The FIT Project

In June 2009, Shumac was awarded a contract by the Canadian Space Agency (CSA) to conduct research in response to a need identified by CSA for an approach to identify occurrences in space operations where human performance may be challenged by the task, the environment or the condition of the individual (e.g., fatigue, stress). The project, known as FIT, (for “fitness for task”) will extend until the end of 2010.

FIT builds upon existing scientific knowledge in human factors and human reliability. In its current version, it takes into account a number of factors (e.g., fatigue, circadian rhythm, task and procedural complexity) associated with the performance of a given type of task to predict the likelihood that a user will successfully carry it out. The user will then be in a position to decide which measure, if any, should be taken to reduce the likelihood of human error for the task. For example, a task could be delayed or moved forward, or an independent verification could be carried out. In some cases, just being aware that the conditions to carry out a given task are unfavourable may lead the user to adapt his or her strategies to carry out the task and thus improve the likelihood of success. FIT relies on a number of interacting modules that embody the knowledge required and that offer the functionality necessary to carry out the assessment. Through a careful selection of the techniques used to evaluate the factors that affect human performance for a given task, the system is designed to be as non-intrusive as possible so as not to increase the burden of the operator. Further, the human-machine interaction has been optimized so as to ease any interaction between the user and the system. Thanks to this open, knowledge-based, architecture, FIT will easily be extended to consider additional factors that affect human performance.

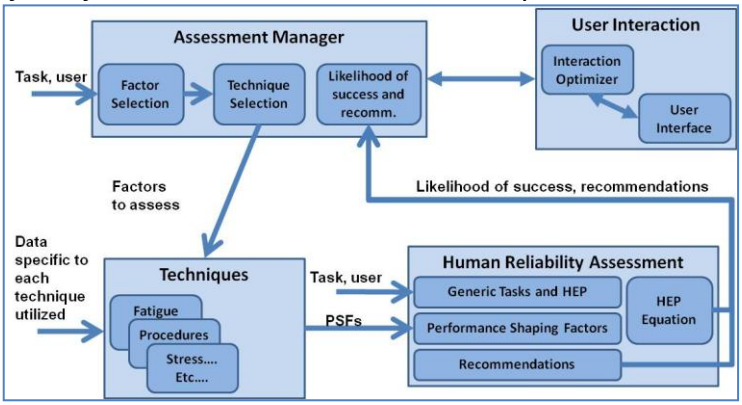

Figure 1: FIT Architecture.

The team responsible for developing FIT is working hard to make the tool as relevant to CSA needs and as user friendly as possible. However, FIT is also intended to be useful in any other dynamic environment that involves the need for a high level of human performance.

What we do

Since 1995, Systèmes Humains-Machines inc. (“Shumac”) specializes in all aspects of human performance and human-machine interactions in a wide variety of industries and applications. Our expertise includes human factors, operator performance, error reduction, usability, physical ergonomics and fitness for duty.