

OPEN SPECIFICATIONS AND STANDARDS FOR MORE EFFICIENT TRANSPORT SYSTEMS

Based on the work undertaken in the Polis Traffic Efficiency and Mobility Working Group and the EU project POSSE

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Intelligent Transport Systems (ITS) are an important tool in the delivery of sustainable transport policies. They are widely implemented within cities to manage traffic and to influence travel behaviour. Typical applications of ITS deployed by cities and regions include real-time traffic and travel information, parking guidance and public transport priority at traffic lights. These services can be used to encourage and maintain more sustainable patterns of travel and reduce environmental impacts.

A. The consequences of closed systems

However, ITS have largely been implemented in an uncoordinated and incremental way, due in part to the multitude of organizations involved, the absence of a common set of ITS standards and specifications in Europe and the prevalence of closed property systems within the market.

The closed- system nature of traffic management through ITS can lead to higher costs, less operational efficiency and lack of incentives to innovate from perspective of suppliers and public authorities. Closed systems have also led to a situation of vendor lock-in for public authorities. Furthermore, technologies purchased from different suppliers may not be interoperable. Closed systems have the following consequences:

- **Loss of operational efficiency:** it can be impossible or difficult to develop an effective integrated approach to policies when urban ITS systems, such as those for traffic control, variable message signs, and real time passenger information are all separate entities;
- **Cost:** with disparate systems, an authority may be able to ensure best value through competitive tender for the initial implementation, but could face higher costs for any subsequent system extension;
- **Barrier to the development of new technologies:** lack of open standards can restrict the market potential of new technologies and systems, and the new policy opportunities they could bring.

B. The benefits of open systems

It is not always easy to capture in numbers the benefits of adopting an open systems framework (flexible nature, different contextual frameworks of the users and the market situation). However, many less quantifiable benefits have emerged over the years, for the customer (authority) and the supplier (industry).

- **More efficient traffic operations:** open specifications and standards allow for better integration of ITS which enable a more holistic view of the traffic situation, a greater use of automatic responses during key events, a better understanding of how systems work together and how to resolve problems as they occur, and greater flexibility in terms of mixing and matching solutions. The use of open standards would enable such systems to be integrated through, for example, a common database;
- **Cost reduction;**

- **Simplified and structured procurement:** technical specifications are impartial and readily available for use in procurement which can greatly simplify the tendering procedures. Furthermore, transferability is possible and an authority can make use of another authority's specifications and tendering document;
- **Promoting innovation** thanks to a scope for flexibility and evolution to keep up with technology and policy developments. The open systems framework provides a simple structure for the addition of new technology;
- **Improved customer-supplier relationship:** clarity of technical requirements helps dialogue between buyer and suppliers;
- **Future proofing investments:** overcoming the risks of legacy systems for local authorities. Integrating products into client systems as well as upgrading existing compliant products is easier.

Within the European policy and legislative context of promoting ITS deployment, common open specifications and standards are also important. The total public budget for ITS investments is relatively fixed now. By opening up the ITS market, road authorities can install and develop more systems to the benefit of the transport sector.

C. Supporting local transport authorities implement opens system frameworks

The European project POSSE (Promotion of Open Specifications and Standards in Europe) was set up to raise awareness on the need for open specifications and standards in Europe as well as to share the experiences of existing open system frameworks in Europe. It also aims to facilitate knowledge transfer to help local authorities develop a plan for implementing open specifications and standards.

The project builds on long standing experience of two open specifications and standards for ITS/traffic management systems. Both are different and provide case studies on the ability of different approaches to deliver benefits:

- **UTMC** (Universal Traffic Management & Control): the initiative comes for the UK Department for Transport to help transport authorities make the most of modern information and communication technologies. Traffic management systems were designed and manufactured by each supplier to its private specification, meaning that local authorities were locked to their specific suppliers for system maintenance, upgrade and replacement. Furthermore, it was difficult to connect systems together. Now, the open systems framework provides a continually evolving set of specifications for interfaces between different systems.
- **OCIT** (Open Communication Interface for Traffic Systems): in the German speaking countries of the EU along with Switzerland, the initiative comes from the suppliers. It aimed at replacing the local authority specific standards with a single, open industry standard so as to avoid heavy costs. The local authorities then founded an association named **OCA** (Open Traffic System City Association) to determine their interests and to play a role alongside industry in this standardisation process.

The POSSE project is developing a “**Good Practice Guide**” to provide advice for the following questions:

- How to proceed – under the constraint of public procurement – with system modernisation / system re-design and procurement of a complex system in the traffic environment?
- How to deal with a vendor mixed environment as a way of flexible adaptation?
- How to set up organisational structures and procedures to enable stakeholders to work towards the same goal?
- How to develop the technical specifications for a tender, without violating public procurement law; which procurement packages / lots are useful?