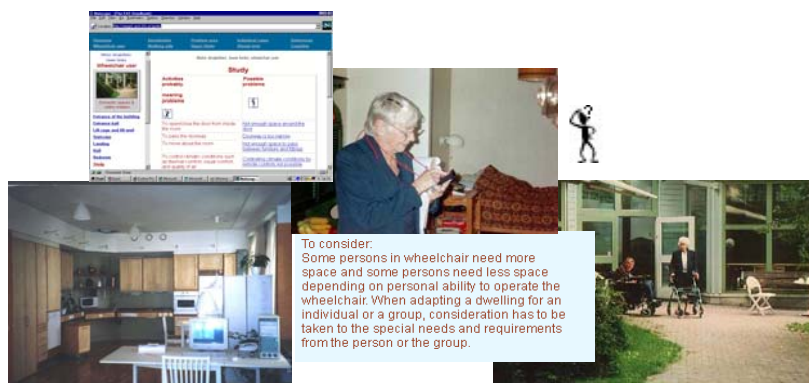


The rapid development of information technology around the millennium-change has created an urgent necessity to define theories, methods and concepts in order to analyse and evaluate the interaction between IT, environment and users. The population in the world get older and many persons want to stay in their homes as long as possible. An independent living and design for all principles becomes more and more important.

## Two Electronic Tools: Guide to cheque accessibility in housing and Handbook on how to evaluate "smart homes"



### Domotics

The concept "Domotics" is an anglicised French word of "domotique". Domus in Latin means home and tics is the ending of informatics and telematics. The comparable terms in English are "home automation" and sometimes "smart houses" or "smart home technology". These are rather unspecified words. According to the definition domotic is defined more specifically as a system of IT components (products and services) in housing applicable to safety and security, comfort and self-care, communication and property management. They can be classified into the four categories as follows:

- **Safety and security:** e.g. TV monitoring at the entrance door showing who is visiting, burglary alarm, security alarm, fire alarm.
- **Comfort and self-care:** Remote control for doors window, curtains, lighting, heating, elevator, stair lift etc. Support for the memory.
- **Communication:** Products and services to support entertainment, distance working, distant education, diagnosis care at distance etc.

- **Property management:** Service, control and maintenance. Information about efficient energy, and water consumption.

The domotic system can be integrated with the dwelling and the building structure and connected to adjacent apartments or within the block, to the work place and to public and private services. Domotics can also become an important assistive-technology solution for the inhabitants, their next of kin, the property manager, the personnel of local services and other actors.

### Domotic Lab

Domotic Lab, is a consultancy company in the building and property management sector dealing with design an evaluation to support accessibility and usability for people with disabilities, focusing on new technologies.

The company was founded in 2000, aiming at disseminating and developing the knowledge that had been put forward by the research group with the same name at Royal Institute of Technology (KTH) in Stockholm. The

consultancy company Domotic Lab has the aim of acquiring research on the interaction between people, the built environment, and the use of new technologies. We have special competence within two activity directions.

- Design for all
- Evaluation

The multi-disciplinary work is done in collaboration with Swedish and international research teams.

### Two European projects

Since 1997/98 the research group Domotic Lab was involved in the two European-projects within the "Telematics applications for the Integration of Disabled and Elderly" (TIDE). In the NJORD-TIDE support action as co-ordinating team and in the FACILE- project as contractor. The first project has resulted in an electronic Handbook about methods for user sensitive evaluations of domotic environment (EAS Handbook) and the second includes an electronic Guide to Design about accessibility.

#### Contact details:

#### Domotic Lab

Address: Björkallén 18, SE-142 66 Trångsund, SWEDEN

Phone: +46 70 441 34 95, +46 76 104 15 45 8

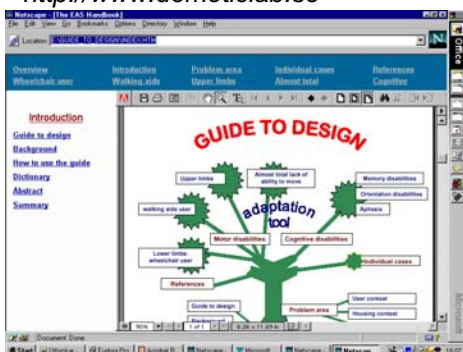
E-mail: [info@domoticlab.se](mailto:info@domoticlab.se)

Web site: [www.domoticlab.se](http://www.domoticlab.se)

## How to cheque accessible in housing?

The Guide to design on CD-ROM provides support to design or modification of living space for motor and cognitive disabled persons with reference to; handbooks and de facto standards, individual cases, telematic products and web sites. The Guide highlights some aspects of good design of the domestic space and dwelling adaptations related to various needs and includes approx. 650 advice to different accessibility problems in the dwelling and its surrounding. The *Guide to design* is available at the web site of Domotic Lab:

<http://www.domoticlab.se>



The tool is structured in five parallel guidelines related to different needs:

- Wheelchair users'
- Walking aids users'
- Users' with motor disabilities in upper limbs
- Users' with almost total lack of ability to move
- Users' with cognitive disabilities (orientation difficulties, memory difficulties, aphasia)

## How to evaluate "smart homes"?

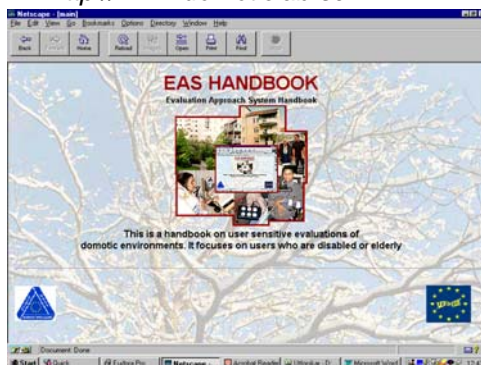
People with disabilities and a steadily growing number of elderly often wish to remain in their own dwellings. Many new domotic products and services for these groups appear without being evaluated concerning the users. Due to the lack of clear evaluation processes, the users

are often not offered the best solutions. Presently, evaluations of domotics and other areas are frequently performed throughout the world without regarding systematic evaluation methodology and without necessary scientific knowledge or approach. Even highly skilled experts in different fields of occupation, may lack know how in evaluation matters. This is often also the case when the users themselves and their organisations perform evaluations.

In addition, "home-made" evaluation solutions are being used for some purposes. Further to this, there is an abundance of evaluation methods according to their many different names and terms. But when scrutinising the evaluation flora, several of the methods are similar or next to identical in terms of approaches, techniques and tools.

The Evaluation Approach System (EAS) Handbook is a software dissemination tool to support user-sensitive evaluations of domotic environments, presented in hypertext form on CD-ROM. An introductory handbook (*the summary*) and the *EAS Handbook* are available at the web site of Domotic Lab.

<http://www.domoticlab.se>



The methods presented in the Handbook are not new. They are established and proven to be valid and reliable.

The innovative contribution gained by the Handbook is:

- Being a simplified framework in which different types of evaluation methods can be perceived and put in a distinguishable order
- Bringing order into the abundance of evaluation methods, clearing it from duplicates to give an isolated systematic overview, answering many questions on what when and how, an ABC for evaluations
- Providing a practical manual and guidance for evaluation, to be used by project leaders and evaluators involved in R&D-projects, beginners, students, users, user organisations, social service providers, occupational therapists, nurses, ergonomists, technical service providers, enterprises developing producing and installing domotics, inventors, designers, architects and constructors etc.
- Selecting eight evaluation methods to illustrate the variation of evaluation approaches (methods, techniques, cost, need of expertise, applicability etc.). Each method is in established use, valid, reliable and user sensitive, covering several aspects of domotic systems and environments

A scientific approach to evaluation is important, as the impact of the result will influence the distribution of telematic applications. This may affect the quality of life of all users, not only disabled and elderly people, hopefully in a positive direction.

Applying the appropriate evaluation methods from start to end, facilitates the considerable task of matching domotic dwellings, life length 50 years, with the extreme speed of IT-development. With this in mind, it might even be possible to influence the development for future needs, avoiding costly built-in mistakes.

### Contact details:

**Domotic Lab**

**Address:** Björkallén 18, SE-142 66 Trångsund, SWEDEN

**Phone:** +46 70 441 34 95, +46 76 104 15 45 8

**E-mail:** [info@domoticlab.se](mailto:info@domoticlab.se)

**Web site:** [www.domoticlab.se](http://www.domoticlab.se)

---

**Contact details:**

**Domotic Lab**

**Address:** Björkallén 18, SE-142 66 Trångsund, SWEDEN

**Phone:** +46 70 441 34 95, +46 76 104 15 45 8

**E-mail:** [info@domoticlab.se](mailto:info@domoticlab.se)

**Web site:** [www.domoticlab.se](http://www.domoticlab.se)

---