Solid: A Model of the Principles, Processes and Information required to ensure Mobility for all in Public Transport Systems

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Existing signs and systems of guidance and communication of information for users of public transport are often insufficient and difficult to use for passengers using an unfamiliar station or metro line. The problem is even more acute for those with impaired mobility. In particular, the visually impaired, the elderly and persons with physical, cognitive or sensory problems require signs or information systems providing accurate guidance adapted to their circumstances. Often some of this information may be considered excessive or redundant for the everyday traveller, but may be essential for those with disabilities. In order to adopt a systematic approach to evaluating the different needs and types of information required to ensure optimum safety and guidance for all classes of user we have developed a model of the basic requirements and tasks involved when using public transport. This model can be summarized by the acronym SOLID and it enables us to identify the essential requirements, processes and information needed at each stage of the chain of displacements. The Acronym stands for the five essential components of the model, which are Safety, Orientation, Localisation, Information and Displacement. Ensuring maximum safety and security for all users in all circumstances and all phases of the journey is of course the primary function of the transport operator.

The correct orientation of the traveller during the pedestrian phase implies timely indications of the direction he should take during each stage and confirmation of the passage by indications of arrival at appropriate "milestones" and the intermediate destination for that phase of the journey. Localisation permits the user to know where he is in relation to the required line or platform, but also the presence of points of interest, ticket offices, timetables of trains, obstacles or aids to mobility for persons of reduced mobility such as escalators or lifts. Information provided by all means of communication will include train destinations, wait times and perturbations or delays as well as commercial or tourist destinations. The displacements undertaken by the traveller will be actions linked to the essential tasks of entering and proceeding through the station, the process of leaving and the procedures to follow in case of an emergency such as a fire.

These four basic actions are, of course, more difficult to achieve for sensory impaired persons. These tasks are the same as those associated with the general problems involved in using a device, any form of transportation or entering and leaving private or public premises. The efficiency of the systems put in place to provide a satisfactory service to all depends on the modes of communication available, the physical and cognitive capacities of the travellers and is affected by the local environment and the multiple technical constraints implied by functional, historical, structural and economic factors particularly in metro stations dating back to the early 1900’s. In circumstances where older existing transport systems are being updated to comply with the new European regulations on accessibility coming into force, it is sometimes easier to propose alternative transport solutions, but much can still be done to improve accessibility in existing systems. The advantages of using this model are illustrated by the analysis of real problems and solutions applied in metro and train stations for the various types of users with mobility problems.

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