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A FOCUS ON THE “LAYERED” DEFINITIONS AND METRICS APPLIED TO ASI’S SPACE
SECTOR’S AND SPACE ECONOMY TRENDS COMPREHENSIVE MEASUREMENTS

Abstract

Consistent with this Symposium’s focus, this paper won’t be about figures, as such, or series of them, to explain trends and economic phenomena within the space sector, or the enlarged “space economy”. This paper will be concise and targeted to methodologies of data collection, definitions and perimeters for quantitative measurements, their relative accountancy metrics. Figures will be used only to provide examples and clear up the above funding concepts. Time has now come, we think, to have an in-depth discussion and hopefully agree on solid/shared, comparable measurement systems, especially because it becomes crucial to master the size and progress of space related activities, other than the “core” space sector, in their impressive increase, and finally know our way around a too foggy galaxy of concepts.

Space is, namely, emerging as a cross-cutting new frontier of economics, surrounding the Earth from 10ths km above, as a rather mature legal framework “Property of Mankind”. But, just like it happened two centuries back during the industrial revolution, with the start of massive international trade (and the relative theoretical mainstays of Smiths’ National Product and Balance of Payments), we believe we cannot exploit this potential if we fail to agree on definitions and measurement for these activities in a precise and separate macro-economic accountancy.

This paper, based on the longtime (2009-19) on-field experience of ASI’s DV web db and Panel, in measuring socio-economic trends of Italy’s space sector, and richly referring to evolutions and debates in the most authoritative Boards dealing with Space economic measurement (OECD, ESA, IAF itself), presents, after introducing about sustainable ways to collect meaningful data online, a “layered” system of perimeter definitions, basically divided into four areas, ideally and progressively distant from the center, or: core space sector (including midstream and core downstream), space-related activities, space-enabled activities, space-connected activities. For each layer there’s a clear definition with practical examples aimed at stressing potentially diverging opinions. Especially important, in the border between core space sector downstream and the space-related area, the postulate of “could/could not exist without space” which for instance separates terrestrial services (positioning, communication) supplied in urban areas, where alternatives to satellite based technologies are available, and elsewhere, where only satellites can help. The study concludes, back to general concepts, on specific metric solutions, and their convenience (the issue of double count reduction and purity of value chain), to estimate production, value added, RD expenditure, workforce and separate sensitive subPanels measurements such as SMEs, geographical clusters, technological/commercial areas, “export”.