



# Superior Astronaut Integration and Flight Ergonomics (SAIFE) Certification Program



## Executive Summary

ASTROWRIGHT SAIFE Certification



# Overview

## WHAT IS SAIFE CERTIFICATION?

Astrowright's Superior Astronaut Integration and Flight Ergonomics (SAIFE) certification program is an **independent, third-party human factors engineering and design review for spacecraft developers**. The SAIFE certification process is intended to assess and verify the degree to which human-accessible elements of a spacecraft meet human-system integration and ergonomics industry standards.

**SAIFE certification promotes the incorporation of the highest-quality human factors design and engineering into spacecraft development.** The design standards against which a SAIFE assessment is performed incorporate the latest in ergonomics, kinesiology, usability and serviceability.

NASA human integration design requirements and recommendations form the backbone of the process, with **all human interactive areas of a spacecraft being eligible for rating and certification**.

The evolution of NASA's Man Systems Integration Standards into today's NASA-STD-3001 and Human Integration Design Handbook forms a theoretical framework for sound design, while other more explicit design references such as MIL-STD-1472F provide specific criteria when warranted.

## WHY HAVE MY SPACECRAFT SAIFE-CERTIFIED?

With an integrated, systems-oriented method of spacecraft human-systems design, **implementation of a SAIFE approach can reduce risks, maximize usable passenger time on-orbit, improve the user experience, and enhance overall human-spacecraft interaction**. Consequently, SAIFE Certification translates to enhanced spacecraft reliability and longevity.

Simultaneously, a SAIFE rating provides clear and concise means of communicating a spacecraft's human factors performance attributes to potential clients, end-users and other stakeholders.

**Holding an independent ergonomics and human-integration certification demonstrates an owner's commitment to providing a superior spacecraft.**



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## HOW DOES SAIFE CERTIFICATION WORK?

SAIFE Certification comes in three rating tiers: **one-star, two-star, and three-star**. Each certification tier is based on sequentially increasing thresholds that represent the percentage of human-accessible design elements that meet the highest recommended standards. These elements include all aspect of the user experience, from physical components such as controls, accessibility and workstation geometry to cognitive components such as usability, fonts and color-schemes.

**The breakdown of rating tiers, which describe the minimum number of total human-accessible design elements which meet SAIFE criteria, is as follows:**

ONE-STAR	-	70%
TWO-STAR	-	80%
THREE-STAR	-	90%

Because the rating system is percentage-based and internally-focused with respect to a uniform set of standards, the rating system is self-scaling. **The capacity of the SAIFE rating system to self-scale means that though different spacecraft providers' architectures may differ significantly, the rating system is equitable across the entire spectrum of human-habitable spacecraft.**

No matter the spacecraft, whether small or large, transport or stationary, SAIFE-rated spacecraft compare apples to apples with respect to each other. **Users will know that they can rely on SAIFE-rated spacecraft to provide a minimum standard and uniformity of spacecraft experience.**

## SAIFE PLATINUM PARTNER PROGRAM

For manufacturers desiring to incorporate the most comprehensive human factors integration in their designs, **the SAIFE Platinum Partner program provides ground-up independent review of spacecraft development from concept to final production**. By considering ergonomics and human factors from the outset of a design, many problems and issues can be addressed before design constraints make them more expensive or impossible to change.



# Contact Information

## OUR STAFF

Our staff comes from a variety of challenging human factors environments including military and civilian aircraft, formula 1 racing, and emergency, military and off-highway vehicle designs. They are experienced in the integration of humans into complex environments under demanding mental conditions and implicitly understand the tangible value of good human factors outcomes.

## SCHEDULING YOUR CONSULTATION

Best-practice human factors considerations are most effectively incorporated early in the spacecraft development cycle. With this in mind, initial SAIFE assessments will bring the project team together to review spacecraft development already accomplished, articulate the project's goals, and evaluate the SAIFE certification level sought.

For more information regarding SAIFE certification, design criteria, or to schedule a consultation, contact us at the below address or email at [info@astrowright.com](mailto:info@astrowright.com).



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