



Call for Papers
IEEE TRANSACTIONS ON
AUTOMATION SCIENCE AND ENGINEERING
Special Issue on Home Automation



Automation plays an increasingly important role in the home environment. With advances in automation, homes can potentially become the places where people can interact with the world and receive a number of services, now distributed in many different places, from hospitals to shops, to libraries to museums. Modern automation is providing new methods, components, and architectures that, when implemented in a home, allow for highly personalized services at an affordable cost. Similarly, automation industries see the potential of developing a consumer market in parallel to the established professional market. Home automation is thus broad and includes man machine interface issues, energy usage and task planning and management, intelligent non-intrusive automation systems, highly distributed sensing and actuation, automation devices into everyday objects, privacy issues, safety and security protocols, new telecommuting and production paradigms, and ethics of a changing society. This Special Issue aims to publish original, significant and visionary papers describing scientific methods and technologies that improve efficiency, productivity, quality and reliability in all areas of home automation. The central theme of the Special Issue is on *recent progress in home automation*. Special attention will be paid to papers focusing on integrating various elementary technologies creating interdisciplinary systems, and to solve specific home automation problems, such as those mentioned above. Submissions of scientific results from experts in academia and industry worldwide are strongly encouraged. Topics to be covered include, but are not limited to,

- *Energy usage and task management* to balance energy loads, and to plan and coordinate tasks of daily living.
- *Truly friendly and multi-modal home interfaces*, capable of gesture/emotion recognition, visual expression understanding, emotional perception, natural language understanding, etc.
- *Intelligent non-intrusive home automation systems* capable of understanding the normal execution of tasks of daily living, detecting unexpected events, and availing of context awareness.
- *Handling of highly distributed devices*, capable of handling a large amount of data from distributed sensors and actuators, most likely using wireless protocols connecting fixed and wearable sensors.
- *Active furniture*, equipped with new generations of sensors and actuators, such as autonomous coffee tables, arm-equipped kitchen, and intelligent beds.
- *Privacy, security and safety*, to ensure data analysis correctness, actuators safety, robustness to data overload and storms, protecting against break-ins and intrusions, and to provide safety for children and senior citizens.
- *New telecommuting and production paradigms* to support advances in manufacturing technologies that may foster new types of home manufacturing.
- *Ethical issues* to evaluate the risks of the introduction of home automation based services.
- *New professions and economic impact*, to address the issue of preparing a new era of technical people, specifically trained for the needs of home automation.
- *Application and demonstration*, to present results of technology integration into operational systems, including home offices and distributed home manufacturing, health care and telemedicine, transportation and mobility support, better living and intelligent furniture, safe homes and environmental monitoring.

Important Dates

- March 15, 2006: Paper submission deadline.
- July 1, 2006: Completion of the first round paper review.
- October 1, 2006: Completion of the second round paper review.
- November 1, 2006: Final manuscripts due.
- January, 2007: Tentative publication date

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Paper Submission

All papers are to be submitted through the IEEE's **Manuscript Central** for Transactions on Automation Science and Engineering <http://mc.manuscriptcentral.com/t-ase>. Please select "Special Issue" under Manuscript Category of your submission. All manuscripts must be prepared according to the IEEE Transactions on Automation Science and Engineering publication guidelines <http://www.engr.uconn.edu/~ieeetase/>.

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