and indirect jobs on the French side linked to the new specific site public transport line will be slightly less than 1,000.

\(^1\) Territorial Coherence Scheme for Val de Rosselle
Part 3
Next steps

On 22 September 2015, the service providers presented the findings of their work to the members of the technical committee (technicians) and the steering committee (politicians, appointed from amongst the members of the Saar-Moselle Eurodistrict Assembly). It was then agreed that each design office would present the findings of their study during the next Meeting of the Saar-Moselle Eurodistrict Assembly, on 4 November 2015.

Next, the Saar-Moselle Eurodistrict will take charge of informing all of its members and partners in the studies who would wish to know more about the subject. Participation in the following meetings, amongst others, is planned:

- the findings were presented to the Saarbrücken Urban Community Committee for Regional Development, the Environment and Planning on 30 September 2015,
- on 12 November, the Eurodistrict will take part in a meeting of the Saar Parliament Committee for European Affairs in order to present these studies,
- at the end of November 2015, 2 meetings of the committees in charge of transport and urban development for the City of Saarbrücken will examine the subject.
- on the German side, the EGTC was contacted by many stakeholders who wished to find out about the work which had been done, in particular the Chamber of Commerce, the Saarland Ministry of the Economy and Transport and the VCD (Verkehrs Club Deutschland).
- SCOT Rosselle (responsible for town and country planning in Moselle-East) wishes to organise a special meeting for the presentation of the findings:
- the Conurbation Community of Forbach-Porte de France added an item to the agenda of its next Intercommunal Council meeting in order to discuss the project,
- the Moselle Departmental Council also wishes to be kept informed,
- the different co-funders, in particular the French State via the intermediary of DREAL (Regional Directorate for Development and Housing in Lorraine) and the DDT (Departmental Directorate for the Territories of Moselle) as well as the Region of Lorraine, which is partly responsible for transport provision, wish to receive detailed reports on the studies.

This feasibility study therefore arouses very strong interest on both sides of the border and from stakeholders in very diverse political and economic worlds. They have understood that this project was not simply a proposal in the field of public transport but that it concerned planning and development in the entire cross-border metropolitan area.

In addition to the users and the population concerned, the issues are much broader and important and it was socio-economic and urban regeneration studies which
enabled the overall effects generated by the creation of a new specific site cross border public transport link to be measured. Thus, although formerly certain stakeholders like Saarland did not want to be involved in the project in any way, judging it as superfluous in a difficult financial context, attitudes within the Ministry are evolving towards benevolent neutrality and definite interest.

Likewise, in view of the overall benefits quantified by the studies, the question of funding the project is being posed in different terms: beyond the simple question of financing the construction of a new public transport line in accordance with the classic cost-advantage analysis, clearly unfavourable to the implementation of the project, benefits in the wider sense are offsetting the concept of costs.

Likewise, the change of perspective in the examination of the project is opening up new possibilities for co-funding, no longer solely in the field of transport: the European Investment Bank, INEA, etc.

It is also a question here of continuing the implementation of cross-border projects developed jointly and at a more local level by making use of the right to experiment and search for original and innovative solutions. The specific site public transport project is adapted to local realities: experience leads us to favour the use of existing private rail tracks for the creation of a tram-train, in order to limit costs and prioritise feasibility. This project encourages the restoration and reuse of equipment which would be a burden for public authorities, while improving the public transport situation throughout the Metropolitan area. Deliberations are governed by a mind-set which is focused on the innovative use of what currently exists and on combining projects, in particular via collaboration between public sector players, and the transport and household waste sectors.

Finally, this project has demonstrated the necessity of intensifying cross-border collaboration. Following discussions between the French and German partners on the specific site public transport project, it was observed that a permanent cross-border authority was necessary for better cooperation on this type of study, in the field of transport but also in the fields of urban and regional planning. Thus, the idea of creating the first cross-border urban planning agency within the territory of the Eurodistrict, which was abandoned in 2013, is once more on the agenda. The members of the EGTC will examine this possibility once more, this time with the desire to make it a reality.
Part 4
Wider transnational relevance to the Sintropher partnership and external audiences

In conclusion, the inclusion in Sintropher Plus has allowed the Saar-Moselle Eurodistrict to benefit from co-funding for its project for the extension of the specific site cross-border public transport network in the Saar-Moselle Metropolitan area, but has also provided feedback and perspective, both for the leading partner and the other backers of the project.

For its part, the EGTC allows all Sintropher partners to benefit from its experience in the cross-border sphere as well as that of the tram-train and public transport in general. This exchange has been beneficial for all parties.

As the Eurodistrict project is in its early stages, we hope to be able to continue with the fruitful collaboration initiated within Sintropher.

The following lessons are relevant to other European cities and regions contemplating these kinds of new or extended tram-based links:

Adopting a wider territorial approach

The experience in Saar-Moselle shows how the adoption of a wider approach to investment in new/extended transport links (in this case tram-train) can help unlock economic development and regeneration benefits, and how better integration with territorial planning can help capture these benefits - and in turn strengthen the case for the investment.

Changing stakeholder views

This feasibility study aroused very strong interest on both sides of the border and from stakeholders in very diverse political and economic worlds. They have understood that this project was not simply a proposal in the field of public transport but that it concerned planning and development in the entire cross-border metropolitan area. In addition to the users and the population concerned, the issues are much broader and important and it was socio-economic and urban regeneration studies which enabled the overall effects generated by the creation of a new specific site cross border public transport link to be measured. Thus, although formerly certain stakeholders like Saarland did not want to be involved in the project in any way, judging it as superfluous in a difficult financial context, attitudes within the Ministry are evolving towards benevolent neutrality and definite interest.
A wider basis for financing transport links

In view of the overall benefits quantified by the studies, the question of funding the project is being posed in different terms: beyond the simple question of financing the construction of a new public transport line in accordance with the classic cost-advantage analysis, clearly unfavourable to the implementation of the project, benefits in the wider sense are offsetting the concept of costs.

Likewise, the change of perspective in the examination of the project is opening up new possibilities for co-funding, no longer solely in the field of transport: the European Investment Bank, INEA, etc.

Innovative low cost solutions

These can help the case for investment, by making use of the right to experiment and search for original and innovative solutions. For Saar-Moselle, the specific site public transport project is adapted to local realities: experience leads us to favour the use of existing private rail tracks for the creation of a tram-train, in order to limit costs and prioritise feasibility. This project encourages the restoration and reuse of equipment which would be a burden for public authorities, while improving the public transport situation throughout the Metropolitan area. Deliberations are governed by a mind-set which is focused on the innovative use of what currently exists and on combining projects, in particular via collaboration between public sector players, and the transport and household waste sectors.
Part 5
Further information

Detailed findings - Main Report

This is available from Marie Kiffer, Eurodistrict Saar-Moselle, or online at
www.sintropher.eu/publications/reports

Contact details

Marie Kiffer  
Eurodistrict SaarMoselle  
Talstrasse 16  
D-66119 Saarbrücken

Tél : 0049 (0) 681-506-8017  
Fax : 0049 (0) 681 -506-8020  
Mail : marie.kiffer@saarmoselle.org
Part 6
What is Sintropher?

The Sintropher transport project (Sustainable Integrated Transport Options for Peripheral European Regions) is funded by the EU’s North West Europe transnational cooperation programme under INTERREG IVB.

The overall project aim is to develop sustainable, cost-effective solutions to improve connectivity to, from and within poorly connected regions in North-West Europe. There are four objectives:

- promote possible cost-effective technology-based solutions
- assess the appraisal procedures used by different counties for investment in regional tram systems and improve the development process for a positive business case
- promote high-quality, effective interchange between regional tram systems and regional rail and air hubs
- promote and market the benefits of regional tram-based systems to users and stakeholders

There has been a particular focus on tram-train systems which allow local trams to run on to national rail networks, pioneered in Germany, firstly in Karlsruhe and developed in Kassel, which allow urban tram systems to extend over national rail tracks to serve extensive city regions. The project has also looked at other innovative forms of tram systems such as single-track tramways as well as high-quality transport interchanges that link such systems to major national or transnational rail or air hubs.

The project began in late 2009, with fourteen partner agencies in five EU Member States, and lead partner University College London (UCL): Valenciennes (France); the Fylde Coast (UK); West Flanders (Belgium); North Hesse (Germany); and Arnhem-Nijmegen (Netherlands). Participants include public transport operators, local authorities, regional transport agencies, and universities.

They have worked together on a series of feasibility evaluations, pilot investments and demonstration projects, as well as comparative analyses of EU best practice. The total budget is more than €23m, with funding part-financed by the EU’s INTERREG IVB Programme.

A €1.5m project extension in 2014, covers follow-on work to capitalise on results from the initial project, and added a fifth objective:

- to test technologies for low cost transport links in different territorial contexts, plus integrated territorial corridor plans that help these links unlock wider economic and regeneration benefits; and better recognise these in business cases (this also covered innovative fainting to fund investment cases in such schemes)
This includes two new partners (total now 16) and two extra demonstration regions (total now 7) in West Flanders Brugge-Zeebrugge (Belgium) and Saar-Moselle (a cross-border region France-Germany).

The project officially ends in European funding terms in October 2015 and work will continue by partners beyond this, to capitalise on results and generate impacts in terms of influencing transport and territorial development policies and investment programmes in their regions, and respective national approaches to appraising and deciding investment in such links.

**Contact details - Sintropher**

Colin Osborne  
Project Manager  
Tel: 0044 (0) 203 108 9544  
Mob: 0044 (0) 7796 258078  
[colin.osborne@ucl.ac.uk](mailto:colin.osborne@ucl.ac.uk)

Dr. Robin Hickman  
Project Director/Reader in Transport & City Planning  
Tel: 0044 (0) 203 108 9531  
[r.hickman@ucl.ac.uk](mailto:r.hickman@ucl.ac.uk)

University College London  
Bartlett School of Planning  
Central House, 5th Floor  
14 Upper Woburn Place  
London WC1H 0NN
Partners

Sintropher is coordinated by

In partnership with

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