



I E G U L D Ī J U M S T A V Ā N Ā K O T N Ē

Project title: Mobile Space Environment Testing Equipment Development of "Metamorphosis" prototype for transportation intermodal traffic

Number of project implementation agreement: 1.1.1.1/18/A/133

Registration number: 4127

Project completed during the period 01.05.2019. - 31.07.2019.:

Project activities and accomplishments during the reporting period:

Activity 1. Design calculations and design documentation for the design elements of the prototype:

Work 1.1. Calculation of the vacuum system

Outcomes:

Vacuum calculation:

Work has begun of the prototype vacuum chamber variational calculation and determination of the necessary for prototyping volumes and sizes of the vacuum chamber on its basis.

Started the calculation of the ultimate and working pressures for various tests and various modes of operation of the prototype, as well as possible ranges of their change.

Thermophysical calculation:

The development of a thermal model has begun.

Started the preliminary calculations of the thermal balance of the prototype for various types of tests.

Work 1.2. Vacuum vessel strengthen and stability calculation

Outcomes:

Started the determination of the mechanical structure and system of connections of the elements of the prototype, weights and efforts, interactions between the components of the prototype.

The development of a scheme for the static loading of prototype elements has begun.

Job started of creating models of the basic elements by sectioning the basic elements of the prototype.

An analysis of the applicability of EN standards and industry methodologies for strength analysis within the framework of this project has begun.

Activity 2. Prototype software development:

Work 2.1. Development of the prototype working algorithm

Outcomes:

Started the analysis of all types of tests that are planned to be performed using the MSTF test facility.

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