

Publicizing of MemsONE (beta version)

The MEMS Open Network Engineering System of Design Tools (MEMS-ONE) Project was a three-year (2004 – 2006) development project commissioned by the New Energy and Industrial Technology Development Organization (NEDO). The project culminated in the achievement of a beta version of the MEMS design and analysis software “MemsONE”. Distribution of this version will be begun at the beginning of June.

At the end of February, the evaluation version (alpha version) of the software distributed since the end of last November had approximately 400 licensed users. 70% of these users provided feedback regarding functions, price, support and expectations. Modifications will be made based on this feedback and all of the issues encountered during project development will be incorporated into the beta version release. We hope the software will prove useful in product design and development at companies as well as in research projects, teaching materials and so on at universities.

1. Project objectives and system features

The objective of this project was to develop a system that would enable stress-free use of advanced MEMS knowledge and data by not only people such as MEMS researchers and engineers who are familiar with cutting-edge research in the field but also researchers and engineers in other fields who are first-time or inexperienced users, thereby achieving broad-based expansion of the MEMS industry.

The MemsONE system was developed jointly by three software developers (each handling its own field of specialty), five companies engaged in projects relating to MEMS devices (each of which contributed its experience and achievements to create specifications and conduct evaluations), 13 university researchers (who provided their state-of-the-art knowledge and wisdom), and one research institution (which provided the measurement technologies that it had accumulated over a long period of time).

The analytical functions needed for MEMS design were provided in all-in-one fashion. The most significant feature of the software is its Japanese language response capability, making it easy for beginners to use (see figure below).

Functions provided by the software include standard analysis and design, unique “inverse design” in which masks and processes are designed from the final structure, evaluation of bonding and packaging (which is involved for resolving many problems in the MEMS development phase), nanoimprinting analysis

(which is becoming a focal point for cutting-edge technical trends in the MEMS field), and integrated analysis of MEMS devices and circuits. The software also includes a knowledge database containing more than 1,700 entries and a material database containing approximately 170 entries including data acquired through the process line.

2. Activities aimed at dissemination

Last year a major publicity campaign was initiated to encourage dissemination of the MemsONE software. Events included the Sensors and Micromachines and Applied Systems symposium of the Institute of Electrical Engineers, the 9th Kansai Design and Manufacturing Solutions Exhibition, the Exhibition MICROMACHINE and the conference held concurrently to announce the achievements of the project, and the Nanotech 2007 exhibition.

As a result of this publicity campaign, the number of registered members in the MemsONE Club rose to approximately 800 persons. As MemsONE Club members are potential MemsONE users, Information disclosure and service activities will be focused on them in the future as well.

3. Beta version distribution schedule

- Publicity: Information regarding the beta version distribution will be provided on the website, and through the media, at the beginning of May.
- Distribution cost: The cost will be approximately JPY 10,000 yen per license.
- Use environment: Details will be posted on the website.

