
ABSTRACTS

*doi:10.22306/asim.v8i3.85**Received: 02 Aug. 2022**Revised: 03 Sep. 2022**Accepted: 16 Sep. 2022***Proposing the capacity of bulk materials buffer in the simulation software**

(pages 17-22)

Marek Ondov

Institute of Logistics and Transport, FBERG, Technical University of Kosice, Park Komenskeho 14, 042 00 Kosice, Slovak Republic, EU, marek.ondov@tuke.sk (corresponding author)

Peter Gombos

Institute of Earth Resources, FBERG, Technical University of Kosice, Park Komenskeho 19, 042 00 Kosice, Slovak Republic, EU, peter.gombos@tuke.sk

Ivana Krajnakova

Institute of Earth Resources, FBERG, Technical University of Kosice, Park Komenskeho 19, 042 00 Kosice, Slovak Republic, EU, ivana.krajnakova@tuke.sk

Karolina Bortakova

Institute of Earth Resources, FBERG, Technical University of Kosice, Park Komenskeho 19, 042 00 Kosice, Slovak Republic, EU, karolina.bortakova@tuke.sk

Zuzana Sedlakova

Institute of Earth Resources, FBERG, Technical University of Kosice, Park Komenskeho 19, 042 00 Kosice, Slovak Republic, EU, Zuzana.sedlakova@tuke.sk

Ibrahim Mehana

Institute of Earth Resources, FBERG, Technical University of Kosice, Park Komenskeho 19, 042 00 Kosice, Slovak Republic, EU, ibrahim.mehana@tuke.sk

Keywords: storage, buffer, bulk material, modelling, simulation.

Abstract: Storage is one of the primary activities of manufacturing enterprises. Mainly, enterprises deal with the storage of piece materials, but there are also production processes using bulk materials. For this material, enterprises need to create specific storage areas - buffers. The first activity before creating a buffer is determining the nature of its filling and emptying, which affect the main parameter of buffers, namely capacity. Specifically, it is necessary to know the hourly performance of the filling equipment, the method and speed of emptying, and the type and capacity of the means of transport into which the material is loaded. The simulation software brings a modern touch to the years-proven procedures for determining the capacity of bulk material buffers and speeds up the process. In the paper, simulation replaces the previous approaches to creating graphic outputs, which check the mathematical part of the algorithm and visualize the behaviour of the buffer in specific situations. The result of the use of simulation is the rapid creation of graphs of material supply and easy checking of several options through experimentation with the simulation model.

*doi:10.22306/asim.v8i3.86**Received: 10 Aug. 2022**Revised: 02 Sep. 2022**Accepted: 17 Sep. 2022***Meaning and functions of the specialized laboratory Testbed 4.0**

(pages 23-28)

Peter Trebuňa

Technical University of Košice, Faculty of Mechanical Engineering, Institute of Management, Industrial and Digital engineering, Park Komenského 9, 042 00 Košice, Slovak Republic, EU, peter.trebuna@tuke.sk

Marek Mizerák

Technical University of Košice, Faculty of Mechanical Engineering, Institute of Management, Industrial and Digital engineering, Park Komenského 9, 042 00 Košice, Slovak Republic, EU,

ABSTRACTS

marek.mizerak@tuke.sk (corresponding author)

Marek Kliment

Technical University of Košice, Faculty of Mechanical Engineering, Institute of Management, Industrial and Digital engineering, Park Komenského 9, 042 00 Košice, Slovak Republic, EU, marek.kliment@tuke.sk

Tomáš Švantner

Technical University of Košice, Faculty of Mechanical Engineering, Institute of Management, Industrial and Digital engineering, Park Komenského 9, 042 00 Košice, Slovak Republic, EU, tomas.svantner@tuke

Keywords: Testbed, industry, technology.

Abstract: The highly specialized Testbed 4.0 laboratory is located on the premises of the Technical University in Košice at the Faculty of Mechanical Engineering, specifically in the building of the Department of Industrial and Digital Engineering. The idea of creating the Testbed concept arose as a response to the needs arising from the currently ongoing digital transformation of companies and at the same time as a support tool for companies in the competitive struggle, whether on the market of Slovak companies or on a European scale. The article will describe its individual focuses as well as its other forms abroad. It is necessary to point out that the Testbed located in Košice is the first and only specialized laboratory of its kind in Slovakia.
