Vidmantas NENORTA, Tilmute PILKAITE. Nomeda PUODZIUNIENE
Kaunas University of Technology
Department of Engineering Graphics
27 Kestucio st., 44312 Kaunas, Lithuania
e-mail: vidmantas.nenorta@ktu.lt
e-mail: tilma@ktu.lt
e-mail: nomeda.puodziuniene@ktu.lt

EMPLOYMENT OF CAD SYSTEMS FOR MULTIMEDIA AIM

It is very important to communicate with listeners effectively, using variety of tools and medium. Today we have a lot of power presentation tools (software) like Microsoft power point, Adobe presenter, Keynote, PhotoStory and others. These systems are popular all over the world and are frequently used for lecture delivering, conference report presentation. For presentation preparation creators spend a lot of self depended time, but some times they can not be realized without using special tools.

Presentation products have played minor role in technical engineering world. It is particular sphere witch requires special design tools and products (systems) for presentation. Today Autodesk corporation product – computer aided design (CAD) systems are very popular in the world. These systems a most frequently used during the learning process in technical colleges, universities for today technical engineers preparation and later for design works in enterprises. The contemporary parametrical three-dimensional (3D) modeling systems has a snug presentation possibilities, which can be adapted to multimedia purpose, however two-dimensional (2D) problem visualization is complicated.

Autodesk has several special visualization products including Autodesk Impression, VIZ, 3ds Max, Maya, Sketchbook Pro and Freewhell. Tying of these products together is the Autodesk DWG format. Anyway using of noted software related with expenditure of money additional special knowledge assigned to it handling.

Sometimes it is very important to recognize drawing creation process, simulate and visualize the final product. Knowing the way of drawing creation process, you can evaluate an appropriate knowledge of students (check the task-solving algorithm), prepare the presentation files with AutoCAD, Mechanical Desktop software just using 2D technical drawings. It is particularly important to visualize descriptive geometry and projection-drawing task solving process.

The paper deals with AutoCAD, Autodesk Mechanical Desktop software subsystems creation, in order to adapt these systems to special user requirements, to replay 2D drawing creation process according to design operations order or according to required sequence.

A new methodology, algorithm and special subsystem adapted to it were created. That subsystem recognizes 2D drawing creation process and allow replay it in order of drawing created or according to required for presentation aim sequence. The described problems were solved using AutoLISP programming language. Required technical, geometrical and mathematical solutions performed by internal software's data base analysis with cooperation of AutoLISP equality, logical, conditional, list manipulation and other functions.

Reviewed and analyzed Mechanical Desktop and Inventor software possibilities to visualize digital model of the final product by using exploded views and assembly process simulation.

All the described techniques are adapted to learning process in the Kaunas University of Technology for technical trend students' preparation. It allows improve students' imagination, experience, lightens learning process in classes and out of it.