

iv2splus INFONET

I2V, 3rd Call (2009)

CareLog

Demographic developments in Europe will steadily increase the significance of health care logistics and especially mobile care in our society. New models and methods for optimised intermodal tour planning will be developed within CareLog. These methods should lead to significant improvements in efficacy, important cost reductions and increase in staff satisfaction, thereby leading to an improved patient care.

Five minutes can be of importance in mobile care. Trips between two clients not working out as planned can result in delays and longer working hours for nursing staff as well as inadequate care for patients. Additionally, the personnel are working at their limit. Choosing an optimal route between two patients is of great significance, since shorter and more robust routes will ultimately lead to lower cost and happier health care staff. Today, shifts and tours are usually planned manually. The quality of those plans strongly depends on the expertise of the person in charge of planning. The allocation of clients is therefore often suboptimal and can be problematic if short-term changes occur to the planned visits because staff shortfalls or patients having to cancel visits on short notice. Most of the tours in urban areas are performed by public transport or foot, less often bicycles or cars are used. The necessary approximation of travel-time between the different destinations is currently solely based on experience. Timetables or any form of traffic information are not considered. The connection of automated tour planning and relevant information about travel-times could therefore effectively increase the reliability and efficiency of the tours. The

needs and wishes of personnel and clients can be addressed in a better and more objective way through the use of an automated planning system. In the medium term, the technological solutions for staff and tour planning investigated within CareLog, will contribute to relieve nursing staff while increasing its satisfaction and efficiency and therefore provide for an improved patient care. Within the CareLog project, intermodal tour planning will be addressed for the first

time in the context of an urban (public) transportation network, in order to compute efficient tours for nursing staff while considering multiple transportation means and modes. Models and methods will be developed, to consider expected intermodal travel-times in the route planning process. Real-time information and unexpected changes (disruptions of the transportation network, delays, etc...) will furthermore be addressed by adapting the routes as required. Because of the specific properties of the underlying traffic network, such as time and schedule dependence, CareLog goes far beyond a simple integration of traveltimes into tour planning. The questions from the health care logistics field addressed within the CareLog project are of particular scientific interest, because intermodal tour planning has so far been considered only in the context of transportation of goods over long distances. There are no published approaches in relation to tour planning in the context of urban multimodal traffic networks.

The novel models and methods will be developed in close cooperation between the research organisation AIT Mobility, the realisation partner ilogs, the information provider VOR (ITS Vienna Region) and the application partner SOZIAL GLOBAL. This cooperation will allow the development of new technologies for intelligent intermodal logistics and thereby to strengthen the business and scientific location Austria.

Programme

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Project coordination

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