



Airport Name(s): 6 Airports: Afonso Pena (SBCT), Bacacheri (SBBi), Uruguaiana (SBUG), Pelotas (SBPK), Teresina (SBTE) and Petrolina (SBPL)

Airport Group: ASUR Brasil – Motiva

Responsible: Rebecca Rigotti Cavalcante - ESG Specialist

Project's name: Project Jandaia

Executive Summary

Project Jandaia is a technological innovation and airport sustainability initiative developed by CCR Aeroportos to modernize Aircraft Rescue and Fire Fighting Vehicles (ARFF), considered critical assets for operational safety. Implemented at Afonso Pena International Airport (SBCT), Bacacheri Airport (SBBi), Rubem Berta International Airport (SBUG), João Simões Lopes Neto International Airport (SBPK), Senador Petrônio Portella Airport (SBTE) and Senador Nilo Coelho Airport (SBPL), the project established a new asset management model based on equipment refurbishment engineering, national technological development and circular economy principles.

The main challenge involved modernizing X4 model firefighting vehicles, large units whose architecture integrates propulsion and fire pump operation through a power take-off (PTO) system connected to the main engine. This feature makes technological replacement considerably more complex than for conventional vehicles. Rather than replacing the equipment entirely, CCR Aeroportos developed an innovative advanced retrofit solution capable of incorporating contemporary technologies while preserving the existing operational structure.

Seven vehicles were upgraded with new firefighting systems, joystick-controlled monitors, high-precision pneumatic valves, onboard cameras, integrated electronic panels and management software developed in Brazil. In addition, approximately 75% of the components were sourced nationally, reducing dependence on international suppliers and strengthening the Brazilian industrial supply chain.

The initiative avoided the premature disposal of equipment with remaining operational potential, promoting efficient resource use and reducing demand for raw materials associated with the manufacturing of new vehicles. The investment of approximately BRL 4.2 million generated savings of about 85% compared to the estimated BRL 28 million required to acquire new trucks.

Developed with strong involvement from senior leadership, operational teams, engineering departments, specialized suppliers and the national industry, Project Jandaia has become a benchmark in innovation applied to airport infrastructure, demonstrating high replication potential and direct contribution to United Nations Sustainable Development Goals 8, 9, 12 and 13.

Results and Benefits

Project Jandaia demonstrated that innovation in asset management can generate simultaneous gains in operational performance, sustainability and economic efficiency. Retrofitting seven firefighting vehicles transformed equipment with approximately 20 years of service into technologically upgraded assets aligned with current airport safety standards.

The project's main achievement was the development of a pioneering solution for modernizing X4 firefighting vehicles, whose operational architecture presents significant technical complexity due to the integration between propulsion and firefighting pump systems. Instead of replacing the equipment, an approach based on refurbishment engineering and national technological development was adopted.

Implemented innovations included joystick controls, high-efficiency pneumatic valves, monitoring cameras, intelligent electronic panels and software developed in Brazil. These improvements enhanced operational precision, system reliability and emergency response efficiency.

Key quantitative results include the technical assessment of a fleet of 40 ARFF vehicles distributed across 16 airports, the modernization of seven strategic units and the nationalization of approximately 75% of the components used. Furthermore, the project replaced imported technological solutions with domestic alternatives, strengthening Brazilian suppliers and supporting local technological development.

From an economic perspective, approximately BRL 4.2 million was invested, compared with an estimated BRL 28 million required to purchase new equipment, generating savings of nearly 85%.

Environmental benefits include extending asset service life, reducing waste generation, decreasing demand for raw materials and incorporating circular economy principles. The developed model has strong replication potential for airports throughout Brazil and Latin America, establishing a benchmark for sustainable innovation in airport infrastructure.



Figure 2. Aircraft Rescue and Fire Fighting Vehicle (ARFF).



Figure 3. Project Jandaia delivery ceremony at Goiânia Airport.