DESCRIPTION FOR THE GENERAL PUBLIC
(State the objective of the project, describe the research to be carried out, and present reasons for choosing the research topic - max. 1 standard type-written page)

The aim of the project is construction and investigation of the empirical and theoretical properties of the highly effective statistical procedures in four, important in applications, testing problems.

The posed testing problems concern, among others, censored observations, which frequently occur in analyses of medical data. Unfortunately, the existing, and what is worse, the most popular testing procedures are ineffective and lead to numerous errors in inference.

Obviously, we are not able to compare the new tests, which we intend to construct, to the all existing procedures. Therefore, to extensive simulation study, which we intend to conduct in Wrocław Centre for Networking and Supercomputing, aiming at exhibition of very good properties of the new constructions, we include the specially selected solutions, which are the most common in practice, or which the papers promoting them have been published in prestigious international journals.

Each new solution will also be analyzed from the theoretical point of view. Specifically, we plan, among others, to prove theorems concerning asymptotic distributions of the test statistics and show either the consistency or the control of the error of the second kind of the corresponding tests.

Each published paper will be accompanied with the `R` codes, enabling analyses of the real data sets with usage of the new tests.

It is expected that the new procedures will be better than the existing ones.