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TACTICAL ENHANCEMENT OF AIR TRAFFIC SAFETY DURING ROCKET LAUNCH OPERATIONS

Abstract

At the beginning of this new decade, the exponential growth of various stakeholders in global airspace, both in the aeronautical and space industries, has raised new safety challenges that need to be considered and overcome in everyone's best interests. One significant challenge is the cohabitation of space transportation launches with daily, commercial air traffic. A rocket launched from the ground has to fly through multiple airspaces in a given time window. In most cases, during launch phases, rocket stages and parts fall back to Earth to re-enter the atmosphere and, possibly, fall through the densely occupied airspace where thousands of people commute every day throughout the world. For each launch, CNES' Flight Safety ensures local and international authorities are provided with the rockets' forecast fall back zones which are determined through careful and thorough analysis. This well-established procedure has undeniably guaranteed the safety of people, goods and the environment. In order to further increase the level of safety, we believe the time has come to strengthen the bonds between space and aviation authorities at an international level and to take major steps towards preventing dramatic events. One of the first implemented measures has been to incorporate Air Traffic Controllers from Cayenne Control Centre into the heart of launch operations. Their presence has allowed a smooth monitoring of air traffic as an experiment during rocket launch operations from the French Guiana Space Centre. Over the course of several launches, it has proven to be highly efficient in regard to the tactical decision management of air traffic around the launch area in Cayenne Flight Information Region (FIR). Additionally, the presence of ATC within the space centre has considerably enhanced the mutual knowledge and coordination factors. Moreover, the Flight Safety Department at the French Guiana Space Centre is engaging in international cooperation by editing a Memorandum of Understanding with the FIR concerned by French Guiana rocket launches, while always ensuring full transparency and remaining available for the sharing of information crucial to the safety and various interests of everyone at any time during operations. Relying on this experiment, we are improving the way aircrafts are informed about dangerous areas by enhancing our communication methods and adapting tactical cooperation with worldwide authorities.