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Intelligent transportation systems for Czech ageing generation[☆]



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Abstract In the Czech Republic owning and utilising of a car is one of the best remedies against a diminishing of cruising radius in old age and a comfortable mean to sustain autonomy and independence of living as well as social relations. Physical handicaps and limits of the elderly could be compensated today by sophisticated technical solutions. Promotion of specialised driver-assistance systems in the cars and advancement of the demand for age relevant cars with high-tech-optimisation should be the remedy; It is expected that these technical means will be used to a far greater degree in the future for the purposes of preventing road accidents (active safety) and to reduce the impact of the road accidents that do occur (passive safety) to senior citizens. The use of telematic should help in preventing accidents. Technical development increasing the safety of vehicles for older passengers need not be the privilege of a few. It will be necessary to co-operate with manufacturers to ensure that technical innovations are available to all and attainable as soon as possible for a wide range of new vehicles. The possibilities for equipping older vehicles already on the roads with new technical means of prevention should also be investigated.

With changing attitudes and conditions the desire to travel for services, business and leisure represents a potential major new source of ideas for IVIS and ADAS designers and producers.

Senior drivers represent a potential major new source of ideas for IVIS and ADAS designers and producers. The telematic development including IVIS and ADAS designed to reduce traffic accidents and to support elderly drivers in a suitable and user-oriented way may be appropriate solution.

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Introduction

Due to demographic changes older and disabled people represent a significant and permanently growing part of Czech population. There has been a progressive increase over the

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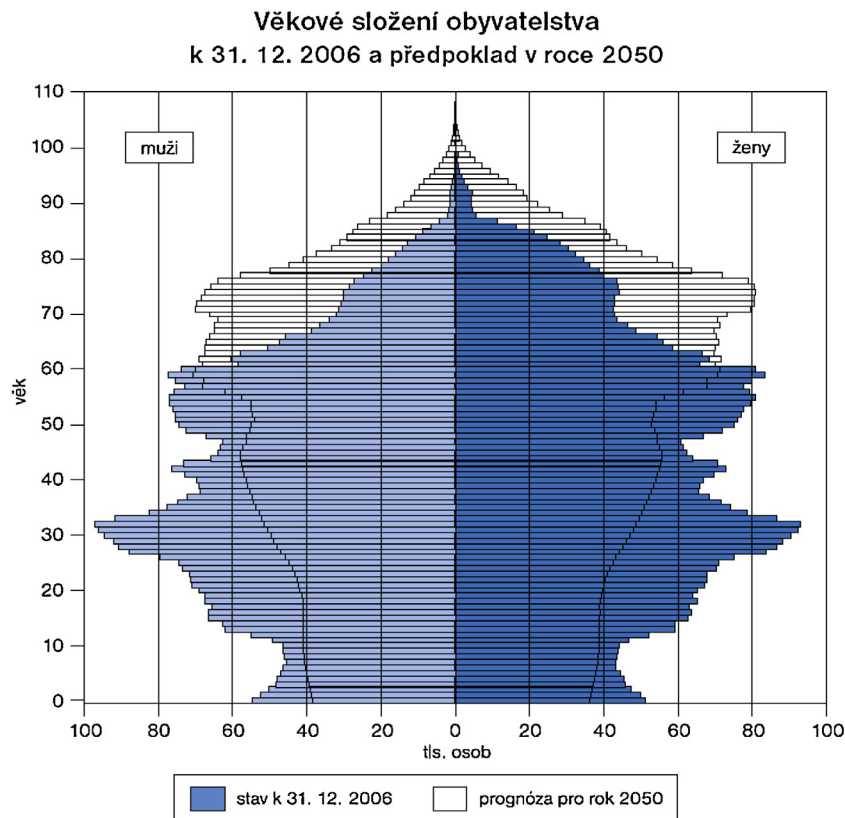


Figure 1 Division of the Czech population according age in the past (year 2006) and in the future (year 2050).

past decade in the social awareness of the requirements for older and disabled people throughout the Czech Republic and other parts of the Central Europe. This progression has moved from making provision for older and disabled people on a welfare-oriented basis, towards increasingly equal access to all facilities as a matter of human rights. Improving access to any form of safe mobility and travel provides additional social, as well as economic benefits at personal, governmental and commercial levels (Fig. 1).

Demographic changes

Demographic trends indicate a marked rise in the number of elderly people in the Czech population and there is a high correlation between age and some form of disability. The share of elderly people in the total population is expected to rise from 21% today to around 31% by the year 2020 and to around 34% by the year 2050. Disabled people represent around 13% of the nation. Various initiatives recognise the needs of elderly people. The older generation as a target group is evolving; its size as well as structure is changing during the time. The population of advanced European countries is getting older; pessimistic forecasts expect that within twenty years the number of post-productive citizens will catch up with and even exceed the numbers of other age categories. As to the structure, the number of women in this group prevails, and this is becoming even more distinct with the growing age. From the economic point of view, this group on the whole comes under poorer groups, which

particularly applies to elderly people living alone (just one person without a partner or a wider family). The higher-age groups also include working citizens (in this group men prevail); senior citizens are often active members of various associations, clubs and other interest groups. Technical facilities of their households and availability of basic living needs enables them to live relatively independent lives in their permanent domiciles or even in their summerhouses (Fig. 2).

Even though essential features are common, this group is very heterogeneous as to the physical and mental health and overall physical and mental condition. The standing and needs of healthy seniors are significantly different from those of more or less ill individuals, not to mention the disabled.

There would be no point to lengthening human life if this meant merely lengthening suffering for individuals and increasing problems for society as a whole. The aim both for ageing individuals themselves and for society is to delay ageing and, in close connection with the biological and social sciences, to seek ways of maintaining man's mental clarity and physical condition for as long as possible. The aim is also to find ways of compensating for the inevitable losses which come with increasing age, ways of increasing man's ability to adapt to the changes occurring both in his own organism and in the surrounding world, and ways of extending the period of time for which man is self-sufficient, useful to his surroundings and able to get something out of life for himself, without proving a burden to himself or his surroundings (Table 1, Fig. 3).

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