

Bavarian research & innovation



Bavarian Research Association for future-oriented products and services for the ageing society

MEETING THE DEMOGRAPHIC CHALLENGES

The German society is being confronted with a demographic dilemma: on the one hand, its citizens are getting older and, on the other, fewer and fewer people are being born. By the year 2050, the proportion of octogenarians will have tripled. From this we will see an emergence of new challenges for German politics, science and commerce. The persistent decrease in the number of citizens actively involved in gainful employment, in particular, will present the domestic economy with serious challenges. In order to assure that Germany can retain its status as a globally recognized site for technology and innovation, new methods and solutions must be found for dealing with this demographic problem.

The scientists in the inter-disciplinary research association "FitForAge" are willing to meet this demographic challenge. They are researching new technological means in order to be able to offer assistance to primarily senior citizens in our society. For this purpose, flexible measures for technological adjustments are required for both the working environment and the private living situation. The older generation's know-how and wealth of experience

have to be preserved and made available to all of society.

In the subject area "Fit4Work", methods are being developed for adjusting the working environment to the individual capabilities of the employee. This allows the individual to remain for a longer period of time and to work more efficiently in his profession.

In the subject area "Fit4Mobility", products are developed that assure an improvement in mobility and orientation for the user, such as "pedestrian-assistance vehicles" or a "mobile fitness aid".

In the subject area "Fit4Life", the target is to enable senior citizens – with the aid of age-based technical systems – to lead a self-determined life within their own four walls for as long as possible.

The cross-sectional projects "Fit4Use" and "Fit4Product" are meant to assure acceptance of new developments on the part of the user. This is meant to assure that the products developed in the project can fulfil the requirements and needs of the elderly individual during this transitional phase in his life.



The older generation's knowledge and competencies are very important for our society. Source: MEV Verlag

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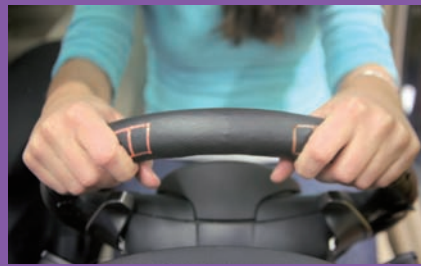
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RESEARCH TOPICS:



Subject Area I:
Individuals stay self-sufficient longer
(Fit4Life)



Subject Area II:
Individuals stay mobile longer
(Fit4Mobility)



Subject Area III:
Individuals stay in their professions longer
(Fit4Work)

Cross-Sectional Project I:
Consultation for and evaluation of age-based technologies (Fit4Use)

Cross-Sectional Project II:
Consideration of typical performance limitations due to age in product development (Fit4Product)

Photo descriptions:

SA I: Intelligent textiles for registration and recording of daily patterns of movement. Source: MiMed

SA II: Installation of skin-resistance systems and pulse-measurement systems into the vehicle. Source: MiMed

SA III: Assembly applications in assembly-line operations: proving grounds for robot-assisted assembly applications in assembly-line operations at *iwb*. Source: *iwb*

Subject area I "Fit4Life":

- "informARTik": Preparation of screening and diagnostic procedures
- "ISA-Haus": modern language-recognition in a building suitable for senior citizens
- "Intelligent in-house infrastructure and services": Measurement and appraisal of vital-sign parameters in the course of daily life; automatic data recording and analysis of movement and/or activity
- "Intelligently integrated technologies and services for a self-sufficient life for the aged": RFID (radio-frequency-identification) technology, sensor networks, localisation systems, etc.

Subject area II "Fit4Mobility":

- Fitness aid: recording of the heart frequency/ ECG by means of mobile sensors
- Orientation assistance: Pathway planning functions, guide functions and navigation functions
- Pedestrian mobility: motorised scooters / walking frames for movement-challenged individuals
- Vehicle mobility: Bio-sensors in the vehicle to monitor the individual's vital signs

Subject area III "Fit4Work":

- Assembly systems and structures: Appropriate configuration of individual work stations under consideration of technical aids and ergonomic guidelines
- Logistics systems and organisation: Improvement of the workstation ergonomics, optimisation of the provision of information
- Robotics support at assembly-line work stations; intelligent, robot-based support for strength and handling

Cross-sectional projects "Fit4Use" and "Fit4Product":

- Guidelines for an appropriate and unified configuration of age-based technologies
- Sensitisation of the target group as regards the applications and demands for acceptance of the new products within the user environment

Academic partners:

- Friedrich-Alexander-University Erlangen-Nuremberg
Institute for Psycho-Gerontology
Chair of Business Administration, especially logistics
Chair of Informatics 5 (Pattern Recognition)
Chair of Information Technology, especially Communication Electronics
Chair of Construction Technology
Psychiatric and Psycho-Therapeutic Clinic
- Julius-Maximilians University Würzburg
Chair for Technical Informatics
- Technical University of Munich
Institute for Machine Tools and Business Administration
Chair of Conveyor Technology, Material Flow, Logistics
Chair of Micro-Technology and Medical-Instrument Engineering
- University of Regensburg, Chair of Psychology V

Industrial partners:

- ABF Apotheke Breitscheidstraße Fürth
- BayME - Bayerischer Unternehmensverband Metall und Elektro e. V.
- BIJO-DATA Informationssysteme GmbH
- Biosigna GmbH
- BMW AG
- BMW Group Forschung und Technik
- BMW M GmbH
- BSH Bosch und Siemens Hausgeräte GmbH
- Chimaera GmbH
- Corscience GmbH & Co. KG
- Dr. Hein GmbH
- EURO-LOG AG
- Geis Industrie-Service GmbH
- Geromed GmbH
- GEV Grundstücksgesellschaft Herzogenaurach mbH & Co. KG
- Handicare GmbH
- Harcourt Test Services GmbH
- Metabowerke GmbH
- Navigon AG
- Ray Sono AG
- Reis GmbH & Co. KG Maschinenfabrik
- Softgate GmbH
- TRIKON Engineering GmbH
- VBM - Verband der Bayerischen Metall- und Elektro-Industrie e. V.
- xmedio GmbH
- ZELENKA GmbH