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For a successful space program : Quality and Safety! (1)

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GUIDELINES FOR PROCESSES AND METHODS FOR A SUCCESSFUL SPACE MISSION IN VERY
TIGHT SCHEDULE FOR PROJECT AND PROGRAMME MANAGERS

Abstract

With the rapid growth of the industry, space companies and start-ups are required to find innovative techniques to be as competitive as possible by delivering innovative and high technology Space missions. The industry by its high risks and costs nature due to the space environment constraints that require system-oriented production. Furthermore, the industry has very tight standards and regulations that shall be met to be able to send any spacecraft to space. The last few decades have known a rapid emergence in the number of new actors – New Space companies – that are developing end-to-end space systems in a record-breaking time. Indeed, the tight schedules became another constraint that require agility and adaptability from the operations and project teams. As a matter of fact, the project and program managers find themselves constrained to make compromises in terms of risk and trade-offs to meet the planning objectives while keeping the performance of the product developed. In addition, due to many delays that have been a direct consequence of the pandemic and the new ways of work, this agility in the operations during the overall project cycle's first phases and more specifically during the preliminary and detailed design phases is more challenging. Not to mention the delays in terms of procurement and the volatility of components, remote work and the rather difficult internal communication of the teams. Undoubtedly, the human factor, the nature of the market, the operations and the planning are the main pillars of the success or failure of any space mission.

This paper will be suggesting an effective approach and methods that can be implemented by project and programme managers during the development phases of very consequent space missions which have a particularly tight schedule. It describes the various practices, procedures and skills to ensure efficient management of cutting-edge space technology while ensuring an optimized schedule, scope, quality and cost.