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Policy, Legal, Institutional, Economic and Security Aspects of Debris Mitigation, Debris Remediation and
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COLLISION RISK HANDLING AT REGULATORY LEVEL, THE EXAMPLE OF THE FRENCH
SPACE OPERATIONS ACT

Abstract

With the issue of congestion of space becoming more and more alarming, many national regulations and international non-binding initiatives are starting to focus on Space Traffic Management needs. STM will indeed be critical in the near future to enable space flight safety, especially through the mitigation of collision risk for maneuverable spacecraft, the handling of radiofrequency interference, and more generally the coordination of space activities for all phases of flight, from launch up until mission disposal.

Among these initiatives, France has initiated a reflection on the update of its legal and regulatory framework as early as 2019 to improve safety and sustainability of space operations performed under its authority. With approximately a decade of experience and feedback in the compliance analysis of orbital systems, CNES Space Safety Office has been heavily involved in this update, and has been working since 2020 on proposing new technical requirements. This work ultimately led, in the first semester of year 2024, to the publication of a new applicable version of the French Technical Regulation addressing innovative activities such as constellations or in-orbit servicing, and improving collision risk handling.

While all recent developments in the field of Space Traffic Management agree on the necessity to better frame collision avoidance practices, the actual implementation within regulations or non-binding instruments may slightly differ and reflect a wide range of possible risk reduction measures.

After a brief introduction on the French national law governing space operations (French Space Operation Act), this paper will explore in details the choices made in the construction of new technical requirements towards collision risk management obligations, as well as the challenges faced during this process. It will also give insight on the justification for the introduced requirements and focus on some of the pre-standardization studies performed in order to provide adequate methods for their implementation at French regulatory framework level. Finally, it will highlight possible area for improvement identified during the update process regarding collision risk management, to be further considered in the coming years for potential inclusion into a future version of the Technical Regulation.