

Modernization of the Human Centrifuge of the French Armed Forces Health Service by AMST-Systemtechnik and NFM Systems - REEL

Ranshofen, September 2025 – The consortium, AMST-Systemtechnik (Austria) and NFM Systems - REEL (France), has been awarded the contract to modernize and maintain the human centrifuge (CH), for the benefit of the Armed Forces Biomedical Research Institute (IRBA), in Brétigny-sur-Orge (France), and the Armed Forces Health Service.

The work, which will last until 2028, involves the refurbishment and modernization of the Centrifugeuse Humaine d'Applications, de Recherches Médicales et d'Etudes Scientifiques (CHARMES).

The maintenance and operational readiness contract following the refurbishment and modernization phase extends over a period of 5 years and addresses the needs of aeromedical training of French Air Force pilots, and research in aerospace physiology by clearly defining the responsibilities between the two partners.

NFM Systems - REEL will be responsible for:

- Upgrade of the main hydraulic line system (24 motors), including power electronics, programmable logic controllers (PLCs), hydraulic control system and auxiliary systems related to power generation.
- Provision of a complete maintenance service for all power generation systems.

AMST-Systemtechnik will contribute with:

- Replacement of the entire gondola, including the provision of a carbon fiber roll ring as well as roll and pitch motion technology based on AMST's know-how;
- Installation of a new cockpit (replica of the Rafale), including a set of auxiliary equipment;
- Replacement of computer and control systems;
- Replacement of the control stations, graphical user interfaces and centrifuge management software;
- Modernization of audio and video systems;
- Implementation of high-speed data transmission systems;
- Replacement of the medical monitoring system;
- General upgrade with the addition of Dynamic Flight Simulation (DFS) capability;
- Provision of a complete maintenance service for all the control systems of the human centrifuge.

We are honoured by IRBA's confidence in the expertise and capabilities of NFM - REEL and AMST-Systemtechnik. This project represents a significant advance in aeromedical training and research technology for France.