

Creanex

R&D AND TESTING SOLUTIONS



Management of product development schedules and costs

The control system of a machine is always a challenging development project where schedules can easily become drawn out and eventually postpone the launching time. The postponed launching of products, or warranty alterations to the products already delivered, create major costs that cannot always be avoided, but the likelihood of delays can be diminished.

The simulator-based product development and testing environment, developed in cooperation with working machine manufacturers, is an innovative solution for product development and testing of control systems. This enables the development and integration testing of complete control systems, using the real components, already in the early stages of product development when it is the most economical. The development environment consists of the control system of the device, a simulator that accurately imitates the operation of the machine or device, and of test case management.

The product development and testing environments by Creanex can be adapted for a variety of machines or process equipment. We are a comprehensive cooperation partner in testing and the development of test equipment. In addition to simulator development, our services also include planning of test cases and the implementation of test management systems.

Product development and test environments will not make test runs with the actual machine obsolete, but they minimise routine test procedures and allow more time to concentrate on demanding application tests.



SAVINGS THROUGH FASTER PRODUCT DEVELOPMENT



INCREASED SAFETY AND RELIABILITY



QUALITY MANAGEMENT THROUGH IMPROVED TESTING



SHORTER TIME-TO-MARKET DURATION AND EASIER FOLLOW-UP OF DEVELOPMENT PROJECT PROGRESS



LOWER PRODUCT DEVELOPMENT AND AFTER-MARKET COSTS



SOFTWARE DEVELOPERS HAVE A SAFE TEST MACHINE AT THEIR DISPOSAL THROUGHOUT THE DEVELOPMENT PROJECT, WHICH MAKES INTEGRATION TESTS OF THE CONTROL SYSTEM POSSIBLE ALREADY BEFORE A PROTOTYPE MACHINE IS BUILT



TESTING AND VERIFYING OF SAFETY-CRITICAL FUNCTIONS, DOCUMENTATION OF TESTING



POSSIBILITY TO HAVE TESTING AUTOMATED

Testing verifies safety and reliability of product

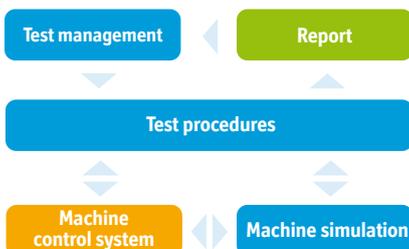
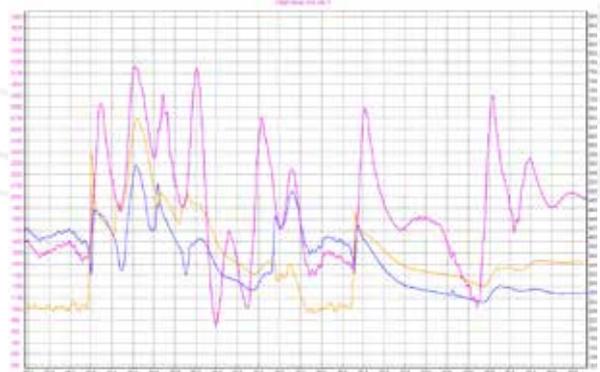
The possibility to test the control system free of any restrictions by prototype building schedules opens up completely new possibilities to save on product development costs and after-market expenses. Postponing the launching of a product or making alterations to machines already delivered usually generate major costs, and it pays to invest in practices that minimise these expenses.

A simulator-based test environment is a test machine for the development group. A virtual machine is created for the control system, and simulations are used for imitating the components and machine parts to be controlled. The operator sees the functions as movements of the virtual machine and will also receive a wide range of measurements of the desired controls and responses. The intended use determines the accuracy requirement for simulation. The functionality of various solutions can be quickly examined

already in the early stages of the development project when it is the most economical. A test environment can also be used for modelling various sensor faults that are often nearly impossible to

test in practice. Even after product launch, the same environment will work as a platform for product development and testing when assuring the quality of new product versions.

Testing can be carried out manually in the product development phase, but tests can also be partly or completely automated. Automatic testing and storing test cases in a test library reduce the amount of manual work and free test personnel to conduct more demanding tests as well as creating a comprehensive test library to form a part of the company's quality system. A test case, once created, enables routine tests to be easily repeated and followed up.



CREANEX OY

Creanex specialises in the comprehensive technology services of working machines. Our customers include globally operating leading manufacturers of working machines; examples of their products are forestry machines as well as earth moving and mining machinery. The services offered by Creanex cover mechanical, hydraulic, and automation engineering. In addition, we design and manufacture working machine training simulators and test environments for working machine control systems.

The cornerstone of our engineering is to utilise the potential of new technologies to produce functional solutions that meet the needs of the application. If necessary, we will develop a functional overall solution of your idea.