SUMMARY

This study is one of the ten area studies within the ACTIF project. Its subject is co-ordinated urban travel management and it was carried out over five months between December 2000 and April 2001. It was carried out in three phases which are reflected in the document structure: assessment of the current situation, analysis of the logical architecture and variants for the physical architecture, consequences for the ACTIF architecture and recommendations. The appendices may be found in a separate document.

Co-ordinated urban travel management has a characteristic feature: the strategic objectives set out in the urban master plans ("French PDUs") and the expectations of transport network users in major urban areas, imply an increased need for co-operation between the different actors of urban travel management. Moreover, this need for improved co-operation between the actors is demonstrated by the emergence of a new generation of organisations and systems aimed at global travel management in France and Europe. However, the implementation of these systems has come up against institutional obstacles resulting from the diversity of actors and travel modes, as well as operational and technical obstacles arising from the multiplicity and heterogeneous nature of existing systems and applications. In terms of ITS, these goals and needs are satisfied by functions which have been grouped in the study according to the following classification: functions for exchange and sharing of data between the actors; real time functions; non-real time functions.

The first phase of the study consists of a study of "sample" systems considered from the institutional and functional viewpoint, according to the proposed breakdown.

- At the institutional level, analysis of the existing situation reveals that, in most cases, it has been necessary to capitalise on the common experience of the partners, using the existing "building bricks". Sometimes this results in the drawing up of conventions or protocols between the actors. In other cases, a dedicated organisational structure (consortium, association, etc.) has been formed, creating an extra layer of travel management at the level of the urban area. In addition, it is necessary to distinguish systems which fulfil a single function (e.g., LePilote for user information in Marseilles) from those which fulfil several functions (5T in Torino, MOBINET in Munich, etc.). For all samples, commonly-defined objectives are an essential guide.
- At the functional level, analysis of the systems against the proposed breakdown reveals the major risks and difficulties inherent in data sharing and information exchange: it seems that as soon as the system includes an intermodal dimension, the partners recognise not only the need for implementing common terminology, and a common reference and database, which are technically essential for the co-ordination of the other functions, but also the difficulty of achieving these aims. However, it should be noted that the computerisation of those functions enabling co-ordination between the actors only covers one area of co-ordinated management, and that many activities do not need to be automated.
  Moreover, most intermodal systems feature a centre for co-ordinating the systems of the individual operators. In every case, the principle of subsidiarity is applied, namely that each situation is handled by the competent operator, who remains the "master of his network".

The objective of the second phase of the study is to validate the part of ACTIF's logical architecture relating to co-ordinated urban travel management, and to propose variants for the physical architecture. Our analysis shows that, despite modelling and structuring errors

concerning both the nature and the form of the architecture, urban travel management was handled in an enhanced, evolutive and open way by KAREN. At the level of detail achieved in the framework of this study (impacting around one-third of the architecture), few enhancements at the logical level were identified. Analysis of the functional architecture thus verifies its general suitability against the needs and functions analysed in the current review. On this stable logical basis, it has therefore been possible to propose a variant for the physical architecture which guarantees that the ACTIF architecture will retain its generic character, by creating Physical Sub-systems for co-ordinating travels and emergency management, whilst retaining the possibility of ”peer-to-peer” exchanges.
The second phase of the study concludes with a discussion of the possible implementation scenarios, emphasising the importance of a phased deployment, function by function, and the likely emergence over time of a “dedicated” organisation for co-ordinated urban travel management, even if the existence of a physical sub-system does not initially imply any particular type of organisation.

The objective of the third phase of the study is to achieve concrete feedback on the architecture and make recommendations. As the scope of the study is particularly wide, there was no exhaustive analysis of each affected component, but instead proposals for the foundations required for co-ordination between the actors. The creation of some co-ordination dataflows were proposed for enhancing the logical architecture. In addition, the study’s most important impact on the logical architecture consists of reviewing the architecture’s structure, with proposals for merging the functions relating to urban and inter-urban traffic management.
The main feedback concerns physical architecture. This results from the need to create two Physical Sub-Systems to represent “dedicated” emergency management and global travel management co-ordination centres.

The study concludes with proposals for recommendations following discussions with the actors interviewed, and the contributions of the High Level Group members which piloted and steered the study.

The recommendations have been grouped under four complementary headings, corresponding to institutional, operational/functional, technical and capitalisation issues. They are addressed to local decision-makers (operators, local authorities, local government departments), and to the Ministry of Transport (capitalisation). As existing co-ordinated urban travel management systems remain limited, these recommendations, rather than proposing concrete “turnkey” solutions, emphasise instead the need for better specification, trials and experience capitalisation, and for the progressive implementation of “dedicated” co-ordination organisations, systems and tools.

At the institutional level, the development of dedicated travel co-ordination organisations is proposed in the larger urban areas. This type of organisation corresponds to the American idea of ”regional architecture”.
At the operational and functional level, there appears an obvious need for better specification of the travel co-ordination and emergency functions. In addition, the study initiates a discussion of the possible implementation scenarios, emphasising the importance of a phased deployment, function by function, and the likely emergence over time of a “dedicated” organisation for co-ordinated urban travel management, even if the existence of a Physical Sub-System does not initially imply any particular type of organisation.

At the technical level, the study's conclusions fall in with those of other ACTIF area studies on the need to establish standardised specifications, to use standards, to prioritise work on the common reference database, and on the need to watch over exchange solutions, especially those based on XML.
Finally, proposals have been made relating to capitalising on knowledge: the launch and monitoring of pilot projects, creation of an "exchange club" between sites, the completion of a "project" case study addressing each of the large French urban areas.

It can also be seen that if these recommendations are implemented, it would be necessary to co-ordinate them and to monitor them constantly. Even though this should not be a reason for delaying the first real actions, it seems advisable to assume a timescale of 5 or even 10 years; even if this means starting immediately and in a practical manner, then formalising a more systematic programme later. No cost estimation are given for the proposed actions, as their dimension could be adapted depending on the available resources to be spent on this application domain.

It will be the responsibility of the Steering Committee and the ACTIF High Level Group to decide on the next steps.