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THE WAY FORWARD TO ICSO : AN INTERNATIONAL ORGANIZATION TO HANDLE A SUSTAINABLE SPACE TRAFFIC MANAGEMENT.

Abstract

Since two decades, the UN-COPUOS and IADC have set the current standards for Space Traffic Management, the registration rules, the debris mitigation guidelines, with some limitations. It is now clear that the existing international and national frameworks needs a serious upgrade. The possibility of having an integrated international civilian organization (ICSO) dealing regulating the traffic management has been exposed and debated during last IAC 2018. It is now an evidence that this is feasible, and we could be inspired by existing successful similar organization such as ICAO and its very efficient process around the Standards and Recommended Practices (SARPS). A first sketch of ICSO has been presented in IAC18, symbolized with a 5 level structure.

1. Maintenance of the technical rules and strandards (IADC heritage, ISO main interface)
2. License to fly, registration and final access to space permit delivery (enhanced UN registry)
3. Space Access fees collection. Funding for STM, enhanced SSA, and ADR could come from different sources of revenue: general government revenues and end-users of satellite services fees
4. Traffic awareness and control, based upon a common situational awareness, above the national policies, starting with voluntary data exchanges, then with the aggregation of civilian tracking means.
5. Ad'hoc means of coercion including incentives, penalties, nameshame, and coercive measures if needed

Those fives layers are not isolated, but intimately inter-dependent. How could we deliver a registration and a fly clearance without a strong link with technical requirements ? How could we impose a space access fee without a strong license/registration layer ? After a quick recall of what could be ICSO, this paper goes much deeper into those interactions and process with explicit examples of space mission ranging from a university cubesat up to a commercial mega constellation, from a pure National program to an International commercial venture, from a classical telecom program to an ambitious in space manufacturing mission. In each example, we will underline the issues and propose how the ICSO can solve them.

The second part of the paper describes the possible roadmap and associated milestones to start such an organization, again being inspired by the convention of Chicago in 1944 that gave birth to the ICAO. The steps are described in detail, showing the full coherence with National existing frameworks.