

# OPUS

## *Optimising the use of Partial information in Urban and regional Systems*

**Project IST-2001-32471**

ITS Programme

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## **TECHNICAL ABSTRACT**

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This deliverable D1.1 is the OPUS Inception Report and Quality Assurance Plan. The key objective of the deliverable is to set in place clear and agreed arrangements for the management of the OPUS project and for the assurance of quality.

## **EXECUTIVE SUMMARY**

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This document is Deliverable D1.1 of the Fifth-Framework project OPUS. The OPUS project aims to develop and demonstrate the coherent combination and use of data from disparate, cross-sectoral sources, and so contribute to improved decision making in the public and private sector within Europe. The research is focused on developing an innovative methodology, incorporating statistical and database systems.

The key objective of the deliverable is to set in place clear and agreed arrangements for the management of the OPUS project and for the assurance of quality.

The management of the OPUS project is structured into three main levels:

- The Project Management Committee
- The Technical Committee
- Individual Managers

With clear responsibilities and management methods attached to each level.

The OPUS approach to quality assurance four key dimensions of the project:

- The scope of the work
- The resources (human, financial, organisational and physical) required
- The time required to do the work
- The quality with which the work is done.

For each of these dimensions specific mechanisms of reporting, monitoring and control will be put in place.

## **1. OVERVIEW OF THE OPUS PROJECT**

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### **1.1 Project background and objectives**

OPUS is a large information management research project, supported by Eurostat as part of the European Commission's Information Society Technologies (IST) Programme. The overall aim of the OPUS project is to enable the coherent combination and use of data from disparate, cross-sectoral sources, and so contribute to improved decision making in the public and private sector within Europe. The research is focused on developing an innovative methodology, incorporating statistical and database systems. Transport planning is a prominent example of a topic that uses multiple sources of data, and will be the main test case for OPUS, but the cross-sectoral nature of the research will be demonstrated through the inclusion of an application in the field of health information as another example.

To meet the needs for comprehensive information on socio-economic systems such as urban and regional transport planning, and in the health services sector, data from many diverse sources (e.g. conventional sample surveys, census records, operational data streams and data generated by IST systems themselves) must be combined. There is currently no appropriate generic methodology that enables the combination of complex spatial, temporal and real time data in a statistically coherent fashion. The aim of the project is to develop, apply and evaluate such a methodology. OPUS will develop a general statistical framework for combining diverse data sources and specialise this framework to estimate indicators of mobility such as travel patterns over space and time for different groups of people. The project will undertake pilot and feasibility study applications in London, Zurich, Milan, and on a national level in Belgium. Methods for extending the framework to information aspects of the health domain will also be investigated.

### **1.2 Project results and benefits**

The benefits of the OPUS project will include:

- Improved estimation of detailed travel demand, using all available information;
- Avoidance of simplified combination of data that can give erroneous estimates;
- Indicators of data quality, to provide guidance for new data collection;
- A framework for managing data from rolling survey programmes;
- Better understanding of the role of variability and uncertainty in results and models;
- Avoidance of confusion from different, apparently conflicting, estimates of the same quantity;
- A generalised methodology for other domains of interest.

### 1.3 Project partners

The OPUS project is being undertaken by a multi-national consortium of partners drawn from the research, practitioner and user communities in the field of transport and health studies.

#### *Research Organisations*

- CTS (Centre for Transport Studies, Department of Civil and Environmental Engineering, Imperial College London), United Kingdom – Lead Partner
- DEPH (Department of Epidemiology and Public Health, Imperial College London), United Kingdom
- ETHZ (Institut für Verkehrsplanung, Transporttechnik, Strassen- und Eisenbahnbau), Switzerland
- FUNDP, Transport Research Group (Facultés Universitaires Notre-Dame de la Paix), Belgium

#### *Practitioners*

- Minnerva Ltd., United Kingdom.
- Survey and Statistical Computing, United Kingdom.
- Katalysis Ltd., United Kingdom.
- PTV AG, Germany
- Systematica, Italy.

#### *Public Bodies*

- Transport for London (TfL), United Kingdom.
- World Health Organisation (WHO), Italy.

### 1.4 OPUS workpackages and deliverables

The work of OPUS project will be carried out through a number of inter-related workpackages, each of which will produce one or more project deliverables. These workpackages and the associated deliverables are shown in Table 1.

The broad objectives of these workpackages and the associated deliverables and the relationships between the outputs of the workpackages reflect the overall objectives of the OPUS project and are set out in the *Description of Work*<sup>1</sup>.

Each workpackage is led by one project partner and typically involves contributions from several partners.

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<sup>1</sup> IST-2001-32471 OPUS Description of Work

**Table 1: OPUS Workpackages and deliverables**

Work-package	Workpackage title	Lead partner	Deliverables
WP1	Project Management (including project coordination)	CTS	D1.1: Inception Report and Quality Control Plan D1.2: Final Report D1.3.x: Progress Reports
WP2	Theoretical Framework	CTS	D2.1 Literature Review D2.2 Tentative Theoretical Approach
WP3	Metadata	CTS	D3.1: Proposals For Metadata For Generic Support of Statistical Modelling In Statistical Databases D3.2: Specifications For The Extension of the LATS Database System For the Transport Domain
WP4	Specification of pilot transport implementation model	CTS	D4.1: Inception Note D4.2: Transport Domain Method Specification Report
WP5	Consistency testing	ETHZ	D5.1: Review and Update to the Modelling Framework
WP6	Database systems	CTS	D6.1: Report on the Database Structures and Functionality For Generic Support D6.2: Report on the Implementation of Modelling Support in Statistical Databases D6.3: Database System Enhancement
WP7	Estimation software	PTV	D7.1: Design Specification Document D7.2: Estimation Software D7.3: Test Plan and Test Results
WP8	Case Study – London	TjL	D8.1: Updated Database of Transport Information for London D8.2: Report of London Case Study
WP9	Case Study – Zurich	ETHZ	D9.1: Updated Database of Transport Information for Zurich D9.2: Report of Zurich Case Study
WP10	Feasibility Studies – Transport	FUNDP	D10.1: Feasibility Study Design D10.2: Report on Data Sources and Gaps D10.3: Design of Implementation Project
WP11	Feasibility Studies – Health	WHO	D11.1: Feasibility Study Design D11.2: Report on Data Sources and Gaps D11.3: Design of Implementation Project
WP12	Assessment and evaluation	ETHZ	D12.1: Evaluation Plan D12.2: Evaluation Results
WP13	Dissemination and exploitation	Katalysis	D13.1: Dissemination and Use Plan D13.2: User Forum D13.3: OPUS Web Site D13.4: Conference Proceedings D13.5: Technology Implementation Plan

## **1.5 OPUS Management structure**

The management of the project is structured into three main groups:

- The Project Management Committee
- The Technical Committee
- Individual Managers

The following sections briefly describe these groups and their responsibilities.

### **1.5.1 Project Management Committee**

The Project Management Committee (PMC) is the principal decision making body in the project and is responsible for the overall scientific direction of the project, for monitoring the progress of the project, for overseeing the work of any other committees established within the project and, if and when necessary, for conflict resolution within the Consortium. To this end, the PMC shall be comprised of the project coordinator, the scientific coordinator, and a senior representative from each partner in the project.

### **1.5.2 Technical Committee**

The Technical Committee (TC) is responsible for enabling technical cooperation between project partners and for coordinating and implementing the overall scientific approach of the project. The TC shall comprise the scientific coordinator, the administrative coordinator and representatives of all partners who are workpackage leaders.

### **1.5.3 Individual managers**

A number of individual managers and roles have been established:

- **Project Coordinator:** The project coordinator chairs and coordinates the work of the PMC and has overall responsibility for the project.
- **Partner Leader:** The leader in each partner organisation is responsible for ensuring the quality of the work undertaken by their organisation, for keeping appropriate records of this work and for informing the project coordinator of progress on a regular basis.
- **Scientific Coordinator:** The scientific coordinator is responsible to the PMC for coordinating and facilitating the scientific work of the project, via the TC.
- **The Dissemination and Exploitation Manager:** The dissemination and exploitation manager is responsible to the PMC for developing an effective dissemination and exploitation strategy for the OPUS project and will take the lead in liaison and discussion with

- **Administrative Coordinator:** The administrative coordinator assists the project coordinator, the scientific coordinator and the dissemination and exploitation manager in organising and minuting relevant meetings and in implementing and delivering the overall management and quality assurance procedures of the project.
- **Workpackage Leader:** Each workpackage leader has technical and managerial responsibility for a workpackage, including the planning, inception, monitoring and reporting of the work and liaison and participation in the relevant TC and other consortium activities.
- **Peer Reviewers:** Peer reviewers are responsible for providing an assessment, based on their scientific expertise, of the quality and appropriateness of the deliverables submitted to them. This assessment should take account both of the clarity and comprehensibility of the material and of the intellectual merit and technical competence and originality of the work. Peer reviews may be internal or external to the consortium.

## 1.6 OPUS Consortium Agreement

An important aspect of the inception activity of the project is the initiation of discussion regarding a Consortium Agreement. Dissemination and exploitation of the results of OPUS outside the consortium depend upon a clear and agreed treatment of the intellectual property rights of members of the Consortium.

These rights will be guaranteed both by all partners respecting the existing project contract and by all partners signing a dedicated Consortium Agreement, specifying fully such matters as:

- The responsibilities and rights of the project coordinator and project partners in relation to the separate and joint exploitation of knowledge generated in the OPUS project,
- Confidentiality considerations
- The relationship of knowledge generated in the OPUS project to partners' existing intellectual property
- Arrangements for access to OPUS generated knowledge
- The liability of partners
- Arrangements for the resolution of conflicts regarding exploitation and use.

The development of an appropriate consortium agreement is already well advanced.

## **2. THE OPUS QUALITY PLAN**

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### **2.1 Objectives of the OPUS Quality Plan**

OPUS is a large and complex project involving the work of a substantial number of individuals in different organisations throughout Europe. The overall aim of the OPUS Quality Plan is to put in place general management and monitoring mechanisms to help ensure that the project fulfils its objectives. To achieve this overall aim a number of specific objectives are established:

- To define arrangements for the organisation of work within the OPUS project,
- To define mechanisms for communication between the project partners,
- To define relevant project procedures.

The OPUS Quality Plan will not attempt to reflect changes to the project plan resulting from routine re-scheduling or re-planning of activities during project execution. However, it may be modified to reflect major changes in project organisation or responsibilities such as a change in workpackage leadership or modifications to the set of deliverables. To that extent, the Quality Plan remains a live document.

### **2.2 Key features of the OPUS Quality Plan**

The project management and quality control approach adopted in the OPUS project is broadly based on selected PRINCE 2 concepts and methodology, but significantly simplified and adapted to the context and requirements of the OPUS project. There are a number of features to this approach, which are summarised below.

#### **2.2.1 Dimensions of the approach**

The approach identifies four key dimensions of the project that will be the focus of the Quality Plan mechanisms:

- The scope of the work
- The resources (human, financial, organisational and physical) required
- The time required to do the work
- The quality with which the work is done.

The OPUS DoW document provides a clear statement of the expectations and constraints that apply in the scope, resources and time dimensions and regular monitoring will be performed by gathering information on the progress of the project along these dimensions (see Section 2.3, below).

The assurance of quality will be undertaken by the use appropriate internal and external (peer) review processes of key project deliverables.

### **2.2.2 Change management**

It is acknowledged that a variety of internal and external influences can act upon the project during its lifetime that may necessitate changes in the project plan. To cope with this, a simple change management system will be used to enable a logical and controlled response to any issues that may arise.

### **2.2.3 Risk management**

Certain changes can be anticipated and their incidence and impact can be mitigated in advance by the management of risks. The OPUS methodology provides a simple risk management system to assist in this function.

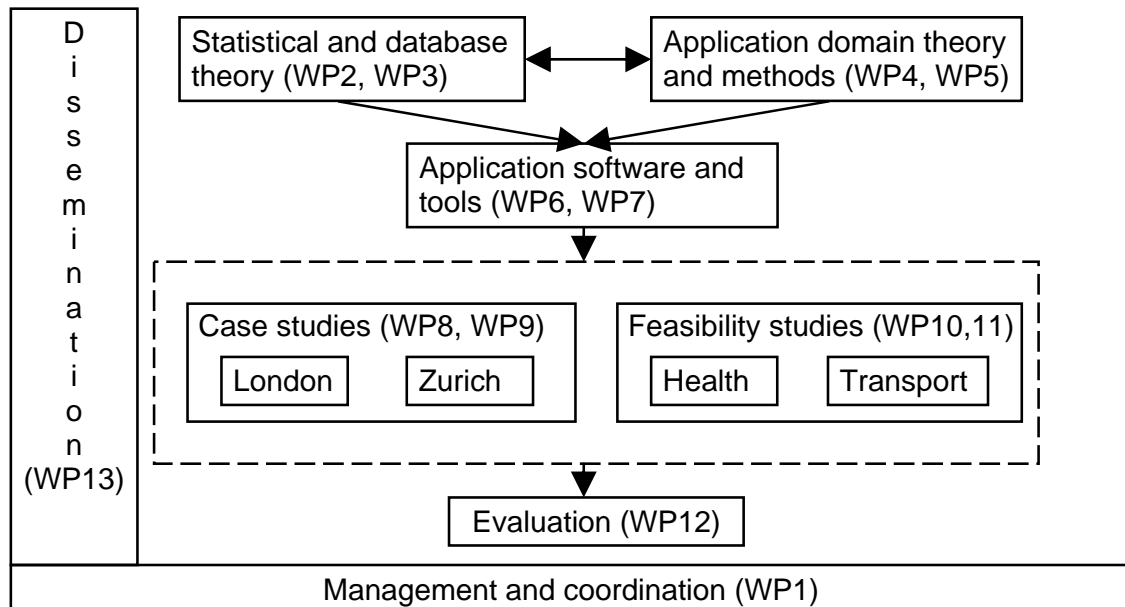
### **2.2.4 Dividing the project into stages**

The OPUS project was initially conceived of in terms of a number of interrelated stages:

- Starting with the development of new statistical and database theory and methods (WP2 and WP3),
- Moving onto the specification of key applications (WP4 and WP5) and hence to,
- The development and implementation of appropriate software and database tools (WP6 and WP7) leading to,
- A variety of domain demonstrations (WP8, WP9, WP10, WP11),
- The evaluation of these demonstrations (WP12) and,
- Further dissemination and exploitation of the results (WP13).

This structure (which is depicted in Figure 1) provides a natural staging through which the complexity of the overall project can be broken down into more manageable parts. Within each of these stages, detailed planning will be undertaken within the relevant workpackages over a 6 month horizon.

**Figure 1 OPUS Project Structure**



## 2.3 Project control and planning

This section briefly summaries the principal methods that the OPUS project will use for project control and planning:

### 2.3.1 Meetings

A variety of different types of meeting will take place. The most important types are briefly discussed below.

#### 2.3.1.1 Project Management Committee meetings

The PMC will meet regularly, typically once ever 6 months to review the work of the project and to consider strategic issues. A PMC meeting will usually form part of agenda of a full Consortium meeting, serving the objectives of enhancing the exchange of information between partners and reinforcing communication structures and shared vision regarding project objectives and methods.

#### 2.3.1.2 Technical Committee meetings

The TC (or sub-committees of the TC) will meet as necessary during the execution of the project and will also meet formally at each full Consortium meeting.

### *2.3.1.3 External project liaison and related meetings*

Periodically the liaison and dissemination activities of the project will give rise to meetings between project partners and external stakeholder and other parties. Where relevant these meeting will be summarised in the Quarterly Progress Report (see Section 2.3.2.1, below).

## **2.3.2 Internal Reporting**

In order to monitor the status and progress of the project in relation to scope, resources and time, a number of reports will be produced periodically. These will include

### *2.3.2.1 Quarterly Progress Reports*

Each partner will provide the Administrative Coordinator with a brief quarterly progress report covering the following topics:

- Brief summary of the activities in each workpackage in which the partner has been involved during the relevant reporting period,
- Deliverables produced
- Bibliographic details other OPUS reports and publications produced
- Summary of OPUS participation in relevant external workshops and conferences and other related events
- Significant risks to current plans identified and proposed mitigation
- Significant deviations from current plans and proposed corrective actions
- Number of person months spent in each workpackage during the relevant reporting period.

These progress reports will be assembled and consolidated by the Administrative Coordinator and periodically reviewed by the Project Coordinator. If necessary the Project Coordinator will discuss the reports with specific partners.

We envisage that these quarterly progress reports will be requested and submitted using the facilities provided by the collaborative shared workspace and document repository that will be established for the project as part of the OPUS web site<sup>2</sup>. This technology and its proposed use within the OPUS project are discussed in more detail in Deliverable 13.1 – *The OPUS Dissemination and Use Plan*. A template for the quarterly progress report is given in Appendix A.

### *2.3.2.2 Change Request Form*

In situations in which circumstances require a formal change to the planned activities or outputs of the project, partners will be expected to signal the need for such changes to be considered by completing a Change Request Form detailing:

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<sup>2</sup> This functionality will be provided using *iNovem Team Initiative* software technology, see [www.inovem.com](http://www.inovem.com).

- The nature of the proposed change,
- The impact of the change on relevant workpackages and on the overall project,
- The consequences of not approving the change,
- Implications of the proposed change in terms of timescale and resources.

Change requests will be considered by the Project Coordinator and, if necessary, the Project Management Committee. A template for the change request form is shown in Appendix B.

### **2.3.3 Reviews**

The project will be subject to period review by the Commission. The Project Coordinator working with the PCM has responsibility for responding to such requests and organising the practical logistics, presentation and content of such reviews.

In addition, the OPUS Project Coordinator and the PMC may if it is considered necessary or worthwhile call an interval review, the nature of which would be tailored to the specific circumstances at hand.

## **2.4 Documentation procedures and standards**

The development and maintenance of appropriate documentation procedures and standards is an important aspect of quality assurance, and is the responsibility of the Project Coordinator, supported by the Administrative Coordinator.

It is intended that all OPUS project documents in discussion, in draft and in final form will be made available to partners via the proposed collaborative shared workspace and document repository that will form part of the OPUS web site. Public documents and deliverables will also be made available to a wider audience via this mechanism.

The Project Coordinator, supported by the Administrative Coordinator, will provide specific guidance to workpackage leaders regarding the format and content of OPUS report and deliverables, including such matters as standard formats for covers and title pages and referencing and citation style.

Part of this guidance will include a standard acknowledgement to the Commission and to the project partners which will be included in all academic and professional publications arising from the OPUS project.

It will however be the responsibility of each author to ensure that each document that they produce is fully and accurately referenced and that proper track is kept of revision histories and version.

## **APPENDIX A: QUARTERLY PROGRESS REPORT PRO-FORMA**

## OPUS Quarterly Progress Report

Partner	
Period	
Summary of activities	
Deliverables produced	
Other OPUS related publications	
Other OPUS related activities	
New risks and proposed mitigation	
Significant deviations from plan and proposed corrective actions	
Number of person months per workpackage	

## **APPENDIX B: CHANGE REQUEST PRO-FORMA**

## OPUS Change Request Form

Partner	
Author	
Date raised	
Description of proposed change	
Impact of the change on workpackage and project	
Consequences of not approving the change	
Implications in terms of timescale and resources	