Multi-objective trip pricing model

Many congestion pricing schemes still focus on charging specific roads or zones. While these approaches can reduce traffic, they are often experienced as inflexible, difficult to explain, and unfair, especially by travellers who have limited alternatives. This problem becomes even more pronounced in cities with multimodal networks, where cars, public transport, cycling, and walking are closely interconnected.

What is the product?

The ACUMEN **multi-objective trip pricing model** introduces a more flexible and comprehensive approach by applying pricing at the level of complete trips rather than individual network elements. This allows the model to account for multimodal journeys and to design pricing schemes that reflect the full travel experience.

A key feature of the model is its ability to consider multiple objectives simultaneously. It can be used not only to reduce congestion but also to improve public transport performance, encourage sustainable travel choices, and address equity considerations across different user groups and areas. The model also supports both charges and incentives, enabling the design of revenue-neutral schemes.

Studies indicate that this trip-based approach can achieve better system-wide outcomes than traditional pricing mechanisms, often while maintaining lower price levels and greater flexibility for users. Furthermore, it is compatible with existing technologies such as smartphone-based tracking and digital payment systems, which facilitates its potential implementation.

Who is it for?

The model is particularly relevant for:

- **Transport planners, policy makers, traffic authorities, and public transport operators** that seek more adaptive, equitable, and effective approaches to managing congestion, travel behaviour, and multimodal urban mobility systems.