identification. Such technologies authorize systems to independently analyze a huge volume of video streams, recognize anomalies and respond in a timely manner to potential threats or malfunctions [2, p. 21].

The ability of information technology to process great number of video data in real time is extremely important. Collecting and analyzing large amounts of information requires high performance and speed, which is achieved with the help of specialized software solutions and equipment.

Information technology also plays a pivotal role in making decisions based on video data analysis. Automated systems not only provide operators with the necessary information and can also independently recommend intervention strategies based on previous experience and training.

The use of information technologies in video surveillance not only increases the efficiency of security and control systems, but also contributes to sustainable development by optimizing the use of resources and increasing the level of security in society. This integrated approach, combined with the constant development of technology, makes information technology an integral part of the successful implementation of video surveillance and monitoring in the modern world.

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PRODUCTION AND TECHNOLOGICAL PROCESSES IN MECHANICAL ENGINEERING

The production process is used to transform natural objects into a product useful to humans. The production process includes all the stages that natural objects go through on the way to transforming them into a finished product.

The production process carried out at a machine-building plant is part of the entire production process of transforming natural objects into a machine. Thus,

a production process in mechanical engineering is a set of all stages that semi-finished products go through on the way to transforming them into a finished machine.

A technological process is a sequential change in the shape, size, properties of a material or semi-finished product in order to obtain a part or product in accordance with the specified technical requirements. The technological process of machining parts is part of the overall production process of manufacturing the entire machine [1, p. 7].

Any technological process consists of the smallest technological processes or is part of a more a more complex one. For example, the technological process of assembling of an automobile engine, on the one hand, can be divided into smaller ones that differ from each other: technological processes of assembling a connecting rod and piston group, cylinder block or gearbox; on the other hand, the technological process of engine assembly process is part of the technological process of assembling a vehicle as a whole.

Manufacturing processes are the foundation of modern industrialization, driving the creation of a vast array of products that touch every aspect of our daily lives. As a vital subset of mechanical engineering, manufacturing processes encompass a diverse range of techniques and technologies that transform raw materials into finished products with precision, efficiency, and innovation [2, p. 1].

In mechanical engineering, the first step to creating a new product is to have a clear understanding of what the customer needs and what the product should do. Engineers need to be really knowledgeable because they use science and engineering ideas, like forces, how people hold and use things, what materials to use, and heat energy, to guess how well the product will work, how safe it is, and if it can be made easily.

After fine-tuning the initial design idea, it's vital to pick the right materials that will meet the product's needs and can be made effectively. Engineers look closely at each material's characteristics –like how strong, flexible, hard, rust-resistant, and heat-stable it is –to make sure it's a good fit for the job, the environment it will work in, and the budget. With new developments in materials science bringing out fresh options like advanced composites and alloys, staying informed is key.

The next step is the actual production of the product, using different tools and techniques. There are four basic production processes for producing desired shape

of a product. These are casting, machining, joining (welding, mechanical fasteners, epoxy, etc.), and deformation processes. Casting process takes advantage of the fluidity of a metal in liquid state as it takes shape and solidifies in a mold. Machining processes provide desired shape with good accuracy and precision, but tend to waste material in the generation of removed portions. Joining processes permit complex shapes to be constructed from simpler components and have a wide range of applications.

Deformation processes exploit a remarkable property of metals, which is their ability to flow plastically in the solid state without deterioration of their properties. With the application of suitable pressures, the material is moved to obtain the desired shape with almost no wastage. The required pressures are generally high and the tools and equipment needed are quite expensive. Large production quantities are often necessary to justify the process.

In making products, it's very important for mechanical engineers to check everything is made well, so it's safe and works like it should. They use a bunch of different ways to do this, like checking the numbers to spot problems (that's called statistical process control or SPC), figuring out what could go wrong and how bad it would be (failure mode and effects analysis or FMEA), and finding the root of a problem when something's not right (root cause analysis or RCA). They're always trying to make these checks better so they can make things more accurately and throw away less.

Several trends regarding various aspects of modern manufacturing are the following:

- Product variety and complexity continues to increase.
- Markets continue to become multinational and global competition is increasing rapidly.
- Developments continue in the quality of materials and their selection, especially for improved recyclability.
- The most economical and environmentally friendly manufacturing methods are increasingly being pursued, and energy management has become increasingly important.
- Titanium, magnesium, aluminum and fiber-reinforced polymers are increasingly seen as essential technologies for meeting fuel energy efficiency goals in transportation applications [3, p. 59].

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CURRENT ISSUES OF VIRTUAL REALITY IN VARIOUS SPHERES OF HUMAN ACTIVITY

Virtual reality is a remarkable technological achievement that allows you to immerse yourself in a world like the real one, but with many more possibilities. The use of VR allows you to analyze and explore problems for improvement. This proves useful in scientific research, where accuracy and efficiency are the most important factors. This tool is widely used in various fields, from medicine to the military. But despite its benefits, the use of BP raises some pressing issues and challenges.

With the emergence of new technologies, live communication in society is decreasing, and the emergence of virtual reality is exacerbating this problem. People don't notice the difference between the virtual and real worlds, especially if they spend most of their time in an artificial world where there are no wrong paths. The impact of VR inhibits the division of reality into artificial and natural, which changes the way people see the world and the person themselves [1].

There is also the issue of data privacy and security. VR headsets have many cameras and sensors that track body, eye, and facial movements. This data is needed for human interaction with the virtual environment. The information is processed on the device itself, but it can also be transferred to external servers. This can lead to leakage of work-related and personal information. There is a need for privacy mechanisms in VR applications [2].

The role of technology is growing, as is the negative impact on the health of users. A lot of studies have shown that the use of virtual reality can lead to symptoms