

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Sustainable Approaches and Impact of Space Transportation Solutions on Earth + Space Environment
and on General Safety (9-D6.2)

Author: Mr. Egalgi Joël
Centre National d'Etudes Spatiales (CNES), France

Mrs. CROS Caroline
ESA - European Space Agency, France

Mr. HEDIN Jeremy
Centre National d'Etudes Spatiales (CNES), French Guiana

Mr. FREDERIC PRADIER
Centre National d'Etudes Spatiales (CNES), French Guiana

Mr. Nagera Cedric
Centre National d'Etudes Spatiales (CNES), French Guiana

NEW GENERATION OF EUROPE'S SPACE PORT IN FRENCH GUIANA, AS SUSTAINABLE AS
FLEXIBLE

Abstract

December 24th, 1979, 2:13 p.m. local time, an amazing event: Lift off of Ariane 1 from French Guiana. This launch date was the beginning of a tremendous technological adventure in French Guiana. Progress after innovation: Europe's spaceport was growing from a technical point of view with the supremacy of Ariane 4, then Ariane 5, and the adaptations of the systems. All of these modifications are brought about by the evolution of systems and by modifications in the needs and ways of working. Step by step, Europe's spaceport was growing up. Due to the spacecraft market evolution and the need to build an adaptable launch base, ready to face the needs, a new and major complete change in Europe's spaceport was validated in November 2019 during the European Ministers Council in Seville. The name of this ambitious program is "Core Launch Range Renewal," co-financed by Europe and French Space Agencies, ESA and CNES. The main objectives are Reduction of the cost, Modernization of the installations, and Flexibility, Adaptability, and Greening

According to Pareto law, it is essential to manage the 20% of greening actions that immediately bring 80% of the results. Should the low profitability of the other actions be neglected?

We have therefore taken the side to conduct as many of the actions in parallel, each action contributing to the reduction of the carbon footprint.

The main costs of our tropical launch base, are energy, due to the need to cool down and maintain environmental conditions (22C and 60% Relative Humidity for 30C and 90

Each component of the CLRR contributes by helping the greening act of Europe's spaceport. For example, the photovoltaic field will reduce the power consumption of CSG from the local power supply provider for approximately 18MWh a year, including the management of the network.

In the presentation of the six different but linked components, we will show you the position of greening in the CLRR program and how it is implemented from a technical point of view, but even in the management of the project and in the supervision of the network. Do we have to choose between flexibility and sustainability? Absolutely not. We drive both in parallel in the ambitious European program to reach a New Generation of Europe's Space Port in French Guiana, as sustainable as flexible.