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**Author(s)**: Stefan Schwillinsky, Lucas Weiss (AustriaTech)

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1 Introduction

This document summarises the activities and outcomes within the act 4.5 Data Manager Center and Creation of an Information Cross-border interactive tool of the ACROSSEE project. Chapter 1 gives a general overview about the project and the assigned task. Chapter 2 illustrates the working process as well as organisational and technical issues and solutions. Chapter 3 presents the conclusion, which includes lessons learned and the provision of recommendations for future work.

1.1 ACROSSEE project

The ACROSSEE project (Accessibility improved at border CROSings for the development of South East Europe), co-financed by the EU Transnational Cooperation Programme “South-East Europe”, 4th Call aims at improving cross border accessibility in South-East Europe and optimizing the high level road and rail networks. It has as core activity the assessment of relevant Border Crossing Points (BCPs) to identify the mix of infrastructural and organizational measures that need to be implemented in order to improve the transport efficiency of the rail and road infrastructure and to ensure economic prosperity by better access to all regions of the South East Europe (SEE) area. This assessment is done by the ACROSSEE transport model. In order to ensure the long term reuse of the collected data and the project’s results, the ACROSSEE project also has the Data Management Center (DMC) as key element which acts as platform for the collection and distribution of data. On the one hand for the ACROSSEE project data and outputs, but on the other hand also as central contact point for relevant (Meta) information and data in terms of border crossing points and transport modelling data. The ACROSSEE Data Management Center shall help to achieve a boost in terms of quantity and quality of cross-border transport data within the South East Europe area, facilitate the improvement and ease of transnational / cross border transport activities (e.g. modelling).
1.2 Task description and goals

The ACROSSEE Data Management Center is a web-based information toolbox to host and promote the exchange of various transport related data like e.g. information on border crossing, border agency procedures in SEE. In the context of ACROSSEE, it was the goal to establish a prototype to demonstrate the benefits and challenges, both technical and organisational. This process includes establishing links to different institutions involved in traffic data and exchanging experiences in order to be able to provide assistance for setting up such a center which allows regular data exchange between countries. It can serve as a basis for the integration of other existing or newly established similar centers in the rest of Europe. In order to achieve this, several steps are necessary. The demand of such a center has to be defined (user needs of different stakeholders like ministries, modellers, data providers and others who want to use the output). It has to be defined what can and will be provided as well as technical and economical requirements. A prototype has to be set up to demonstrate its benefits and within this process the collection of feedback is important. Based on the findings, the results need to be communicated and steps towards the establishment of the center as a regular institution can be made.

The centralized solution has the benefit that it can be a single access point for those involved with transport data and ensure that they have access to the most up-to-date data as well as historical data at a defined quality and format. The provision will not only be limited to certain data, but also enables the hosting of e.g. model data. As the Data Management Center is intended to be operated by public administration it is not in competition with any provider of modelling expertise but rather an additional benefit to all those involved in transport data.

The objective of Act 4.5 Data Manager Center and Creation of an Information Cross-border interactive tool is to develop a prototype platform for transport data and transport model data for the easy access and exchange of data between the ACROSSEE project partners and potentially for interested 3rd
parties. Along with this prototype the required legal, organizational and financial framework will be analysed and results in recommendations for a strategic concept for the creation of a long-term sustainable Data Management Center.

The goal of this center is thus to:

- Ensure easy access to data and, where possible, models to all parties with access privileges
- Reach a consensual agreement on which conditions data may be used among partners and distributed to third parties
- Continuous consolidation of data needed for modelling in the required quality and level of detail
- Establish expertise on different existing models (e.g. TransTools, CUBE)
- Continue communication with similar institutions in other countries
- Support harmonisation of data and models with neighbouring countries and beyond

In a first step, user and target groups, user needs and expectations need to be identified. Afterwards, useful content as well as current process of exchanging national and international data have to be determined. The state of the art on European or national comparable initiatives (e.g. ETIS+) has to be analysed. In this process, the strengths, chances and obstacles will become visible. On this basis, the development of a common idea of the Data Management Center needs to be established.
1.3 Challenges

It has to be noted that there are multiple challenges from different perspectives. On the one hand, there are general problems in the exchange of data. On the other hand also the geographical region South East Europe brings various things which have to be considered.

The fact that there is a lack of data (availability), in certain cases data are available but not accessible or are hard to find and many times outdated. These are common problems which a lot of people have to face nowadays. If available, the criteria of data quality and comparability are often not fulfilled. There are many transport models around but software/data structure is most of the time not compatible. Further usually there is no cross fertilization between data and models. As a result, many times re-use of data and models is not possible. Nowadays there is only rarely regular data exchange between ministries. Last but not least, data privacy issues need to be considered. This means that (sometimes) certain important decisions (e.g. expensive infrastructure) are based on insufficient data. Therefore the reusability of results, data and models is a key element for a cost saving management of the public administration and to ensure cost-efficiency of transport (modelling) activities and stringent (modelling) results on macro-, meso- and microscopic level.

The SEE region consists of a great variety of countries in terms of size, population, economic and socio-economic factors – and of course different levels of transport infrastructure and the related planning tools for transport infrastructure. Despite these differences there is potential for a better cooperation on administrative level to ensure the coordinated infrastructure development particularly among the small countries in order to achieve the best possible transport networks with the optimal linkage to the neighbouring countries. Along with the often encountered language barriers, the administration is organized very differently within the various countries, which leads to a big variety of
administrative structures and competences. Among the SEE countries there is also a widespread variety in the area of transport modelling, data availability, accessibility and quality on national level. This is a particular challenge in the SEE region and the creation of a common platform – the ACROSSEE Data Management Center – shall help to facilitate the exchange of data and models used in infrastructure planning and hence in transport modelling. In the past there has been little to no regular transnational exchange of data and models – many times the modelling activities only cover small areas along the borders of two (or more) countries and do not see the required constant maintenance.

1.4 State of the Art

At the moment certain kind of data are available and centralised collected; this has the advantage that they are available in one location (e.g. bureau of statistics). Certain obtainable data are not systematically stored in one location, instead partly at different locations, while other data are non-existent i.e. not available at all, at least in the detail necessary, or outdated.

On European level the initiatives around TRANSTOOLS and ETIS+ have made a great effort on the creation of an open source transport model and data repository. However, both initiatives have not yet seen the broad uptake as desired. This might be due to two facts: both initiatives are by design for analysis on European level and lack the organizational framework for the quality, continuous update and extension of the content by the public administration.

ETIS+ (European Transport policy Information System - Development and implementation of data collection methodology for EU transport modelling) was a project in the Seventh Framework Programme dealing with a concept for a common transport policy database to be used by policy makers, analysts and modellers. The objective was to build a transport policy oriented database for DG-MOVE and address the issue of how to create a single, consistent, transport data source, using a repeatable methodology. ETIS+ was designed to complement
official Statistical Collection and Dissemination (in particular Eurostat); data requirements of DG-MOVE’s transport network model, TRANSTOOLS; Infrastructure data and monitoring collected in TENTec Information System; as well as data usage in EC forecasting models, especially TREMOVE and ASTRA. The ETIS+ network consists of about 60,000 road-links (50 attributes) and 10,000 rail-links (40 attributes). Various methodologies and numerousness of external data sets were used to compile the data. Moreover, a lot of methodologies have been elaborated, primary data sources identified and linkages between national databases and ETIS+ networks have been established. An open specification, a repeatable methodology and linkages to active EC data initiatives (specifically Eurostat), Transtools and TENTec, were established to design an updateable system.

The conclusion drawn, from the data management center’s establishment point of view, was that on the one hand the DMC is based on public available data and the project achieved to harmonise it into one consistent database, but on the other hand there is no agreement / resources for further maintenance of data base, yet.
2 Data Management Center – Technical and organisational implementation

2.1 Introduction

The experience shows that nowadays technical solutions are usually not the critical part of the implementation of a tool. Normally there are several major organisational barriers, which have to be overcome to ensure and boost the utilisation and benefit of a tool. Therefore, preparation work is of particular importance. User groups and needs have to be identified and taken into account. It has to be ensured that an added value is provided and administrative efforts need to be limited to a minimum. To host and run a tool, there is the need of willingness to pay, provide information and bring an added value to users. There is also the need for some kind of regulatory / legal framework, to clarify how is dealt with data, certain situations and issues. Within this framework it also needs to be defined under what conditions it is possible to join and the requirements to be a DMC partner. In this context data privacy and business interests need to be considered. There are several different approaches for users like uploading everything, sharing only Meta data and others are probably not willing to provide anything, but want to acquire all the data. Nowadays, usually data exchange is most of the times in connection with projects or similar, but apart from that regular data exchange is rarely. Therefore, from a technical point of view, tools should be simple, available on a Meta data basis, searchable and allow attaching files. Access rights need to be defined (user management) and clarified and there needs to be some kind of governance. Data privacy needs also to be considered. To ensure sustainability, a regular updating process needs to be implemented.
2.2 **Data Management Center Workshops**

In the beginning of the process the position of certain Austrian stakeholders were collected. The main outcomes were that a central authority, where data is available is already an added value. The design of a cooperation and process are the important points, more than the tool itself. Meta information is sufficient (otherwise too much information/complex). Feedback loops are important (e.g. from projects etc.). It could also include the hosting of different models from projects. Raised questions were about which data are available and who has access rights and also about the name that might be a little bit misleading, since the DMC is not a data warehouse (data open for everybody) – this has to be clearly communicated. It is important to achieve active involvement/initiative from data suppliers and in general a high level of use. Existing regulations and open (government) data should be considered as possible inputs.

On the 30th of October 2013 a workshop in Vienna was held with 19 participants to discuss about several important issues of the Data Management Center, in order to learn about the expectations, find out about strengths, chances and obstacles and to develop a common idea of the Data Management Center. The discussions of the afternoon sessions focused on four topics:

- Content of the DMC – User needs
- Data exchange/publishing restraints
- Organisational and technical implementation
- Long-term sustainability and commitment of responsibilities and financial resources

The first session dealt with the user needs and the content of the DMC and the following questions were discussed:

- What are currently problems in obtaining data (from neighbouring countries)?
- What are your expectations from a Data Management Center?
- What would be a useful content of a Data Management Center?
- Who should be the user and target groups of a Data Management Center?
- How often should data be updated / exchanged? (Periodically, when updates are available …)

The participants highlighted that there is no technical problem, but organisational and financial barriers. The difficulty lies in the fact that there are different user groups (e.g. administration, government, decision makers, researchers, civil society...) and at the moment there is a lack of communication and cooperation. Due to these different user groups, there is a different level of access necessary for each of them. Up-to-date and comparable data are very important to overcome current inconsistencies and quality gaps of data. To overcome these barriers there were many different approaches and suggestions. A central contact point (neutral body) for administration and stakeholders seems to be necessary. The solution should be centralised, following a hierarchical structure, which is non-bureaucratic, responses quickly and has advices where to find other data. Furthermore, it was mentioned that all the outcomes of public funded projects should be publically available. The content of the Data Management Center should be a basic set of transport data in a standardised format as well as Meta Information about projects. Data should be up-dated as soon as available or in other cases once a year. Responsible persons in institutions have to be identified. In the discussions questions were raised regarding, how to address institutions to get data/support and which data should be free of charge, and which of them not.
The second session addressed the topic data exchange/publishing restraints, with the help of the following key questions:

- Are there already some establishments which store/provide transport model data?
- The content identified in the previous workshop session – are there any restrictions for publishing?
- How do you deal with this problem (restrictions for publishing)?
- Who should have access to certain kinds of data?

The stakeholders named that they do not know any other establishments for modelling data apart from ETIS+. The restrictions depend on data and “who wants it”. Usually, it is possible to get access to data under certain conditions and for certain purposes. Even on aggregated data there are very strong restrictions. A participant stated that in some cases even self-collected data needs approval by ministry or data owners. Privacy issues need to be considered as well. The amount and type of public available data differs between countries. It was highlighted that there should be a differentiation between use for public or private activities.

Suggestions and wishes were that public funded data should be publically available and reusable to use synergies and avoid double efforts. Some stated that there might be review of legal framework necessary. The use of licensing regimes for different users, but also creative commons was mentioned. A suggestion from a participant regarding the data access regulations was the following: general public (should get basic information), experts (all, part of costs), public bodies (all, minimum costs) and private companies (information for charge).
Session 3 was concerned with the organisational and technical implementation and included the following questions:

- Should there be a central DMC or national DMC in every country?
- Should the content of the DMC available without restriction or should there be access control?
- Should there be a feedback loop from data users (e.g. projects)?
- What is your opinion about ETIS+?

The majority agreed that ETIS+ seems nice, but there is not enough information about the data quality and it seems to be too complex for maintenance. But on the other hand should be used and taken care of as good as possible. Furthermore, there is no commitment from the public sector. The participants would like to see a central Data Management Center and a national DMC in each country. The central Data Management Center shall be responsible for coordination/harmonisation and overlooking the processes. Other would also like to see DMCs on national level and on EU27+Western Balkans level, but they have same importance.

The National DMCs have to be connected (format, interfaces) as well, so there is a need for a common methodology. The National level shall correspond to European level – and not the other way around. Flexible content and data formats were proposed. There needs to be an access control. Data should be provided only on request and based on Terms of Reference / contracts. There might be general information available without access control. Specific feedback from users depends on scope, but at least Meta-information needs to be provided. Feedback should be provided on usefulness, quality, possible changes and extra needs.
In the last session long-term sustainability and commitment of responsibilities and financial resources were discussed, with the following key questions:

- What are possible opportunities and what are the obstacles?
- Who should be the host of a Data Management Center?
- How to ensure the maintenance of the data/models in the DMC? (contracts, MoU, funding …)
- How would it be possible to ensure long-term sustainability of the DMC? (after the project end)

An opportunity will be the optimal use of funds due to savings in this area as well as the availability of regular updated data with a certain quality standard. An obstacle is money as well as the commitment, since money and resources are scarce. Big commitment of the public authorities is a must (it needs to be driven by administrations and not private partners or researchers). High level commitment and contribution to White Paper goals are important for long-term sustainability. The political will, national as well as EU funding are necessary to ensure the maintenance of data. Legislation is required, since someone needs to put data into DMC. Participants suggested that the national DMC should be hosted by public bodies for transport planning (not statistical offices) and the central DMC should be hosted by an EU transport agency. Others more precisely said that it needs to be connected to DG MOVE (e.g. TENTec division). To achieve long term sustainability, commitment and budget from the European Commission and on national level is necessary. First it needs to be shown that it helps to adjust national strategies to save money e.g. for wrong infrastructure decisions. Some even thought about the DMC should think beyond transport. The key results should be communicated to the public regularly and proposing new European initiatives. A Memorandum of Understanding between Member States (+Western Balkans) and EU could be an idea. In terms of ACROSSEE, there should be one DMC accessible for all partners to show benefits (role model).
The conclusion of the workshops and research for the ACROSSEE Data Management Center was that there will be a two level approach:

- Data Management Center - Public section
  - In the public section Meta-information about the data produced and collected in the project will be displayed (but no data itself). Data can be requested, it will be looked at each case individually (in coordination with data owner).

- Data Management Center - Private section (only for partners)
  - All collected and produced data (survey etc.) will be available for all ACROSSEE partners.
2.3 **Requirements**

This subchapter shall outline what a Data Management Center should contain and be capable of – to ensure quality, long-term use and sustainability. One of the core parts is to host the ACROSSEE survey data and other collected data within the ACROSSEE project. A consensual agreement on which conditions data may be shared among project partners and distributed to third parties should be reached. Communication and the establishment of links to the relevant institution and authorities on a national and international level as well as harmonization is another priority action.

The ACROSSEE Data Management Center has several needs to cope with quality and other requirements. The provided data needs to include a certain minimum on information (metadata). This concerns apart from the source also minimum descriptions about data content, data format, geographical coverage, reference year, ownership information and contact data (responsible person/organisation). Furthermore, the content description has to be accompanied by details about the approach and methodology. This is necessary to ensure that the data and quality is understandable for third persons (i.e. information about assumptions etc.). Otherwise no reasonable estimations regarding the quality of the data can be made. To ensure valid results, information about the calibration and validation process, e.g. how survey data were implemented or assumptions made have to be provided. The tools should be simple to use and the data searchable in order to ensure quick and timesaving work. Furthermore the content needs to provide an added value to users in terms of availability and quality, e.g. by providing important (cross border) information or other modelling data in one place.

Figure 1 shows a general overview of the work flow of the Data Management Center. To ensure timeliness, a periodical data collection process is necessary. The content of the DMC can be distributed or used by DMC users under
certain conditions. After the usage a certain kind of feedback about results or Meta information is desired and foreseen, if possible. The data content itself is wide-spread from border crossing information, to Origin/Destination matrices, traffic counts, graphs, Meta information on project and where to find certain data (statistics, open government data etc.).

Figure 1: Overview Data Management Center

2.3.1 Meta Data

The information stored in and distributed via the ACROSSEE Data Management Center is characterized by two domains: the Data Properties which describe Meta information about data and the Data Content which describes quantitative aspects of data. A dataset stored in the ACROSSEE DMC shall be characterized by the following Data Properties:

Metadata:
- Category
In which category and folder the file should be stored (e.g. networks -> Involved countries -> e.g. Austria)

- Title
  - Title or name of uploaded file

- Description
  - Short general description, if wanted, but must at least include the corresponding contact data for this specific file (i.e. name and e-mail address)

- Data source / producer
  - Organisation/Person who gathered the data

- Data provider
  - Organisation/Person who added the data to the DMC

- Type of data
  - E.g. network, matrices, traffic counts, whole transport model, zone data, statistical data etc.

- Description of methodology, approach, assumptions and validation
  - Provide some short information

- Year of reference
  - Year in which the data was produced (refers to)

- Covered extent
  - Where applicable geographical extent

- Covered time frame
  - Which time period is covered?

### 2.3.2 Content

The approach for the content of the Data Management Center is quite wide-ranging and three-fold:

On the one hand data (in form of files) will be directly available, on the other hand it should be used to provide information (e.g. contact details) to know that certain data is available and where it can be found / who can be asked.
Furthermore, an interactive map is available which provides information about the 59 surveyed Border Crossing Points (both road and rail) like name, construction year, number of lanes or tracks, agencies present at the station (customs, police, phyto-Sanitary, veterinary, immigration, visa issuing, technical inspection) and other facilities (forwarders, banks, coffee shop, restaurant, duty free shop).

The content itself will focus on cross border information and suitable modelling data. Therefore the data and information can be wide ranging. National statistics and projects, inter-/multinational statistics and projects, cross border information (border crossing, principal inland terminals, border agencies procedures), times tables, demographic data or economic data to name only a few examples.

No specific data format will be required, since the data can originate from various sources and software used in the framework of projects. Furthermore, throughout the process it became clear that the conversion of data into a specific format is in certain cases not possible, in others very resource-intensive. Therefore for this kind of data ex-change it is not realisable in terms of resources and willingness to invest time and money – at this stage. But however it is recommended where possible in a non-software specific format e.g. txt, xls etc. In terms of language, the focus will be on English, but other data are also welcome, at best with a few additional instructions and translations. Furthermore, verbal descriptions of the attributes used in each data set and explanations of the units used for each attribute of a data set (e.g. tonnes/year, cars/hour etc.) is desirable to ensure cleaerness and traceability.
2.4 **DMC Governance**

The Data Management Center needs a kind of governance, it is necessary to reach a consensual agreement on which conditions data of the Data Management Center can be used by DMC partners or distributed to third parties. This section gives a short overview about questions to be solved and the decision necessary to set up such governance for the ACROSSEE Data Management Center. There are certain requirements and conditions about the Data Management Center, which need to be considered:

- The uploader must own the data / has the right to upload
- What can I do with the data from others?
- What are others allowed to do with my data?
- Is a specific format necessary? Are there recommendations for update?

Figure 2 shows the actors in and around the DMC and the agreements/conditions to contribute to the data and distribute data from the DMC. In principle there are two types of conditions for the distribution of the content of the DMC.

- DMC Partners: until the end of the project all ACROSSEE project partners have full access to the DMC, after the end of the project (31.12.2014) only ACROSSEE partners who register and agree to the Terms and Conditions will be able to use it further. The DMC consortium will decide on the admission of new users.
- Data (public section): all ACROSSEE project outputs that need to be publicised in the sense of the SEE programme guidelines and other free publically available data as well as Meta Information.
• Data (restricted area): All data collected within the ACROSSEE project (e.g. traffic counts, transport model data, survey data etc.) and other restricted data; to access this area of the DMC a login is required.

• Number I (public available): in the public section of the DMC the ACROSSEE project results (i.e. reports in pdf) and other data are freely available to the public.

• Number II (DMC Terms and Conditions): the terms and conditions define the conditions under which the DMC partners can contribute and distribute data among them and from any DMC partner to a 3rd party.

• 3rd Parties: all non ACROSSEE project partners (or after the project non DMC Partners) to whom data from the DMC shall be passed on (e.g. universities, consultants etc.)

Figure 2: Overview DMC conditions

The Terms and Conditions for the DMC usage, as discussed among the ACROSSEE partners, can be found in Annex II: Data Management Center –
Governance Agreement. In the following the main intentions to ensure the data exchange via the DMC are described.

The DMC shall be a platform for sharing data relevant for cross border issues and transport modelling under defined conditions. The access and the usage of the DMC shall be as easy as possible. It is necessary to establish a kind of governance for accessing and using data to ensure every user is aware of the principals of the DMC and a smooth operation of the DMC. On the one hand to ensure that the uploading DMC partner owns the data or has the right to upload the data. On the other hand to know under what conditions they are allowed to use the DMC data from other partners and to distribute the data to 3rd parties. DMC Partners declare their intention to distribute data from the DMC to competent and trustworthy 3rd parties to foster national and transnational transport planning and modelling. The DMC Partners declare their intention to enrich the DMC by results from data reuse done by themselves or 3rd parties, if possible.

Every DMC Partner should proactively contribute and update data in order to ensure the multilateral benefit of the DMC and meet the standards on Meta data as described in chapter 2.3. There will be no specific data format, since the data can originate from various sources and software used in projects, but however it is recommended where possible in a non-software specific format e.g. txt, xls etc.

The terms and conditions also help to ensure continuation beyond the project’s lifetime. The DMC shall be a long term sustainable structure to facilitate continuous data exchange and to help national and international (transport modelling) activities with the most up-to-date data.

In the authors’ point of view, it is necessary to have a person/organisation made responsible for the DMC on national level in order to ensure that data is maintained in the DMC that the content would be growing. Experience shows that
there is risk rather to have no one taking care of the DMC on national level than several persons/organisations from one country contributing and distributing data.

The DMC is not designed to make any financial profit, the added value of the DMC is the improved quality of (modelling) activities by the use better input data coming from neighbouring countries or the EU. The establishment of a structure like the DMC needs political and financial commitment from every member state participating in the DMC.

The discussion and resulting elaboration made within this task of the ACROSSEE project shall help to raise awareness for the needs and merits as well as problems and issues of the DMC and shall develop a vision as well as a prototype for such a future structure of the DMC.
2.5  **Technical Solution (KB-Publisher)**

This section gives a short overview about the technical solution of the Data Management Center. As basis the software KB-Publisher was used, which is a Knowledge Management Software and allows sharing information. In the following a list of several important features which were required for the tool:

- Easy to set up and use
- Access from any browser / computer
- Upload and view files and articles
- Control who sees and has access to which areas/articles/files
- Add attachments to articles
- Roles and privileges control on which articles and files users can see/download and whether they must log on first
- Custom Fields
- Search for articles / files are searchable

1 http://www.kbpublisher.com
· Unlimited content
· Unlimited categories/levels
· Easy customization of structure and look and feel

The Data Management Center is hosted by AustriaTech and reachable via the website http://www.transportmodelling.eu (see Figure 3)

![Data Management Center](Figure 3: Data Management Center - start screen)

The first menu item "Knowledgebase" (see Figure 4) contains the articles. There are several sections:

· Welcome to the ACROSSEE - Data Management Center
  Provides general information about the ACROSSEE project and the Data Management Center
· Imprint
  Information about publisher and owner, Terms and Conditions
· ACROSSEE project information
  Further information about the ACROSSEE project
• Help
  o Files Knowledgebase
  o Articles
  o Interactive map

Useful information about the first steps of using the knowledgebase and articles

• Data sources / Contacts

Contact data to relevant and interesting project and institutions

Figure 4: Data Management Center - Section: Knowledgebase

The second menu item “Downloads” (see Figure 5) includes the files and has the following sections, which all have same sub-structure (illustrated for the first section):

• Networks
ACROSSEE

o ACROSSEE

o Involved countries
  • Albania
  • Austria
  • Belgium
  • Bulgaria
  • Croatia
  • Greece
  • Hungary
  • Italy
  • Montenegro
  • Romania
  • Serbia
  • Slovenia
  • Ukraine

o Other countries

This section will contain files and data with information related to networks.

• Border Crossings
  
  This section contains data related to border crossings e.g. traffic survey, questionnaires etc.

• Zone data
  
  This section will include data related to zone data like e.g. structural data or economic data.

• Matrices
This section is for data related to matrices like e.g. origin / destination matrices

- Public Transport

Here data related to public transport will be added.

- Other data

In this section all other data which does not fit into any other section will be added.

Figure 5: Data Management Center - Section Downloads

The third menu item “Ask a Question” provides the possibility to directly contact the host and give feedback or similar (see Figure 6).
Figure 6: Data Management Center - Section Ask a Question

The fourth menu item “ACROSSEE Homepage” provides a direct link to the ACROSSEE project homepage, while the last menu item “Interactive Map” provides a link to an interactive map that shows detailed information about the within ACROSSEE surveyed Border Crossing Points (see Figure 7 and Figure 8).

A short user guide about the main and most important functions and the handling of the Data Management Center can be found in Annex I: Data Management Center – User guide.
Figure 7: Interactive Map

Figure 8: Interactive map detailed view - road (left) and rail (right)
3 Conclusion

Within the ACROSSEE project it was the target to establish a basic technical infrastructure and define processes which can bring added value and show ways how to ensure commitment in the establishment and maintenance of a Data Management Center. The process showed that there is a desire and need for a central contact point, which provides data, quality and timeliness and allows better resource utilisation and efficiency. Therefore in the first step, a prototype platform for data provision, exchange and required regulations between partners and third parties was established.

In terms of data constraints and inefficiencies, there is still a lack of clear guidelines and data standards which present one of the major barriers. Since in many cases data availability or accessibility is not provided, it is important that new data sources like e.g. probe-based data and data from private vendors are getting increasingly available. Data quality and reliability is an important topic because poor base data requires more effort and raises questions about the overall result where they were used. Regarding data format, there is a lack of standardised formats for common data like demand data. The data exchange should also be easily possible between different kinds of resolutions, in this regard an open standard would enhance interoperability, therefore data need to be defined scalable, modular, interoperable and extendable. To reach interoperability, guidelines and standards, which address data handling and exchange, need to be established.

At the moment, on European level the organizational and legal regime is changing with the growing Open (Government) Data movement and with new obligations for data accessibility to the public for example through Directives like INSPIRE and PSI (Public Sector Information). Much of the data used in transport modelling and other areas will be affected by these regulations and will therefore most probably become available to the public at some point in near future. The activities started within the ACROSSEE Data Management Center have shown the
potential to draft a way towards better utilisation of resources and synergies within the SEE regions and possibly beyond.

The discussion about data and access within the whole process showed that there is a lot of need in terms of standardisation and other developments in this area. There are more organisational than technical challenges. A certain kind of governance agreement is needed for such a platform, where a basic version was set up within the ACROSSEE project. The potential and desire for such a Data Management Center was shown, but as expected there is more need to solve certain organisational aspects. It could be seen that the key to ensure sustainability and long-term use are (political) commitment, willingness, (financial) resources and a host who acts as central point, but this is only possible when an added value is provided. The outcomes and discussions at the workshop illustrated how a possible structure of Data Management Center could look like.

In a long term perspective the development of mechanisms for platform (or modelling software) independent data exchange between national and regional / European transport modelling data could be tackled. The key incentive for this is the savings achievable by data reuse in standardized formats leading to reduced costs e.g. for transport modelling activities and the better results resulting from better data quality. This requires the political commitment for the establishment of sustainable organizational structures on national level as well as on regional level. Some kind of financing is needed, since normally resources, in terms of personnel and funds, are scarce and usually only available within projects, which are needed to run such a Data Management Center at high usage and quality. The ACROSSEE Data Management Center can serve as a small pilot to show the needs and good practices to ensure smooth data exchange in the future.
Annex I: Data Management Center – User guide

ACROSSEE

Data Management Center

User Guide

INTRODUCTION

This document is a short user guide to provide with initial instructions how to use the Data Management Center and its basic functions. The web-based platform is for structuring and handling of data and documented information. Use link below to get to the ACROSSEE - Data Management Center (see Figure 9):

http://www.transportmodelling.eu
**LOGIN**

In order to get to the login window of the ACROSSEE – Data Management Center the “Login” button at the top right of the start page should be selected (see Figure 10).

![Figure 10: Login interface of the ACROSSEE – Data Management Center](image-url)
OVERVIEW

STRUCTURE

At the top five sections are visible, namely:

- Knowledgebase
- Downloads
- Ask a Question
- ACROSSEE Homepage
- Interactive Map

KNOWLEDGEBASE

The first section is called “Knowledgebase” (Figure 11). Here the so-called “Articles” can be found. These can include text, links but also attachments. Articles can either be published as public or private article (which are visible for all users, but can only be read by users which are logged in). At the moment there are the following sub-sections:

- Welcome to the ACROSSEE – Data Management Center
- Imprint
- ACROSSEE project information
- Help
- Data sources / Contacts

Figure 12 shows the section “Data sources / Contacts”, while Figure 13 the detailed view of an article.
Figure 11: Overview – Knowledgebase

Figure 12: Knowledgebase - Data sources / Contacts
The second section is called "Downloads". This section is the main area for data and files. Files can either be uploaded as public or private files (which are visible for all users, but can only be downloaded by users which are logged in). At the moment the following sub-sections are available:

- Networks
  - ACROSSEE
  - Involved countries
  - Other countries
- Zone data
- Matrices
- Public transport
- Other data
At the right top, there are several options. Via the “Manage”-button (Figure 15) articles and files can be added. In the “Admin Area” (see Figure 16), the uploaded files and articles can be managed (edited, deleted etc.).
Add Article

After clicking on the “Add Article”-button, the input mask opens. To upload an article all the required (*) information must be specified. It has to be added into a category (structure – see Figure 18), can be given a tag, referred to related articles or attach to it already uploaded documents (see Figure 17). Via the second tab (advanced tab – see Figure 19) it is possible to add a Meta description, external links and to define the accessibility of the article (who can see entries and read/download data – see Table 1).
Figure 17: "Add Article" (Main tab)

Figure 18: Assigned category
Figure 19: "Add Article" (Advanced tab)

<table>
<thead>
<tr>
<th>Read</th>
<th>Write</th>
<th>public/private</th>
<th>readable/downloadable</th>
<th>editable</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>public</td>
<td>Everyone can read/download it</td>
<td>No one can edit it²</td>
</tr>
<tr>
<td>✓</td>
<td>-</td>
<td>private</td>
<td>only logged in users can read it³</td>
<td>No one can edit it²</td>
</tr>
</tbody>
</table>

² Except from the user that wrote/uploaded the article/file and privileged admins
Notes:
When you check read or write, except from making the article/file private, it also enables you to specify further distinctions between logged in users. So if you just want to make the article/file private, it is sufficient to just check read.

Table 1: Control of accessibility

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>private</th>
<th>only logged in users can read it</th>
<th>Editing rights for certain users (specified role) can be enabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>✓</td>
<td>private</td>
<td>only logged in users can read it³</td>
<td>Editing rights for certain users (specified role) can be enabled</td>
</tr>
<tr>
<td>-</td>
<td>✓</td>
<td>private</td>
<td>only logged in users can read it</td>
<td>Editing rights for certain users (specified role) can be enabled</td>
</tr>
</tbody>
</table>

Add File

Similar to the article, via the “Manage”-button it is possible to add files. The input mask consists of various fields which are required (*) to upload a file (data source, data provider, type of data etc.) (Figure 20) and also the accessibility of the files must be defined (see Table 1). In the following the fields which have to be completed are explained with some descriptions:

- Category

³ Can be distinguished further between different categories of logged in users
In which category and folder the file should be stored (e.g. networks -> Involved countries -> Austria)

- Title
  - Title or name of uploaded file

- Description
  - Short general description, if wanted, but must at least include the corresponding contact data for this specific file (i.e. name and e-mail address)

- Data source / producer
  - Organisation/Person who gathered the data

- Data provider
  - Organisation/Person who added the data to the DMC

- Type of data
  - E.g. network, matrices, traffic counts, whole transport model, zone data, statistical data etc.

- Description of methodology, approach, assumptions and validation
  - Provide some short information

- Year of reference
  - Year in which the data was produced (refers to)

- Covered extent
  - Where applicable geographical extent

- Covered time frame
  - Which time period is covered?
Above the menu tree on the left side, the “advanced search” gives the opportunity to search article and files (see Figure 21 and Figure 22). There is the possibility to search for certain Meta data of files (see “Extra options”). Furthermore, the content of certain formats (Word97-2003, Word 2007-2010 and pdf) is searchable.
Figure 21: Advanced search (e.g. Search in Article)

Figure 22: Advanced search (e.g. Search in File)

Articles and files can be edited, modified, deleted via the “Admin Area” (Figure 16), where you can either choose “Article” or “File statistics”. By clicking on either one you get to the screen shown in Figure 23.
DIFFERENCE BETWEEN REGISTERED USERS AND VISITORS

Visitors are able to see public as well as private articles and files. But they are not able read or download them and get a notification message (see Figure 25). The key-symbol left of the files (or articles) indicates that it is private data (see Figure 24).

Figure 23: Edit uploaded content

Figure 24: Downloads - Matrices - Involved countries – Austria

Figure 25: Notification
Annex II: Data Management Center – Governance Agreement
Terms and Conditions

1. Introduction

The Data Management Center (DMC) is intended to be used for providing, up- and downloading files and for writing and providing articles. The DMC is hosted by AustriaTech as “administrator”.

2. Use

The DMC can be used by registered users and the public. Public users are only able to read and download files, which are marked as public by the respective file provider or author of the respective article. The full functionalities of the DMC are only available for registered users. Registered users are also able to provide articles or upload files. If content of the DMC is used and generates content, which would bring an added value to the DMC, this outcome shall be made available via DMC, if possible. The use of the DMC is free of charge for non-profit and non-commercial purposes. The users are obligated to use the DMC in compliance with these terms and conditions, any applicable law, regulation or generally accepted practices or guidelines at its users’ own risk. Every user is obligated to acknowledge the DMC as the source of the content, which is used by him/her. The user is not authorized to share the username and password with other persons.

3. Rights and Responsibilities

The user acknowledges and agrees to be solely responsible for any breach of obligations under these terms and provisions and for the consequences of any such breach. The user shall indemnify and hold the administrator harmless from and against any claims or damages (whether direct, indirect, incidental, consequential, punitive or damages for loss of profit, business interruption, loss of programmes or other data), including where a third party brings a claim. The administrator shall have the right at any time to amend these terms and conditions.
or to impose, as necessary, other terms of use or requirements not provided herein, in particular, the user shall be obliged to comply and adhere to any further copyright and proprietary notices. The user agrees not to engage in any activity that interferes with or disrupts the DMC or the stored files as its content.

4. **Intellectual property and Non-Disclosure**

The user acknowledges and agrees that all legal rights, title and interest, including intellectual property rights regarding the DMC at all times shall be and remain with the administrator of the DMC. The user also acknowledges and agrees that all legal rights, title and interest, including intellectual property rights regarding the provided files and articles at all times shall be and remain with the respective user, who makes the file(s) or articles available. The DMC and the available files and articles neither may be reproduced nor made accessible to third parties by other users without the administrator’s or the relevant user’s prior consent given per E-mail.

The user undertakes to refrain from doing anything that might endanger, jeopardize or infringe the ownership or any other intellectual property rights or obligations of Non-Disclosure associated to the DMC and the stored files as its content.

5. **Exclusion of warranties**

The administrator disclaims all warranties and liabilities, either express or implied, relating to the availability, continuance, quality, completeness, accuracy, fitness for purpose or achievement of a particular result or non-infringement with respect to the DMC and its files and articles that are contained therein. No advice or information, obtained by the user from the administrator shall create any warranty. The user explicitly acknowledges that the DMC and the files and articles as its content may contain misprints, mistakes or inconsistencies and that the administrator shall not be held liable for any of such errors or faults. In particular, the administrator does not provide any warranty with regard to the intellectual property rights related to the Web-DMC and its content.
Any content of the DMC is provided on the basis that such content is verified by the user prior to the use and that the user will be solely responsible for any damage that results therefrom. All content and services are provided "as is" and "as available".

6. Limitation of liability

The user expressly understands and explicitly agrees to use the stored files and articles at its sole risk and liability. The administrator explicitly excludes its liability to the fullest extent permitted by law. In particular, the administrator isn’t liable for any damages in connection with or related to the use or failure to use, modification, availability (including any permanent or temporary cessation), accuracy, completeness and the quality related to the DMC or the stored files and articles. Also the administrator is not liable for any violation of intellectual property rights or for breaches of Non-Disclosure obligations.

7. Revision of the DMC

The DMC can be constantly amended, and, can be consequently, subject to revision from time to time. The administrator reserves the right, at its own discretion, to amend and modify the DMC at any time without any prior notice. The user acknowledges and agrees that the form and nature of services provided with respect to the DMC may change from time to time without prior notice.

8. Termination

The user agrees to remain bound by the terms and conditions for as long as the user remains using the DMC and the provided files and articles.

The user acknowledges and agrees that the administrator may stop at any time (permanently or temporarily) providing or prevent the user from accessing the DMC and its content and services related thereto at the administrator sole discretion, without prior notice. The administrator explicitly reserves the right, at its own discretion, to discontinue, limit, suspend or to terminate the use of the DMC and its content at any time without prior notice. In such cases the content of the
concerned user will be deleted by the administrator. In cases where users decide to leave the DMC, their files and articles will remain on the DMC, until they request the deletion per E-mail.

9. **Governing law and jurisdiction**

These terms and conditions shall be interpreted and governed according to the Austrian laws with exclusion of the UN-Convention on the International Sale of Goods (CISG) and without regard to its conflict of law provisions. The Vienna Commercial Court shall have exclusive jurisdiction to settle any dispute or claim arising out of or in connection with these terms and conditions.

In order to use the DMC as registered user with its full functionalities, it’s necessary to register and to accept to comply and adhere to these terms and conditions by marking the checkbox. The DMC consortium will decide on the admission of new users.