

**Goal of the project:**

The European project thinkMOTION is intended to offer knowledge in the field of mechanisms and machine science through the portal Europeana on a specialized site called DMG-Lib. DMG-Lib is a digital library, which provides content originating from a large range of sources (universities, technical libraries, museums, patent offices, individual owners etc.). The content posted on DMG-Lib presents information in more categories: books, articles, proceedings, PhD thesis, contributions, journals, reports, biographies, images, interactive animations, software and so on. One of the main goals of the project is the retrieval of mechanism science in its history. Almost all content before 1990 exists in analogue form, written, printed or drawn on paper support. Getting back and gathering national historical treasures in a well-organized collection requires digitization of a large amount of documents. The digital library offers a novel way of describing the history of development in mechanism science field, from antiquity up to nowadays.

**Short description of the project:**

The processing of an item starting with an analogue document and ending up to having high-quality online information was planned to pursue the following workflow:

- locating of potential content providers, owning the rights of use granted by the owner of intellectual property and getting the physical support carrying content;
- performing the primary digitization by means of specially designed equipment, in order to obtain raw scanned images of the original document;
- processing the raw images with appropriate software so that the quality of images matches imposed standards and the final files are web-compliant; (fig. 1)

- digitization of images;
- generation of CAD files in order to provide movies, interactive animations and CAX files;
- contributing with Romanian scientists biographies to a Who-is-Who European Collection;
- posting the items online.

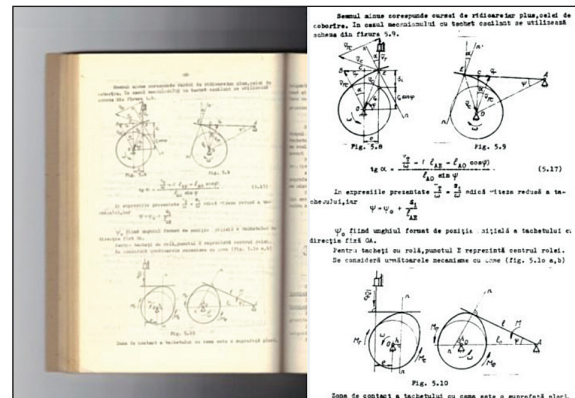


Fig. 1. Raw scanned image of a page book (left) and its final digitized look online (right)

**Project implemented by:**

Partners from:

- Ilmenau University of Technology (IUT, Germany);
- University of Basque Country (UBC, Spain);
- Politehnica University of Timisoara (UPT, Romania);
- RWTH Aachen University (RWTH, Germany);
- French Institute of Advanced Mechanics (IFMA, France) and;
- University of Cassino (UCAS, Italy).

"God determines how fast you're going to run; I can only help with the mechanics."

Bill Bowerman

### Implementation period:

10.06.2012-31.05.2013

### Main activities:

The workpackages within the project are briefly described below:

WP1: Coordination, project management and quality assurance

WP2: Adaptation to interfaces to Europeana

WP3: Locating and providing relevant sources and clarification of rights of use

WP4: Digitizing heterogeneous input content

WP5: Processing of digitized content and integration into DMG-Lib

WP6: Entering metadata for content

WP7: Collection and systematization of information about important persons in mechanism science

WP8: Multilingual translation of metadata

WP9: Sustainability and exploitation

WP10: Dissemination, awareness activities and staff development

### Results:

- designing and assembling of a performant scanning equipment; (Fig. 2)

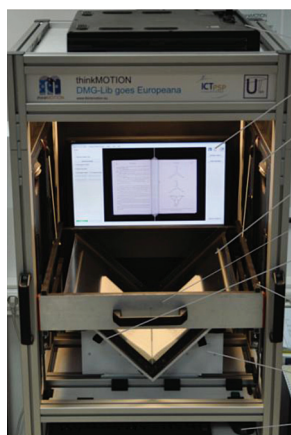


Fig. 2. Scanning equipment developed at UPT

- digitization and processing of a large amount of documents (about 6500 titles);
- generation of digital items such as movies, CAD files, 2D and 3D images of mechanisms, interactive animations;

- posting of 140 biographies of persons and descriptions of universities that are significant in Romania.

**Fields of interest:** mechanism and mobile mechanical systems, software development and implementation, multilingual digital library

### Financed through/by:

The Information and Communication Technologies Policy Support Program; Area: CIP-ICT-PSP.2009.2.3 - Digital Libraries; European Digital Library Digitizing content for Europeana

### Research team:

Erwin-Christian Lovasz, Inocențiu Maniu, Corina Mihaela Gruescu, Iosif Cărbăș, Valeriu Ciupe, Dan Mărgineanu, Rodica Militaru, Carmen Sticlaru, Agneta Lovasz, Eugen Zăbavă, Dan Perju, Liana Dehelean, Nicolae Dehelean, Valer Dolga, Ivan Bogdanov, Diana Resiga, Veronica Argeșanu, Andreea Dobra, Endre Ianoși, Cristian Emil Moldovan, Sanda Grigorescu, George Savii, Țucu Dumitru, Liviu Bereteu, Valeria Văcărescu, Voicu Mesaroș-Anghel, Mihaela Jula, Aurel Diaconu, Ioan Doroftei, Dan Sergiu Stan, Dan Mândru, Angela Repanovici, Corneliu Rădulescu.

**Research centre** for Mechatronics and Robotics

**Aplicability and transferability of the results:** Results are available on the site of DMG-Lib ([dmg-lib.org](http://dmg-lib.org)) and the portal Europeana. They address to students, PhD students, engineers, teachers and so on. The content is useful for education and research purposes.

### Contact information:

Erwin-Christian Lovasz

e-mail: [erwin.lovasz@mec.upt.ro](mailto:erwin.lovasz@mec.upt.ro)

Corina Mihaela Gruescu

e-mail: [corina.gruescu@mec.upt.ro](mailto:corina.gruescu@mec.upt.ro)

"God determines how fast you're going to run; I can only help with the mechanics."

Bill Bowerman