

FROM MECHANICAL AUTOMATIC SYSTEMS TO HUMANOID ROBOTS - KEY MILESTONES

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Abstract: *Human intention of creating an artificial structure similar to him is one of the oldest, which remained a constant concern, being paid a high level of attention, and creative scholars throughout history have been going through a maximum period of interest. This article presents the main stages of evolution of the legendary mechanical machines or humanoid robots made real until now. The article is important because obviously during the next period such concerns are widespread. They can be brought to the attention of researchers, engineers, robotics and mechatronics experts, in both academic environment and in manufacturing of potential mechatronic items in Romania, the market for such products, as can be deduced from the existing data, having very encouraging potential in the near future.*

Keywords: *humanoid robot, service robot, medical robot, robotics market*

1. Introduction

Human intention of creating an artificial structure similar to him is one of the oldest, which remained a constant concern, being paid a high level of attention, and creative scholars throughout history have been going through a maximum period of interest. Historically, the first automatic (the term coming from the Greek word *automatos*- moving on its own) mechanical humanoid system can be considered the legendary *Talos* (see **Figure 1**). This one, described in several texts from antiquity, had a human-like mechanical structure and it was driven by a special liquid. According to some texts, Talos was probably forged of bronze, by Hephaestus and the Cyclopes and given to King Minos of Crete as a gift. Talos was intended to defend Crete from potential invaders but also to stop the locals to leave the island without the will of the king and to make sure that the king's laws are observed. On this purpose, he used to patrol up and down the island, going around Crete three times a day, which means a speed of 350 km per hour, something still impossible even today. In order to work, Talos was based on a single red vein, most likely a network of

veins, located under artificial skin, rather a breastplate, from the neck to the heel, being closed by a bronze nail. The nail was sealed in the *divine ichor* (a kind of blood of the gods), and the liquid in the vein allowed the metal limbs to move. The heel was the only weak point of his body.



Figure 1: *Talos in an artistic representation [9]*

Talos lost functionality when Medea gave him a drink, which made him fall asleep, and she removed the bronze nail so that the liquid in the vein has leaked out. Even though Talos probably never existed physically, he has always been a starting point for making real versions of him.