

SUCCESS  
STORY #8

# How to select ab initio pilots

## Replacing a flight simulator with psychological tests

### CLIENT



AMC - Aviation Medical Center  
www.aviationmedical.com

Since 1999 AMC has developed into one of the leading medical and psychological examination institutes in the aviation industry. The examinations are in accordance with the statutory EASA and FAA requirements. The various locations are close to the most important airports in the Netherlands.

„Subjectivity in human assessments in aviation with respect to sensor motoric performance is undesirable. The VTS system helps us get reliable and objective sensomotor measurements without the intervention of human assessments. All results are obtained in the same way, time after time.“

Hans Stapel,  
Operational Manager Psychology,  
Aviation Medical Center

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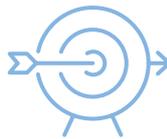
### Initial situation



Safety is essential for (civilian) pilots and crew. All pilots are required to undergo psychological and periodic medical examinations in accordance with the statutory EASA and FAA requirements.

AMC's client operates a training facility for pilots and used to rely on an **in-house flight simulator for selecting students**. However, this method proved impractical due to **low testing capabilities of just one applicant at a time and high replacement costs** for a newer model. A new approach to the selection process should tackle both issues.

### Project Aim & Challenge



The main goal was to establish a **new, modern selection process conform to EASA** rules and regulations that allowed AMC to advise their client on whether or not a candidate was able to complete the flight education with regard to various cognitive and motoric skills, such as stress tolerance, eye-hand-foot coordination or multi-tasking.

The new selection process had to meet essential criteria: **significant cost-reduction, increasing testing capabilities without compromising on scientific validity of the results and conformity with the EASA rules and regulations.**

### Procedure



To establish a test selection that could replace the flight simulator, we first worked out which basic abilities were measured by the current flight simulator. Based on that, we selected psychometric tests that would assess these abilities and were proven to work in the context of aviation. Since the target group tends to have a higher skill level than the average person, it was also important to select tests that would allow to **distinguish between the best of the best.**

This yielded a test setting in **two on-site stages**. The first for **preselecting candidates** and a second **in-depth testing for the most promising candidates**, with both using SCHUHFRIED specific in- and output devices. These devices enable **precise measurements**, allowing a very **fine distinction between candidates**. To enhance the significance of test results even further, a **customer-specific comparison group** consisting of other applicants was implemented. This allowed AMC to compare applicants with other applicants and set the test results directly into their very specific practical context. After establishing the psychometric framework, all users at AMC received a training regarding the technical use of the Vienna Test System and the test administration as well as the interpretation of test results and how to put them into the context of pilot selection.

### Solution & Outcome



- ◀ Server solution with four test PCs
- ◀ First, shorter test stage for preselecting candidates
- ◀ Second, in-depth test stage for identifying the most promising candidates in the remaining applicant group

“Whereas in the past several half-days were usually required to test and report the sensory motoric competencies, a few hours of testing is now sufficient. The VTS system has greatly reduced our testing time.”, says Hans Stapel, Psychologist and Operational Manager Psychology at AMC.